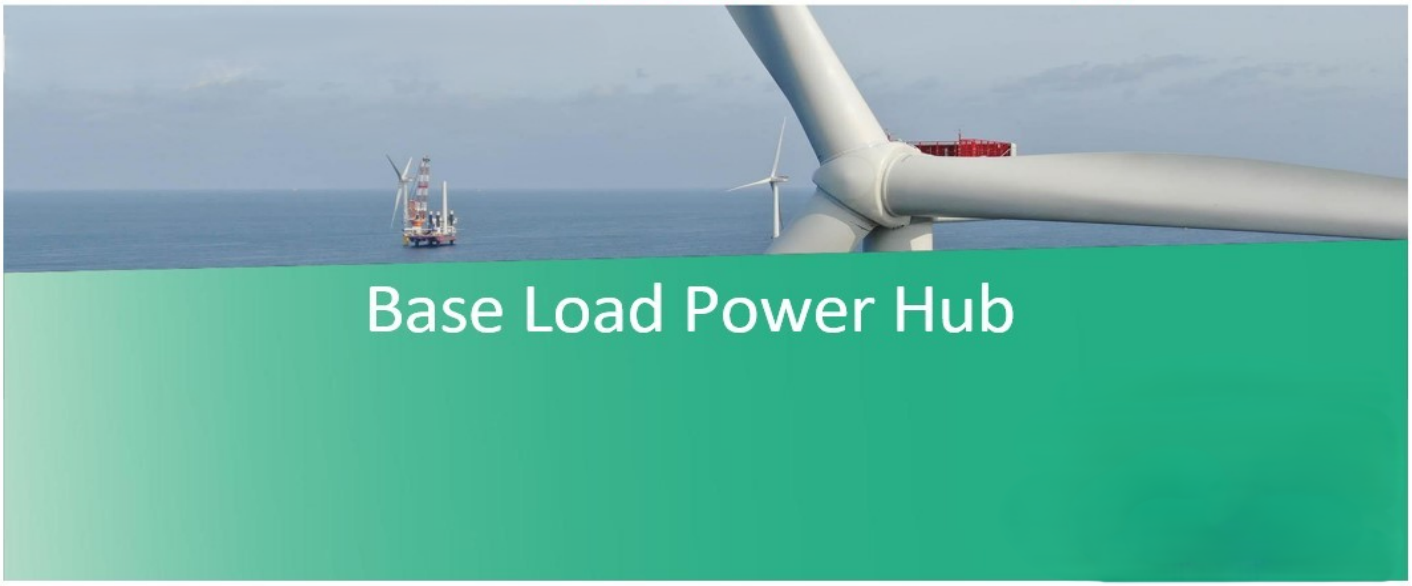
CROSSWIND

ROSETTI MARINO

PROVERLIS

PROJECT **123A90 - HOLLANDSE KUST NOORD WIND PARK**
BLPH Project



MECHANICAL COMPLETION DOSSIER (ONSHORE)

SYSTEM	43 Hydrogen Vent System
SUBSYSTEM	43-00 Hydrogen Vent Header & Drum System

CROSSWIND	123A90 - HOLLANDSE KUST NOORD WIND PARK BLPH Project MECHANICAL COMPLETION DOSSIER INDEX	ROSETTI MARINO

Sub System N°:	43-00	Tick as appropriate	ONSHORE	O
Description:	Hydrogen Vent Header & Drum System		OFFSHORE	NA

1.	***READY FOR COMMISSIONING CERTIFICATE*** *Ready For Commissioning Certificate (RFC)*	O
2.	***CONSOLIDATED PUNCH LISTS*** *Cleared and Residual Items*	O
3.	***SYSTEM/SUB-SYSTEM LIMIT DRAWINGS*** *Mark-up drawings showing the limits of the relevant System/Sub-System*	O
4.	***MECHANICAL COMPLETION STATUS INDEX – BUILDING DISCIPLINE*** *Building Sub-System Status Index (Print out) and Check/Test sheets*	NA
5.	***MECHANICAL COMPLETION STATUS INDEX – ELECTRICAL DISCIPLINE*** *Electrical Sub-System Status Index (Print out) and Check/Test Sheets* *Hazardous Area Equipment Detailed Inspection*	O
6.	***MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE*** *Instrumental Sub-System Status Index (Print out) and Check/Test Sheets*	O
7.	***MECHANICAL COMPLETION STATUS INDEX - MECHANICAL DISCIPLINE*** *Mechanical SubSystem Status Index (Print out) and Check/Test Sheets*	O
8.	***MECHANICAL COMPLETION STATUS INDEX - TELECOMMUNICATION DISCIPLINE*** *Telecommunication Sub-System Status Index (Print out) and Check/Test Sheets*	NA
9.	***MECHANICAL COMPLETION STATUS INDEX - HVAC DISCIPLINE*** *HVAC Sub-System Status Index (Print out) and Check/Test Sheets*	NA
10.	***MECHANICAL COMPLETION STATUS INDEX - PIPING DISCIPLINE*** *Piping Sub-System Status Index and Check/Test Sheets*	O
11.	***MECHANICAL COMPLETION INDEX - SAFETY DISCIPLINE*** *Safety Sub-System Status Index (Print out) and Check/Test Sheets*	NA
12.	***FAT / VENDOR REPORTS*** *Fat reports issued by vendors and/or vendor reports*	OK
13.	***MECHANICAL COMPLETION CHANGES / MARK-UPS*** *A copy of the changes initiated during the Mechanical Completion process pertaining to the relevant Sub-System will be incorporated in this section*	NA

Note: Under the generic terminology “Building” are also covered the following disciplines: **Structural, Painting**

Under the generic terminology “Instrumental” is also covered the following discipline: **Fire & Gas**

ROSETTI MARINO

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

CROSSWIND

Ready For Commissioning (RFC) Certificate

COMPLETE	●	PARTIAL	

Revision:	2		Issued on:	2025-03-28	
System:	43	/	Hydrogen Vent System		
SubSystem:	43-00	/	Hydrogen Vent Header & Drum System		

1	COMPANY has, at its option and if required, reviewed the mechanical completion associated with the above-named system/sub-system of the SCOPE and observed that such functional sub-system has been brought into readiness for commencement of the associated pre-commissioning and commissioning activities, but for the outstanding punch list items, if any, attached and referred in this Certificate.
2	Issuance of this Certificate shall not release CONTRACTOR from any of his obligations, responsibilities or liabilities under the CONTRACT.
3	Mechanical Completion Status Index attached (per Discipline) Punch List report attached (Outstanding and Cleared)

PUNCH LIST	PENDING POINTS	
Note: All Category "A" Items must be cleared prior to issue a Ready For Commissioning (RFC) Certificate	A	B
	'0	16

REMARKS:

	CONTRACTOR Construction Manager	**CONTRACTOR** Commissioning Manager	**COMPANY** Construction Lead (if required)	**COMPANY** Commissioning Lead (if required)
Name	Wolmer Borghi	Anthony Iveson	CPY NOT PRESENT	CPY NOT PRESENT
Date	2025-03-28	2025-03-28	2025-03-28	2025-03-28
Signature	PROVERLIS Digitaly signed by Wolmer Borghi 2025-03-28T07:41:02.328Z	PROVERLIS Digitaly signed by Anthony Iveson 2025-03-28T09:31:10.062Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2025-03-28T10:40:33.779Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2025-03-28T10:40:56.736Z

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC

Instrumental	43-00 Hydrogen Vent Header & Drum System

ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
43-FT-001	Flow Transmitter - Hydrogen form KO DRUM V-43001 to vent stack Q-43004	ONSHORE	C10001471	TJX04	100	2025-02-26	RFC 1
43-LT-001	Level DP Transmitter - KO Drum V-43001 High/Low Level	ONSHORE	C10000938	TJX04	100	2024-10-02	RFC 1
43-LT-003	Level DP Transmitter - H2 Vent Q-43004 Low Level	ONSHORE	C10000939	TJX04	100	2024-10-02	RFC 1
43-PT-001	Pressure Transmitter - KO Drum V-43001 Pressure	ONSHORE	C10000940	TJX04	100	2024-10-02	RFC 1
80-RO-001	Restriction Orifice - Hyrogen storage to A-80000 Package vent system	ONSHORE	C10001218	CJX11	100	2025-02-15	RFC 1
		ONSHORE	C10001446	TJX11	100	2024-12-20	RFC 1
BLPH-MV-404/43-LT-001	Process Connection Water - 43-LT-001	ONSHORE	C10001996	CJX06	100	2025-02-06	RFC 1
BLPH-MV-405/43-LT-001	Process Connection Water - 43-LT-001	ONSHORE	C10001997	CJX06	100	2025-02-06	RFC 1
BLPH-MV-462/43-LT-003	Process Connection Water - 43-LT-003	ONSHORE	C10001998	CJX06	100	2025-02-06	RFC 1
BLPH-MV-463/43-LT-003	Process Connection Water - 43-LT-003	ONSHORE	C10001999	CJX06	100	2025-02-06	RFC 1
C-43-FT-001/00-JE-11002	FLOW TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000029	CJX10	100	2025-02-25	RFC 1
C-43-FT-001/43-FE-001A	43-FT-001/43-FE-001A	ONSHORE	C10004547	CJX10	100	2025-03-13	RFC 2
C-43-FT-001/43-FE-001B	43-FT-001/43-FE-001B	ONSHORE	C10004548	CJX10	100	2025-03-13	RFC 2
C-43-LT-001/00-JE-21002	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000028	CJX10	100	2025-02-06	RFC 1
C-43-LT-003/00-JE-11002	LEVEL TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000138	CJX10	100	2025-01-22	RFC 1
C-43-PT-001/00-JE-11002	PRESSURE TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000027	CJX10	100	2025-02-19	RFC 1
PD-43-FT-001/00-JE-13001	FLOW TRANSMITTER POWER SUPPLY / MARSHALLING PCS	ONSHORE	C10001838	CJX10	100	2025-02-25	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC

Mechanical	43-00 Hydrogen Vent Header & Drum System						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
Q-43004	Hydrogen Vent	ONSHORE	C10004526	CZX01M	100	2025-02-08	RFC 1
V-43001	Hydrogen Vent KO Drum	ONSHORE	C10004521	CDX01	100	2025-02-07	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC

Piping	43-00 Hydrogen Vent Header & Drum System						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
006-1-J1	Joint 006-1-J1	ONSHORE	C10004075	TMX27	100	2025-02-14	RFC 1
006-1-J2	Joint 006-1-J2	ONSHORE	C10004076	TMX27	100	2025-02-14	RFC 1
006-1-J3	Joint 006-1-J3	ONSHORE	C10004077	TMX27	100	2025-02-14	RFC 1
018-1-J1	Joint 018-1-J1	ONSHORE	C10004078	TMX27	100	2025-02-10	RFC 1
018-1-J2	Joint 018-1-J2	ONSHORE	C10004079	TMX27	100	2025-02-10	RFC 1
018-1-J3	Joint 018-1-J3	ONSHORE	C10004080	TMX27	100	2025-02-10	RFC 1
037-1-J1	Joint 037-1-J1	ONSHORE	C10004088	TMX27	100	2025-02-07	RFC 1
037-1-J2	Joint 037-1-J2	ONSHORE	C10004089	TMX27	100	2025-02-07	RFC 1
037-1-J3	Joint 037-1-J3	ONSHORE	C10004090	TMX27	100	2025-02-07	RFC 1
038-1-J1	Joint 038-1-J1	ONSHORE	C10004091	TMX27	100	2025-02-10	RFC 1
038-1-J2	Joint 038-1-J2	ONSHORE	C10004092	TMX27	100	2025-02-10	RFC 1
038-1-J3	Joint 038-1-J3	ONSHORE	C10004093	TMX27	100	2025-02-10	RFC 1
039-1-J1	Joint 039-1-J1	ONSHORE	C10004094	TMX27	100	2025-02-17	RFC 1
039-1-J2	Joint 039-1-J2	ONSHORE	C10004095	TMX27	100	2025-02-17	RFC 1
039-1-J3	Joint 039-1-J3	ONSHORE	C10004096	TMX27	100	2025-02-17	RFC 1
040-1-J1	Joint 040-1-J1	ONSHORE	C10004097	TMX27	100	2025-02-13	RFC 1
040-1-J2	Joint 040-1-J2	ONSHORE	C10004098	TMX27	100	2025-02-13	RFC 1
040-1-J3	Joint 040-1-J3	ONSHORE	C10004099	TMX27	100	2025-02-13	RFC 1
041-1-J1	Joint 041-1-J1	ONSHORE	C10004100	TMX27	100	2025-02-14	RFC 1
041-1-J2	Joint 041-1-J2	ONSHORE	C10004101	TMX27	100	2025-02-14	RFC 1
041-1-J3	Joint 041-1-J3	ONSHORE	C10004102	TMX27	100	2025-02-03	RFC 1
042-2-J1	Joint 042-2-J1	ONSHORE	C10004103	TMX27	100	2025-01-30	RFC 1
043-1-J1	Joint 043-1-J1	ONSHORE	C10004104	TMX27	100	2025-02-17	RFC 1
043-1-J2	Joint 043-1-J2	ONSHORE	C10004105	TMX27	100	2025-02-18	RFC 1
043-1-J3	Joint 043-1-J3	ONSHORE	C10004106	TMX27	100	2025-02-18	RFC 1
043-1-J4	Joint 043-1-J4	ONSHORE	C10004107	TMX27	100	2025-02-18	RFC 1
065-1-J4	Joint 065-1-J4	ONSHORE	C10004124	TMX27	100	2025-01-30	RFC 1
114-1-J1	Joint 114-1-J1	ONSHORE	C10004273	TMX27	100	2025-02-14	RFC 1
114-1-J2	Joint 114-1-J2	ONSHORE	C10004274	TMX27	100	2025-02-14	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC

Piping	43-00 Hydrogen Vent Header & Drum System						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
114-1-J3	Joint 114-1-J3	ONSHORE	C10004275	TMX27	100	2025-02-14	RFC 1
116-1-J1	Joint 116-1-J1	ONSHORE	C10004276	TMX27	100	2025-01-27	RFC 1
116-1-J2	Joint 116-1-J2	ONSHORE	C10004277	TMX27	100	2025-01-27	RFC 1
116-2-J3	Joint 116-2-J3	ONSHORE	C10004278	TMX27	100	2025-01-27	RFC 1
116-2-J4	Joint 116-2-J4	ONSHORE	C10004279	TMX27	100	2025-01-27	RFC 1
116-3-J5	Joint 116-3-J5	ONSHORE	C10004280	TMX27	100	2025-01-27	RFC 1
116-3-J6	Joint 116-3-J6	ONSHORE	C10004281	TMX27	100	2025-01-27	RFC 1
116-4-J7	Joint 116-4-J7	ONSHORE	C10004282	TMX27	100	2025-01-27	RFC 1
116-4-J8	Joint 116-4-J8	ONSHORE	C10004283	TMX27	100	2025-02-03	RFC 1
123-1-J1	Joint 123-1-J1	ONSHORE	C10004290	TMX27	100	2025-01-31	RFC 1
123-1-J2	Joint 123-1-J2	ONSHORE	C10004291	TMX27	100	2025-01-27	RFC 1
123-1-J3	Joint 123-1-J3	ONSHORE	C10004292	TMX27	100	2025-01-27	RFC 1
124-1-J1	Joint 124-1-J1	ONSHORE	C10004293	TMX27	100	2025-01-27	RFC 1
124-1-J2	Joint 124-1-J2	ONSHORE	C10004294	TMX27	100	2025-01-27	RFC 1
124-1-J3	Joint 124-1-J3	ONSHORE	C10004295	TMX27	100	2025-01-27	RFC 1
124-1-J4	Joint 124-1-J4	ONSHORE	C10004296	TMX27	100	2025-01-27	RFC 1
125-1-J1	Joint 125-1-J1	ONSHORE	C10004297	TMX27	100	2025-01-28	RFC 1
125-1-J2	Joint 125-1-J2	ONSHORE	C10004298	TMX27	100	2025-01-27	RFC 1
125-2-J3	Joint 125-2-J3	ONSHORE	C10004299	TMX27	100	2025-01-28	RFC 1
125-2-J4	Joint 125-2-J4	ONSHORE	C10004300	TMX27	100	2025-01-27	RFC 1
157-1-J1	Joint 157-1-J1	ONSHORE	C10004170	TMX27	100	2025-02-12	RFC 1
43-00-TP-022	Test Pack 43-00-TP-022	ONSHORE	C10003397	CLX02A	100	2025-01-03	RFC 2
		ONSHORE	C10003398	CLX02B	100	2025-02-04	RFC 2
		ONSHORE	C10003399	CXX01	100	2025-03-25	RFC 2
		ONSHORE	C10003400	CXX02	100	2025-02-05	RFC 2
		ONSHORE	C10003401	TMX03	100	2025-01-03	RFC 2
		ONSHORE	C10003402	TMX05	100	2025-01-03	RFC 2
		ONSHORE	C10003405	TPLX05	100	2025-01-03	RFC 2

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC

Piping	43-00 Hydrogen Vent Header & Drum System						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
43-00-TP-024	Test Pack 43-00-TP-024	ONSHORE	C10003413	CLX02A	100	2025-01-29	RFC 2
		ONSHORE	C10003414	CLX02B	100	2025-02-25	RFC 2
		ONSHORE	C10003415	CXX02	100	2025-03-24	RFC 2
		ONSHORE	C10003416	TMX03	100	2025-02-07	RFC 2
		ONSHORE	C10003417	TMX05	100	2025-02-07	RFC 2
		ONSHORE	C10003420	TPLX05	100	2025-02-07	RFC 2
43-00-TP-044	Test Pack 43-00-TP-044	ONSHORE	C10003569	CLX02A	100	2025-01-16	RFC 2
		ONSHORE	C10003570	CLX02B	100	2025-02-25	RFC 2
		ONSHORE	C10003571	CXX02	100	2025-03-24	RFC 2
		ONSHORE	C10003572	TMX03	100	2025-02-19	RFC 2
		ONSHORE	C10003573	TMX05	100	2025-02-19	RFC 2
		ONSHORE	C10003576	TPLX05	100	2025-02-19	RFC 2
43-00-TP-050	Test Pack 43-00-TP-050	ONSHORE	C10003604	CLX02A	100	2025-01-25	RFC 2
		ONSHORE	C10003605	CLX02B	100	2025-01-31	RFC 2
		ONSHORE	C10003606	CXX01	100	2025-03-25	RFC 2
		ONSHORE	C10003607	CXX02	100	2025-01-31	RFC 2
43-00-TP-058	Test Pack 43-00-TP-058	ONSHORE	C10003661	CLX02A	100	2025-02-20	RFC 1
		ONSHORE	C10003662	CLX02B	100	2025-02-20	RFC 1
		ONSHORE	C10003663	CXX02	100	2025-02-20	RFC 1
43-00-TP-064	Test Pack 43-00-TP-064	ONSHORE	C10003697	CLX02A	100	2025-01-30	RFC 1
		ONSHORE	C10003698	CLX02B	100	2025-02-22	RFC 1
		ONSHORE	C10003699	CXX02	100	2025-02-22	RFC 1
		ONSHORE	C10003700	TMX03	100	2025-02-07	RFC 1
		ONSHORE	C10003701	TMX05	100	2025-02-07	RFC 1
		ONSHORE	C10003703	TPLX05	100	2025-02-07	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC

Piping	43-00 Hydrogen Vent Header & Drum System						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
43-00-TP-065	Test Pack 43-00-TP-065	ONSHORE	C10003704	CLX02A	100	2025-01-21	RFC 2
		ONSHORE	C10003705	CLX02B	100	2025-01-29	RFC 2
		ONSHORE	C10003706	CXX02	100	2025-01-30	RFC 2
		ONSHORE	C10003707	TMX03	100	2025-01-21	RFC 2
		ONSHORE	C10003708	TMX05	100	2025-01-21	RFC 2
		ONSHORE	C10003710	TPLX05	100	2025-01-21	RFC 2
		ONSHORE	C10004858	CXX01	100	2025-03-25	RFC 2
43-00-TP-066	Test Pack 43-00-TP-066	ONSHORE	C10004555	CLX02A	100	2025-01-25	RFC 1
		ONSHORE	C10004556	CLX02B	100	2025-02-25	RFC 1
		ONSHORE	C10004557	TMX05	100	2025-01-27	RFC 1
		ONSHORE	C10004558	TPLX05	100	2025-01-27	RFC 1
43-00-TP-067	Test Pack 43-00-TP-067	ONSHORE	C10004786	CLX02A	100	2025-02-03	RFC 1
		ONSHORE	C10004787	CLX02B	100	2025-02-21	RFC 1
		ONSHORE	C10004788	CXX02	100	2025-02-25	RFC 1
		ONSHORE	C10004789	TMX03	100	2025-02-04	RFC 1
		ONSHORE	C10004790	TMX05	100	2025-02-04	RFC 1
		ONSHORE	C10004792	TPLX05	100	2025-02-04	RFC 1
TP-001	H2 Vent System	ONSHORE	C10004888	TMX25	100	2025-02-26	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC

ATEX	43-00 Hydrogen Vent Header & Drum System						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
43-FE-001A	Pre-Amplifier Flow Sensor	ONSHORE	C10004545	CJX01	100	2025-03-12	RFC 2
43-FE-001B	Pre-Amplifier Flow Sensor	ONSHORE	C10004546	CJX01	100	2025-03-12	RFC 2
43-FT-001	Flow Transmitter - Hydrogen form KO DRUM V-43001 to vent stack Q-43004	ONSHORE	C10001470	CJX01	100	2025-02-26	RFC 1
43-LT-001	Level DP Transmitter - KO Drum V-43001 High/Low Level	ONSHORE	C10000898	CJX01	100	2025-02-06	RFC 1
43-LT-003	Level DP Transmitter - H2 Vent Q-43004 Low Level	ONSHORE	C10000899	CJX01	100	2025-02-06	RFC 1
43-PT-001	Pressure Transmitter - KO Drum V-43001 Pressure	ONSHORE	C10000900	CJX01	100	2025-02-19	RFC 1

CROSSWIND

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 43 Hydrogen Vent System

SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003263	A	125-2-J3 C10004299	Body length of Valve BLPH-MV-463 does not allow the installation of washers from insulation kit on the valve side.	.As agreed with Engineering Dpt. they have not been installed on that side.		LNovaga 2025-01-28	2025-01-28	LNovaga 2025-01-28	2025-01-28
C30003264	A	125-1-J1 C10004297	Body length of Valve BLPH-MV-462 does not allow the installation of washers from insulation kit on the valve side.	As agreed with Engineering Dpt. they have not been installed on that side.		LNovaga 2025-01-28	2025-01-28	LNovaga 2025-01-28	2025-01-28
C30004110	A	43-00-TP-024 C10003414	Missing earthing connection (SK 042)	.		LNovaga 2025-02-25	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30004111	A	43-00-TP-024 C10003414	Earthing plate completly painted.	.		LNovaga 2025-02-25	2025-02-26	KAlbonetti 2025-02-26	2025-02-26
C30004126	A	43-00-TP-044 C10003570	Missing earthing connection	.		LNovaga 2025-02-25	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30004127	A	43-00-TP-044 C10003570	Clean the earthing plate before installing the cable. See attached.	.		LNovaga 2025-02-25	2025-02-26	LNovaga 2025-02-26	2025-02-26
C30004129	A	43-00-TP-066 C10004556	Flow element not installed to arrange sensitive test.	.		LNovaga 2025-02-25	2025-03-17	LNovaga 2025-03-17	2025-03-17
C30002338	B	43-00-TP-022 C10003397	Spool has not been installed in erection. Inspection points from 4 to 6 of the ITR to be checked during reinstatement.	.		KAlbonetti 2025-01-03	2025-02-07	KAlbonetti 2025-02-07	2025-02-07
C30002954	B	43-00-TP-044 C10003569	SK.043, PS-03054: the support is different in field compared to construction. See DWG attached.	.		KAlbonetti 2025-01-16			

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 43 Hydrogen Vent System

SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002955	B	43-00-TP-044 C10003569	Sk.43, PS-03053: Position R1 has not been prepared.	.		KAlbonetti 2025-01-16	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30002956	B	43-00-TP-044 C10003569	Spool has not been installed in erection. Inspection points from 4 to 6 to be checked during flange management in the after test phase.	.		KAlbonetti 2025-01-16	2025-02-19	KAlbonetti 2025-02-19	2025-02-19
C30003114	B	43-00-TP-065 C10003704	PS-02134: the structural part of the support is 5 mm shorter and the position R1 is missing.	.		KAlbonetti 2025-01-21	2025-02-11	KAlbonetti 2025-02-11	2025-02-11
C30003117	B	43-00-TP-065 C10003704	In the Spool A, the section between W1 and W2 has been cut of 70 mm due the fact that the nozzle of the Vent was longer.	.		KAlbonetti 2025-01-21			
C30003181	B	43-00-TP-064 C10003697	Supports type "S-211" not assembled as for Standard. To be checked again during reinstatement.	.		KAlbonetti 2025-01-24	2025-02-22	LNovaga 2025-02-22	2025-02-22
C30003200	B	43-00-TP-066 C10004555	Nameplate on the spool belonging to the equipment 43-FE-001 is empty.	.		KAlbonetti 2025-01-25			
C30003262	B	43-00-TP-024 C10003413	All stopper type "S-205" are missing. They shall be installed and welded to the pads.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003265	B	43-00-TP-024 C10003413	Vlaves have not been installed before test. Flanged joints before test are only temporary. Inspection points from 5 to 7 are going to be	.		KAlbonetti 2025-01-28	2025-02-19	KAlbonetti 2025-02-19	2025-02-19
C30003266	B	43-00-TP-024 C10003413	Sketch 038: Piping support PS-03025 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 43 Hydrogen Vent System
SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003267	B	43-00-TP-024 C10003413	Sketch 037: Piping support PS-03023 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003268	B	43-00-TP-024 C10003413	Sketch 018: Piping support PS-03548 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003269	B	43-00-TP-024 C10003413	Sketch 044: Piping supports PS-03017 and PS-3018 have not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003270	B	43-00-TP-024 C10003413	Sketch 041: Piping support PS-03132 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-03-03	LNovaga 2025-03-03	2025-03-03
C30003271	B	43-00-TP-024 C10003413	Sketch 006: Piping support PS-03051 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003272	B	43-00-TP-024 C10003413	Sketch 039: Piping support PS-03032 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003273	B	43-00-TP-024 C10003413	Sketch 039: Piping support PS-03134 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003274	B	43-00-TP-024 C10003413	Sketch 008: Piping support PS-03127 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-03-03	LNovaga 2025-03-03	2025-03-03
C30003403	B	43-00-TP-024 C10003413	PS-02035 is different from the drawing. See as-built.	.		KAlbonetti 2025-01-30			

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SYSTEM 43 Hydrogen Vent System
SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003404	B	43-00-TP-024 C10003413	PS-03058 is not as for the drawing. See as-built.	.		KAlbonetti 2025-01-30			
C30003515	B	43-00-TP-067 C10004786	Support "PS-02133" is unmounted. ISO 123A90-FDL-PP-DI-00002-01	.		MBruschi 2025-02-03	2025-02-21	LNovaga 2025-02-21	2025-02-21
C30003516	B	43-00-TP-067 C10004786	SK.002-01: All piping supports type "S-75", "C-34", "C-16" and "-S-211" will be check during reinstatement phase.	.		MBruschi 2025-02-03	2025-02-21	LNovaga 2025-02-21	2025-02-21
C30003546	B	43-00-TP-022 C10003400	General touch up do to, especially near the supports of the piping line.	.		KAlbonetti 2025-02-05	2025-02-06	KAlbonetti 2025-02-06	2025-02-06
C30004051	B	43-00-TP-058 C10003663	Color coding and fluid direction are missing.	.		LNovaga 2025-02-20			
C30004083	B	43-00-TP-067 C10004787	Support PS-20289.1 doesn't touch structural support.	.		LNovaga 2025-02-21	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30004084	B	43-00-TP-067 C10004787	Correct the gap on support PS-02132.1 (SK 002 1/2).	.		LNovaga 2025-02-21	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30004085	B	43-00-TP-067 C10004787	Support PS-02080.1 doesn't touch the structural support (SK 002 1/2).	.		LNovaga 2025-02-21	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30004086	B	43-00-TP-067 C10004787	Spool-B has a vertical misalignment about 1.3°.	.		LNovaga 2025-02-21	2025-02-25	KAlbonetti 2025-02-25	2025-02-25

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SYSTEM 43 Hydrogen Vent System
SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004087	B	43-00-TP-064 C10003699	Color coding and fluid direction are missing.	.		LNovaga 2025-02-22	2025-03-25	LNovaga 2025-03-25	2025-03-25
C30004088	B	43-00-TP-064 C10003698	BLPH-MV-419 has stem direction north and gear east. the valve was rotated because there was a clash with the structure.	.		LNovaga 2025-02-22	2025-02-22	LNovaga 2025-02-22	2025-02-22
C30004090	B	43-00-TP-024 C10003414	BLPH-MV-199 has stem direction north and gear east. the valve was rotated because there was a clash with piping.	.		LNovaga 2025-02-22	2025-02-22	LNovaga 2025-02-22	2025-02-22
C30004112	B	43-00-TP-024 C10003414	Support PS-03127.1 SK 008 missing gap.	.		LNovaga 2025-02-25	2025-02-26	KAlbonetti 2025-02-26	2025-02-26
C30004113	B	43-00-TP-024 C10003414	Support PS-03052.1 is missing.	.		LNovaga 2025-02-25	2025-03-03	LNovaga 2025-03-03	2025-03-03
C30004114	B	43-00-TP-024 C10003414	Support PS-03056.2 SK042 sh 1/2 lateral gap is missing.	.		LNovaga 2025-02-25	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30004115	B	43-00-TP-024 C10003414	Support PS-03055.2 SK042 sh 1/2 lateral gap is missing.	.		LNovaga 2025-02-25	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30004116	B	43-00-TP-024 C10003414	Support PS-03017.2 SK044 correct the gap.	.		LNovaga 2025-02-25	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30004117	B	43-00-TP-024 C10003414	Support PS-03018 SK044 is not alligned with pipe.	.		LNovaga 2025-02-25	2025-02-27	LNovaga 2025-02-27	2025-02-27

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SYSTEM	43	Hydrogen Vent System
SUBSYSTEM	43-00	Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004118	B	43-00-TP-024 C10003414	Support PS-03134.2 SK041, there is a gap between pad and structural support, corret it.	.		LNovaga 2025-02-25	2025-02-28	LNovaga 2025-02-28	2025-02-28
C30004119	B	43-00-TP-024 C10003414	Support PS-03045.1 SK 040 correct the gap.	.		LNovaga 2025-02-25	2025-03-03	LNovaga 2025-03-03	2025-03-03
C30004120	B	43-00-TP-024 C10003414	Support PS-03033.1 SK 039 is not clamped.	.		LNovaga 2025-02-25	2025-03-03	LNovaga 2025-03-03	2025-03-03
C30004125	B	43-00-TP-044 C10003570	The distance between the welds EW5 and W6 has an inverse inclination of 1.4° with respect to the isometric.	.		LNovaga 2025-02-25	2025-03-06	LNovaga 2025-03-06	2025-03-06
C30004128	B	43-00-TP-044 C10003570	Support PS-03053.1 doesn't touch structure, correct the gap. See attached.	.		LNovaga 2025-02-25	2025-02-26	LNovaga 2025-02-26	2025-02-26
C30004136	B	43-00-TP-067 C10004788	Color coding and fluid direction are missing.	.		KAlbonetti 2025-02-25	2025-03-21	LNovaga 2025-03-21	2025-03-21
C30004152	B	43-00-TP-067 C10004787	Support PS-02090 is UPN80 and not UPN100, correct drawings.	.		LNovaga 2025-02-26			
C30004260	B	43-00-TP-044 C10003571	Touch up near the support PS-03053 and joint 043-1-J3 to do.	.		LNovaga 2025-03-24			
C30004261	B	43-00-TP-024 C10003415	General touch up to do, especially near the supports and joints.	.		LNovaga 2025-03-24			

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SYSTEM 43 Hydrogen Vent System

SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004269	B	43-00-TP-065 C10004858	Color coding and fluid direction are missing.	.		LNovaga 2025-03-25			
C30004270	B	43-00-TP-065 C10004858	Missing the insulation pillow around the valve BLPH-MV-417, BLPH-MV-418 and joint 124-1J1.	.		LNovaga 2025-03-25			
C30004271	B	43-00-TP-050 C10003606	Missing the insulation pillow around the valve BLPH-MV-462 and BLPH-MV-463.	.		LNovaga 2025-03-25			
C30004272	B	43-00-TP-022 C10003399	Color coding and fluid direction are missing.	.		LNovaga 2025-03-25			
C30004273	B	43-00-TP-022 C10003399	Missing the insulation pillow around the valve BLPH-MV-409 and joint 123-1J1.	.		LNovaga 2025-03-25			

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PUNCH LIST REPORT

SYSTEM	43	Hydrogen Vent System
SUBSYSTEM	43-00	Hydrogen Vent Header & Drum System

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003508	A	43-LT-003 C10000899	Missing drain tubing below the manifold (VENT). See Attached photo.	.		Gtangianu 2025-02-03	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30003506	B	43-LT-003 C10000899	The support bracket is not aligned. The bracket is damaged. See attached photo.	.		Gtangianu 2025-02-03	2025-02-28	AAndreani 2025-02-28	2025-02-28
C30003509	B	43-LT-003 C10000899	Elevation of instrument is not in accordance with Layout. See attached photo.	.		Gtangianu 2025-02-03	2025-03-05	Gtangianu 2025-03-05	2025-03-05
C30003522	B	43-LT-001 C10000898	The support bracket is not aligned. The bracket is damaged. See attached photo.	.		Gtangianu 2025-02-04	2025-02-28	AAndreani 2025-02-28	2025-02-28
C30004025	B	43-PT-001 C10000900	missing trafolite and SS tag	.		AAndreani 2025-02-19	2025-02-24	AAndreani 2025-02-24	2025-02-24
C30004153	B	43-FT-001 C10001470	Not installed the trafolite tag on the instrument 43-FT-001.See Attached photo.	.		Gtangianu 2025-02-26		Gtangianu	

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PUNCH LIST REPORT

SYSTEM 43 Hydrogen Vent System

SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Mechanical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003582	A	Q-43004 C10004526	Vent Tip n ot installed	.		AMancini 2025-02-07	2025-03-05	MBruschi 2025-03-05	2025-03-05
C30003583	A	Q-43004 C10004526	Missing earthing connections on earthing plates	.		AMancini 2025-02-07	2025-02-26	KAlbonetti 2025-02-26	2025-02-26
C30003585	A	V-43001 C10004521	Missing earthing connections on earthing plates	.		AMancini 2025-02-07	2025-02-26	Ecarotenuto 2025-02-26	2025-02-26
C30003586	A	V-43001 C10004521	V-43001 to be tightened	.		AMancini 2025-02-07	2025-02-11	LNovaga 2025-02-11	2025-02-11
C30003587	A	V-43001 C10004521	Some lines still need to be connected	.		AMancini 2025-02-07	2025-02-20	LNovaga 2025-02-20	2025-02-20
C30000150	B	V-43001	NCR 2024-Q-123A90-0007		NCR CLOSED	SLinari 2024-10-04	SLinari 2024-12-05	SLinari 2024-12-05	2024-12-05
C30003584	B	Q-43004 C10004526	Ladder not completely installed	.		AMancini 2025-02-07	2025-03-06	LNovaga 2025-03-06	2025-03-06
C30003653	B	V-43001 C10004521	The KO drum is not vertically levelled. Due the cut of one of the vessel feet there a 1° pending towards North and 1° degree pending towards	.		KAlbonetti 2025-02-11	2025-02-26	KAlbonetti 2025-02-26	2025-02-26
C30004170	B	V-43001 C10004521	There are three earthing lugs instead of two and all of them have been connected to earth. Approved but drawing shall be updated.	.		KAlbonetti 2025-02-28			

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 43 Hydrogen Vent System

SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003145	B	C-43-LT-003/00-JE-11002 C10000138	Missing cable tag SS project, near the instrument (43-LT-003.)	.		Gtangianu 2025-01-22	2025-02-03	APolo 2025-02-03	2025-02-03
C30003573	B	BLPH-MV-404/43-LT-001 C10001996	Missing tubing SS tags on both ends	.		Pschintu 2025-02-06	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30003574	B	BLPH-MV-405/43-LT-001 C10001997	Missing tubing SS tags on both ends	.		Pschintu 2025-02-06	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30003575	B	BLPH-MV-462/43-LT-003 C10001998	Missing tubing SS tags on both ends	.		Pschintu 2025-02-06	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30003576	B	BLPH-MV-463/43-LT-003 C10001999	Missing tubing SS tags on both ends	.		Pschintu 2025-02-06	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30004248	B	C-43-FT-001/43-FE-001A C10004547	General arrangment doc: SK18028/1706864 need to be update. See attached the Mark-up.	.		Gtangianu 2025-03-13			

Section 2 CONSOLIDATED PUNCH LISTS

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 43 Hydrogen Vent System

SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003263	A	125-2-J3 C10004299	Body length of Valve BLPH-MV-463 does not allow the installation of washers from insulation kit on the valve side.	.As agreed with Engineering Dpt. they have not been installed on that side.		LNovaga 2025-01-28	2025-01-28	LNovaga 2025-01-28	2025-01-28
C30003264	A	125-1-J1 C10004297	Body length of Valve BLPH-MV-462 does not allow the installation of washers from insulation kit on the valve side.	As agreed with Engineering Dpt. they have not been installed on that side.		LNovaga 2025-01-28	2025-01-28	LNovaga 2025-01-28	2025-01-28
C30004110	A	43-00-TP-024 C10003414	Missing earthing connection (SK 042)	.		LNovaga 2025-02-25	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30004111	A	43-00-TP-024 C10003414	Earthing plate completly painted.	.		LNovaga 2025-02-25	2025-02-26	KAlbonetti 2025-02-26	2025-02-26
C30004126	A	43-00-TP-044 C10003570	Missing earthing connection	.		LNovaga 2025-02-25	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30004127	A	43-00-TP-044 C10003570	Clean the earthing plate before installing the cable. See attached.	.		LNovaga 2025-02-25	2025-02-26	LNovaga 2025-02-26	2025-02-26
C30004129	A	43-00-TP-066 C10004556	Flow element not installed to arrange sensitive test.	.		LNovaga 2025-02-25	2025-03-17	LNovaga 2025-03-17	2025-03-17
C30002338	B	43-00-TP-022 C10003397	Spool has not been installed in erection. Inspection points from 4 to 6 of the ITR to be checked during reinstatement.	.		KAlbonetti 2025-01-03	2025-02-07	KAlbonetti 2025-02-07	2025-02-07
C30002954	B	43-00-TP-044 C10003569	SK.043, PS-03054: the support is different in field compared to construction. See DWG attached.	.	Changes have been recorded on RLMUs	KAlbonetti 2025-01-16	RDegliEsposti 2025-06-25	RDegliEsposti 2025-06-25	2025-06-25

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PUNCH LIST REPORT

SYSTEM 43 Hydrogen Vent System
SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002955	B	43-00-TP-044 C10003569	Sk.43, PS-03053: Position R1 has not been prepared.	.		KAlbonetti 2025-01-16	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30002956	B	43-00-TP-044 C10003569	Spool has not been installed in erection. Inspection points from 4 to 6 to be checked during flange management in the after test phase.	.		KAlbonetti 2025-01-16	2025-02-19	KAlbonetti 2025-02-19	2025-02-19
C30003114	B	43-00-TP-065 C10003704	PS-02134: the structural part of the support is 5 mm shorter and the position R1 is missing.	.		KAlbonetti 2025-01-21	2025-02-11	KAlbonetti 2025-02-11	2025-02-11
C30003117	B	43-00-TP-065 C10003704	In the Spool A, the section between W1 and W2 has been cut of 70 mm due the fact that the nozzle of the Vent was longer.	.		KAlbonetti 2025-01-21	2025-04-02	LNovaga 2025-04-02	2025-04-02
C30003181	B	43-00-TP-064 C10003697	Supports type "S-211" not assembled as for Standard. To be checked again during reinstatement.	.		KAlbonetti 2025-01-24	2025-02-22	LNovaga 2025-02-22	2025-02-22
C30003200	B	43-00-TP-066 C10004555	Nameplate on the spool belonging to the equipment 43-FE-001 is empty.	.		KAlbonetti 2025-01-25	2025-03-31	LNovaga 2025-03-31	2025-03-31
C30003262	B	43-00-TP-024 C10003413	All stopper type "S-205" are missing. They shall be installed and welded to the pads.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003265	B	43-00-TP-024 C10003413	Vlaves have not been installed before test. Flanged joints before test are only temporary. Inspection points from 5 to 7 are going to be	.		KAlbonetti 2025-01-28	2025-02-19	KAlbonetti 2025-02-19	2025-02-19
C30003266	B	43-00-TP-024 C10003413	Sketch 038: Piping support PS-03025 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27

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SYSTEM 43 Hydrogen Vent System
SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003267	B	43-00-TP-024 C10003413	Sketch 037: Piping support PS-03023 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003268	B	43-00-TP-024 C10003413	Sketch 018: Piping support PS-03548 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003269	B	43-00-TP-024 C10003413	Sketch 044: Piping supports PS-03017 and PS-3018 have not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003270	B	43-00-TP-024 C10003413	Sketch 041: Piping support PS-03132 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-03-03	LNovaga 2025-03-03	2025-03-03
C30003271	B	43-00-TP-024 C10003413	Sketch 006: Piping support PS-03051 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003272	B	43-00-TP-024 C10003413	Sketch 039: Piping support PS-03032 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003273	B	43-00-TP-024 C10003413	Sketch 039: Piping support PS-03134 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30003274	B	43-00-TP-024 C10003413	Sketch 008: Piping support PS-03127 has not been assembled in erection.	.		KAlbonetti 2025-01-28	2025-03-03	LNovaga 2025-03-03	2025-03-03
C30003403	B	43-00-TP-024 C10003413	PS-02035 is different from the drawing. See as-built.	.	Changes have been recorded on RLMUs	KAlbonetti 2025-01-30	RDegliEsposti 2025-06-25	RDegliEsposti 2025-06-25	2025-06-25

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PUNCH LIST REPORT

SYSTEM	43	Hydrogen Vent System
SUBSYSTEM	43-00	Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003404	B	43-00-TP-024 C10003413	PS-03058 is not as for the drawing. See as-built.	.	Changes have been recorded on RLMUs	KAlbonetti 2025-01-30	RDegliEsposti 2025-06-25	RDegliEsposti 2025-06-25	2025-06-25
C30003515	B	43-00-TP-067 C10004786	Support "PS-02133" is unmounted. ISO 123A90-FDL-PP-DI-00002-01	.		MBruschi 2025-02-03	2025-02-21	LNovaga 2025-02-21	2025-02-21
C30003516	B	43-00-TP-067 C10004786	SK.002-01: All piping supports type "S-75", "C-34", "C-16" and "-S-211" will be check during reinstatement phase.	.		MBruschi 2025-02-03	2025-02-21	LNovaga 2025-02-21	2025-02-21
C30003546	B	43-00-TP-022 C10003400	General touch up do to, especially near the supports of the piping line.	.		KAlbonetti 2025-02-05	2025-02-06	KAlbonetti 2025-02-06	2025-02-06
C30004051	B	43-00-TP-058 C10003663	Color coding and fluid direction are missing.	.	Colour code and flow direction arrow added.	LNovaga 2025-02-20	RDegliEsposti 2025-07-07	RDegliEsposti 2025-07-07	2025-07-07
C30004083	B	43-00-TP-067 C10004787	Support PS-20289.1 doesn't touch structural support.	.		LNovaga 2025-02-21	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30004084	B	43-00-TP-067 C10004787	Correct the gap on support PS-02132.1 (SK 002 1/2).	.		LNovaga 2025-02-21	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30004085	B	43-00-TP-067 C10004787	Support PS-02080.1 doesn't touch the structural support (SK 002 1/2).	.		LNovaga 2025-02-21	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30004086	B	43-00-TP-067 C10004787	Spool-B has a vertical misalignment about 1.3°.	.		LNovaga 2025-02-21	2025-02-25	KAlbonetti 2025-02-25	2025-02-25

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	43	Hydrogen Vent System
SUBSYSTEM	43-00	Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004087	B	43-00-TP-064 C10003699	Color coding and fluid direction are missing.	.		LNovaga 2025-02-22	2025-03-25	LNovaga 2025-03-25	2025-03-25
C30004088	B	43-00-TP-064 C10003698	BLPH-MV-419 has stem direction north and gear east. the valve was rotated because there was a clash with the structure.	.		LNovaga 2025-02-22	2025-02-22	LNovaga 2025-02-22	2025-02-22
C30004090	B	43-00-TP-024 C10003414	BLPH-MV-199 has stem direction north and gear east. the valve was rotated because there was a clash with piping.	.		LNovaga 2025-02-22	2025-02-22	LNovaga 2025-02-22	2025-02-22
C30004112	B	43-00-TP-024 C10003414	Support PS-03127.1 SK 008 missing gap.	.		LNovaga 2025-02-25	2025-02-26	KAlbonetti 2025-02-26	2025-02-26
C30004113	B	43-00-TP-024 C10003414	Support PS-03052.1 is missing.	.		LNovaga 2025-02-25	2025-03-03	LNovaga 2025-03-03	2025-03-03
C30004114	B	43-00-TP-024 C10003414	Support PS-03056.2 SK042 sh 1/2 lateral gap is missing.	.		LNovaga 2025-02-25	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30004115	B	43-00-TP-024 C10003414	Support PS-03055.2 SK042 sh 1/2 lateral gap is missing.	.		LNovaga 2025-02-25	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30004116	B	43-00-TP-024 C10003414	Support PS-03017.2 SK044 correct the gap.	.		LNovaga 2025-02-25	2025-02-27	LNovaga 2025-02-27	2025-02-27
C30004117	B	43-00-TP-024 C10003414	Support PS-03018 SK044 is not alligned with pipe.	.		LNovaga 2025-02-25	2025-02-27	LNovaga 2025-02-27	2025-02-27

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	43	Hydrogen Vent System
SUBSYSTEM	43-00	Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004118	B	43-00-TP-024 C10003414	Support PS-03134.2 SK041, there is a gap between pad and structural support, corret it.	.		LNovaga 2025-02-25	2025-02-28	LNovaga 2025-02-28	2025-02-28
C30004119	B	43-00-TP-024 C10003414	Support PS-03045.1 SK 040 correct the gap.	.		LNovaga 2025-02-25	2025-03-03	LNovaga 2025-03-03	2025-03-03
C30004120	B	43-00-TP-024 C10003414	Support PS-03033.1 SK 039 is not clamped.	.		LNovaga 2025-02-25	2025-03-03	LNovaga 2025-03-03	2025-03-03
C30004125	B	43-00-TP-044 C10003570	The distance between the welds EW5 and W6 has an inverse inclination of 1.4° with respect to the isometric.	.		LNovaga 2025-02-25	2025-03-06	LNovaga 2025-03-06	2025-03-06
C30004128	B	43-00-TP-044 C10003570	Support PS-03053.1 doesn't touch structure, correct the gap. See attached.	.		LNovaga 2025-02-25	2025-02-26	LNovaga 2025-02-26	2025-02-26
C30004136	B	43-00-TP-067 C10004788	Color coding and fluid direction are missing.	.		KAlbonetti 2025-02-25	2025-03-21	LNovaga 2025-03-21	2025-03-21
C30004152	B	43-00-TP-067 C10004787	Support PS-02090 is UPN80 and not UPN100, correct drawings.	.	Changes have been recorded on RLMUs	LNovaga 2025-02-26	RDegliEsposti 2025-06-25	RDegliEsposti 2025-06-25	2025-06-25
C30004260	B	43-00-TP-044 C10003571	Touch up near the support PS-03053 and joint 043-1-J3 to do.	.		LNovaga 2025-03-24	2025-04-04	LNovaga 2025-04-04	2025-04-04
C30004261	B	43-00-TP-024 C10003415	General touch up to do, especially near the supports and joints.	.		LNovaga 2025-03-24	2025-04-22	LNovaga 2025-04-22	2025-04-22

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 43 Hydrogen Vent System
SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004269	B	43-00-TP-065 C10004858	Color coding and fluid direction are missing.	.	Colour code and fluid direction flow added	LNovaga 2025-03-25	RDegliEsposti 2025-07-07	RDegliEsposti 2025-07-07	2025-07-07
C30004270	B	43-00-TP-065 C10004858	Missing the insulation pillow around the valve BLPH-MV-417, BLPH-MV-418 and joint 124-1J1.	.		LNovaga 2025-03-25	2025-04-04	LNovaga 2025-04-04	2025-04-04
C30004271	B	43-00-TP-050 C10003606	Missing the insulation pillow around the valve BLPH-MV-462 and BLPH-MV-463.	.		LNovaga 2025-03-25	2025-04-04	LNovaga 2025-04-04	2025-04-04
C30004272	B	43-00-TP-022 C10003399	Color coding and fluid direction are missing.	.		LNovaga 2025-03-25	2025-04-08	LNovaga 2025-04-08	2025-04-08
C30004273	B	43-00-TP-022 C10003399	Missing the insulation pillow around the valve BLPH-MV-409 and joint 123-1J1.	.		LNovaga 2025-03-25	2025-04-04	LNovaga 2025-04-04	2025-04-04

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 43 Hydrogen Vent System
SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003508	A	43-LT-003 C10000899	Missing drain tubing below the manifold (VENT). See Attached photo.	.		Gtangianu 2025-02-03	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30003506	B	43-LT-003 C10000899	The support bracket is not aligned. The bracket is damaged. See attached photo.	.		Gtangianu 2025-02-03	2025-02-28	AAndreani 2025-02-28	2025-02-28
C30003509	B	43-LT-003 C10000899	Elevation of instrument is not in accordance with Layout. See attached photo.	.		Gtangianu 2025-02-03	2025-03-05	Gtangianu 2025-03-05	2025-03-05
C30003522	B	43-LT-001 C10000898	The support bracket is not aligned. The bracket is damaged. See attached photo.	.		Gtangianu 2025-02-04	2025-02-28	AAndreani 2025-02-28	2025-02-28
C30004025	B	43-PT-001 C10000900	missing trafolite and SS tag	.		AAndreani 2025-02-19	2025-02-24	AAndreani 2025-02-24	2025-02-24
C30004153	B	43-FT-001 C10001470	Not installed the trafolite tag on the instrument 43-FT-001.See Attached photo.	.		Gtangianu 2025-02-26	2025-03-26	Gtangianu 2025-03-26	2025-03-26

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 43 Hydrogen Vent System
SUBSYSTEM 43-00 Hydrogen Vent Header & Drum System

Mechanical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003582	A	Q-43004 C10004526	Vent Tip n ot installed	.		AMancini 2025-02-07	2025-03-05	MBruschi 2025-03-05	2025-03-05
C30003583	A	Q-43004 C10004526	Missing earthing connections on earthing plates	.		AMancini 2025-02-07	2025-02-26	KAlbonetti 2025-02-26	2025-02-26
C30003585	A	V-43001 C10004521	Missing earthing connections on earthing plates	.		AMancini 2025-02-07	2025-02-26	Ecarotenuto 2025-02-26	2025-02-26
C30003586	A	V-43001 C10004521	V-43001 to be tightened	.		AMancini 2025-02-07	2025-02-11	LNovaga 2025-02-11	2025-02-11
C30003587	A	V-43001 C10004521	Some lines still need to be connected	.		AMancini 2025-02-07	2025-02-20	LNovaga 2025-02-20	2025-02-20
C30000150	B	V-43001	NCR 2024-Q-123A90-0007		NCR CLOSED	SLinari 2024-10-04	SLinari 2024-12-05	SLinari 2024-12-05	2024-12-05
C30003584	B	Q-43004 C10004526	Ladder not completely installed	.		AMancini 2025-02-07	2025-03-06	LNovaga 2025-03-06	2025-03-06
C30003653	B	V-43001 C10004521	The KO drum is not vertically levelled. Due the cut of one of the vessel feet there a 1° pending towards North and 1° degree pending towards	.		KAlbonetti 2025-02-11	2025-02-26	KAlbonetti 2025-02-26	2025-02-26
C30004170	B	V-43001 C10004521	There are three earthing lugs instead of two and all of them have been connected to earth. Approved but drawing shall be updated.	.		KAlbonetti 2025-02-28	2025-06-20	Ecarotenuto 2025-06-20	2025-06-20

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	43	Hydrogen Vent System
SUBSYSTEM	43-00	Hydrogen Vent Header & Drum System

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003145	B	C-43-LT-003/00-JE-11002 C10000138	Missing cable tag SS project, near the instrument (43-LT-003.)	.		Gtangianu 2025-01-22	2025-02-03	APolo 2025-02-03	2025-02-03
C30003573	B	BLPH-MV-404/43-LT-001 C10001996	Missing tubing SS tags on both ends	.		Pschintu 2025-02-06	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30003574	B	BLPH-MV-405/43-LT-001 C10001997	Missing tubing SS tags on both ends	.		Pschintu 2025-02-06	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30003575	B	BLPH-MV-462/43-LT-003 C10001998	Missing tubing SS tags on both ends	.		Pschintu 2025-02-06	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30003576	B	BLPH-MV-463/43-LT-003 C10001999	Missing tubing SS tags on both ends	.		Pschintu 2025-02-06	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30004248	B	C-43-FT-001/43-FE-001A C10004547	General arrangment doc: SK18028/1706864 need to be update. See attached the Mark-up.	.	The SK 18028/1706864, as marked up, has been included in the Vendor MRB	Gtangianu 2025-03-13	RDegliEsposti 2025-10-17	RDegliEsposti 2025-10-17	2025-10-17

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004261

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003415	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

General touch up to do, especially near the supports and joints.

Name: Lorenzo Novaga

Date: 2025-03-24

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-24
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-04-22

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-04-22

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-04-22

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004269

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004858	1.4 Discipline	Piping
1.2 Item	43-00-TP-065	Test Pack 43-00-TP-065	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Color coding and fluid direction are missing.

Name: Lorenzo Novaga
Date: 2025-03-25
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Colour code and fluid direction flow added

Name: Raffaele Degli Esposti
Date: 2025-07-07
Signature:

5 - CLEARANCE CHECK

Done.

Name: Raffaele Degli Esposti
Date: 2025-07-07
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-07-08
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004270

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004858	1.4 Discipline	Piping
1.2 Item	43-00-TP-065	Test Pack 43-00-TP-065	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Missing the insulation pillow around the valve BLPH-MV-417, BLPH-MV-418 and joint 124-1J1.

Name: Lorenzo Novaga

Date: 2025-03-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Lorenzo Novaga

Date: 2025-04-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004271

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003606	1.4 Discipline	Piping
1.2 Item	43-00-TP-050	Test Pack 43-00-TP-050	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Missing the insulation pillow around the valve BLPH-MV-462 and BLPH-MV-463.

Name: Lorenzo Novaga

Date: 2025-03-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Lorenzo Novaga

Date: 2025-04-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004272

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003399	1.4 Discipline	Piping
1.2 Item	43-00-TP-022	Test Pack 43-00-TP-022	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Color coding and fluid direction are missing.

Name: Lorenzo Novaga

Date: 2025-03-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-04-08

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004273

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003399	1.4 Discipline	Piping
1.2 Item	43-00-TP-022	Test Pack 43-00-TP-022	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Missing the insulation pillow around the valve BLPH-MV-409 and joint 123-1J1.

Name: Lorenzo Novaga

Date: 2025-03-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Lorenzo Novaga

Date: 2025-04-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004112

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003414	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-03127.1 SK 008 missing gap.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

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3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The standard has been changed to S-212. See engineering mark-up.

Name: Kangi Albonetti

Date: 2025-02-26

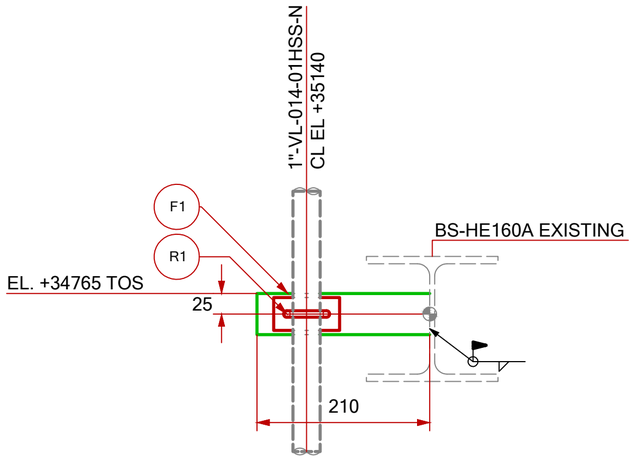
Signature:

6- CLEARANCE APPROVAL

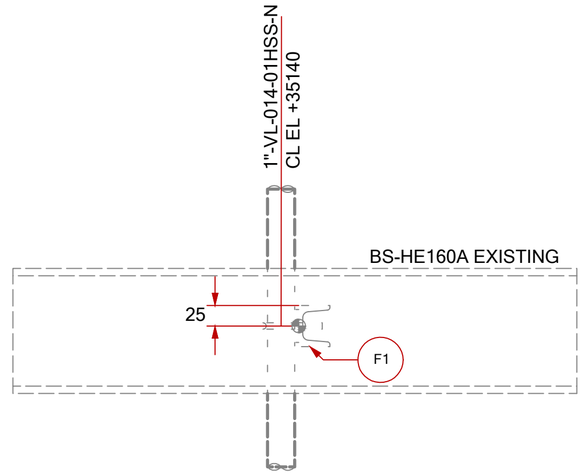
Name:

Date:

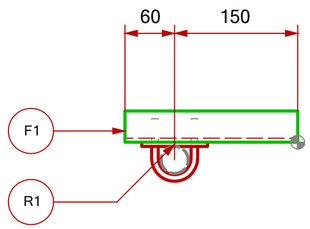
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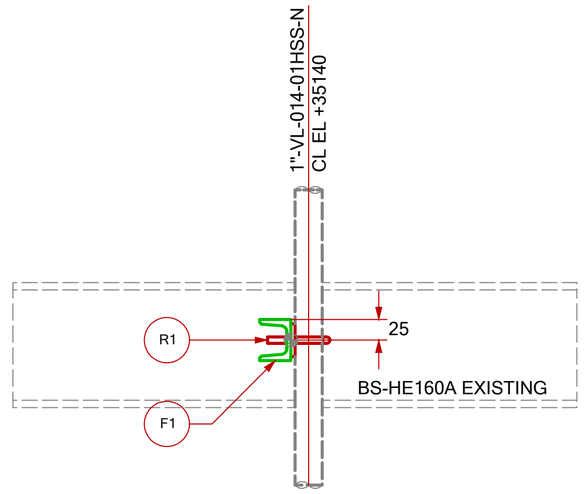
VIEW LOOKING NORTH



VIEW LOOKING WEST



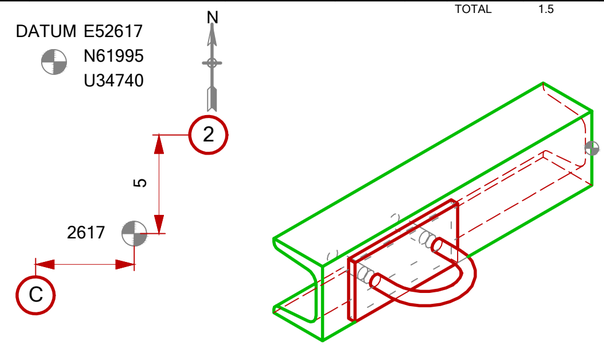
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	~~S-211-1~~ S-212-1"	-	-	1	-	0.29	-
F1	BEAM	UPN50	Carbon Steel	210	1	5.61	1.18	0.050
						TOTAL	1.5	0.05



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	04/11/24	MMA	SLO	DLO	ACCEPTED FOR CONSTRUCTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03127

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 5
DRAWN	CHECKED	APPROVED	DATE 04/11/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1 / REV. 01

File Name :

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004113

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003414	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-03052.1 is missing.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

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3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004114

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003414	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-03056.2 SK042 sh 1/2 lateral gap is missing.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004115

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003414	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-03055.2 SK042 sh 1/2 lateral gap is missing.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004116

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003414	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-03017.2 SK044 correct the gap.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004117

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003414	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-03018 SK044 is not alligned with pipe.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004118

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003414	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-03134.2 SK041, there is a gap between pad and structural support, corret it.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-28

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004119

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003414	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-03045.1 SK 040 correct the gap.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004120

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003414	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-03033.1 SK 039 is not clamped.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004125

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003570	1.4 Discipline	Piping
1.2 Item	43-00-TP-044	Test Pack 43-00-TP-044	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

The distance between the welds EW5 and W6 has an inverse inclination of 1.4° with respect to the isometric.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Accepted by Rosetti Marino.

Name: Lorenzo Novaga

Date: 2025-03-06

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004126

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003570	1.4 Discipline	Piping
1.2 Item	43-00-TP-044	Test Pack 43-00-TP-044	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Missing earthing connection

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-03-10

Signature:

5 - CLEARANCE CHECK

Done

Name: Lorenzo Novaga

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-03-10

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004127

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003570	1.4 Discipline	Piping
1.2 Item	43-00-TP-044	Test Pack 43-00-TP-044	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Clean the earthing plate before installing the cable. See attached.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004128

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003570	1.4 Discipline	Piping
1.2 Item	43-00-TP-044	Test Pack 43-00-TP-044	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-03053.1 doesn't touch structure, correct the gap. See attached.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-26

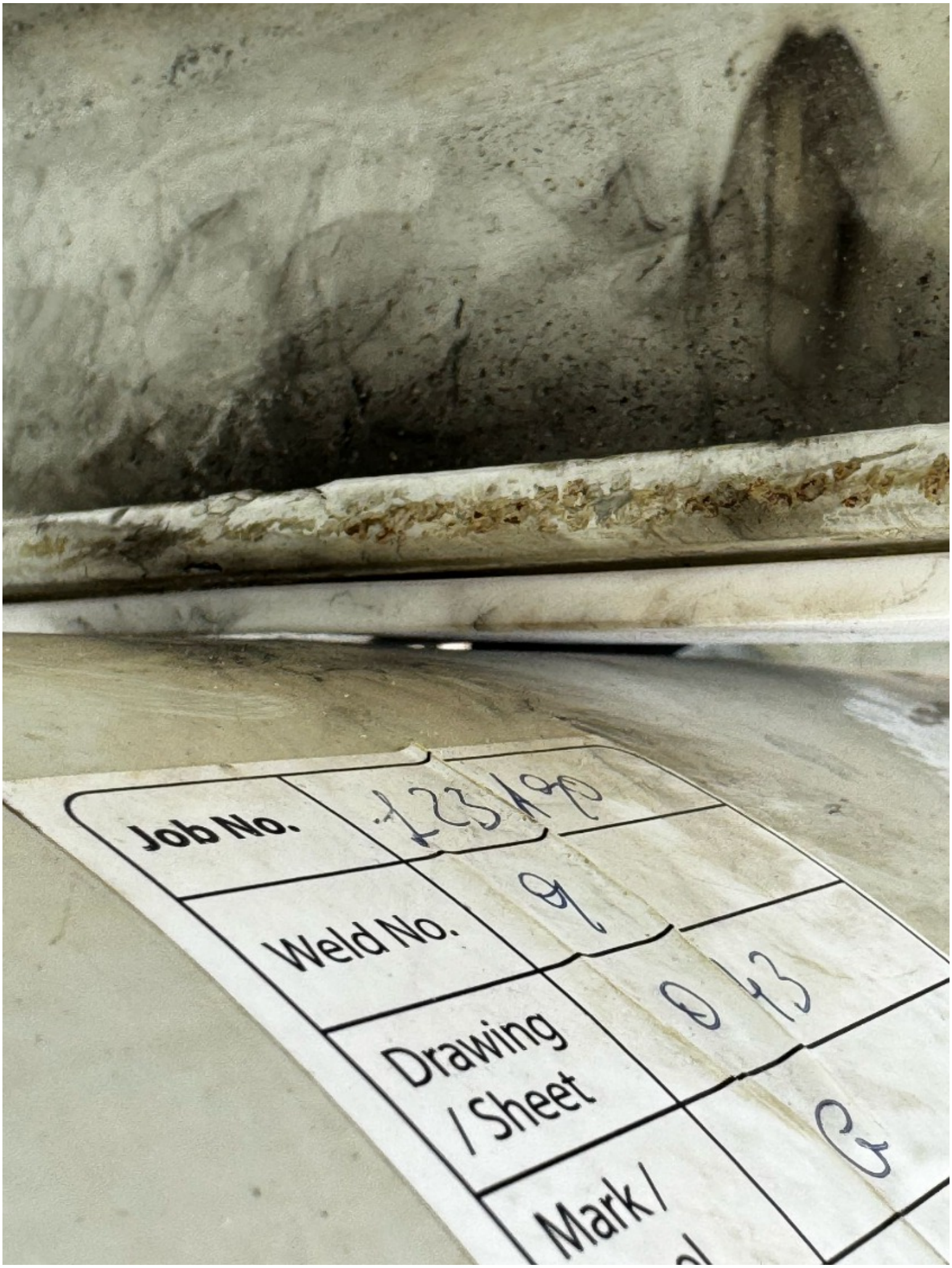
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


Job No.
123190
Weld No.
9
Drawing /Sheet
013
Mark/


BIZ 217006 24.0/8,0

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004129

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004556	1.4 Discipline	Piping
1.2 Item	43-00-TP-066	Test Pack 43-00-TP-066	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Flow element not installed to arrange sensitive test.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Lorenzo Novaga

Date: 2025-03-17

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004136

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004788	1.4 Discipline	Piping
1.2 Item	43-00-TP-067	Test Pack 43-00-TP-067	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Color coding and fluid direction are missing.

Name: Kangi Albonetti

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-03-21

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-03-21

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004152

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004787	1.4 Discipline	Piping
1.2 Item	43-00-TP-067	Test Pack 43-00-TP-067	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-02090 is UPN80 and not UPN100, correct drawings.

Name: Lorenzo Novaga

Date: 2025-02-26

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-26
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Changes have been recorded on RLMUs

Name: Raffaele Degli Esposti

Date: 2025-06-25

Signature:

5 - CLEARANCE CHECK

Ref. to RLMU 123A90-DDL-PP-DD-72000-PS-02090_01_01A

Name: Raffaele Degli Esposti

Date: 2025-06-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-06-25

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004153

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001470	1.4 Discipline	ATEX
1.2 Item	43-FT-001		Flow Transmitter - Hydrogen form KO DRUM V-43001 to vent stack Q-43004
1.3 Subsystem	43-00		Hydrogen Vent Header & Drum System

2 - OBSERVATION

Not installed the trafolite tag on the instrument 43-FT-001.See Attached photo.

Name: Giovanni Tangianu

Date: 2025-02-26

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-26
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-03-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-GDZ-02
DO NOT OPEN WHILE ENERGIZED
DigitalFlow™ XGF868i

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004170

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004521	1.4 Discipline	Mechanical
1.2 Item	V-43001	Hydrogen Vent KO Drum	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

There are three earthing lugs instead of two and all of them have been connected to earth. Approved but drawing shall be updated.

Name: Kangi Albonetti

Date: 2025-02-28

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-02-28
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Document alligned

Name: Eleonora Carotenuto

Date: 2025-06-20

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004248

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004547	1.4 Discipline	Instrumental
1.2 Item	C-43-FT-001/43-FE-001A	43-FT-001/43-FE-001A	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

General arrangment doc: SK18028/1706864 need to be update.
See attached the Mark-up.

Name: Giovanni Tangianu
Date: 2025-03-13
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-03-13
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

The SK 18028/1706864, as marked up, has been included in the Vendor MRB

Name: Raffaele Degli Esposti
Date: 2025-10-17
Signature:

5 - CLEARANCE CHECK

Done.

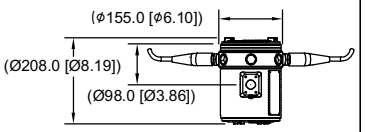
Name: Raffaele Degli Esposti
Date: 2025-10-17
Signature:

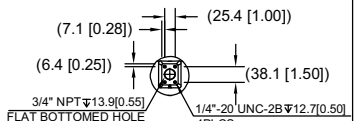
6- CLEARANCE APPROVAL

Name:
Date: 2025-10-17
Signature:

L:\COMMON\DRA\FLOW\170XXXX\1706864\GA\SK18028B | GRIFTOM

1. FLOWMETER (QTY: 1)		2. FLOWMETER CABLE (QTY: 1 PAIR)		3. PRE-AMPLIFIER (QTY: 2)		4. TRANSDUCER (QTY: 2)		5. INSERTION MECHANISM (QTY: 2)		6. ISOLATION VALVE (QTY: 2)		7. FLOWCELL (QTY : 1)
TYPE:	XGF868I	TYPE:	FLAME RETARDENT RG-62	TYPE :	XAMP	TYPE :	T5	TYPE:	IMA72	TYPE :	GATE VALVE	FOR DETAILS OF THE FLOWCELL, PLEASE REFER TO THE FLOWCELL FABRICATION DRAWING, REF: 182M4103
ENCLOSURE:	316SS	ARMOUR:	SWA	ENCLOSURE :	316SS	MATERIAL :	TITANIUM	SIZE:	2" x 2"	SIZE :	2", 150# RF	WEIGHT : 98 kg [216 lb] B
VOLTAGE:	12 - 28 VDC	LENGTH:	10 M	IP RATING :	IP65/66	TEMP RANGE :	-55 to 150°C (-67 to 302°F) (NT)	RATING:	150#	F/F LENGTH:	177.8MM (7")	
POWER USAGE:	20W	CONNECTION (METER):	3/4" NPT	HAZ. AREA :	Ex d IIC T6 Gb	HAZ. AREA :	Ex d IIC T6 Gb	MATERIAL		MATERIAL		
IP RATING:	IP66	CONNECTION (XDUCER):	3/4" NPT	CERT NUMBER :	SIRA 20ATEX1001X	CERT NUMBER :	SIRA 20ATEX1001X	PACKING GLAND :	316SS	BODY:	A351 CF8M	
HAZ AREA:	EX dIIC T6 Gb	GLAND MAT'L:	316SS	WEIGHT :	2 kg [4.4 lb] EA B	MAT'L CERTS :	EN10204 3.1 & NACE MR-01-75	BARREL HOLDER:	316 / 316L SS	TRIM:	316SS	
CERT NUMBER:	SIRA 17ATEX1304X	HAZ AREA :	Ex nR IIC Gc			JUNCTION BOX:	316SS	HYDROTEST:	PER ASME B31.3	MAT'L CERTS:	EN10204 3.1 & NACE MR-01-75	
WEIGHT:	11 kg [24 lb] B	CERT. NUMBER :	CML-19ATEX4109X			IP RATING :	IP66	MAT'L CERTS:	EN10204 3.1 & NACE MR-01-75	WEIGHT:	18 kg [39.7 lb] EA B	
		WEIGHT:	0.28 kg/m B			WEIGHT :	2 kg [4.4 lb] EA B	WEIGHT:	12.7 kg [28 lb] EA B			
FINISH :	AS PER MANUFACTURER STANDARD	FINISH :	N/A	FINISH :	AS PER MANUFACTURER STANDARD	FINISH :	AS PER MANUFACTURER STANDARD	FINISH :	PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A	FINISH :	PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A	FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A



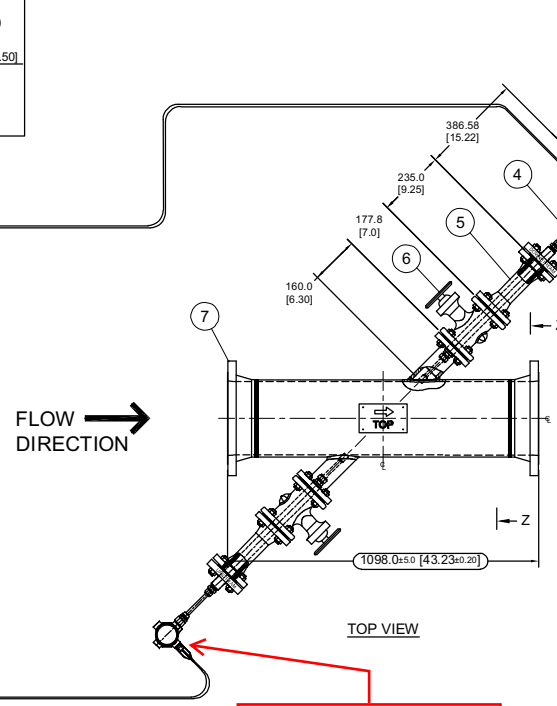


DETAIL-C
(FOR 2" PIPE MOUNTING)

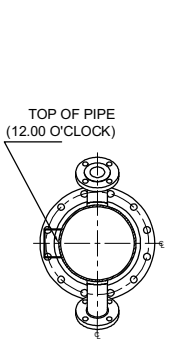
8. 2" PIPE MOUNTING BRACKET (QTY: 1)
MATERIAL : 316SS
WEIGHT : 5 kg B

MISC ITEMS (NOT SHOWN)
-1x NAMEPLATE
-5x 3/4" x M20 ADAPTORS SS

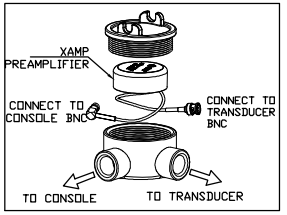
FRONT VIEW OF METER



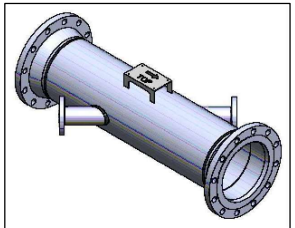
TOP VIEW



SECTION Z-Z



XAMP DETAIL

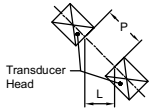


ISOMETRIC VIEW

NOTES:

1. EACH PAIR OF CABLES MUST BE CONTINUOUS IN LENGTH (NO JOINTS) AND EACH CABLE (WITHIN THE PAIR) MUST BE EQUAL IN LENGTH TO WITHIN 2.0 INCHS (50mm) OF EACH OTHER.
2. WHEN USING ARMOURED CABLE, ENSURE THAT THE ARMOURING OF THE COAXIAL CABLE AT THE INSTRUMENT ENCLOSURE END IS CONNECTED TO THE INSTRUMENT SUPPLY EARTH LINE.
3. USE ONLY Ex d CERTIFIED CABLE GLANDS / ADAPTORS PROVIDED.

WARNING
DO NOT REMOVE / REINSTALL TRANSDUCERS IF LINE PRESSURE EXCEEDS 5.5 BARG.



Path Length, P = 368.20mm[14.496"]
Axial Length, L = 260.32mm[10.248"]

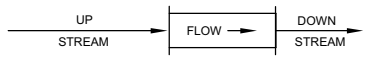
Final P & L Values will be provided on Flowcell Nameplate

TAG NUMBER : 43-FT-001
PIPE SIZE : 10", 150#, SCH 20, RF
XDCR CONFIG : TILTED DIA, 1P/1T

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN "MM[INCHES]".

FLOWCELL INSTALLATION RECOMMENDATION

INSTALL FLOWCELL ON PIPELINE TO ENSURE A FULLY DEVELOPED FLOW PROFILE IS PRESENTED TO THE FLOWMETER. BAKER HUGHES RECOMMENDS A MINIMUM OF 20 DIAMETERS OF UNOBSTRUCTED STRAIGHT RUN OF PIPELINE EXIST UPSTREAM OF THE FLOWCELL LOCATION AND 10 DIAMETERS OF SAME DOWNSTREAM.



Rev	Description of Changes	Drawn	Checked	Date
B	Issued for Approval	TG	TG	14/10/24
A	Issued for Approval	TG	TG	19/09/24
-	Issued for Approval	SG	TG	12/07/24

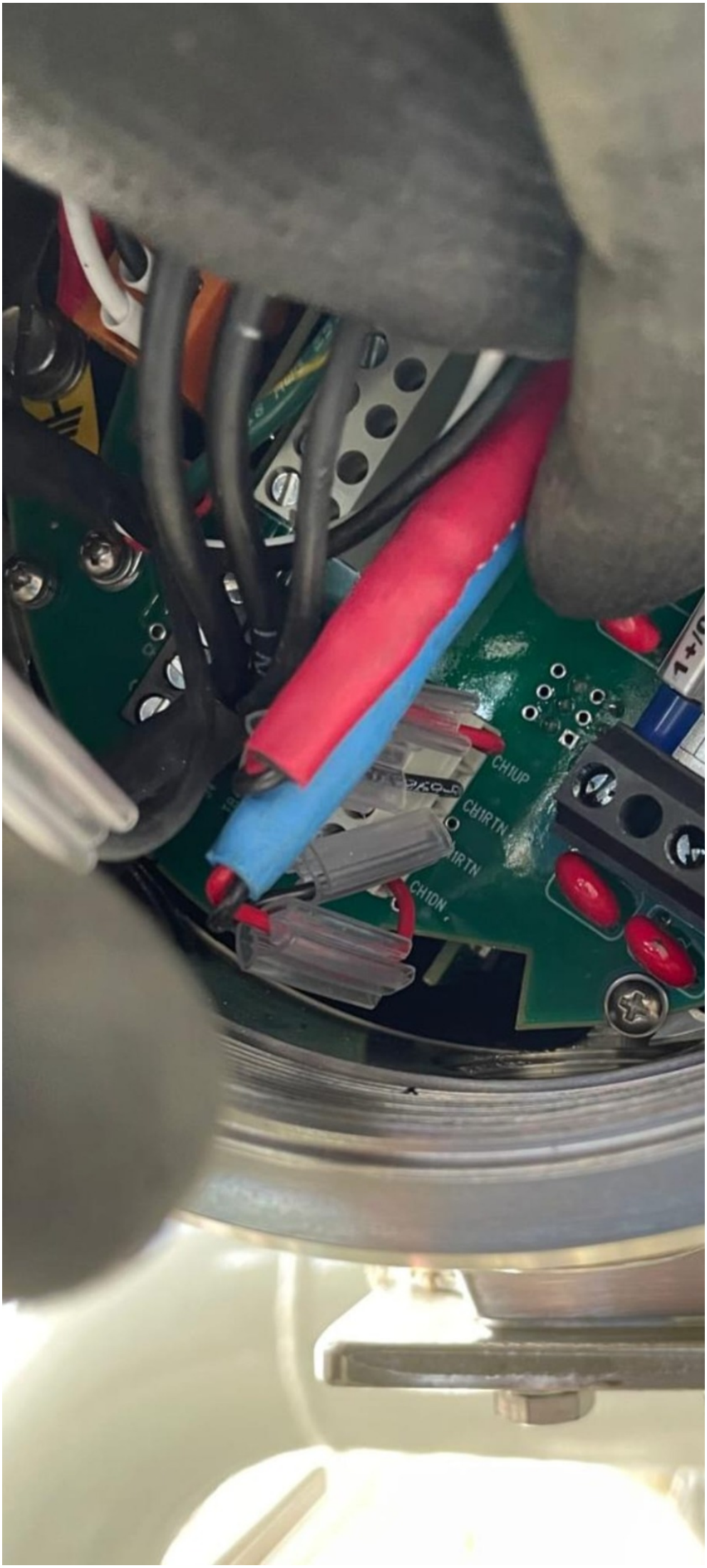
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TITLE
GENERAL ARRANGEMENT FOR XGF868i FLOWMETER C/W T5 TRANSDUCERS

SCALE	NTS	DO NOT SCALE DRAWING	SHEET 1 OF 1
SIZE	A3	DRAWING NUMBER SK18028 / 1706864	REV B






CH1UP
CH1RTN
CH1DN

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004260

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003571	1.4 Discipline	Piping
1.2 Item	43-00-TP-044	Test Pack 43-00-TP-044	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Touch up near the support PS-03053 and joint 043-1-J3 to do.

Name: Lorenzo Novaga

Date: 2025-03-24

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-24
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-04-04

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-04-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-04-04

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003585

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004521	1.4 Discipline	Mechanical
1.2 Item	V-43001	Hydrogen Vent KO Drum	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Missing earthing connections on earthing plates

Name: Andrea Mancini

Date: 2025-02-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Andrea Mancini
3.4 Activity code	MC Mechanical Completion	Date	2025-02-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003586

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004521	1.4 Discipline	Mechanical
1.2 Item	V-43001	Hydrogen Vent KO Drum	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

V-43001 to be tightened

Name: Andrea Mancini

Date: 2025-02-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Andrea Mancini
3.4 Activity code	MC Mechanical Completion	Date	2025-02-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Activity done.

Name: Lorenzo Novaga

Date: 2025-02-08

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003587

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004521	1.4 Discipline	Mechanical
1.2 Item	V-43001	Hydrogen Vent KO Drum	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Some lines still need to be connected

Name: Andrea Mancini

Date: 2025-02-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Andrea Mancini
3.4 Activity code	MC Mechanical Completion	Date	2025-02-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Flange management activity done for this item.

Name: Lorenzo Novaga

Date: 2025-02-20

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003653

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004521	1.4 Discipline	Mechanical
1.2 Item	V-43001	Hydrogen Vent KO Drum	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

The KO drum is not vertically levelled. Due the cut of one of the vessel feet there a 1° pending towards North and 1° degree pending towards East.

Name: Kangi Albonetti
Date: 2025-02-11
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-02-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Shim plate added under one feet. KO-Drum levelled correctly.

Name: Kangi Albonetti
Date: 2025-02-26
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



LaserRuler

Laserliner
PPG

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004025

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000900	1.4 Discipline	ATEX
1.2 Item	43-PT-001		Pressure Transmitter - KO Drum V-43001 Pressure
1.3 Subsystem	43-00		Hydrogen Vent Header & Drum System

2 - OBSERVATION

missing trafolite and SS tag

Name: Andrea Andreani

Date: 2025-02-19

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Andrea Andreani
3.4 Activity code	MC Mechanical Completion	Date	2025-02-19
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-24

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004051

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003663	1.4 Discipline	Piping
1.2 Item	43-00-TP-058	Test Pack 43-00-TP-058	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Color coding and fluid direction are missing.

Name: Lorenzo Novaga
Date: 2025-02-20
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-20
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Colour code and flow direction arrow added.

Name: Raffaele Degli Esposti
Date: 2025-07-07
Signature:

5 - CLEARANCE CHECK

Done.

Name: Raffaele Degli Esposti
Date: 2025-07-07
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-07-08
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004083

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004787	1.4 Discipline	Piping
1.2 Item	43-00-TP-067	Test Pack 43-00-TP-067	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-20289.1 doesn't touch structural support.

Name: Lorenzo Novaga

Date: 2025-02-21

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-21
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004084

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004787	1.4 Discipline	Piping
1.2 Item	43-00-TP-067	Test Pack 43-00-TP-067	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Correct the gap on support PS-02132.1 (SK 002 1/2).

Name: Lorenzo Novaga

Date: 2025-02-21

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-21
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004085

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004787	1.4 Discipline	Piping
1.2 Item	43-00-TP-067	Test Pack 43-00-TP-067	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support PS-02080.1 doesn't touch the structural support (SK 002 1/2).

Name: Lorenzo Novaga

Date: 2025-02-21

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-21
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004086

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004787	1.4 Discipline	Piping
1.2 Item	43-00-TP-067	Test Pack 43-00-TP-067	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Spool-B has a vertical misalignment about 1.3°.

Name: Lorenzo Novaga

Date: 2025-02-21

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-21
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Accepted.

Name: Kangi Albonetti

Date: 2025-02-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004087

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003699	1.4 Discipline	Piping
1.2 Item	43-00-TP-064	Test Pack 43-00-TP-064	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Color coding and fluid direction are missing.

Name: Lorenzo Novaga

Date: 2025-02-22

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-22
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004088

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003698	1.4 Discipline	Piping
1.2 Item	43-00-TP-064	Test Pack 43-00-TP-064	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

BLPH-MV-419 has stem direction north and gear east. the valve was rotated because there was a clash with the structure.

Name: Lorenzo Novaga
Date: 2025-02-22
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-22
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

In accordance with ENG dpt is accetable.

Name: Lorenzo Novaga
Date: 2025-02-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004090

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003414	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

BLPH-MV-199 has stem direction north and gear east. the valve was rotated because there was a clash with piping.

Name: Lorenzo Novaga

Date: 2025-02-22

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-22
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

In accordance with ENG dpt is accetable.

Name: Lorenzo Novaga

Date: 2025-02-22

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004110

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003414	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Missing earthing connection (SK 042)

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004111

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003414	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Earthing plate completly painted.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-02-26

Signature:

5 - CLEARANCE CHECK

Paint removed.

Name: Kangi Albonetti

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-02-26

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003403

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

PS-02035 is different from the drawing. See as-built.

Name: Kangi Albonetti

Date: 2025-01-30

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-30
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Changes have been recorded on RLMUs

Name: Raffaele Degli Esposti

Date: 2025-06-25

Signature:

5 - CLEARANCE CHECK

Ref. to RLMU 123A90-DDL-PP-DD-72000-PS-02035_01_01A

Name: Raffaele Degli Esposti

Date: 2025-06-25

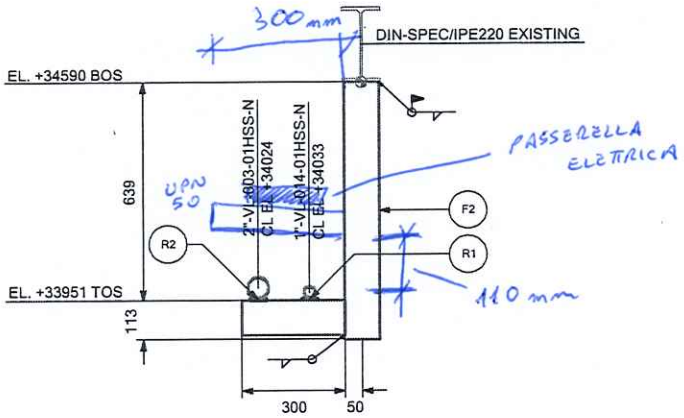
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6- CLEARANCE APPROVAL

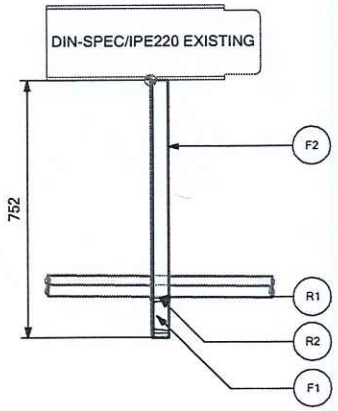
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Date: 2025-06-25

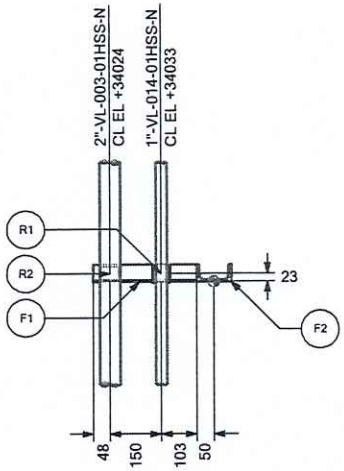
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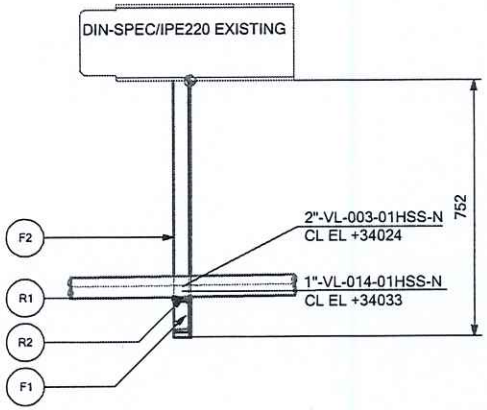
VIEW LOOKING NORTH



VIEW LOOKING WEST



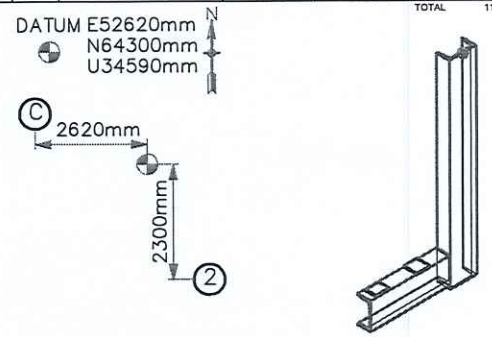
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-16-50-50-5	-	-	1	-	0.03	-
R2	STD	C-16-50-40-5	-	-	1	-	0.02	-
F1	BEAM	UPN100	Carbon Steel	300	1	10.57	3.17	0.114
F2	BEAM	UPN100	Carbon Steel	752	1	10.57	7.95	0.282
						TOTAL	11.2	0.40



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	04/11/24	MMA	SLO	DLO	ACCEPTED FOR CONSTRUCTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE:

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-02035

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:10
DRAWN	CHECKED	APPROVED	DATE 04/11/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 01

File Name:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003404

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

PS-03058 is not as for the drawing. See as-built.

Name: Kangi Albonetti

Date: 2025-01-30

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-30
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Changes have been recorded on RLMUs

Name: Raffaele Degli Esposti

Date: 2025-06-25

Signature:

5 - CLEARANCE CHECK

Ref. to RLMU 123A90-DDL-PP-DD-72000-PS-03058_01_01A

Name: Raffaele Degli Esposti

Date: 2025-06-25

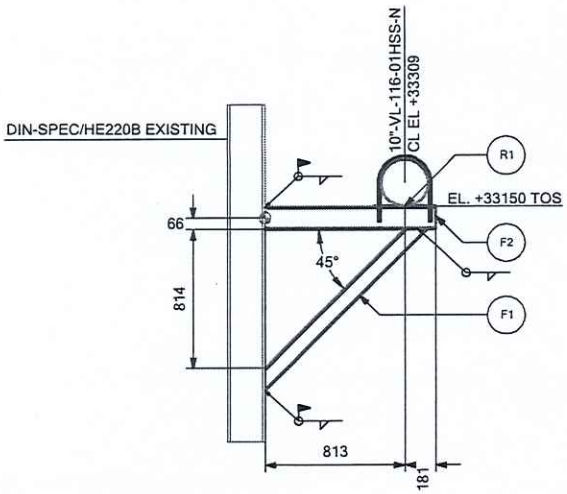
Signature:

6- CLEARANCE APPROVAL

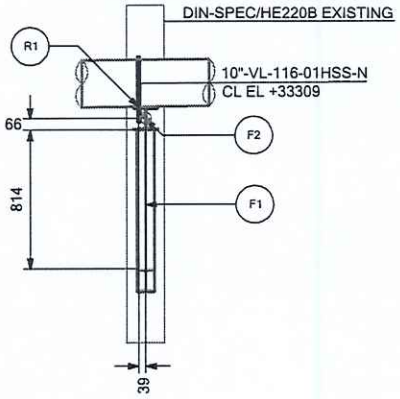
Name:

Date:

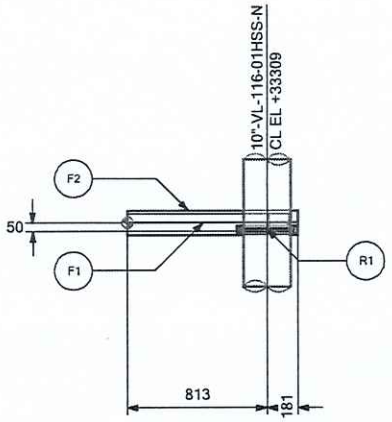
Signature:



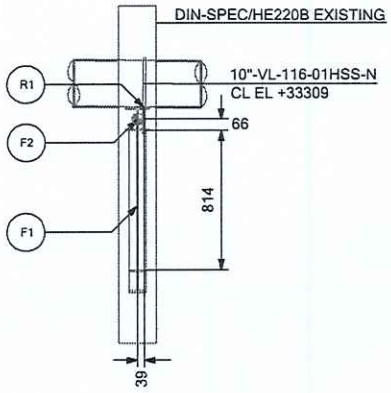
VIEW LOOKING NORTH



VIEW LOOKING WEST



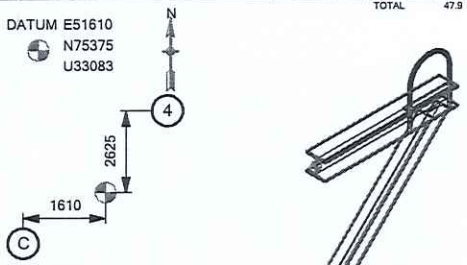
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-10"	-	-	1	-	2.35	-
F1	BEAM	HEA100	EN 10025 S355J2	1344	1	15.56	20.91	0.706
F2	BEAM	~~HEA140~~ HEA100	EN 10025 S355J2	994	1	24.75	24.60	0.795
						TOTAL	47.9	1.50



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	04/11/24	MMA	SLO	DLO	ACCEPTED FOR CONSTRUCTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03058

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 20
DRAWN	CHECKED	APPROVED	DATE 04/11/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 01

File Name :

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003506

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000899	1.4 Discipline	ATEX
1.2 Item	43-LT-003		Level DP Transmitter - H2 Vent Q-43004 Low Level
1.3 Subsystem	43-00		Hydrogen Vent Header & Drum System

2 - OBSERVATION

The support bracket is not aligned. The bracket is damaged.
See attached photo.

Name: Giovanni Tangianu
Date: 2025-02-03
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani
Date: 2025-02-28
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


DON'T REMOVE WITH POWER
DRAIN



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003508

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000899	1.4 Discipline	ATEX
1.2 Item	43-LT-003		Level DP Transmitter - H2 Vent Q-43004 Low Level
1.3 Subsystem	43-00		Hydrogen Vent Header & Drum System

2 - OBSERVATION

Missing drain tubing below the manifold (VENT). See Attached photo.

Name: Giovanni Tangianu

Date: 2025-02-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed during ispection.

Name: Giovanni Tangianu

Date: 2025-02-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


DON'T REMOVE WITH POWER
DRAIN

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003509

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000899	1.4 Discipline	ATEX
1.2 Item	43-LT-003		Level DP Transmitter - H2 Vent Q-43004 Low Level
1.3 Subsystem	43-00		Hydrogen Vent Header & Drum System

2 - OBSERVATION

Elevation of instrument is not in accordance with Layout.

See attached photo.

Name: Giovanni Tangianu

Date: 2025-02-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

RLMU "done".

Name: Giovanni Tangianu

Date: 2025-03-05

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178
DON'T RE
AIN

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003515

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004786	1.4 Discipline	Piping
1.2 Item	43-00-TP-067	Test Pack 43-00-TP-067	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Support "PS-02133" is unmounted. ISO 123A90-FDL-PP-DI-00002-01

Name: Massimo Bruschi

Date: 2025-02-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Massimo Bruschi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003516

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004786	1.4 Discipline	Piping
1.2 Item	43-00-TP-067	Test Pack 43-00-TP-067	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

SK.002-01: All piping supports type "S-75", "C-34", "C-16" and "-S-211" will be check during reinstatement phase.

Name: Massimo Bruschi

Date: 2025-02-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Massimo Bruschi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003522

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000898	1.4 Discipline	ATEX
1.2 Item	43-LT-001		Level DP Transmitter - KO Drum V-43001 High/Low Level
1.3 Subsystem	43-00		Hydrogen Vent Header & Drum System

2 - OBSERVATION

The support bracket is not aligned. The bracket is damaged.
See attached photo.

Name: Giovanni Tangianu
Date: 2025-02-04
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-04
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

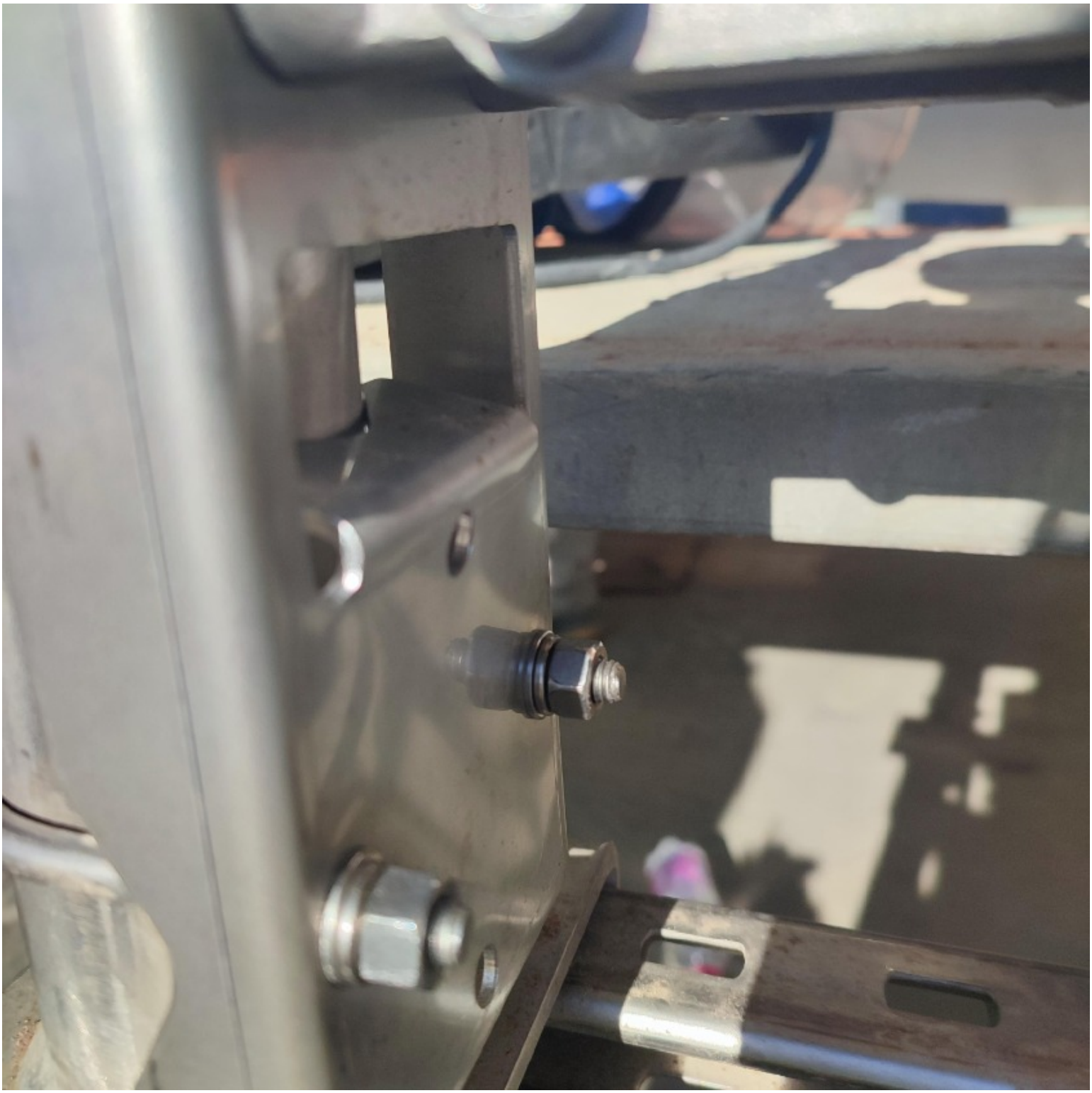
DONE

Name: Andrea Andreani
Date: 2025-02-28
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


MENU



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003546

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003400	1.4 Discipline	Piping
1.2 Item	43-00-TP-022	Test Pack 43-00-TP-022	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

General touch up do to, especially near the supports of the piping line.

Name: Kangi Albonetti

Date: 2025-02-05

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-02-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Activity done

Name: Kangi Albonetti

Date: 2025-02-06

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003573

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001996	1.4 Discipline	Instrumental
1.2 Item	BLPH-MV-404/43-LT-001	Process Connection Water - 43-LT-001	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Missing tubing SS tags on both ends

Name: Paolo Schintu

Date: 2025-02-06

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-06
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003574

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001997	1.4 Discipline	Instrumental
1.2 Item	BLPH-MV-405/43-LT-001	Process Connection Water - 43-LT-001	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Missing tubing SS tags on both ends

Name: Paolo Schintu

Date: 2025-02-06

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-06
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003575

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001998	1.4 Discipline	Instrumental
1.2 Item	BLPH-MV-462/43-LT-003	Process Connection Water - 43-LT-003	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Missing tubing SS tags on both ends

Name: Paolo Schintu

Date: 2025-02-06

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-06
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003576

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001999	1.4 Discipline	Instrumental
1.2 Item	BLPH-MV-463/43-LT-003	Process Connection Water - 43-LT-003	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Missing tubing SS tags on both ends

Name: Paolo Schintu

Date: 2025-02-06

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-06
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003582

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004526	1.4 Discipline	Mechanical
1.2 Item	Q-43004	Hydrogen Vent	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Vent Tip n ot installed

Name: Andrea Mancini

Date: 2025-02-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Andrea Mancini
3.4 Activity code	MC Mechanical Completion	Date	2025-02-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Massimo Bruschi

Date: 2025-03-05

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003583

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004526	1.4 Discipline	Mechanical
1.2 Item	Q-43004	Hydrogen Vent	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Missing earthing connections on earthing plates

Name: Andrea Mancini

Date: 2025-02-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Andrea Mancini
3.4 Activity code	MC Mechanical Completion	Date	2025-02-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Connected.

Name: Kangi Albonetti

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003584

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004526	1.4 Discipline	Mechanical
1.2 Item	Q-43004	Hydrogen Vent	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Ladder not completely installed

Name: Andrea Mancini

Date: 2025-02-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Andrea Mancini
3.4 Activity code	MC Mechanical Completion	Date	2025-02-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Accepted by Rosetti Marino.

Name: Lorenzo Novaga

Date: 2025-03-06

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002956

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003569	1.4 Discipline	Piping
1.2 Item	43-00-TP-044	Test Pack 43-00-TP-044	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Spool has not been installed in erection. Inspection points from 4 to 6 to be checked during flange management in the after test phase.

Name: Kangi Albonetti

Date: 2025-01-16

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-16
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Checked

Name: Kangi Albonetti

Date: 2025-02-19

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003114

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003704	CLX02A	1.4 Discipline	Piping
1.2 Item	43-00-TP-065		Test Pack 43-00-TP-065	
1.3 Subsystem	43-00		Hydrogen Vent Header & Drum System	

2 - OBSERVATION

PS-02134: the structural part of the support is 5 mm shorter and the position R1 is missing.

Name: Kangi Albonetti

Date: 2025-02-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-21
3.5 Action by	RM_CONSTR RM	Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Corrected.

Name: Kangi Albonetti

Date: 2025-02-11

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003117

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003704	1.4 Discipline	Piping
1.2 Item	43-00-TP-065	Test Pack 43-00-TP-065	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

In the Spool A, the section between W1 and W2 has been cut of 70 mm due the fact that the nozzle of the Vent was longer.

Name: Kangi Albonetti

Date: 2025-01-21

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-21
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Document marked-up.

Name: Lorenzo Novaga

Date: 2025-04-02

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003145

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000138	1.4 Discipline	Instrumental
1.2 Item	C-43-LT-003/00-JE-11002	LEVEL TRANSMITTER / MARSHALLING PCS	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Missing cable tag SS project, near the instrument (43-LT-003.)

Name: Giovanni Tangianu

Date: 2025-01-22

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-01-22
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003181

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003697	1.4 Discipline	Piping
1.2 Item	43-00-TP-064	Test Pack 43-00-TP-064	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Supports type "S-211" not assembled as for Standard. To be checked again during reinstatement.

Name: Kangi Albonetti

Date: 2025-01-24

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-24
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Activity done.

Name: Lorenzo Novaga

Date: 2025-02-22

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003200

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004555	1.4 Discipline	Piping
1.2 Item	43-00-TP-066	Test Pack 43-00-TP-066	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Nameplate on the spool belonging to the equipment 43-FE-001 is empty.

Name: Kangi Albonetti

Date: 2025-01-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-25
3.5 Action by	VND Vendor	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-03-31

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Lorenzo Novaga

Date: 2025-03-31

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-03-31

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003262

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

All stopper type "S-205" are missing. They shall be installed and welded to the pads.

Name: Kangi Albonetti

Date: 2025-01-28

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003263

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004299	1.4 Discipline	Piping
1.2 Item	125-2-J3	Joint 125-2-J3	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Body length of Valve BLPH-MV-463 does not allow the installation of washers from insulation kit on the valve side.

Name: Lorenzo Novaga

Date: 2025-01-27

Signature:

3 - DEFECT ASSESSMENT

.As agreed with Engineering Dpt. they have not been installed on that side.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-01-28

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003264

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004297	1.4 Discipline	Piping
1.2 Item	125-1-J1	Joint 125-1-J1	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Body length of Valve BLPH-MV-462 does not allow the installation of washers from insulation kit on the valve side.

Name: Lorenzo Novaga

Date: 2025-01-28

Signature:

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal: As agreed with Engineering Dpt. they have not been installed on that side.

3.2 Material required:

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-01-28

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003265

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Vlaves have not been installed before test. Flanged joints before test are only temporary. Inspection points from 5 to 7 are going to be checked during flange management and reinstatement.

Name: Kangi Albonetti
Date: 2025-01-28
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done

Name: Kangi Albonetti
Date: 2025-02-19
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003266

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Sketch 038: Piping support PS-03025 has not been assembled in erection.

Name: Kangi Albonetti

Date: 2025-01-28

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003267

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Sketch 037: Piping support PS-03023 has not been assembled in erection.

Name: Kangi Albonetti

Date: 2025-01-28

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003268

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Sketch 018: Piping support PS-03548 has not been assembled in erection.

Name: Kangi Albonetti

Date: 2025-01-28

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003269

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Sketch 044: Piping supports PS-03017 and PS-3018 have not been assembled in erection.

Name: Kangi Albonetti

Date: 2025-01-28

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003270

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Sketch 041: Piping support PS-03132 has not been assembled in erection.

Name: Kangi Albonetti

Date: 2025-01-28

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003271

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Sketch 006: Piping support PS-03051 has not been assembled in erection.

Name: Kangi Albonetti

Date: 2025-01-28

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003272

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Sketch 039: Piping support PS-03032 has not been assembled in erection.

Name: Kangi Albonetti

Date: 2025-01-28

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003273

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Sketch 039: Piping support PS-03134 has not been assembled in erection.

Name: Kangi Albonetti

Date: 2025-01-28

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003274

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003413	1.4 Discipline	Piping
1.2 Item	43-00-TP-024	Test Pack 43-00-TP-024	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Sketch 008: Piping support PS-03127 has not been assembled in erection.

Name: Kangi Albonetti

Date: 2025-01-28

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000150

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Mechanical
1.2 Item	V-43001		Hydrogen Vent KO Drum
1.3 Subsystem	43-00		Hydrogen Vent Header & Drum System

2 - OBSERVATION

NCR 2024-Q-123A90-0007

Name: Stefano Linari

Date: 2024-10-08

Signature:

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal

3.2 Material required

3.3 Priority: B PL B

3.4 Activity code: FAT factory acceptance test

3.5 Action by

Name: Stefano Linari

Date: 2024-10-04

Signature: --- Proverlis ---
Duplicata issued from database information
Signature is on original form

4 - PERFORMED ACTION

NCR CLOSED

Name: Raffaele Degli esposti

Date: 2024-12-05

Signature:

5 - CLEARANCE CHECK

NCR CLOSED

Name: Stefano Linari

Date: 2024-12-05

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO	NON CONFORMITY REPORT	NCR n° 2024-Q-123A90-0007 rev. 0

DESCRIPTION

Project:	123A90	**Client:**	CROSSWIND C.V.	**Originator:** VENDOR		**Subcontractor name:** C.A.M.P.I. Srl	
Process:	SUPPLY MANAGEMENT			**Procedure:**	1724000163-QC-PRO-00010: HYDROSTATIC TEST PROCEDURES AND PNEUMATIC TEST PROCEDURE (FAT PROCEDURE) 1724000163-MD-LIS-00001: SUPPLIER MASTER INDEX REGISTER (SMIR) 1724000163-QC-ITP-00002: INSPECTION AND TEST PLAN		
Activity:	QC INSPECTIONS						
Short Title:	EXECUTION OF HYDROSTATIC TEST WITH TEST PROCEDURE AND ITP NOT APPROVED UNDER CODE 1						

Description:

On September 18, 2024, an "health check" was conducted at C.A.M.P.I. Srl, the supplier of the H2 KO Drum for the BLPH project. Concurrently, a notification for the execution of the final hydrostatic test following the PWHT (Post Weld Heat Treatment) was issued.

One of the key aspects of the health check was to review the activities leading up to the final hydrostatic test phase, including the verification of the approval status of the related documentation. During the review, it was found that almost all the documents under verification were marked with approval code 2 by Crosswind. It is important to note that although code 2 does not block activities, the high number of documents affected by this code, many of which had significant comments, were not addressed. No responses were provided, nor were the comments discussed.

As a result, the hydrostatic test was conducted, with the Notified Body (NO.BO.) present due to the PED (Pressure Equipment Directive) stamp, without having at least the procedure and the ITP (Inspection Test Plan) in approval code 1 (approved).

Please be informed that the test was nevertheless successful.

Noted by:	Degli Esposti Raffaele	**Role:**	PQM	**Date:**	18/09/2024
Accepted by:	Degli Esposti Raffaele	**Role:**		**Date:**	23/09/2024

MANAGEMENT

☐ **Use as is** ☐ **Rework** ☐ **Rejected**

Root-Cause Analysis

Classification: DOCUMENTATION NOT APPROVED

Notes:

REFER TO THE ATTACHED NOTES

Reaction Plan

Activities	Person in charge	Scheduled Closing Date	Actual Closing Date	Notes
Respond to comments received on documents and revise accordingly	SUPPLIER C.A.M.P.I.	27/09/2024	31/10/2024	
Hold the HT report until comments are closed. Vessel is still accepted with reservation.	Degli Esposti Raffaele	07/10/2024	31/10/2024	

Defined by:	Degli Esposti Raffaele	**Role:**	PQM	**Date:**	23/09/2024
Approved by:	Degli Esposti Raffaele	**Role:**	PQM	**Date:**	23/09/2024
Client's / AI Approval:		**Role:**		**Date:**	

COMPLETION

Checked by:	Degli Esposti Raffaele	**Role:**	PQM	**Date:**	31/10/2024

Effective Closing Date:

ROSETTI MARINO	NON CONFORMITY REPORT	NCR n° 2024-Q-123A90-0007 rev. 0

Client's / AI Approval:	Role:	Date:

Notes:

The client has approved the documents in code 1- Refer to the ACONEX Client DataBase

Distribution:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002338

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003397	1.4 Discipline	Piping
1.2 Item	43-00-TP-022	Test Pack 43-00-TP-022	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Spool has not been installed in erection. Inspection points from 4 to 6 of the ITR to be checked during reinstatement.

Name: Kangi Albonetti
Date: 2025-01-03
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Reinstatement activities complete.

Name: Kangi Albonetti
Date: 2025-02-06
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002954

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003569	1.4 Discipline	Piping
1.2 Item	43-00-TP-044	Test Pack 43-00-TP-044	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

SK.043, PS-03054: the support is different in field compared to construction. See DWG attached.

Name: Kangi Albonetti
Date: 2025-01-16
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-16
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Changes have been recorded on RLMUs

Name: Raffaele Degli Esposti
Date: 2025-06-25
Signature:

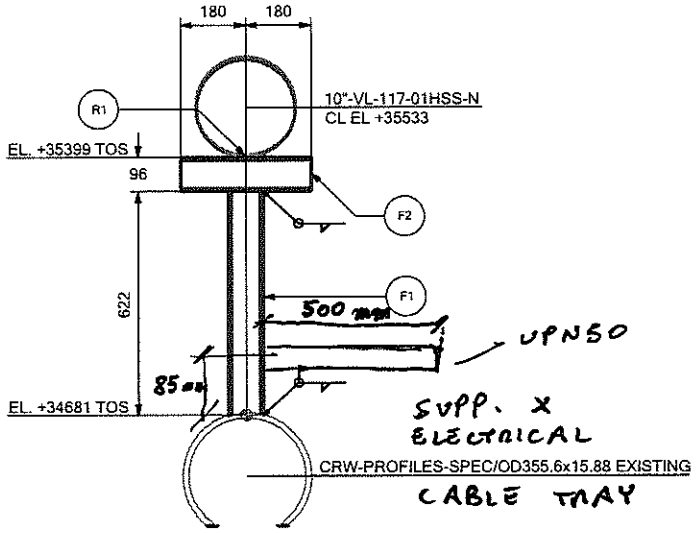
5 - CLEARANCE CHECK

Ref. to RLMU 123A90-DDL-PP-DD-72000-PS-03054_01_01A

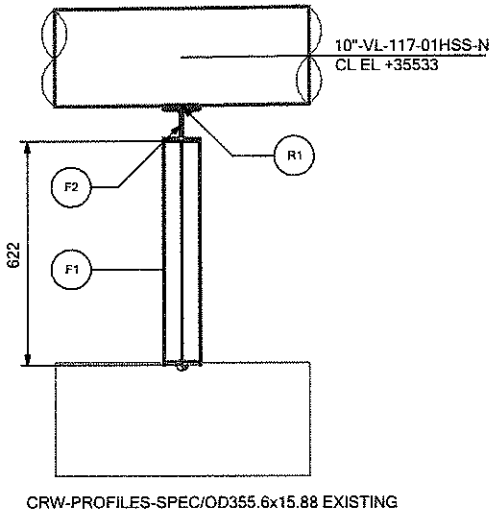
Name: Raffaele Degli Esposti
Date: 2025-06-25
Signature:

6- CLEARANCE APPROVAL

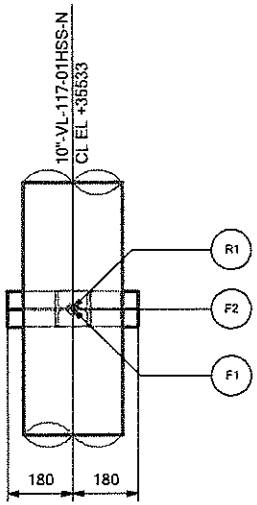
Name:
Date: 2025-06-25
Signature:



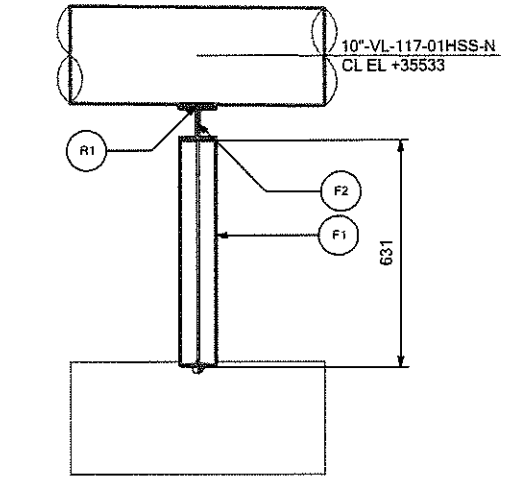
VIEW LOOKING NORTH



VIEW LOOKING WEST



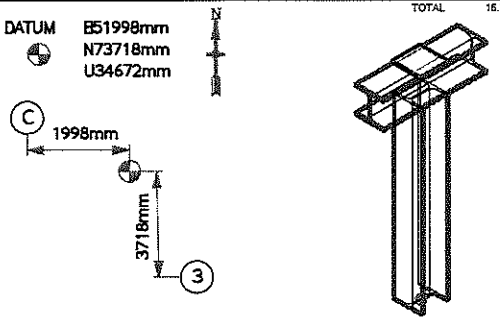
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-10-100-500-S	-	-	1	-	0.11	-
F1	BEAM	HEA100	Carbon Steel	631	1	16.76	10.58	0.358
F2	BEAM	HEA100	Carbon Steel	360	1	16.76	6.03	0.206
						TOTAL	16.7	0.56



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/06/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE:
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03054

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/06/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV 00

File Name:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002955

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003569	1.4 Discipline	Piping
1.2 Item	43-00-TP-044	Test Pack 43-00-TP-044	
1.3 Subsystem	43-00	Hydrogen Vent Header & Drum System	

2 - OBSERVATION

Sk.43, PS-03053: Position R1 has not been prepared.

Name: Kangi Albonetti

Date: 2025-01-16

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-16
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

Section 3 SYSTEM,SUB-SYSTEM LIMIT DRAWINGS

DRAWING NO. DRAWING_NO.

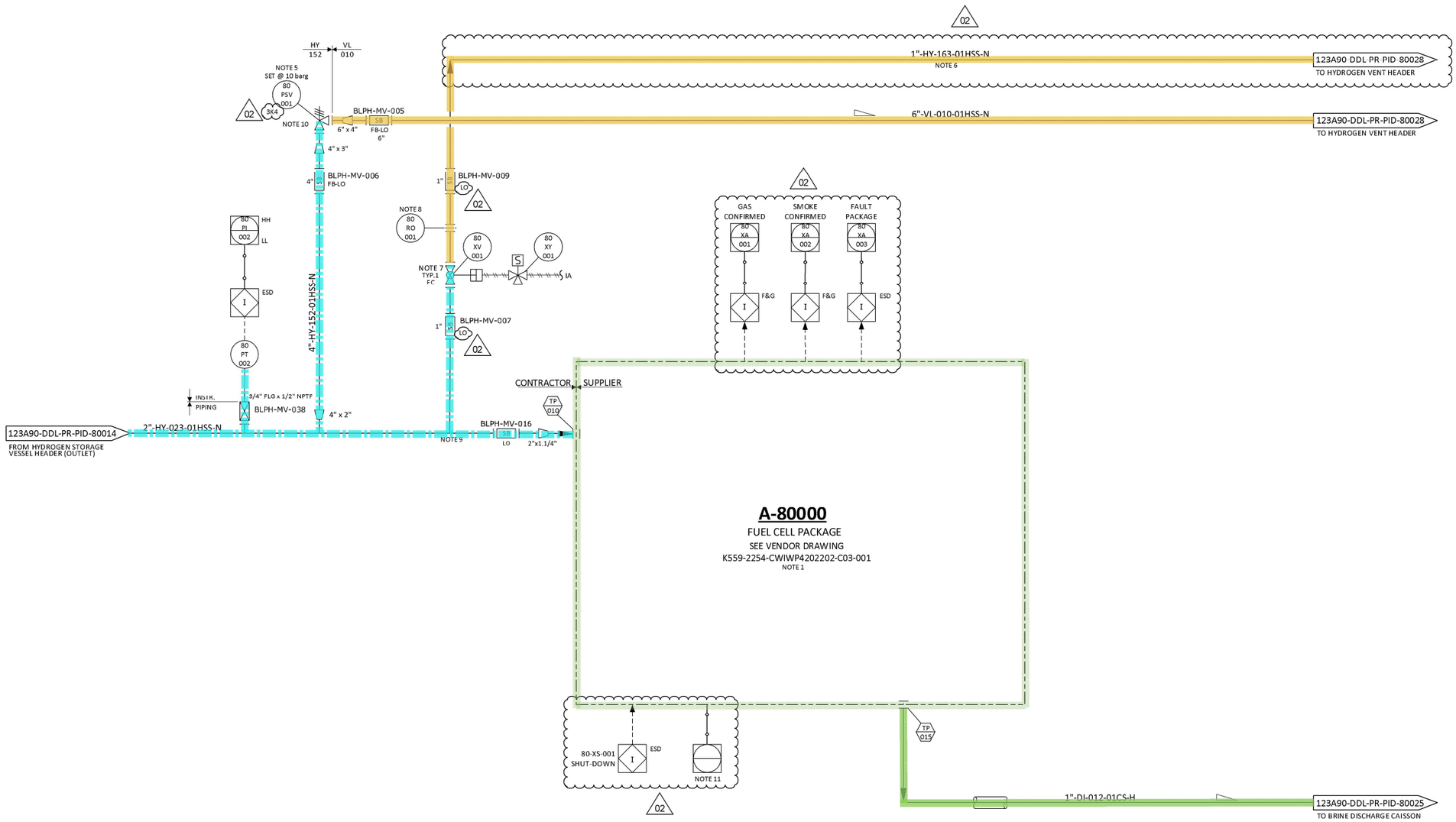
REV. REV

Hydrogen Vent Header & Drum System SS 43-00

Hydrogen Storage Vessels Header (Outlet) SS 25-08

Waste Water Brine Discharge System SS 55-01

Hydrogen Fuel Cell Package SS 80-00



NOTES

1. THE VENDOR PACKAGE WILL CONTAIN AIR INTAKE AND EXHAUST, SUITABLY SAFEGUARDED AND SEPARATED.
2. DELETED.
3. DELETED.
4. DELETED
5. ONE UNINSTALLED SPARE PSV SHALL BE AVAILABLE.
6. LINE REQUIRED FOR PURGING OF PIPING WORK.
7. TIGHT SHUT-OFF VALVE.
8. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
9. LINE 1"-HY-163-01HSS-N WILL BE LOCATED AS CLOSE TO THE PACKAGE AS POSSIBLE TO ENSURE COMPLETE PURGING OF THE LINE.
10. 80PSV001 SIZED FOR CV FAILURE OF UPSTREAM CONTROL VAVE 25PV055A/B.
11. SERIAL COMMUNICATION WITH CONTROL SYSTEM. 02

HOLDS

1. DELETED.
2. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
FUEL CELL PACKAGE

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80012	SHEET 001	REV. 02

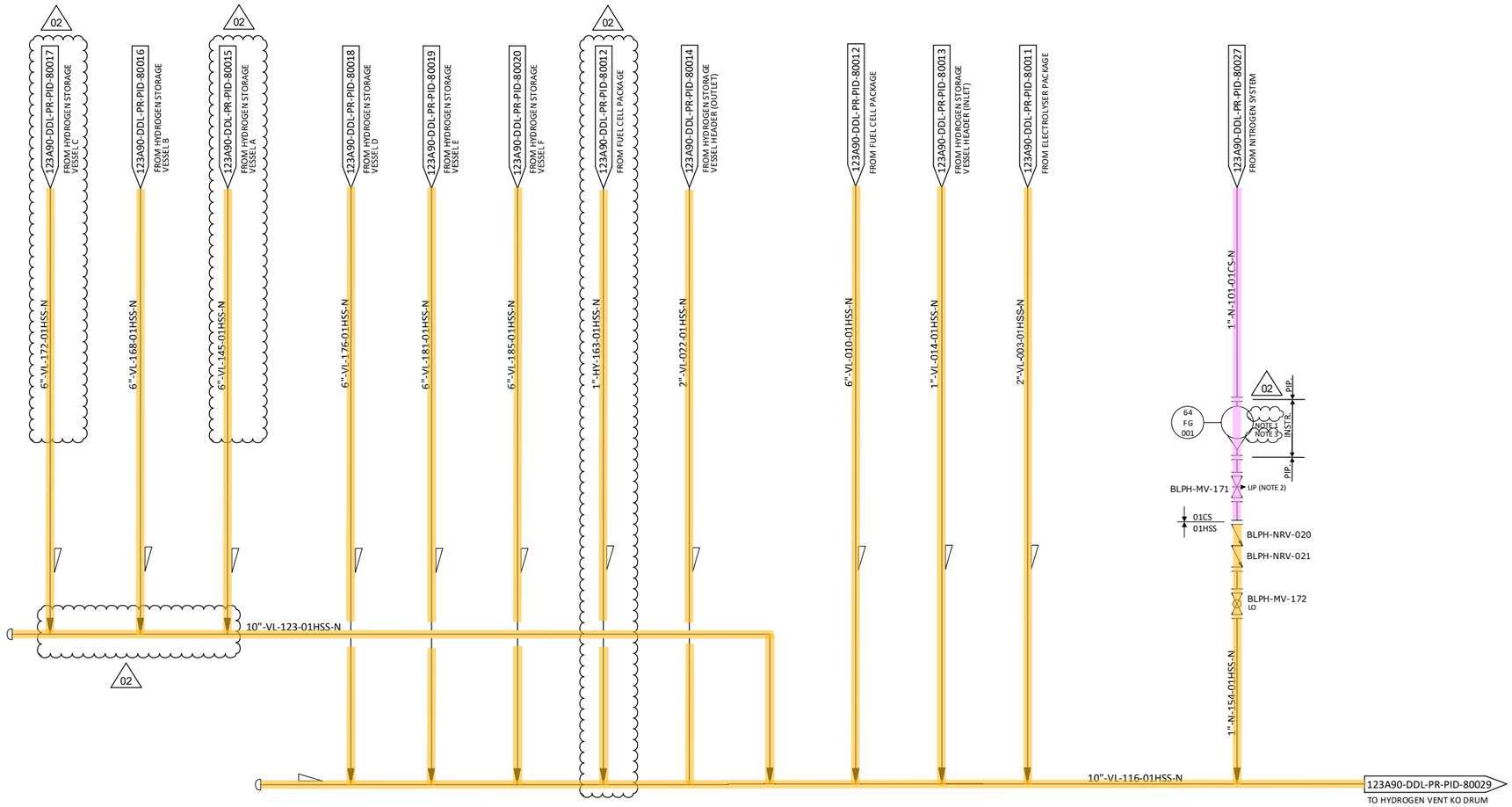
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DRAWING_NO.

REV.

Nitrogen Distrubution Network SS 64-10

Hydrogen Vent Header & Drum System SS 43-00



NOTES

1. FLOW METER 64-FG-001 SHALL BE READABLE FROM MANUAL VALVE MV-171.
2. VALVE BLPH-MV-171 TO BE LOCKED IN PLACE.
3. VERTICAL INSTALLATION. 02

HOLDS

1. DELETED.
2. DELETED. 02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT HEADER

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80028	SHEET 001	REV. 02

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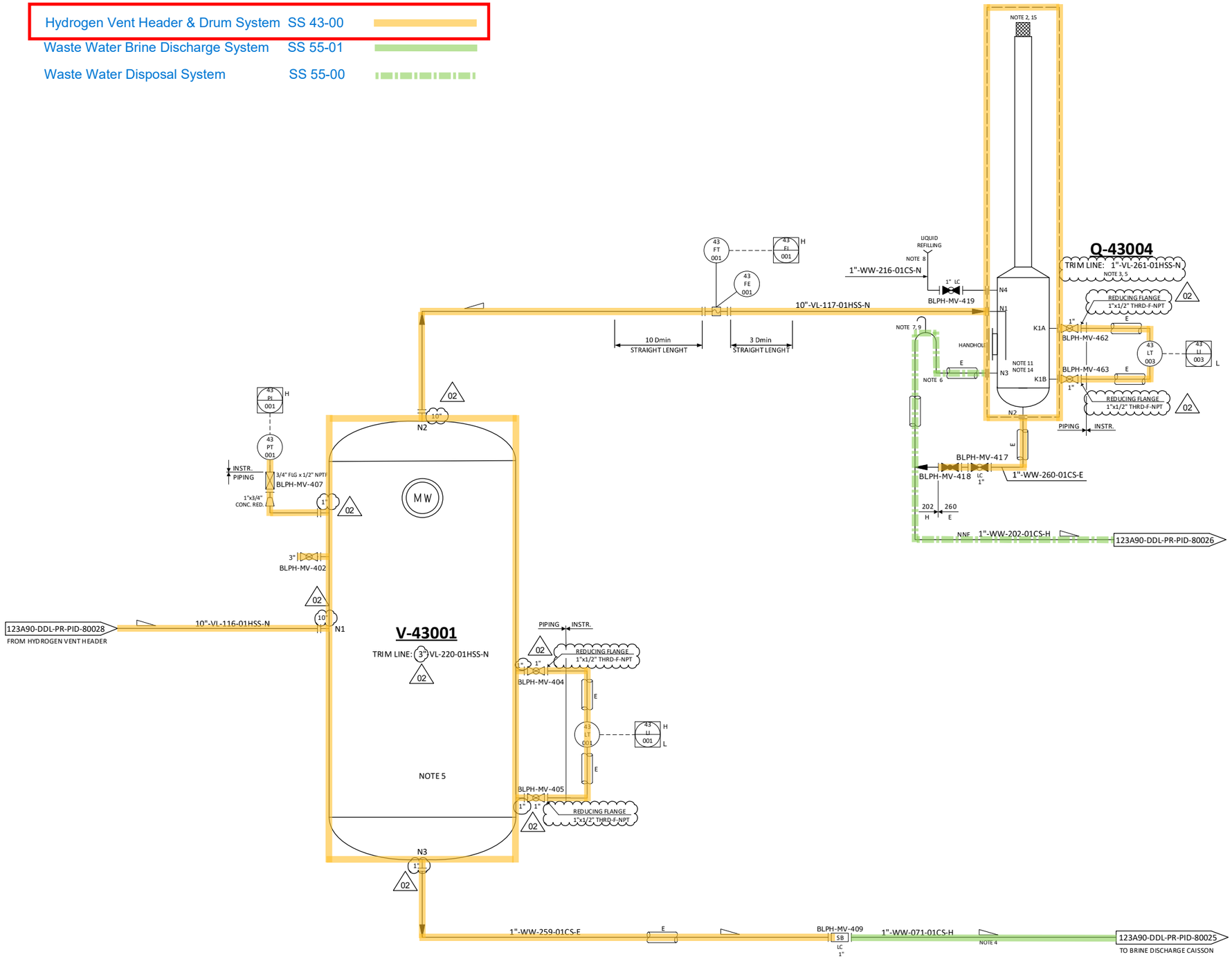
DRAWING NO. DRAWING_NO.

REV. REV

V-43001
HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA 02

Q-43004
HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA 02

Hydrogen Vent Header & Drum System	SS 43-00
Waste Water Brine Discharge System	SS 55-01
Waste Water Disposal System	SS 55-00



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH FLAME ARRESTOR AND BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT. 02
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED. 02
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m. 02
12. DELETED. 02
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 40% VOLUME OF GLYCOL.
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 02

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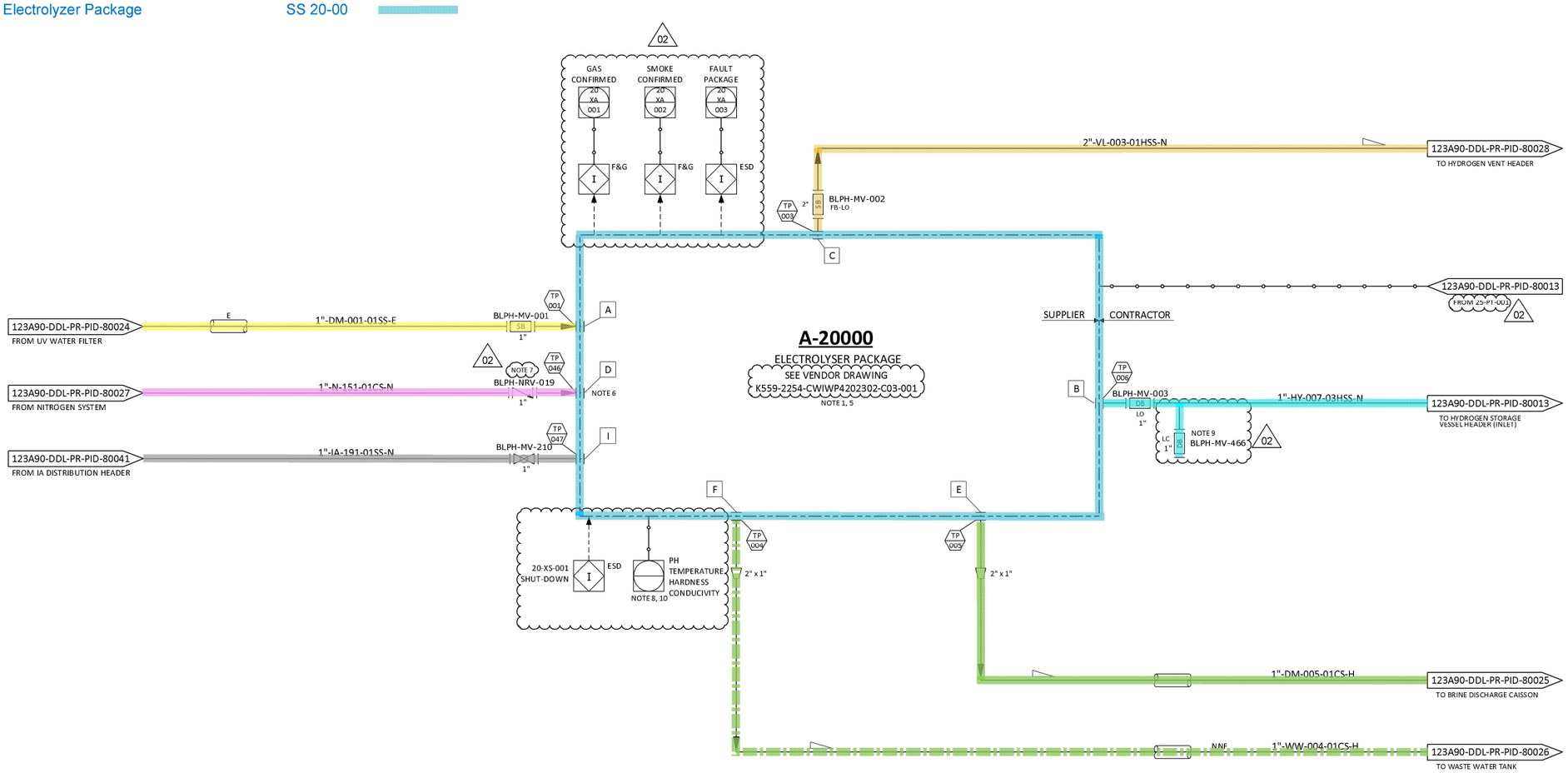
DRAWING NO. DRAWING_NO.

REV. REV

Instrumen Air Distribution Network	SS 63-30
Water Desalination & Distribution System	SS 50-10
Hydrogen Storage Vessel Header (Intel)	SS 43-00
Nitrigen Distribution Network	SS 64-11
Waste Water Brine Discharge System	SS 55-01
Waste Water Disposal System	SS 55-00
Hydrigen Storage Vessel Header (Intel)	SS 25-07
Electrolyzer Package	SS 20-00

A-20000
ELECTROLYSER PACKAGE

DUTY: 2.5MW
DESIGN PRESSURE: 40 barg
DESIGN TEMPERATURE: 80 °C
H2 GENERATING CAPACITY: 500 Nm³/h



NOTES

1. PACKAGE SUPPLIED WITH POWER FROM THE BLPH ELECTRICAL SYSTEM.
2. DELETED.
3. DELETED.
4. DELETED.
5. ELECTROLYSER PACKAGE INCLUDES AN OXYGEN VENT LINE WHICH IS IN THE SCOPE OF SUPPLY OF THE ELECTROLYSER PACKAGE UP TO THE ATMOSPHERE. NO PHYSICAL INTERFACE IS PRESENT BETWEEN ELECTROLYSER PACKAGE AND CONTRACTOR ON THIS LINE.
6. AN ISOLATION VALVE DOWNSTREAM THE CHECK VALVE NRV-019 IS PROVIDED WITHIN THE PACKAGE A-20000.
7. CHECK VALVE NRV-019 TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE ELECTROLYSER PACKAGE A-20000.
8. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
9. NITROGEN PURGING CONNECTION TO BE LOCATED AS CLOSE AS POSSIBLE TO MANUAL VALVE BLPH-MV-003.
10. PH, TEMPERATURE, HARDNESS AND CONDUCTIVITY SHALL BE SENT FROM CONTROL SYSTEM TO ELECTROLISER UCP IN ADDITION TO THE OTHER SOFTWARE SIGNALS.

02

HOLDS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
ELECTROLYSER PACKAGE

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80011	SHEET 001	REV. 02

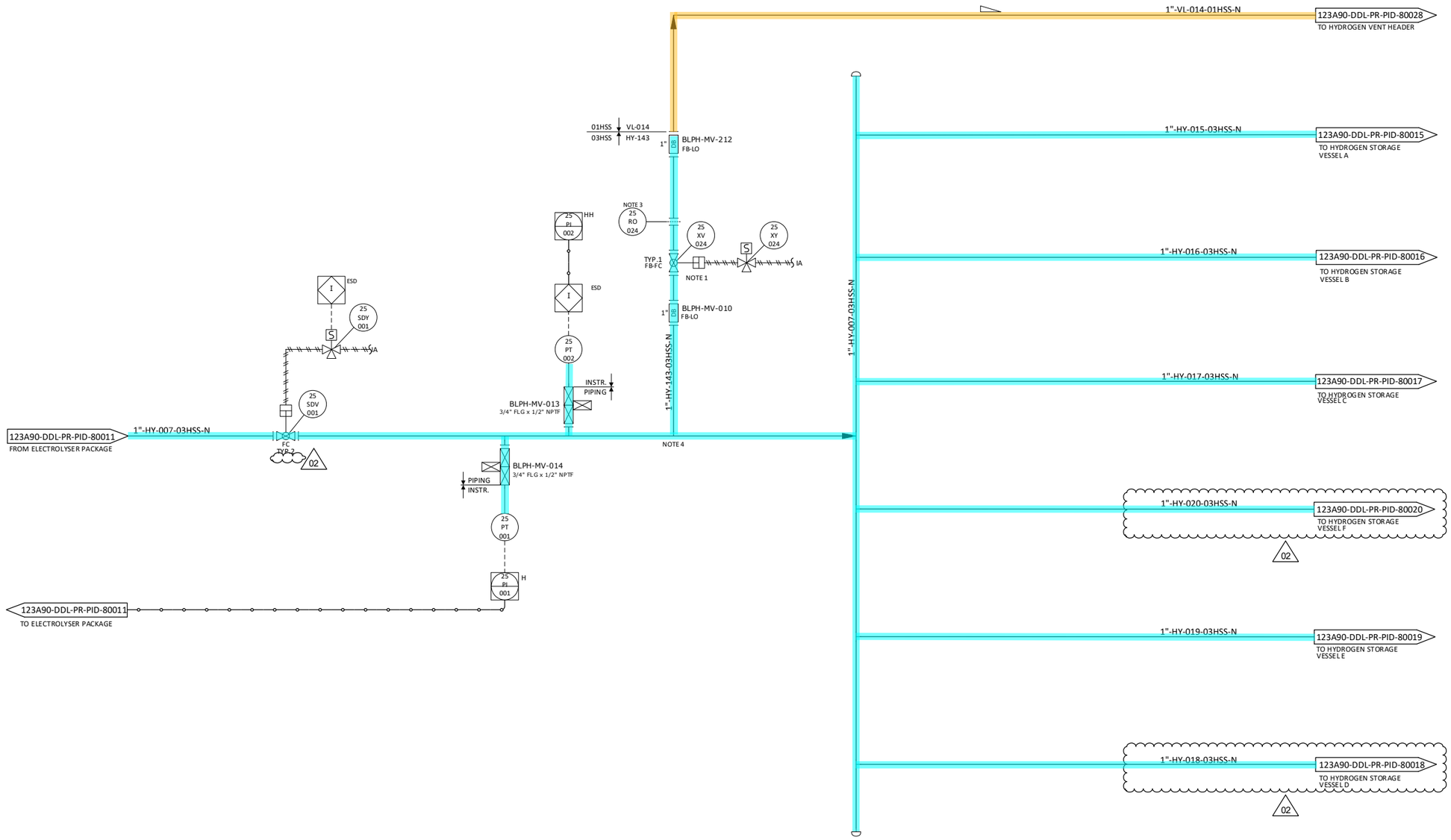
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DRAWING NO. DRAWING_NO.

REV. REV

Hydrogen Vent Header & Drum System SS 43-00

Hydrogen Storage Vessels Header (Inlet) SS 25-07



NOTES

1. TIGHT SHUT OFF XV.
2. DELETED. 02
3. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
4. PIPING CONNECTION TO 25-XV-003 SHALL BE AS CLOSE TO THE MANIFOLD AS POSSIBLE, TO ENSURE COMPLETE PURGING OF FEED LINE.

HOLDS

1. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSELS HEADER (INLET)

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO.	SHEET	REV.
	123A90-DDL-PR-PID-80013	001	02

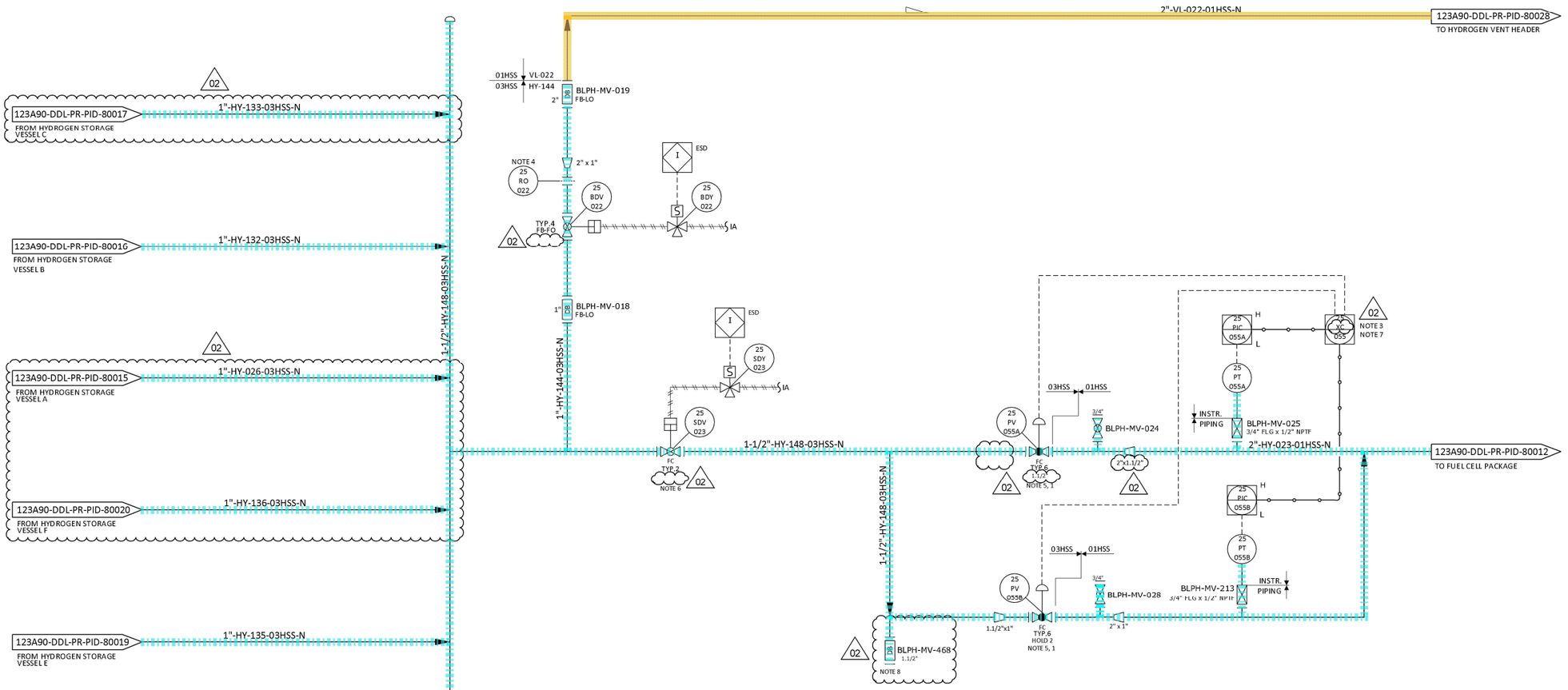
File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

Hydrogen Vent Header & Drum System SS 43-00

Hydrogen Storage Vessels Header (Outlet) SS 25-08



NOTES

1. TIGHT SHUT-OFF VALVE.
2. DELETED.
3. CONTROL VALVES 25-PV-055A/B WORK IN SPLIT RANGE:
   - FOR LOW OPERATING CV (UP TO 0.31) VALVE "B" IS USED
   - FOR HIGH OPERATING CV (FROM 0.31) VALVE "A" IS USED

   02
4. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
5. SOFTWARE INTERLOCK PREVENTS OPENING OF THE CONTROL VALVES 25-PV-055A/B IN CASE FUEL CELL PACKAGE (A-80000) IS NOT RUNNING.
6. SDV VALVE 25-SDV-023 TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE CONTROL VALVES 25-PV-055A/B.
7. HS INCLUDES SOFTWARE INTERLOCK TO PREVENT BOTH VALVES TO BE ONLINE SIMULTANEOUSLY. SOFTWARE INTERLOCK PREVENTS VALVE 25PV055B TO OPEN IF VALVE 25PV055A IS NOT CLOSED.
8. TO BE USED DURING COMMISSIONING PHASE. 02

HOLDS

1. DELETED.
2. CONTROL VALVE SIZE (BY VENDOR).

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSELS HEADER (OUTLET)

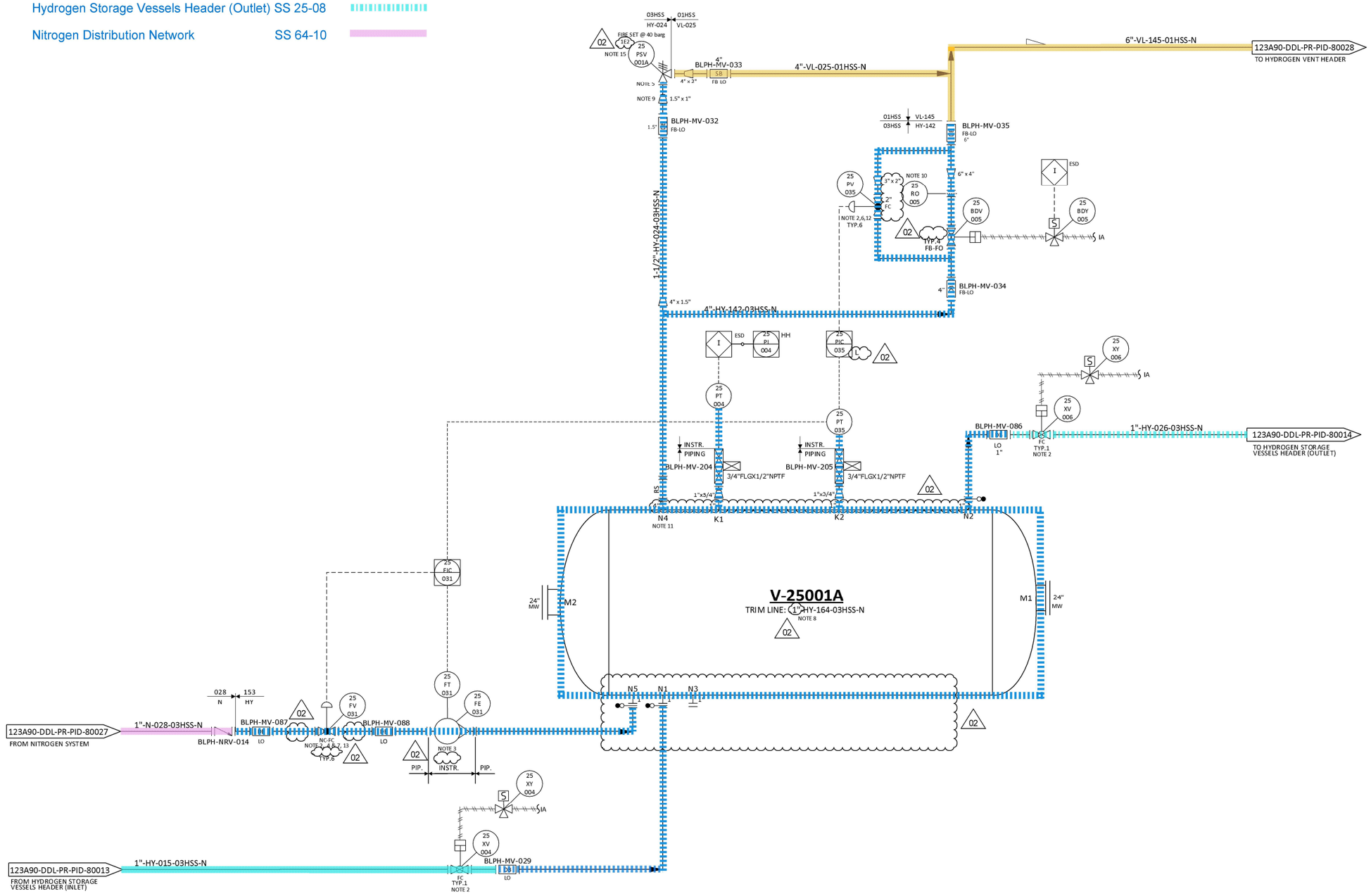
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DRAWN	CHECKED	APPROVED	DATE	
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File Name : FILE_NAME

DRAWING_NO.

REV.

Hydrogen Storage Vessel A (V-25001A)	SS 25-01	
Hydrogen Vent Header & Drum System	SS 43-00	
Hydrogen Storage Vessels Header (inlet)	SS 25-07	
Hydrogen Storage Vessels Header (Outlet)	SS 25-08	
Nitrogen Distribution Network	SS 64-10	



NOTES

1. DELETED. 02
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-001), CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25PV035 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION. CONTROL VALVE 25PV035 IS USED ONLY IN CASE OF VESSEL PURGING.
13. SOFTWARE INTERLOCK TO PREVENT 25FV031 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25PV035 HAS FAILED TO CLOSE.
15. 25PSV001A SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL A

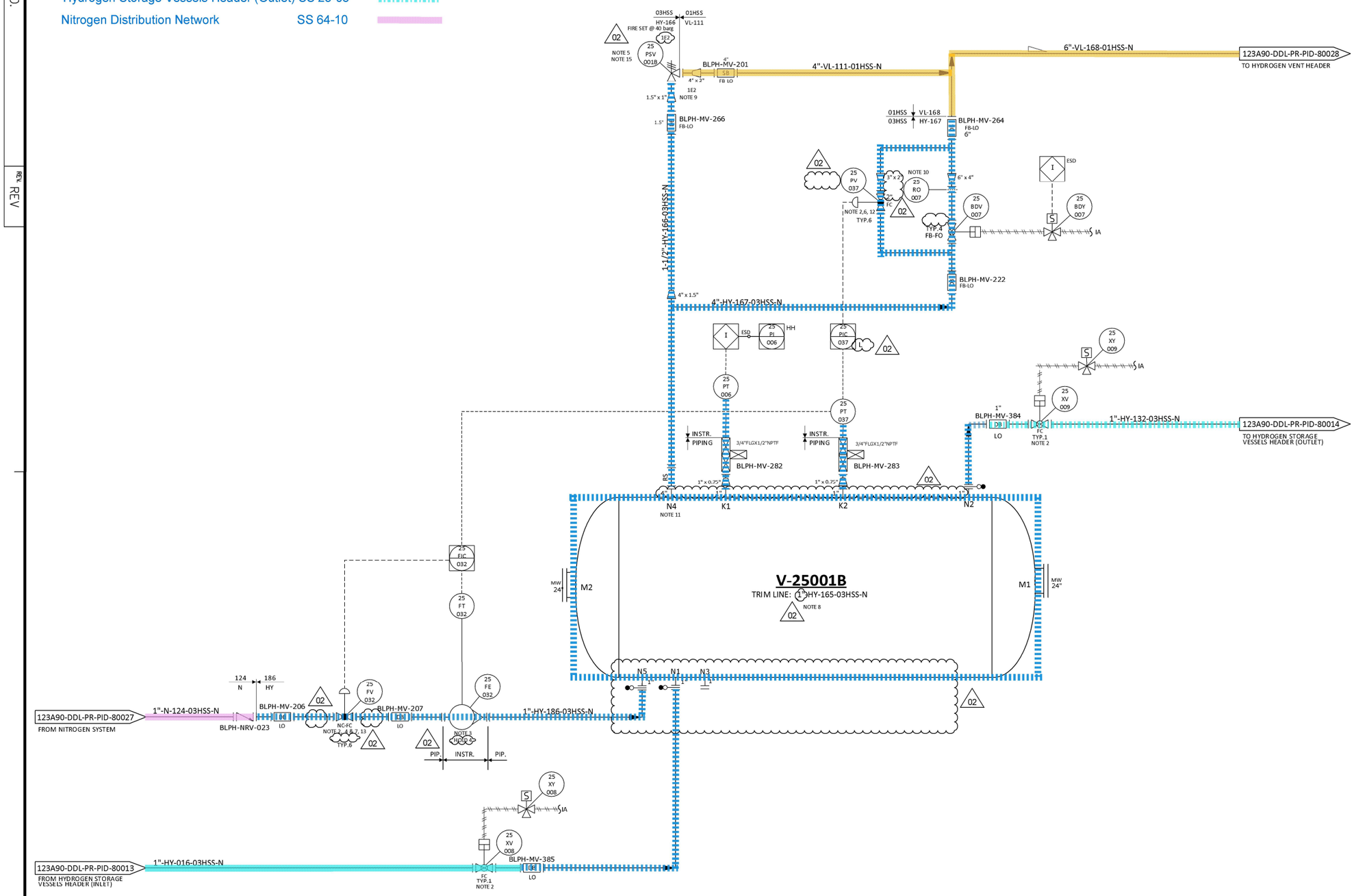
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DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80015		SHEET 001	REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

Hydrogen Storage Vessel A (V-25001A)	SS 25-02	
Hydrogen Vent Header & Drum System	SS 43-00	
Hydrogen Storage Vessels Header (inlet)	SS 25-07	
Hydrogen Storage Vessels Header (Outlet)	SS 25-08	
Nitrogen Distribution Network	SS 64-10	



NOTES

1. DELETED. 02
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-001), CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25PV037 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION. CONTROL VALVE 25PV037 IS USED ONLY IN CASE OF VESSEL PURGING.
13. SOFTWARE INTERLOCK TO PREVENT 25FV032 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25PV037 HAS FAILED TO CLOSE.
15. 25PSV001B SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL B

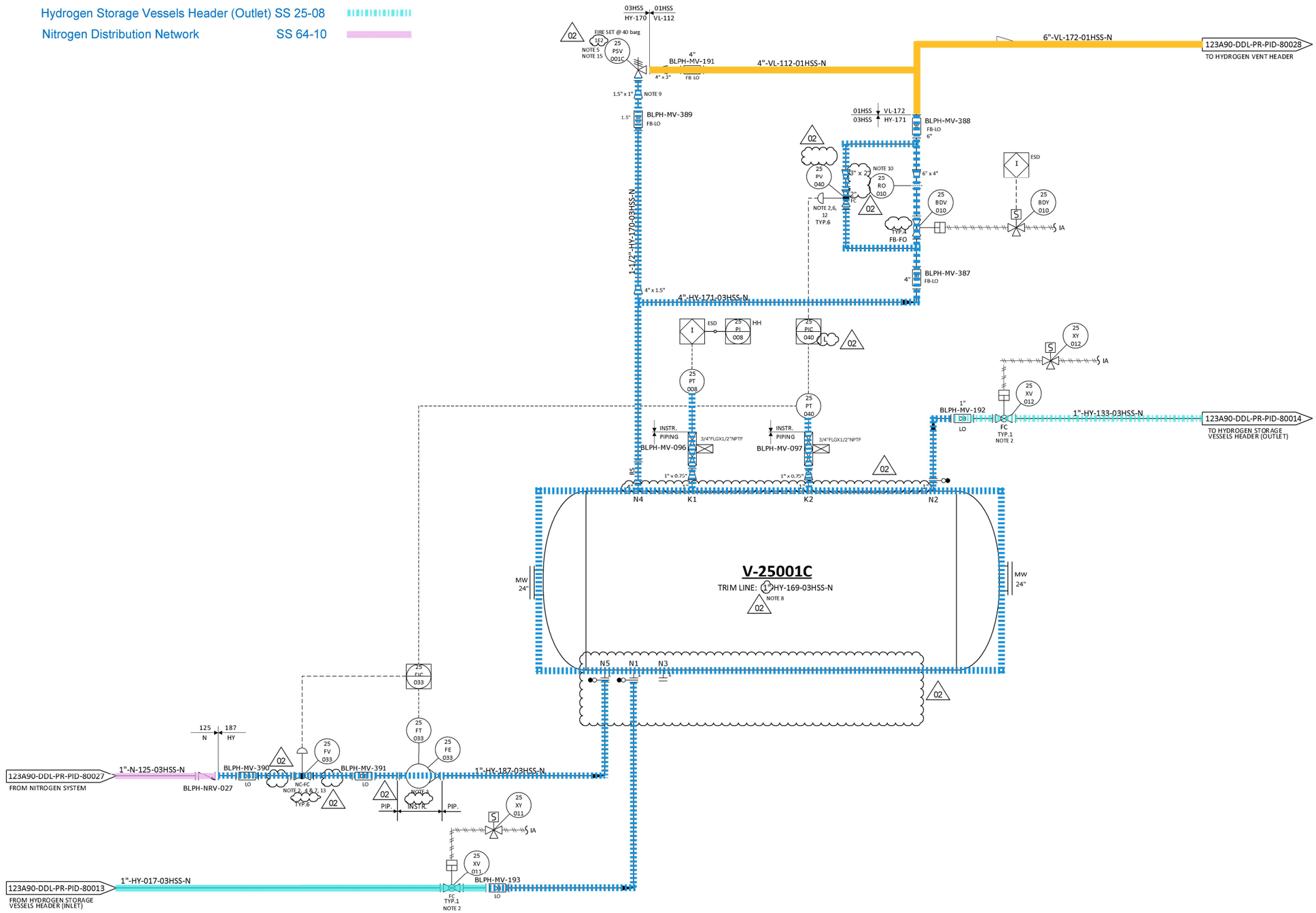
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
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File Name : FILE_NAME

DRAWING_NO.

REV.

Hydrogen Storage Vessel A (V-25001A)	SS 25-03	
Hydrogen Vent Header & Drum System	SS 43-00	
Hydrogen Storage Vessels Header (inlet)	SS 25-07	
Hydrogen Storage Vessels Header (Outlet)	SS 25-08	
Nitrogen Distribution Network	SS 64-10	



NOTES

1. DELETED. 02
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-001), CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25PV040 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION. CONTROL VALVE 25PV040 IS USED ONLY IN CASE OF VESSEL PURGING.
13. SOFTWARE INTERLOCK TO PREVENT 25FV033 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25PV040 HAS FAILED TO CLOSE.
15. 25PSV001C SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL C

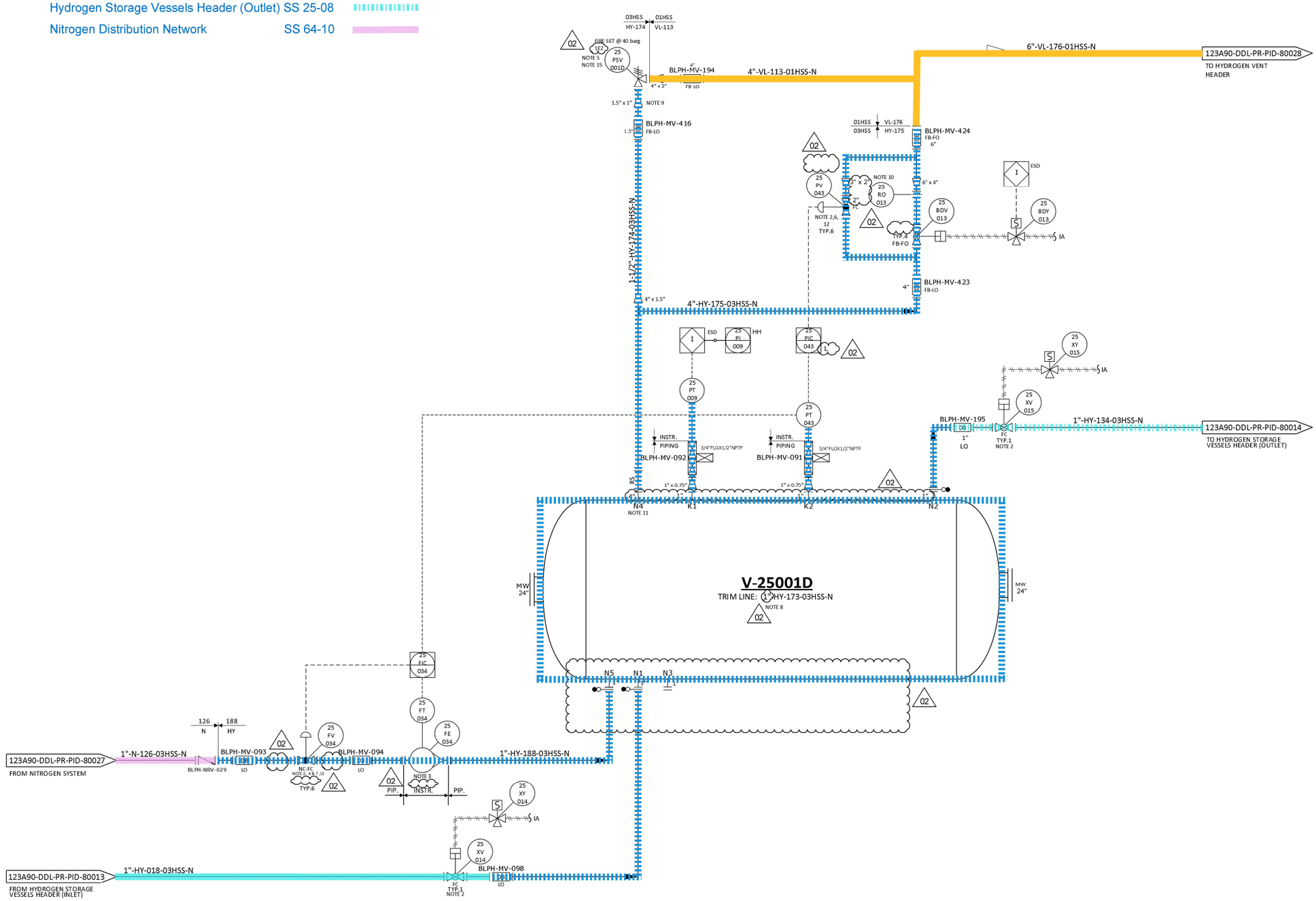
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80017	SHEET 001	REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

Hydrogen Storage Vessel A (V-25001A)	SS 25-04	
Hydrogen Vent Header & Drum System	SS 43-00	
Hydrogen Storage Vessels Header (inlet)	SS 25-07	
Hydrogen Storage Vessels Header (Outlet)	SS 25-08	
Nitrogen Distribution Network	SS 64-10	



NOTES

1. DELETED. 02
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-001), CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25PV043 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION. CONTROL VALVE 25PV043 IS USED ONLY IN CASE OF VESSEL PURGING
13. SOFTWARE INTERLOCK TO PREVENT 25FV034 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25PV043 HAS FAILED TO CLOSE.
15. 25PSV001D SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL D

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80018	SHEET 001	REV. 02

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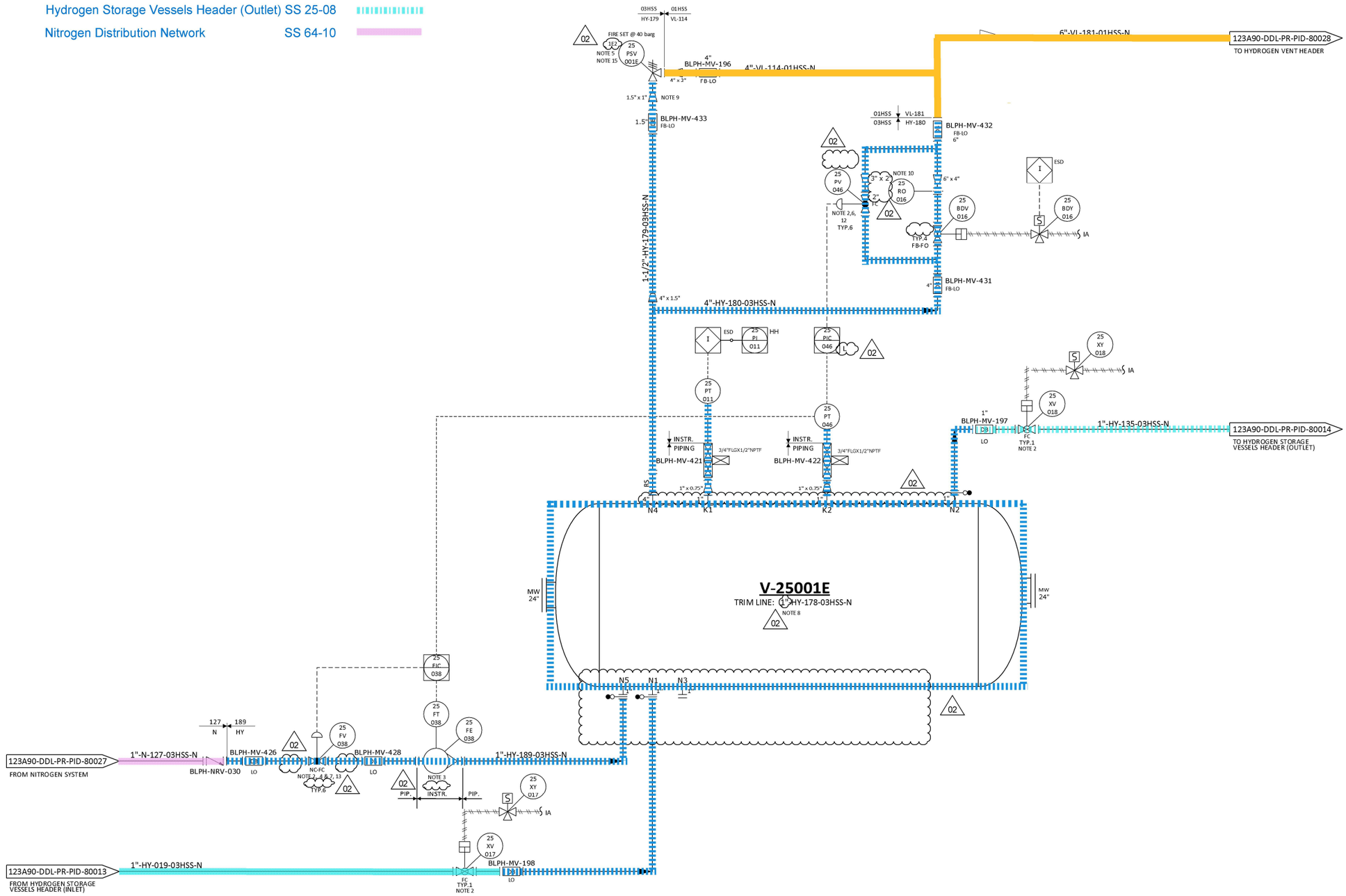
REV.

Hydrogen Storage Vessel A (V-25001A)	SS 25-05	
Hydrogen Vent Header & Drum System	SS 43-00	
Hydrogen Storage Vessels Header (inlet)	SS 25-07	
Hydrogen Storage Vessels Header (Outlet)	SS 25-08	
Nitrogen Distribution Network	SS 64-10	

V-25001 E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED. 02
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-001), CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25PV046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION. CONTROL VALVE 25PV046 IS USED ONLY IN CASE OF VESSEL PURGING
13. SOFTWARE INTERLOCK TO PREVENT 25FV038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25PV046 HAS FAILED TO CLOSE.
15. 25PSV001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80019	SHEET 001	REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

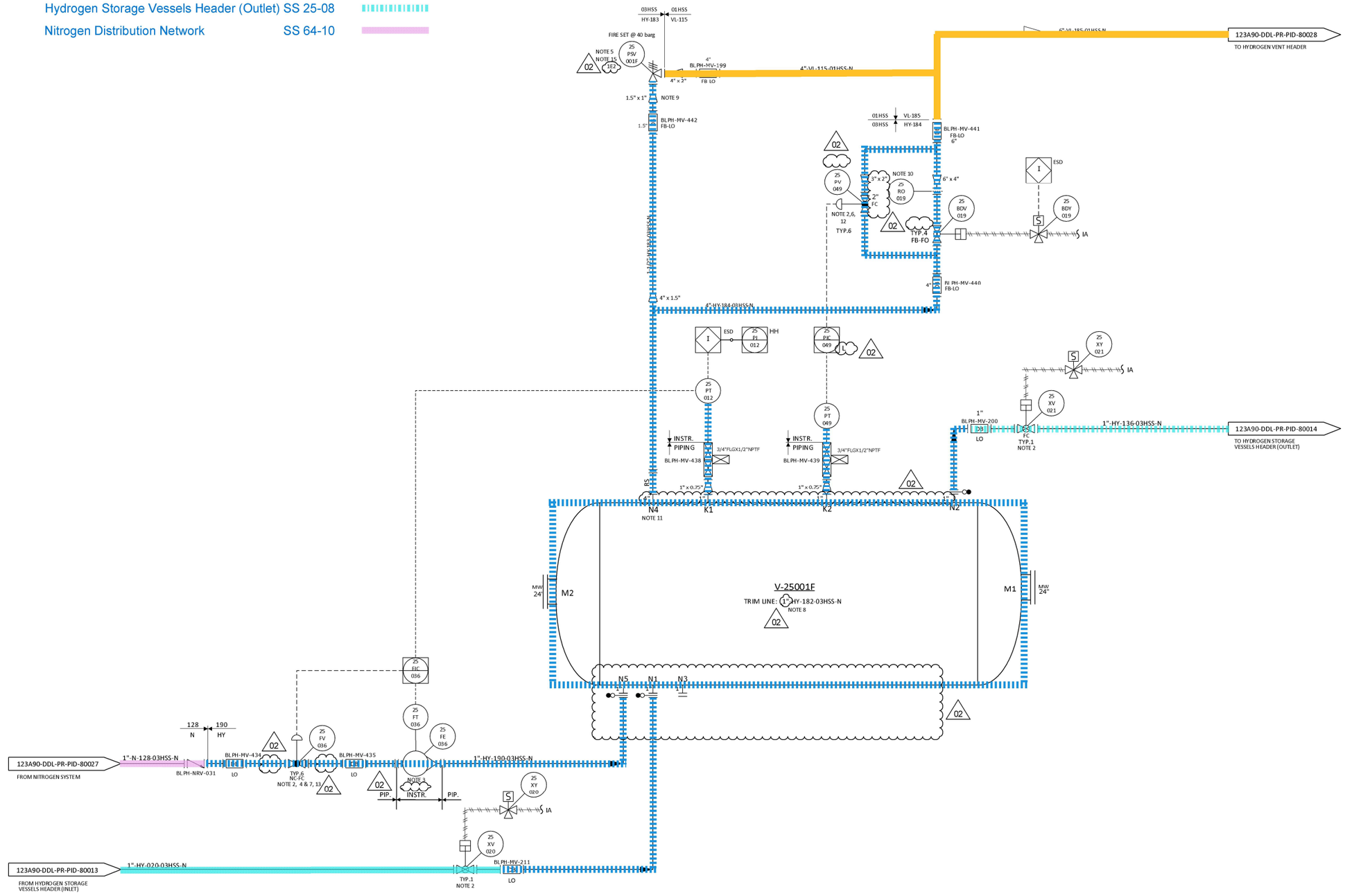
REV. REV

Hydrogen Storage Vessel A (V-25001A)	SS 25-06
Hydrogen Vent Header & Drum System	SS 43-00
Hydrogen Storage Vessels Header (inlet)	SS 25-07
Hydrogen Storage Vessels Header (Outlet)	SS 25-08
Nitrogen Distribution Network	SS 64-10

V-25001 F

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED. 02
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-001), CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027.
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25PV049 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION. CONTROL VALVE 25PV049 IS USED ONLY IN CASE OF VESSEL PURGING.
13. SOFTWARE INTERLOCK TO PREVENT 25FV036 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25PV049 HAS FAILED TO CLOSE.
15. 25PSV001F SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR HAZOP (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL F

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80020		SHEET 001 / REV. 02

File Name : FILE_NAME

Section 4 MECHANICAL COMPLETION STATUS INDEX - BUILDING DISCIPLINE

NOT APPLICABLE

Section 5 MECHANICAL COMPLETION STATUS INDEX - ELECTRICAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC & discipline : Y

ATEX	43-00 Hydrogen Vent Header & Drum System						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
43-FE-001A	Pre-Amplifier Flow Sensor	ONSHORE	C10004545	CJX01	100	2025-03-12	RFC 2
43-FE-001B	Pre-Amplifier Flow Sensor	ONSHORE	C10004546	CJX01	100	2025-03-12	RFC 2
43-FT-001	Flow Transmitter - Hydrogen form KO DRUM V-43001 to vent stack Q-43004	ONSHORE	C10001470	CJX01	100	2025-02-26	RFC 1
43-LT-001	Level DP Transmitter - KO Drum V-43001 High/Low Level	ONSHORE	C10000898	CJX01	100	2025-02-06	RFC 1
43-LT-003	Level DP Transmitter - H2 Vent Q-43004 Low Level	ONSHORE	C10000899	CJX01	100	2025-02-06	RFC 1
43-PT-001	Pressure Transmitter - KO Drum V-43001 Pressure	ONSHORE	C10000900	CJX01	100	2025-02-19	RFC 1

ITEM	Tag	43-LT-001	: Level DP Transmitter - KO Drum V-43001 High/Low Level	Dwg	123A90-DDL-PR-PID-80029		
	S/Sys	43-00	: Hydrogen Vent Header & Drum System	Module	UD		
TASK	code	C10000898	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01

Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		SE240632			
Manufacturer	Terranova Srl			**Model**		SST77B-H-9-D-2-3-0-0-4 + MAN5-D1			
Cert No.	TI17ATEX304X-TI17ATEX304X/1			**Equipment Ambient Temp.**		-40°C to +60°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex d	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66/67

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		OK	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	OK	

ITEM	Tag	43-LT-001	: Level DP Transmitter - KO Drum V-43001 High/Low Level			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10000898	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	PL	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	OK	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	43-LT-001	: Level DP Transmitter - KO Drum V-43001 High/Low Level	Dwg	123A90-DDL-PR-PID-80029		
	S/Sys	43-00	: Hydrogen Vent Header & Drum System	Module	UD		
TASK	code	C10000898	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01
							Hazardous Area Equipment Detailed Inspection

	Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA		
68	Hermetically sealed and enclosed break devices are undamaged	x	NA		
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA		
70	Test port, if fitted, is functional (type “nR” only)	x	NA		
71	Breathing operation is satisfactory (type “nR” only)	x	NA		
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA		
73	The ventilation airflow is not impeded	x	NA		
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA		
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA		
76	Variable voltage/frequency installation complies with documentation	x	NA		
	Extra Ex p checks				
77	Pressurization gas is correct type	x	NA		
78	Actual pressure is within maximum and minimum settings for equipment	x	NA		
79	Timers set as per certification documentation	x	NA		
80	Alarms and trip functions operate correctly as per certification documentation	x	NA		
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA		
82	Automatic electrical protective devices operate within permitted limits	x	NA		
83	Automatic electrical protective devices are set correctly	x	NA		
84	Protective gas inlet temperature is below maximum specified	x	NA		
85	Ducts, pipes and enclosures are in good condition	x	NA		
86	Protective gas is substantially free from contaminants	x	NA		
87	Protective gas pressure and/or flow is adequate	x	NA		
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA		
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA		
90	Specific conditions of use (if applicable) are complied with		NA		
	Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA		
92	Cables are installed in accordance with the documentation	x	NA		
93	Segregation is maintained between IS and non-IS Circuits	x	NA		
94	Cable screens are isolated at one end (field side)	x	NA		
95	Cable screens are earthed in accordance with the documentation	x	NA		
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA		
97	Equipment installed is the one specified in the documentation	x	NA		
98	Ambient temperature range of the apparatus is correct for the installation	x	NA		
99	Service temperature range of the apparatus is correct for the installation	x	NA		
100	Installation is clearly labelled	x	NA		
101	Printed circuit boards are clean and undamaged	x	NA		
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA		
103	Point-to-point connections are all correct	x	NA		
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA		
105	Earth connections maintain the integrity of the type of protection	x	NA		
106	Intrinsically safe circuit earthing is satisfactory	x	NA		
107	Insulation resistance is satisfactory	x	NA		
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA		

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

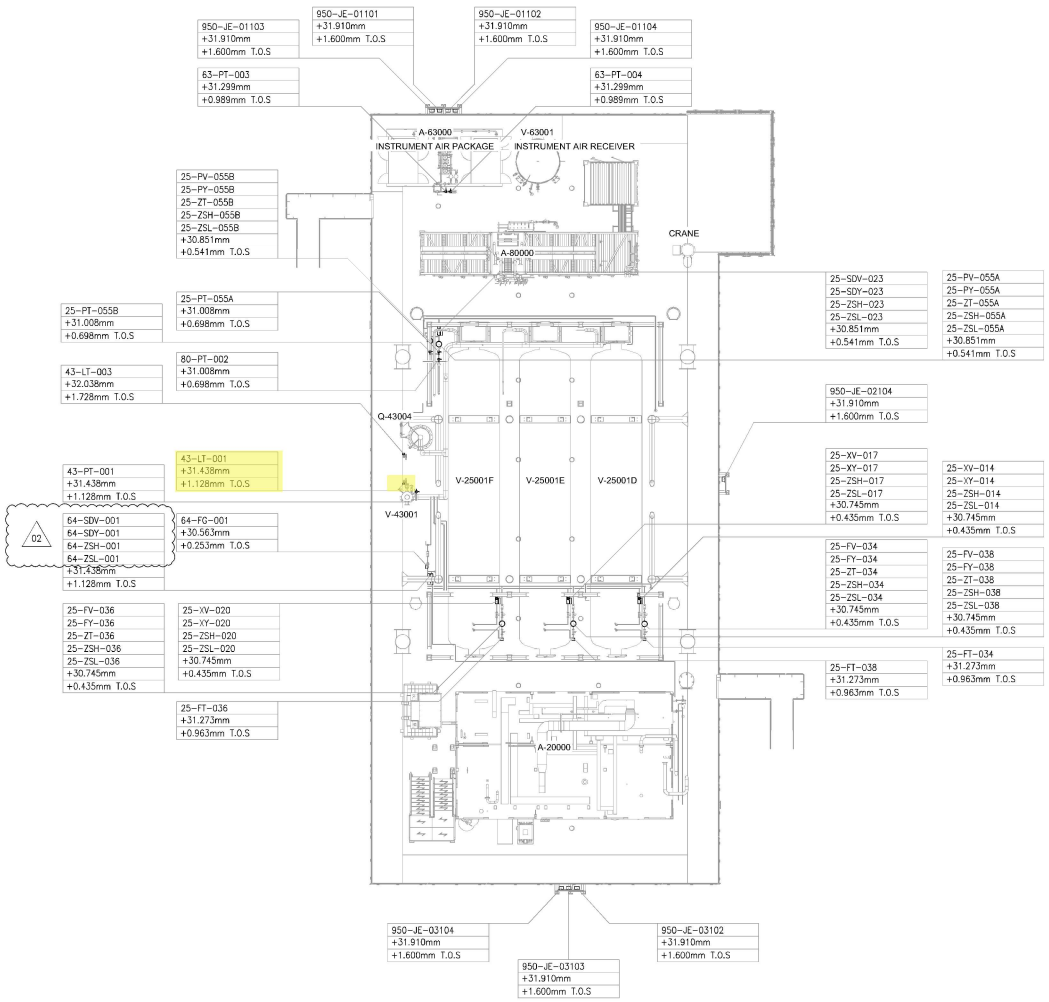
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-05	2025-02-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T14:29:07.042Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-06T08:23:18.687Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

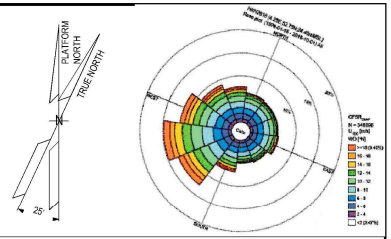
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. DRAWING_NO.

REV. REV

V-43001

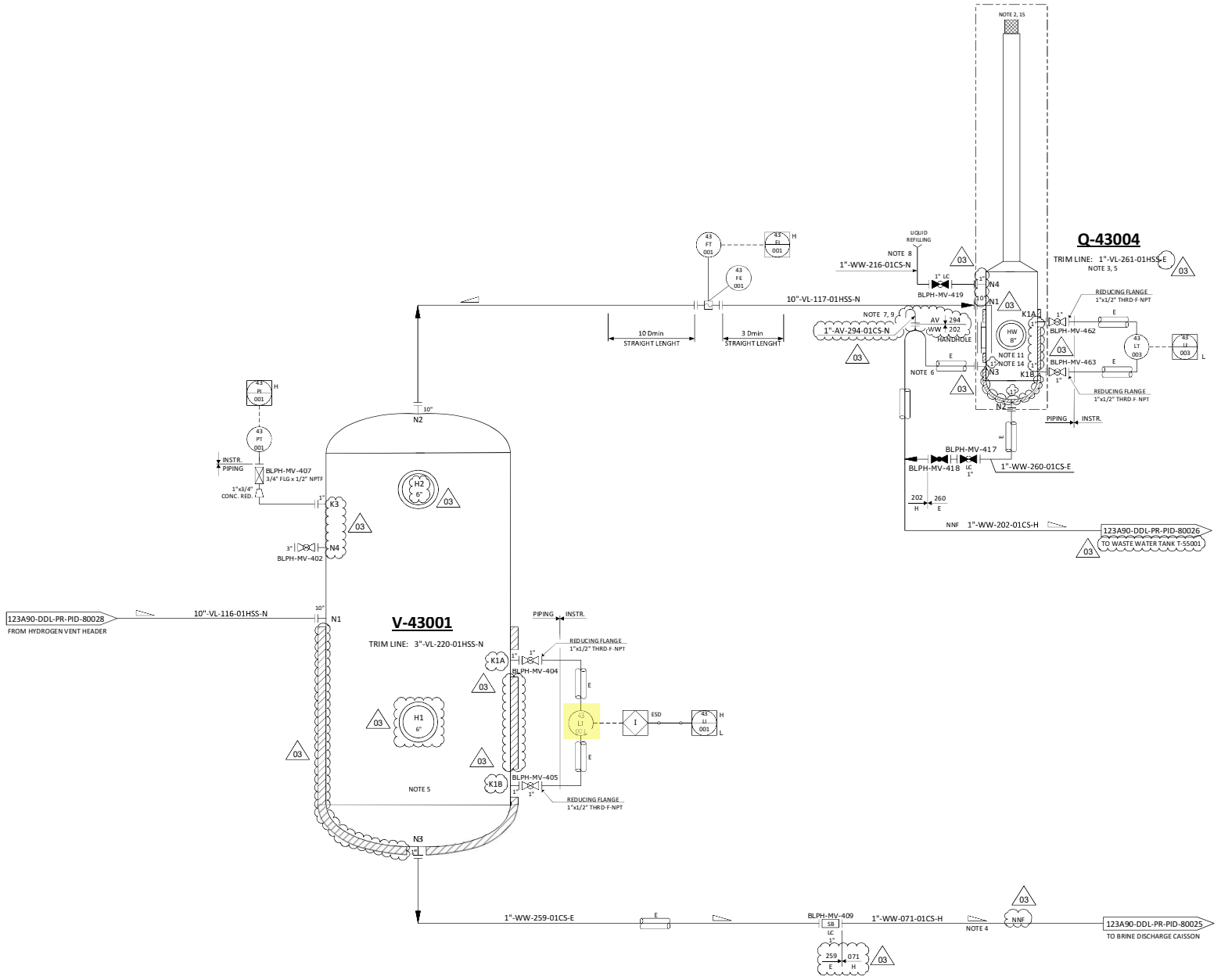
HYDROGEN VENT KO DRUM

SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1

SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	NTS
DRAWN	CHECKED	APPROVED		DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80029			SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-21002	No.	MARSHALLING CABINET B400-SIS-001

<01>

25-PT-002 (+ WH, - BK) — NOTE-2 — C-25-PT-002/00-JE-21002 1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

80-PT-002 (+ WH, - BK) — NOTE-2 — C-80-PT-002/00-JE-21002 1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

43-LT-001 (+ WH, - BK) — C-43-LT-001/00-JE-21002 1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

64-PT-002 (+ WH, - BK) — NOTE-2 — C-64-PT-002/00-JE-21002 1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-1

WH/BK	1	WH/BK	PR1
	2		
	SH		
WH/BK	3	WH/BK	PR2
	4		
	SH		
WH/BK	5	WH/BK	PR3
	6		
	SH		
WH/BK	7	WH/BK	PR4
	8		
	SH		
SPARE	9	WH/BK	PR5
	10		
	SH		
SPARE	11	WH/BK	PR6
	12		
	SH		
	OS		

00-JE-21002/B400-SIS-001
6x2x0.75mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-00-JE-21002

PR1 (WH/BK)	1	25-PT-002
Shield Bar	2	
PR2 (WH/BK)	3	80-PT-002
Shield Bar	4	
PR3 (WH/BK)	5	43-LT-001
Shield Bar	6	
PR4 (WH/BK)	7	64-PT-002
Shield Bar	8	
PR5 (WH/BK)	9	SPARE
Shield Bar	10	
PR6 (WH/BK)	11	SPARE
	12	

Shield Bar — I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_Q	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

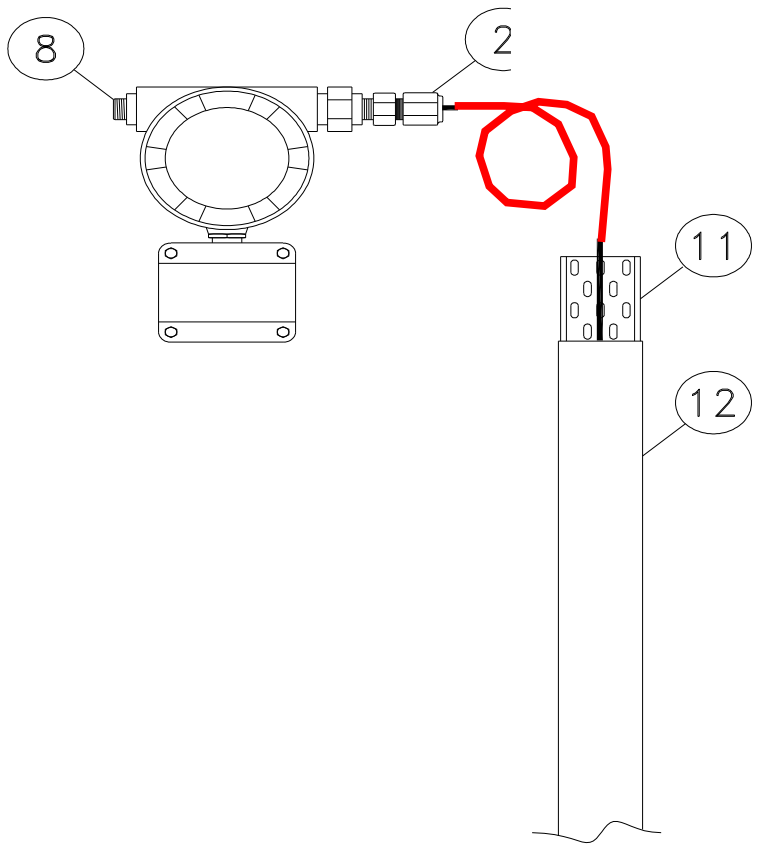
TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT– SAFETY SYSTEM WIRING DIAGRAMS
00–JE–21002

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

	DRAWING NO.	SHEET	REV.
A3	123A90–DDL–IN–DG–40016	006	01

File Name : 123A90-DDL-IN-DG-40016_Rev.01

ELECTRICAL HOOK-UP FOR LEVEL TRANSMITTERS (DP TYPE C/W DIAPHRAGM SEAL)



INSTRUMENT TAG	
1	43-LT-001
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

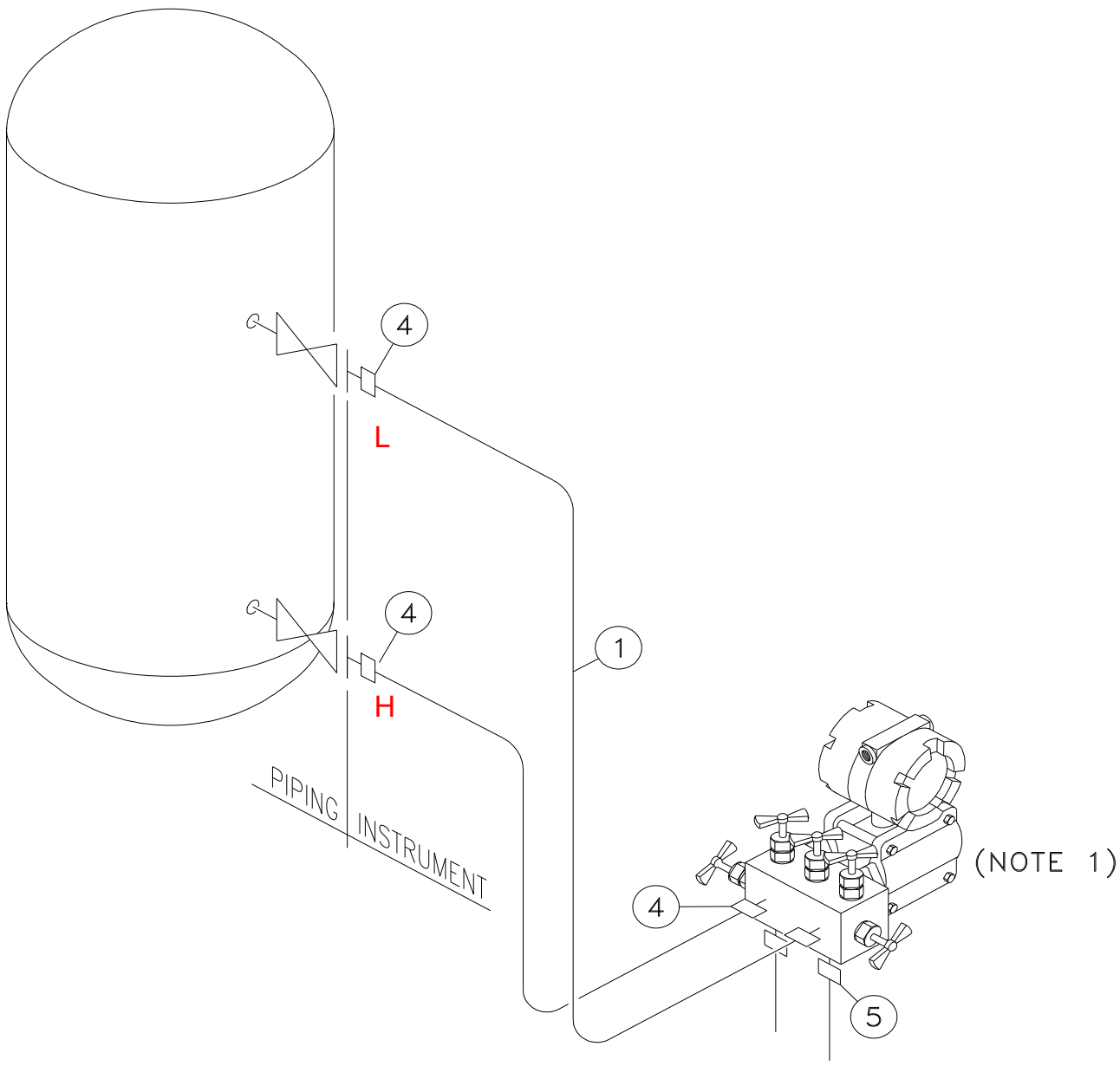
ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	1

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File: 123A90-DDL-IN-HD-40079_Rev.02 - Instrument Electrical Hook-up its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Process Hook-Ups	Sh. 8 of 8 Date: 06/12/2024 Rev. 02

LEVEL TRANSMITTERS - DP Cell Type



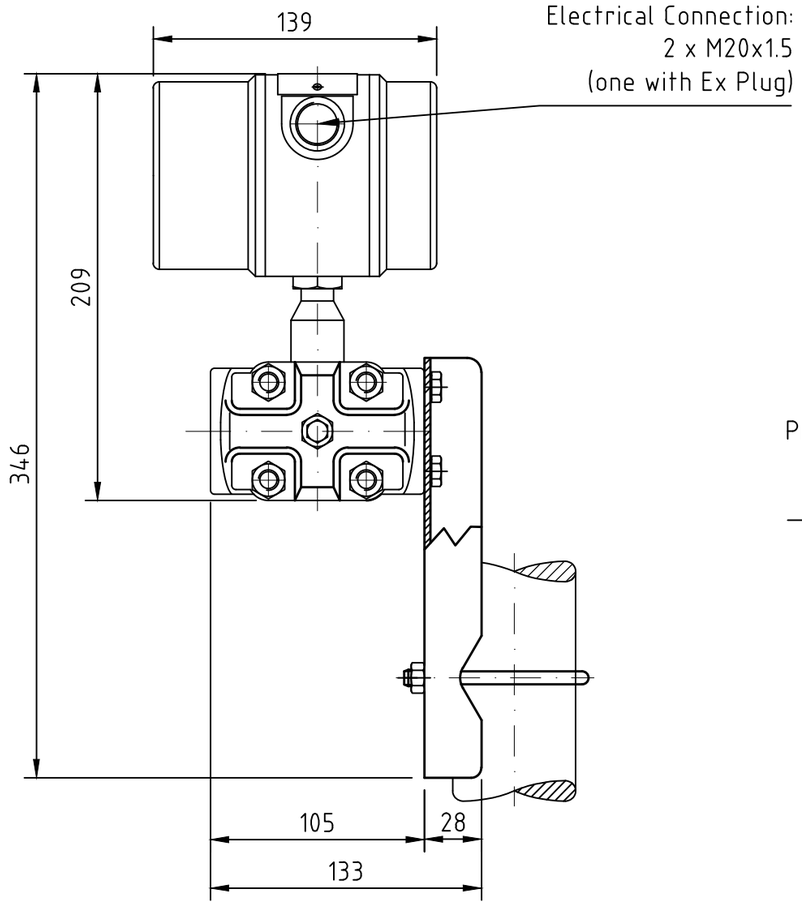
	INSTRUMENT TAG
1	43-LT-001
2	43-LT-003
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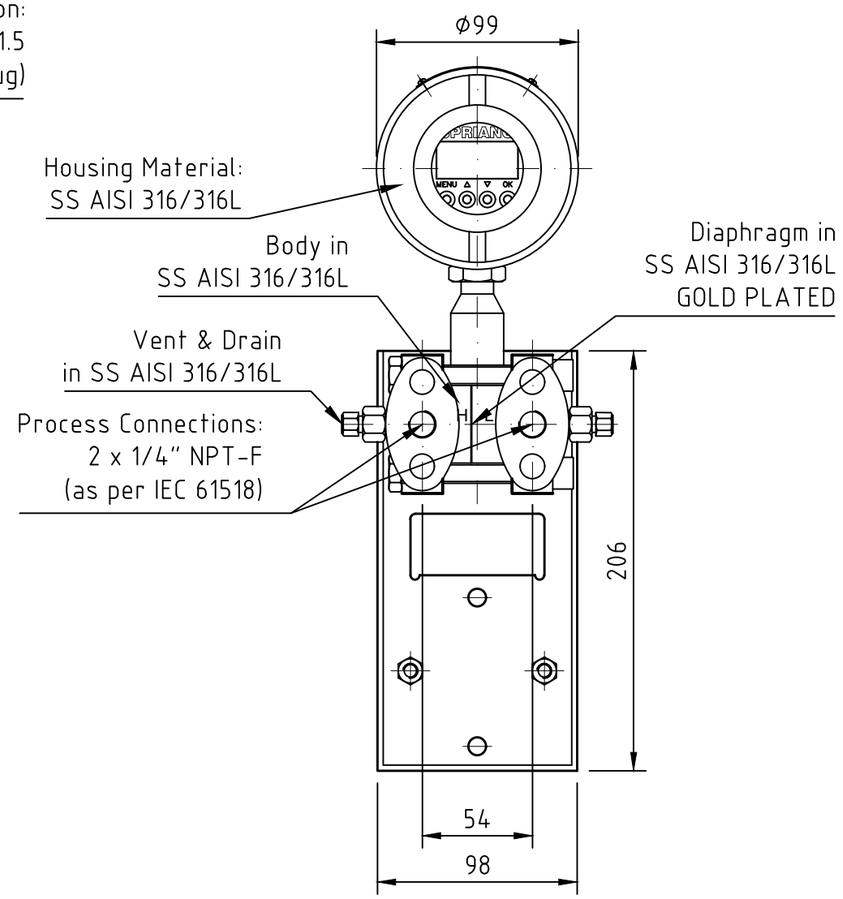
NOTES:
(1) MANIFOLD IS SUPPLIED WITH INSTRUMENT
(2) VENDOR SHALL GUARANTEE THE MATERIAL COUPLING BETWEEN TUBING AND FITTINGS.

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
4		SS316 MALE CONNECTOR	1/2" NPT x 1/2" O.D.	N. 4
1		SS 316L TUBING (NOTE 2)	1/2" x 0,049"Thk	6 m

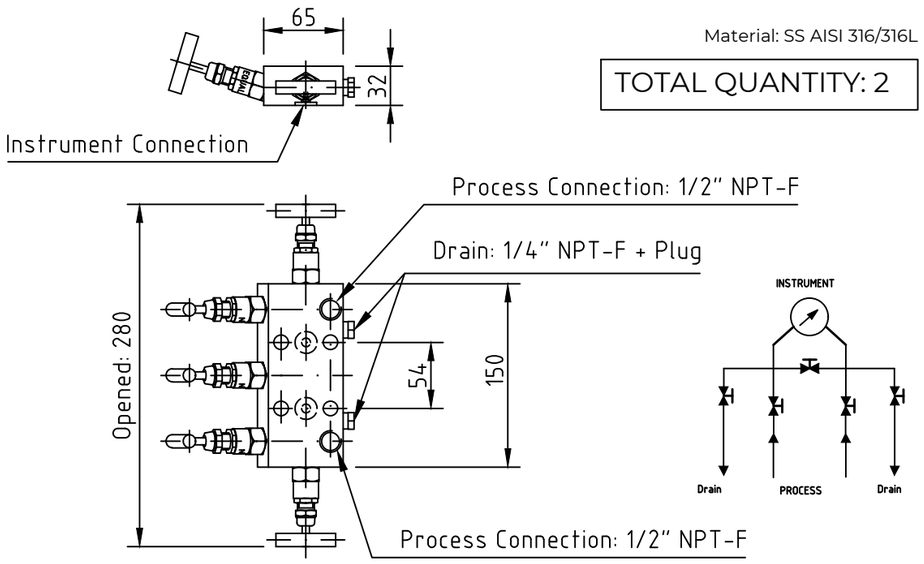
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SST77B DIFFERENTIAL PRESSURE TRANSMITTERS





MAN5-D1 FIVE WAYS AND FIVE VALVES MANIFOLD



TAG LIST

#	TAG	RANGE	CALIBRATION
1	43-LT-001	0 ÷ 350 mbar	0 ÷ 560 mmH_2O
2	43-LT-003	0 ÷ 350 mbar	0 ÷ 1000 mmH_2O

TOTAL QUANTITY: 2

NOTES

SST77B DIFFERENTIAL PRESSURE TRANSMITTERS
SST77B-H-9-D-2-3-0-0-4 + MAN5-D1

H - OUTPUT: 4-20 mA + HART
9 - EXTERNAL PARTS IN SS AISI 316 & DIAPHRAGM IN SS AISI 316 + GOLD PLATING
D - NOMINAL RANGE: 0 ÷ 350 mbar
2 - CALIBRATION: refer to TAG LIST TABLE
3 - OPTIONS: HOUSING MATERIAL STAINLESS STEEL WITH ELECTRICAL CONNECTIONS 2 x M20x1,5 (ONE WITH EXD PLUG)
0 - OPTIONS: WITHOUT
0 - PROCESS CONNECTIONS: STAINLESS STEEL 1/4" NPT-F (TO FIT TO THE MANIFOLD - IEC 61518 STANDARD)
4 - EXPLOSION PROTECTION 2014/34/EU: ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb

to be coupled with:
1. MAN5-D1 FIVE VALVES AND THREE WAYS MANIFOLD IN SS AISI 316/316L, INSTRUMENT CONNECTIONS FLANGED / PROCESS CONNECTION 1/2" NPT-F.

NOTES:
1. OVERALL ACCURACY (COMPREHENSIVE OF HYSTERESIS, NON-LINEARITY, REPEATABILITY) IS WITHIN +/-0,1% FS;
2. ALL ITEMS ARE EQUIPPED WITH SS NAMEPLATE;
3. ALL ITEMS HAVE INGRESS PROTECTION EN 60529: IP66;
4. HOUSING MATERIAL STAINLESS STEEL;
5. FILLING OF ELEMENT IS FORESEEN WITH DOW CORNING SILICONIC OIL;
6. ELECTRICAL CONNECTIONS ARE 2 x M20x1,5 (ONE PLUGGED);
7. MOUNTING BRACKET INCLUDED AS STANDARD;
8. INTEGRAL LCD DISPLAY;
9. STATIC PRESSURE 100 BAR;
10. HART 6;
11. MANIFOLD WITH INSTRUMENT CONNECTIONS FLANGED SUITABLE TO BE CONNECTED TO INSTRUMENT PROCESS CONNECTION 2 x 1/4" NPT-F.

CERTIFICATES

1. ATEX Ex-d CERTIFICATE (2014/34/EU)
2. IP66 GRADE (EN/IEC 60529)
3. MATERIAL 3.1 (EN 10204) & HYDROTEST CERTIFICATES
4. CALIBRATION CERTIFICATES (IEC 60770)

REV	DATE	STATUS	PURPOSE OF ISSUE	PRE'D.	CHC'D.	APP'D.	AUTH'D.
03	18/JULY/24	FOURTH ISSUE	FOR CONSTRUCTION	M. Sanna	G. Arcuri	G. Olivieri	S. Valletta
02	02/JULY/24	THIRD ISSUE	FOR CONSTRUCTION	M. Sanna	G. Arcuri	G. Olivieri	S. Valletta
01	13/JUN/24	SECOND ISSUE	FOR CONSTRUCTION	M. Sanna	G. Arcuri	G. Olivieri	S. Valletta
00	24/MAY/24	FIRST ISSUE	FOR APPROVAL	M. Sanna	G. Arcuri	G. Olivieri	S. Valletta

CROSSWIND ROSETTI MARINO

P.O. No.: 24/01611/PO | Mod_CAR_Rev17-01 | SCALE – 1:3

TERRANOVA
SPIRIANO York.com MEC-REL

TERRANOVA SRL

DRAWING TITLE: DIMENSIONAL DRAWINGS

JOB:	4718_OS	SHEET No.	3 OF 10	REV. 03

GENERAL	1	Tag Number					43-LT-001		
	2	Service					HYDROGEN VENT KO DRUM (V-43001)		
	3	P&ID Number					123A90-DDL-PR-PID-80029		
	4	Equipment Number		Line Number			V-43001	-	
	5	Area Classification					ATEX Zone2 - IIC (IIB+H2) T1		
	6	Mounting					REMOTE		
PROCESS CONDITIONS	7	Fluid		State			WATER	LIQUID	
	8	Pressure	Unit	Min.	Oper.	Max.		Atm (op.)	
	9	Temperature	Unit	Min.	Oper.	Max.		Amb. (op)	
	10	Design Pressure		Min.		Max.	3.5 barg		
	11	Design Temperature		Min.		Max.	-10 / + 80 °C		
	12	Lower Oper. S.G.		Lower Oper. Visc.			1	1 cP	
	13	Vacuum		Over Pressure			-		
	14	Ambient Temperature					Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.		
TRANSMITTER	15	Application					LEVEL MEASUREMENT		
	16	Type					Diaphragm		
	17	ATEX Certification		Ingress Protection			ATEX Ex II 2G Ex db IIC T5	IP66	
	18	Housing		Paint			SS AISI 316/316L	N/A	
	19	Power Supply					24 Vdc		
	20	Process Connection		Electrical Connection			2 x 1/4” NPT-F	2 x M20x1.5	
	21	Accuracy					0.07% of Nominal Range		
	22	Max. Static Pressure		Element Material			100 bar	SS AISI 316/316L Gold Plated	
	23	Fill Fluid					Dow Corning Siliconic Oil		
	24	Instrument Range		Min.		Max.	0 mbar	350 mbar	
	25	Calibration Range		Min.		Max.	0 mmH_2O	560 mmH_2O	
	26	Elevation		Suppression			-	-	
	27	Allow. Oper. Pressure		Allow. Oper. Temp.			Static Pressure 100 bar	85 °C	
	28	SIL Certification		PED Certification			-	Required	
DIAPHRAGM SEAL	29	Process Conn. & Rating		Diaphragm Material			-	-	
	30	Capillary Material		Fill Fluid			-	-	
	31	Housing Material		Allow.Oper.Temp.			-	-	
COMMUNICATION AND SOFTWARE	32	Communication Type		Signal Type			HART 6	4-20mA Loop Powered 24 Vdc	
	33	DD Revision		CFF Revision			-	-	
	34	Hart Descriptor		Hart Tag			-	-	
	35	Internal Diagnostics		Capacitance			-	-	
	36	Segment		Device Address			-	-	
	37	Device Class		Simulate			-	-	
	38	Nominal Current		Operating Voltage			-	-	
OPTIONS	39	Manifold Supplied		Manifold Rating			Required (5-valves)	6000 psi	
	40	Process Connection		Manifold Model			1/2" NPT-F	MAN5-D1	
	41	Integral Meter		Scale			Required	-	
	42	Lightning Protection		Hydrostatic Testing			-	Required	
	43	Mounting Brackets					Required		
	44	Barrier - Manufacturer / Model					-		
PURCHASE	45	Manufacturer					TERRANOVA SRL		
	46	Model					SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		
	47	Purchase Order Number					4718_OS		

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Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-ZSL-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSL-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSL-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSL-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSL-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSL-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
43-FE-001A	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6...T1 Gb		N/A	True	N/A	True	
43-FE-001B	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6...T1 Gb		N/A	True	N/A	True	
43-FT-001	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		XGF868i-2-2-OI-H7-3-4-0-CC		17ATEX1304X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	II 2G Ex db IIC T6 Gb		N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
43-LT-001	KO DRUM V-43001 high/low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240632	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-LT-003	H2 vent Q-43004 low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240633	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-PT-001	KO DRUM V-43001 pressure	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240650	SST76-H-7-G-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_7 HAZARDOUS-AREA_3
50-AT-020A	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020B	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020C	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-021A	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021B	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021C	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-HS-001	Emergency push button	LOWER DECK	1724000448	PSC	E2S	-	BExCP3CBGSSNAP2A1RN24 E4K7RS820R	Safe Area	Sira 09ATEX3286X	-	II 2 GD Ex db eb mb IIC T4 Gb Ta = (-40°C to +65°C) Ex tb IIIC T75oC Db Ta = (-40°C to +65°C)	-	A-5000	True	N/A	True	
50-HS-020	Emergency push button	LOWER DECK	1724000448	PSC	STAHL	-	8040/11	Safe Area	PTB 01 ATEX 1105	-	II 2 G Ex db eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-5000	True	N/A	False	
50-PSV-006	Pressure Safety Valve for P-5001A	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PSV-007	Pressure Safety Valve for P-5001B	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PT-001	Sea water from pump P-50001A	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240660	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-002	Sea water from pump P-50001B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240661	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-014	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240651	SST76-H-7-K-2-0-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-XV-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-003	Sea water from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-004	Sea water recirculation from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-005	Drain Water discharge to Caisson	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XY-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	
50-XY-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	

Technická inšpekcia, a.s.

Trnavská cesta 56, 821 01 Bratislava
Slovenská republika

[1] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective System Intended for use in potentially explosive atmospheres
Directive 2014/34/EU

[3] Supplementary EU-Type Examination Certificate Number:

TI17ATEX 304 X / 1

[4] Product:

SPRIANO® Electronic transmitter series SST7X
Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator)

[5] Manufacturer: **TERRANOVA S.r.l.**

[6] Address: **Via Gramsci, 1, 26827 – Terranova dei Passerini (LO), Italy**

[7] This supplementary certificate extends EU – Type Examination Certificate No. TI17ATEX 304 X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

[8] Technická inšpekcia, a.s., Notified Body Number 1354 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that the product, as modified by this supplementary certificate, has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

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Bratislava, March 08th, 2021

Ing. Dušan Perniš
General Director

NB 1354

[13] **Schedule**

[14] **Supplementary EU-Type Examination Certificate Number: TI17ATEX 304 X / 1**

[15] Description of the variation to the product:

The subject of this supplementary certificate is extension of product SPRIANO® Electronic transmitter series SST7X, Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator), which has protection mode "Ex-db" certified by certificate TI17ATEX304X, to the protection mode "Ex-ia" certified by certificate TI17ATEX305X.
Electronic inside the Series SST7X has been used the same as the SST5X described into TI17ATEX305X certificate.
Housing materials to be used Anticorodal Aluminum or Stainless Steel according previous certificates.
New Variation to the product are:

		With Aluminum housing	
		Without safety barrier	
Ex	II 1/2 G	Ex db IIC T6 Ga/Gb	-40°C<Tamb<+60°C
		Ex db IIB T5 Ga/Gb	-40°C<Tamb<+80°C
		or	
		With safety barrier	
Ex	II 1/2 G	Ex ia IIC T6, T5, T4 Ga	-40°C<Tamb<+40°C / +55°C / +80°C
		With SS AISI 316 housing	
		Without safety barrier	
Ex	II 1/2 G	Ex db IIC T6 Ga/Gb	-40°C<Tamb<+60°C
		Ex db IIB T5 Ga/Gb	-40°C<Tamb<+80°C
		or	
		With safety barrier	
Ex	II 1 G	Ex ia IIC T6, T5, T4 Ga	-40°C<Tamb<+40°C / +55°C / +80°C

Basic description of product:

The Transmitters series electronic SST7X measure pressure, level or temperature of liquids, gases and vapors and transmit a current signal 4-20mA + HART®.
According to the process connection, the series SST7X is constituted by the following models, they can be identified by the code following the series name:

SST70	Displacer level transmitter
SST71	Float level transmitter
SST72	Temperature transmitter
SST75	Relative or absolute pressure transmitter with incorporate separating diaphragm (ceramic)
SST76	Relative or absolute pressure transmitter with incorporate separating diaphragm (piezo)
SST77B	Differential pressure transmitter
SST77BL	Pressure transmitter for level measure
SST79B	Submersible level transmitter
SST70-REM	Field digital indicator

CSTA3-128

TERRANOVA® SPRIANO TELCOM MEC-RELA

G. Luca Mergazzoli
W
Director

Model SST70: The transmitter is isolated from the process via a mechanical system to the torsion tube and also the measuring cell presents a separation membrane filled with inert fluid.
Model SST71: The transmitter is isolated from the process via a tube containing reed switches.
Model SST72: The transmitter is isolated from the process via a tube containing sensors PT100.
Models SST75, SST76, SST77B and SST77BL: The transmitter is isolated from the process by membrane separation metal filled with inert fluid.
Model SST79 (version with remote sensor): The remote transmitter is isolated from the process by separation membranes metal filled with inert fluid. It is connected to the housing means shielded cable with 5 wires soldered.
Model SST70-REM (Loop powered field digital indicator): The indicator has no element part but only it is connected via current loop for displaying the desired variable.

Product with variation of Exdb protection:

The instruments are suitable for gas group IIC or IIB depending by the Ambient Temperature and they have the type of protection "Ex db".
Temperature: -40 ° C ≤Tamb≤ + 60 ° C (or -40 ° C ≤Tamb≤ + 80 ° C)
In the case where the process temperatures are higher than the maximum ambient temperature (or below the minimum ambient temperature), the instrument is installed with a suitable finned arm that can dissipate the temperature in excess and ensure the installation inside the ambient temperature range specified by the manufacturer.
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a body of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made in Anticorodal Aluminum or Stainless Steel AISI 304 / 316 (Thickness of coating <0.15mm) while the door is tempered-glass glued to the lid with a silicone seal.

Electrical characteristics:

Supply voltage	≤ 30 VDC
Output signal	4 ÷ 20 mA + HART®
Maximum power transferred	0,75 W
ATEX category	II 1/2 G
Protection mode	Ex db IIC T6 Ga/Gb with Tamb [- 40°C, +60°C] Ex db IIB T5 Ga/Gb with Tamb [- 40°C, +80°C]
IP Code	IP 66
The power cables must be at least 22 AWG (0.34mm2 section section - 0.64mm2), suitable for an operating temperature ≥ 90 ° C for Tamb ≥ 70 ° C.	

The marking of the product shall include the following:

⟨Ex⟩ II 1/2 G Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C

Product with variation of Exia protection:

The instruments are suitable for gas group IIC and have the type of protection "Ex i".
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a body of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made of stainless steel or aluminum having a content Mg of less than 6% (coating thickness <0.15mm) while the door can be static plastic, 5 mm thick (glue Araldite 2021) or sodalime tempered glass, 5 mm thick (glue Araldite 2011).

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Electrical characteristics:

Parameter	Tamb<60°C	Tamb<80°C
Maximum voltage input **Ui**	30 V	25.2 V
Maximum current input **Ii**	100 mA	100 mA
Power maximum input **Pi**	0.75 W	0.62 W
Maximum capacity Internal	10 nF	10 nF
Maximum Internal Inductance	0.2 mH	0.2 mH
Output signal	4 ÷ 20 mA + HART®	
Degree of protection	IP 66 for Aluminum housing IP67 for SS AISI 316 housing	

The marking of the product shall include the following:

II 1/2G Ex ia IIC T6, T5, T4 Ga/Gb **-40°C ≤ Tamb ≤ 40°C (T6)** **-40°C ≤ Tamb ≤ 55°C (T5)** **-40°C ≤ Tamb ≤ 80°C (T4)** **For Aluminum housing**	**1G Ex ia IIC T6, T5, T4 Ga** **-40°C ≤ Tamb ≤ 40°C (T6)** **-40°C ≤ Tamb ≤ 55°C (T5)** **-40°C ≤ Tamb ≤ 80°C (T4)** **For SS AISI 316 housing**

[16] Report Number:
Inspection report No: 54/5/2021
Final Test Report No: 54/5/2021

[17] Specific Conditions of Use:

Product with variation of Exdb protection:

Ambient temperature:
Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C
In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

Entries for flameproof enclosure:
The accessories used for cable entry into the housing (which must be treated ½ "NPT or M20x1.5) must comply with the standards EN 60079-0 and EN 60079-1.
The entrance hole leads not used should be closed with the cap conforms to EN 60079-1.

Warning marking:
- "WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT"

Informative marking:
- "SEE INSTALLATION INSTRUCTION DOCUMENT".

Product with variation of Exia protection:

Ambient temperature:

-40°C ÷ +40°C	For Class T6
-40°C ÷ +55°C	For Class T5
-40°C ÷ +80°C	For Class T4

In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable

spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

[18] Essential Health and Safety Requirements:
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.
Additional information: None.

[19] Drawings and Documents:

Number	Sheet	Issue	Date	Description
DTP-SST7X	4pgs	REV No.21.02	12/02/2021	List of drawings and Documents SPRIANO ® Electronic Switches SST7X By TERRANOVA ®
TI17ATEX305X	3 pgs	-	13/03/2017	EU –Type Examination Certificate (Exia)

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TECHNICKÁ INŠPEKCIA • SLOVENSKÁ REPUBLIKA • TI NB 1354 -5-

Bratislava, March 08th, 2021

Ing. Dušan Perniš
General Director

TERRANOVA® SPRIANO Tylcom MEC-RELA

G. Luca Vergazzoli
W
...E...ctor

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SLOVENSKÁ REPUBLIKA

CEOC INTERNATIONAL

[1] EU-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective System Intended for use in potentially explosive atmospheres
Directive 2014/34/EU

[3] EU-Type Examination Certificate Number:

TI17ATEX 304 X

[4] Product:

SPRIANO® Electronic transmitter series SST7X
Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator)

[5] Manufacturer: **TERRANOVA S.r.l.**

[6] Address: **Via Gramsci, 1, 26827 – Terranova dei Passerini (LO), Italy**

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] Technická inšpekcia, a.s., Notified Body Number 1354 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of product intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in confidential report No. 304/5/2017.

[9] Compliance with the Essential Health and safety Requirements has been assured by compliance with: **EN 60079-0:2012+A11:2013, EN 60079-1:2014**
except in respect of those requirements listed at item 18 of the Schedule.

[10] If the sign "X" is placed after the certificate number, it indicate that the product is subject to the Specific conditions of Use specified in the schedule to this certificate.

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of this Directive apply to the manufacturing process and supply of this product.

[12] The marking of the product shall include the following:

Ex II 1/2 G Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C

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Bratislava, March 13th, 2017

Ing. Dušan Perniš
General Director

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NB 1354

[13] **Schedule**

[14] **EU-Type Examination Certificate Number: TI17ATEX 304 X**

[15] Description of product:
The Transmitters series electronic SST7X measure pressure, level or temperature of liquids, gases and vapors and transmit a current signal 4-20mA.
The instruments are suitable for gas group IIC and have the type of protection "Ex db".
Temperature: -40 ° C ≤Tambs≤ + 60 ° C (or -40 ° C ≤Tambs≤ + 80 ° C)
In the case where the process temperatures are higher than the maximum ambient temperature (or below the minimum ambient temperature), the appliance is installed with a suitable spacer can dissipate the temperature in excess and ensure the installation inside the ambient temperature range specified by the manufacturer.
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a bodice of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made in anticorodal aluminum or stainless steel AISI 304 (Thickness of coating <0.15mm) while the door is tempered-glass glued to the lid with a silicone seal.

According to the process connection, the series SST7 is formed by the following models, they can be identified by the code following the series name:

SST70	Displacer level transmitter
SST71	Float level transmitter
SST72	Temperature transmitter
SST75	Relative or absolute pressure transmitter with incorporate separating diaphragm (ceramic)
SST76	Relative or absolute pressure transmitter with incorporate separating diaphragm (piezo)
SST77B	Differential pressure transmitter
SST77BL	Pressure transmitter for level measure
SST79B	Submersible level transmitter
SST70-REM	Field digital indicator

Model SST70: The transmitter is isolated from the process via a mechanical system to the torsion tube and also the measuring cell presents a separation membrane filled with inert fluid.

Model SST71: The transmitter is isolated from the process via a tube containing reed switches.

Model SST72: The transmitter is isolated from the process via a tube containing sensors PT100.

Models SST75, SST76, SST77B and SST77BL: The transmitter is isolated from the process by membrane separation metal filled with inert fluid.

Model SST79 (version with remote sensor): The remote transmitter is isolated from the process by separation membranes metal filled with inert fluid. It is connected to the housing means shielded cable with 5 wires soldered.

Model SST70-REM (Loop powered field digital indicator): The indicator has no element part but only it is connected via current loop for displaying the desired variable.

Electrical characteristics:

Supply voltage	≤ 30 VDC
Output signal	4 ÷ 20 mA
Maximum power transferred	0,75 W
ATEX category	1/2 G
Protection mode	Ex db IIC T6 Ga/Gb with Tamb [- 40°C, +60°C] Ex db IIB T5 Ga/Gb with Tamb [- 40°C, +80°C]
IP Code	IP 66
The power cables must be at least 22 AWG (0.34mm2 section section - 0.64mm2), suitable for an operating temperature ≥ 90 ° C for Tamb ≥ 70 ° C.	

[16] Report Number:
Inspection report No: 304/5/2017
Final Test Report No: 304/5/2017

[17] Specific Conditions of Use:

Ambient temperature:

Ex db IIC T6 Ga/Gb	-40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb	-40°C ≤ Tamb ≤ 80°C

In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

Entries for flameproof enclosure:
The accessories used for cable entry into the housing (which must be treated ½ "NPT) must comply with the standards EN 60079-0 and EN 60079-1.
The entrance hole leads not used should be closed with the cap conforms to EN 60079-1.

Warning marking:
- "WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT"

Informative marking:
- "SEE INSTALLATION INSTRUCTION DOCUMENT".

[18] Essential Health and Safety Requirements:
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.
Additional information: None.

[19] Drawings and Documents:

Number	Sheet	Issue	Date	Description
DTP-SST7X	3pgs	REV No.17.01	31/01/2017	List of drawings and Documents SPRIANO® Electronic Switches SST7X

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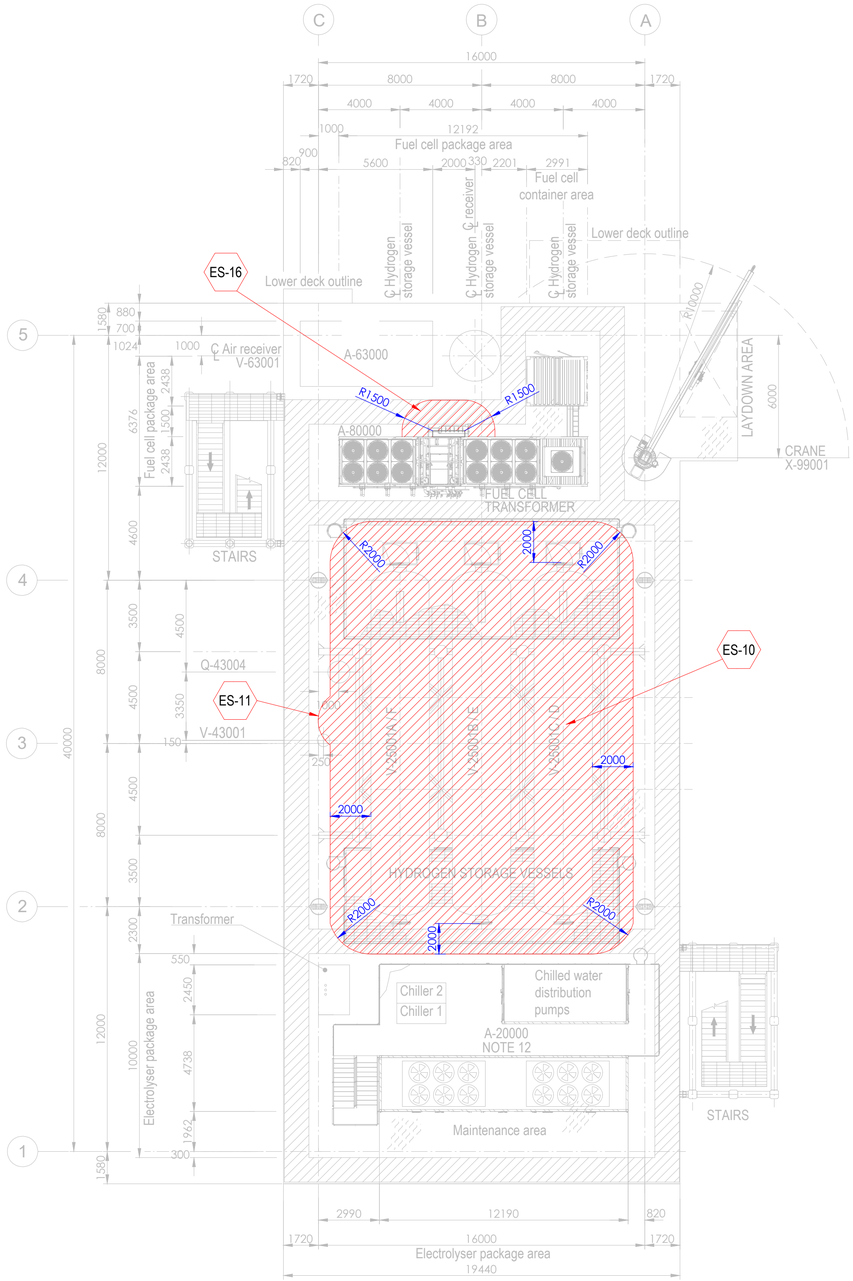
Bratislava, March 13th, 2017

Ing. Dušan Perniš
General Director

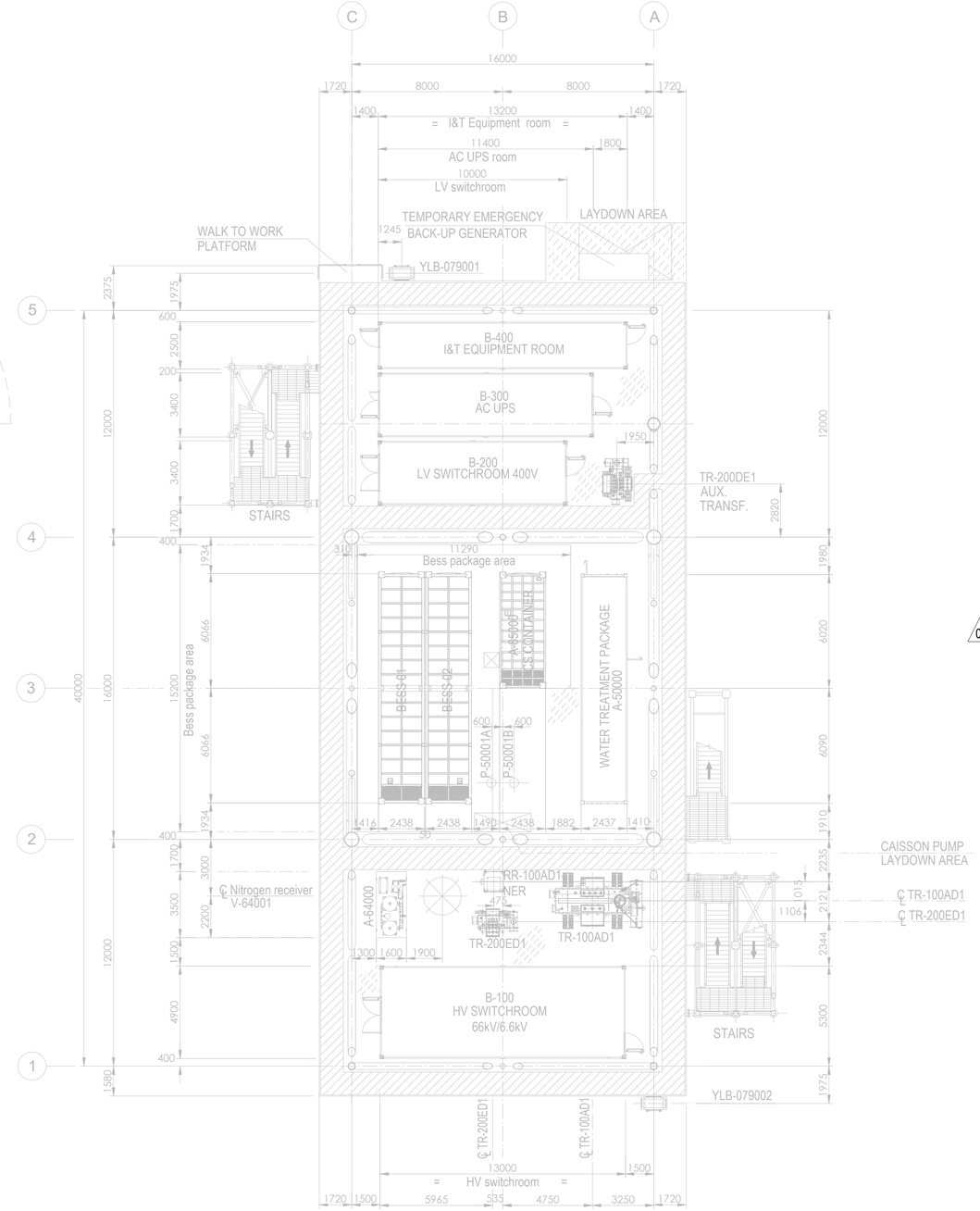
CSTA3-128

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



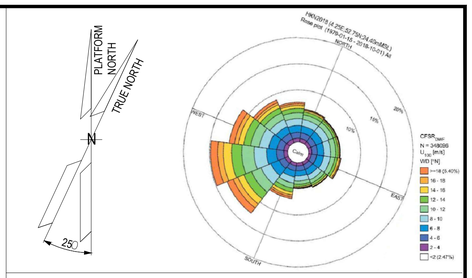
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

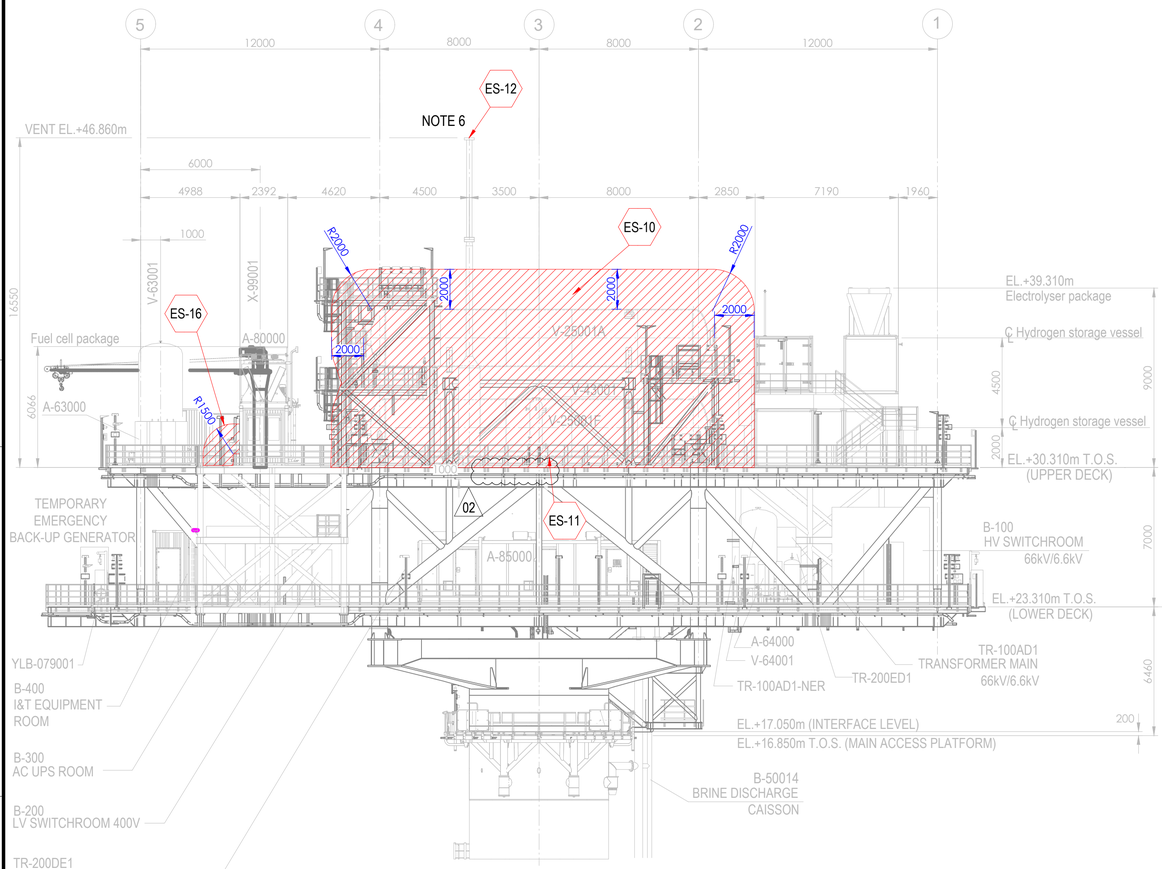
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DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

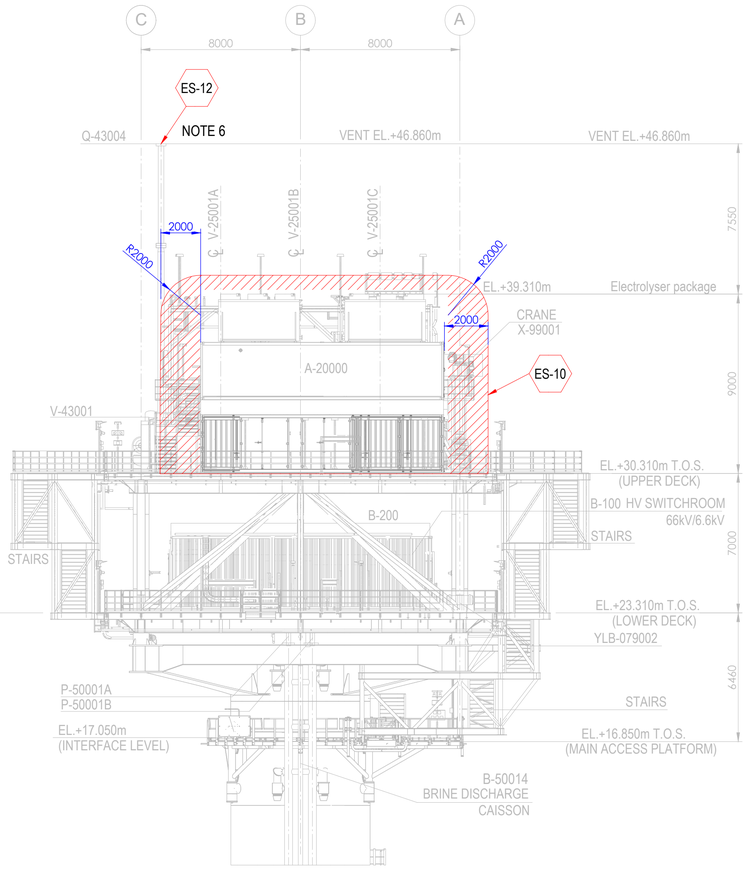
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

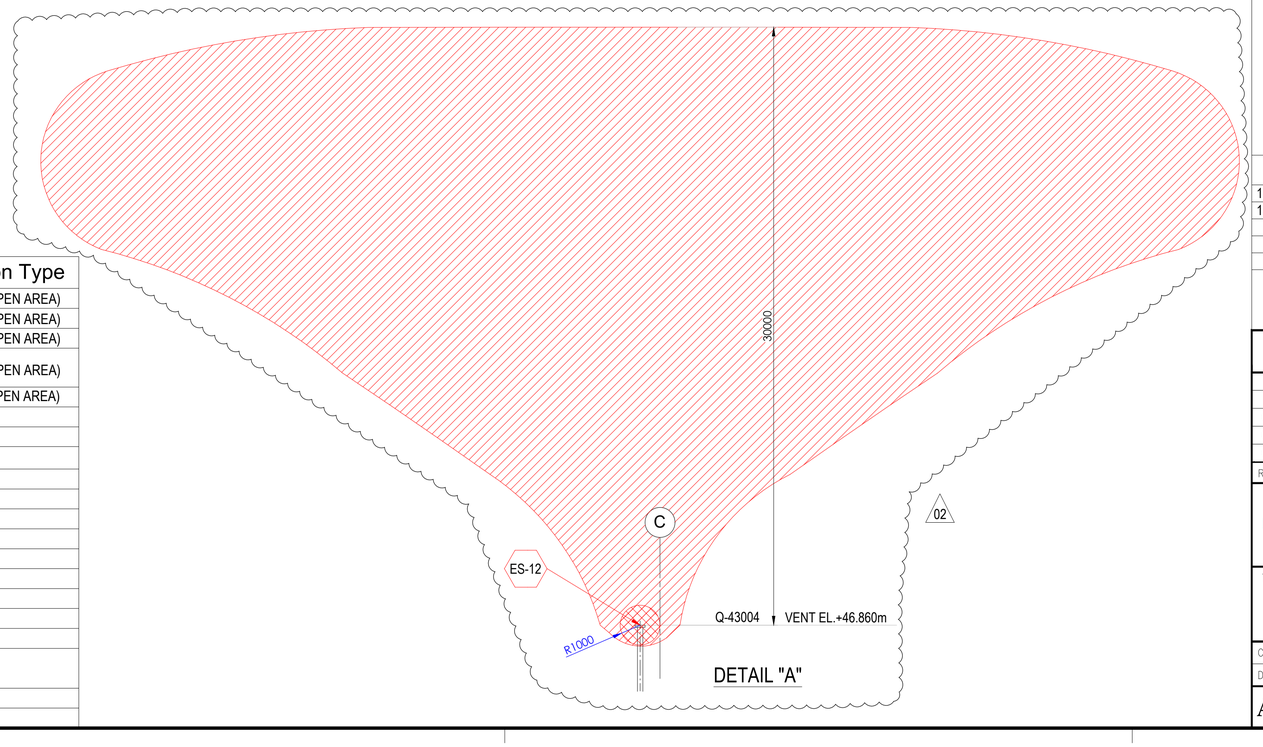


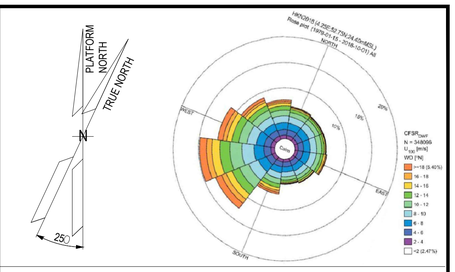
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	43-LT-003	: Level DP Transmitter - H2 Vent Q-43004 Low Level	Dwg	123A90-DDL-PR-PID-80029		
	S/Sys	43-00	: Hydrogen Vent Header & Drum System	Module	UD		
TASK	code	C10000899	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01

Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		SE240633			
Manufacturer	Terranova Srl			**Model**		SST77B-H-9-D-2-3-0-0-4 + MAN5-D1			
Cert No.	TI17ATEX304X_TI17ATEX304X/1			**Equipment Ambient Temp.**		-40°C to +60°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex d	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66/67

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		OK	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	OK	

ITEM	Tag	43-LT-003	: Level DP Transmitter - H2 Vent Q-43004 Low Level			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10000899		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	PL	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	OK	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	43-LT-003	: Level DP Transmitter - H2 Vent Q-43004 Low Level		Dwg	123A90-DDL-PR-PID-80029	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10000899	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

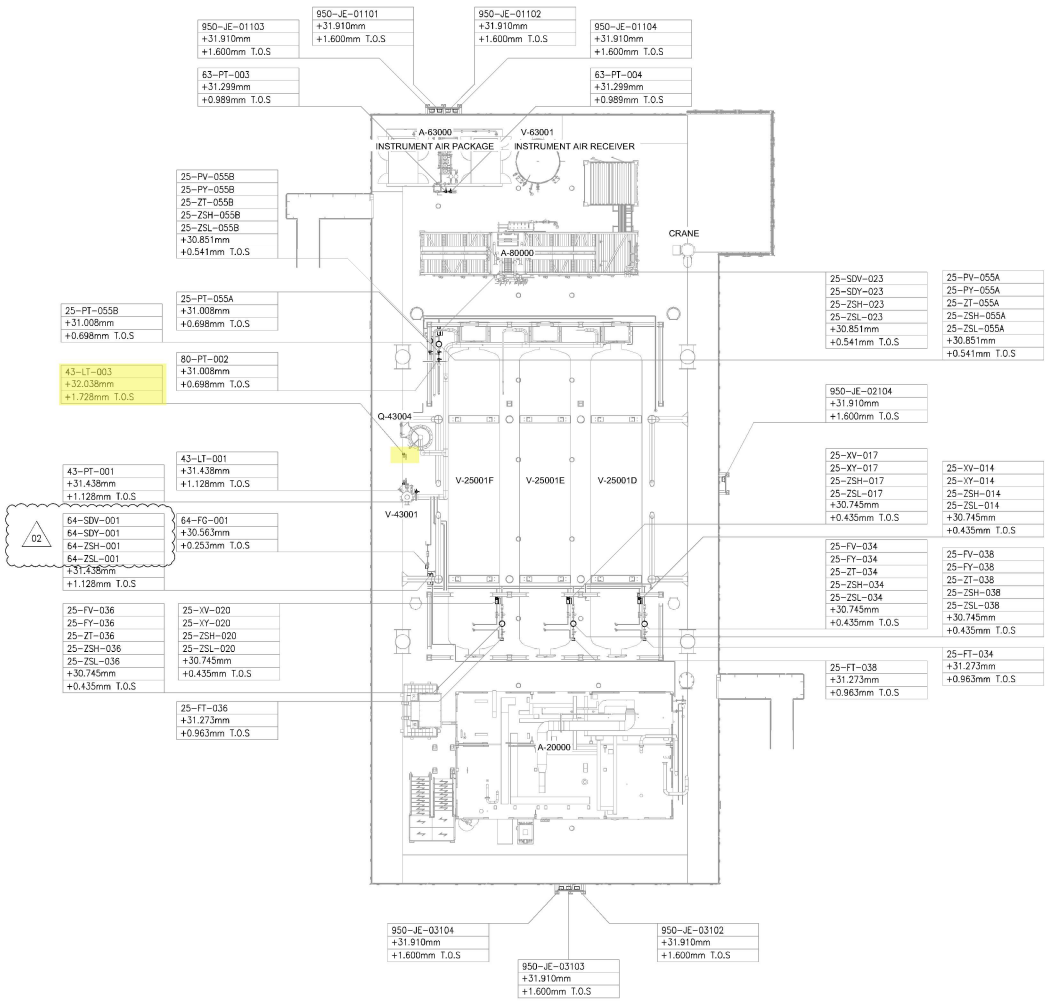
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-05	2025-02-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T14:29:33.351Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-06T08:14:59.283Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

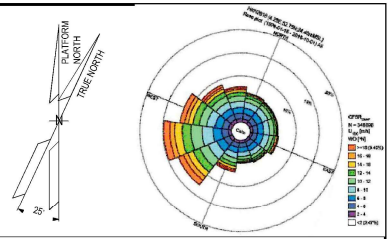
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. DRAWING_NO.

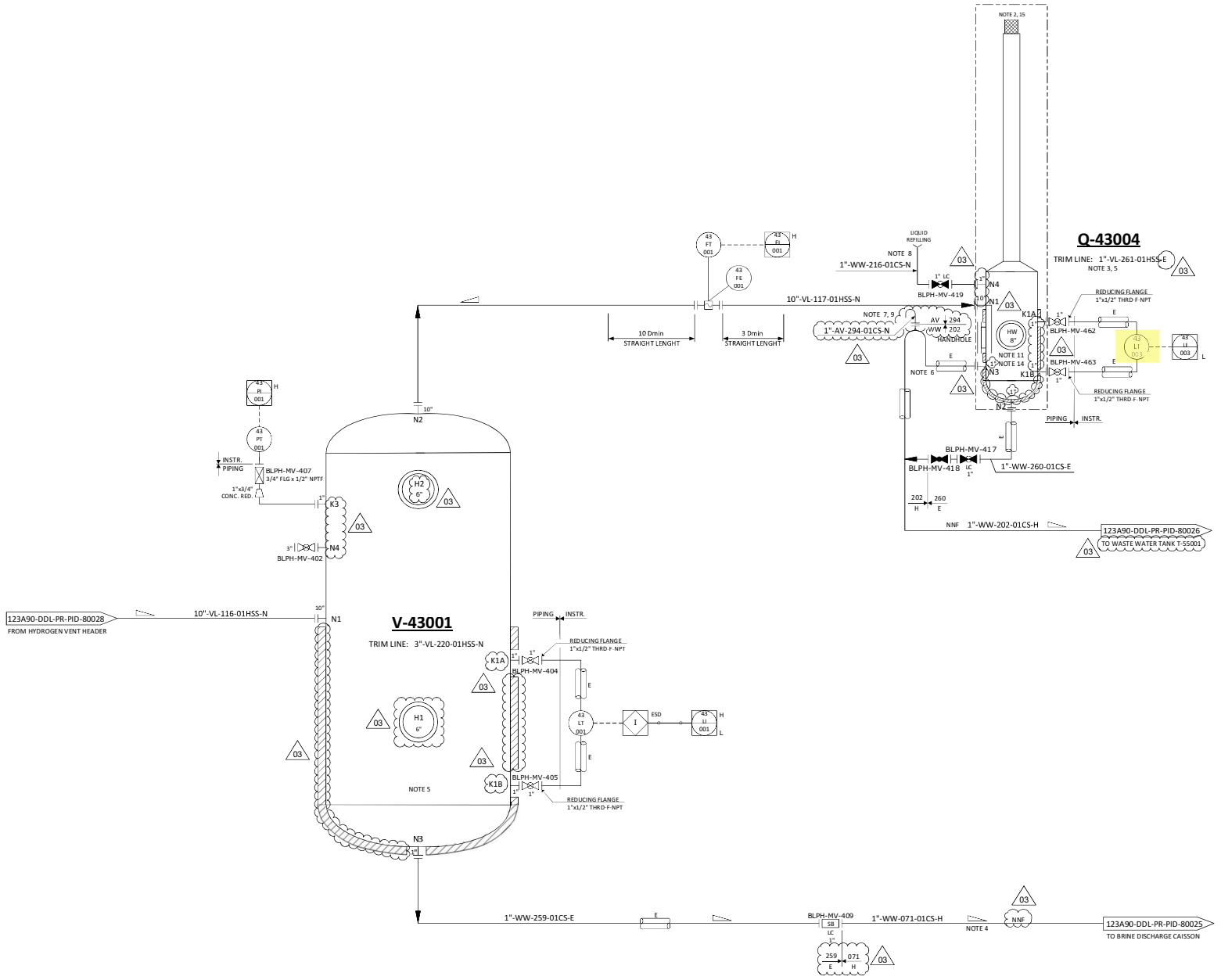
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	NTS
DRAWN	CHECKED	APPROVED		DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80029			SHEET 001	REV. 03

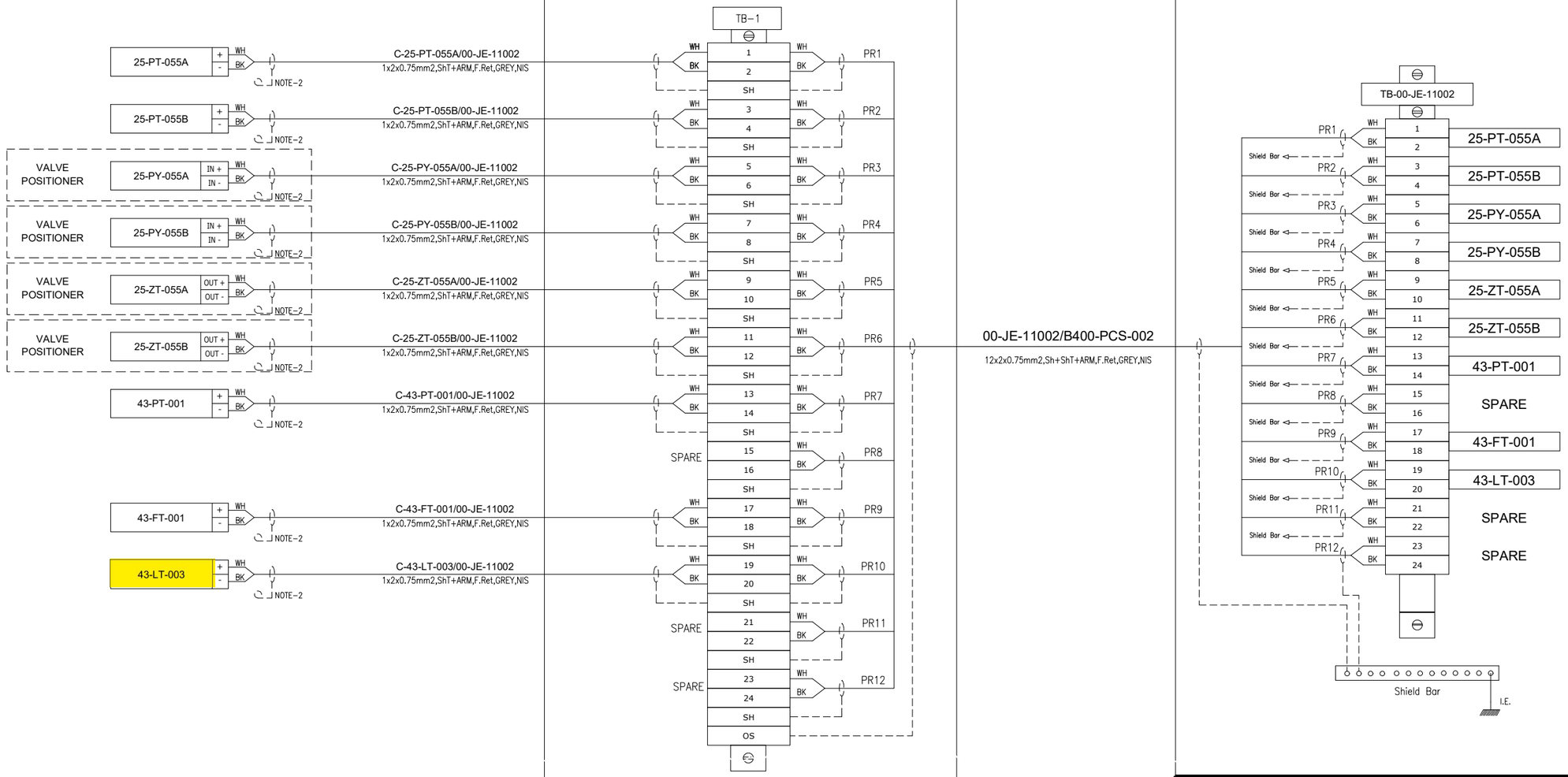
File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11002	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

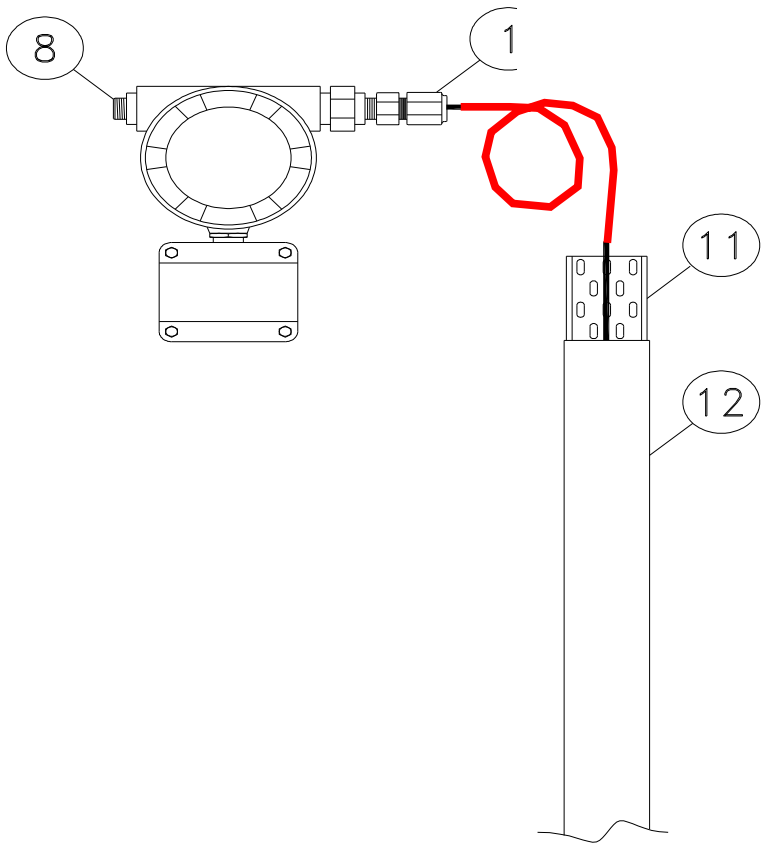
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11002–SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123–A90–DDL–40015	SHEET 006	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 10 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR LEVEL TRANSMITTERS (DP TYPE C/W DIAPHRAGM SEAL)



INSTRUMENT TAG	
1	43-LT-003
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

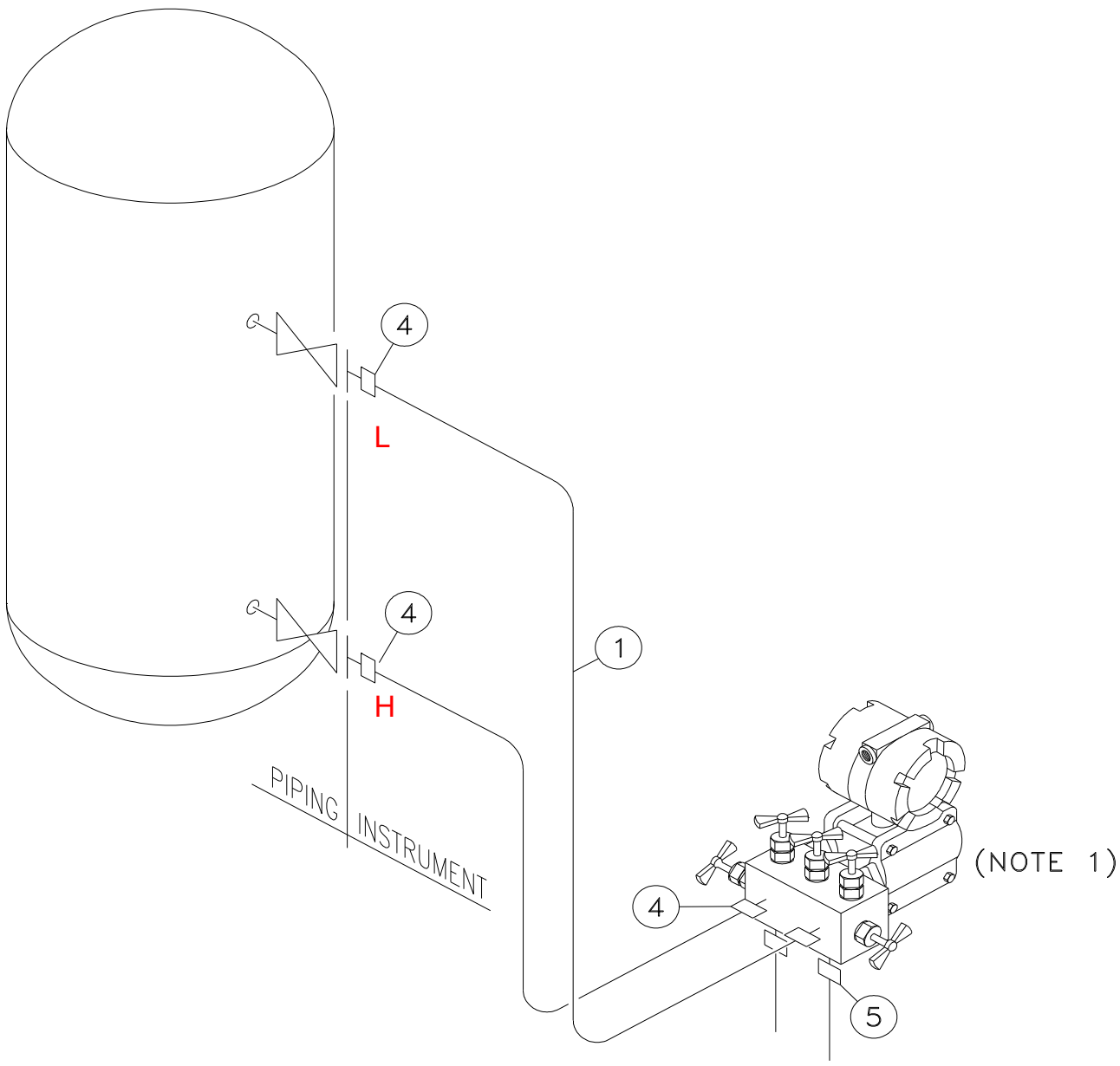
ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	1

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Process Hook-Ups	Sh. 8 of 8 Date: 06/12/2024 Rev. 02

LEVEL TRANSMITTERS - DP Cell Type



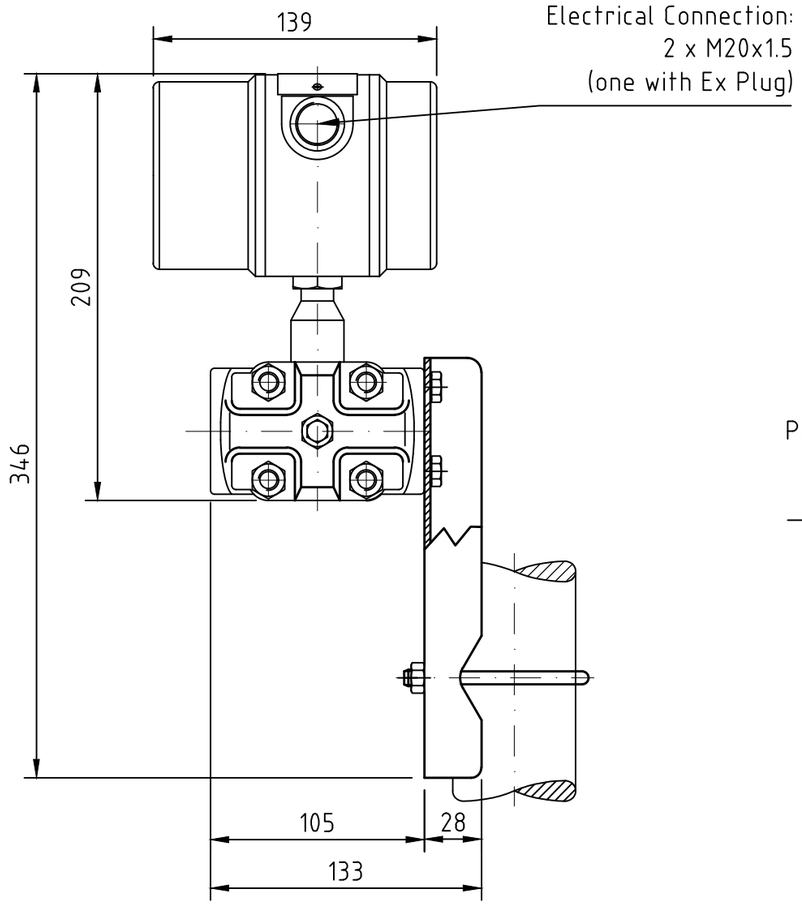
INSTRUMENT TAG	
1	43-LT-001
2	43-LT-003
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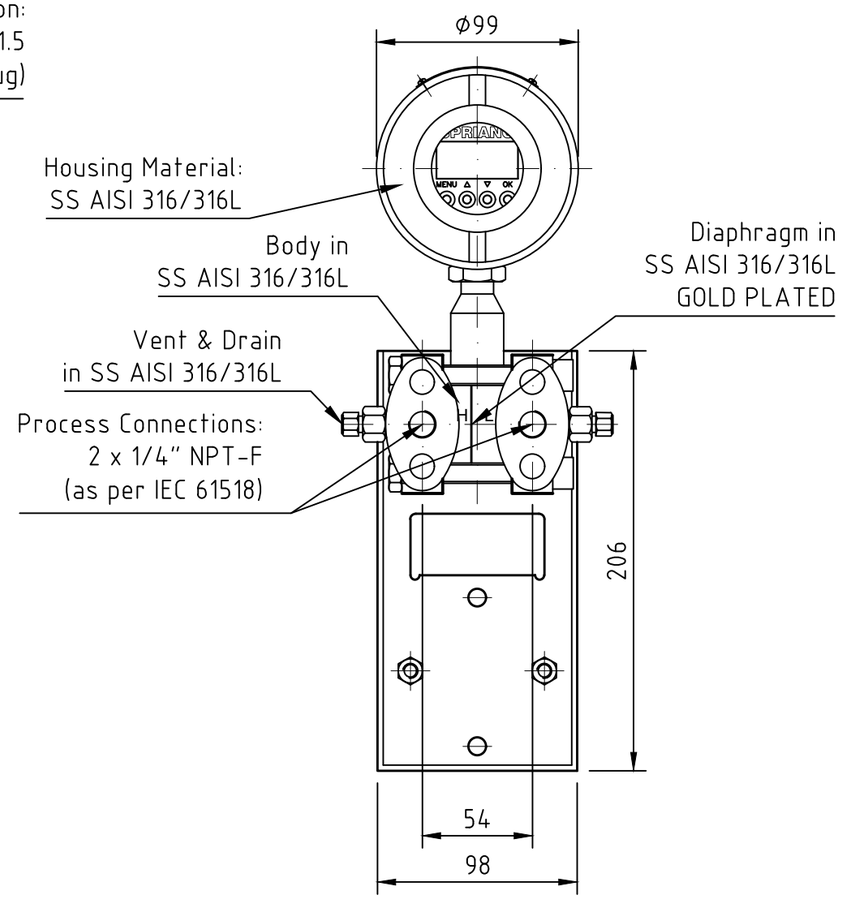
NOTES:
(1) MANIFOLD IS SUPPLIED WITH INSTRUMENT
(2) VENDOR SHALL GUARANTEE THE MATERIAL COUPLING BETWEEN TUBING AND FITTINGS.

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
4		SS316 MALE CONNECTOR	1/2" NPT x 1/2" O.D.	N. 4
1		SS 316L TUBING (NOTE 2)	1/2" x 0,049"Thk	6 m

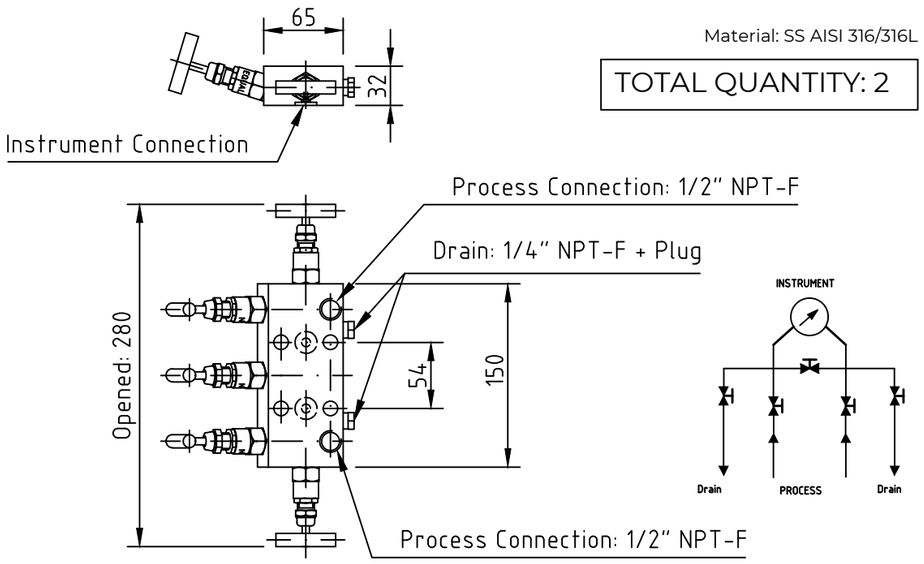
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SST77B DIFFERENTIAL PRESSURE TRANSMITTERS





MAN5-D1 FIVE WAYS AND FIVE VALVES MANIFOLD



TAG LIST

#	TAG	RANGE	CALIBRATION
1	43-LT-001	0 ÷ 350 mbar	0 ÷ 560 mmH_2O
2	43-LT-003	0 ÷ 350 mbar	0 ÷ 1000 mmH_2O

TOTAL QUANTITY: 2

NOTES

SST77B DIFFERENTIAL PRESSURE TRANSMITTERS
SST77B-H-9-D-2-3-0-0-4 + MAN5-D1

H - OUTPUT: 4-20 mA + HART
9 - EXTERNAL PARTS IN SS AISI 316 & DIAPHRAGM IN SS AISI 316 + GOLD PLATING
D - NOMINAL RANGE: 0 ÷ 350 mbar
2 - CALIBRATION: refer to TAG LIST TABLE
3 - OPTIONS: HOUSING MATERIAL STAINLESS STEEL WITH ELECTRICAL CONNECTIONS 2 x M20x1,5 (ONE WITH EXD PLUG)
0 - OPTIONS: WITHOUT
0 - PROCESS CONNECTIONS: STAINLESS STEEL 1/4" NPT-F (TO FIT TO THE MANIFOLD - IEC 61518 STANDARD)
4 - EXPLOSION PROTECTION 2014/34/EU: ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb

to be coupled with:
1. MAN5-D1 FIVE VALVES AND THREE WAYS MANIFOLD IN SS AISI 316/316L, INSTRUMENT CONNECTIONS FLANGED / PROCESS CONNECTION 1/2" NPT-F.

NOTES:
1. OVERALL ACCURACY (COMPREHENSIVE OF HYSTERESIS, NON-LINEARITY, REPEATABILITY) IS WITHIN +/-0,1% FS;
2. ALL ITEMS ARE EQUIPPED WITH SS NAMEPLATE;
3. ALL ITEMS HAVE INGRESS PROTECTION EN 60529: IP66;
4. HOUSING MATERIAL STAINLESS STEEL;
5. FILLING OF ELEMENT IS FORESEEN WITH DOW CORNING SILICONIC OIL;
6. ELECTRICAL CONNECTIONS ARE 2 x M20x1,5 (ONE PLUGGED);
7. MOUNTING BRACKET INCLUDED AS STANDARD;
8. INTEGRAL LCD DISPLAY;
9. STATIC PRESSURE 100 BAR;
10. HART 6;
11. MANIFOLD WITH INSTRUMENT CONNECTIONS FLANGED SUITABLE TO BE CONNECTED TO INSTRUMENT PROCESS CONNECTION 2 x 1/4" NPT-F.

CERTIFICATES

1. ATEX Ex-d CERTIFICATE (2014/34/EU)
2. IP66 GRADE (EN/IEC 60529)
3. MATERIAL 3.1 (EN 10204) & HYDROTEST CERTIFICATES
4. CALIBRATION CERTIFICATES (IEC 60770)

REV	DATE	STATUS	PURPOSE OF ISSUE	PRE'D.	CHC'D.	APP'D.	AUTH'D.
03	18/JULY/24	FOURTH ISSUE	FOR CONSTRUCTION	M. Sanna	G. Arcuri	G. Olivieri	S. Valletta
02	02/JULY/24	THIRD ISSUE	FOR CONSTRUCTION	M. Sanna	G. Arcuri	G. Olivieri	S. Valletta
01	13/JUN/24	SECOND ISSUE	FOR CONSTRUCTION	M. Sanna	G. Arcuri	G. Olivieri	S. Valletta
00	24/MAY/24	FIRST ISSUE	FOR APPROVAL	M. Sanna	G. Arcuri	G. Olivieri	S. Valletta

CROSSWIND ROSETTI MARINO

P.O. No.: 24/01611/PO | Mod_CAR_Rev17-01 | SCALE – 1:3

TERRANOVA
SPIRIANO York.com MEC-REL

TERRANOVA SRL

DRAWING TITLE: DIMENSIONAL DRAWINGS

JOB:	4718_OS	SHEET No.	3 OF 10	REV. 03

GENERAL	1	Tag Number						43-LT-003		
	2	Service						HYDROGEN VENT (Q-43004)		
	3	P&ID Number						123A90-DDL-PR-PID-80029		
	4	Equipment Number		Line Number				Q-43004	-	
	5	Area Classification						ATEX Zone2 - IIC (IIB+H2) T1		
	6	Mounting						REMOTE		
PROCESS CONDITIONS	7	Fluid		State				Mono Ethylene Glyco (50%vol) + water	LIQUID	
	8	Pressure	Unit	Min.	Oper.	Max.			Atm (op.)	
	9	Temperature	Unit	Min.	Oper.	Max.			Amb. (op)	
	10	Design Pressure		Min.		Max.		3.5 barg		
	11	Design Temperature		Min.		Max.		-10 / + 80 °C		
	12	Lower Oper. S.G.		Lower Oper. Visc.				1.063	1 - 2 cP	
	13	Vacuum		Over Pressure				-		
	14	Ambient Temperature						Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.		
TRANSMITTER	15	Application						LEVEL MEASUREMENT		
	16	Type						Diaphragm		
	17	ATEX Certification		Ingress Protection				ATEX Ex II 2G Ex db IIC T5	IP66	
	18	Housing		Paint				SS AISI 316/316L	N/A	
	19	Power Supply						24 Vdc		
	20	Process Connection		Electrical Connection				2 x 1/4” NPT-F	2 x M20x1.5	
	21	Accuracy						0.07% of Nominal Range		
	22	Max. Static Pressure		Element Material				100 bar	SS AISI 316/316L Gold Plated	
	23	Wetted O - Ring Material		Fill Fluid				Dow Corning Siliconic Oil		
	24	Instrument Range		Min.		0 mbar		0 mbar	350 mbar	
	25	Calibration Range		Min.		0		0 mmH_2O	1000 mmH_2O	
	26	Elevation		Suppression				-	-	
	27	Allow.Oper. Pressure		Allow.Oper.Temp.				Static Pressure 100 bar	85 °C	
	28	SIL Certification		PED Certification				-	Required	
DIAPHRAGM SEAL	29	Process Conn. & Rating		Diaphragm Material				-	-	
	30	Capillary Material		Fill Fluid				-	-	
	31	Housing Material		Allow.Oper.Temp.				-	-	
COMMUNICATION AND SOFTWARE	32	Communication Type		Signal Type				HART 6	4-20mA Loop Powered 24 Vdc	
	33	D D Revision		CFF Revision				-	-	
	34	Hart Descriptor		Hart Tag				-	-	
	35	Internal Diagnostics		Capacitance				-	-	
	36	Segment		Device Address				-	-	
	37	Device Class		Simulate				-	-	
	38	Nominal Current		Operating Voltage				-	-	
OPTIONS	39	Manifold Supplied		Manifold Rating				Required (5-valves)	6000 psi	
	40	Process Connection		Manifold Model				1/2" NPT-F	MAN5-D1	
	41	Integral Meter		Scale				Required	-	
	42	Lightning Protection		Hydrostatic Testing				-	Required	
	43	Mounting Brackets						Required		
	44	Barrier - Manufacturer / Model						-		
PURCHASE	45	Manufacturer						TERRANOVA SRL		
	46	Model						SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		
	47	Purchase Order Number						4718_OS		

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Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-ZSL-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSL-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSL-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSL-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSL-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSL-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
43-FE-001A	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6...T1 Gb		N/A	True	N/A	True	
43-FE-001B	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6...T1 Gb		N/A	True	N/A	True	
43-FT-001	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		XGF868i-2-2-OI-H7-3-4-0-CC		17ATEX1304X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	II 2G Ex db IIC T6 Gb		N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
43-LT-001	KO DRUM V-43001 high/low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240632	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-LT-003	H2 vent Q-43004 low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240633	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-PT-001	KO DRUM V-43001 pressure	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240650	SST76-H-7-G-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_7 HAZARDOUS-AREA_3
50-AT-020A	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020B	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020C	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-021A	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021B	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021C	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-HS-001	Emergency push button	LOWER DECK	1724000448	PSC	E2S	-	BExCP3CBGSSNAP2A1RN24 E4K7RS820R	Safe Area	Sira 09ATEX3286X	-	II 2 GD Ex db eb mb IIC T4 Gb Ta = (-40°C to +65°C) Ex tb IIIC T75oC Db Ta = (-40°C to +65°C)	-	A-5000	True	N/A	True	
50-HS-020	Emergency push button	LOWER DECK	1724000448	PSC	STAHL	-	8040/11	Safe Area	PTB 01 ATEX 1105	-	II 2 G Ex db eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-5000	True	N/A	False	
50-PSV-006	Pressure Safety Valve for P-5001A	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PSV-007	Pressure Safety Valve for P-5001B	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PT-001	Sea water from pump P-50001A	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240660	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-002	Sea water from pump P-50001B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240661	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-014	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240651	SST76-H-7-K-2-0-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-XV-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-003	Sea water from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-004	Sea water recirculation from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-005	Drain Water discharge to Caisson	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XY-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	
50-XY-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	

Technická inšpekcia, a.s.

Trnavská cesta 56, 821 01 Bratislava
Slovenská republika

[1] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective System Intended for use in potentially explosive atmospheres
Directive 2014/34/EU

[3] Supplementary EU-Type Examination Certificate Number:

TI17ATEX 304 X / 1

[4] Product:

SPRIANO® Electronic transmitter series SST7X
Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator)

[5] Manufacturer: **TERRANOVA S.r.l.**

[6] Address: **Via Gramsci, 1, 26827 – Terranova dei Passerini (LO), Italy**

[7] This supplementary certificate extends EU – Type Examination Certificate No. TI17ATEX 304 X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

[8] Technická inšpekcia, a.s., Notified Body Number 1354 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that the product, as modified by this supplementary certificate, has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

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Bratislava, March 08th, 2021

Ing. Dušan Perniš
General Director

NB 1354

[13] **Schedule**

[14] **Supplementary EU-Type Examination Certificate Number: TI17ATEX 304 X / 1**

[15] Description of the variation to the product:

The subject of this supplementary certificate is extension of product SPRIANO® Electronic transmitter series SST7X, Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator), which has protection mode "Ex-db" certified by certificate TI17ATEX304X, to the protection mode "Ex-ia" certified by certificate TI17ATEX305X.
Electronic inside the Series SST7X has been used the same as the SST5X described into TI17ATEX305X certificate.
Housing materials to be used Anticorodal Aluminum or Stainless Steel according previous certificates.
New Variation to the product are:

		With Aluminum housing	
		Without safety barrier	
Ex	II 1/2 G	Ex db IIC T6 Ga/Gb	-40°C<Tamb<+60°C
		Ex db IIB T5 Ga/Gb	-40°C<Tamb<+80°C
		or	
		With safety barrier	
Ex	II 1/2 G	Ex ia IIC T6, T5, T4 Ga	-40°C<Tamb<+40°C / +55°C / +80°C
		With SS AISI 316 housing	
		Without safety barrier	
Ex	II 1/2 G	Ex db IIC T6 Ga/Gb	-40°C<Tamb<+60°C
		Ex db IIB T5 Ga/Gb	-40°C<Tamb<+80°C
		or	
		With safety barrier	
Ex	II 1 G	Ex ia IIC T6, T5, T4 Ga	-40°C<Tamb<+40°C / +55°C / +80°C

Basic description of product:

The Transmitters series electronic SST7X measure pressure, level or temperature of liquids, gases and vapors and transmit a current signal 4-20mA + HART®.
According to the process connection, the series SST7X is constituted by the following models, they can be identified by the code following the series name:

SST70	Displacer level transmitter
SST71	Float level transmitter
SST72	Temperature transmitter
SST75	Relative or absolute pressure transmitter with incorporate separating diaphragm (ceramic)
SST76	Relative or absolute pressure transmitter with incorporate separating diaphragm (piezo)
SST77B	Differential pressure transmitter
SST77BL	Pressure transmitter for level measure
SST79B	Submersible level transmitter
SST70-REM	Field digital indicator

CSTA3-128

TERRANOVA® SPRIANO TELCOM MEC-RELA

G. Luca Mergazzoli
W
Director

Model SST70: The transmitter is isolated from the process via a mechanical system to the torsion tube and also the measuring cell presents a separation membrane filled with inert fluid.
Model SST71: The transmitter is isolated from the process via a tube containing reed switches.
Model SST72: The transmitter is isolated from the process via a tube containing sensors PT100.
Models SST75, SST76, SST77B and SST77BL: The transmitter is isolated from the process by membrane separation metal filled with inert fluid.
Model SST79 (version with remote sensor): The remote transmitter is isolated from the process by separation membranes metal filled with inert fluid. It is connected to the housing means shielded cable with 5 wires soldered.
Model SST70-REM (Loop powered field digital indicator): The indicator has no element part but only it is connected via current loop for displaying the desired variable.

Product with variation of Exdb protection:

The instruments are suitable for gas group IIC or IIB depending by the Ambient Temperature and they have the type of protection "Ex db".
Temperature: -40 ° C ≤Tamb≤ + 60 ° C (or -40 ° C ≤Tamb≤ + 80 ° C)
In the case where the process temperatures are higher than the maximum ambient temperature (or below the minimum ambient temperature), the instrument is installed with a suitable finned arm that can dissipate the temperature in excess and ensure the installation inside the ambient temperature range specified by the manufacturer.
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a body of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made in Anticorodal Aluminum or Stainless Steel AISI 304 / 316 (Thickness of coating <0.15mm) while the door is tempered-glass glued to the lid with a silicone seal.

Electrical characteristics:

Supply voltage	≤ 30 VDC
Output signal	4 ÷ 20 mA + HART®
Maximum power transferred	0,75 W
ATEX category	II 1/2 G
Protection mode	Ex db IIC T6 Ga/Gb with Tamb [- 40°C, +60°C] Ex db IIB T5 Ga/Gb with Tamb [- 40°C, +80°C]
IP Code	IP 66
The power cables must be at least 22 AWG (0.34mm2 section section - 0.64mm2), suitable for an operating temperature ≥ 90 ° C for Tamb ≥ 70 ° C.	

The marking of the product shall include the following:

⟨Ex⟩ II 1/2 G Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C

Product with variation of Exia protection:

The instruments are suitable for gas group IIC and have the type of protection "Ex i".
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a body of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made of stainless steel or aluminum having a content Mg of less than 6% (coating thickness <0.15mm) while the door can be static plastic, 5 mm thick (glue Araldite 2021) or sodalime tempered glass, 5 mm thick (glue Araldite 2011).

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Electrical characteristics:

Parameter	Tamb<60°C	Tamb<80°C
Maximum voltage input **Ui**	30 V	25.2 V
Maximum current input **Ii**	100 mA	100 mA
Power maximum input **Pi**	0.75 W	0.62 W
Maximum capacity Internal	10 nF	10 nF
Maximum Internal Inductance	0.2 mH	0.2 mH
Output signal	4 ÷ 20 mA + HART®	
Degree of protection	IP 66 for Aluminum housing IP67 for SS AISI 316 housing	

The marking of the product shall include the following:

II 1/2G Ex ia IIC T6, T5, T4 Ga/Gb **-40°C ≤ Tamb ≤ 40°C (T6)** **-40°C ≤ Tamb ≤ 55°C (T5)** **-40°C ≤ Tamb ≤ 80°C (T4)** **For Aluminum housing**	**1G Ex ia IIC T6, T5, T4 Ga** **-40°C ≤ Tamb ≤ 40°C (T6)** **-40°C ≤ Tamb ≤ 55°C (T5)** **-40°C ≤ Tamb ≤ 80°C (T4)** **For SS AISI 316 housing**

[16] Report Number:
Inspection report No: 54/5/2021
Final Test Report No: 54/5/2021

[17] Specific Conditions of Use:

Product with variation of Exdb protection:

Ambient temperature:
Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C
In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

Entries for flameproof enclosure:
The accessories used for cable entry into the housing (which must be treated ½ "NPT or M20x1.5) must comply with the standards EN 60079-0 and EN 60079-1.
The entrance hole leads not used should be closed with the cap conforms to EN 60079-1.

Warning marking:
- "WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT"

Informative marking:
- "SEE INSTALLATION INSTRUCTION DOCUMENT".

Product with variation of Exia protection:

Ambient temperature:

-40°C ÷ +40°C	For Class T6
-40°C ÷ +55°C	For Class T5
-40°C ÷ +80°C	For Class T4

In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable

spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

[18] Essential Health and Safety Requirements:
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.
Additional information: None.

[19] Drawings and Documents:

Number	Sheet	Issue	Date	Description
DTP-SST7X	4pgs	REV No.21.02	12/02/2021	List of drawings and Documents SPRIANO ® Electronic Switches SST7X By TERRANOVA ®
TI17ATEX305X	3 pgs	-	13/03/2017	EU –Type Examination Certificate (Exia)

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TECHNICKÁ INŠPEKCIA • SLOVENSKÁ REPUBLIKA • TI NB 1354 -5-

Bratislava, March 08th, 2021

Ing. Dušan Perniš
General Director

TERRANOVA® SPRIANO Tylcom MEC-RELA

G. Luca Vergazzoli
W
...E...ctor

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SLOVENSKÁ REPUBLIKA

CEOC INTERNATIONAL

[1] EU-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective System Intended for use in potentially explosive atmospheres
Directive 2014/34/EU

[3] EU-Type Examination Certificate Number:

TI17ATEX 304 X

[4] Product:

SPRIANO® Electronic transmitter series SST7X
Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator)

[5] Manufacturer: **TERRANOVA S.r.l.**

[6] Address: **Via Gramsci, 1, 26827 – Terranova dei Passerini (LO), Italy**

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] Technická inšpekcia, a.s., Notified Body Number 1354 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of product intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in confidential report No. 304/5/2017.

[9] Compliance with the Essential Health and safety Requirements has been assured by compliance with: **EN 60079-0:2012+A11:2013, EN 60079-1:2014**
except in respect of those requirements listed at item 18 of the Schedule.

[10] If the sign "X" is placed after the certificate number, it indicate that the product is subject to the Specific conditions of Use specified in the schedule to this certificate.

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of this Directive apply to the manufacturing process and supply of this product.

[12] The marking of the product shall include the following:

Ex II 1/2 G Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C

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Bratislava, March 13th, 2017

Ing. Dušan Perniš
General Director

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NB 1354

[13] **Schedule**

[14] **EU-Type Examination Certificate Number: TI17ATEX 304 X**

[15] Description of product:
The Transmitters series electronic SST7X measure pressure, level or temperature of liquids, gases and vapors and transmit a current signal 4-20mA.
The instruments are suitable for gas group IIC and have the type of protection "Ex db".
Temperature: -40 ° C ≤Tambs≤ + 60 ° C (or -40 ° C ≤Tambs≤ + 80 ° C)
In the case where the process temperatures are higher than the maximum ambient temperature (or below the minimum ambient temperature), the appliance is installed with a suitable spacer can dissipate the temperature in excess and ensure the installation inside the ambient temperature range specified by the manufacturer.
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a bodice of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made in anticorodal aluminum or stainless steel AISI 304 (Thickness of coating <0.15mm) while the door is tempered-glass glued to the lid with a silicone seal.

According to the process connection, the series SST7 is formed by the following models, they can be identified by the code following the series name:

SST70	Displacer level transmitter
SST71	Float level transmitter
SST72	Temperature transmitter
SST75	Relative or absolute pressure transmitter with incorporate separating diaphragm (ceramic)
SST76	Relative or absolute pressure transmitter with incorporate separating diaphragm (piezo)
SST77B	Differential pressure transmitter
SST77BL	Pressure transmitter for level measure
SST79B	Submersible level transmitter
SST70-REM	Field digital indicator

Model SST70: The transmitter is isolated from the process via a mechanical system to the torsion tube and also the measuring cell presents a separation membrane filled with inert fluid.

Model SST71: The transmitter is isolated from the process via a tube containing reed switches.

Model SST72: The transmitter is isolated from the process via a tube containing sensors PT100.

Models SST75, SST76, SST77B and SST77BL: The transmitter is isolated from the process by membrane separation metal filled with inert fluid.

Model SST79 (version with remote sensor): The remote transmitter is isolated from the process by separation membranes metal filled with inert fluid. It is connected to the housing means shielded cable with 5 wires soldered.

Model SST70-REM (Loop powered field digital indicator): The indicator has no element part but only it is connected via current loop for displaying the desired variable.

Electrical characteristics:

Supply voltage	≤ 30 VDC
Output signal	4 ÷ 20 mA
Maximum power transferred	0,75 W
ATEX category	1/2 G
Protection mode	Ex db IIC T6 Ga/Gb with Tamb [- 40°C, +60°C] Ex db IIB T5 Ga/Gb with Tamb [- 40°C, +80°C]
IP Code	IP 66
The power cables must be at least 22 AWG (0.34mm2 section section - 0.64mm2), suitable for an operating temperature ≥ 90 ° C for Tamb ≥ 70 ° C.	

[16] Report Number:
Inspection report No: 304/5/2017
Final Test Report No: 304/5/2017

[17] Specific Conditions of Use:

Ambient temperature:

Ex db IIC T6 Ga/Gb	-40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb	-40°C ≤ Tamb ≤ 80°C

In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

Entries for flameproof enclosure:
The accessories used for cable entry into the housing (which must be treated ½ "NPT) must comply with the standards EN 60079-0 and EN 60079-1.
The entrance hole leads not used should be closed with the cap conforms to EN 60079-1.

Warning marking:
- "WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT"

Informative marking:
- "SEE INSTALLATION INSTRUCTION DOCUMENT".

[18] Essential Health and Safety Requirements:
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.
Additional information: None.

[19] Drawings and Documents:

Number	Sheet	Issue	Date	Description
DTP-SST7X	3pgs	REV No.17.01	31/01/2017	List of drawings and Documents SPRIANO® Electronic Switches SST7X

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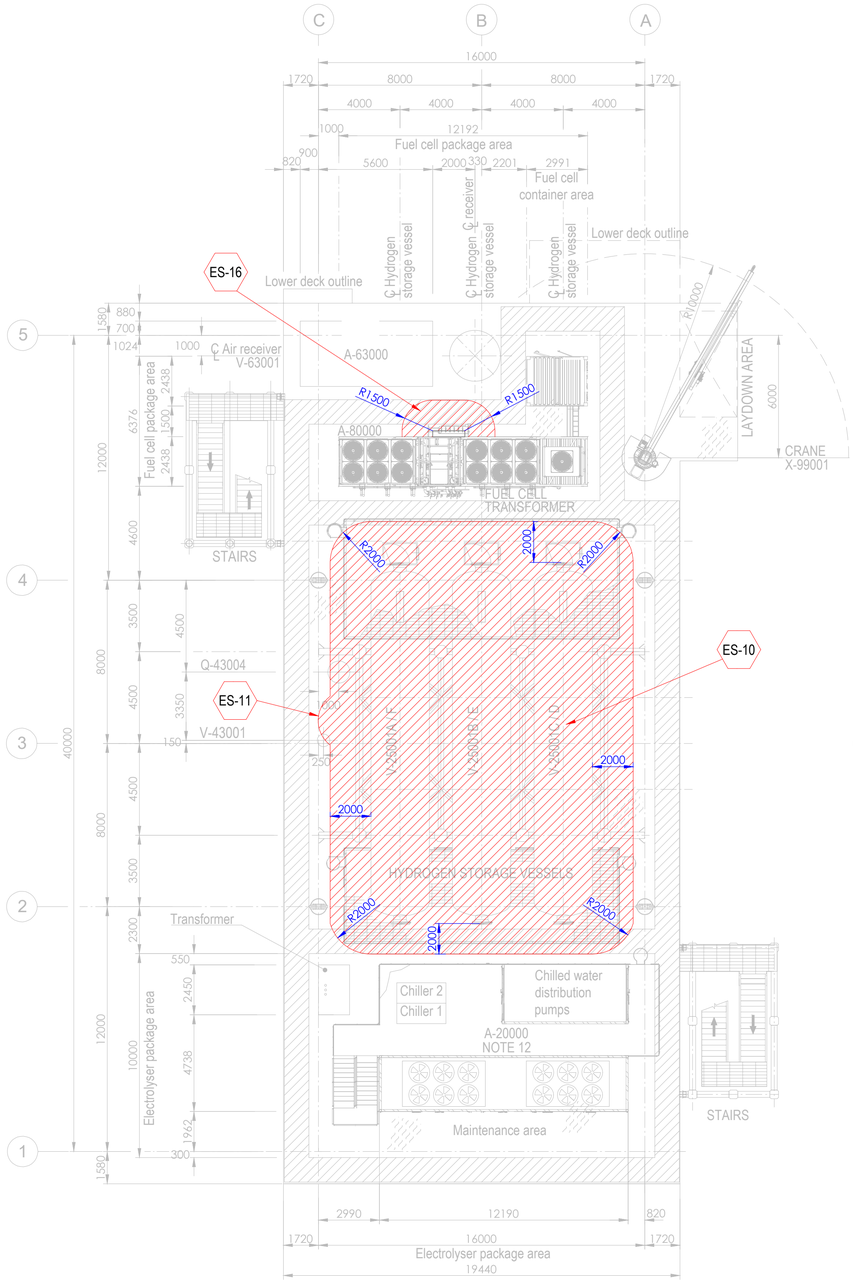
Bratislava, March 13th, 2017

Ing. Dušan Perniš
General Director

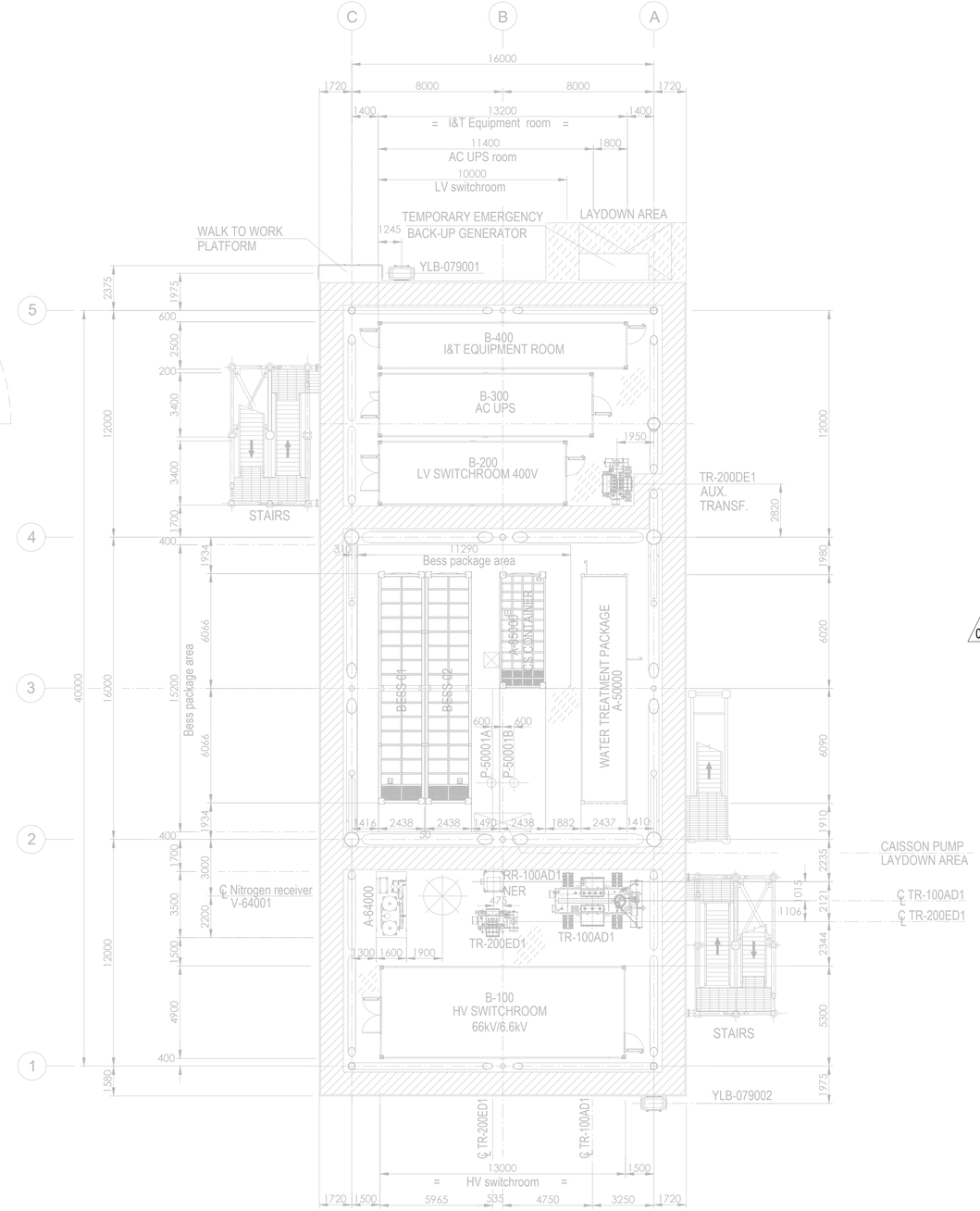
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



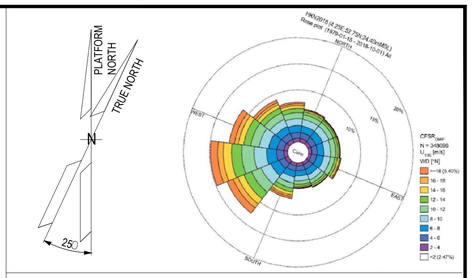
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

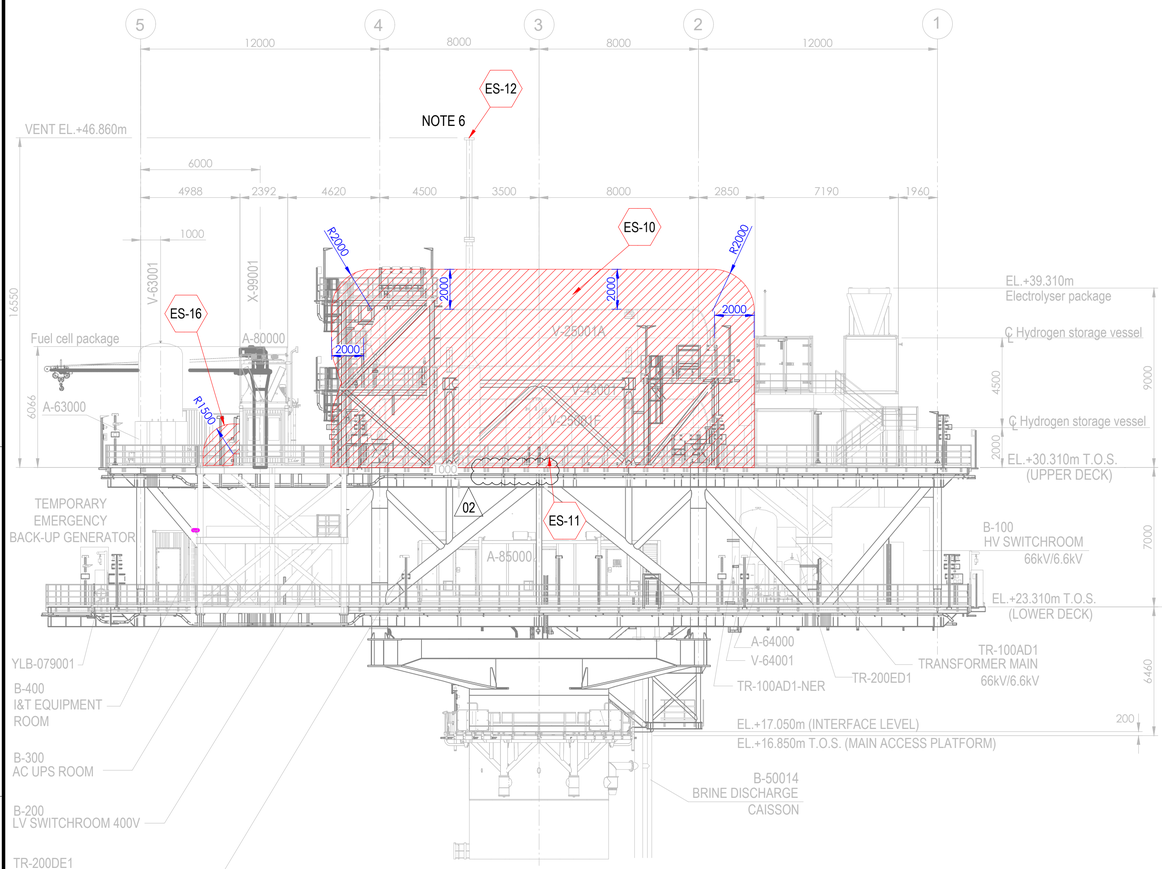
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

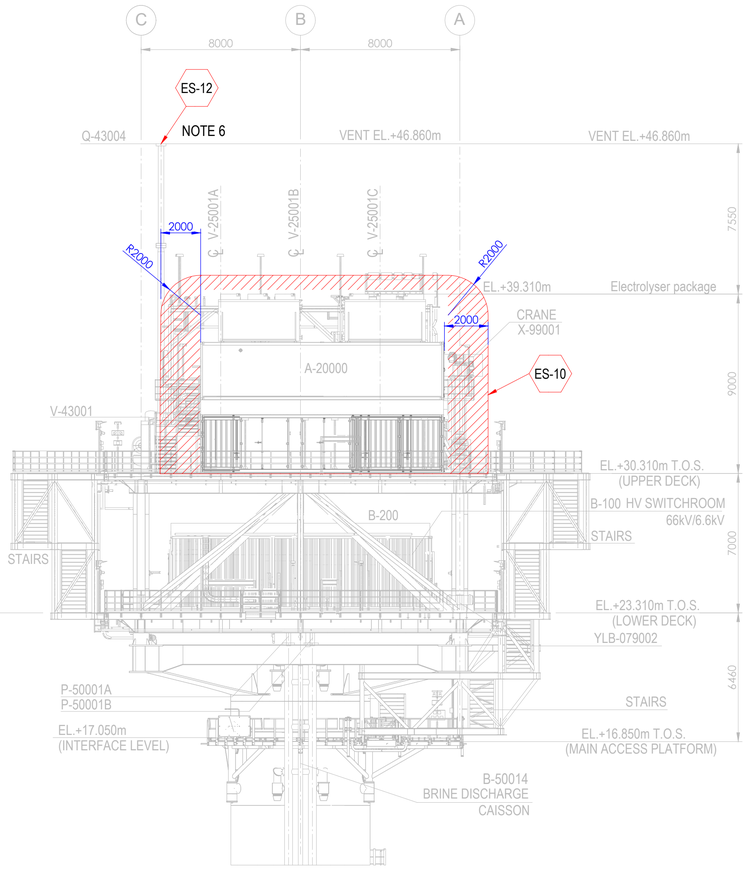
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

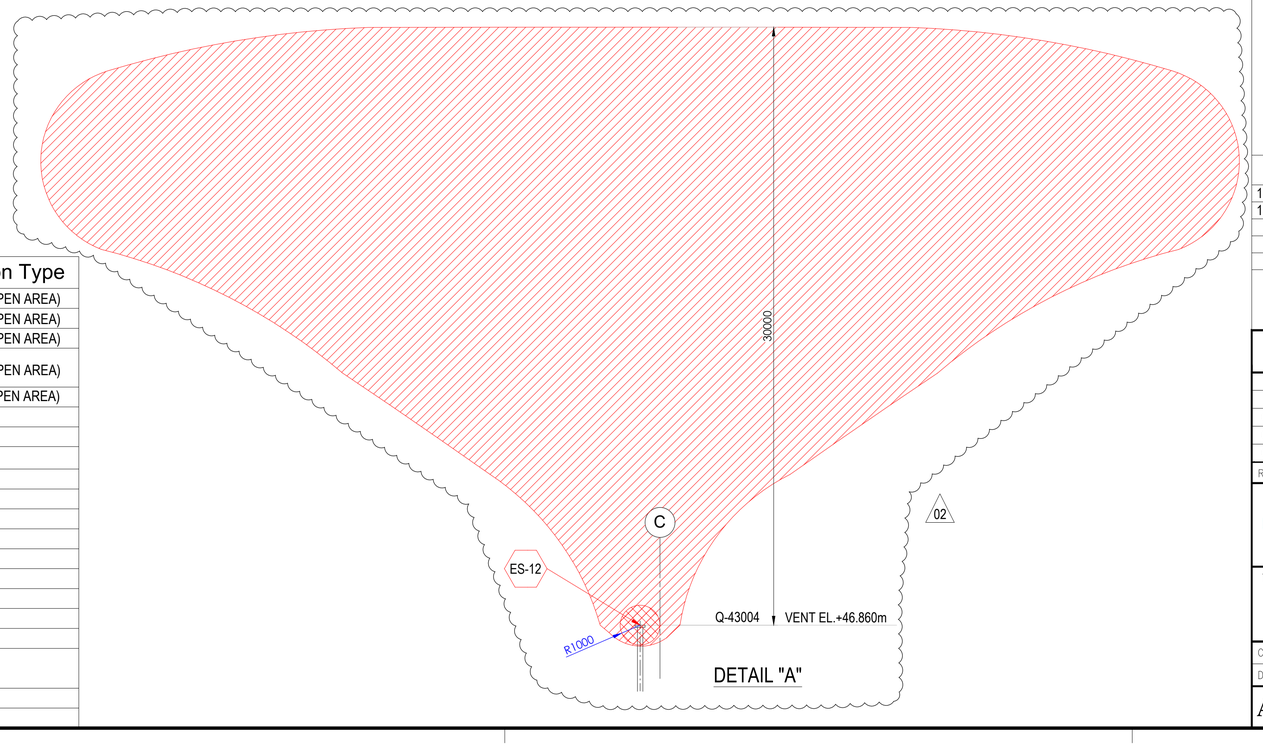


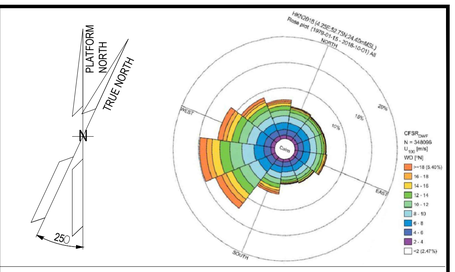
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	43-PT-001	: Pressure Transmitter - KO Drum V-43001 Pressure	Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System	Module	UD
TASK	code	C10000900	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		SE240650			
Manufacturer	Terranova Srl			**Model**		SST76			
Cert No.	TI17ATEX304X			**Equipment Ambient Temp.**		-40°C to +60°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state “NA”. Comments are required for ‘Failure’ column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	PL	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex “e” – Ex “n” – Ex “t”)	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	43-PT-001	: Pressure Transmitter - KO Drum V-43001 Pressure			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10000900		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	OK	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	43-PT-001	: Pressure Transmitter - KO Drum V-43001 Pressure	Dwg	123A90-DDL-PR-PID-80029		
	S/Sys	43-00	: Hydrogen Vent Header & Drum System	Module	UD		
TASK	code	C10000900	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

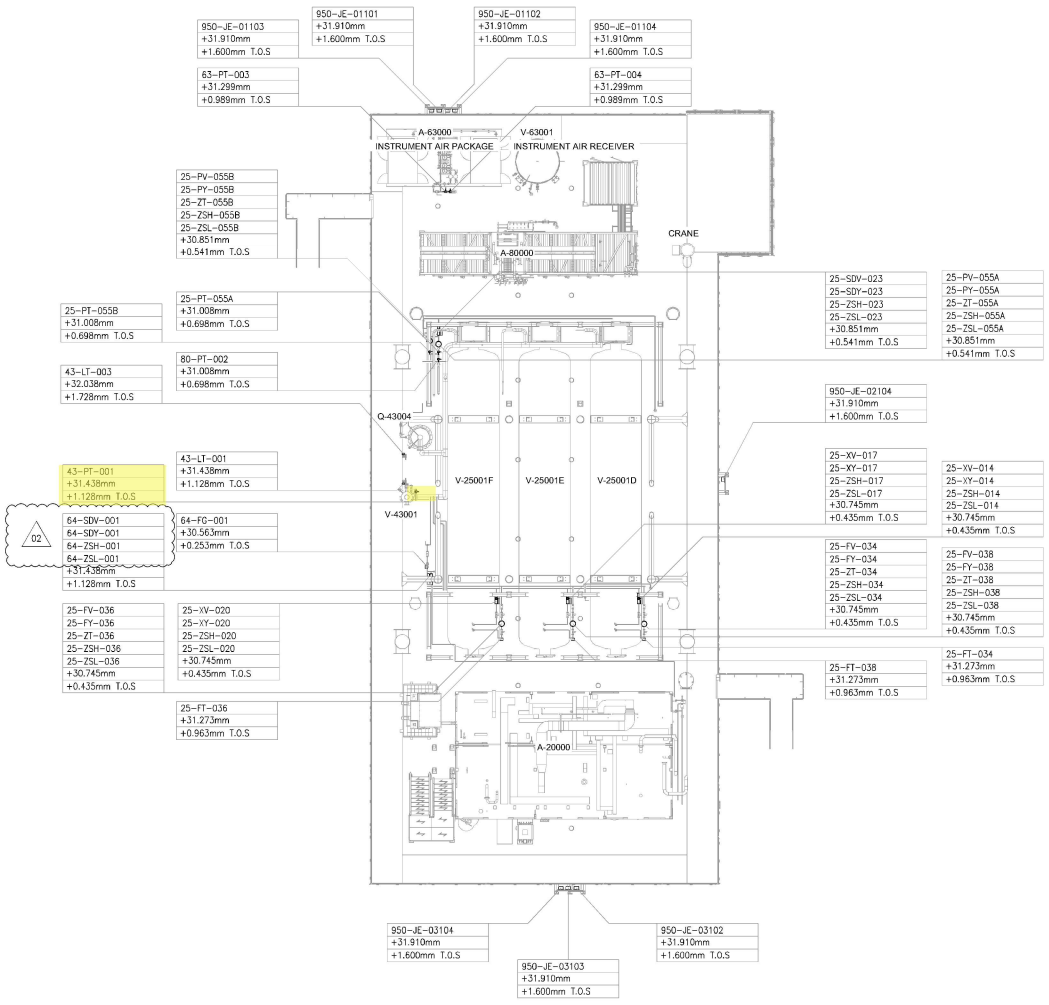
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Andrea Andreani	
Date	2025-02-17	2025-02-19	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-17T14:29:59.709Z	PROVERLIS Digitaly signed by Andrea Andreani 2025-02-19T15:57:48.505Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

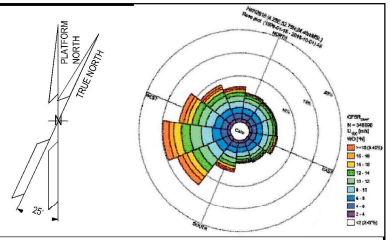
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

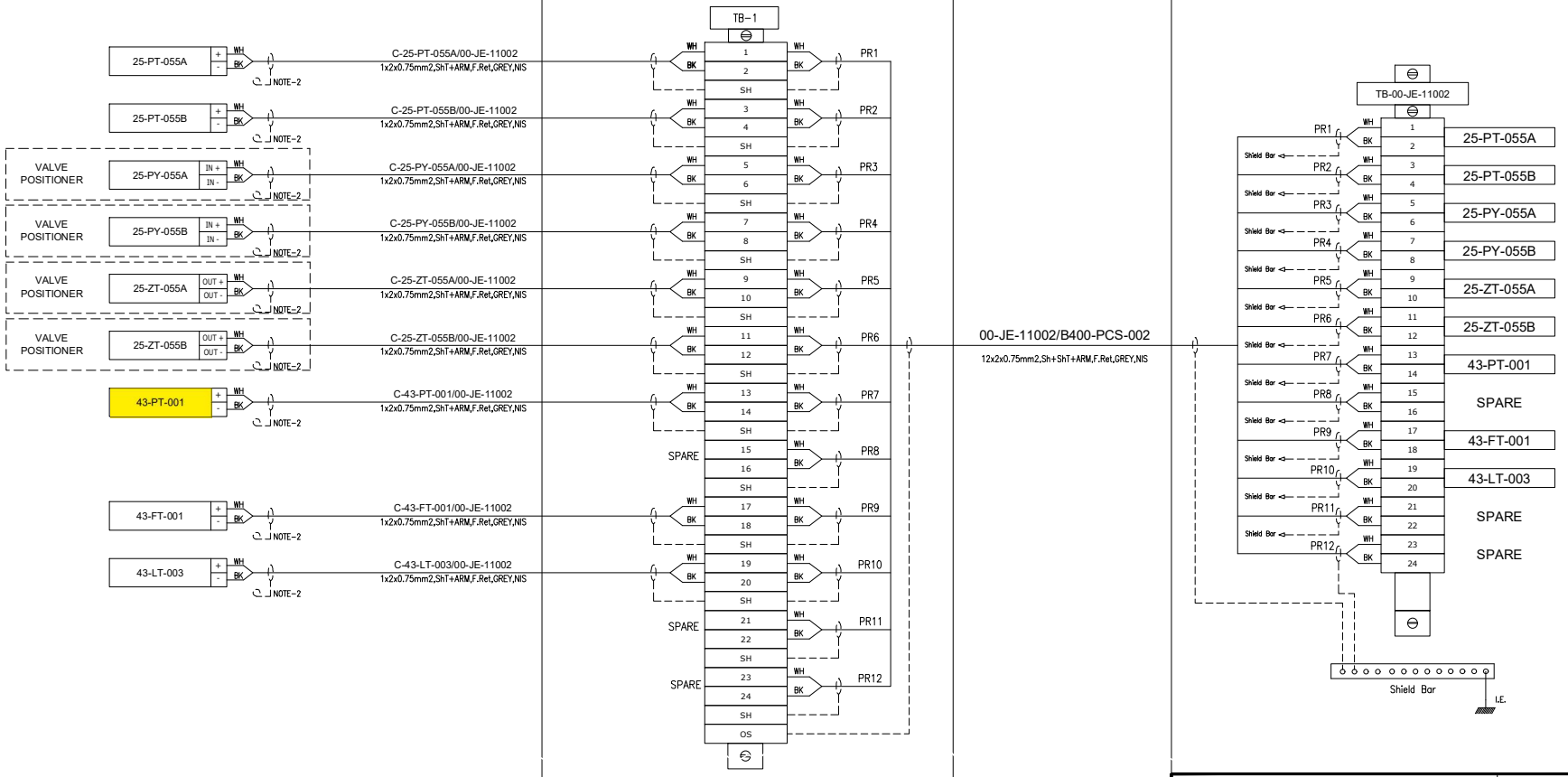
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11002	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11002–SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123–A90–DDL–40015	SHEET 006	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. DRAWING_NO.

REV. REV

V-43001

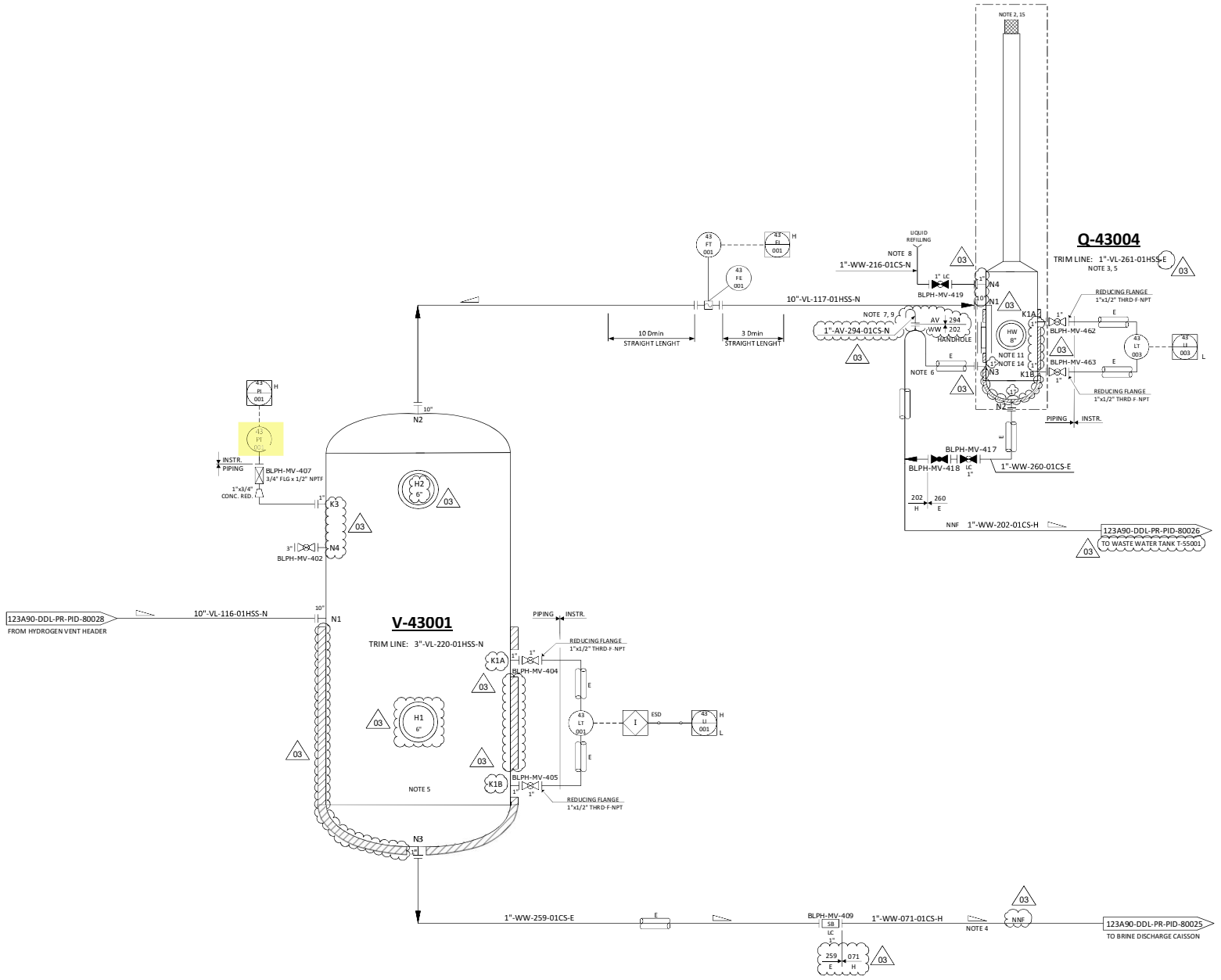
HYDROGEN VENT KO DRUM

SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1

SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

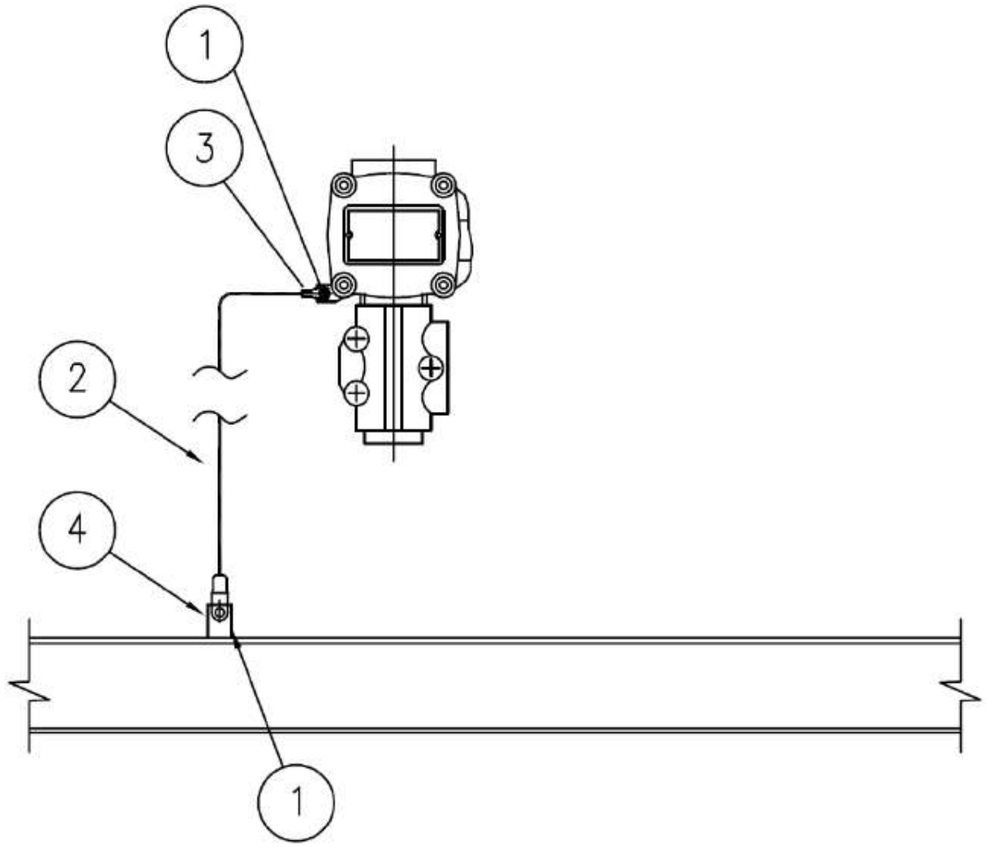
TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	NTS
DRAWN	CHECKED	APPROVED		DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80029			SHEET 001	REV. 03

File Name : FILE_NAME

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

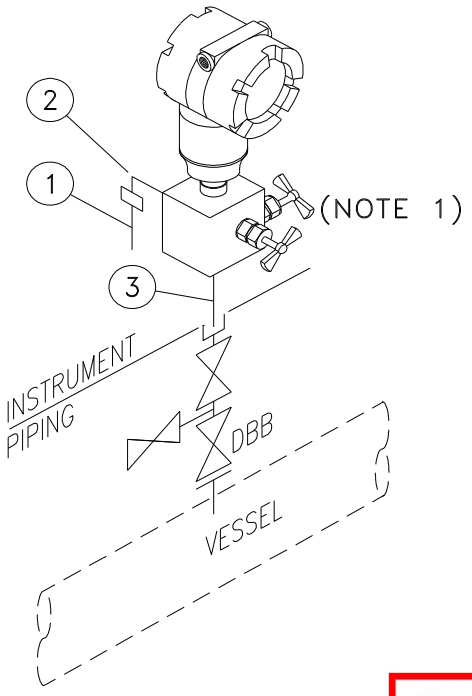
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

PRESSURE TRANSMITTERS - Installation for Gas Service



	INSTRUMENT TAG
1	25-PT-004
2	25-PT-006
3	25-PT-008
4	25-PT-009
5	25-PT-011
6	25-PT-012
7	25-PT-035
8	25-PT-037
9	25-PT-040
10	25-PT-043
11	25-PT-046
12	25-PT-049
13	25-PT-001
14	25-PT-002
15	25-PT-055A
16	25-PT-055B
17	43-PT-001
18	50-PT-014
19	63-PT-003
20	63-PT-004
21	~~64-PT-031A~~
22	64-PT-031B
23	64-PT-002
24	80-PT-002
25	
26	
27	
28	
29	
30	

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40077**

REV.:	DATE:	SIGNATURE:
2_B	17/01/25	G.Randi

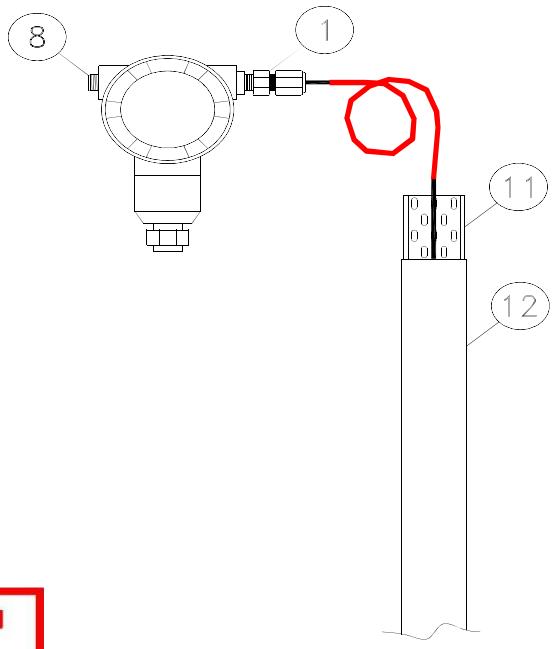
ROSETTI MARINO SpA

NOTES:
(1) MANIFOLD IS SUPPLIED WITH INSTRUMENT.
(2) VENDOR SHALL GUARANTEE THE MATERIAL COUPLING BETWEEN TUBING AND FITTINGS.

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
3		SS316 NIPPLE	1/2" NPT L=100mm	N. 1
2		ELBOW SS316	1/4" NPT-M x 1/2" O.D	N. 1
1		SS 316L TUBING (NOTE 2)	1/2" x 0,049"Thk	m 0.5

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ELECTRICAL HOOK-UP FOR PRESSURE TRANSMITTERS



	INSTRUMENT TAG
1	25-PT-001
2	25-PT-035
3	25-PT-037
4	25-PT-040
5	25-PT-043
6	25-PT-046
7	25-PT-049
8	25-PT-055A
9	25-PT-055B
10	43-PT-001
11	50-PT-014
12	63-PT-003
13	64-PT-031A
14	64-PT-031B
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VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_D	13/11/24	G.Randi

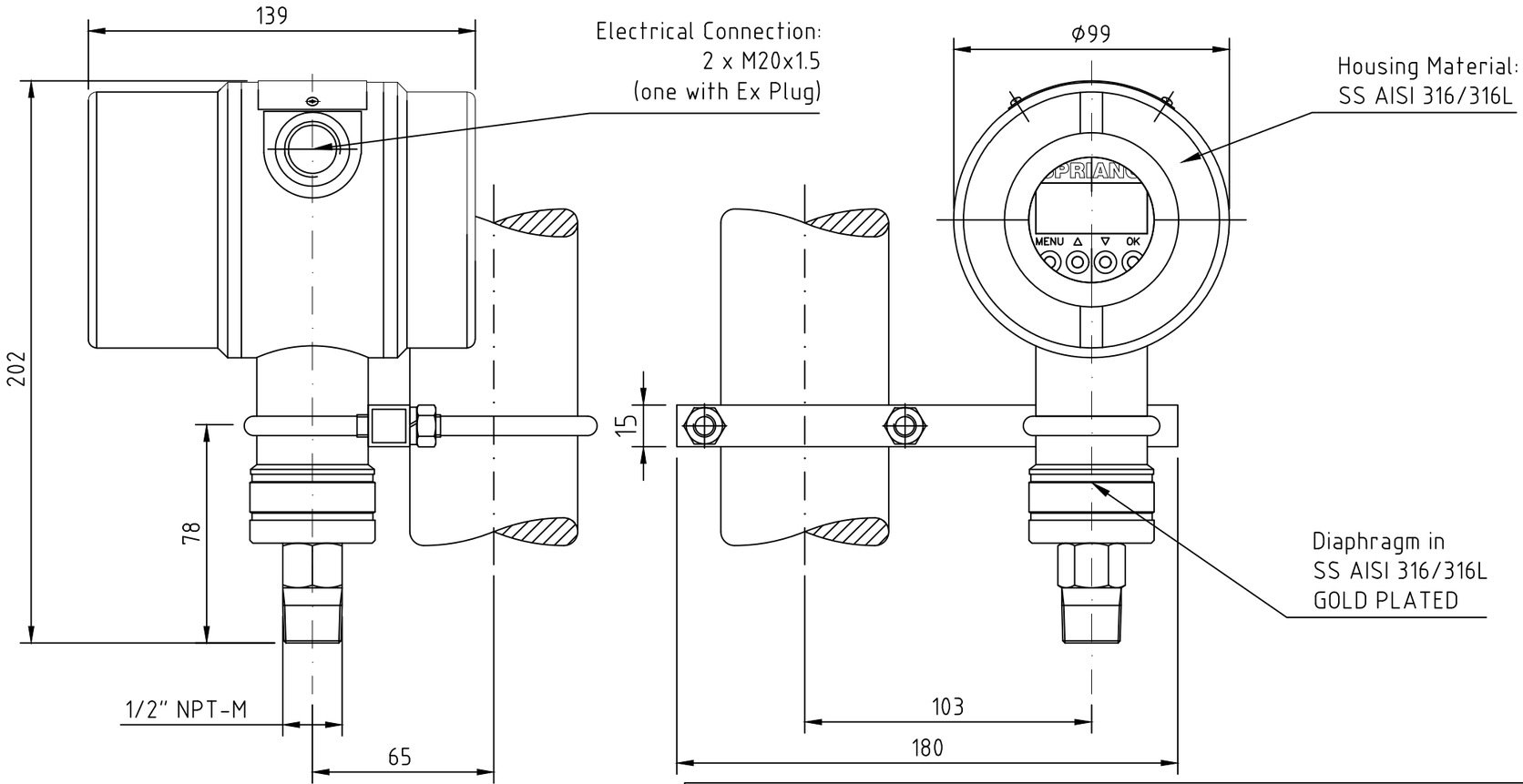
ROSETTI MARINO SpA

NOTE:

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	1

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SST76 PRESSURE TRANSMITTERS

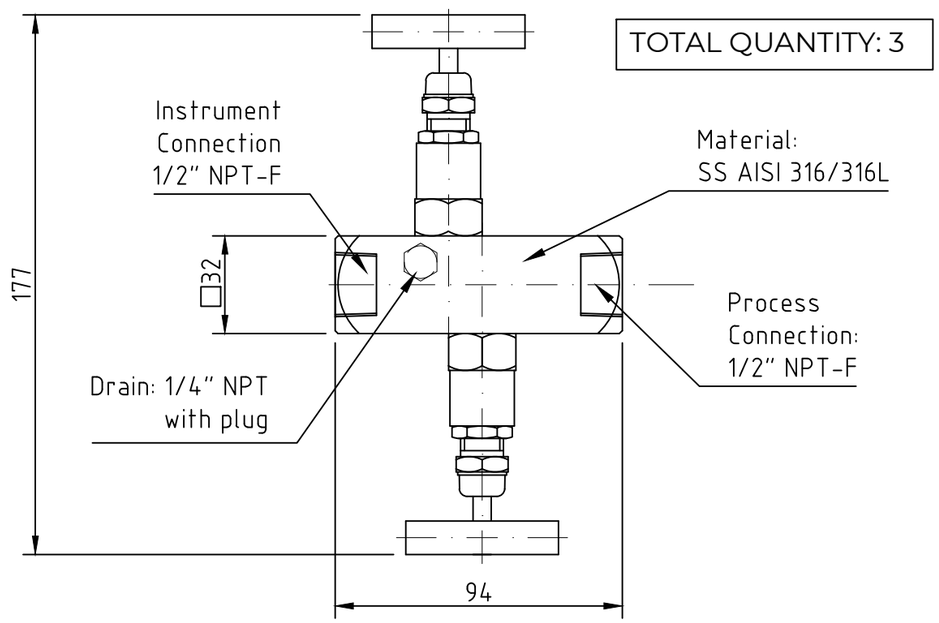


TAG LIST

#	TAG	RANGE	CALIBRATION
15	25-PT-055A	0 ÷ 30 barg	0 ÷ 10 barg
16	25-PT-055B	0 ÷ 30 barg	0 ÷ 10 barg
17	43-PT-001	0 ÷ 5 barg	0 ÷ 3,5 barg

TOTAL QUANTITY: 3

MAN2-R6 TWO WAYS AND TWO VALVES MANIFOLD



NOTES

SST76 PRESSURE TRANSMITTERS
SST76-H-7-...-2-9-2-1-4 + MAN2-R6

H - OUTPUT: 4-20 mA + HART
7 - PROCESS CONNECTION: 1/2" NPT M;
... - NOMINAL RANGE: refer to TAG LIST TABLE
2 - CALIBRATION: refer to TAG LIST TABLE
9 - DIAPHRAGM MATERIAL: SS AISI 316/316L GOLD PLATED
2 - OPTIONS: HOUSING MATERIAL STAINLESS STEEL WITH ELECTRICAL CONNECTIONS 2 x 1/2" NPT-F
1 - OPTIONS: MOUNTING BRACKET FOR 2" PIPE MOUNTING
4 - EXPLOSION PROTECTION 2014/34/EU: ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1G Ex ia IIC T6/T5/T4 Ga

to be coupled with:
1. MAN2-R6 TWO VALVES AND TWO WAYS MANIFOLD, MATERIAL SS AISI 316/316L, CONNECTION TO INSTRUMENT 1/2" NPT-F, PROCESS CONNECTION 1/2" NPT-F.

NOTES:
1. OVERALL ACCURACY OF PT (COMPREHENSIVE OF HYSTERESIS, NON-LINEARITY, REPEATABILITY) IS WITHIN +/- 0,07% FS;
2. ALL ITEMS ARE EQUIPPED WITH SS NAMEPLATE;
3. FILLING OF ELEMENT IS FORESEEN WITH DOW CORNING SILICONIC OIL;
4. ELECTRICAL CONNECTION ARE: 2 X 1/2" NPT-F (ONE PLUGGED);
5. INTEGRAL LCD /CONFIGURABLE ENGINEERING UNITS;
6. INGRESS PROTECTION EN 60529: IP66;
7. HOUSING MATERIAL STAINLESS STEEL;
8. ALL INSTRUMENT ARE SIL2/SIL3 CERTIFIED;
9. HART 6.

CERTIFICATES

1. ATEX Ex-d CERTIFICATE (2014/34/EU)
2. IP66 GRADE (EN/IEC 60529)
3. MATERIAL 3.1 (EN 10204) & HYDROTEST CERTIFICATES
4. CALIBRATION CERTIFICATES (IEC 60770)

REV	DATE	STATUS	PURPOSE OF ISSUE	PRE'D.	CHC'D.	APP'D.	AUTH'D.
03	18/JULY/24	FOURTH ISSUE	FOR CONSTRUCTION	M. Sonsi	G. Arnaudo	G. Olivieri	S. Valletti
02	02/JULY/24	THIRD ISSUE	FOR CONSTRUCTION	M. Sonsi	G. Arnaudo	G. Olivieri	S. Valletti
01	13/JUN/24	SECOND ISSUE	FOR CONSTRUCTION	M. Sonsi	G. Arnaudo	G. Olivieri	S. Valletti
00	24/MAY/24	FIRST ISSUE	FOR APPROVAL	M. Sonsi	G. Arnaudo	G. Olivieri	S. Valletti

CROSSWIND — ROSETTI MARINO

P.O. No.: 24/01611/PO | Mod_CAR_Rev17-01 | SCALE – 1:2

TERRANOVA
SPRIANO · YorkCentr · MEC-RELA
TERRANOVA SRL

DRAWING TITLE: DIMENSIONAL DRAWINGS

JOB: 4718_OS | SHEET No. 5 OF 10 | REV. 03

GENERAL	1	Tag Number		43-PT-001	
	2	Service		HYDROGEN VENT KO DRUM (V-43001)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80029	V-43001
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	3.5	Atm
	10	Temperature Des.	Oper. [°C]	-10 / + 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
TRANSMITTER	13	Instrument Range Min.	Max. [barg]	0	5
	14	Calibration Range Min.	Max. [barg]	0	3.5
	15	Elevation	Suppression	-	-
	16	Element Type		Diaphragm	
	17	Element Material		SS AISI 316/316L GOLD PLATED	
	18	Body Material	Body Rating	AISI 316 SS	50 bar
	19	Process Connection		1/2" NPT-M	
	20	Wetted O-Rings Material		-	
	21	Fill Fluid		-	
	22	Bolts	Housing	Manifold/Instrument assembly	SS AISI 316/316L
	23	Paint		N/A	
	24	ATEX Certification	Ingress Protection	ATEX Ex II 2G Ex db IIC T5	IP66
	25	Process Connection	Electrical Connection	1/2" NPT-M	2 X M20X1.5
	26	Accuracy		0.07% of Nominal Range	
	27	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	28	Process Connection & Rating		-	
	29	Diaphragm Material	Housing Material	-	-
	30	Fill Fluid	Capillary Material	-	-
	31	Capillary Type	Capillary Length	-	-
	32	Flushing Connection		-	
OPTIONS	33	Integral Meter	Scale	Required	-
	34	Hydrostatic Testing	Cleaning	Required	-
	35	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	36	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	37	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	38	D D Revision	CFF Revision	-	-
	39	Device Tag	Hart Tag	-	-
	40	Internal Diagnostics	Capacitance	-	-
	41	Segment	Device Address	-	-
	42	Device Class	Simulate	-	-
	43	Nominal Current	Operating Voltage	-	-
PURCHASE	44	Manufacturer		TERRANOVA SRL	
	45	Model		SST76-H-7-G-2-9-2-1-4 + MAN2-R6	
	46	Purchase Order Number		4718_OS	

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Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-ZSL-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSL-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSL-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSL-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSL-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSL-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
43-FE-001A	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6...T1 Gb		N/A	True	N/A	True	
43-FE-001B	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6...T1 Gb		N/A	True	N/A	True	
43-FT-001	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		XGF868i-2-2-OI-H7-3-4-0-CC		17ATEX1304X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	II 2G Ex db IIC T6 Gb		N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
43-LT-001	KO DRUM V-43001 high/low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240632	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-LT-003	H2 vent Q-43004 low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240633	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-PT-001	KO DRUM V-43001 pressure	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240650	SST76-H-7-G-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_7 HAZARDOUS-AREA_3
50-AT-020A	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020B	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020C	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-021A	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021B	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021C	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-HS-001	Emergency push button	LOWER DECK	1724000448	PSC	E2S	-	BExCP3CBGSSNAP2A1RN24 E4K7RS820R	Safe Area	Sira 09ATEX3286X	-	II 2 GD Ex db eb mb IIC T4 Gb Ta = (-40°C to +65°C) Ex tb IIIC T75oC Db Ta = (-40°C to +65°C)	-	A-5000	True	N/A	True	
50-HS-020	Emergency push button	LOWER DECK	1724000448	PSC	STAHL	-	8040/11	Safe Area	PTB 01 ATEX 1105	-	II 2 G Ex db eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-5000	True	N/A	False	
50-PSV-006	Pressure Safety Valve for P-5001A	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PSV-007	Pressure Safety Valve for P-5001B	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PT-001	Sea water from pump P-50001A	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240660	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-002	Sea water from pump P-50001B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240661	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-014	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240651	SST76-H-7-K-2-0-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-XV-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-003	Sea water from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-004	Sea water recirculation from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-005	Drain Water discharge to Caisson	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XY-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	
50-XY-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	

Technická inšpekcia, a.s.

Trnavská cesta 56, 821 01 Bratislava
Slovenská republika

[1] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective System Intended for use in potentially explosive atmospheres
Directive 2014/34/EU

[3] Supplementary EU-Type Examination Certificate Number:

TI17ATEX 304 X / 1

[4] Product:

SPRIANO® Electronic transmitter series SST7X
Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator)

[5] Manufacturer: **TERRANOVA S.r.l.**

[6] Address: **Via Gramsci, 1, 26827 – Terranova dei Passerini (LO), Italy**

[7] This supplementary certificate extends EU – Type Examination Certificate No. TI17ATEX 304 X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

[8] Technická inšpekcia, a.s., Notified Body Number 1354 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that the product, as modified by this supplementary certificate, has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

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Bratislava, March 08th, 2021

Ing. Dušan Perniš
General Director

NB 1354

[13] **Schedule**

[14] **Supplementary EU-Type Examination Certificate Number: TI17ATEX 304 X / 1**

[15] Description of the variation to the product:

The subject of this supplementary certificate is extension of product SPRIANO® Electronic transmitter series SST7X, Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator), which has protection mode "Ex-db" certified by certificate TI17ATEX304X, to the protection mode "Ex-ia" certified by certificate TI17ATEX305X.
Electronic inside the Series SST7X has been used the same as the SST5X described into TI17ATEX305X certificate.
Housing materials to be used Anticorodal Aluminum or Stainless Steel according previous certificates.
New Variation to the product are:

		With Aluminum housing	
		Without safety barrier	
Ex	II 1/2 G	Ex db IIC T6 Ga/Gb	-40°C<Tamb<+60°C
		Ex db IIB T5 Ga/Gb	-40°C<Tamb<+80°C
		or	
		With safety barrier	
Ex	II 1/2 G	Ex ia IIC T6, T5, T4 Ga	-40°C<Tamb<+40°C / +55°C / +80°C
		With SS AISI 316 housing	
		Without safety barrier	
Ex	II 1/2 G	Ex db IIC T6 Ga/Gb	-40°C<Tamb<+60°C
		Ex db IIB T5 Ga/Gb	-40°C<Tamb<+80°C
		or	
		With safety barrier	
Ex	II 1 G	Ex ia IIC T6, T5, T4 Ga	-40°C<Tamb<+40°C / +55°C / +80°C

Basic description of product:

The Transmitters series electronic SST7X measure pressure, level or temperature of liquids, gases and vapors and transmit a current signal 4-20mA + HART®.
According to the process connection, the series SST7X is constituted by the following models, they can be identified by the code following the series name:

SST70	Displacer level transmitter
SST71	Float level transmitter
SST72	Temperature transmitter
SST75	Relative or absolute pressure transmitter with incorporate separating diaphragm (ceramic)
SST76	Relative or absolute pressure transmitter with incorporate separating diaphragm (piezo)
SST77B	Differential pressure transmitter
SST77BL	Pressure transmitter for level measure
SST79B	Submersible level transmitter
SST70-REM	Field digital indicator

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TERRANOVA® SPRIANO TELCOM MEC-RELA

G. Luca Mergazzoli
W
Director

Model SST70: The transmitter is isolated from the process via a mechanical system to the torsion tube and also the measuring cell presents a separation membrane filled with inert fluid.
Model SST71: The transmitter is isolated from the process via a tube containing reed switches.
Model SST72: The transmitter is isolated from the process via a tube containing sensors PT100.
Models SST75, SST76, SST77B and SST77BL: The transmitter is isolated from the process by membrane separation metal filled with inert fluid.
Model SST79 (version with remote sensor): The remote transmitter is isolated from the process by separation membranes metal filled with inert fluid. It is connected to the housing means shielded cable with 5 wires soldered.
Model SST70-REM (Loop powered field digital indicator): The indicator has no element part but only it is connected via current loop for displaying the desired variable.

Product with variation of Exdb protection:

The instruments are suitable for gas group IIC or IIB depending by the Ambient Temperature and they have the type of protection "Ex db".
Temperature: -40 ° C ≤Tamb≤ + 60 ° C (or -40 ° C ≤Tamb≤ + 80 ° C)
In the case where the process temperatures are higher than the maximum ambient temperature (or below the minimum ambient temperature), the instrument is installed with a suitable finned arm that can dissipate the temperature in excess and ensure the installation inside the ambient temperature range specified by the manufacturer.
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a body of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made in Anticorodal Aluminum or Stainless Steel AISI 304 / 316 (Thickness of coating <0.15mm) while the door is tempered-glass glued to the lid with a silicone seal.

Electrical characteristics:

Supply voltage	≤ 30 VDC
Output signal	4 ÷ 20 mA + HART®
Maximum power transferred	0,75 W
ATEX category	II 1/2 G
Protection mode	Ex db IIC T6 Ga/Gb with Tamb [- 40°C, +60°C] Ex db IIB T5 Ga/Gb with Tamb [- 40°C, +80°C]
IP Code	IP 66
The power cables must be at least 22 AWG (0.34mm2 section section - 0.64mm2), suitable for an operating temperature ≥ 90 ° C for Tamb ≥ 70 ° C.	

The marking of the product shall include the following:

⟨Ex⟩ II 1/2 G Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C

Product with variation of Exia protection:

The instruments are suitable for gas group IIC and have the type of protection "Ex i".
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a body of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made of stainless steel or aluminum having a content Mg of less than 6% (coating thickness <0.15mm) while the door can be static plastic, 5 mm thick (glue Araldite 2021) or sodalime tempered glass, 5 mm thick (glue Araldite 2011).

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Electrical characteristics:

Parameter	Tamb<60°C	Tamb<80°C
Maximum voltage input **Ui**	30 V	25.2 V
Maximum current input **Ii**	100 mA	100 mA
Power maximum input **Pi**	0.75 W	0.62 W
Maximum capacity Internal	10 nF	10 nF
Maximum Internal Inductance	0.2 mH	0.2 mH
Output signal	4 ÷ 20 mA + HART®	
Degree of protection	IP 66 for Aluminum housing IP67 for SS AISI 316 housing	

The marking of the product shall include the following:

II 1/2G Ex ia IIC T6, T5, T4 Ga/Gb **-40°C ≤ Tamb ≤ 40°C (T6)** **-40°C ≤ Tamb ≤ 55°C (T5)** **-40°C ≤ Tamb ≤ 80°C (T4)** **For Aluminum housing**	**1G Ex ia IIC T6, T5, T4 Ga** **-40°C ≤ Tamb ≤ 40°C (T6)** **-40°C ≤ Tamb ≤ 55°C (T5)** **-40°C ≤ Tamb ≤ 80°C (T4)** **For SS AISI 316 housing**

[16] Report Number:
Inspection report No: 54/5/2021
Final Test Report No: 54/5/2021

[17] Specific Conditions of Use:

Product with variation of Exdb protection:

Ambient temperature:
Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C
In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

Entries for flameproof enclosure:
The accessories used for cable entry into the housing (which must be treated ½ "NPT or M20x1.5) must comply with the standards EN 60079-0 and EN 60079-1.
The entrance hole leads not used should be closed with the cap conforms to EN 60079-1.

Warning marking:
- "WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT"

Informative marking:
- "SEE INSTALLATION INSTRUCTION DOCUMENT".

Product with variation of Exia protection:

Ambient temperature:

-40°C ÷ +40°C	For Class T6
-40°C ÷ +55°C	For Class T5
-40°C ÷ +80°C	For Class T4

In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable

spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

[18] Essential Health and Safety Requirements:
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.
Additional information: None.

[19] Drawings and Documents:

Number	Sheet	Issue	Date	Description
DTP-SST7X	4pgs	REV No.21.02	12/02/2021	List of drawings and Documents SPRIANO ® Electronic Switches SST7X By TERRANOVA ®
TI17ATEX305X	3 pgs	-	13/03/2017	EU –Type Examination Certificate (Exia)

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TECHNICKÁ INŠPEKCIA • SLOVENSKÁ REPUBLIKA • TI NB 1354 -5-

Bratislava, March 08th, 2021

Ing. Dušan Perniš
General Director

TERRANOVA® SPRIANO Tylcom MEC-RELA

G. Luca Vergazzoli
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...E...ctor

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[1] EU-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective System Intended for use in potentially explosive atmospheres
Directive 2014/34/EU

[3] EU-Type Examination Certificate Number:

TI17ATEX 304 X

[4] Product:

SPRIANO® Electronic transmitter series SST7X
Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator)

[5] Manufacturer: **TERRANOVA S.r.l.**

[6] Address: **Via Gramsci, 1, 26827 – Terranova dei Passerini (LO), Italy**

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] Technická inšpekcia, a.s., Notified Body Number 1354 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of product intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in confidential report No. 304/5/2017.

[9] Compliance with the Essential Health and safety Requirements has been assured by compliance with: **EN 60079-0:2012+A11:2013, EN 60079-1:2014**
except in respect of those requirements listed at item 18 of the Schedule.

[10] If the sign "X" is placed after the certificate number, it indicate that the product is subject to the Specific conditions of Use specified in the schedule to this certificate.

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of this Directive apply to the manufacturing process and supply of this product.

[12] The marking of the product shall include the following:

Ex II 1/2 G Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C

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Bratislava, March 13th, 2017

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General Director

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[13] **Schedule**

[14] **EU-Type Examination Certificate Number: TI17ATEX 304 X**

[15] Description of product:
The Transmitters series electronic SST7X measure pressure, level or temperature of liquids, gases and vapors and transmit a current signal 4-20mA.
The instruments are suitable for gas group IIC and have the type of protection "Ex db".
Temperature: -40 ° C ≤Tambs≤ + 60 ° C (or -40 ° C ≤Tambs≤ + 80 ° C)
In the case where the process temperatures are higher than the maximum ambient temperature (or below the minimum ambient temperature), the appliance is installed with a suitable spacer can dissipate the temperature in excess and ensure the installation inside the ambient temperature range specified by the manufacturer.
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a bodice of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made in anticorodal aluminum or stainless steel AISI 304 (Thickness of coating <0.15mm) while the door is tempered-glass glued to the lid with a silicone seal.

According to the process connection, the series SST7 is formed by the following models, they can be identified by the code following the series name:

SST70	Displacer level transmitter
SST71	Float level transmitter
SST72	Temperature transmitter
SST75	Relative or absolute pressure transmitter with incorporate separating diaphragm (ceramic)
SST76	Relative or absolute pressure transmitter with incorporate separating diaphragm (piezo)
SST77B	Differential pressure transmitter
SST77BL	Pressure transmitter for level measure
SST79B	Submersible level transmitter
SST70-REM	Field digital indicator

Model SST70: The transmitter is isolated from the process via a mechanical system to the torsion tube and also the measuring cell presents a separation membrane filled with inert fluid.

Model SST71: The transmitter is isolated from the process via a tube containing reed switches.

Model SST72: The transmitter is isolated from the process via a tube containing sensors PT100.

Models SST75, SST76, SST77B and SST77BL: The transmitter is isolated from the process by membrane separation metal filled with inert fluid.

Model SST79 (version with remote sensor): The remote transmitter is isolated from the process by separation membranes metal filled with inert fluid. It is connected to the housing means shielded cable with 5 wires soldered.

Model SST70-REM (Loop powered field digital indicator): The indicator has no element part but only it is connected via current loop for displaying the desired variable.

Electrical characteristics:

Supply voltage	≤ 30 VDC
Output signal	4 ÷ 20 mA
Maximum power transferred	0,75 W
ATEX category	1/2 G
Protection mode	Ex db IIC T6 Ga/Gb with Tamb [- 40°C, +60°C] Ex db IIB T5 Ga/Gb with Tamb [- 40°C, +80°C]
IP Code	IP 66
The power cables must be at least 22 AWG (0.34mm2 section section - 0.64mm2), suitable for an operating temperature ≥ 90 ° C for Tamb ≥ 70 ° C.	

[16] Report Number:
Inspection report No: 304/5/2017
Final Test Report No: 304/5/2017

[17] Specific Conditions of Use:

Ambient temperature:

Ex db IIC T6 Ga/Gb	-40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb	-40°C ≤ Tamb ≤ 80°C

In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

Entries for flameproof enclosure:
The accessories used for cable entry into the housing (which must be treated ½ "NPT) must comply with the standards EN 60079-0 and EN 60079-1.
The entrance hole leads not used should be closed with the cap conforms to EN 60079-1.

Warning marking:
- "WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT"

Informative marking:
- "SEE INSTALLATION INSTRUCTION DOCUMENT".

[18] Essential Health and Safety Requirements:
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.
Additional information: None.

[19] Drawings and Documents:

Number	Sheet	Issue	Date	Description
DTP-SST7X	3pgs	REV No.17.01	31/01/2017	List of drawings and Documents SPRIANO® Electronic Switches SST7X

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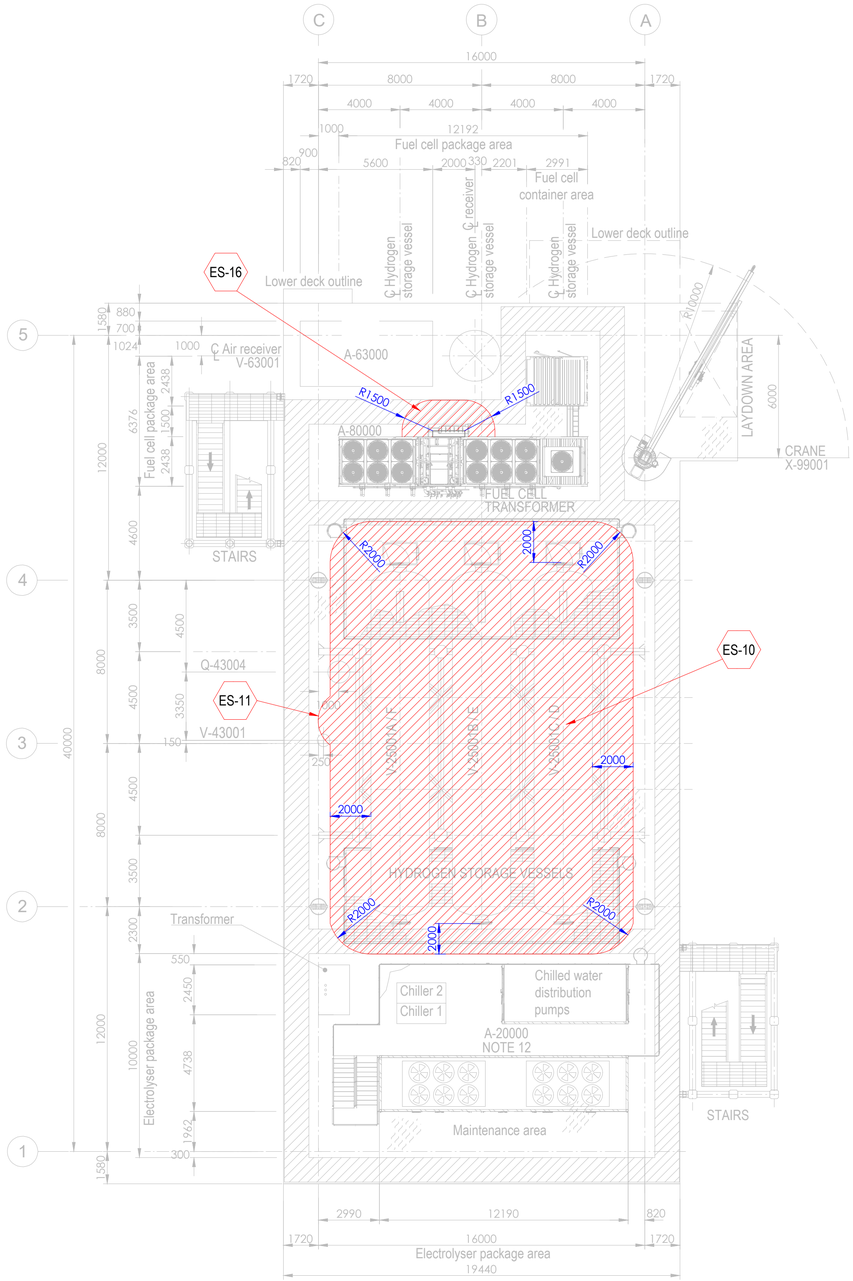
Bratislava, March 13th, 2017

Ing. Dušan Perniš
General Director

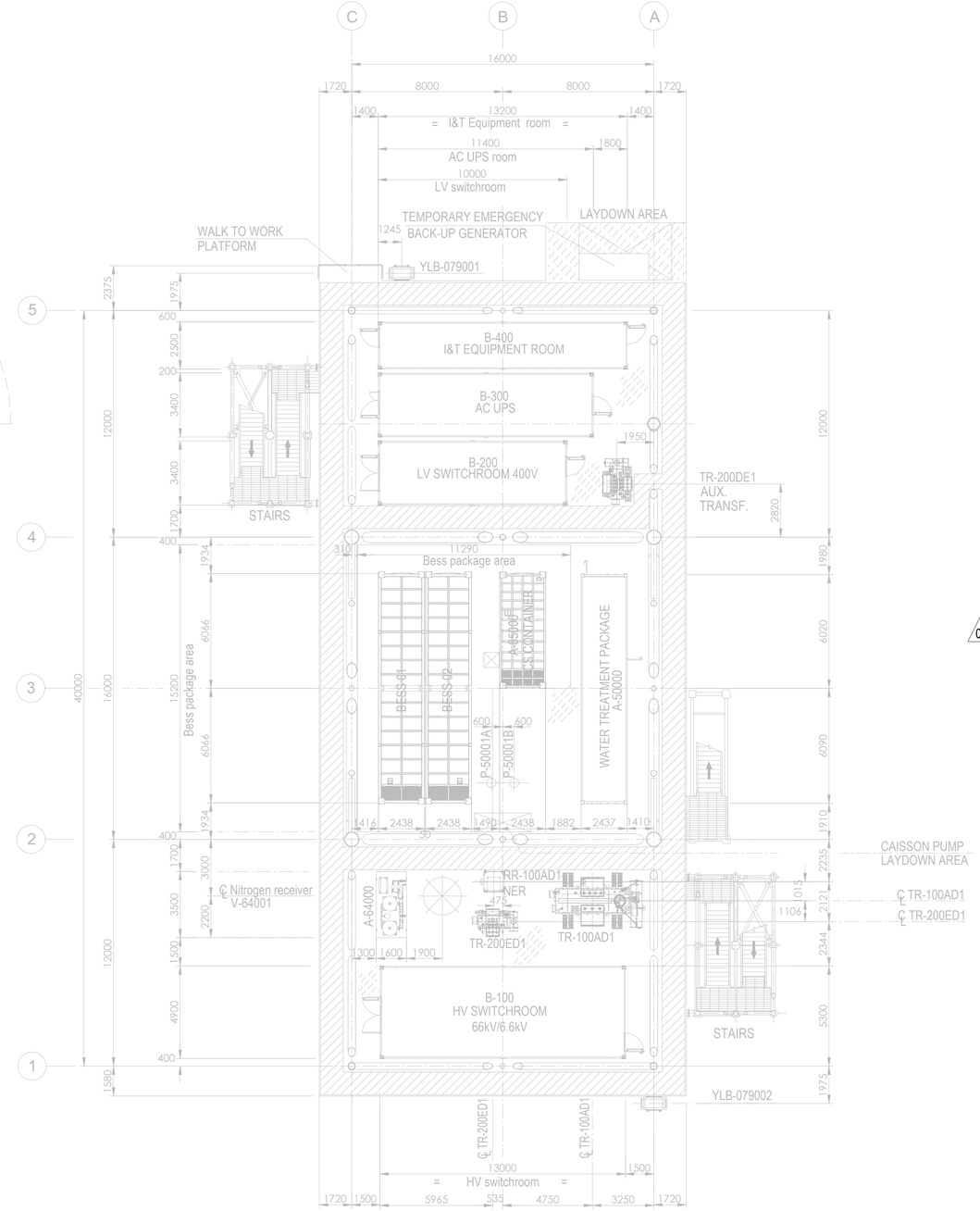
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



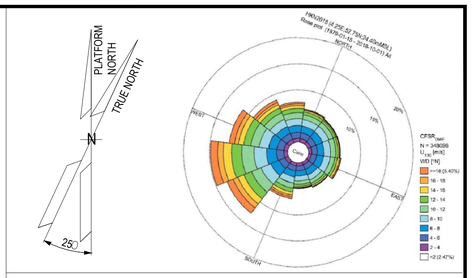
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

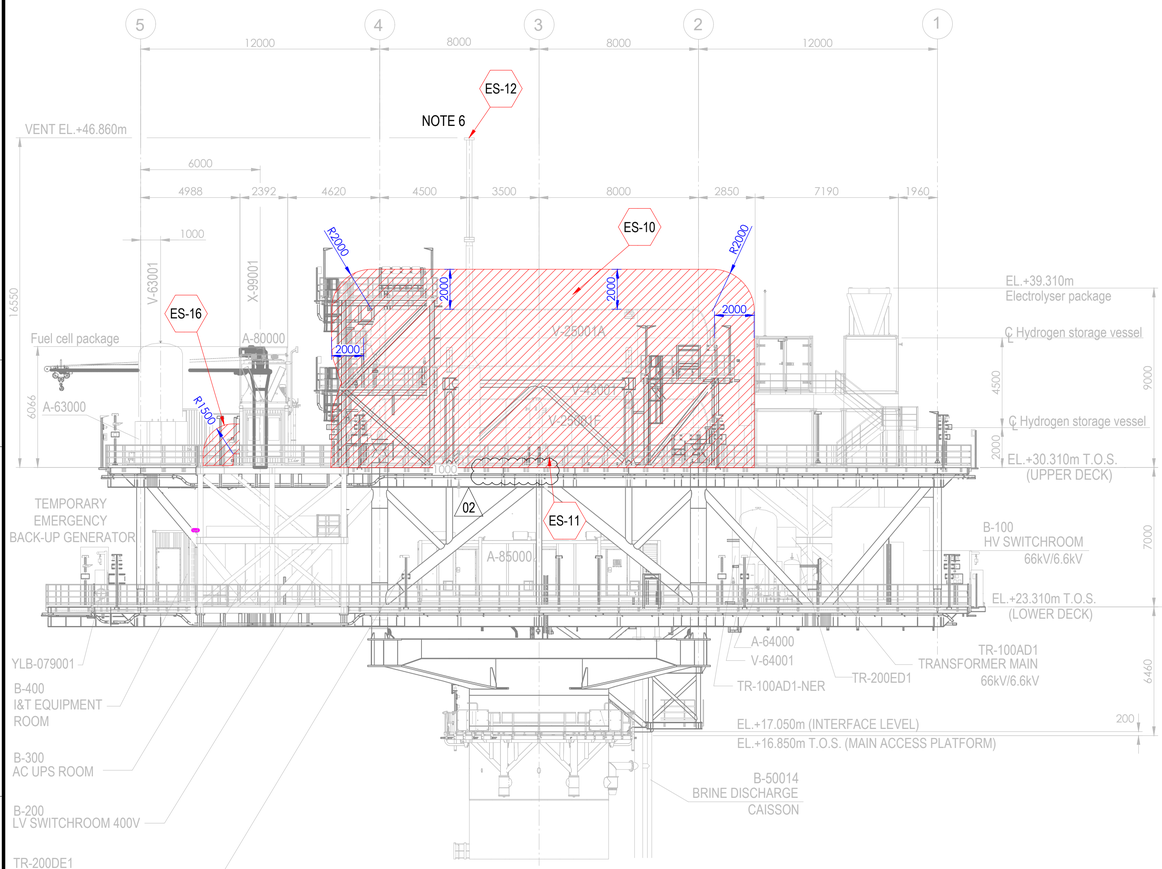
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

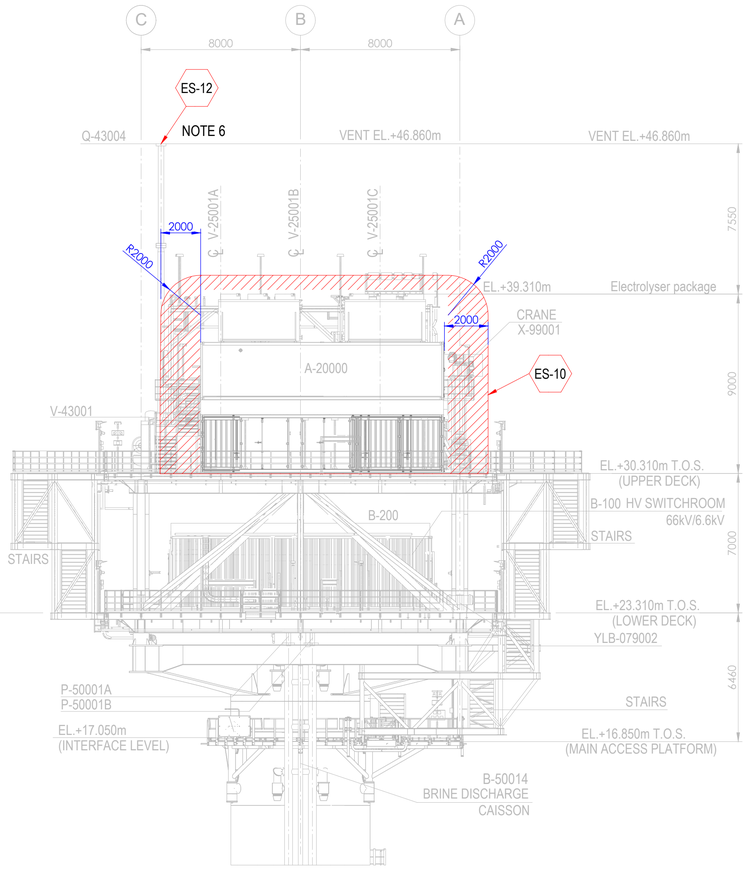
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

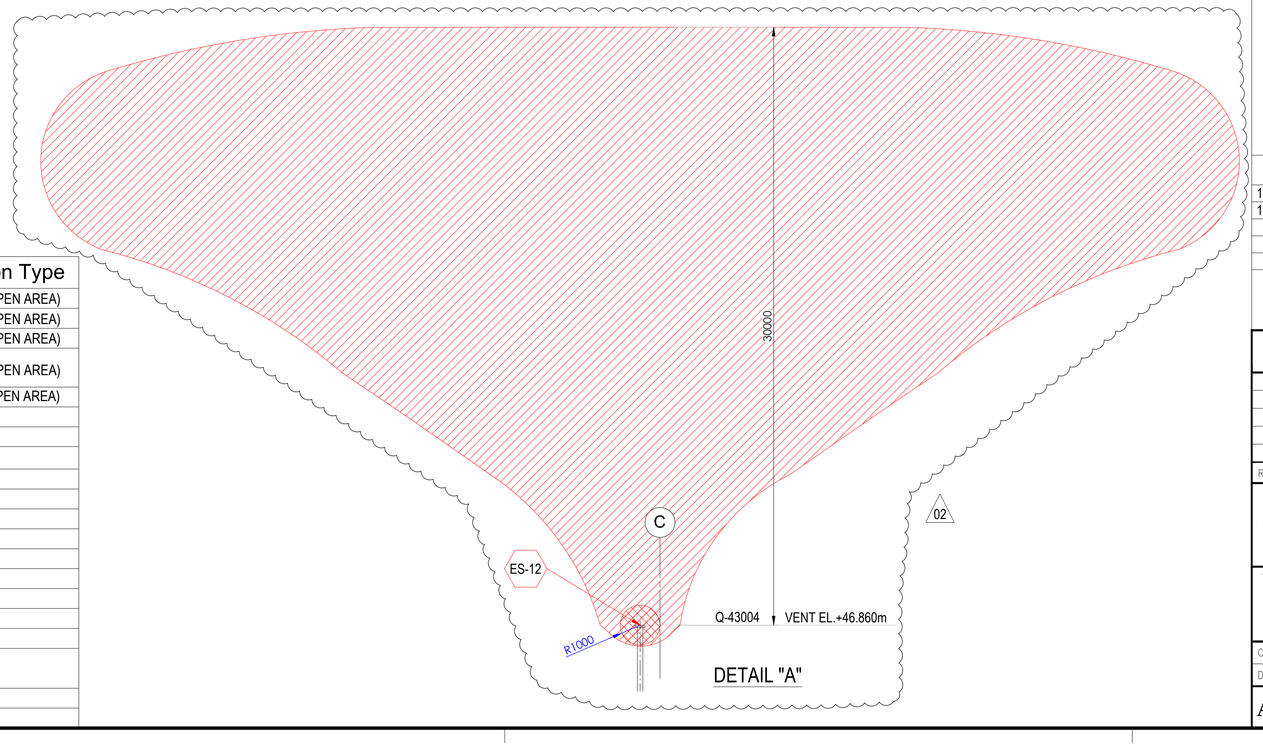


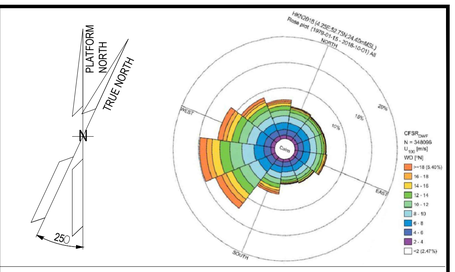
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	43-FT-001	: Flow Transmitter - Hydrogen form KO DRUM V-43001 to vent stack Q-43004			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10001470	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		XGFI-2588E			
Manufacturer	Panametrics LLC			**Model**		XGF868i-2-2-OI-H7-3-4-0-CC			
Cert No.	Sira 17ATEX1304X			**Equipment Ambient Temp.**		-40°C to +60°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex d	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state “NA”. Comments are required for ‘Failure’ column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	PL	See PL: C30003200
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		OK	
	Physical check	x	PL	See PL: C30004129
11	Threaded covers on enclosures are of the correct type, are tight and secured		OK	
	Physical check	x	OK	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	OK	
20	Fluorescent lamps are not indicating EOL effects (only for Ex “e” – Ex “n” – Ex “t”)	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	NA	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	PL	See PL: C30004129
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	OK	

ITEM	Tag	43-FT-001	: Flow Transmitter - Hydrogen form KO DRUM V-43001 to vent stack Q-43004			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10001470	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	OK	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	43-FT-001	: Flow Transmitter - Hydrogen form KO DRUM V-43001 to vent stack Q-43004			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10001470		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

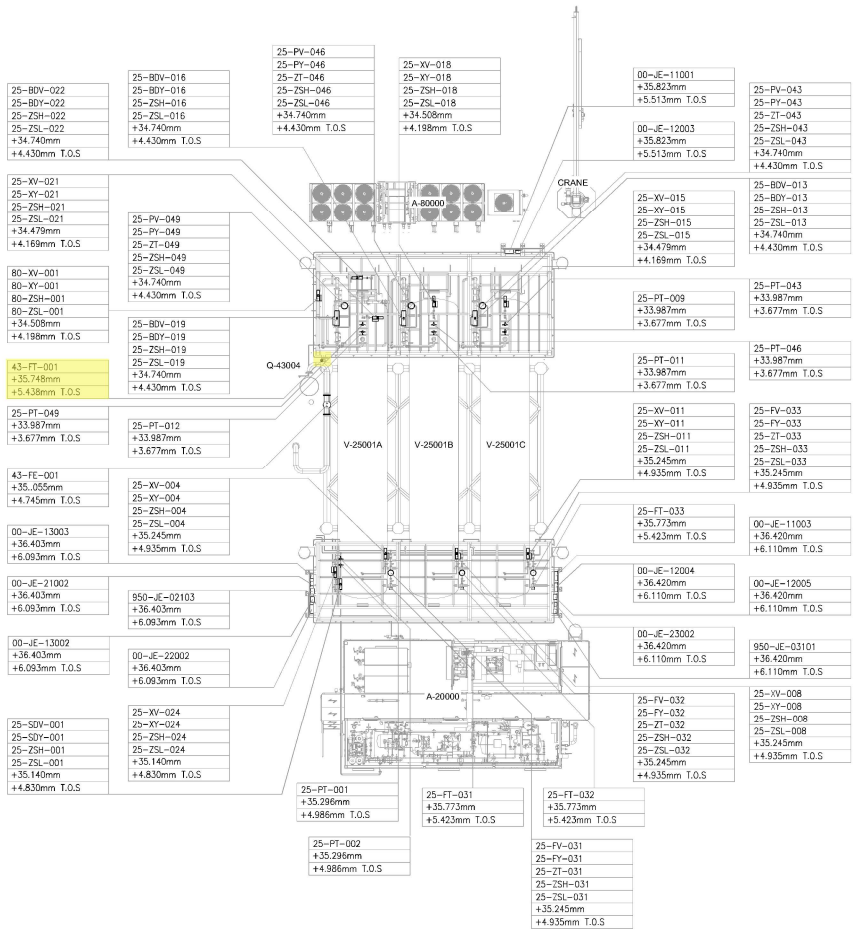
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-13	2025-02-26	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-13T12:22:50.870Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-26T12:58:23.012Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

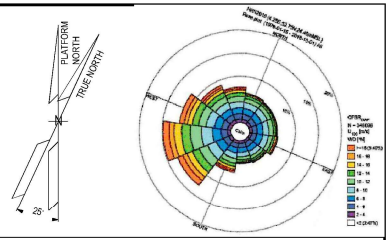
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV.02.dwg

DRAWING NO. DRAWING_NO.

REV. REV

V-43001

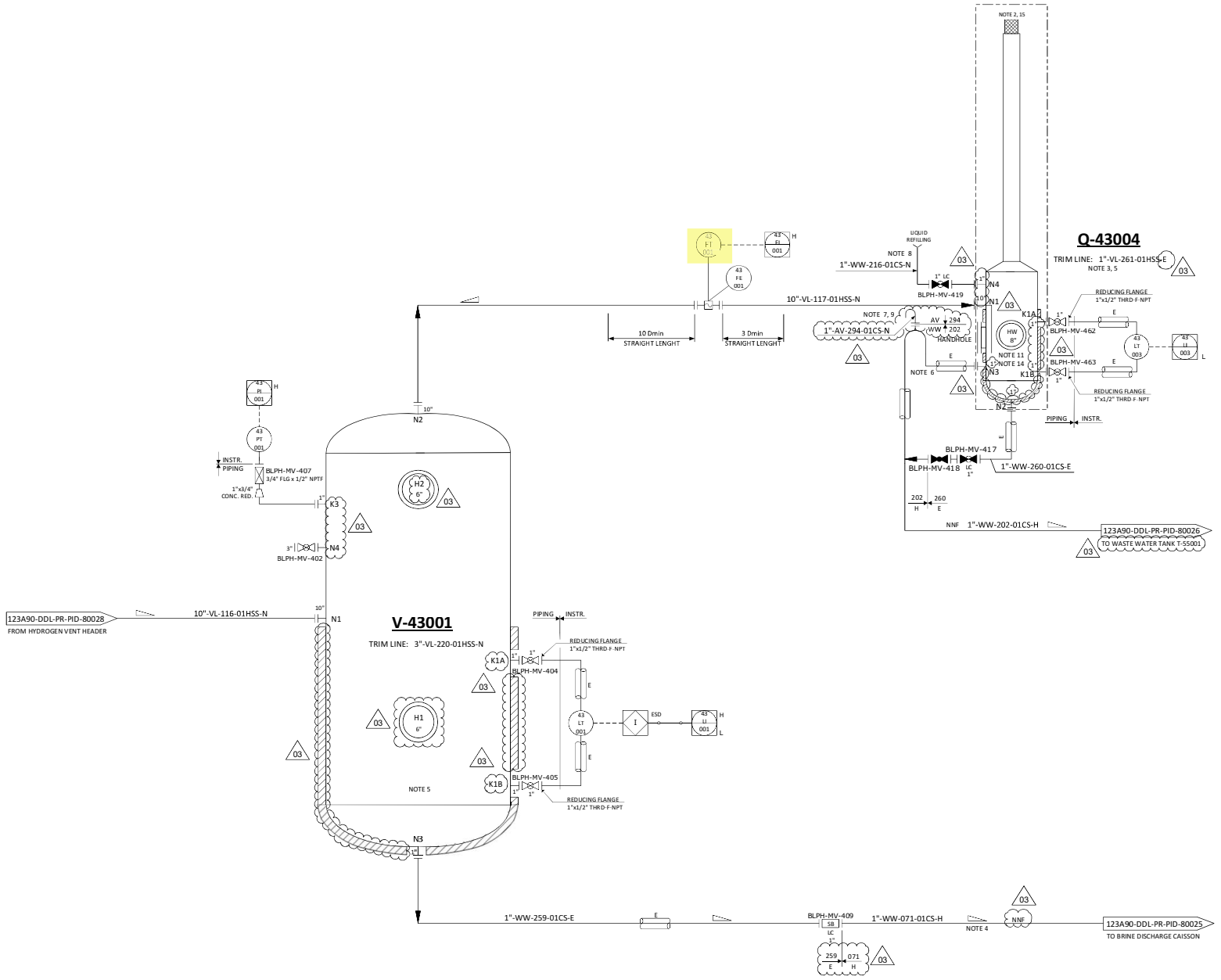
HYDROGEN VENT KO DRUM

SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1

SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	NTS
DRAWN	CHECKED	APPROVED		DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80029			SHEET 001	REV. 03

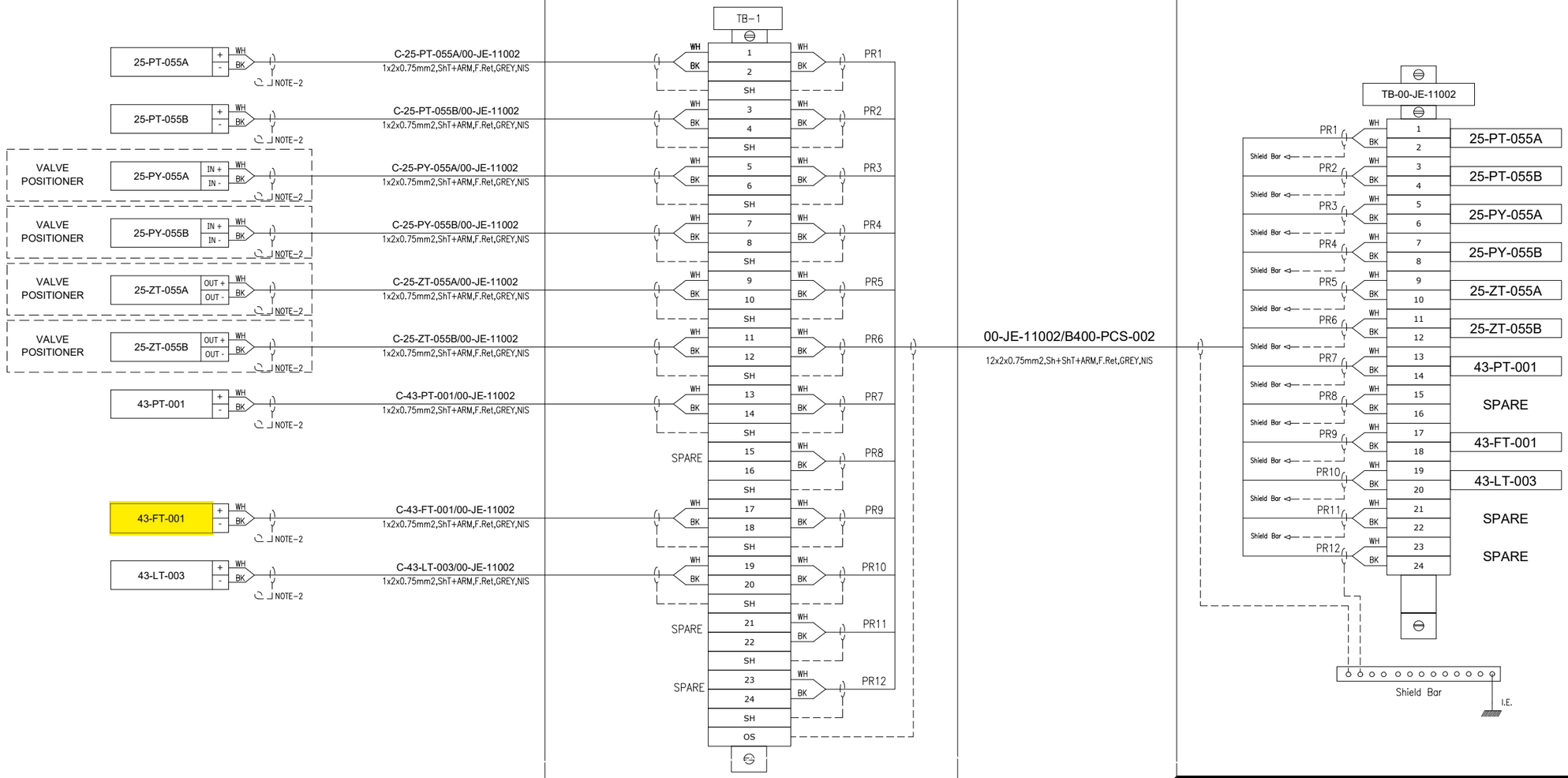
File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11002	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_J	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

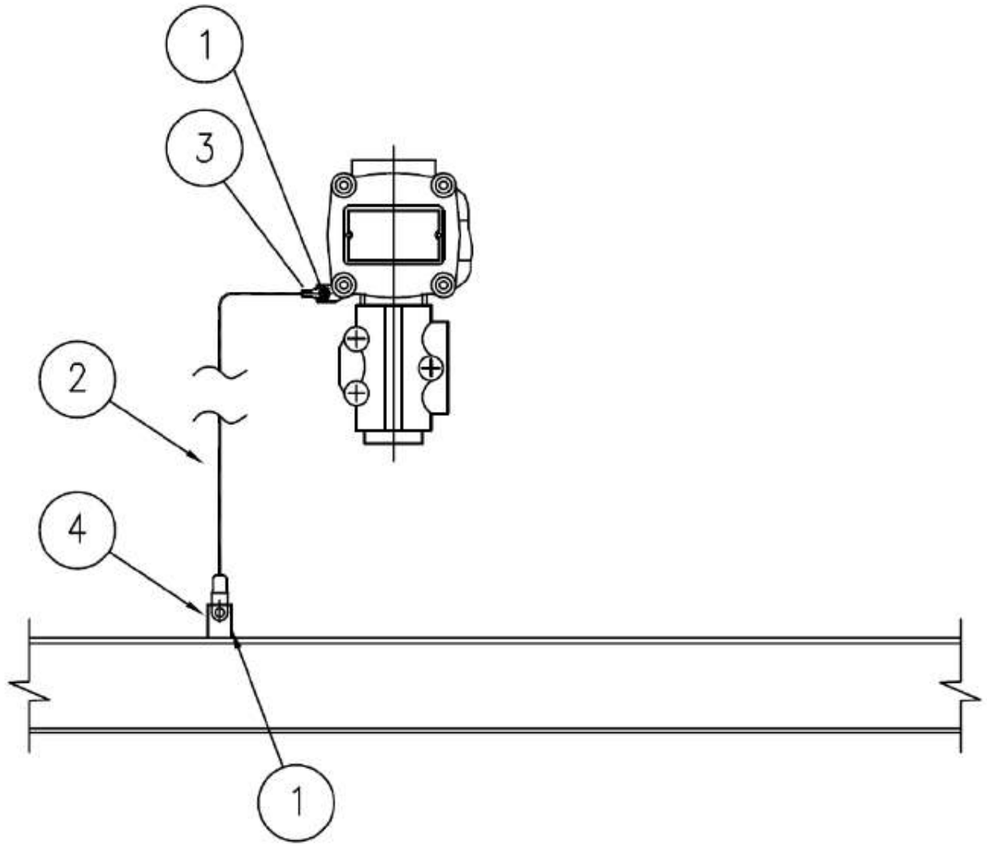
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00-JE-11002-SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123-A90-DDL-40015	SHEET 006	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

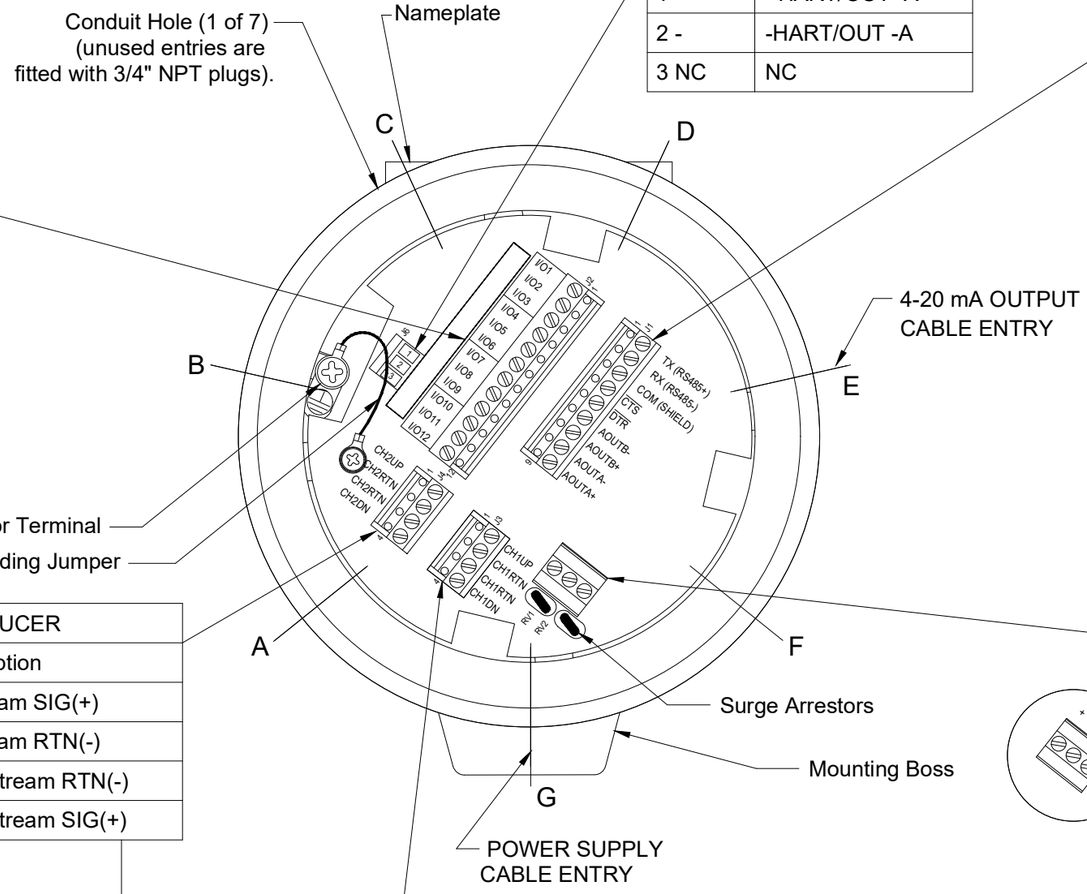
File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

C:\USERS\GOVESHU\ONEDRIVE - BAKER HUGHES\DESKTOP\MY WORK\12_JULY_2024\09_SO_1706864\OUTPUT\WD\SK18027

INPUT/OUTPUT CONNECTIONS	
Pin No.	Description
1 I/O1	NC
2 I/O2	NC
3 I/O3	NC
4 I/O4	NC
5 I/O5	NC
6 I/O6	NC
7 I/O7	OUT C +24V
8 I/O8	INPUT C - +
9 I/O9	INPUT C - RTN
10 I/O10	OUT D +24V
11 I/O11	INPUT D - +
12 I/O12	INPUT D - RTN

HART	
Pin No.	Description
1 +	+HART/OUT -A
2 -	-HART/OUT -A
3 NC	NC

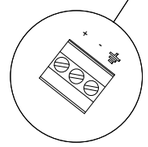
RS232 / 4-20 OUTPUT		
Pin #	Designation	Description
1	TX(RS485+)	Transmit / +
2	RX(RS485-)	Receive / -
3	COM (SHLD)	Ground
4	$\overline{CTS}$	Clear To Send
5	$\overline{DTR}$	Data Terminal Ready
6	AOUT B-	4-20 Output 2 RTN(-)
7	AOUT B+	4-20 Output 2 SIG(+)
8	AOUT A-	4-20 Output 1 RTN(-)
9	AOUT A+	4-20 Output 1 SIG(+)

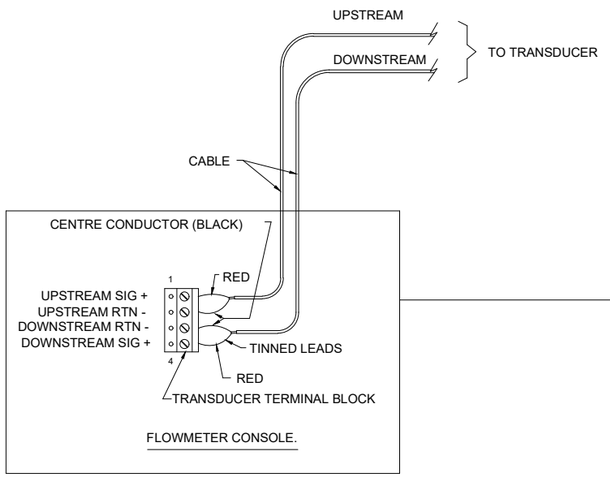


CH2 TRANSDUCER	
Pin No.	Description
1 CH2UP	Upstream SIG(+)
2 CH2RTN	Upstream RTN(-)
3 CH2RTN	Downstream RTN(-)
4 CH2DN	Downstream SIG(+)

CH1 TRANSDUCER	
Pin No.	Description
1 CH1UP	Upstream SIG(+)
2 CH1RTN	Upstream RTN(-)
3 CH1RTN	Downstream RTN(-)
4 CH1DN	Downstream SIG(+)

DC POWER INPUT	
12 TO 28 VDC	
Pin #	Description
1 +	LINE POSITIVE
2 -	LINE NEGATIVE
3 ⏚	NO CONNECTION





TRANSDUCER CONNECTION DETAIL

NOTE: Unit shown from rear with rear cover removed.

TAG No's :
43-FT-001

NOTES:
1. POWER SUPPLY SURGE PROTECTION IS IN-BUILT ON THE POWER SUPPLY BOARD.
2. TROPICALIZATION OF ELECTRONICS.

XGF868I-2-2-OI-H7-3-4-0-CC

Rev	Description of Changes	Checked	Approved	Date
-	Issued for Approval	SG	TG	12/07/24

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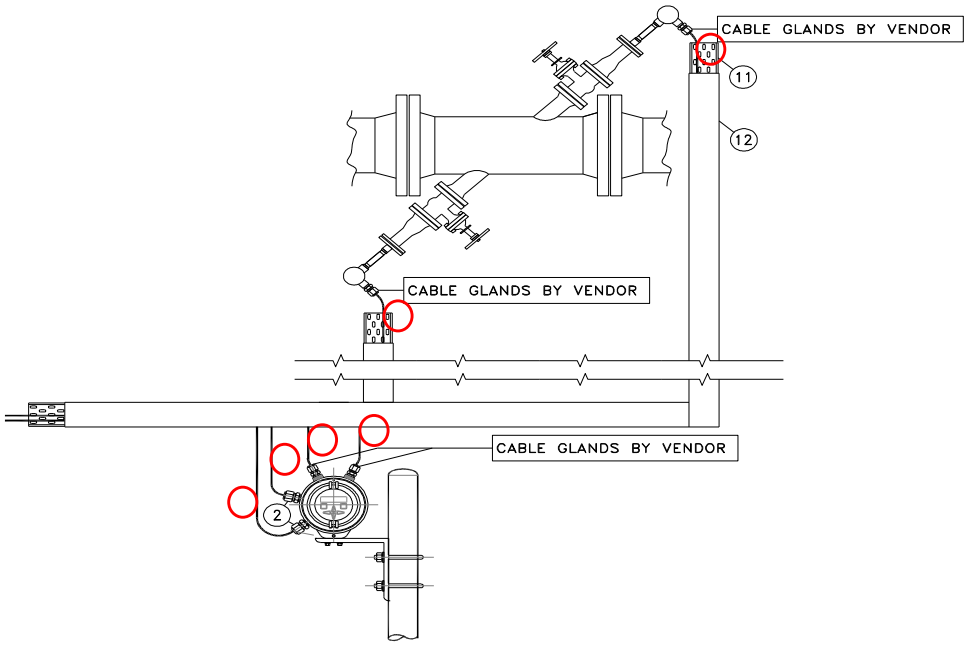
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TITLE
INTERCONNECTION DIAGRAM
FOR XGF868i FLOWMETER
TWO CHANNEL

SCALE		SHEET	OF
NTS	DO NOT SCALE DRAWING	1	1

SIZE	DRAWING NUMBER	REV
A3	SK18027 / 1706864	-

ELECTRICAL HOOK-UP FOR FLOW TRANSMITTERS (ULTRASONIC)



	INSTRUMENT TAG
1	43-FT-001
2	
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	20 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	20 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	2

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PB distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

1. FLOWMETER (QTY: 1)

TYPE:	XGF868I
ENCLOSURE:	316SS
VOLTAGE:	12 - 28 VDC
POWER USAGE:	20W
IP RATING:	IP66
HAZ AREA:	EX dIIC T6 Gb
CERT NUMBER:	SIRA 17ATEX1304X
WEIGHT:	11 kg [24 lb] B

FINISH : AS PER MANUFACTURER STANDARD

2. FLOWMETER CABLE (QTY: 1 PAIR)

TYPE:	FLAME RETARDENT RG-62
ARMOUR:	SWA
LENGTH:	10 M
CONNECTION (METER):	3/4" NPT
CONNECTION (XDUCER):	3/4" NPT
GLAND MAT'L:	316SS
HAZ AREA :	Ex nR IIC Gc
CERT. NUMBER :	CML-19ATEX4109X
WEIGHT:	0.28 kg/m B

FINISH : N/A

3. PRE-AMPLIFIER (QTY: 2)

TYPE :	XAMP
ENCLOSURE :	316SS
IP RATING :	IP65/66
HAZ. AREA :	Ex d IIC T6 Gb
CERT NUMBER :	SIRA 20ATEX1001X
WEIGHT :	2 kg [4.4 lb] EA B

FINISH : AS PER MANUFACTURER STANDARD

4. TRANSDUCER (QTY: 2)

TYPE :	T5
MATERIAL :	TITANIUM
TEMP RANGE :	-55 to 150°C (-67 to 302°F) (NT)
HAZ. AREA :	Ex d IIC T6 Gb
CERT NUMBER :	SIRA 20ATEX1001X
MAT'L CERTS :	EN10204 3.1 & NACE MR-01-75
JUNCTION BOX:	316SS
IP RATING :	IP66
WEIGHT :	2 kg [4.4 lb] EA B

FINISH : AS PER MANUFACTURER STANDARD

5. INSERTION MECHANISM (QTY: 2)

TYPE:	IMA72
SIZE:	2" x 2"
RATING:	150#
MATERIAL	
PACKING GLAND :	316SS
BARREL HOLDER:	316 / 316L SS
HYDROTEST:	PER ASME B31.3
MAT'L CERTS:	EN10204 3.1 & NACE MR-01-75
WEIGHT:	12.7 kg [28 lb] EA B

FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A

6. ISOLATION VALVE (QTY: 2)

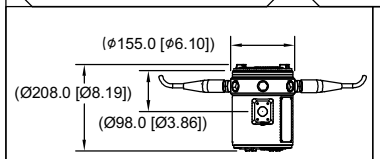
TYPE :	GATE VALVE
SIZE :	2", 150# RF
F/F LENGTH:	177.8MM (7")
MATERIAL	
BODY:	A351 CF8M
TRIM:	316SS
MAT'L CERTS:	EN10204 3.1 & NACE MR-01-75
WEIGHT:	18 kg [39.7 lb] EA B

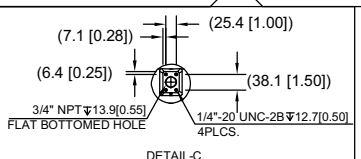
FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A

7. FLOWCELL (QTY : 1)

FOR DETAILS OF THE FLOWCELL, PLEASE REFER TO THE FLOWCELL FABRICATION DRAWING, REF: 182M4103
WEIGHT : 98 kg [216 lb] B

FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A





DETAIL-C
(FOR 2" PIPE MOUNTING)

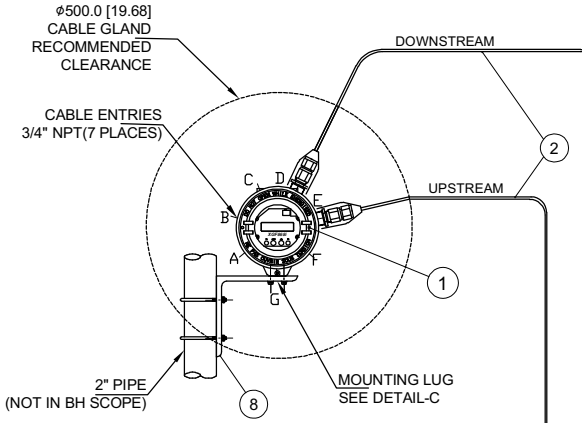
8. 2" PIPE MOUNTING BRACKET (QTY: 1)

MATERIAL : 316SS

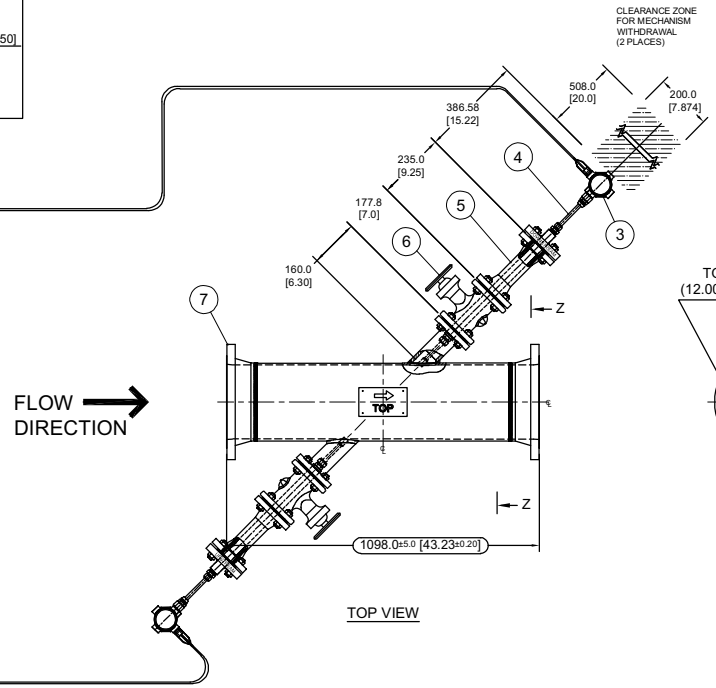
WEIGHT : 5 kg B

MISC ITEMS (NOT SHOWN)

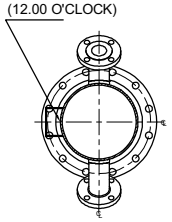
-1x NAMEPLATE
-5x 3/4" x M20 ADAPTORS SS



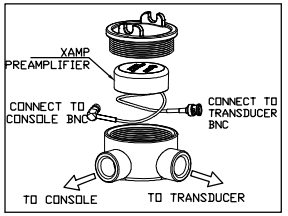
FRONT VIEW OF METER



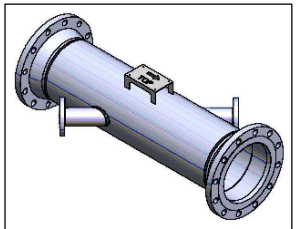
TOP VIEW



SECTION Z-Z



XAMP DETAIL

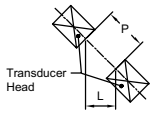


ISOMETRIC VIEW

NOTES:

1. EACH PAIR OF CABLES MUST BE CONTINUOUS IN LENGTH (NO JOINTS) AND EACH CABLE (WITHIN THE PAIR) MUST BE EQUAL IN LENGTH TO WITHIN 2.0 INCHS (50mm) OF EACH OTHER.
2. WHEN USING ARMOURED CABLE, ENSURE THAT THE ARMOURING OF THE COAXIAL CABLE AT THE INSTRUMENT ENCLOSURE END IS CONNECTED TO THE INSTRUMENT SUPPLY EARTH LINE.
3. USE ONLY Ex d CERTIFIED CABLE GLANDS / ADAPTORS PROVIDED.

WARNING
DO NOT REMOVE / REINSTALL TRANSDUCERS IF LINE PRESSURE EXCEEDS 5.5 BARG.



Path Length, P = 368.20mm[14.496"]
Axial Length, L = 260.32mm[10.248"]

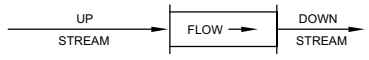
Final P & L Values will be provided on Flowcell Nameplate

TAG NUMBER : 43-FT-001
PIPE SIZE : 10", 150#, SCH 20, RF
XDCR CONFIG : TILTED DIA, 1P/1T

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN "MM[INCHES]".

FLOWCELL INSTALLATION RECOMMENDATION

INSTALL FLOWCELL ON PIPELINE TO ENSURE A FULLY DEVELOPED FLOW PROFILE IS PRESENTED TO THE FLOWMETER. BAKER HUGHES RECOMMENDS A MINIMUM OF 20 DIAMETERS OF UNOBSTRUCTED STRAIGHT RUN OF PIPELINE EXIST UPSTREAM OF THE FLOWCELL LOCATION AND 10 DIAMETERS OF SAME DOWNSTREAM.



Rev	Description of Changes	Drawn	Checked	Date
B	Issued for Approval	TG	TG	14/10/24
A	Issued for Approval	TG	TG	19/09/24
-	Issued for Approval	SG	TG	12/07/24

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TITLE: GENERAL ARRANGEMENT FOR XGF868i FLOWMETER C/W T5 TRANSDUCERS

SCALE	NTS	DO NOT SCALE DRAWING	SHEET	1	OF 1
SIZE	A3	DRAWING NUMBER	SK18028 / 1706864	REV	B

GENERAL	1	Tag Number			43-FT-001		
	2	Service			HDROGEN FROM KO DRUM TO HYDROGEN VENT (Q-43004)		
	3	P&ID Number	Special Regulation		123A901-DDL-PR-PID-80029	-	
	4	Line Size	Line No.		10"	10"-VL-117-01HSS-N	
	5	Line Schedule	Area Classification		Thk (mm) = 4.19	ATEX Zone2 - IIC (IIB+H2) T1	
PROCESS CONDITIONS	6	Fluid	Phase	State	HYDROGEN	SINGLE	GAS
	7	Spec Cond.	Sour Serv.				
	8	Flow	Min. / Norm. / Max. / Units			note 17	
	9	Oper. Pressure	Oper. Temperature		0 / 0.5 barg	AMB	
	10	Des. Pressure	Des. Temp. Max. / Min.		3.5 barg	80 °C	
	11	Density @ Fl. Norm.	Viscosity @ Fl. Norm.		0.11 kg/m^3 (@25°C, 0.4 barg)	0.01	
	12	Max. Allowable DP across Meter			N/A		
	13	Molecul. Wt. @ Fl. Nor.	Entrained Gas		2		
	14	Vapour Pressure	Critical Pressure		N/A	N/A	
METER	15	Meter Type			Spool Piece		
	16	Size	Rating	Facing	10" #150	RF	
	17	Range From	To	Eng. Units			
	18	Housing			ASTM A312 Gr.TP316/316L (ASME B31.12)		
	19	Electrical Connections			M20		
	20	Accuracy	Tracing		See Vendor Calculation Sheet	-	
	21	Trace Size	Rating	Facing	-	-	-
	22						
METER MATERIALS	23	Process Flanges			10" FLANGED #150		
	24	Tube Material			ASTM A312 Gr.TP316/316L		
	25	Sensor Housing Material			AISI 316/316L		
TRANSMITTER	26	Measurement Type	Beam / PATH No.		TRANSIT TIME	SINGLE / SINGLE	
	27	Mounting	Housing Material		Remote	AISI 316	
	28	Calibration Range			See Vendor Calculation Sheet		
	29	Electrical Connection	Electrical Class		M20x1,5MM	-	
	30	Output Signal	Load		4-20mA	600Ω	
	31	Other Output Signal			-		
	32	Power Supply	Consumption		24Vdc	20W	
	33	Ingress Protection	ATEX Certification		IP66	Ex-d IIC T6 Gb	
COMMUNICATION AND SOFTWARE	34	Communication Type	Signal Type		Conventional + HART Rev.7	4-20mA	
	35	DD Revision	CFF Revision		-	-	
	36	Hart Desciptor	Hart Tag		-	-	
	37	Internal Diagnostics	Capacitance		-	-	
	38	Segment	Device Address		-	-	
	39	Device Class	Simulate		-	-	
	40	Nominal Current	Operating Voltage		-	-	
ACCESSORIES	41	Environ. Protection			-		
	42	Measuring Cable Length	Special Cable Length		-	10m (Sensor - Transmitter)	
	43	Mounting Kit	Cable Glands		Mounting Bracket for 2" pole	Required	
	44	Isolating Ball Valve			Required according to piping class 01HSS		
PURCHASE	45	Manufacturer			Panametrics		
	46	Model Sensor	Transmitter		Flowcell	XGF868I	
	47	Purchase Order Number			1724001317		
	48	Weight			See Sheet 9		

No.	Date	By	Chkd	Appr	Description
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)
00	13/03/2024	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

Ultrasonic Flowmeter

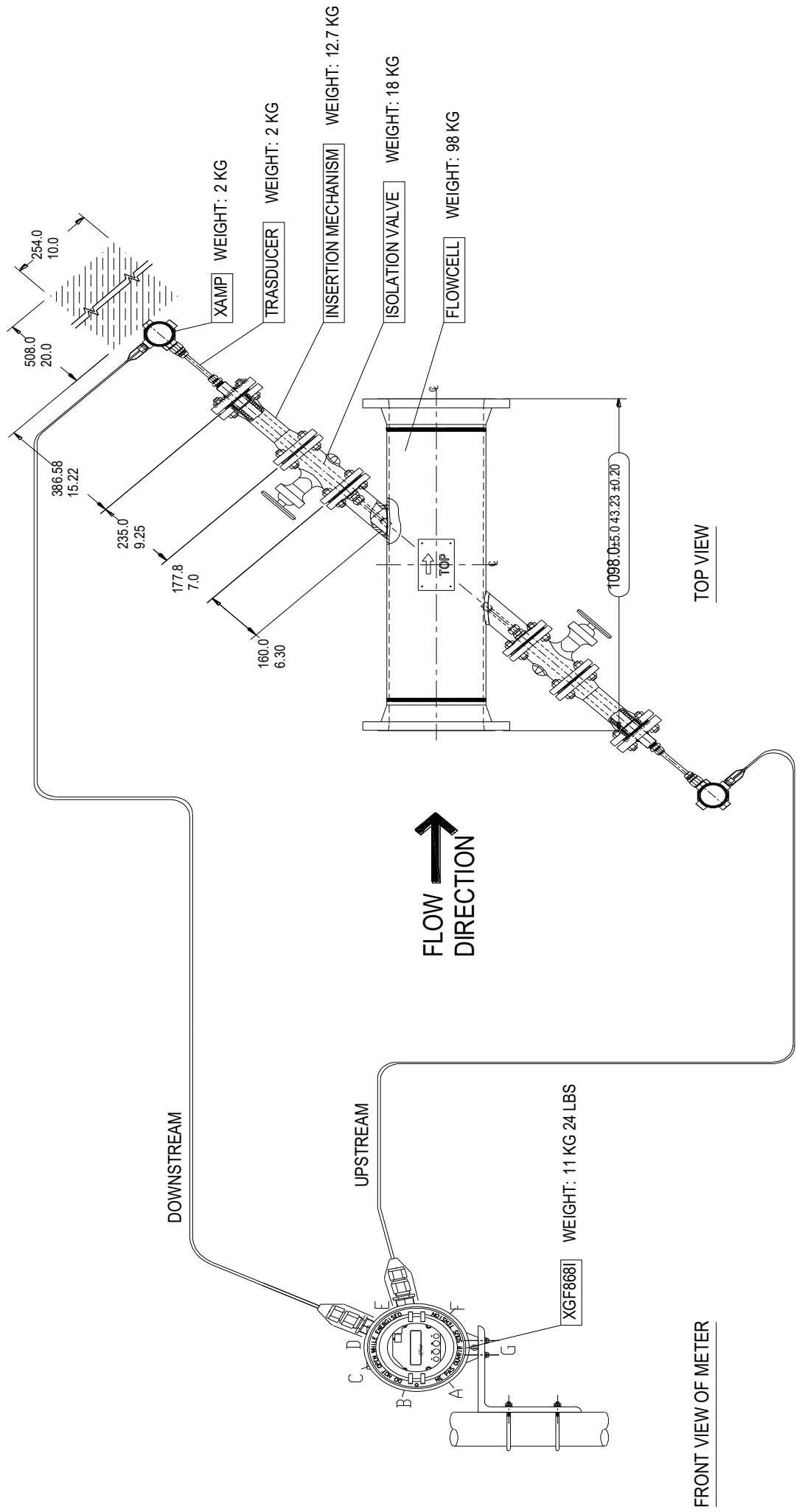
CROSSWIND

ROSETTI MARINO

Sheet 5 of 6

Code : Dwg. No.: 123A90-DDL-IN-DS-40048 Rev 01

43-FT-001 GENERAL ARRANGEMENT DRAWING



						INSTRUMENT DATASHEET	CROSSWIND	
						Ultrasonic Flowmeter	ROSETTI MARINO	
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)		Sheet 6 of 6	
No.	Date	By	Chkd	Appr	Description	Code :	Dwg. No.: 123A90-DDL-IN-DS-40048	Rev 01

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-ZSL-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSL-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSL-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSL-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSL-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSL-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
43-FE-001A	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6..T1 Gb		N/A	True	N/A	True	
43-FE-001B	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6..T1 Gb		N/A	True	N/A	True	
43-FT-001	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		XGF868i-2-2-OI-H7-3-4-0-CC		17ATEX1304X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	II 2G Ex db IIC T6 Gb		N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
43-LT-001	KO DRUM V-43001 high/low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240632	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-LT-003	H2 vent Q-43004 low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240633	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-PT-001	KO DRUM V-43001 pressure	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240650	SST76-H-7-G-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_7 HAZARDOUS-AREA_3
50-AT-020A	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020B	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020C	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-021A	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021B	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021C	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-HS-001	Emergency push button	LOWER DECK	1724000448	PSC	E2S	-	BExCP3CBGSSNAP2A1RN24 E4K7RS820R	Safe Area	Sira 09ATEX3286X	-	II 2 GD Ex db eb mb IIC T4 Gb Ta = (-40°C to +65°C) Ex tb IIIC T75oC Db Ta = (-40°C to +65°C)	-	A-5000	True	N/A	True	
50-HS-020	Emergency push button	LOWER DECK	1724000448	PSC	STAHL	-	8040/11	Safe Area	PTB 01 ATEX 1105	-	II 2 G Ex db eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-5000	True	N/A	False	
50-PSV-006	Pressure Safety Valve for P-5001A	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PSV-007	Pressure Safety Valve for P-5001B	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PT-001	Sea water from pump P-50001A	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240660	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-002	Sea water from pump P-50001B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240661	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-014	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240651	SST76-H-7-K-2-0-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-XV-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-003	Sea water from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-004	Sea water recirculation from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-005	Drain Water discharge to Caisson	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XY-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	
50-XY-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	

1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 17ATEX1304X** Issue: **3**

4 Equipment: **DigitalFlow 868i, 878 series Transmitters and Panaflow PF8x series Ultrasonic Gas Flowmeter**

5 Applicant: **Panametrics LLC.**

6 Address: 1100 Technology Park Drive
Billerica
Massachusetts 01821
USA

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018 + AC:2020 EN 60079-1:2014 + AC:2018 EN 60079-11:2012

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

868i* and 878 series
II 2 G
Ex db IIC T6 Gb
Ta = -40°C to +60°C
IP66

PF8x series:
II 2 G
Ex db IIB+H2 T6…T3 Gb
Ta = -40°C to +60°C
IP66
Note: See Condition of Use 15.6 for Temperature Class disambiguation

*FOR FIELDBUS OPTION ONLY:
INSTALL PER DRAWING 752-326
FISCO FIELD DEVICE

Signed: Michelle Halliwell

Title: Director of Operations

PRODUCTS
RvA C 652

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 17ATEX1304X**
Issue 3

13 **DESCRIPTION OF EQUIPMENT**

The DigitalFlow 868i and 878 series of transmitters includes models XMT868i, XGF868i, XGN868i, XGM868i, XGS868i, IGM878A and IGM878N. The 868i and 878 series are fluid flow meters intended for permanent connection / mounting on a remote pedestal or a process flange, by means of the four threaded mounting holes or threaded mounting boss in the base. The 868i and 878 series deect and measure the flow rate of acoustically conductive fluids by means of ultrasonic (piezo electric) flow transducers, which can be either wetted process type or external clamp-on type.

The 868i and 878 series are available in either AC (100 to 240 Vac, 50/60 Hz) or DC (12 to 28 Vdc) versions. Communication boards are available for HART, MODBUS / TCP, and Foundation Fieldbus communication options. Option boards are available for digital signal processing (DSP), 4 to 20mA analog I/O, data logging, auxiliary output "alarm" contacts, or totalizer / frequency I/O. Either IR or magnetic HMI display is optional available, which is accessible through the threaded window cover.

The 868i and 878 series assembly consists of a cylindrical, single-compartment, painted cast aluminium or stainless steel enclosure with one threaded window cover and one threaded blind cover. The IGM878N (Dual Housing) model is comprised of two identical enclosures mounted to a steel bracket and interconnected by means of a mineral insulated cable. Field wiring connections for supply, communications, I/O and transducers are accommodated through threaded conduit entries. Each conduit entry is provided with a suitably rated blanking element. The overall physical dimensions of the 868i and 878 series enclosure are 16.8 x 14.0 x 20.8 cm or 21.34 x 14.91 x 16.21 cm (L x W x H).

The Panaflow PF8x series of ultrasonic flowmeters includes models PF8M-Z1G, PF8F-Z1G, PF8S-Z1G, PF8M-Z2G, PF8F-Z2G and PF8S-Z2G. The flange-connected flowmeter is designed for single or dual channel measurement of a wide range of acoustically conductive gases (e.g. steam, flare, etc.). The PF8x system uses the transit time measurement technique by sending ultrasonic signals back and forth across the pipe, where the difference in single arrival times is proportional to flowrate.

The PF8x Flowmeter assembly is comprised of the ZxG Meter Body (flowcell) pipeline flange with integral ultrasonic transducer sensors, the ZxG Adapter and the 868i series Transmitter, and is available as either the Remote Mount version or Local Mount version as well as the Standalone Remote Mount version.

The ZxG Meter Body is a single-interconnected-compartment, painted cast carbon steel, stainless steel or nickel base steel enclosure, with a flanged connection of either Remote or Local Mount Adapters. The 868i Transmitter is as described above. The overall physical dimensions for the smallest (2 inch) ZxG Meter Body are 50.8 x 48.7 x 24.1 cm, and for the largest (24 inch) ZxG Meter Body are 132.0 x 119.9 x 83.2 cm.

The optical radiation output of the apparatus with respect to explosion protection is covered in this certificate based on exception 5) to the scope of IEC 60079-28:2015.

The equipment has been separately tested against the requirements of IEC 60529 and meets IP66.

Note: Individual ultrasonic flow transducers are not assessed for compliance under this report.

DigitalFlow 868i and 878 series Transmitter model code:
XMT868i-b-c-d-e-f-g-h-i
XGa868i-c-d-e-0-g-h-i-j
XGF868i-c-d-k-m-3-j

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

Sira 17ATEX1304X
Issue 3

IGM878#-c-l-j-p-q

# = Housing:	A = Single housing N = Dual housing
a = Model:	M = Multipurpose S = Steam N = Natural Gas F = Flare Gas
b = Channels:	1 = Single 2 = Dual
c = Power:	1 = 100 to 240 Vac 2 = 12 to 28 Vdc
d = Package:	1 = Epoxy coated aluminium 2 = 316 stainless steel
e = I/O:	OO = None TO = 2 totalizer outputs TA = 2 totalizer outputs and 2 standard alarms TH = 2 totalizer outputs and 2 hermetically sealed alarms OI = 2 Analog inputs TI = 2 Analog inputs and 2 totalizer / frequency outputs AI = 2 standard alarms and 2 Analog inputs HI = 2 hermetically sealed alarms and 2 Analog inputs AA = 4 standard alarms HH = 4 hermetically sealed alarms TT = 4 totalizer outputs CT = 2 isolated 4 to 20 mA outputs and 4 totalizer / frequency outputs CO = 2 isolated 4 to 20 mA outputs CA = 2 isolated 4 to 20 mA outputs and 2 standard alarms CH = 2 isolated 4 to 20 mA outputs and 2 hermetically sealed alarms CF = 2 isolated 4 to 20 mA outputs and 2 frequency outputs II = 4 Analog outputs IR = 2 current input, 2 RTD input FR = 2 temperature inputs and 2 frequency outputs OR = 2 temperature inputs TR = 2 temperature inputs and 2 totalizer / frequency outputs AR = 2 temperature inputs and 2 standard alarms HR = 2 temperature inputs and 2 hermetically sealed alarms RR = 4 temperature inputs FF = 4 frequency outputs FO = 2 frequency outputs FA = 2 frequency outputs and 2 standard alarms FH = 2 frequency outputs and 2 hermetically sealed alarms

This certificate and its schedules may only be reproduced in its entirety and without change
CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR Arnhem, The Netherlands

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 17ATEX1304X**
Issue 3

FT = 2 frequency outputs and 2 totalizer outputs
FI = 2 current inputs and 2 frequency outputs
RI = 2 temperature inputs and 2 Analog inputs
CI = 2 isolated 4 to 20 mA inputs and 2 Analog inputs
CR = 2 isolated 4 to 20 mA outputs and 2 Analog inputs
CIR = 2 isolated 4 to 20 mA outputs or 1 Analog input and 1 temperature input
AO = Dual standard Alarms

f = DSP Coprocessor:
0 = None
1 = fast response

g = Logging:
0 = None
1 = 1 MB memory
2 = Extended memory
3 = HART
4 = MODBUS
5 = MODBUS TCP
6 = Ethernet
7 = Foundation Fieldbus

h = Display:
0 = None
1 = 16 x 2 LCD

l = Communications:
1 = RS232
2 = RS485
5 = RS232 serial communication port with ATEX certification for Hazardous locations
6 = RS485 multi-user communication port with ATEX certification for Hazardous locations
7 = RS232 serial communication port with IECEX certification for Ex d IIC T6 Gb IP66 Ta= -20°C to +60°C hazardous location installations
8 = RS485 serial communication port with IECEX certification for Ex d IIC T6 Gb IP66 Ta= -20°C to +60°C hazardous location installations

j = Transducer Frequency (Gas only):
1 = 25 kHz
2 = 33 kHz
3 = 50 kHz
4 = 100 kHz
5 = 200 kHz
6 = 500 kHz

k = Input/output
OI = Two 4-20 mA outputs, two 4-20 mA inputs
ORI = Two 4-20 mA outputs, one 4-20 mA input, and one RTD input
FI = Two 4-20 mA outputs, Two 4-20 mA inputs, and two frequency outputs

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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 17ATEX1304X**
Issue 3

	FRI = Two 4-20 mA outputs, one 4-20 mA input, one RTD input and two frequency outputs
m = Digital Communications	H = HART M = ModBus digital output MTCP = ModBus TCP digital output for MODBUS via Ethernet E = Ethernet card. F = Foundation Fieldbus
p = AGA 8 calculation	0 = none 1 = included
q = Option Card	1 = 1 hermetic alarm, 1 frequency, 2 Analog input 2 = Redundant frequency output with 2 hermetic alarms programmable

Panaflow PF8x Ultrasonic Gas Flowmeter (standalone and local mount and remote mount versions)
Model code: a-b-c-d-e-f-g-h-i-j-k-l-m-n-o-p-q-r-s-t-z

a = Model	PF8M = Panaflow gas ultrasonic Flowmeter system PF8F = Panaflow flare ultrasonic Flowmeter system PF8S = Panaflow steam ultrasonic Flowmeter system
b = Path	Z1G = Single path meter body Z2G = Dual path meter body
c = Meter Body (flowcell) Size	02 = 02 inch meter body 03 = 03 inch meter body 04 = 04 inch meter body 06 = 06 inch meter body 08 = 08 inch meter body 10 = 10 inch meter body 12 = 12 inch meter body 14 = 14 inch meter body 16 = 16 inch meter body 18 = 18 inch meter body 20 = 20 inch meter body 24 = 24 inch meter body
d = Meter Body (flowcell) Flange Rating	00 = None, weld-in 1 = ASME 150# WNRF, B16.5 2 = ASME 300# WNRF, B16.5 3 = ASME 600# WNRF, B16.5 1R = ANSI 150# WN RTJ, B16.5 2R = ANSI 300# WN RTJ, B16.5 7 = ANSI 600# WN RTJ, B16.5 E = PN10 EN 1092-1 F = PN16 EN 1092-1 G = PN25 EN 1092-1

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

Sira 17ATEX1304X
Issue 3

	H = PN40 EN 1092-1 J = PN63 EN 1092-1 Q = 10K B2220 WN JIS R = 16K B2220 WN JIS S = 20K B2220 WN JIS T = 30K B2220 WN JIS U = 40K B2220 WN JIS W = ANSI 400# WNRF, B16.5 X = ANSI 150# WNRF, B16.5 Y = ANSI 300# WNRF, B16.5 Z = ANSI 600# WNRF, B16.5 XX = Custom flange (can be represented with any alpha-numeric character)
e = Meter Body (flowcell) Material	CS = SA-216 GR. WCB LC = SA-352 GR. LCB S4 = SA-351 GR. CF8 S6 = SA-351 GR. CF8M SA = SA-351 GR. CK-3MCuN SD = SA-351 GR. CD3MWCuN HA = SA-494 GR. CW-12MW I6 = SA-494 GR. CW6MC CC = SA-352 GR. LCC WC = SA-216 GR. WCC M4 = SA-494 GR. M30-C XX = Custom flowcell material (can be represented with any alpha-numeric character)
f = Meter Body (flowcell) Schedule	010 = Schedule 10 meter body 020 = Schedule 20 meter body 030 = Schedule 30 meter body STD = Schedule STD meter body 040 = Schedule 40 meter body 060 = Schedule 60 meter body 0XS = Schedule XS meter body 080 = Schedule 80 meter body 100 = Schedule 100 meter body 120 = Schedule 120 meter body 140 = Schedule 140 meter body 160 = Schedule 160 meter body XXS = Schedule XXS meter body 5S = Schedule 5S meter body 10S = Schedule 10S meter body 40S = Schedule 40S meter body 80S = Schedule 80S meter body

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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 17ATEX1304X**
Issue 3

	CUS = Custom schedule meter body (can be represented with any alpha-numeric character) note: minimum wall thickness per pipe schedule 5S
g = System Design	A = ASME B31.3 and NACE MR0175/MR0103 C = ASME B31.3, CRN and NACE MR0175/MR0103 P = ASME B31.3, PED and NACE MR0175/MR0103 D = DIN DESIGN, PED and NACE MR0175/MR0103 J = JIS DESIGN and NACE MR0175/MR0103
h = Paint	A = No paint (stainless steel and duplex stainless steel meter body only) G = Standard paint S = Custom paint (can be represented with any alpha-numeric character)
i = NDE	0 = No NDE requirements 1 = NDE documentation 2 = PMI and standard NDE documentation
j = Transducer O-ring	V = Viton, standard applications E = EPDM, steam and non-standard applications M = MARKEZ (FFKM), special applications S = Special elastomer (can be represented with any alpha-numeric character)
k = Electronics Mounting Style	000L = Local mount (process temperature -40°C to +85°C) 0R25 = Standalone / remote mount with 25 ft armored cable length (process temperature > +85°C) 0R50 = Standalone / remote mount with 50 ft armored cable length (process temperature > +85°C) R100 = Standalone / remote mount with 100 ft armored cable length (process temperature > +85°C) R150 = Standalone / remote mount with 150 ft armored cable length (process temperature > +85°C) Rxxx = Standalone / remote mount with custom armored cable length (process temperature > +85°C)
l = Electronics Enclosure Material	AL = Epoxy coated aluminum enclosure SS = 316 stainless steel enclosure Blank for standalone remote version
m = Conduit Connection	1 = 6x standard 3/4-14 NPT 2 = 6x standard 3/4-14 NPT with M20 adapters Blank for standalone remote version
n = Power Supply	AC = 100 to 240 Vac power supply DC = 12 to 28 Vdc power supply Blank for standalone remote version

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 17ATEX1304X**
Issue 3

o = Pressure and Temperature	0 = None 1 = With 1x external 1/2-NPT port in meter body S = Special (can be represented with any alpha-numeric character) Blank for standalone remote version
p = Additional Input / Output	O = No additional input/output F = 2 frequency outputs T = 2 totalizer outputs A = 2 standard alarms Blank for standalone remote version
q = Digital Communications	2 = MODBUS digital output 3 = HART 4 = Foundation Fieldbus Blank for standalone remote version
r = Calibration and Meter Range	x = (can be represented with any alpha-numeric character) Blank for standalone remote version
s = Preamplifier	00 = No preamp 02 = 2x gain preamp 10 = 10x gain preamp 20 = 20x gain preamp 40 = 40x gain preamp Blank for standalone remote version
t = PF8x System Certification	1 = US / CANADA 2 = ATEX 3 = IECEx
z = Special	0 = None S = Special

Variation 1 - This variation introduced the following changes:

i. Update Applicant's name from GE Infrastructure Sensing, Inc. to Panametrics LLC
ii. Introduction of new PF8X Flowmeter model series, with amended Marking and Description.
iii. Update ambient temperature ratings of 868i and 878 Transmitter model series, with amended Marking and Description.
iv. Updated internal PCB assembly for the 868i and 878 Transmitter model series.
v. Revised schedule drawings for the 868i and 878 Transmitter model series.
vi. Following an appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2012/A11:2013 was replaced by EN IEC 60079-0:2018 +AC:2020, EN 60079-1:2014 was replaced by EN 60079-1:2014 + AC:2018.
vii. Three Specific Conditions of Use were added related to the introduced PF8X Flowmeters.
viii. The Condition of Manufacture referencing "previously certified components" was revised.
ix. Introduction of Condition of Manufacture referencing "Routine Overpressure Test".

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 17ATEX1304X**
Issue 3

Variation 2 - This variation introduced the following changes:

i. Introduce 703-2000 PCBA as an alternative optional Foundation Fieldbus FISCO card option to existing 703-1475 and re-evaluation of the existing 703-1475 card from FNICO to FISCO based on the project 80072179 report 1369980. EN 60079-11:2012 was added to the list of standards.
ii. Change of manufacturer's name from "GE Sensing EMEA" to "Baker Hughes EMEA, formerly GE Sensing EMEA".

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Reports and Certificate History**

Issue	Date	Report number	Comment
0	20 December 2017	R70137637A	The release of the prime certificate.
1	31 October 2019	0639	Transfer of certificate Sira 17ATEX1304X from Sira Certification Service to CSA Group Netherlands B.V.
2	14 January 2021	R80057398A	The introduction of Variation 1.
3	31 July 2023	R80156577A	The introduction of Variation 2.

15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)

15.1 The 868i and 878 series transmitters shall only be mounted in such an orientation that the mounting base is pointed downwards with the cylindrical enclosure in a horizontal position. (See clause 26.5.1.1 of EN 60079-0).

15.2 Contact the manufacturer if dimensional information of flameproof joints is needed. (See clause 5.1 of EN 60079-1).

15.3 Field connections to the 868i and 878 series transmitters (e.g. ultrasonic transducers, accessories or similar peripherals) shall be appropriately certified for the location and installed in accordance with wiring method requirements of the local electrical code as applicable.

15.4 The PF8x series Flowmeters have non-conducting coating which may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user shall take the necessary precautions to minimize the risk from electrostatic discharge. For example, controlling the environmental humidity where installed in order to minimize generation of static electricity, with the equipment protected from direct airflow which could cause a transfer of charge to the surface of the equipment. Cleaning should be done only with a damp cloth.

15.5 Contact the manufacturer for genuine replacement of special fasteners for the PF8x series Flowmeters: (See clause 11.3 of EN 60079-1)

a. Meter Body to Adapter flange: M10x1.5 35.0 mm length socket head screws, of zinc plated steel (A574) or better, with a minimum yield strength of 135,000 PSI.
b. Local Mount Bracket: M6x1 16.0 mm length socket head screws, of stainless steel (A4-70 SS) or better, with a minimum yield strength of 65,257 PSI.

15.6 The hazardous locations temperature classification of both local mount version and remote mount version of the PF8x series Flowmeter is contingent upon the process temperature, as follows. At process temperatures higher than 85°C, remote mounting is deemed necessary in order to accommodate the T-class.

Mounting configuration	Process temperature	T-Class
Local	-40°C to +80°C	T6 (85°C)
Local	-40°C to +85°C	T5 (100°C)
Remote	-40°C to +80°C	T6 (85°C)
Remote	-40°C to +95°C	T5 (100°C)
Remote	-40°C to +115°C	T4 (135°C)
Remote	-40°C to +130°C	T4 (135°C)
Remote	-40°C to +150°C	T3 (200°C)

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 **CONDITIONS OF MANUFACTURE**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.

17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.

17.3 Routine Overpressure Test (per EN 60079-1, clause 16, 15.2.3.2): Each of the following enclosure parts / assemblies shall withstand the static test pressures and durations identified below. The test may be conducted at normal ambient temperatures. There shall be no permanent deformation of the joints or damage to the enclosure and no leakages through the cemented joints.

a. 868i and 878 series Transmitter: The routine static test pressure of 570 PSIG shall be applied for a minimum duration of 10 seconds.
b. 868i series Transmitter and ZxG Local Mount Adapter with Trombone Adapter: The routine static test pressure of 470 PSIG shall be applied for a minimum duration of 10 seconds.

17.4 Ex Component Enclosure: The PF8x series Flowmeter assemblies incorporate the following Ex Components which are certified to previous editions of the aforementioned standards. The major technical changes between editions have been assessed with no technical differences found applicable, see ExTR for details. It is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these components, and to inform CSA Group / Sira of any modifications of the devices which may impinge upon the explosion safety design of the aforementioned products.

a. Enclosure, IME model series: 7080. Certificate number: Sira 07ATEX1331U. Standards: EN 60079-0:2012+A1:2013, EN 60079-1:2014

b. Enclosure, IME model series: 7100. Certificate number: Sira 08ATEX1325U Standards: EN 60079-0:2012+A1:2013, EN 60079-1 :2014

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Certificate Annexe

Certificate Number: **Sira 17ATEX1304X**

Equipment: **DigitalFlow 868i, 878 series Transmitters and Panaflow PF8x series Ultrasonic Gas Flowmeter**

Applicant: **Panametrics LLC.**

Issue 0:

Drawing	Rev.	Sheets	Date (Sira stamp)	Description
238-103	E.1	1 of 1	06 Nov 17	Model IGM878N – Interconnect cable assembly
421-1782	A	1 of 1	06 Nov 17	Heat Sink – AC Power Supply
421-1783	A	1 of 1	06 Nov 17	Heat Sink – I/O PCB
421-3997	9	1 to 2	06 Nov 17	Enclosure Design B – Housing Casting and Machining
421-3999	7	1 to 2	06 Nov 17	Enclosure Design B – Threaded Window Cover Casting and Machining
421-4001	6	1 to 2	06 Nov 17	Enclosure Design B – Threaded Blind Cover Casting and Machining
421-4067	2	1 of 1	06 Nov 17	Enclosure Design B – Window Cover Retaining ring
421-4120	1	1 of 1	06 Nov 17	Enclosure Design B – Glass Window
425-271	M	1 to 5	06 Nov 17	Enclosure Design A – Housing Covers and Assembly Drawing (stainless steel)
442-615	N	1 of 1	06 Nov 17	Adhesive Label – Configuration Options
442-618	C	1 to 2	06 Nov 17	Adhesive Label – Warning / Caution Symbols
442-696	H	1 to 2	06 Nov 17	Markings Nameplate – Model Numbers (Enclosure Design A)
442-869	A	1 to 2	06 Nov 17	Adhesive Label – High Voltage Insulator
442-895	F	1 of 1	06 Nov 17	Adhesive Label – Electrical Ratings, Model and Serial Numbers
442-962	C	1 to 2	06 Nov 17	Adhesive Label – Keypad Interface
442-1446	H.2	1 of 1	06 Nov 17	Markings Nameplate – Certification Information (Enclosure Design A)
442-1907	4	1 of 1	06 Nov 17	Markings Nameplate – Certification Information (Enclosure Design B)
442-1908	1	1 to 2	06 Nov 17	Markings Nameplate – Model Numbers (Enclosure Design B)
700-1021	E	1 of 1	06 Nov 17	PCB Schematic – Fast Response Board
700-1215	F	1 to 2	06 Nov 17	PCB Schematic – Frequency / Totalizer / Alarm Option Board
700-1223	D	1 to 4	06 Nov 17	PCB Schematic – Frequency / Totalizer / Alarm / Analog Input Option Board
700-1225	C	1 to 3	06 Nov 17	PCB Schematic – Frequency / Totalizer / Alarm / Analog Output Option Board
700-1233	C	1 to 4	06 Nov 17	PCB Schematic – Quad Analog Input Option Board
700-1272	B	1 to 4	06 Nov 17	PCB Schematic – Analog I/O Option Board
703-1273	D	1 to 2	06 Nov 17	PCB Schematic – Flow DSP Board
700-1284	J	1 of 1	06 Nov 17	PCB Schematic – Receiver Communications Board
700-1291	C	1 of 1	06 Nov 17	PCB Schematic – Terminal Board
700-1299	A	1 to 1	06 Nov 17	PCB Schematic – Dual Transmit Communications Board
700-1332	A	1 to 2	06 Nov 17	PCB Schematic – Data Logging Board
700-1345	B	1 to 2	06 Nov 17	PCB Schematic – Communications Board
700-1385	A	1 to 3	06 Nov 17	PCB Schematic – Hart Communications Board
700-1402	2	1 of 1	06 Nov 17	PCB Schematic – DC Power Supply Board
700-1403	H	1 of 1	06 Nov 17	PCB Schematic – AC Power Supply Board
700-1418	B	1 to 2	06 Nov 17	PCB Schematic – Interconnect Board
700-1422	B	1 to 7	06 Nov 17	PCB Schematic – Main Board
700-1440	B	1 of 1	06 Nov 17	PCB Schematic – Terminal Board
700-1473	D	1 to 5	06 Nov 17	PCB Schematic – Frequency / Totalizer / Alarm / Analog Input Option Board
700-1475	G	1 to 5	06 Nov 17	PCB Schematic – Foundation Fieldbus Communications_Board

Certificate Annexe

Certificate Number: **Sira 17ATEX1304X**

Equipment: **DigitalFlow 868i, 878 series Transmitters and Panaflow PF8x series Ultrasonic Gas Flowmeter**

Applicant: **Panametrics LLC.**

Drawing	Rev.	Sheets	Date (Sira stamp)	Description
700-1910	4	1 to 2	06 Nov 17	PCB Schematic – HMI Board
703-1021	E	1 of 1	06 Nov 17	PCB Assembly – Fast Response Board
703-1130	F	1 of 1	06 Nov 17	PCB Assembly – AC Power Supply Board
703-1146	D	1 of 1	06 Nov 17	PCB Assembly – Data Logging Board
703-1213	B	1 of 1	06 Nov 17	PCB Assembly – DC Power Supply Board
703-1215	A	1 of 1	06 Nov 17	PCB Assembly – Frequency / Totalizer / Alarm Option Board
703-1223	D	1 of 1	06 Nov 17	PCB Assembly – Frequency / Totalizer / Alarm / Analog Input Option Board
703-1225	A	1 of 1	06 Nov 17	PCB Assembly – Frequency / Totalizer / Alarm / Analog Output Option Board
703-1233	B	1 of 1	06 Nov 17	PCB Assembly – Quad Analog Input Option Board
703-1244	J	1 to 2	06 Nov 17	PCB Assembly – AC Power Supply Board
703-1272	C	1 of 1	06 Nov 17	PCB Assembly – Analog I/O Option Board
703-1273	B	1 of 1	06 Nov 17	PCB Assembly – Flow DSP Board
703-1277	1	1 of 1	06 Nov 17	PCB Assembly – DC Power Supply Board
703-1281	3	1 of 1	06 Nov 17	PCB Assembly – DC Power Supply Board
703-1284	J	1 of 1	06 Nov 17	PCB Assembly – Receiver Communications Board
703-1291	D	1 of 1	06 Nov 17	PCB Assembly – Terminal Board
703-1299	A	1 of 1	06 Nov 17	PCB Assembly – Dual Transmit Communications Board
703-1332	A	1 to 2	06 Nov 17	PCB Assembly – Data Logging Board
703-1345	B	1 of 1	06 Nov 17	PCB Assembly – Communications Board
703-1385	B	1 of 1	06 Nov 17	PCB Assembly – Hart Communications Board
703-1402	2	1 to 2	06 Nov 17	PCB Assembly – DC Power Supply Board
703-1403	L	1 to 3	06 Nov 17	PCB Assembly – AC Power Supply Board
703-1418	B	1 to 2	06 Nov 17	PCB Assembly – Interconnect Board
703-1422	C	1 to 2	06 Nov 17	PCB Assembly – Main Board
703-1440	H	1 to 3	06 Nov 17	PCB Assembly – Terminal Board
703-1473	D	1 to 2	06 Nov 17	PCB Assembly – Frequency / Totalizer / Alarm / Analog Input Option Board
703-1475	J	1 to 2	06 Nov 17	PCB Assembly – Foundation Fieldbus Communications Board
703-1910	4	1 to 2	06 Nov 17	PCB Assembly – HMI Board
705-683	AN	1 to 3	06 Nov 17	Overall Assembly – XMT868
705-1106	4	1 to 3	06 Nov 17	Assembly – XMT868i with IR Keypad
705-1107	4	1 to 3	06 Nov 17	Assembly – XGX868i with IR Keypad
705-1848	3	1 to 2	06 Nov 17	Enclosure Design B – Assembly Drawing (aluminium)
752-108	P.2	1 to 4	06 Nov 17	Enclosure Design A – Housing Covers and Assembly Drawing (aluminium)
752-546	4	1 to 2	06 Nov 17	Enclosure Design B – Certification Drawing

Issue 1. No new drawings were introduced.

Certificate Annexe

Certificate Number: **Sira 17ATEX1304X**

Equipment: **DigitalFlow 868i, 878 series Transmitters and Panaflow PF8x series Ultrasonic Gas Flowmeter**

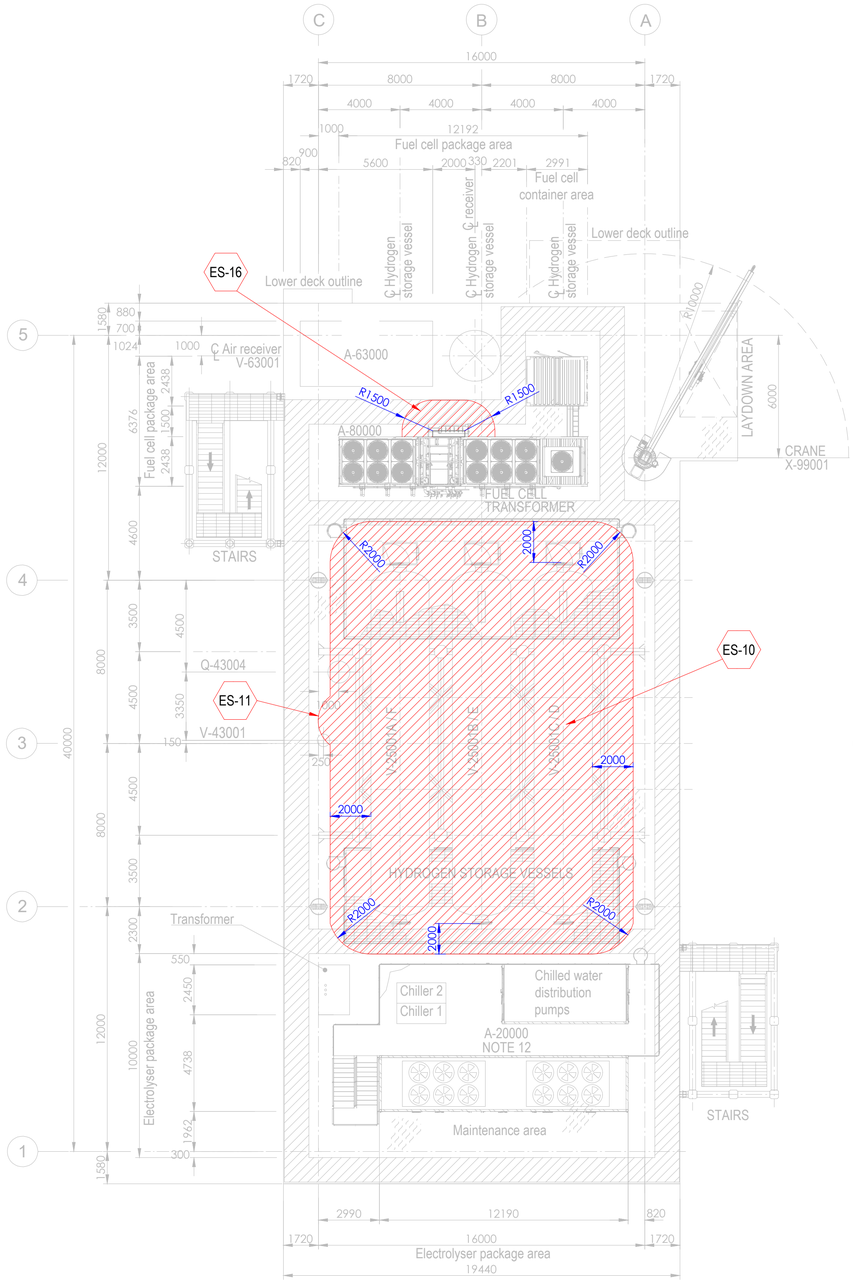
Applicant: **Panametrics LLC.**

Issue 2.

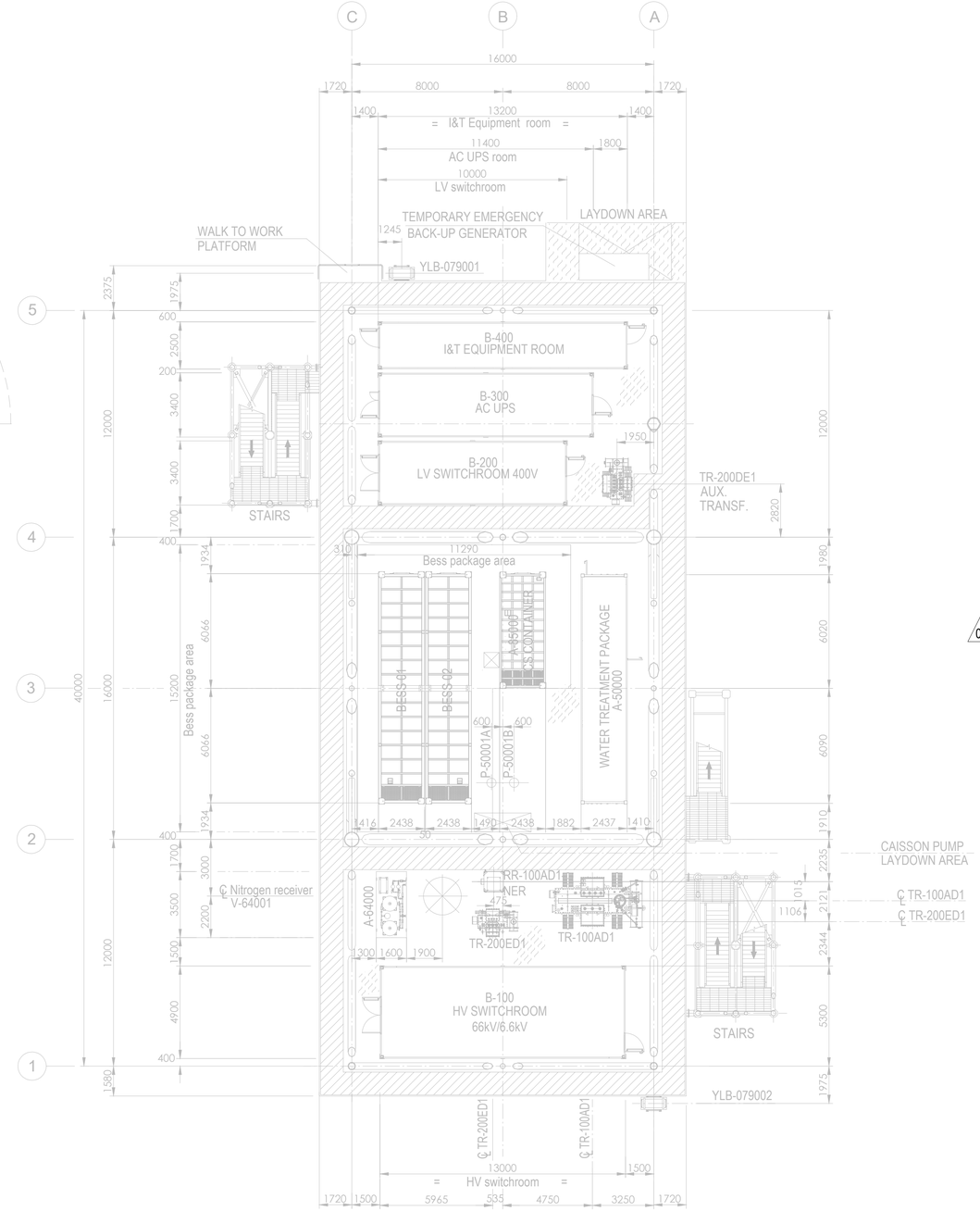
Drawing	Rev.	Sheets	Date	Description
421-3997	A	1 to 2	20 Nov 20	Enclosure Design B – Housing Casting and Machining
421-3999	A	1 to 2	20 Nov 20	Enclosure Design B – Threaded Window Cover Casting and Machining
421-4001	A	1 to 2	20 Nov 20	Enclosure Design B – Threaded Blind Cover Casting and Machining
421-4067	A	1 of 1	20 Nov 20	Enclosure Design B – Window Cover Retaining ring
421-4120	A	1 of 1	20 Nov 20	Enclosure Design B – Glass Window
421-4232	A	1 of 1	20 Nov 20	Heat Sink – AC Power Supply
442-696	J00	1 of 1	11 Jan 21	Markings Nameplate – Model Numbers (Enclosure Design A)
442-895	G00	1 to 2	11 Jan 21	Adhesive Label – Electrical Ratings, Model and Serial Numbers
442-1446	K02	1 of 1	11 Jan 21	Markings Nameplate – Certification Information (Enclosure Design A)
442-1881	B00	1 of 1	11 Jan 21	Markings Nameplate – Model Numbers (Enclosure Design B)
442-1883	C01	1 of 1	11 Jan 21	Markings Nameplate – Certification Information (Enclosure Design B)
700-1284	L	1 of 1	20 Nov 20	PCB Schematic – Receiver Communications Board
700-1345	D	1 to 2	20 Nov 20	PCB Schematic – Communications Board
700-1354	F	1 of 1	20 Nov 20	PCB Schematic – DC Power Supply Board
700-1385	C	1 to 3	20 Nov 20	PCB Schematic – Hart Communications Board
700-1418	C	1 to 2	20 Nov 20	PCB Schematic – Interconnect Board
700-1419	C	1 to 3	20 Nov 20	PCB Schematic – IR Keypad / Display Interface Board
700-1430	D	1 to 5	20 Nov 20	PCB Schematic – 4 Analog Input Board
700-1473	E	1 to 5	20 Nov 20	PCB Schematic – Frequency / Totalizer / Alarm / Analog Input Option Board
700-1475	H	1 to 5	20 Nov 20	PCB Schematic – Foundation Fieldbus Communications Board
700-1477	E	1 to 4	20 Nov 20	PCB Schematic – MODBUS / TCP Board
700-1481	A	1 of 1	20 Nov 20	PCB Schematic – Terminal Ethernet Board
700-1589	D	1 to 7	20 Nov 20	PCB Schematic – Main Board
700-1658	B	1 to 3	20 Nov 20	PCB Schematic – HART Board
700-1674	A	1 to 4	20 Nov 20	PCB Schematic – Magnetic Keypad / Display Interface Board
703-1146	F	1 of 1	20 Nov 20	PCB Assembly – Data Logging Board
703-1215	F	1 of 1	20 Nov 20	PCB Assembly – Frequency / Totalizer / Alarm Option Board
703-1225	C	1 of 1	20 Nov 20	PCB Assembly – Frequency / Totalizer / Alarm / Analog Output Option Board
703-1273	C	1 of 1	20 Nov 20	PCB Assembly – Flow DSP Board
703-1284	K	1 of 1	20 Nov 20	PCB Assembly – Receiver Communications Board
703-1345	D	1 of 1	20 Nov 20	PCB Assembly – Communications Board
703-1354	L	1 of 1	20 Nov 20	PCB Assembly – DC Power Supply Board
703-1385	D	1 to 2	20 Nov 20	PCB Assembly – Hart Communications Board
703-1403	M	1 to 3	20 Nov 20	PCB Assembly – AC Power Supply Board
703-1418	E	1 to 2	20 Nov 20	PCB Assembly – Interconnect Board
703-1419	D	1 to 2	20 Nov 20	PCB Assembly – IR Keypad / Display Interface Board
703-1430	D	1 to 2	20 Nov 20	PCB Assembly – 4 Analog Input Board
703-1440	J	1 to 3	20 Nov 20	PCB Assembly – Terminal Board
703-1473	K	1 to 2	20 Nov 20	PCB Assembly – Frequency / Totalizer / Alarm / Analog Input Option Board

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



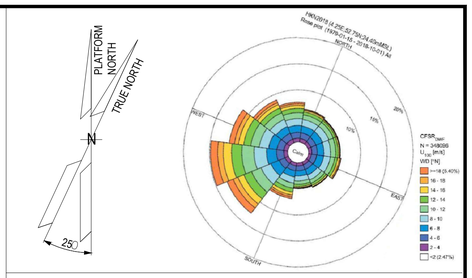
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

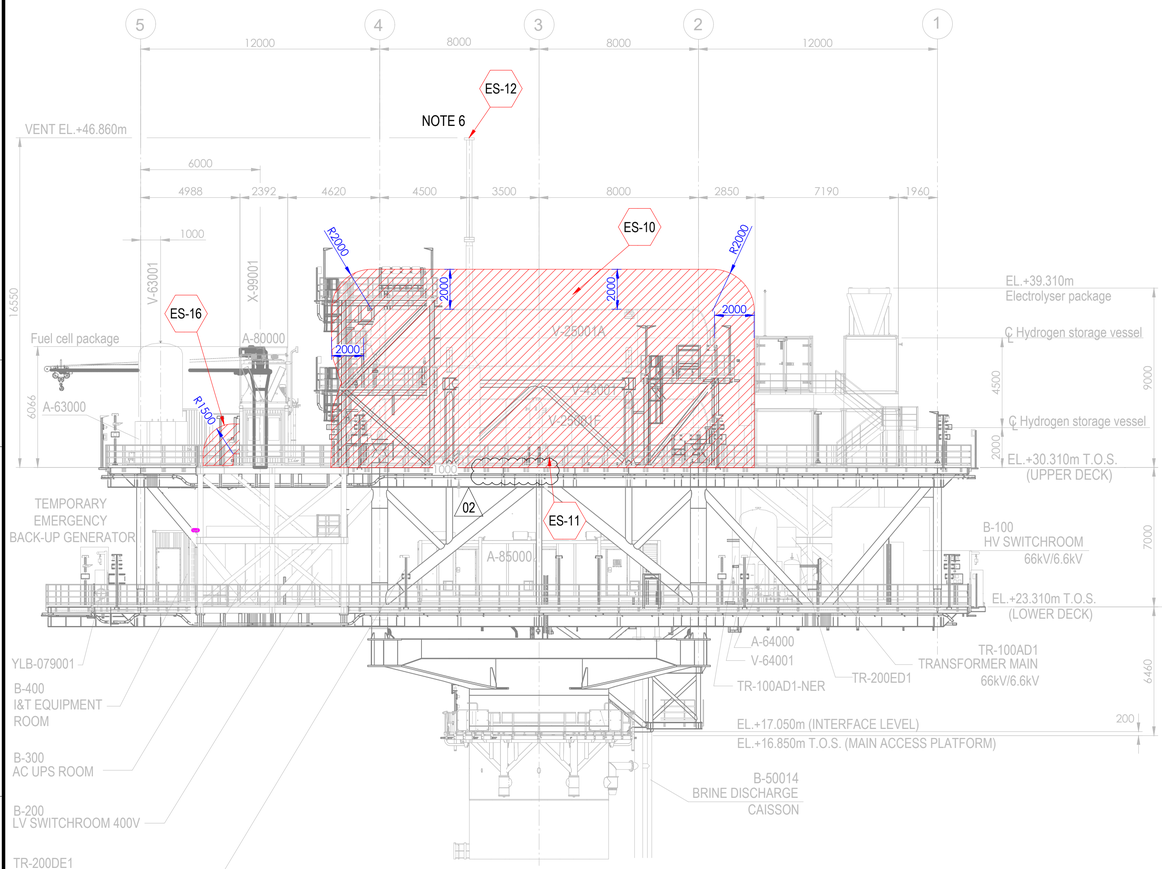
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

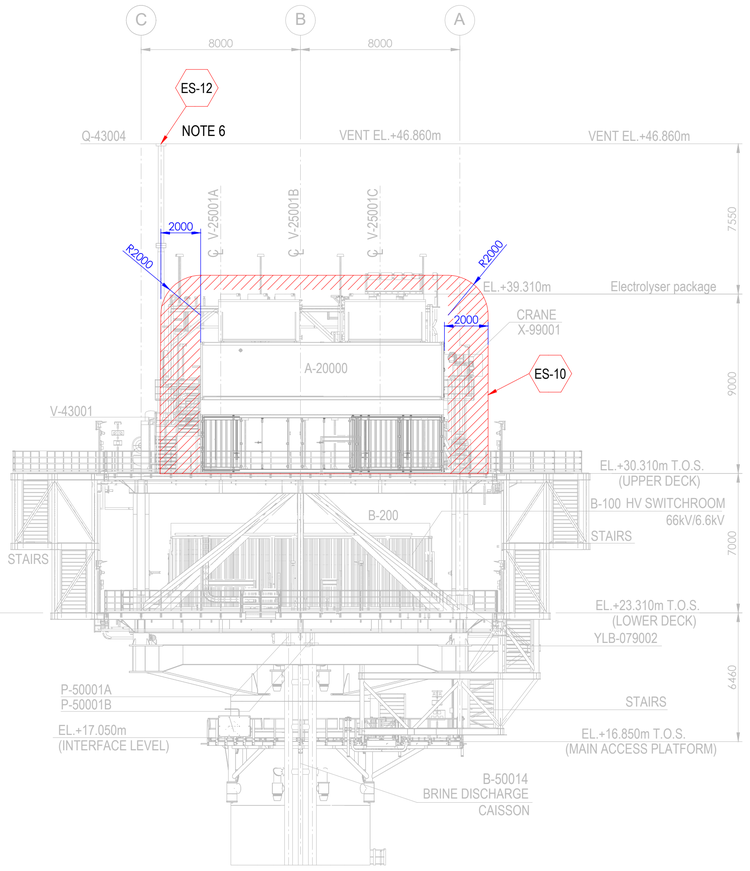
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

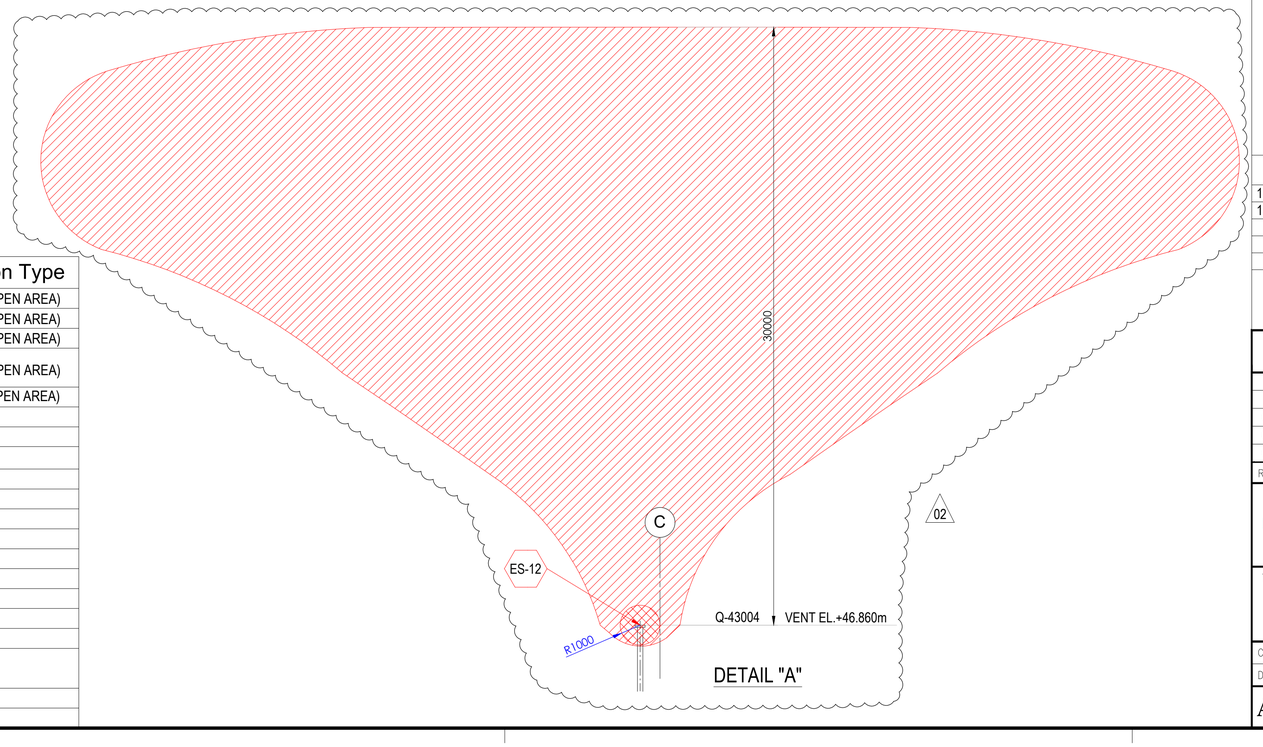


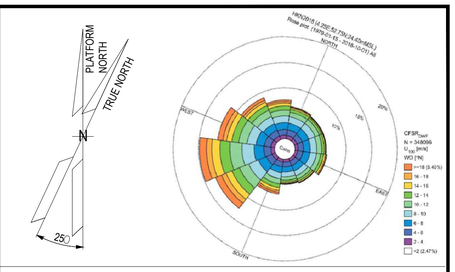
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	43-FE-001A	: Pre-Amplifier Flow Sensor	Dwg	123A90-DDL-IN-MR-40049
	S/Sys	43-00	: Hydrogen Vent Header & Drum System	Module	UD
TASK	code	C10004545	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**	N/A				
Manufacturer	Panametrics LLC			**Model**	T5MAXS				
Cert No.	SIRA 20ATEX1001X			**Equipment Ambient Temp.**	-40°C to +60°C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex d	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		OK	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		OK	
	Physical check	x	OK	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	NA	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	OK	

ITEM	Tag	43-FE-001A	: Pre-Amplifier Flow Sensor		Dwg	123A90-DDL-IN-MR-40049	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10004545	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	OK	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	OK	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	OK	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	43-FE-001A	: Pre-Amplifier Flow Sensor		Dwg	123A90-DDL-IN-MR-40049	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10004545	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
	Authority:	NA	**Cert No:**	NA	**Type:**	NA

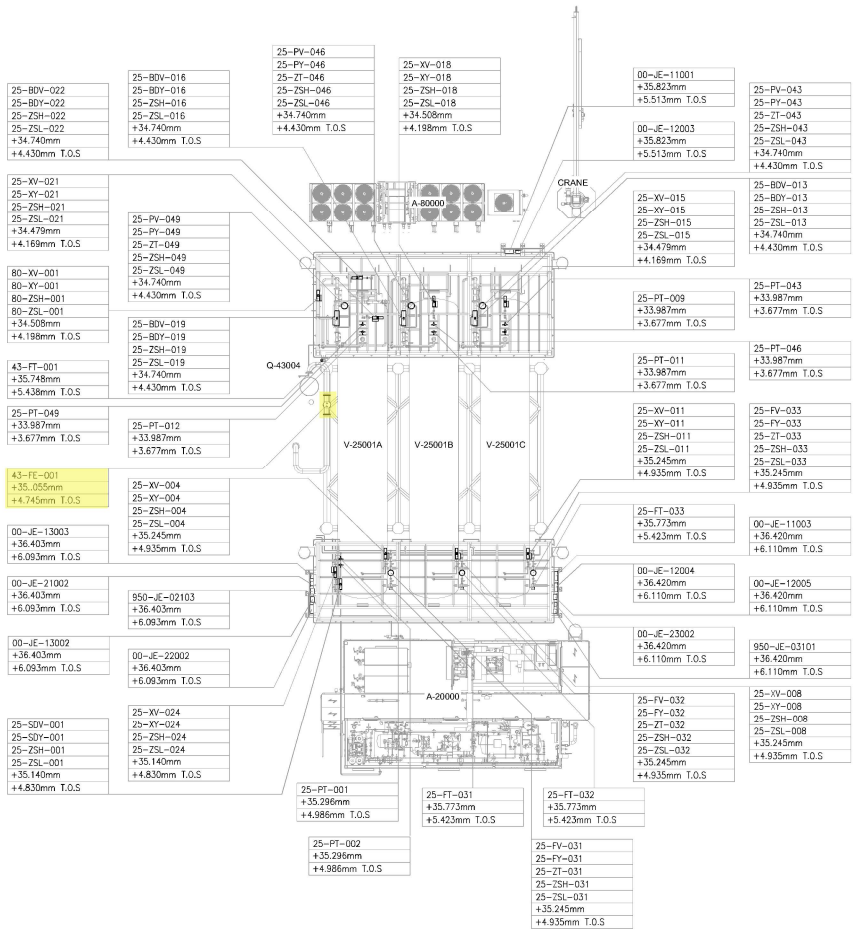
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-10	2025-03-12	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-10T10:30:17.546Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-12T13:08:18.611Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

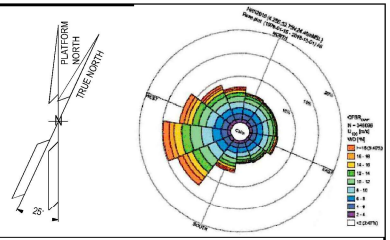
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:150

DRAWN VBA | CHECKED LCA | APPROVED DLO | DATE 04/10/24

A1 | DRAWING NO. 123A90-DDL-IN-DL-40081 | SHEET 002 | REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV.02.dwg

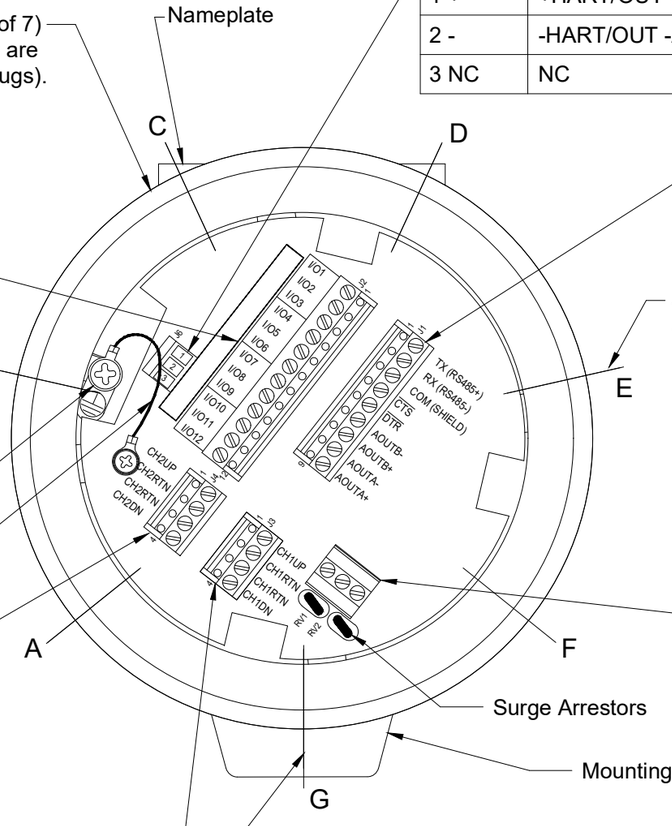
C:\USERS\GOVESHU\ONEDRIVE - BAKER HUGHES\DESKTOP\MY WORK\12_JULY_2024\09_SO_1706864\OUTPUT\WD\SK18027

INPUT/OUTPUT CONNECTIONS	
Pin No.	Description
1 I/O1	NC
2 I/O2	NC
3 I/O3	NC
4 I/O4	NC
5 I/O5	NC
6 I/O6	NC
7 I/O7	OUT C +24V
8 I/O8	INPUT C - +
9 I/O9	INPUT C - RTN
10 I/O10	OUT D +24V
11 I/O11	INPUT D - +
12 I/O12	INPUT D - RTN

HART	
Pin No.	Description
1 +	+HART/OUT -A
2 -	-HART/OUT -A
3 NC	NC

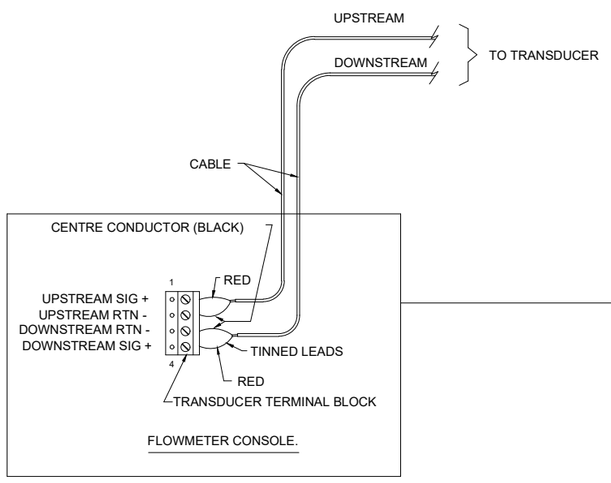
RS232 / 4-20 OUTPUT		
Pin #	Designation	Description
1	TX(RS485+)	Transmit / +
2	RX(RS485-)	Receive / -
3	COM (SHLD)	Ground
4	$\overline{CTS}$	Clear To Send
5	$\overline{DTR}$	Data Terminal Ready
6	AOUT B-	4-20 Output 2 RTN(-)
7	AOUT B+	4-20 Output 2 SIG(+)
8	AOUT A-	4-20 Output 1 RTN(-)
9	AOUT A+	4-20 Output 1 SIG(+)

DC POWER INPUT	
12 TO 28 VDC	
Pin #	Description
1 +	LINE POSITIVE
2 -	LINE NEGATIVE
3 ⏚	NO CONNECTION



CH2 TRANSDUCER	
Pin No.	Description
1 CH2UP	Upstream SIG(+)
2 CH2RTN	Upstream RTN(-)
3 CH2RTN	Downstream RTN(-)
4 CH2DN	Downstream SIG(+)

CH1 TRANSDUCER	
Pin No.	Description
1 CH1UP	Upstream SIG(+)
2 CH1RTN	Upstream RTN(-)
3 CH1RTN	Downstream RTN(-)
4 CH1DN	Downstream SIG(+)



TRANSDUCER CONNECTION DETAIL

NOTE: Unit shown from rear with rear cover removed.

TAG No's :
43-FT-001

NOTES:
1. POWER SUPPLY SURGE PROTECTION IS IN-BUILT ON THE POWER SUPPLY BOARD.
2. TROPICALIZATION OF ELECTRONICS.

XGF868I-2-2-OI-H7-3-4-0-CC

Rev	Description of Changes	Checked	Approved	Date
-	Issued for Approval	SG	TG	12/07/24

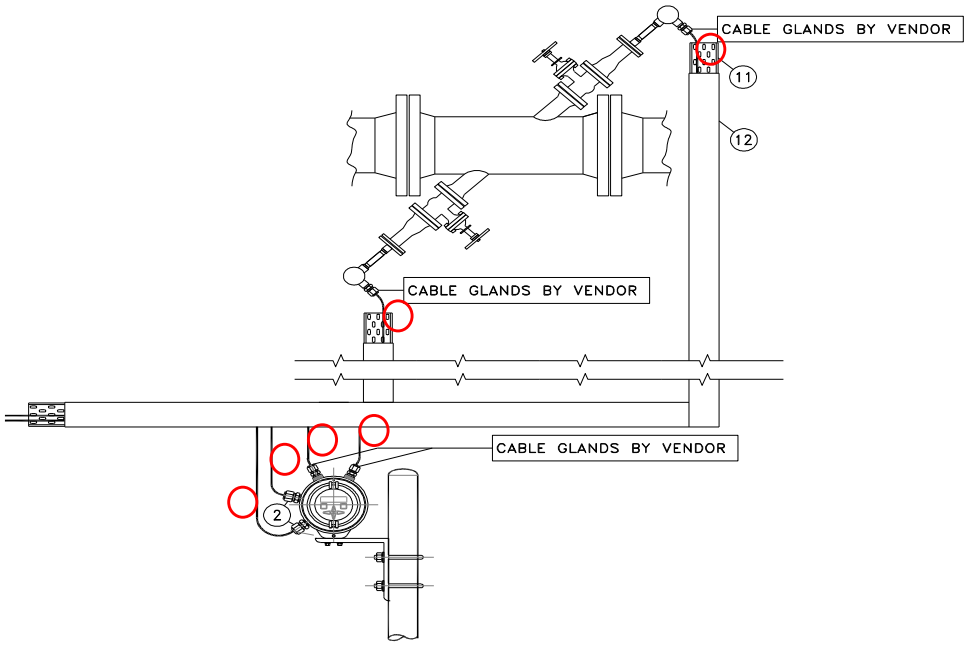
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TITLE
INTERCONNECTION DIAGRAM
FOR XGF868i FLOWMETER
TWO CHANNEL

SCALE		SHEET	OF
NTS	DO NOT SCALE DRAWING	1	1

SIZE	DRAWING NUMBER	REV
A3	SK18027 / 1706864	-

ELECTRICAL HOOK-UP FOR FLOW TRANSMITTERS (ULTRASONIC)



	INSTRUMENT TAG
1	43-FT-001
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30	

NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	20 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	20 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	2

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PB distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

DRAWING NO. DRAWING_NO.

REV. REV

V-43001

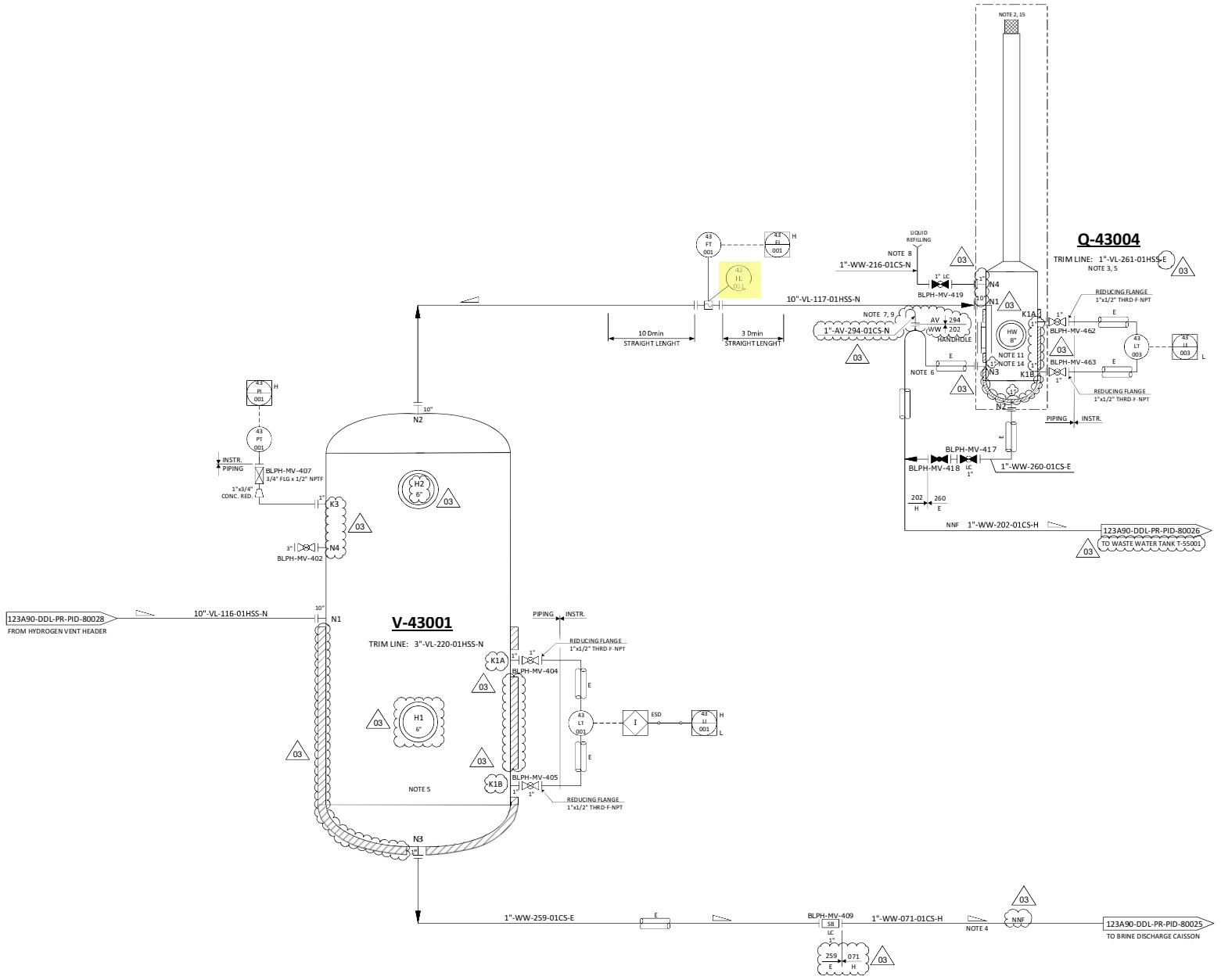
HYDROGEN VENT KO DRUM

SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1

SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. 03
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	NTS
DRAWN	CHECKED	APPROVED		DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80029			SHEET 001	REV. 03

File Name : FILE_NAME

1. FLOWMETER (QTY: 1)

TYPE:	XGF868I
ENCLOSURE:	316SS
VOLTAGE:	12 - 28 VDC
POWER USAGE:	20W
IP RATING:	IP66
HAZ AREA:	EX dIIC T6 Gb
CERT NUMBER:	SIRA 17ATEX1304X
WEIGHT:	11 kg [24 lb] B

FINISH : AS PER MANUFACTURER STANDARD

2. FLOWMETER CABLE (QTY: 1 PAIR)

TYPE:	FLAME RETARDENT RG-62
ARMOUR:	SWA
LENGTH:	10 M
CONNECTION (METER):	3/4" NPT
CONNECTION (XDUCER):	3/4" NPT
GLAND MAT'L:	316SS
HAZ AREA :	Ex nR IIC Gc
CERT. NUMBER :	CML-19ATEX4109X
WEIGHT:	0.28 kg/m B

FINISH : N/A

3. PRE-AMPLIFIER (QTY: 2)

TYPE :	XAMP
ENCLOSURE :	316SS
IP RATING :	IP65/66
HAZ. AREA :	Ex d IIC T6 Gb
CERT NUMBER :	SIRA 20ATEX1001X
WEIGHT :	2 kg [4.4 lb] EA B

FINISH : AS PER MANUFACTURER STANDARD

4. TRANSDUCER (QTY: 2)

TYPE :	T5
MATERIAL :	TITANIUM
TEMP RANGE :	-55 to 150°C (-67 to 302°F) (NT)
HAZ. AREA :	Ex d IIC T6 Gb
CERT NUMBER :	SIRA 20ATEX1001X
MAT'L CERTS :	EN10204 3.1 & NACE MR-01-75
JUNCTION BOX:	316SS
IP RATING :	IP66
WEIGHT :	2 kg [4.4 lb] EA B

FINISH : AS PER MANUFACTURER STANDARD

5. INSERTION MECHANISM (QTY: 2)

TYPE:	IMA72
SIZE:	2" x 2"
RATING:	150#
MATERIAL	
PACKING GLAND :	316SS
BARREL HOLDER:	316 / 316L SS
HYDROTEST:	PER ASME B31.3
MAT'L CERTS:	EN10204 3.1 & NACE MR-01-75
WEIGHT:	12.7 kg [28 lb] EA B

FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A

6. ISOLATION VALVE (QTY: 2)

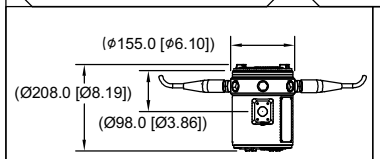
TYPE :	GATE VALVE
SIZE :	2", 150# RF
F/F LENGTH:	177.8MM (7")
MATERIAL	
BODY:	A351 CF8M
TRIM:	316SS
MAT'L CERTS:	EN10204 3.1 & NACE MR-01-75
WEIGHT:	18 kg [39.7 lb] EA B

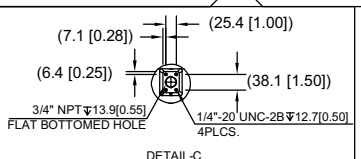
FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A

7. FLOWCELL (QTY : 1)

FOR DETAILS OF THE FLOWCELL, PLEASE REFER TO THE FLOWCELL FABRICATION DRAWING, REF: 182M4103
WEIGHT : 98 kg [216 lb] B

FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A





DETAIL-C
(FOR 2" PIPE MOUNTING)

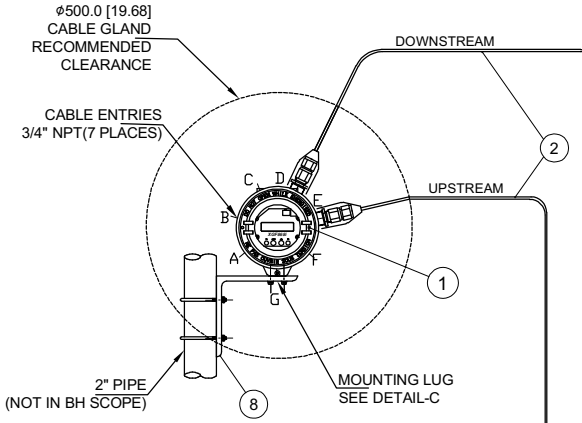
8. 2" PIPE MOUNTING BRACKET (QTY: 1)

MATERIAL : 316SS

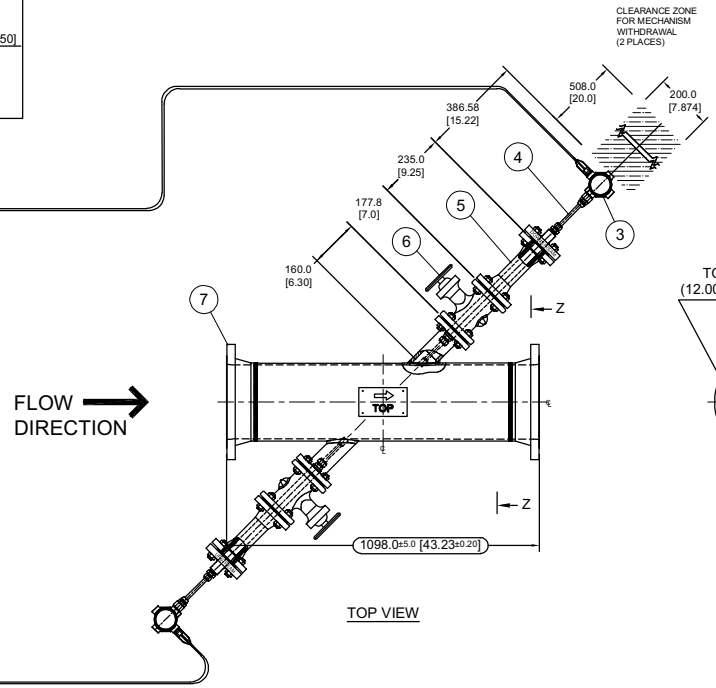
WEIGHT : 5 kg B

MISC ITEMS (NOT SHOWN)

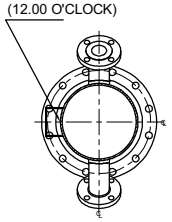
-1x NAMEPLATE
-5x 3/4" x M20 ADAPTORS SS



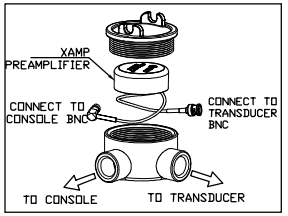
FRONT VIEW OF METER



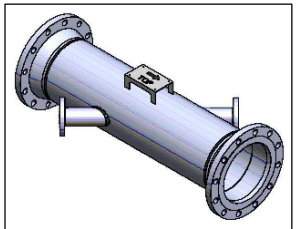
TOP VIEW



SECTION Z-Z



XAMP DETAIL

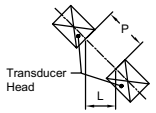


ISOMETRIC VIEW

NOTES:

1. EACH PAIR OF CABLES MUST BE CONTINUOUS IN LENGTH (NO JOINTS) AND EACH CABLE (WITHIN THE PAIR) MUST BE EQUAL IN LENGTH TO WITHIN 2.0 INCHS (50mm) OF EACH OTHER.
2. WHEN USING ARMOURED CABLE, ENSURE THAT THE ARMOURING OF THE COAXIAL CABLE AT THE INSTRUMENT ENCLOSURE END IS CONNECTED TO THE INSTRUMENT SUPPLY EARTH LINE.
3. USE ONLY Ex d CERTIFIED CABLE GLANDS / ADAPTORS PROVIDED.

WARNING
DO NOT REMOVE / REINSTALL TRANSDUCERS IF LINE PRESSURE EXCEEDS 5.5 BARG.



Path Length, P = 368.20mm[14.496"]
Axial Length, L = 260.32mm[10.248"]

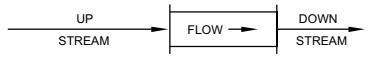
Final P & L Values will be provided on Flowcell Nameplate

TAG NUMBER : 43-FT-001
PIPE SIZE : 10", 150#, SCH 20, RF
XDCR CONFIG : TILTED DIA, 1P/1T

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN "MM[INCHES]".

FLOWCELL INSTALLATION RECOMMENDATION

INSTALL FLOWCELL ON PIPELINE TO ENSURE A FULLY DEVELOPED FLOW PROFILE IS PRESENTED TO THE FLOWMETER. BAKER HUGHES RECOMMENDS A MINIMUM OF 20 DIAMETERS OF UNOBSTRUCTED STRAIGHT RUN OF PIPELINE EXIST UPSTREAM OF THE FLOWCELL LOCATION AND 10 DIAMETERS OF SAME DOWNSTREAM.



Rev	Description of Changes	Drawn	Checked	Date
B	Issued for Approval	TG	TG	14/10/24
A	Issued for Approval	TG	TG	19/09/24
-	Issued for Approval	SG	TG	12/07/24

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TITLE: GENERAL ARRANGEMENT FOR XGF868i FLOWMETER C/W T5 TRANSDUCERS

SCALE	NTS	DO NOT SCALE DRAWING	SHEET	1	OF 1
SIZE	A3	DRAWING NUMBER	SK18028 / 1706864	REV	B

GENERAL	1	Tag Number			43-FT-001		
	2	Service			HDROGEN FROM KO DRUM TO HYDROGEN VENT (Q-43004)		
	3	P&ID Number	Special Regulation		123A901-DDL-PR-PID-80029	-	
	4	Line Size	Line No.		10"	10"-VL-117-01HSS-N	
	5	Line Schedule	Area Classification		Thk (mm) = 4.19	ATEX Zone2 - IIC (IIB+H2) T1	
PROCESS CONDITIONS	6	Fluid	Phase	State	HYDROGEN	SINGLE	GAS
	7	Spec Cond.	Sour Serv.				
	8	Flow	Min. / Norm. / Max. / Units			note 17	
	9	Oper. Pressure	Oper. Temperature		0 / 0.5 barg	AMB	
	10	Des. Pressure	Des. Temp. Max. / Min.		3.5 barg	80 °C	
	11	Density @ Fl. Norm.	Viscosity @ Fl. Norm.		0.11 kg/m^3 (@25°C, 0.4 barg)	0.01	
	12	Max. Allowable DP across Meter			N/A		
	13	Molecul. Wt. @ Fl. Nor.	Entrained Gas		2		
	14	Vapour Pressure	Critical Pressure		N/A	N/A	
METER	15	Meter Type			Spool Piece		
	16	Size	Rating	Facing	10" #150	RF	
	17	Range From	To	Eng. Units			
	18	Housing			ASTM A312 Gr.TP316/316L (ASME B31.12)		
	19	Electrical Connections			M20		
	20	Accuracy	Tracing		See Vendor Calculation Sheet	-	
	21	Trace Size	Rating	Facing	-	-	-
	22						
METER MATERIALS	23	Process Flanges			10" FLANGED #150		
	24	Tube Material			ASTM A312 Gr.TP316/316L		
	25	Sensor Housing Material			AISI 316/316L		
TRANSMITTER	26	Measurement Type	Beam / PATH No.		TRANSIT TIME	SINGLE / SINGLE	
	27	Mounting	Housing Material		Remote	AISI 316	
	28	Calibration Range			See Vendor Calculation Sheet		
	29	Electrical Connection	Electrical Class		M20x1,5MM	-	
	30	Output Signal	Load		4-20mA	600Ω	
	31	Other Output Signal			-		
	32	Power Supply	Consumption		24Vdc	20W	
	33	Ingress Protection	ATEX Certification		IP66	Ex-d IIC T6 Gb	
COMMUNICATION AND SOFTWARE	34	Communication Type	Signal Type		Conventional + HART Rev.7	4-20mA	
	35	DD Revision	CFF Revision		-	-	
	36	Hart Desciptor	Hart Tag		-	-	
	37	Internal Diagnostics	Capacitance		-	-	
	38	Segment	Device Address		-	-	
	39	Device Class	Simulate		-	-	
	40	Nominal Current	Operating Voltage		-	-	
ACCESSORIES	41	Environ. Protection			-		
	42	Measuring Cable Length	Special Cable Length		-	10m (Sensor - Transmitter)	
	43	Mounting Kit	Cable Glands		Mounting Bracket for 2" pole	Required	
	44	Isolating Ball Valve			Required according to piping class 01HSS		
PURCHASE	45	Manufacturer			Panametrics		
	46	Model Sensor	Transmitter		Flowcell	XGF868I	
	47	Purchase Order Number			1724001317		
	48	Weight			See Sheet 9		

No.	Date	By	Chkd	Appr	Description
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)
00	13/03/2024	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

Ultrasonic Flowmeter

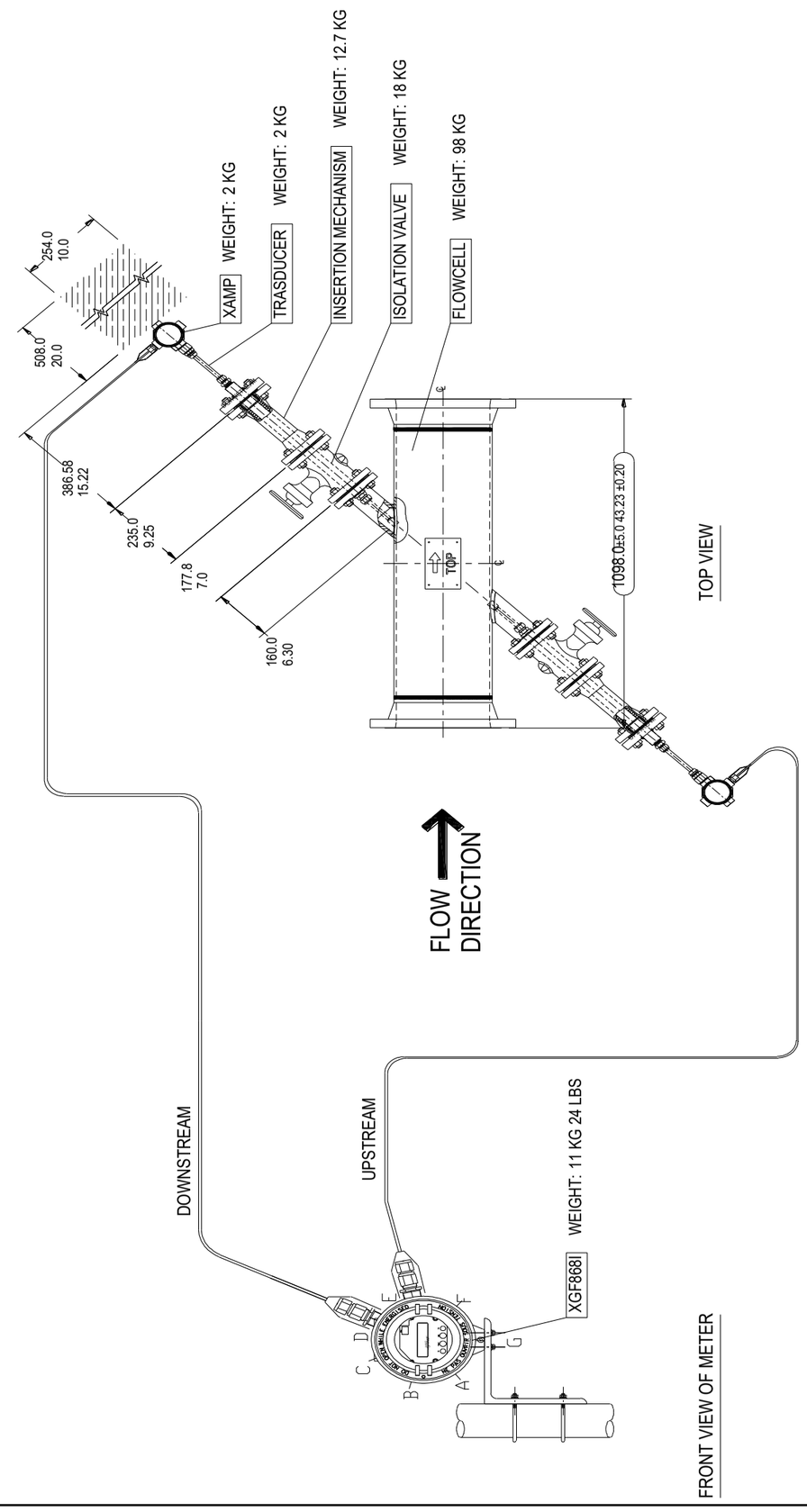
CROSSWIND

ROSETTI MARINO

Sheet 5 of 6

Code : Dwg. No.: 123A90-DDL-IN-DS-40048 Rev 01

43-FT-001 GENERAL ARRANGEMENT DRAWING



						INSTRUMENT DATASHEET	CROSSWIND
						Ultrasonic Flowmeter	ROSETTI MARINO
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)		Sheet 6 of 6
No.	Date	By	Chkd	Appr	Description	Code :	Dwg. No.: 123A90-DDL-IN-DS-40048 Rev 01

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-ZSL-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSL-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSL-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSL-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSL-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSL-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
43-FE-001A	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6..T1 Gb		N/A	True	N/A	True	
43-FE-001B	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6..T1 Gb		N/A	True	N/A	True	
43-FT-001	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		XGF868i-2-2-OI-H7-3-4-0-CC		17ATEX1304X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	II 2G Ex db IIC T6 Gb		N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
43-LT-001	KO DRUM V-43001 high/low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240632	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-LT-003	H2 vent Q-43004 low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240633	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-PT-001	KO DRUM V-43001 pressure	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240650	SST76-H-7-G-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_7 HAZARDOUS-AREA_3
50-AT-020A	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020B	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020C	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-021A	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021B	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021C	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-HS-001	Emergency push button	LOWER DECK	1724000448	PSC	E2S	-	BExCP3CBGSSNAP2A1RN24 E4K7RS820R	Safe Area	Sira 09ATEX3286X	-	II 2 GD Ex db eb mb IIC T4 Gb Ta = (-40°C to +65°C) Ex tb IIIC T75oC Db Ta = (-40°C to +65°C)	-	A-5000	True	N/A	True	
50-HS-020	Emergency push button	LOWER DECK	1724000448	PSC	STAHL	-	8040/11	Safe Area	PTB 01 ATEX 1105	-	II 2 G Ex db eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-5000	True	N/A	False	
50-PSV-006	Pressure Safety Valve for P-5001A	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PSV-007	Pressure Safety Valve for P-5001B	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PT-001	Sea water from pump P-50001A	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240660	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-002	Sea water from pump P-50001B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240661	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-014	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240651	SST76-H-7-K-2-0-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-XV-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-003	Sea water from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-004	Sea water recirculation from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-005	Drain Water discharge to Caisson	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XY-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	
50-XY-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	

1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 20ATEX1001X** Issue: **3**

4 Equipment: **Ultrasonic Flow Transducer Series T5, T5MAX, T17 and T8**

5 Applicant: **Panametrics LLC**

6 Address: 1100 Technology Park Drive
Billerica, Massachusetts 01821 USA

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-1:2014

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

II 2 G

T5, T5MAX and T17:	**T8:**
Ex db IIC T6…T1 Gb	Ex db IIC T6…T3 Gb
Ta = -40°C to +60°C	Ta = -40°C to +60°C
Ingress Protection IP66	Ingress Protection IP66

Signed: Michelle Halliwell

Title: Director of Operations

PRODUCTS RvA C 652

Project Number 80162177

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13 **DESCRIPTION OF EQUIPMENT**

The T5, T5MAX, T17 and T8 model series of flow transducer assemblies are ultrasonic piezoelectric sensors with varying tube lengths, intended to be mounted in direct contact (i.e. wetted type) within gas pipeline processes. Electrical field wiring connections are enclosed within an Ex Component flameproof enclosure with an Ex Component cable gland and/or Ex Component thread adapter, located a minimum distance of 20 cm from the process connection.

The T5, T5MAX, T17 and T8 are optionally available with an internal XAMP preamplifier.

The T5, T5MAX, T17 and T8 transducer assemblies are comprised of a single compartment, stainless steel or aluminium enclosure, with up to four threaded conduit entries. Each unused conduit entry is provided with a suitably rated blanking element. The overall physical dimensions (L x W x H) are 105.9 x 69.6 x 105.9 mm, with a maximum transducer tube length of 1.8 meters.

The equipment has been separately tested against the requirements of IEC 60529 and meets IP66.

Model code:

T5, T5MAX, and T17 Ultrasonic Transducer Assembly model code: aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-zz

aa = Model
- T5
- T5MAX
- T17

bb = Transducer head:
- 17 = Oblique / 174°
- 18 = Straight body / 180°
- 45 = Oblique / 45° (T5 only)
- 90 = Right angle / 90° (T5 and T5MAX only)

cc = Frequency:
- 05 = 50 kHz
- 10 = 100 kHz
- 20 = 200 kHz
- 50 = 500 kHz

dd = Tube length: specified per application
- 8.5 to 72 = 0.2 to 1.8 meters (8.5 to 72 inches)

ee = Process temperature range:
- LT = Low temperature -220°C to +100°C
- NT = Normal temperature -55°C to +150°C
- HT = High temperature -50°C to +250°C
- XT = Extremely high temperature -180°C to +300°C

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ff = Transducer material:
- Ti = Titanium CP2
- MN = Monel 400
- HC = Hastelloy C276
- SS = Stainless steel 316 / 304

gg = Junction box:
- 01 = Aluminium
- 02 = Stainless steel

hh = Preamplifier type:
- 00 = No internal XAMP preamplifier
- 01 = Internal XAMP with transformer
- 02 = Internal XAMP without transformer

ii = Preamplifier gain
- 00 = No internal XAMP
- 01 = Internal XAMP with gain of 10
- 02 = Internal XAMP with gain of 20
- 03 = Internal XAMP with gain of 02
- 04 = Internal XAMP with gain of 40

jj = Certification:
- 02 = ATEX (II 2G Ex db IIC)
- 03 = IECEx (Ex db IIC)

zz = Miscellaneous:
- 0 = None
- S = Special

T8 Ultrasonic Transducer Assembly model code: aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-zz

aa = Model
- T8

bb = Transducer head:
- 18 = Straight body / 180°
- 30 = Oblique / 30°
- 45 = Oblique / 45°

cc = Frequency:
- 05 = 50 kHz
- 10 = 100 kHz
- 20 = 200 kHz
- 50 = 500 kHz

dd = Tube length: specified per application
- 12 to 72 = 0.3 to 1.8 meters (12 to 72 inches)

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SCHEDULE

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Issue 3

ee = Process temperature range:
NT = Normal temperature -50°C to +150°C

ff = Transducer material:
Ti = Titanium CP2
MN = Monel 400
HC = Hastelloy C276
SS = Stainless steel 316 / 304

gg = Junction box:
UX = Aluminium
UXSS = Stainless steel

hh = Preamplifier type:
00 = No internal XAMP preamplifier
01 = Internal XAMP with transformer
02 = Internal XAMP without transformer

ii = Preamplifer gain:
00 = No internal XAMP
01 = Internal XAMP with gain of 10
02 = Internal XAMP with gain of 20
03 = Internal XAMP with gain of 02
04 = Internal XAMP with gain of 40

jj = Certification
02 = ATEX (II 2 G Ex db IIC)
03 = IECEx (Ex db IIC)

zz = Miscellaneous:
0 = None
S = Special

Variation 1 - This variation introduced the following change:

i. The certificate holder and manufacturer's name was changed:

From:	To:
GE Infrastructure Sensing Inc.	Panametrics LLC

Variation 2 - This variation introduced the following changes:

i. Addition of the new model "T5MAX", the description was amended accordingly.
ii. Correction of product nomenclature of the model T8 (XAMP option).
iii. Release of documentation supporting the new model "T5MAX".
iv. Minor update to previously assessed Ex Components and Ex Equipment:
-Enclosure with Preamplifier – Name change went from "GE Infrastructure Sensing" to "Panametrics LLC". Refer to report R80097040A where the name change was documented.
-Thread Adapter (ATEX certs) – Change of Certificate numbers and update of standards.

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"Schedule of Limitations" did not change and original analysis performed in report R80028901A, section 3.10.3.6 remains applicable.

v. Correction to "Manufacturing location B" address.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	19 March 2020	R80028901A	The release of the prime certificate.
1	11 December 2020	R80065145A	Transfer of certificate Sira 20ATEX1001X from Sira Certification Service to CSA Group Netherlands B.V.
2	02 February 2022	R80097040A	The introduction of Variation 1.
3	27 June 2023	R80162176A	The introduction of Variation 2.

15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)

15.1 Consult the manufacturer if dimensional information on the flameproof joints is necessary.

15.2 It is end-user's responsibility to ensure that the ambient around the T5, T5MAX, T17 and T8 assembly does not exceed the permitted ambient of -40°C to +60°C, regardless of process temperature.

15.3 The T5, T5MAX, T17 and T8 transducers made of titanium (where ff = Ti) are potential ignitions sources when subjected to impact or friction, which shall be taken into consideration during installation.

15.4 The T5, T5MAX, T17 and T8 have non-conducting coating which may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user shall take the necessary precautions to minimise the risk from electrostatic discharge. For example, controlling the environmental humidity where installed in order to minimize generation of static electricity, with the equipment protected from direct airflow which could cause a transfer of charge to the surface of the equipment. Cleaning should be done only with a damp cloth.

15.5 The temperature classification rating of the T5, T5MAX, T17 and T8 assemblies is dependent upon the maximum process temperature (see table below).

Model (where aa = T5, T5MAX or T17)	Process temperature	T-Class
aa-bb-cc-dd-LT-ff-gg-hh-ii-jj-zz	-220℃ to +85℃	T6
	+85℃ to +100℃	T5
aa-bb-cc-dd-NT-ff-gg-hh-ii-jj-zz	-55℃ to +85℃	T6
	+86℃ to +100℃	T5
	+101℃ to +135℃	T4
	+136℃ to +150℃	T3
aa-bb-cc-dd-HT-ff-gg-hh-ii-jj-zz	-50℃ to 85℃	T6
	+86℃ to +100℃	T5
	+101℃ to +135℃	T4
	+136℃ to +200℃	T3

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Model (where aa = T5, T5MAX or T17)	Process temperature	T-Class
	+201℃ to +250℃	T2
aa-bb-cc-dd-XT-ff-gg-hh-ii-jj-zz	-180℃ to 85℃	T6
	+86℃ to +100℃	T5
	+101℃ to +135℃	T4
	+136℃ to +200℃	T3
	+201℃ to +300℃	T2
Model T8	Process temperature	T-Class
T8-bb-cc-dd-NT-ff-gg-hh-ii-jj-zz	-50℃ to +85℃	T6
	+86℃ to +100℃	T5
	+101℃ to +135℃	T4
	+136℃ to +150℃	T3

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 **CONDITIONS OF MANUFACTURE**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.

17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.

17.3 Routine Overpressure Test (EN 60079-1 clause 16): Welded T5, T5MAX, T17 and T8 transducer head and tube assemblies are subjected to routine overpressure testing of 290 PSI (2000 kPa) for a minimum duration of 10 seconds during assembly, before potting.

17.4 Ex Component Disclosure: The T5, T5MAX, T8, and T17 assemblies incorporate the following previously certified Ex Components. It is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these components, and to inform CSA Group / Sira of any modifications of the devices which may impinge upon the explosion safety design of the aforementioned products.

- Enclosure, IME model series: 7080. Certificate number: IECEx SIR 07.0111U, SIRA 07ATEX1331U
- Enclosure, IME model series: 6080. Certificate number: IECEx FMG 19.0008U, FM19ATEX0010U
- Enclosure with Preamplifier, **Panametrics** model series XAMP. Certificate number: IECEx SIR 13.0071, Sira 13ATEX1184
- Cable Gland, nVent model: 500SSGL34EX. Certificate number: IECEx BAS 08.0107X, Baseefa08ATEX0327X
- Thread adapter, Peppers model series: AR. Certificate number: CML19ATEX1090X

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Certificate Annexe

Certificate Number: **Sira 20ATEX1001X**

Equipment: **Ultrasonic Flow Transducer Series T5, T5MAX T17 and T8**

Applicant: **Panametrics LLC**

Issue 0

Drawing	Sheets	Rev.	Date (Stamp)	Title
531-160	1 of 1	J	19 Mar 20	T5 transducer 180° head
531-161	1 of 1	E	19 Mar 20	T5 transducer 180° long head
531-170	1 of 1	K	19 Mar 20	T5 extended tube length
531-308	1 of 1	H	19 Mar 20	T5 transducer 45° head
531-309	1 of 1	J	19 Mar 20	T5 transducer 90° head
531-310	1 of 1	H	19 Mar 20	T5 transducer 90° long head
531-578	1 of 1	H	19 Mar 20	T5 and T17 tube length
531-1022	1 of 1	A	19 Mar 20	T5 and T17 standard tube length
752-057	1 of 1	C	19 Mar 20	T5 180° NT transducer assembly
752-058	1 of 1	C	19 Mar 20	T5 180° XT / HT / LT transducer assembly
752-059	1 of 1	C	19 Mar 20	T5 90° NT transducer assembly
752-060	1 of 1	C	19 Mar 20	T5 90° XT / HT / LT transducer assembly
752-061	1 of 1	C	19 Mar 20	T5 45° NT transducer assembly
752-062	1 of 1	C	19 Mar 20	T5 45° XT / HT / LT transducer assembly
752-063	1 of 1	N	19 Mar 20	T5 and T17 series assemblies
752-116	1 of 1	E	19 Mar 20	T8 30° NT transducer assembly
752-117	1 of 1	E	19 Mar 20	T8 45° NT transducer assembly
752-118	1 of 1	E	19 Mar 20	T8 180° NT transducer assembly
752-119	1 of 1	F	19 Mar 20	T8 tube body
752-121	1 of 1	D	19 Mar 20	T8 transducer 30° head
752-122	1 of 1	D	19 Mar 20	T8 transducer 180° head
752-123	1 of 1	E	19 Mar 20	T8 transducer 45° head
752-124	1 of 1	E	19 Mar 20	T8 transducer head cap
752-125	1 of 1	D	19 Mar 20	T8 series assembly
752-321	1 of 1	A	19 Mar 20	T17 180° transducer assembly

Issue 1. No new drawings were introduced.

Issue 2

Drawing	Sheets	Rev.	Date (Stamp)	Title
752-125	1 of 1	A	01 Feb 22	T8 Transducer
752-063	1 of 1	P	01 Feb 22	T5/T17 Transducer

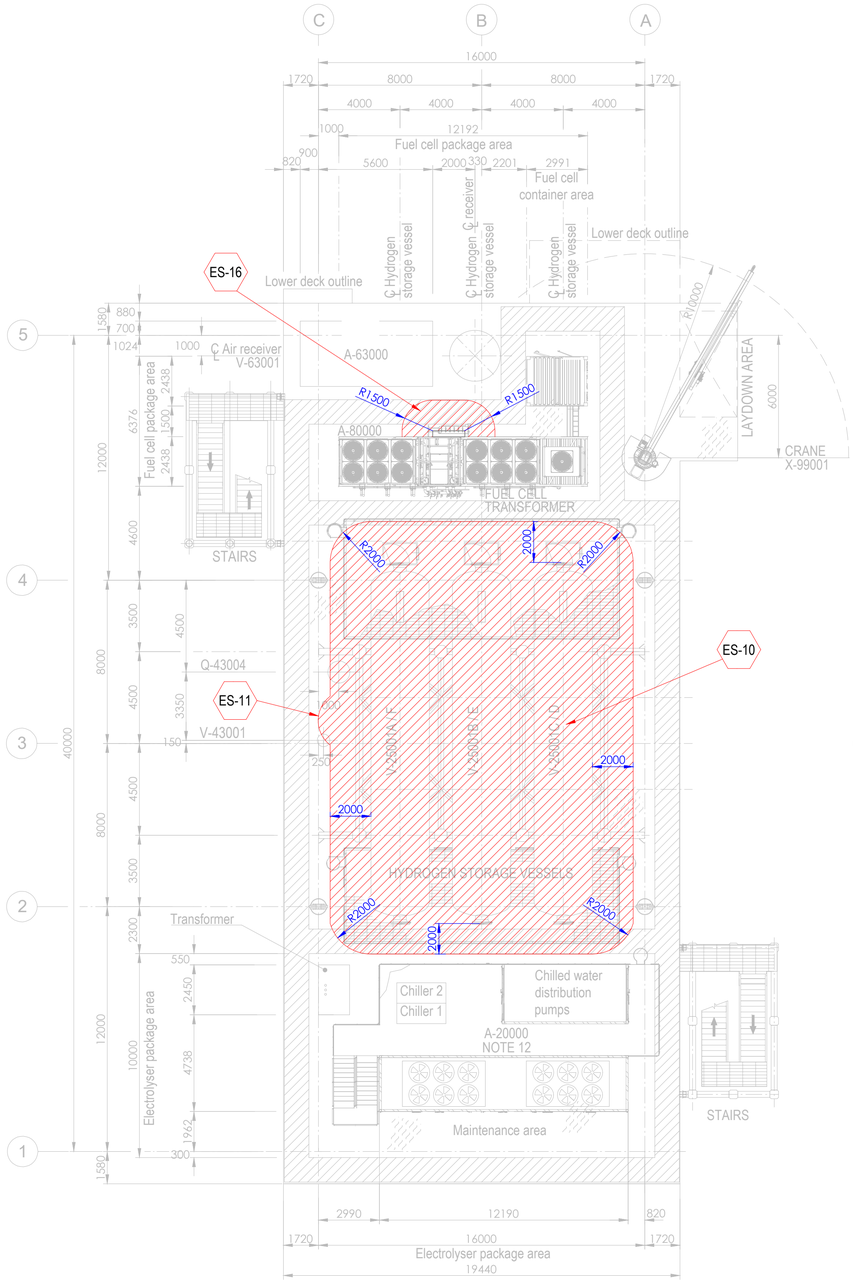
Issue 3

Drawing	Sheets	Rev.	Date (Stamp)	Title
752-063	1 to 2	00	24 Apri23	T5/T17/T5MAX TOP LEVEL CERT DWG
173M2721	1 of 1	00	24 Apri23	T5MAX 180 NT TRDCR CONSTRUCTION CERT DWG
173M2754	1 of 1	00	24 Apri23	T5MAX 90 NT TRDCR CONSTRUCTION CERT DWG

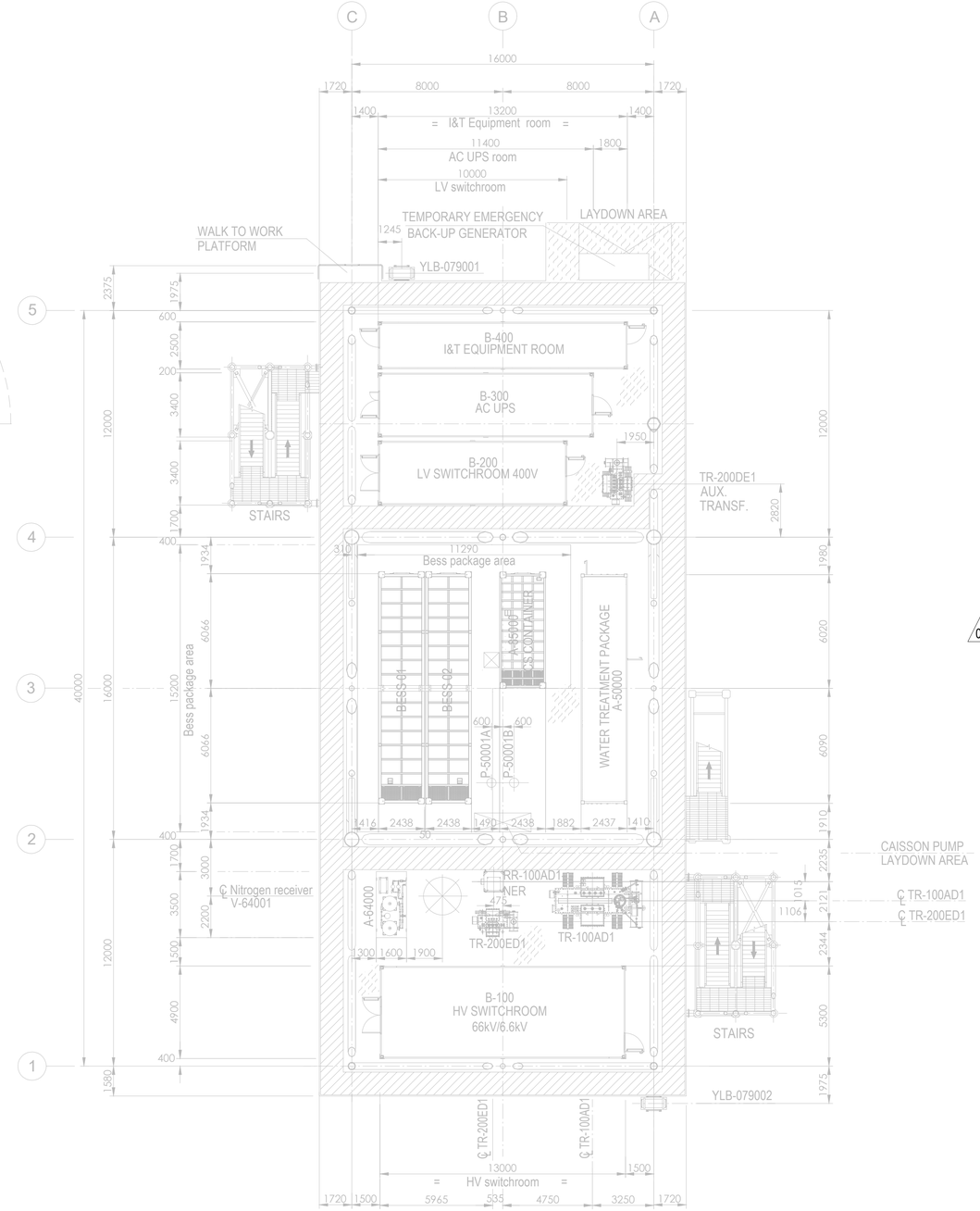
This certificate and its schedules may only be reproduced in its entirety and without change
CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR Arnhem, The Netherlands

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



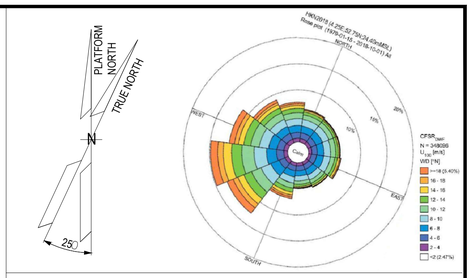
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

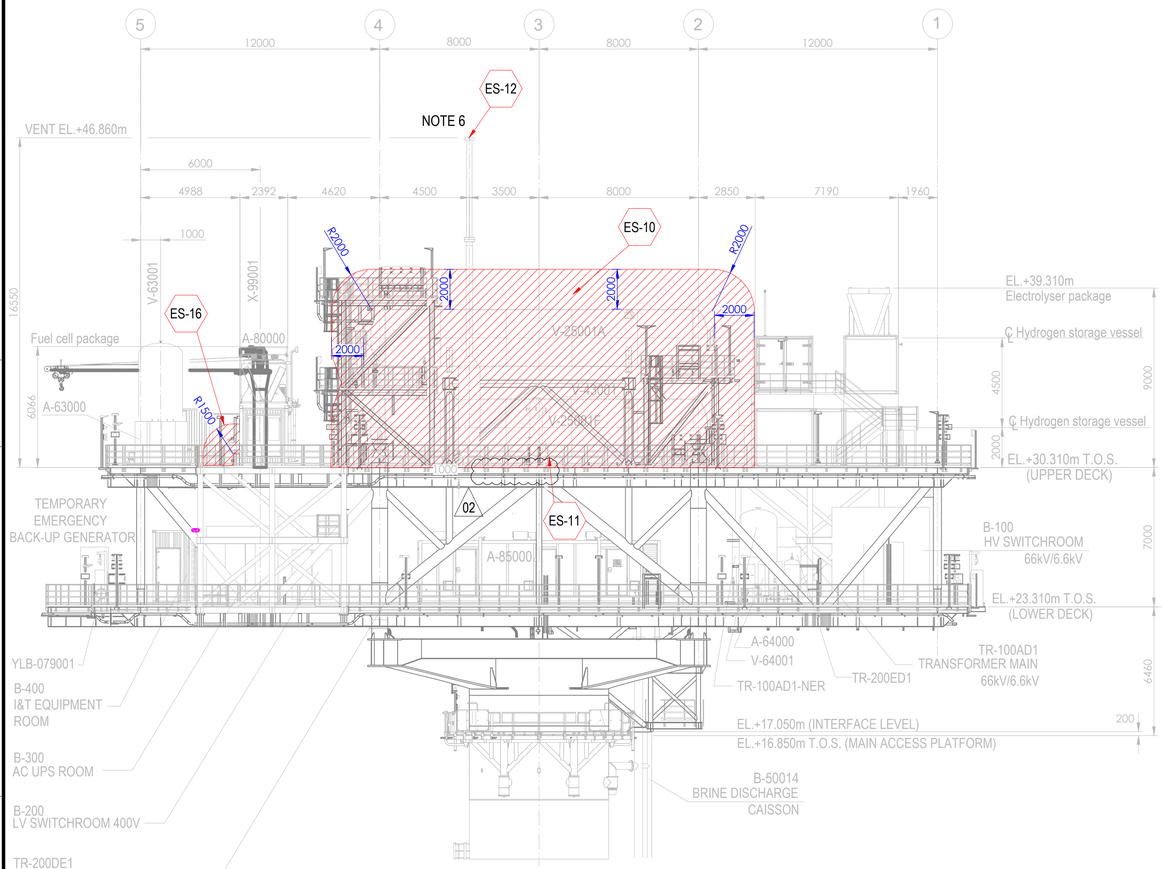
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

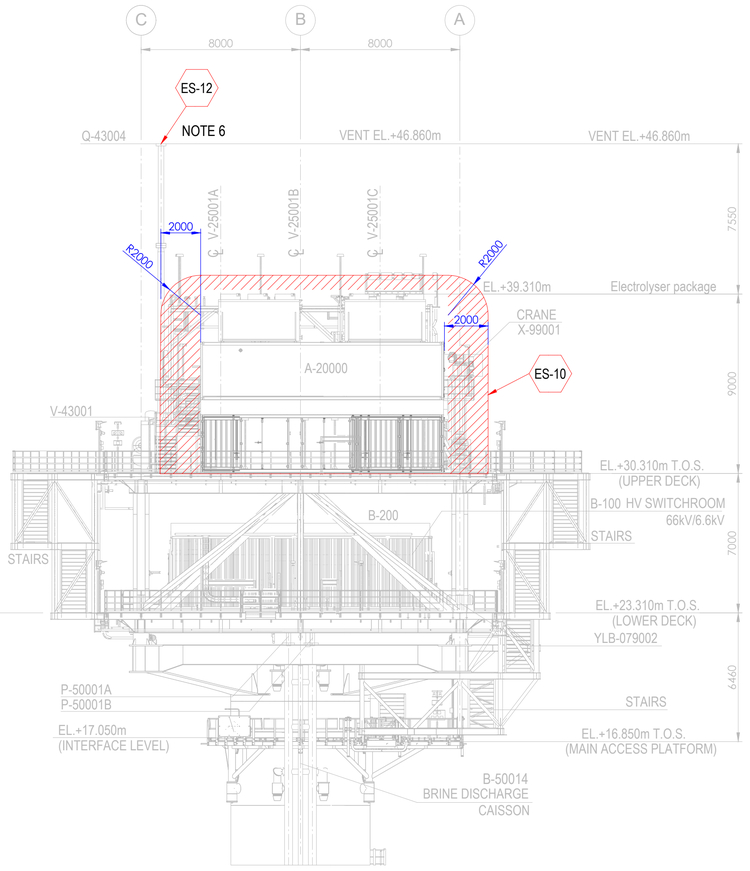
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

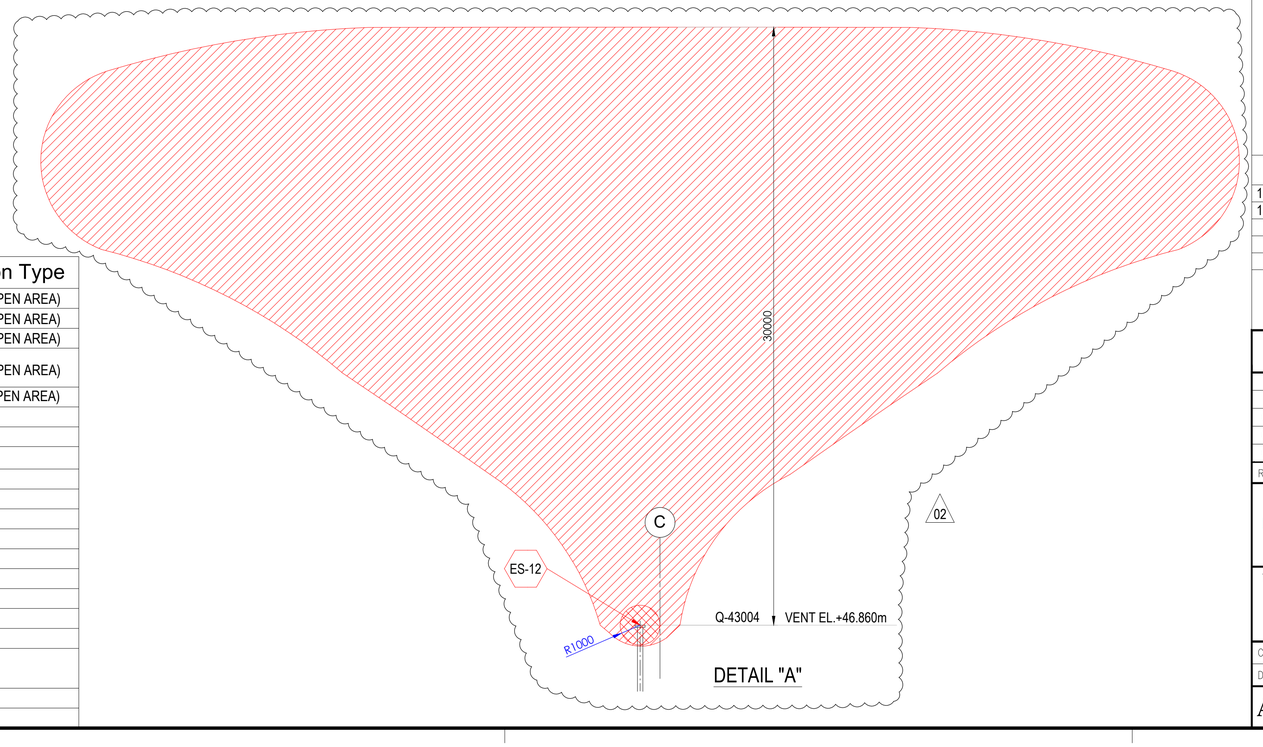


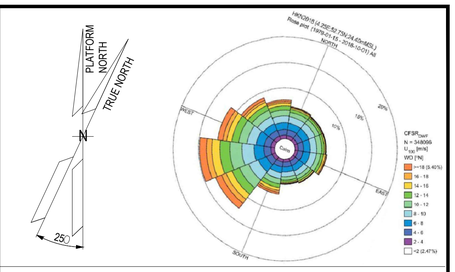
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	43-FE-001B	: Pre-Amplifier Flow Sensor	Dwg	123A90-DDL-IN-MR-40049
	S/Sys	43-00	: Hydrogen Vent Header & Drum System	Module	UD
TASK	code	C10004546	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**	N/A				
Manufacturer	Panametrics LLC			**Model**	T5MAXS				
Cert No.	SIRA 20ATEX1001X			**Equipment Ambient Temp.**	-40°C to +60°C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex d	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state “NA”. Comments are required for ‘Failure’ column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		OK	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		OK	
	Physical check	x	OK	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex “e” – Ex “n” – Ex “t”)	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	NA	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	OK	

ITEM	Tag	43-FE-001B	: Pre-Amplifier Flow Sensor		Dwg	123A90-DDL-IN-MR-40049	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10004546	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	OK	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	OK	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	OK	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	43-FE-001B	: Pre-Amplifier Flow Sensor		Dwg	123A90-DDL-IN-MR-40049	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10004546	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

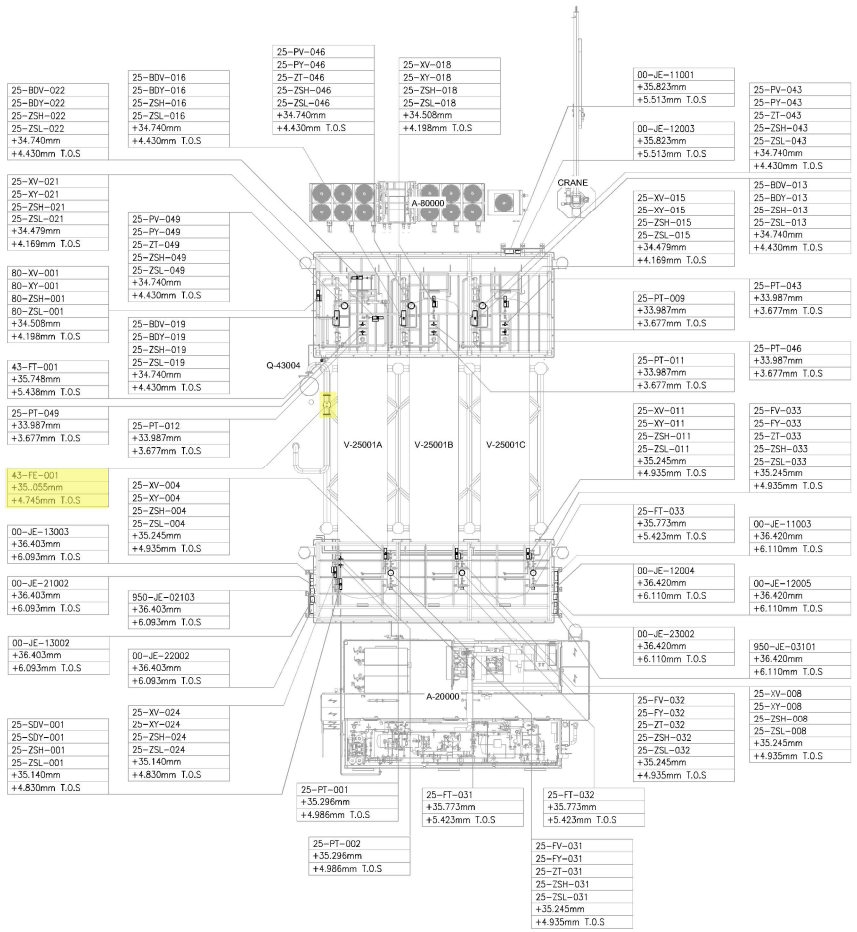
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-10	2025-03-12	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-10T10:30:56.008Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-12T13:08:57.129Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

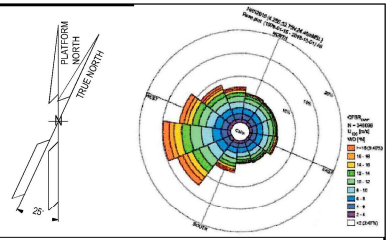
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:150

DRAWN VBA | CHECKED LCA | APPROVED DLO | DATE 04/10/24

A1 | DRAWING NO. 123A90-DDL-IN-DL-40081 | SHEET 002 | REV. 02

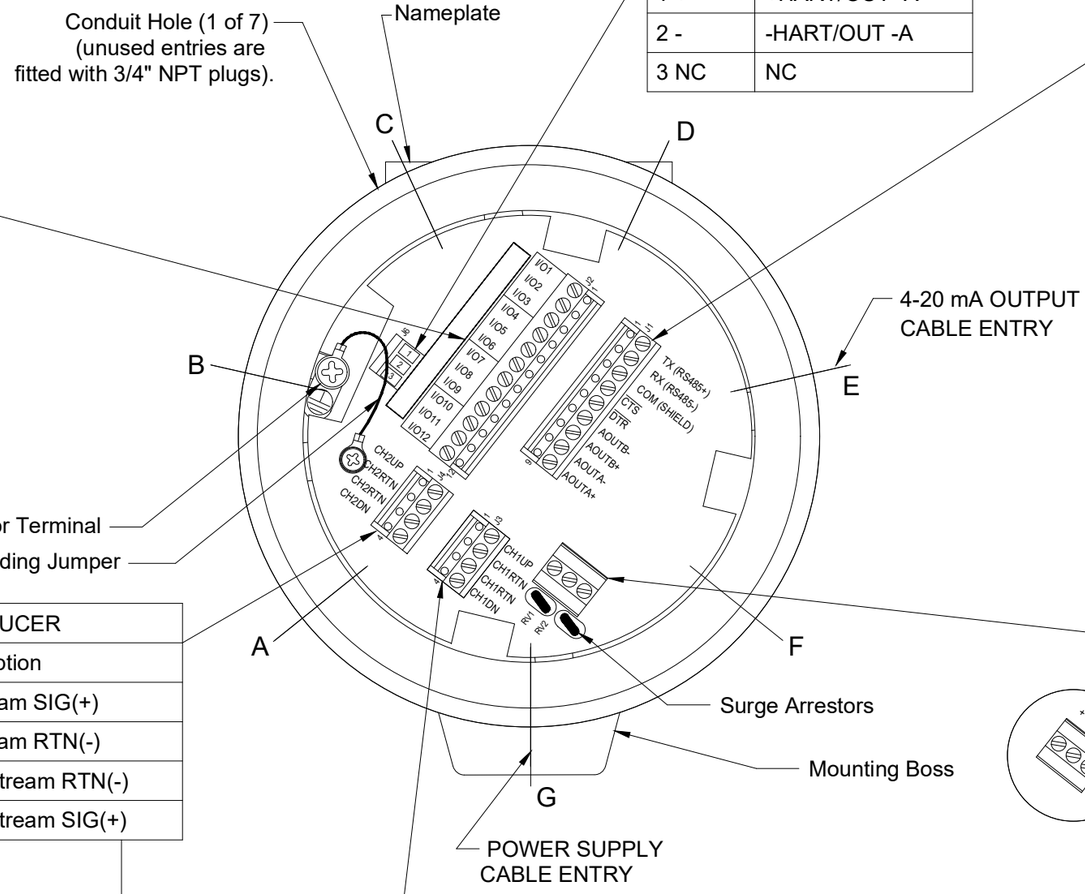
File Name : 123A90-DDL-IN-DL-40081 REV.02.dwg

C:\USERS\GOVESHU\ONEDRIVE - BAKER HUGHES\DESKTOP\MY WORK\12_JULY_2024\09_SO_1706864\OUTPUT\WD\SK18027

INPUT/OUTPUT CONNECTIONS	
Pin No.	Description
1 I/O1	NC
2 I/O2	NC
3 I/O3	NC
4 I/O4	NC
5 I/O5	NC
6 I/O6	NC
7 I/O7	OUT C +24V
8 I/O8	INPUT C - +
9 I/O9	INPUT C - RTN
10 I/O10	OUT D +24V
11 I/O11	INPUT D - +
12 I/O12	INPUT D - RTN

HART	
Pin No.	Description
1 +	+HART/OUT -A
2 -	-HART/OUT -A
3 NC	NC

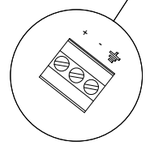
RS232 / 4-20 OUTPUT		
Pin #	Designation	Description
1	TX(RS485+)	Transmit / +
2	RX(RS485-)	Receive / -
3	COM (SHLD)	Ground
4	$\overline{CTS}$	Clear To Send
5	$\overline{DTR}$	Data Terminal Ready
6	AOUT B-	4-20 Output 2 RTN(-)
7	AOUT B+	4-20 Output 2 SIG(+)
8	AOUT A-	4-20 Output 1 RTN(-)
9	AOUT A+	4-20 Output 1 SIG(+)

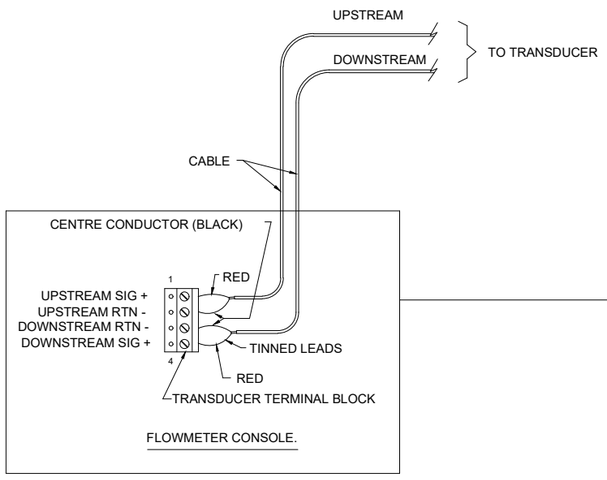


CH2 TRANSDUCER	
Pin No.	Description
1 CH2UP	Upstream SIG(+)
2 CH2RTN	Upstream RTN(-)
3 CH2RTN	Downstream RTN(-)
4 CH2DN	Downstream SIG(+)

CH1 TRANSDUCER	
Pin No.	Description
1 CH1UP	Upstream SIG(+)
2 CH1RTN	Upstream RTN(-)
3 CH1RTN	Downstream RTN(-)
4 CH1DN	Downstream SIG(+)

DC POWER INPUT	
12 TO 28 VDC	
Pin #	Description
1 +	LINE POSITIVE
2 -	LINE NEGATIVE
3 ⏚	NO CONNECTION





TRANSDUCER CONNECTION DETAIL

NOTE: Unit shown from rear with rear cover removed.

TAG No's :
43-FT-001

NOTES:
1. POWER SUPPLY SURGE PROTECTION IS IN-BUILT ON THE POWER SUPPLY BOARD.
2. TROPICALIZATION OF ELECTRONICS.

XGF868I-2-2-OI-H7-3-4-0-CC

Rev	Description of Changes	Checked	Approved	Date
-	Issued for Approval	SG	TG	12/07/24

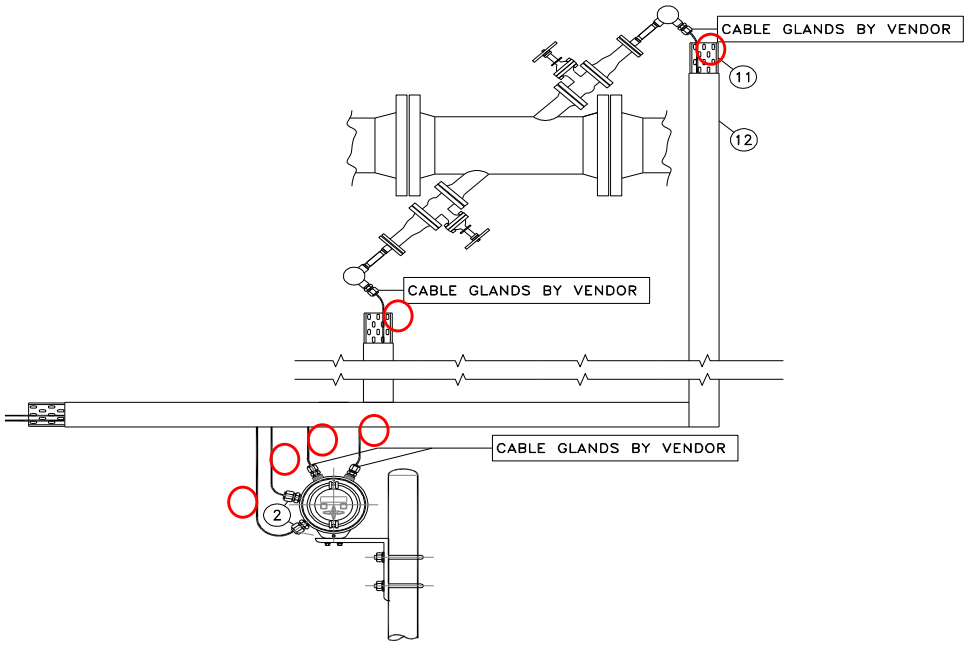
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TITLE
INTERCONNECTION DIAGRAM FOR XGF868i FLOWMETER TWO CHANNEL

SCALE		SHEET	OF
NTS	DO NOT SCALE DRAWING	1	1

SIZE	DRAWING NUMBER	REV
A3	SK18027 / 1706864	-

ELECTRICAL HOOK-UP FOR FLOW TRANSMITTERS (ULTRASONIC)



	INSTRUMENT TAG
1	43-FT-001
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	20 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	20 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	2

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PB distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

DRAWING NO. DRAWING_NO.

REV. REV

V-43001

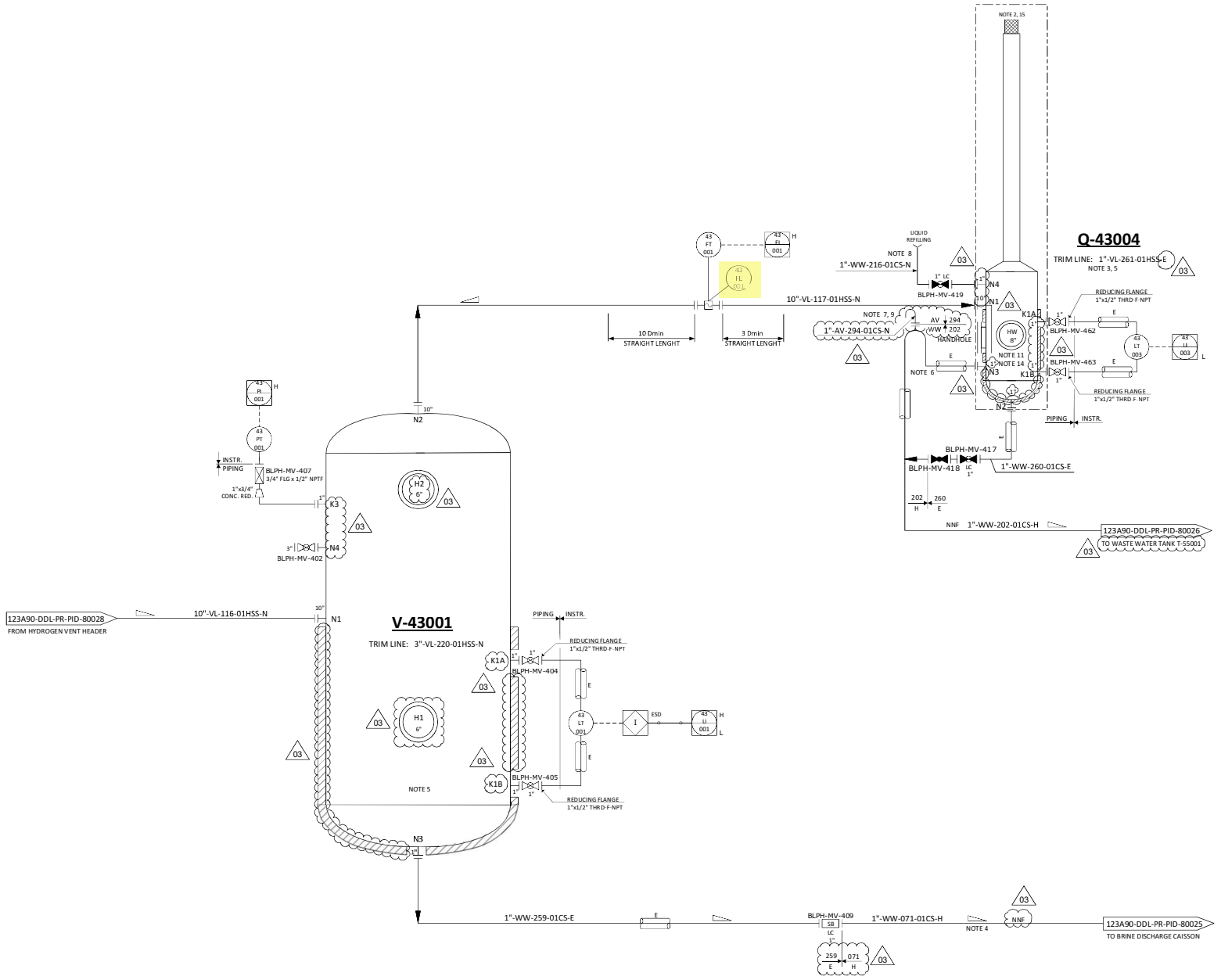
HYDROGEN VENT KO DRUM

SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1

SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. 03
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	NTS
DRAWN	CHECKED	APPROVED		DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80029			SHEET 001	REV. 03

File Name : FILE_NAME

1. FLOWMETER (QTY: 1)

TYPE:	XGF868I
ENCLOSURE:	316SS
VOLTAGE:	12 - 28 VDC
POWER USAGE:	20W
IP RATING:	IP66
HAZ AREA:	EX dIIC T6 Gb
CERT NUMBER:	SIRA 17ATEX1304X
WEIGHT:	11 kg [24 lb] B

FINISH : AS PER MANUFACTURER STANDARD

2. FLOWMETER CABLE (QTY: 1 PAIR)

TYPE:	FLAME RETARDENT RG-62
ARMOUR:	SWA
LENGTH:	10 M
CONNECTION (METER):	3/4" NPT
CONNECTION (XDUCER):	3/4" NPT
GLAND MAT'L:	316SS
HAZ AREA :	Ex nR IIC Gc
CERT. NUMBER :	CML-19ATEX4109X
WEIGHT:	0.28 kg/m B

FINISH : N/A

3. PRE-AMPLIFIER (QTY: 2)

TYPE :	XAMP
ENCLOSURE :	316SS
IP RATING :	IP65/66
HAZ. AREA :	Ex d IIC T6 Gb
CERT NUMBER :	SIRA 20ATEX1001X
WEIGHT :	2 kg [4.4 lb] EA B

FINISH : AS PER MANUFACTURER STANDARD

4. TRANSDUCER (QTY: 2)

TYPE :	T5
MATERIAL :	TITANIUM
TEMP RANGE :	-55 to 150°C (-67 to 302°F) (NT)
HAZ. AREA :	Ex d IIC T6 Gb
CERT NUMBER :	SIRA 20ATEX1001X
MAT'L CERTS :	EN10204 3.1 & NACE MR-01-75
JUNCTION BOX:	316SS
IP RATING :	IP66
WEIGHT :	2 kg [4.4 lb] EA B

FINISH : AS PER MANUFACTURER STANDARD

5. INSERTION MECHANISM (QTY: 2)

TYPE:	IMA72
SIZE:	2" x 2"
RATING:	150#
MATERIAL	
PACKING GLAND :	316SS
BARREL HOLDER:	316 / 316L SS
HYDROTEST:	PER ASME B31.3
MAT'L CERTS:	EN10204 3.1 & NACE MR-01-75
WEIGHT:	12.7 kg [28 lb] EA B

FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A

6. ISOLATION VALVE (QTY: 2)

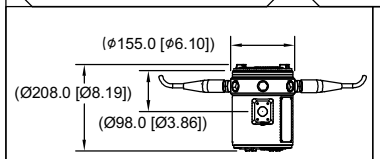
TYPE :	GATE VALVE
SIZE :	2", 150# RF
F/F LENGTH:	177.8MM (7")
MATERIAL	
BODY:	A351 CF8M
TRIM:	316SS
MAT'L CERTS:	EN10204 3.1 & NACE MR-01-75
WEIGHT:	18 kg [39.7 lb] EA B

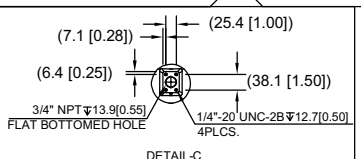
FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A

7. FLOWCELL (QTY : 1)

FOR DETAILS OF THE FLOWCELL, PLEASE REFER TO THE FLOWCELL FABRICATION DRAWING, REF: 182M4103
WEIGHT : 98 kg [216 lb] B

FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A





DETAIL-C
(FOR 2" PIPE MOUNTING)

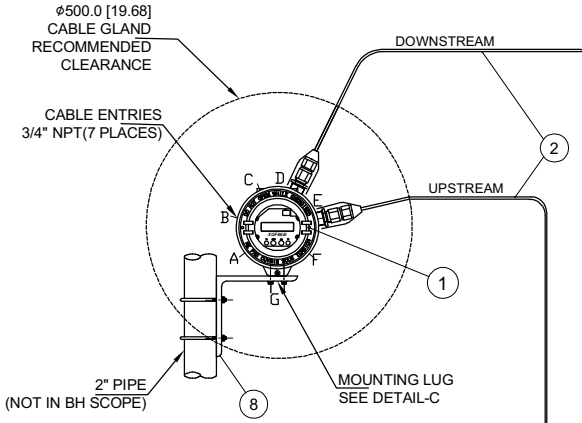
8. 2" PIPE MOUNTING BRACKET (QTY: 1)

MATERIAL : 316SS

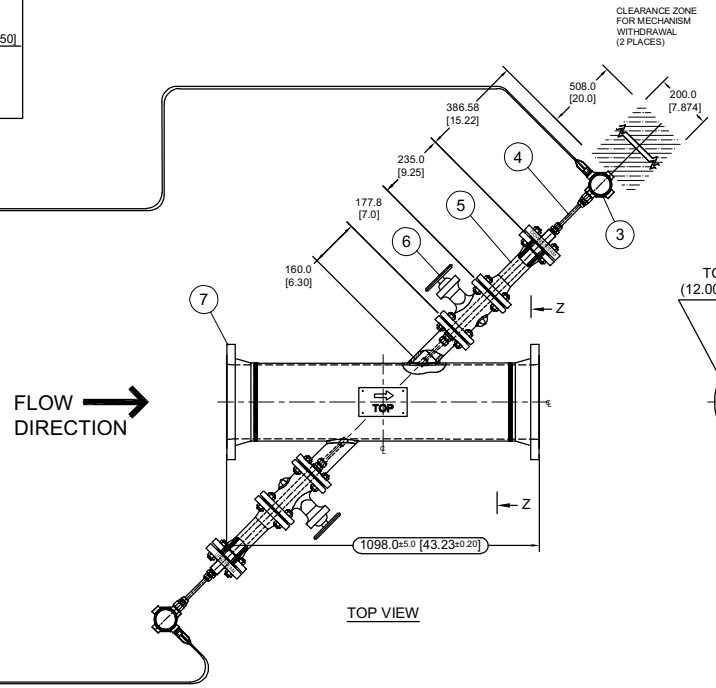
WEIGHT : 5 kg B

MISC ITEMS (NOT SHOWN)

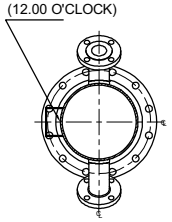
-1x NAMEPLATE
-5x 3/4" x M20 ADAPTORS SS



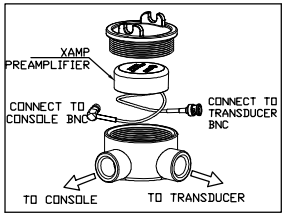
FRONT VIEW OF METER



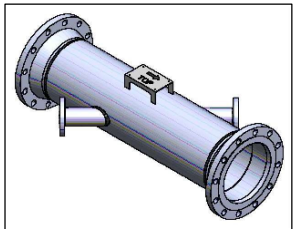
TOP VIEW



SECTION Z-Z



XAMP DETAIL

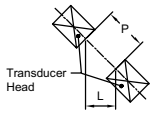


ISOMETRIC VIEW

NOTES:

1. EACH PAIR OF CABLES MUST BE CONTINUOUS IN LENGTH (NO JOINTS) AND EACH CABLE (WITHIN THE PAIR) MUST BE EQUAL IN LENGTH TO WITHIN 2.0 INCHS (50mm) OF EACH OTHER.
2. WHEN USING ARMOURED CABLE, ENSURE THAT THE ARMOURING OF THE COAXIAL CABLE AT THE INSTRUMENT ENCLOSURE END IS CONNECTED TO THE INSTRUMENT SUPPLY EARTH LINE.
3. USE ONLY Ex d CERTIFIED CABLE GLANDS / ADAPTORS PROVIDED.

WARNING
DO NOT REMOVE / REINSTALL TRANSDUCERS IF LINE PRESSURE EXCEEDS 5.5 BARG.



Path Length, P = 368.20mm[14.496"]
Axial Length, L = 260.32mm[10.248"]

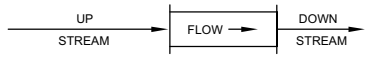
Final P & L Values will be provided on Flowcell Nameplate

TAG NUMBER : 43-FT-001
PIPE SIZE : 10", 150#, SCH 20, RF
XDCR CONFIG : TILTED DIA, 1P/1T

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN "MM[INCHES]".

FLOWCELL INSTALLATION RECOMMENDATION

INSTALL FLOWCELL ON PIPELINE TO ENSURE A FULLY DEVELOPED FLOW PROFILE IS PRESENTED TO THE FLOWMETER. BAKER HUGHES RECOMMENDS A MINIMUM OF 20 DIAMETERS OF UNOBSTRUCTED STRAIGHT RUN OF PIPELINE EXIST UPSTREAM OF THE FLOWCELL LOCATION AND 10 DIAMETERS OF SAME DOWNSTREAM.



Rev	Description of Changes	Drawn	Checked	Date
B	Issued for Approval	TG	TG	14/10/24
A	Issued for Approval	TG	TG	19/09/24
-	Issued for Approval	SG	TG	12/07/24

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TITLE: GENERAL ARRANGEMENT FOR XGF868i FLOWMETER C/W T5 TRANSDUCERS

SCALE	NTS	DO NOT SCALE DRAWING	SHEET	1	OF 1
SIZE	A3	DRAWING NUMBER	SK18028 / 1706864	REV	B

GENERAL	1	Tag Number			43-FT-001	
	2	Service			HDROGEN FROM KO DRUM TO HYDROGEN VENT (Q-43004)	
	3	P&ID Number	Special Regulation		123A901-DDL-PR-PID-80029	-
	4	Line Size	Line No.		10"	10"-VL-117-01HSS-N
	5	Line Schedule	Area Classification		Thk (mm) = 4.19	ATEX Zone2 - IIC (IIB+H2) T1
PROCESS CONDITIONS	6	Fluid	Phase	State	HYDROGEN	SINGLE / GAS
	7	Spec Cond.	Sour Serv.			
	8	Flow	Min. / Norm. / Max. / Units			note 17
	9	Oper. Pressure	Oper. Temperature		0 / 0.5 barg	AMB
	10	Des. Pressure	Des. Temp. Max. / Min.		3.5 barg	80 °C
	11	Density @ Fl. Norm.	Viscosity @ Fl. Norm.		0.11 kg/m^3 (@25°C, 0.4 barg)	0.01
	12	Max. Allowable DP across Meter			N/A	
	13	Molecul. Wt. @ Fl. Nor.	Entrained Gas		2	
	14	Vapour Pressure	Critical Pressure		N/A	N/A
METER	15	Meter Type			Spool Piece	
	16	Size	Rating	Facing	10" #150	RF
	17	Range From	To	Eng. Units		
	18	Housing			ASTM A312 Gr.TP316/316L (ASME B31.12)	
	19	Electrical Connections			M20	
	20	Accuracy	Tracing		See Vendor Calculation Sheet	-
	21	Trace Size	Rating	Facing	-	- / -
	22					
METER MATERIALS	23	Process Flanges			10" FLANGED #150	
	24	Tube Material			ASTM A312 Gr.TP316/316L	
	25	Sensor Housing Material			AISI 316/316L	
TRANSMITTER	26	Measurement Type	Beam / PATH No.		TRANSIT TIME	SINGLE / SINGLE
	27	Mounting	Housing Material		Remote	AISI 316
	28	Calibration Range			See Vendor Calculation Sheet	
	29	Electrical Connection	Electrical Class		M20x1,5MM	-
	30	Output Signal	Load		4-20mA	600Ω
	31	Other Output Signal			-	
	32	Power Supply	Consumption		24Vdc	20W
	33	Ingress Protection	ATEX Certification		IP66	Ex-d IIC T6 Gb
COMMUNICATION AND SOFTWARE	34	Communication Type	Signal Type		Conventional + HART Rev.7	4-20mA
	35	DD Revision	CFF Revision		-	-
	36	Hart Desciptor	Hart Tag		-	-
	37	Internal Diagnostics	Capacitance		-	-
	38	Segment	Device Address		-	-
	39	Device Class	Simulate		-	-
	40	Nominal Current	Operating Voltage		-	-
ACCESSORIES	41	Environ. Protection			-	
	42	Measuring Cable Length	Special Cable Length		-	10m (Sensor - Transmitter)
	43	Mounting Kit	Cable Glands		Mounting Bracket for 2" pole	Required
	44	Isolating Ball Valve			Required according to piping class 01HSS	
PURCHASE	45	Manufacturer			Panametrics	
	46	Model Sensor	Transmitter		Flowcell	XGF868I
	47	Purchase Order Number			1724001317	
	48	Weight			See Sheet 9	

No.	Date	By	Chkd	Appr	Description
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)
00	13/03/2024	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

Ultrasonic Flowmeter

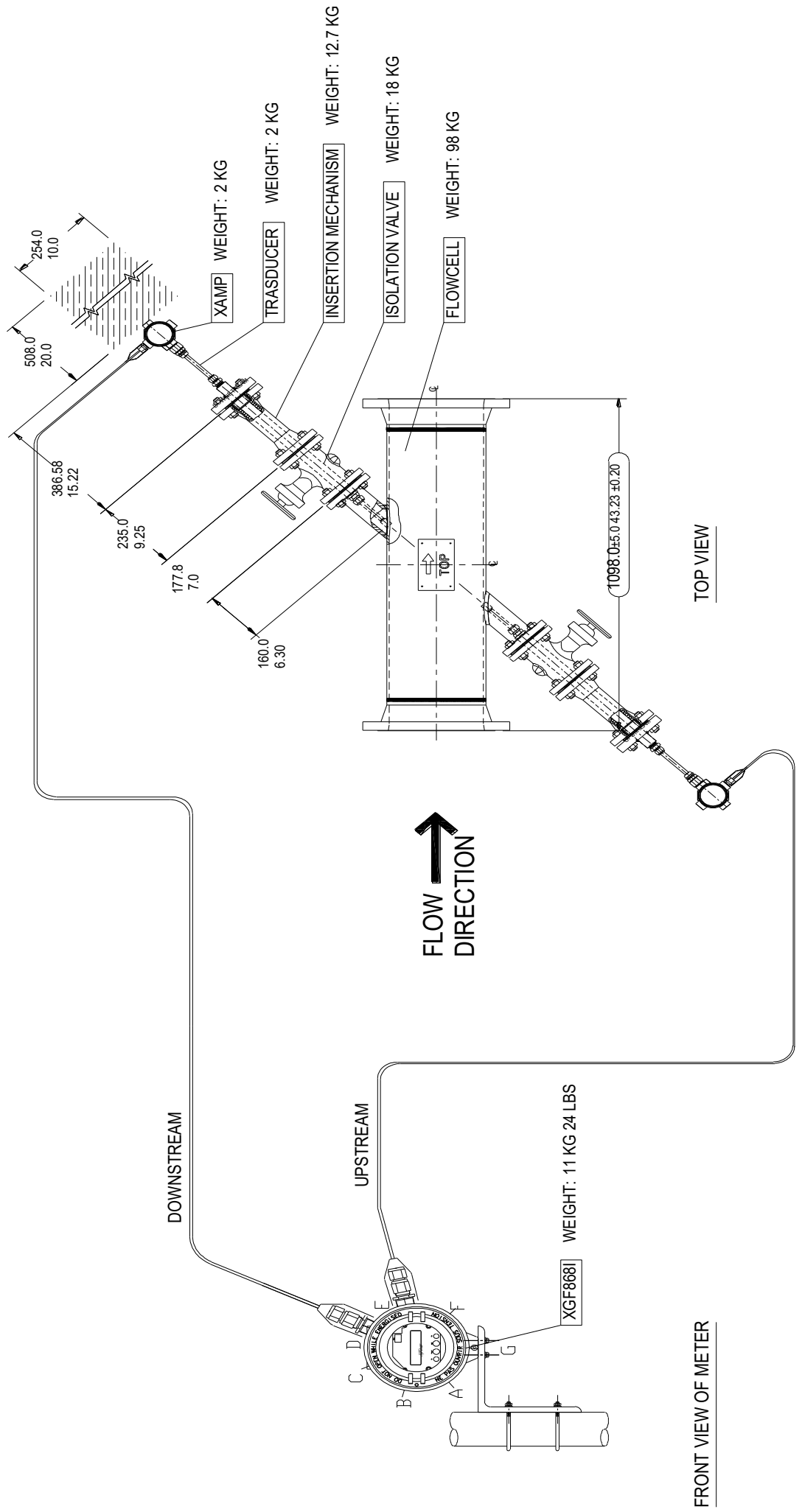
CROSSWIND

ROSETTI MARINO

Sheet 5 of 6

Code : Dwg. No.: 123A90-DDL-IN-DS-40048 Rev 01

43-FT-001 GENERAL ARRANGEMENT DRAWING



						INSTRUMENT DATASHEET	CROSSWIND	
						Ultrasonic Flowmeter	ROSETTI MARINO	
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)		Sheet 6 of 6	
No.	Date	By	Chkd	Appr	Description	Code :	Dwg. No.: 123A90-DDL-IN-DS-40048	Rev 01

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-ZSL-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSL-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSL-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSL-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSL-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSL-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
43-FE-001A	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6..T1 Gb		N/A	True	N/A	True	
43-FE-001B	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6..T1 Gb		N/A	True	N/A	True	
43-FT-001	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		XGF868i-2-2-OI-H7-3-4-0-CC		17ATEX1304X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	II 2G Ex db IIC T6 Gb		N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
43-LT-001	KO DRUM V-43001 high/low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240632	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-LT-003	H2 vent Q-43004 low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240633	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-PT-001	KO DRUM V-43001 pressure	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240650	SST76-H-7-G-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_7 HAZARDOUS-AREA_3
50-AT-020A	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020B	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020C	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-021A	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021B	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021C	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-HS-001	Emergency push button	LOWER DECK	1724000448	PSC	E2S	-	BExCP3CBGSSNAP2A1RN24 E4K7RS820R	Safe Area	Sira 09ATEX3286X	-	II 2 GD Ex db eb mb IIC T4 Gb Ta = (-40°C to +65°C) Ex tb IIIC T75oC Db Ta = (-40°C to +65°C)	-	A-5000	True	N/A	True	
50-HS-020	Emergency push button	LOWER DECK	1724000448	PSC	STAHL	-	8040/11	Safe Area	PTB 01 ATEX 1105	-	II 2 G Ex db eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-5000	True	N/A	False	
50-PSV-006	Pressure Safety Valve for P-5001A	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PSV-007	Pressure Safety Valve for P-5001B	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PT-001	Sea water from pump P-50001A	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240660	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-002	Sea water from pump P-50001B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240661	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-014	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240651	SST76-H-7-K-2-0-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-XV-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-003	Sea water from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-004	Sea water recirculation from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-005	Drain Water discharge to Caisson	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XY-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	
50-XY-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	

1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 20ATEX1001X** Issue: **3**

4 Equipment: **Ultrasonic Flow Transducer Series T5, T5MAX, T17 and T8**

5 Applicant: **Panametrics LLC**

6 Address: 1100 Technology Park Drive
Billerica, Massachusetts 01821 USA

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-1:2014

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

II 2 G

T5, T5MAX and T17:	**T8:**
Ex db IIC T6…T1 Gb	Ex db IIC T6…T3 Gb
Ta = -40°C to +60°C	Ta = -40°C to +60°C
Ingress Protection IP66	Ingress Protection IP66

Signed: Michelle Halliwell

Title: Director of Operations

PRODUCTS RvA C 652

Project Number 80162177

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13 **DESCRIPTION OF EQUIPMENT**

The T5, T5MAX, T17 and T8 model series of flow transducer assemblies are ultrasonic piezoelectric sensors with varying tube lengths, intended to be mounted in direct contact (i.e. wetted type) within gas pipeline processes. Electrical field wiring connections are enclosed within an Ex Component flameproof enclosure with an Ex Component cable gland and/or Ex Component thread adapter, located a minimum distance of 20 cm from the process connection.

The T5, T5MAX, T17 and T8 are optionally available with an internal XAMP preamplifier.

The T5, T5MAX, T17 and T8 transducer assemblies are comprised of a single compartment, stainless steel or aluminium enclosure, with up to four threaded conduit entries. Each unused conduit entry is provided with a suitably rated blanking element. The overall physical dimensions (L x W x H) are 105.9 x 69.6 x 105.9 mm, with a maximum transducer tube length of 1.8 meters.

The equipment has been separately tested against the requirements of IEC 60529 and meets IP66.

Model code:

T5, T5MAX, and T17 Ultrasonic Transducer Assembly model code: aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-zz

aa = Model
- T5
- T5MAX
- T17

bb = Transducer head:
- 17 = Oblique / 174°
- 18 = Straight body / 180°
- 45 = Oblique / 45° (T5 only)
- 90 = Right angle / 90° (T5 and T5MAX only)

cc = Frequency:
- 05 = 50 kHz
- 10 = 100 kHz
- 20 = 200 kHz
- 50 = 500 kHz

dd = Tube length: specified per application
- 8.5 to 72 = 0.2 to 1.8 meters (8.5 to 72 inches)

ee = Process temperature range:
- LT = Low temperature -220°C to +100°C
- NT = Normal temperature -55°C to +150°C
- HT = High temperature -50°C to +250°C
- XT = Extremely high temperature -180°C to +300°C

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ff = Transducer material:
- Ti = Titanium CP2
- MN = Monel 400
- HC = Hastelloy C276
- SS = Stainless steel 316 / 304

gg = Junction box:
- 01 = Aluminium
- 02 = Stainless steel

hh = Preamplifier type:
- 00 = No internal XAMP preamplifier
- 01 = Internal XAMP with transformer
- 02 = Internal XAMP without transformer

ii = Preamplifier gain
- 00 = No internal XAMP
- 01 = Internal XAMP with gain of 10
- 02 = Internal XAMP with gain of 20
- 03 = Internal XAMP with gain of 02
- 04 = Internal XAMP with gain of 40

jj = Certification:
- 02 = ATEX (II 2G Ex db IIC)
- 03 = IECEx (Ex db IIC)

zz = Miscellaneous:
- 0 = None
- S = Special

T8 Ultrasonic Transducer Assembly model code: aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-zz

aa = Model
- T8

bb = Transducer head:
- 18 = Straight body / 180°
- 30 = Oblique / 30°
- 45 = Oblique / 45°

cc = Frequency:
- 05 = 50 kHz
- 10 = 100 kHz
- 20 = 200 kHz
- 50 = 500 kHz

dd = Tube length: specified per application
- 12 to 72 = 0.3 to 1.8 meters (12 to 72 inches)

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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 20ATEX1001X**
Issue 3

ee = Process temperature range:
NT = Normal temperature -50°C to +150°C

ff = Transducer material:
Ti = Titanium CP2
MN = Monel 400
HC = Hastelloy C276
SS = Stainless steel 316 / 304

gg = Junction box:
UX = Aluminium
UXSS = Stainless steel

hh = Preamplifier type:
00 = No internal XAMP preamplifier
01 = Internal XAMP with transformer
02 = Internal XAMP without transformer

ii = Preamplifer gain:
00 = No internal XAMP
01 = Internal XAMP with gain of 10
02 = Internal XAMP with gain of 20
03 = Internal XAMP with gain of 02
04 = Internal XAMP with gain of 40

jj = Certification
02 = ATEX (II 2 G Ex db IIC)
03 = IECEx (Ex db IIC)

zz = Miscellaneous:
0 = None
S = Special

Variation 1 - This variation introduced the following change:

i. The certificate holder and manufacturer's name was changed:

From:	To:
GE Infrastructure Sensing Inc.	Panametrics LLC

Variation 2 - This variation introduced the following changes:

i. Addition of the new model "T5MAX", the description was amended accordingly.
ii. Correction of product nomenclature of the model T8 (XAMP option).
iii. Release of documentation supporting the new model "T5MAX".
iv. Minor update to previously assessed Ex Components and Ex Equipment:
-Enclosure with Preamplifier – Name change went from "GE Infrastructure Sensing" to "Panametrics LLC". Refer to report R80097040A where the name change was documented.
-Thread Adapter (ATEX certs) – Change of Certificate numbers and update of standards.

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"Schedule of Limitations" did not change and original analysis performed in report R80028901A, section 3.10.3.6 remains applicable.

v. Correction to "Manufacturing location B" address.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	19 March 2020	R80028901A	The release of the prime certificate.
1	11 December 2020	R80065145A	Transfer of certificate Sira 20ATEX1001X from Sira Certification Service to CSA Group Netherlands B.V.
2	02 February 2022	R80097040A	The introduction of Variation 1.
3	27 June 2023	R80162176A	The introduction of Variation 2.

15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)

15.1 Consult the manufacturer if dimensional information on the flameproof joints is necessary.

15.2 It is end-user's responsibility to ensure that the ambient around the T5, T5MAX, T17 and T8 assembly does not exceed the permitted ambient of -40°C to +60°C, regardless of process temperature.

15.3 The T5, T5MAX, T17 and T8 transducers made of titanium (where ff = Ti) are potential ignitions sources when subjected to impact or friction, which shall be taken into consideration during installation.

15.4 The T5, T5MAX, T17 and T8 have non-conducting coating which may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user shall take the necessary precautions to minimise the risk from electrostatic discharge. For example, controlling the environmental humidity where installed in order to minimize generation of static electricity, with the equipment protected from direct airflow which could cause a transfer of charge to the surface of the equipment. Cleaning should be done only with a damp cloth.

15.5 The temperature classification rating of the T5, T5MAX, T17 and T8 assemblies is dependent upon the maximum process temperature (see table below).

Model (where aa = T5, T5MAX or T17)	Process temperature	T-Class
aa-bb-cc-dd-LT-ff-gg-hh-ii-jj-zz	-220℃ to +85℃	T6
	+85℃ to +100℃	T5
aa-bb-cc-dd-NT-ff-gg-hh-ii-jj-zz	-55℃ to +85℃	T6
	+86℃ to +100℃	T5
	+101℃ to +135℃	T4
	+136℃ to +150℃	T3
aa-bb-cc-dd-HT-ff-gg-hh-ii-jj-zz	-50℃ to 85℃	T6
	+86℃ to +100℃	T5
	+101℃ to +135℃	T4
	+136℃ to +200℃	T3

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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

Sira 20ATEX1001X
Issue 3

Model (where aa = T5, T5MAX or T17)	Process temperature	T-Class
	+201℃ to +250℃	T2
aa-bb-cc-dd-XT-ff-gg-hh-ii-jj-zz	-180℃ to 85℃	T6
	+86℃ to +100℃	T5
	+101℃ to +135℃	T4
	+136℃ to +200℃	T3
	+201℃ to +300℃	T2
Model T8	Process temperature	T-Class
T8-bb-cc-dd-NT-ff-gg-hh-ii-jj-zz	-50℃ to +85℃	T6
	+86℃ to +100℃	T5
	+101℃ to +135℃	T4
	+136℃ to +150℃	T3

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 **CONDITIONS OF MANUFACTURE**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.

17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.

17.3 Routine Overpressure Test (EN 60079-1 clause 16): Welded T5, T5MAX, T17 and T8 transducer head and tube assemblies are subjected to routine overpressure testing of 290 PSI (2000 kPa) for a minimum duration of 10 seconds during assembly, before potting.

17.4 Ex Component Disclosure: The T5, T5MAX, T8, and T17 assemblies incorporate the following previously certified Ex Components. It is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these components, and to inform CSA Group / Sira of any modifications of the devices which may impinge upon the explosion safety design of the aforementioned products.

- Enclosure, IME model series: 7080. Certificate number: IECEx SIR 07.0111U, SIRA 07ATEX1331U
- Enclosure, IME model series: 6080. Certificate number: IECEx FMG 19.0008U, FM19ATEX0010U
- Enclosure with Preamplifier, **Panametrics** model series XAMP. Certificate number: IECEx SIR 13.0071, Sira 13ATEX1184
- Cable Gland, nVent model: 500SSGL34EX. Certificate number: IECEx BAS 08.0107X, Baseefa08ATEX0327X
- Thread adapter, Peppers model series: AR. Certificate number: CML19ATEX1090X

This certificate and its schedules may only be reproduced in its entirety and without change
CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR Arnhem, The Netherlands

Certificate Annexe

Certificate Number: **Sira 20ATEX1001X**

Equipment: **Ultrasonic Flow Transducer Series T5, T5MAX T17 and T8**

Applicant: **Panametrics LLC**

Issue 0

Drawing	Sheets	Rev.	Date (Stamp)	Title
531-160	1 of 1	J	19 Mar 20	T5 transducer 180° head
531-161	1 of 1	E	19 Mar 20	T5 transducer 180° long head
531-170	1 of 1	K	19 Mar 20	T5 extended tube length
531-308	1 of 1	H	19 Mar 20	T5 transducer 45° head
531-309	1 of 1	J	19 Mar 20	T5 transducer 90° head
531-310	1 of 1	H	19 Mar 20	T5 transducer 90° long head
531-578	1 of 1	H	19 Mar 20	T5 and T17 tube length
531-1022	1 of 1	A	19 Mar 20	T5 and T17 standard tube length
752-057	1 of 1	C	19 Mar 20	T5 180° NT transducer assembly
752-058	1 of 1	C	19 Mar 20	T5 180° XT / HT / LT transducer assembly
752-059	1 of 1	C	19 Mar 20	T5 90° NT transducer assembly
752-060	1 of 1	C	19 Mar 20	T5 90° XT / HT / LT transducer assembly
752-061	1 of 1	C	19 Mar 20	T5 45° NT transducer assembly
752-062	1 of 1	C	19 Mar 20	T5 45° XT / HT / LT transducer assembly
752-063	1 of 1	N	19 Mar 20	T5 and T17 series assemblies
752-116	1 of 1	E	19 Mar 20	T8 30° NT transducer assembly
752-117	1 of 1	E	19 Mar 20	T8 45° NT transducer assembly
752-118	1 of 1	E	19 Mar 20	T8 180° NT transducer assembly
752-119	1 of 1	F	19 Mar 20	T8 tube body
752-121	1 of 1	D	19 Mar 20	T8 transducer 30° head
752-122	1 of 1	D	19 Mar 20	T8 transducer 180° head
752-123	1 of 1	E	19 Mar 20	T8 transducer 45° head
752-124	1 of 1	E	19 Mar 20	T8 transducer head cap
752-125	1 of 1	D	19 Mar 20	T8 series assembly
752-321	1 of 1	A	19 Mar 20	T17 180° transducer assembly

Issue 1. No new drawings were introduced.

Issue 2

Drawing	Sheets	Rev.	Date (Stamp)	Title
752-125	1 of 1	A	01 Feb 22	T8 Transducer
752-063	1 of 1	P	01 Feb 22	T5/T17 Transducer

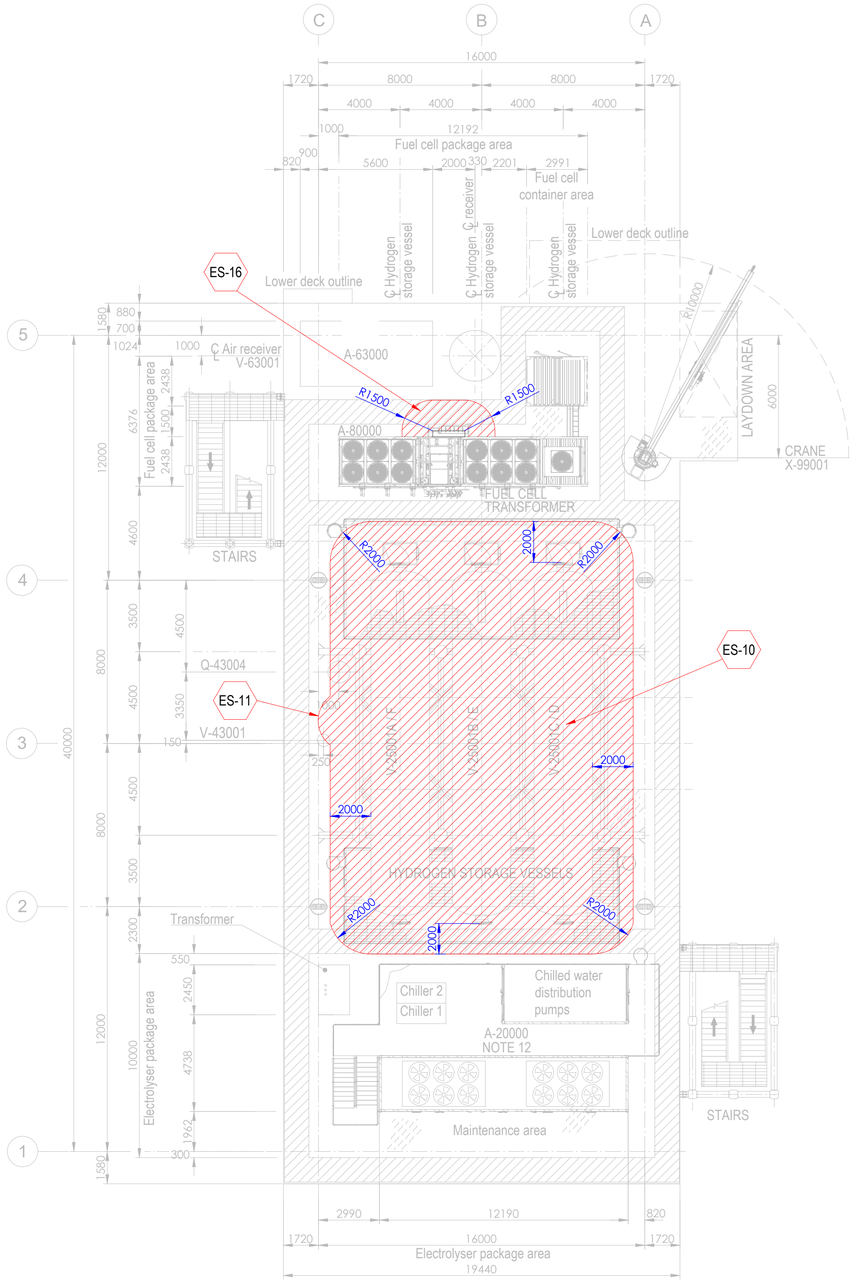
Issue 3

Drawing	Sheets	Rev.	Date (Stamp)	Title
752-063	1 to 2	00	24 Apri23	T5/T17/T5MAX TOP LEVEL CERT DWG
173M2721	1 of 1	00	24 Apri23	T5MAX 180 NT TRDCR CONSTRUCTION CERT DWG
173M2754	1 of 1	00	24 Apri23	T5MAX 90 NT TRDCR CONSTRUCTION CERT DWG

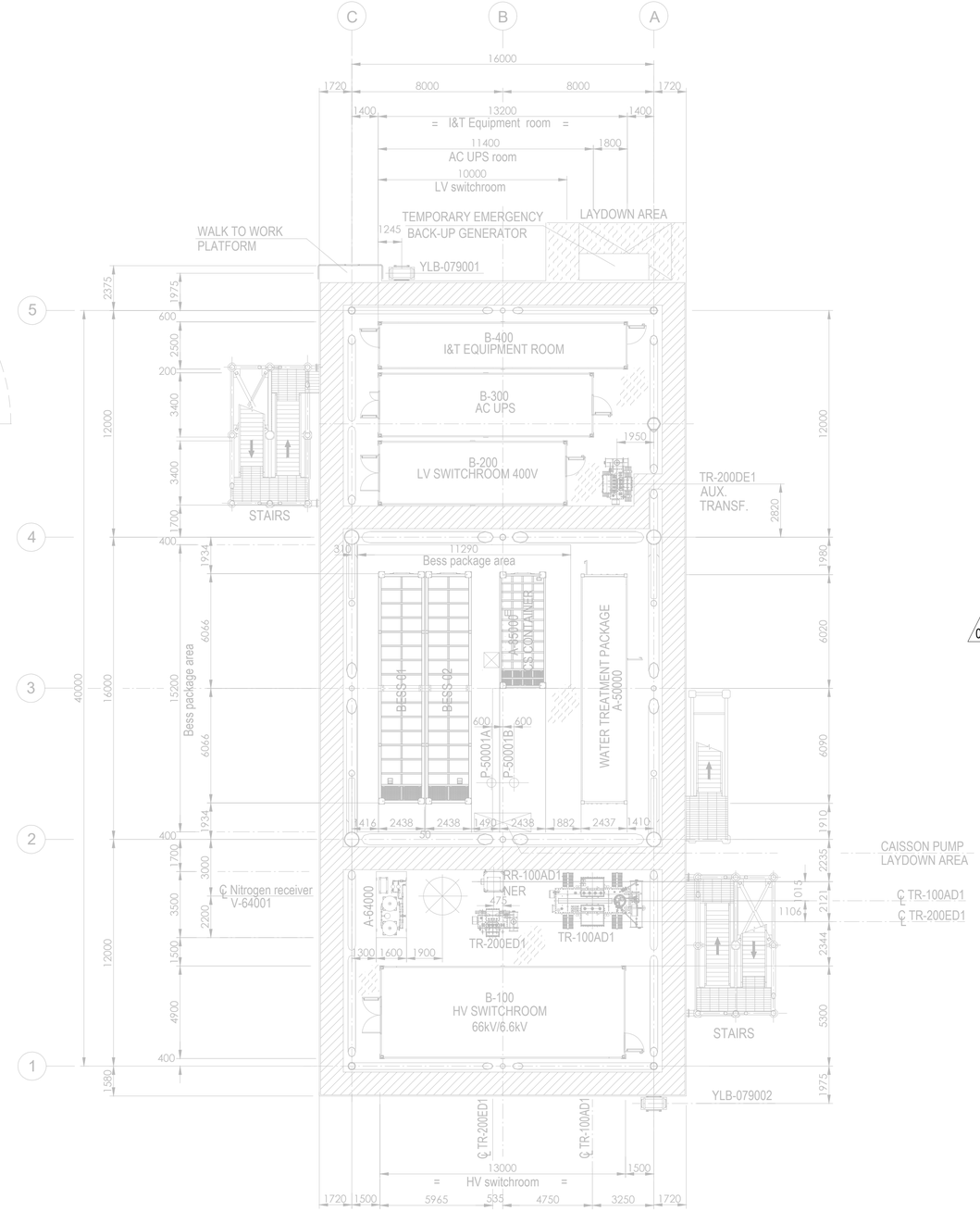
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



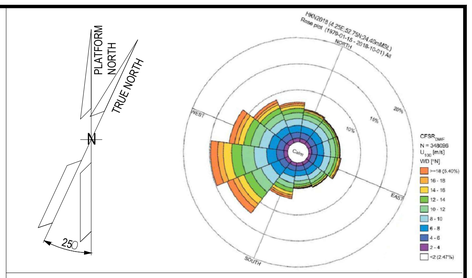
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

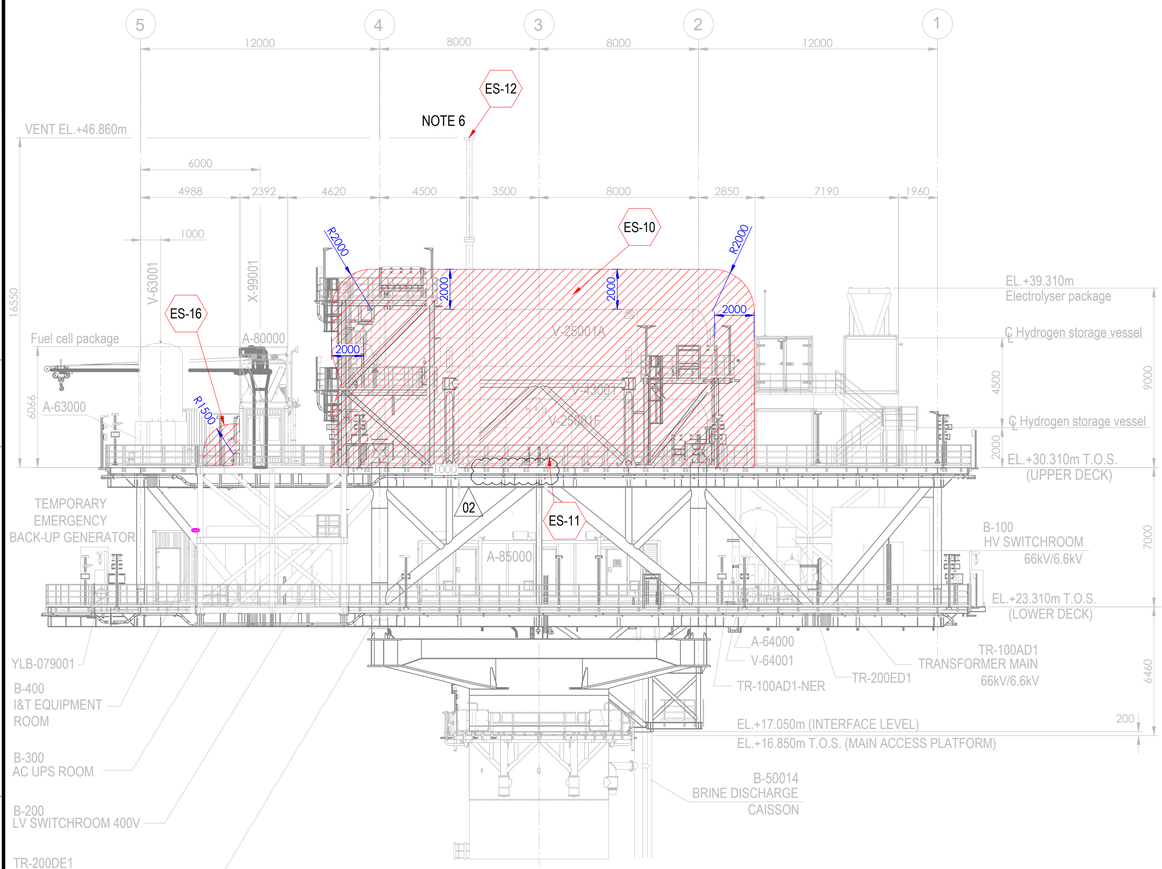
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

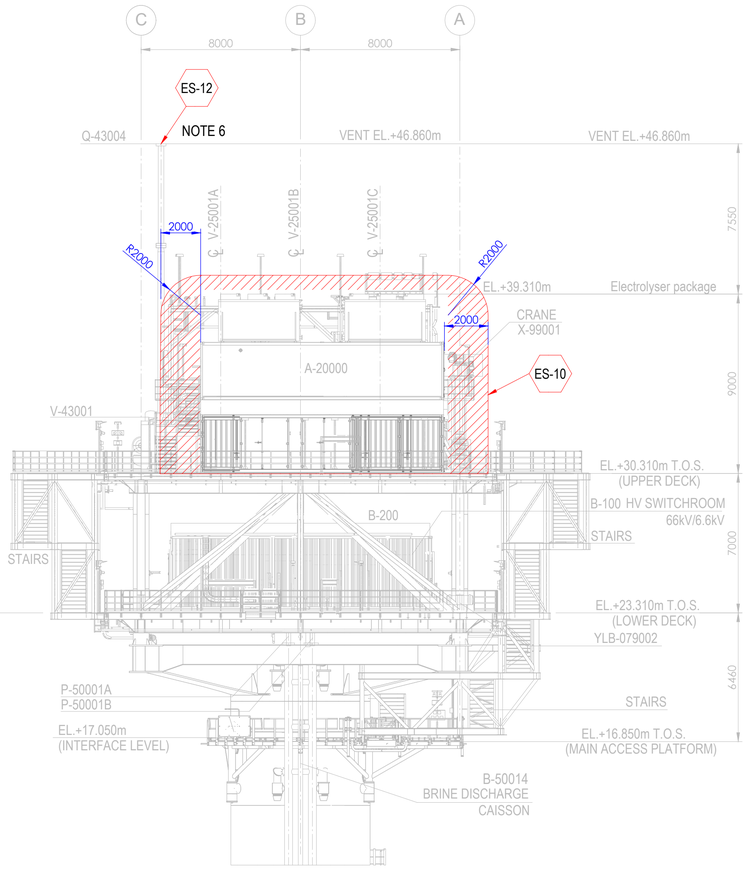
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

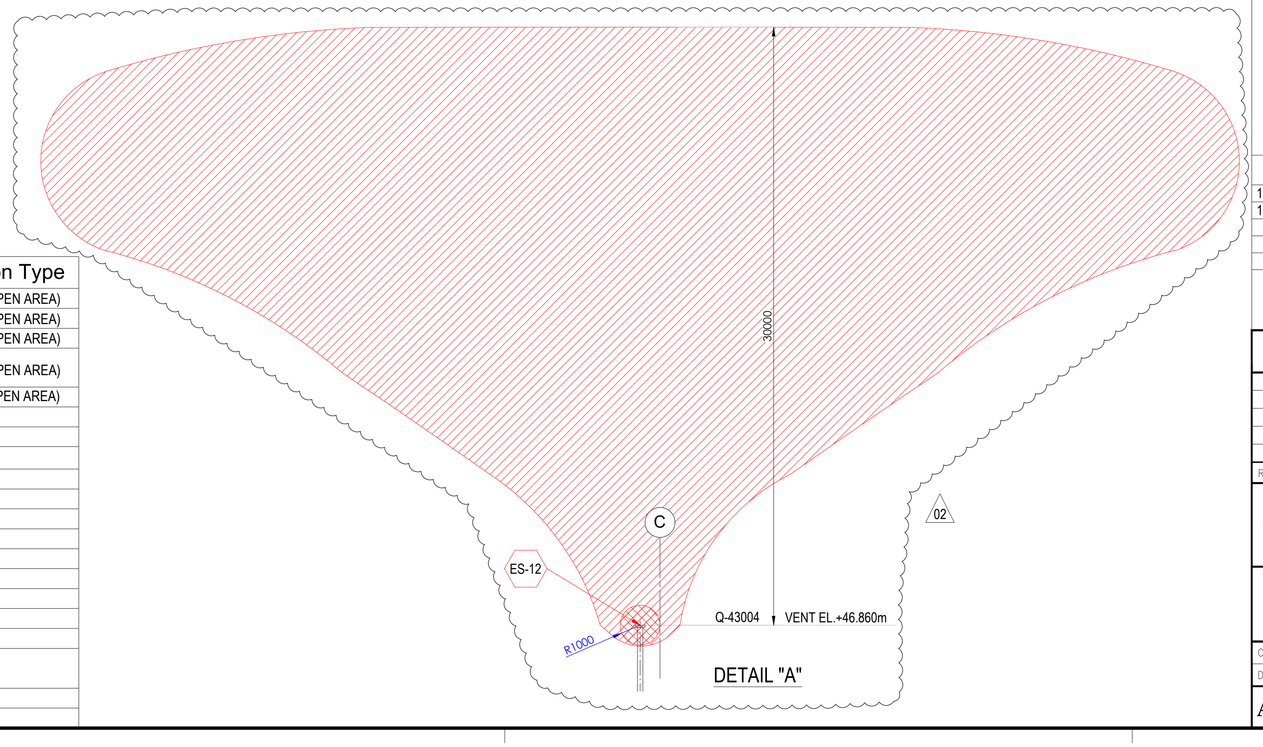


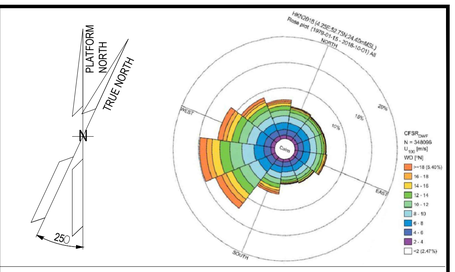
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

Section 6 MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC & discipline : I

Instrumental	43-00 Hydrogen Vent Header & Drum System

ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
43-FT-001	Flow Transmitter - Hydrogen form KO DRUM V-43001 to vent stack Q-43004	ONSHORE	C10001471	TJX04	100	2025-02-26	RFC 1
43-LT-001	Level DP Transmitter - KO Drum V-43001 High/Low Level	ONSHORE	C10000938	TJX04	100	2024-10-02	RFC 1
43-LT-003	Level DP Transmitter - H2 Vent Q-43004 Low Level	ONSHORE	C10000939	TJX04	100	2024-10-02	RFC 1
43-PT-001	Pressure Transmitter - KO Drum V-43001 Pressure	ONSHORE	C10000940	TJX04	100	2024-10-02	RFC 1
80-RO-001	Restriction Orifice - Hyrogen storage to A-80000 Package vent system	ONSHORE	C10001218	CJX11	100	2025-02-15	RFC 1
		ONSHORE	C10001446	TJX11	100	2024-12-20	RFC 1
BLPH-MV-404/43-LT-001	Process Connection Water - 43-LT-001	ONSHORE	C10001996	CJX06	100	2025-02-06	RFC 1
BLPH-MV-405/43-LT-001	Process Connection Water - 43-LT-001	ONSHORE	C10001997	CJX06	100	2025-02-06	RFC 1
BLPH-MV-462/43-LT-003	Process Connection Water - 43-LT-003	ONSHORE	C10001998	CJX06	100	2025-02-06	RFC 1
BLPH-MV-463/43-LT-003	Process Connection Water - 43-LT-003	ONSHORE	C10001999	CJX06	100	2025-02-06	RFC 1
C-43-FT-001/00-JE-11002	FLOW TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000029	CJX10	100	2025-02-25	RFC 1
C-43-FT-001/43-FE-001A	43-FT-001/43-FE-001A	ONSHORE	C10004547	CJX10	100	2025-03-13	RFC 2
C-43-FT-001/43-FE-001B	43-FT-001/43-FE-001B	ONSHORE	C10004548	CJX10	100	2025-03-13	RFC 2
C-43-LT-001/00-JE-21002	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000028	CJX10	100	2025-02-06	RFC 1
C-43-LT-003/00-JE-11002	LEVEL TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000138	CJX10	100	2025-01-22	RFC 1
C-43-PT-001/00-JE-11002	PRESSURE TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000027	CJX10	100	2025-02-19	RFC 1
PD-43-FT-001/00-JE-13001	FLOW TRANSMITTER POWER SUPPLY / MARSHALLING PCS	ONSHORE	C10001838	CJX10	100	2025-02-25	RFC 1

ITEM	Tag	C-43-PT-001/00-JE-11002	:	PRESSURE TRANSMITTER / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	43-00	:	Hydrogen Vent Header & Drum System	Module	UD	
TASK	code	C10000027	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity	CCK	Discipline	Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	1X2X0,75 mm2	Color	GREY
From	43-PT-001	To	00-JE-11002		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH		>999	MΩ
	CORE to CORE		>999	MΩ
	CORE to SCREEN		>999	MΩ
	CORE to ARMr		>999	MΩ
	SCREEN to EARTH		>999	MΩ
	SCREEN to ARMr		>999	MΩ
CONTINUITY	CORES		1,83	Ω
	SCREEN		1,83	Ω
	EARTH		NA	Ω
	ARMr		1,83	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

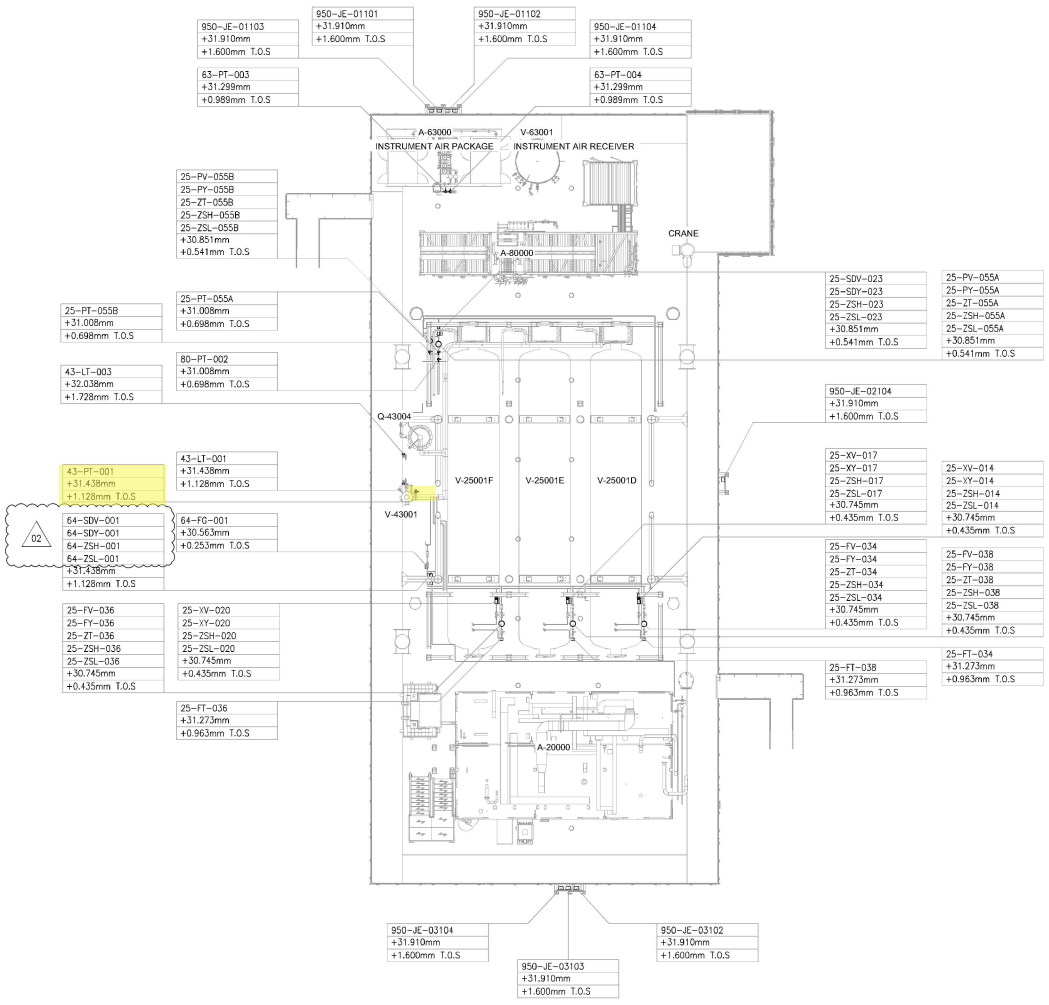
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Andrea Andreani	
Date	2025-02-08	2025-02-19	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:37:41.649Z	PROVERLIS Digitaly signed by Andrea Andreani 2025-02-19T15:48:39.787Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

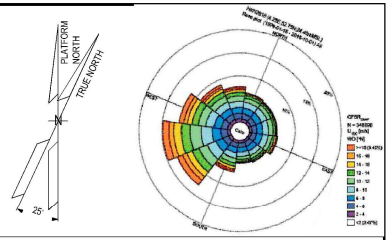
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

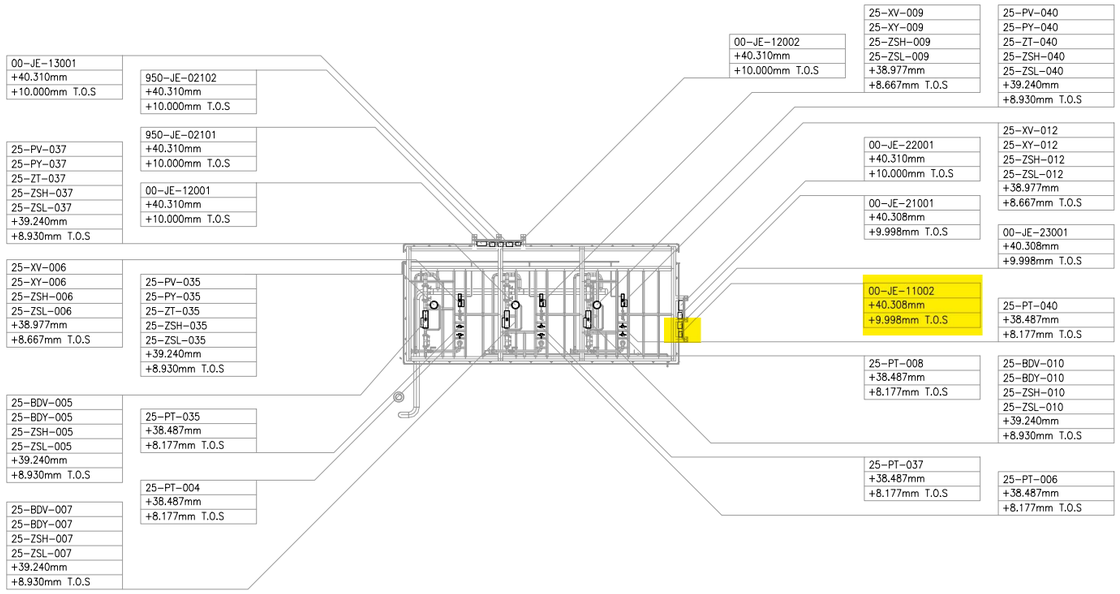
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 001	REV. 02

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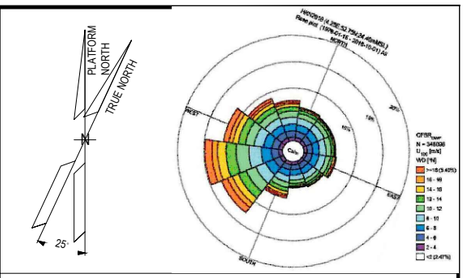
DRAWING NO. 123A90-DDL-IN-DL-40081

REV. 02



UPPER DECK
SCALE: 1:100

VIEW EL. 36500mm to 47060mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPT FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

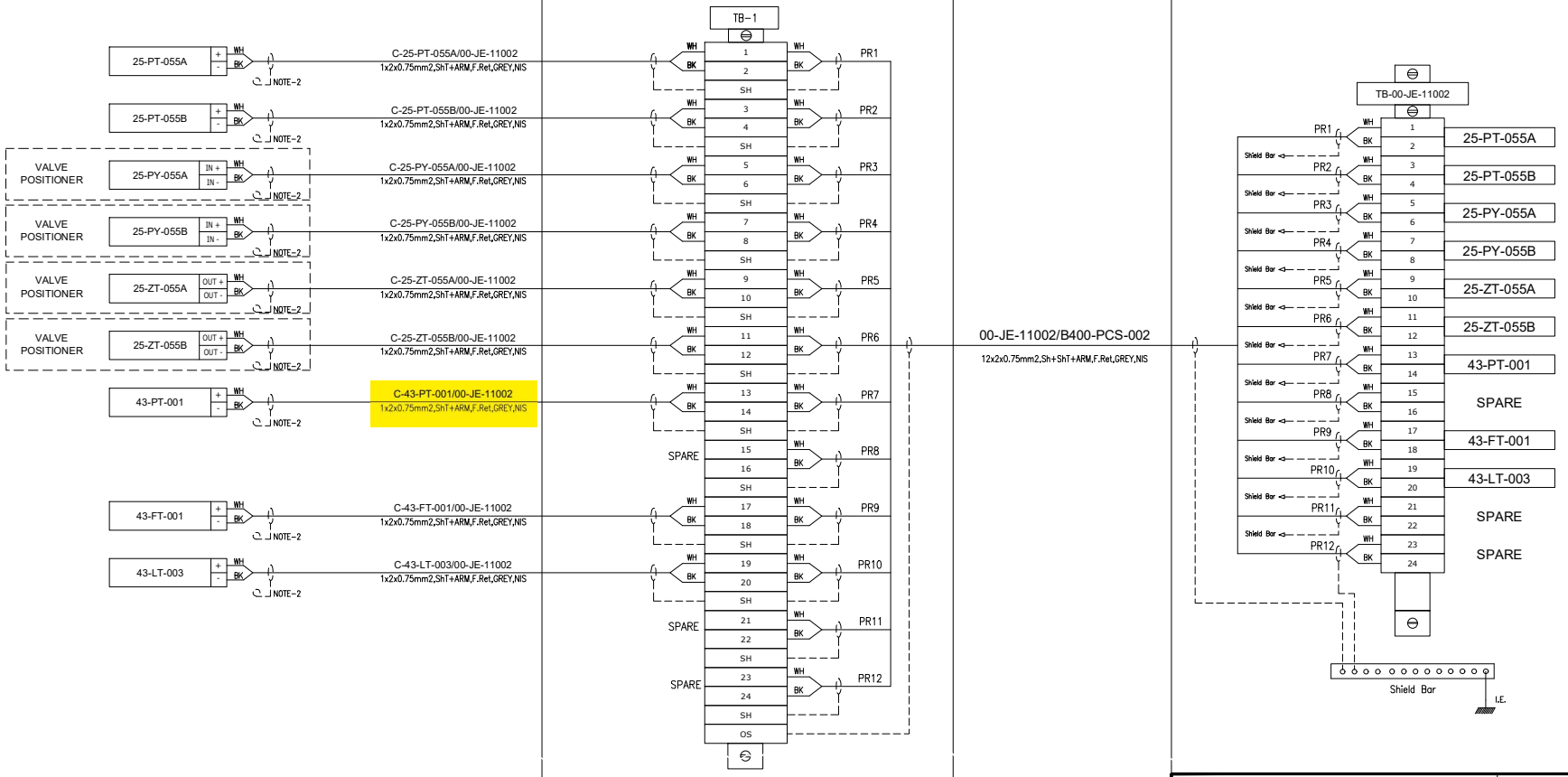
CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 003	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV:02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11002	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11002–SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123–A90–DDL–40015	SHEET 006	REV. 01

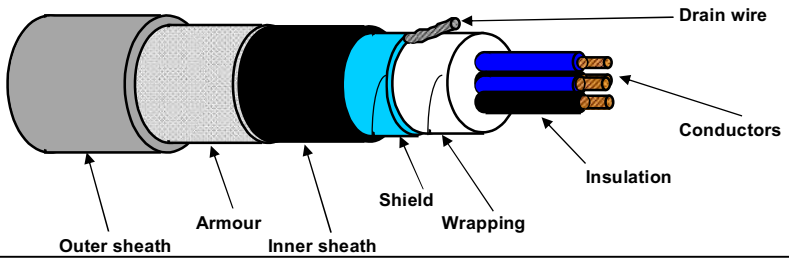
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-ZSL-031/00-JE-12004	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-ZSL-031	Proximity Switch	Upper Deck		00-JE-12004	DI JB to PCS	Upper Deck	Junction Box	SMICV01-1X2X0,75	Cable Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-17 / U-SEC-14D / U-SEC-14E

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

All proprietary rights reserved according to law. This document shall be not reproduced without written permission. FLEI reserves the right to change characteristics and technical data of product shown at any time.

ROSETTI MARINO — PROVERLIS — CROSSWIND

ITEM	Tag	C-43-LT-001/00-JE-21002	: PROXIMITY SWITCH / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091		
	S/Sys	43-00	: Hydrogen Vent Header & Drum System	Module	UD		
TASK	code	C10000028	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX10

Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-MICA-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	1X2X0,75 mm2	Color	ORANGE
From	43-LT-001	To	00-JE-21002		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	OK
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0.7	Ω
	SCREEN	0.7	Ω
	EARTH	NA	Ω
	ARMr	0.7	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

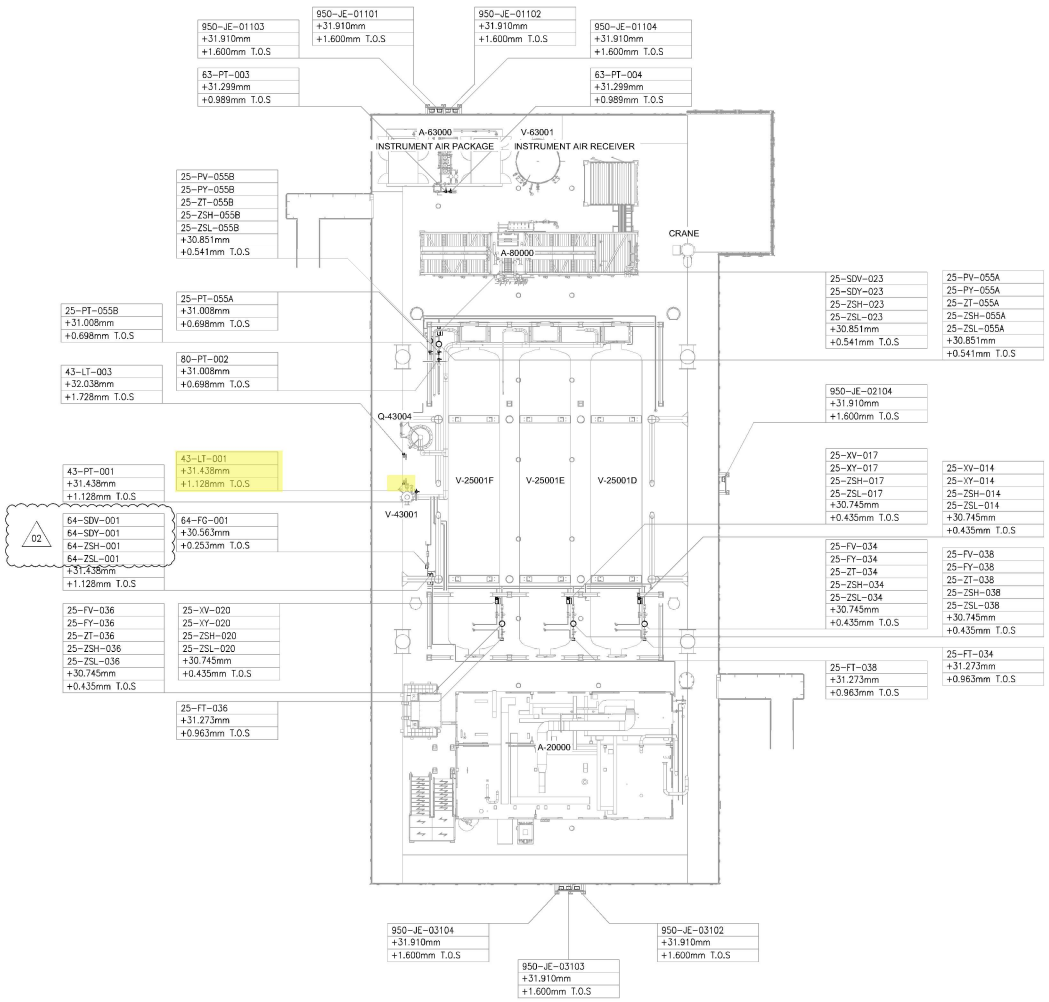
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-02-05	2025-02-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:09:04.488Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-02-06T08:18:22.689Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

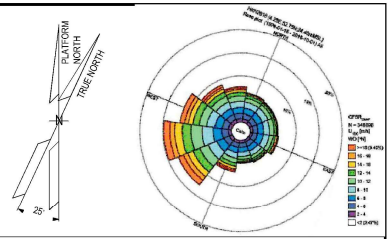
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

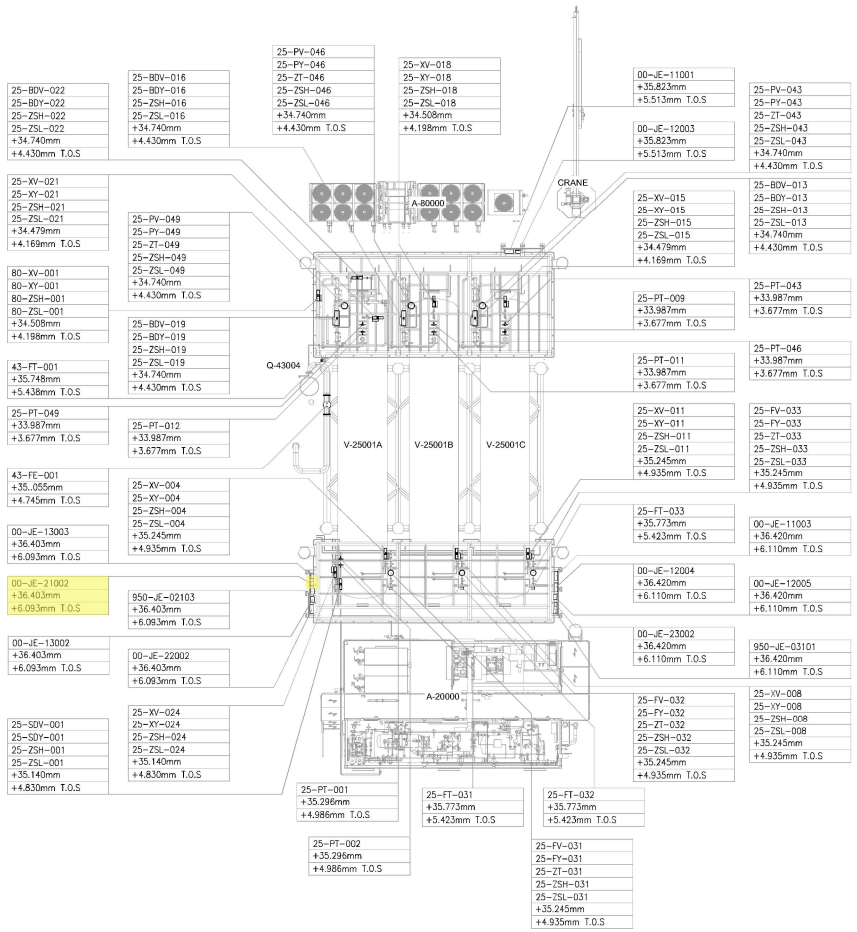
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. 123A90-DDL-IN-DL-40081

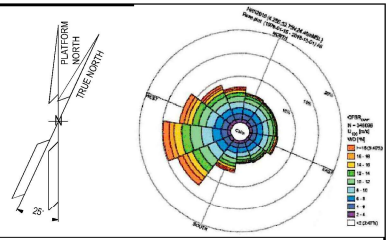
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-21002	No.	MARSHALLING CABINET B400-SIS-001

<01>

25-PT-002 (+ WH, - BK) — NOTE-2 — C-25-PT-002/00-JE-21002 1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

80-PT-002 (+ WH, - BK) — NOTE-2 — C-80-PT-002/00-JE-21002 1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

43-LT-001 (+ WH, - BK) — C-43-LT-001/00-JE-21002 1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

64-PT-002 (+ WH, - BK) — NOTE-2 — C-64-PT-002/00-JE-21002 1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-1

WH/BK	1	WH/BK	PR1
	2		
	SH		
WH/BK	3	WH/BK	PR2
	4		
	SH		
WH/BK	5	WH/BK	PR3
	6		
	SH		
WH/BK	7	WH/BK	PR4
	8		
	SH		
SPARE	9	WH/BK	PR5
	10		
	SH		
SPARE	11	WH/BK	PR6
	12		
	SH		
	OS		

00-JE-21002/B400-SIS-001
6x2x0.75mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-00-JE-21002

PR1 (WH/BK)	1	25-PT-002
Shield Bar	2	
PR2 (WH/BK)	3	80-PT-002
Shield Bar	4	
PR3 (WH/BK)	5	43-LT-001
Shield Bar	6	
PR4 (WH/BK)	7	64-PT-002
Shield Bar	8	
PR5 (WH/BK)	9	SPARE
Shield Bar	10	
PR6 (WH/BK)	11	SPARE
	12	

Shield Bar — I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_Q	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT– SAFETY SYSTEM WIRING DIAGRAMS
00–JE–21002

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 006	REV. 01

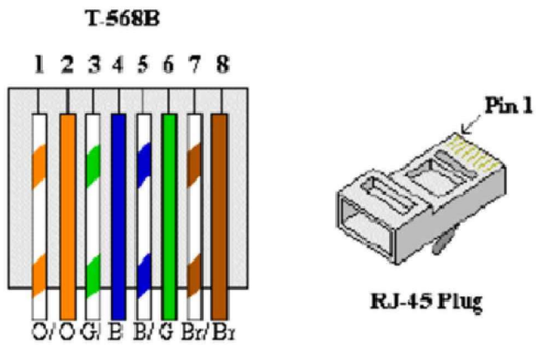
File Name : 123A90-DDL-IN-DG-40016_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



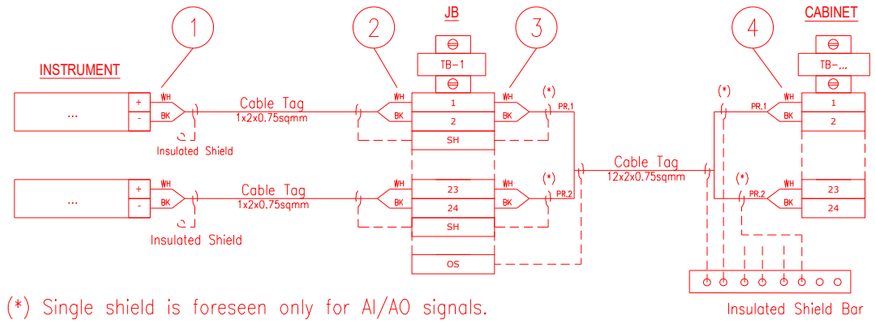
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

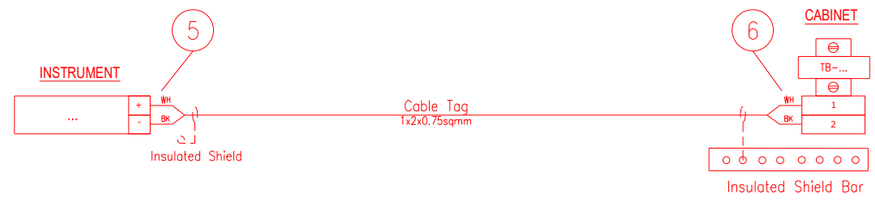
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

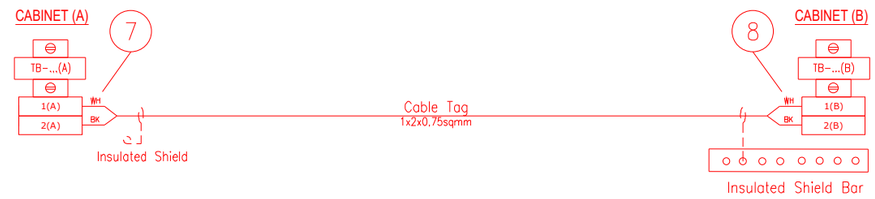
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_Q	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

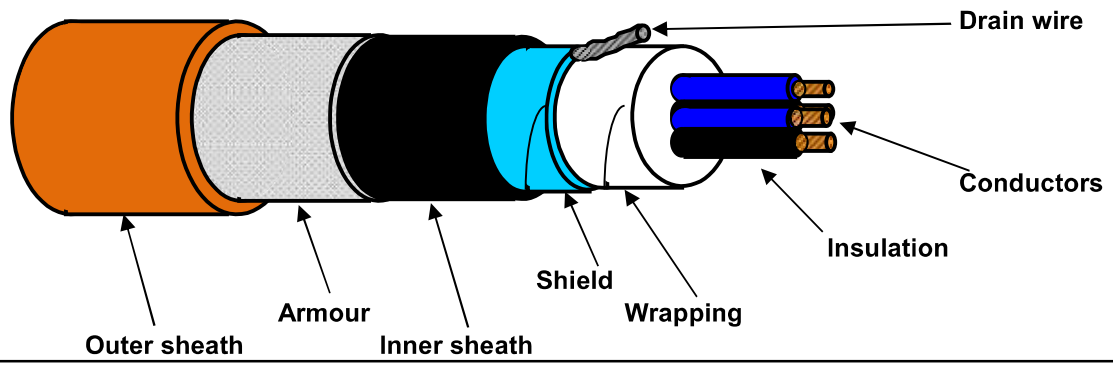
A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-43-LT-001/00-JE-21002	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						43-LT-001	Level Transmitter	Upper Deck		00-JE-21002	AI/AO JB to SIS	Upper Deck	Junction Box	SMICV08-1X2X0,75	Cable Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Orange	M20S	T2_M20S_Double			T2_M20S_Double					U-SEC-16 / U-SEC-14B / U-SEC-15

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Fire Resistant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	Mica/Glass Tape (MGT) plus XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	10/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,1 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,2 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - MGT/XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60331.21 -**	
(every 1000 mm)	**IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(8,5 ± 10%) mm	
Over armour diameter :	(9,3 ± 10%) mm	
Outer diameter :	(11,7 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Fire Resistant test :	**IEC 60331.21**	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided herein are meant for the transaction will be used in the sense of the article 19 of the Regulation (UE) 2016/679, also by such subjects in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.
All proprietary rights reserved according to law. This document shall be not reproduced without written permission. FLEI reserves the right to change characteristics and technical data of product shown at any time.

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-43-FT-001/00-JE-11002	: FLOW TRANSMITTER / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10000029	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Cu-XLPE-OS-LSZH-SWB-LSZH | Cores/Size mm²: 1X2X0,75 mm2 | Color: GREY

From: 43-FT-001 | To: 00-JE-11002

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	1,32	Ω
	SCREEN	1,32	Ω
	EARTH	NA	Ω
	ARMr	1,32	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

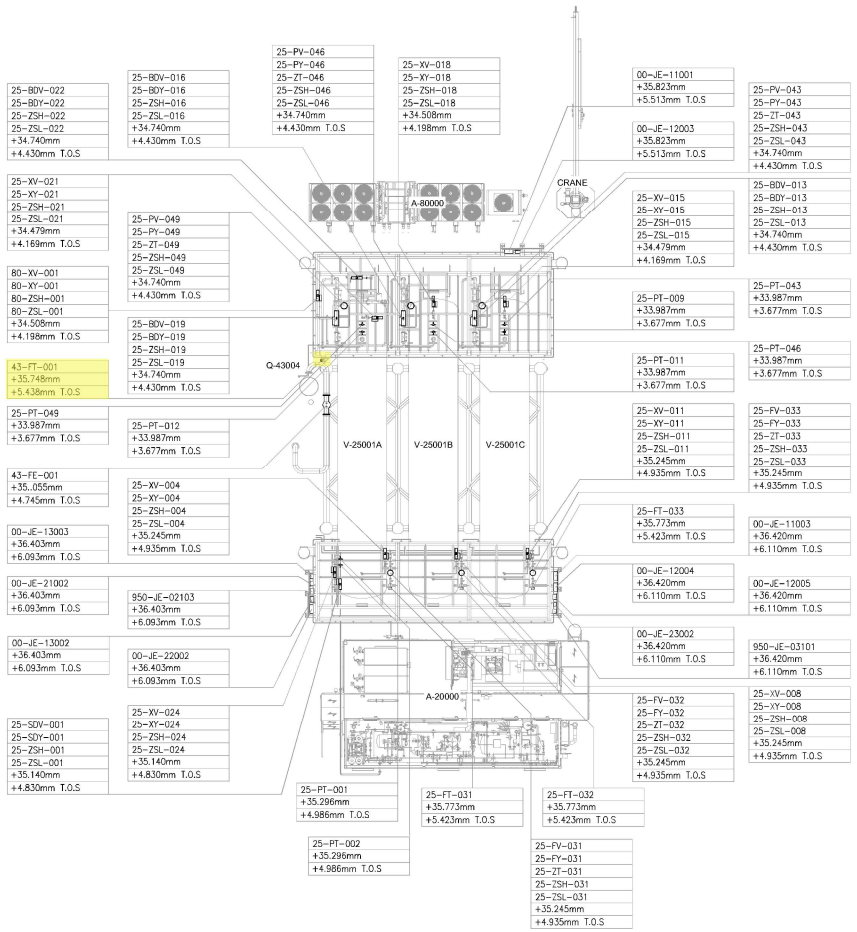
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 | Calibration date: N°LAT 042 00768/24 12/10/2024

Comments: Nota 5: refer to PL C30000682

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-02-25	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:37:51.818Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-25T15:44:42.023Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

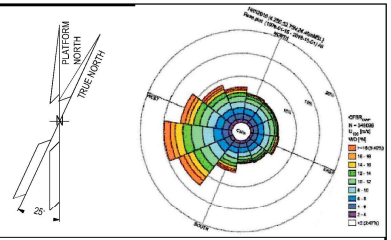
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE :

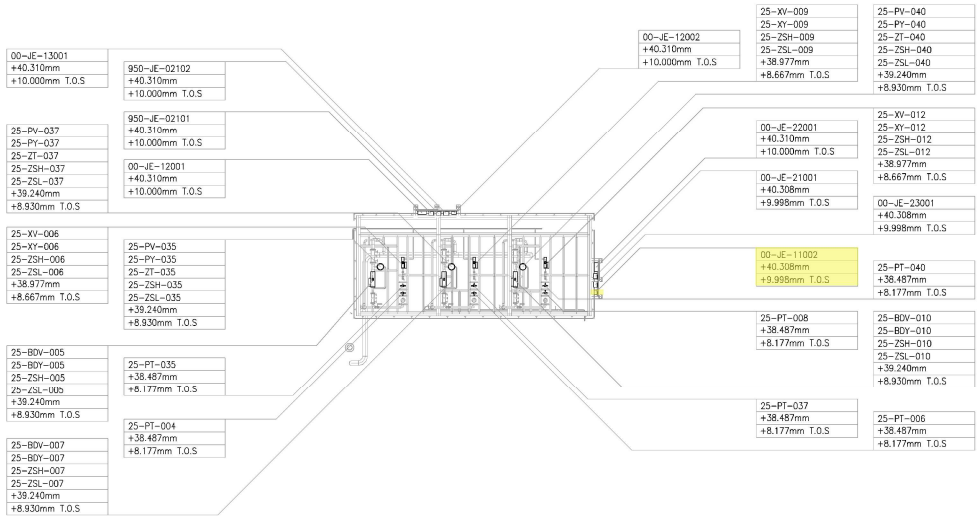
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DL-40081

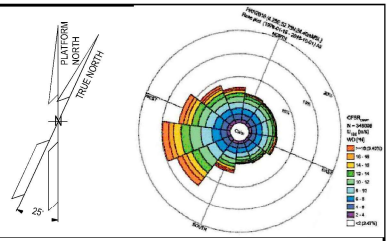
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 36500mm to 47060mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHK'D	APP'D	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPT FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 003	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11002	No.	MARSHALLING CABINET B400-PCS-002

<01>

INSTRUMENTS		JUNCTION BOX 00-JE-11002	MULTICABLE No.	MARSHALLING CABINET B400-PCS-002
25-PT-055A (+ / -) WH / BK, NOTE-2	C-25-PT-055A/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	TB-1: 1 (WH), 2 (BK), SH → PR1	00-JE-11002/B400-PCS-002 12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS	TB-00-JE-11002: 1 → 25-PT-055A
25-PT-055B (+ / -) WH / BK, NOTE-2	C-25-PT-055B/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	3 (WH), 4 (BK), SH → PR2		2 Shield Bar; 3 → 25-PT-055B
VALVE POSITIONER; 25-PY-055A (IN + / IN -) WH / BK, NOTE-2	C-25-PY-055A/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	5 (WH), 6 (BK), SH → PR3		4 Shield Bar; 5 → 25-PY-055A
VALVE POSITIONER; 25-PY-055B (IN + / IN -) WH / BK, NOTE-2	C-25-PY-055B/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	7 (WH), 8 (BK), SH → PR4		6 Shield Bar; 7 → 25-PY-055B
VALVE POSITIONER; 25-ZT-055A (OUT + / OUT -) WH / BK, NOTE-2	C-25-ZT-055A/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	9 (WH), 10 (BK), SH → PR5		8 Shield Bar; 9 → 25-ZT-055A
VALVE POSITIONER; 25-ZT-055B (OUT + / OUT -) WH / BK, NOTE-2	C-25-ZT-055B/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	11 (WH), 12 (BK), SH → PR6		10 Shield Bar; 11 → 25-ZT-055B
43-PT-001 (+ / -) WH / BK, NOTE-2	C-43-PT-001/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	13 (WH), 14 (BK), SH → PR7		12 Shield Bar; 13 → 43-PT-001
		SPARE: 15 (WH), 16 (BK), SH → PR8		14 Shield Bar; 15 → SPARE
43-FT-001 (+ / -) WH / BK, NOTE-2	C-43-FT-001/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	17 (WH), 18 (BK), SH → PR9		16 Shield Bar; 17 → 43-FT-001
43-LT-003 (+ / -) WH / BK, NOTE-2	C-43-LT-003/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	19 (WH), 20 (BK), SH → PR10		18 Shield Bar; 19 → 43-LT-003
		SPARE: 21 (WH), 22 (BK), SH → PR11		20 Shield Bar; 21 → SPARE
		SPARE: 23 (WH), 24 (BK), SH → PR12		22 Shield Bar; 23 → SPARE
		OS		24 Shield Bar → I.E.

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_J	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11002–SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123–A90–DDL–40015	SHEET 006	REV. 01

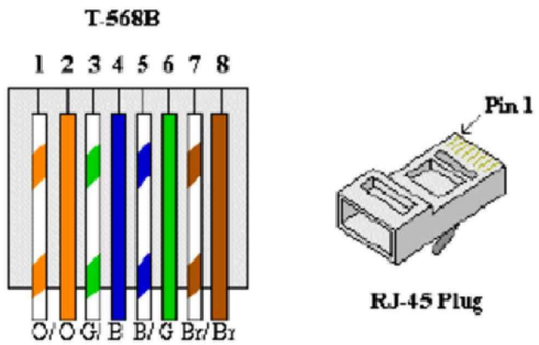
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



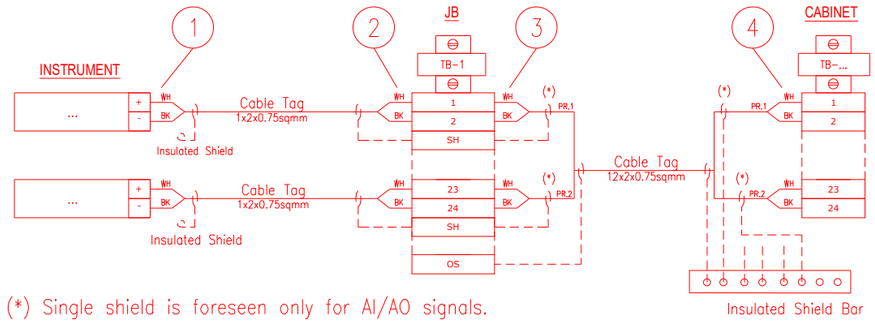
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

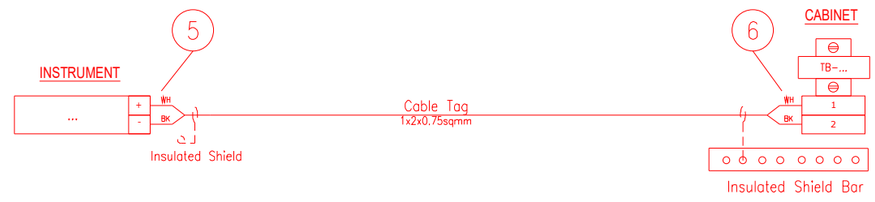
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

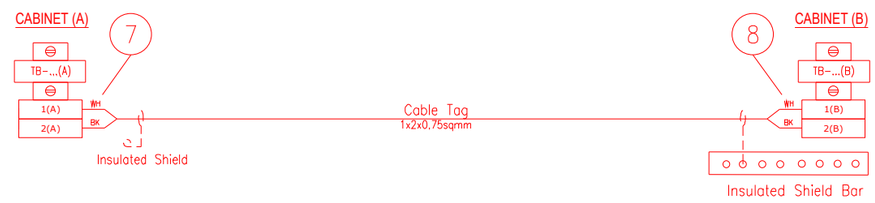
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_J	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

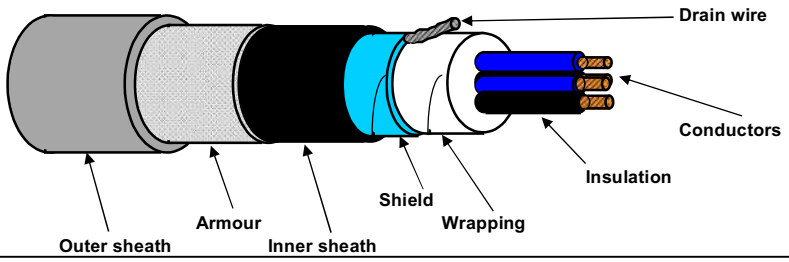
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-43-FT-001/00-JE-11002	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						43-FT-001	Flow Transmitter	Upper Deck		00-JE-11002	AI/AO JB to PCS / Marshalling PCS	Upper Deck	Junction Box	SMICV01-1X2X0,75	Cable Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-21B / U-SEC-21A / U-SEC-7 / U-SEC-1F / U-SEC-1E / U-SEC-1D / U-SEC-1C / U-SEC-3

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO — CROSSWIND

ITEM	Tag	C-43-LT-003/00-JE-11002	: LEVEL TRANSMITTER / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091		
	S/Sys	43-00	: Hydrogen Vent Header & Drum System	Module	UD		
TASK	code	C10000138	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX10

Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	1X2X0,75 mm2	Color	GREY
From	43-LT-003	To	00-JE-11002		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	PL
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH		>999	MΩ
	CORE to CORE		>999	MΩ
	CORE to SCREEN		>999	MΩ
	CORE to ARMr		>999	MΩ
	SCREEN to EARTH		>999	MΩ
	SCREEN to ARMr		>999	MΩ
CONTINUITY	CORES		1,6	Ω
	SCREEN		1,6	Ω
	EARTH		NA	Ω
	ARMr		1,6	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

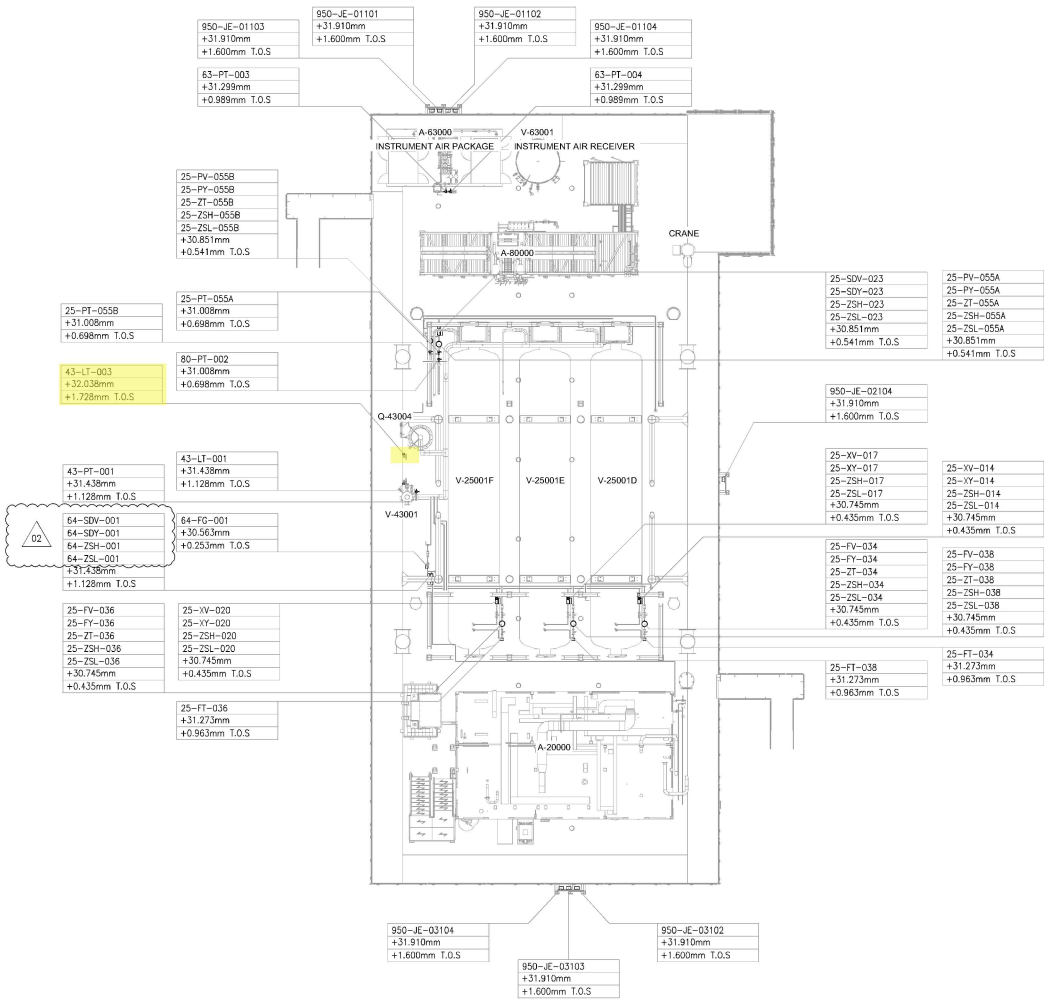
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-01-21	2025-01-22	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-21T16:04:38.087Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-01-22T10:35:19.055Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

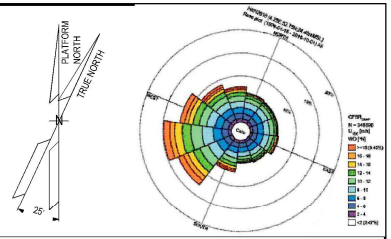
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

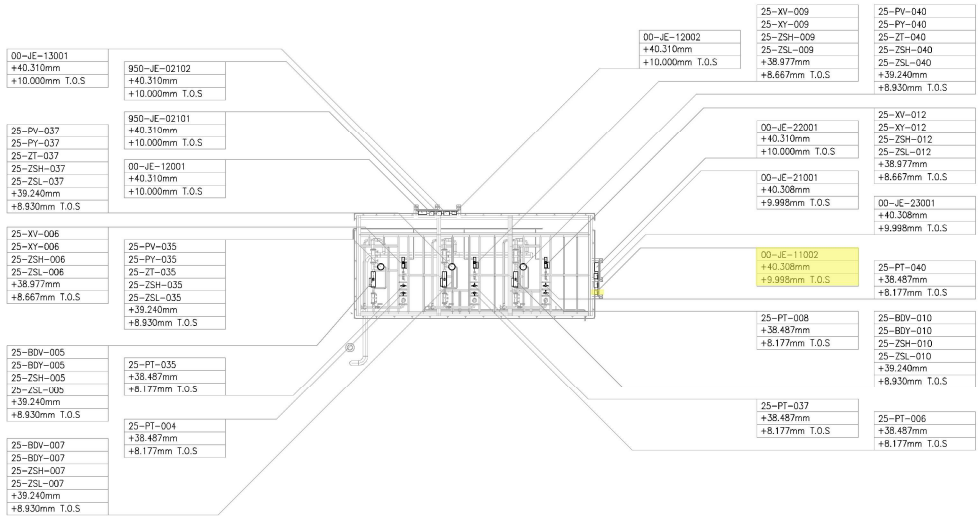
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. 123A90-DDL-IN-DL-40081

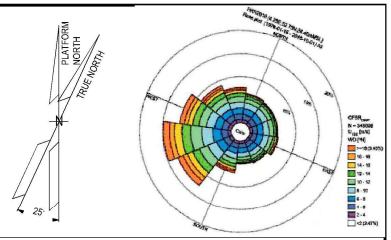
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 36500mm to 47060mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPT FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 003	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11002	No.	MARSHALLING CABINET B400-PCS-002

<01>

INSTRUMENTS		JUNCTION BOX 00-JE-11002	MULTICABLE No.	MARSHALLING CABINET B400-PCS-002
25-PT-055A (+ / -) WH / BK, NOTE-2	C-25-PT-055A/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	TB-1: 1 (WH), 2 (BK), SH → PR1	00-JE-11002/B400-PCS-002 12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS	TB-00-JE-11002: PR1 WH/BK → 1, 2 → 25-PT-055A
25-PT-055B (+ / -) WH / BK, NOTE-2	C-25-PT-055B/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	3 (WH), 4 (BK), SH → PR2		Shield Bar; PR2 WH/BK → 3, 4 → 25-PT-055B
VALVE POSITIONER; 25-PY-055A (IN + / IN -) WH / BK, NOTE-2	C-25-PY-055A/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	5 (WH), 6 (BK), SH → PR3		Shield Bar; PR3 WH/BK → 5, 6 → 25-PY-055A
VALVE POSITIONER; 25-PY-055B (IN + / IN -) WH / BK, NOTE-2	C-25-PY-055B/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	7 (WH), 8 (BK), SH → PR4		Shield Bar; PR4 WH/BK → 7, 8 → 25-PY-055B
VALVE POSITIONER; 25-ZT-055A (OUT + / OUT -) WH / BK, NOTE-2	C-25-ZT-055A/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	9 (WH), 10 (BK), SH → PR5		Shield Bar; PR5 WH/BK → 9, 10 → 25-ZT-055A
VALVE POSITIONER; 25-ZT-055B (OUT + / OUT -) WH / BK, NOTE-2	C-25-ZT-055B/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	11 (WH), 12 (BK), SH → PR6		Shield Bar; PR6 WH/BK → 11, 12 → 25-ZT-055B
43-PT-001 (+ / -) WH / BK, NOTE-2	C-43-PT-001/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	13 (WH), 14 (BK), SH → PR7		Shield Bar; PR7 WH/BK → 13, 14 → 43-PT-001
		SPARE: 15 (WH), 16 (BK), SH → PR8		Shield Bar; PR8 WH/BK → 15, 16 → SPARE
43-FT-001 (+ / -) WH / BK, NOTE-2	C-43-FT-001/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	17 (WH), 18 (BK), SH → PR9		Shield Bar; PR9 WH/BK → 17, 18 → 43-FT-001
43-LT-003 (+ / -) WH / BK, NOTE-2	C-43-LT-003/00-JE-11002 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	19 (WH), 20 (BK), SH → PR10		Shield Bar; PR10 WH/BK → 19, 20 → 43-LT-003
		SPARE: 21 (WH), 22 (BK), SH → PR11		Shield Bar; PR11 WH/BK → 21, 22 → SPARE
		SPARE: 23 (WH), 24 (BK), SH → PR12		Shield Bar; PR12 WH/BK → 23, 24 → SPARE
		OS		Shield Bar → I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

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ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11002–SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123–A90–DDL–40015	SHEET 006	REV. 01

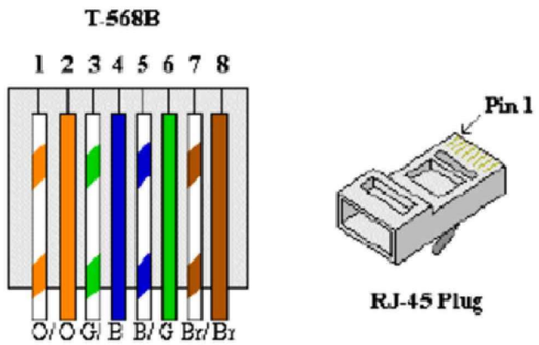
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



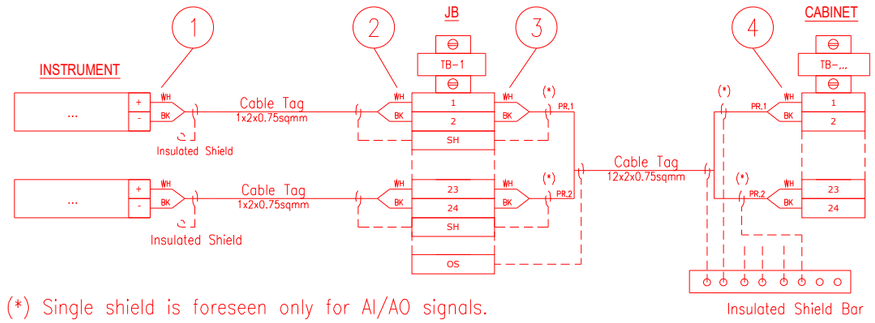
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

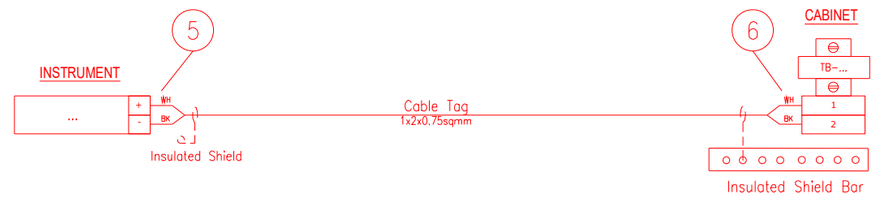
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

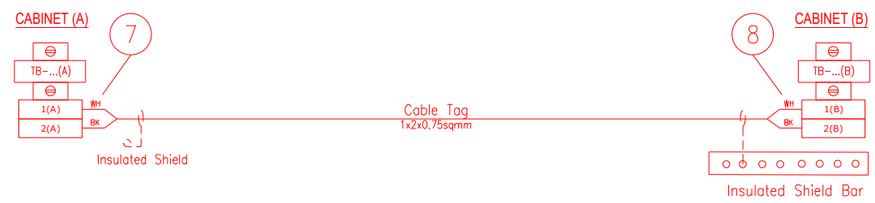
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

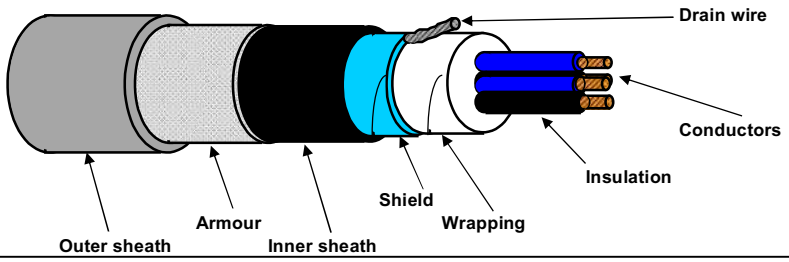
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-43-LT-003/00-JE-11002	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						43-LT-003	Level Transmitter	Upper Deck		00-JE-11002	AI/AO JB to PCS / Marshalling PCS	Upper Deck	Junction Box	SMICV01-1X2X0,75	Cable Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-21A / U-SEC-7 / U-SEC-1F / U-SEC-1E / U-SEC-1D / U-SEC-1C / U-SEC-3

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ITEM	Tag	43-LT-001	: Level DP Transmitter - KO Drum V-43001 High/Low Level			Dwg	123A90-DDL-IN-DS-40039
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10000938		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Instrumental	Form	TJX04 Analogue O/P

DATA

VENDOR CALIBRATION MANUAL N° 1724000979-QC-PRO-00005

CALIBRATION/TEST PROCEDURE N° : 123A90-PML-QHSE-PRO-00122

MODEL N° :	SST77B-SERIES	SERIAL N° :	SE240632
DATA SHEET N° :	1724000979-IN-DS-00004	Rev :	3
TEST EQUIPMENT :		SERIAL N° :	

Instruments calibration is not required prior to the installation, as long as Manufacturer's calibration certificate is provided and transportation or storage conditions have not corrupted the instrument.

Manufacturer's calibration certificate is valid, not expired and attached to this check sheet

Following section must be filled only if certificate is not valid or missing

See Attachment

TEST DETAILS
CALIBRATION FIGURES

CALIBRATION POINTS	RISING	FALLING	UNITS
INPUT A			
INPUT B *			
INPUT C *			
OUTPUT			

* NOTE : COMPLETE IF APPLICABLE

TESTED LABEL AFFIXED

DATA SHEET ATTACHED

If required produce Red Line Mark Up for "AS BUILT"

Comments:

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS Impianti	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-09-17	2024-10-02	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-09-17T06:40:46.303Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-02T09:44:12.138Z	

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Plant	CROSSWIND	Description	HYDROGEN VENT KO DRUM V-43001		
Area	V-43001	Loop Tag	43-LI-001	Instrument Tag	43-LT-001
Type of verification	periodic	Calibration range	0,00 ÷ 560,00 mmH2O	Report N°	029
Type of instrument	Level meter diaphragm	Max uncertainty required	± 0,1 % s.r.	Reference procedure data sheet	123A90-PML-QHSE-PRO-00122 Page N°10

UNDER EXAMINATION INSTRUMENT 'S DATA

Tag	Manufacture	Model	S/N
43-LT-001	SPRIANO	SST77B	SE240632

USED REFERENCE SAMPLE 'S DATA

Manufacture	Model	S/N	n° of certification and calibration center	uncertainty (u.m.)	Date of issue
BEAMEX	MC5-IS	20177766	0640/MP/2024 _LAT 150	± 0,001 c.s.	24/04/2024
Digital pressure gauge				± 0,001 c.s.	24/04/2024

environment temperature at the time of check 25 °C

Value indicated before starting the check 0 mmH2O

CHECK RESULT: *as found*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
mmH2O	mA	mA	mA	
0,0	4,000	4,002	+0,002	+0,012
140,0	8,000	8,002	+0,002	+0,013
280,0	12,000	12,001	+0,001	+0,006
420,0	16,000	16,004	+0,004	+0,028
560,0	20,000	20,001	+0,001	+0,006
420,0	16,000	16,003	+0,003	+0,019
280,0	12,000	12,000	+0,000	+0,000
140,0	8,000	8,003	+0,003	+0,019
0,0	4,000	4,001	+0,001	+0,006
		max error detected %		0,028

Check: PASSED

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
mmH2O					

Blocks/alarms check:

Corrective action

CHECK RESULT: *as left*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
mmH2O	mA	mA	mA	
		errore massimo rilevato %		0,00

Check:

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
mmH2O	DESCENT				

Blocks/alarms check:

Value indicated after the check 0 mmH2O

Note:

FINAL OUTCOME OF THE VERIFICATION: ***The instrument is SUITABLE***

Verification Date	Verification Expiration	Technical Executor	Viewed	Approved by
18/09/2024	09/2025	PENSO SILVIO		
		signature	*signature*	*signature*

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Tel. 0544 685411
C.F. e P.IVA 02764420390

GENERAL	1	Tag Number					43-LT-001		
	2	Service					HYDROGEN VENT KO DRUM (V-43001)		
	3	P&ID Number					123A90-DDL-PR-PID-80029		
	4	Equipment Number		Line Number			V-43001	-	
	5	Area Classification					ATEX Zone2 - IIC (IIB+H2) T1		
	6	Mounting					REMOTE		
PROCESS CONDITIONS	7	Fluid		State			WATER	LIQUID	
	8	Pressure	Unit	Min.	Oper.	Max.		Atm (op.)	
	9	Temperature	Unit	Min.	Oper.	Max.		Amb. (op)	
	10	Design Pressure		Min.		Max.	3.5 barg		
	11	Design Temperature		Min.		Max.	-10 / + 80 °C		
	12	Lower Oper. S.G.		Lower Oper. Visc.			1	1 cP	
	13	Vacuum		Over Pressure			-		
	14	Ambient Temperature					Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.		
TRANSMITTER	15	Application					LEVEL MEASUREMENT		
	16	Type					Diaphragm		
	17	ATEX Certification		Ingress Protection			ATEX Ex II 2G Ex db IIC T5	IP66	
	18	Housing		Paint			SS AISI 316/316L	N/A	
	19	Power Supply					24 Vdc		
	20	Process Connection		Electrical Connection			2 x 1/4” NPT-F	2 x M20x1.5	
	21	Accuracy					0.07% of Nominal Range		
	22	Max. Static Pressure		Element Material			100 bar	SS AISI 316/316L Gold Plated	
	23	Fill Fluid					Dow Corning Siliconic Oil		
	24	Instrument Range		Min.		Max.	0 mbar	350 mbar	
	25	Calibration Range		Min.		Max.	0 mmH_2O	560 mmH_2O	
	26	Elevation		Suppression			-	-	
	27	Allow. Oper. Pressure		Allow. Oper. Temp.			Static Pressure 100 bar	85 °C	
	28	SIL Certification		PED Certification			-	Required	
DIAPHRAGM SEAL	29	Process Conn. & Rating		Diaphragm Material			-	-	
	30	Capillary Material		Fill Fluid			-	-	
	31	Housing Material		Allow.Oper.Temp.			-	-	
COMMUNICATION AND SOFTWARE	32	Communication Type		Signal Type			HART 6	4-20mA Loop Powered 24 Vdc	
	33	DD Revision		CFF Revision			-	-	
	34	Hart Descriptor		Hart Tag			-	-	
	35	Internal Diagnostics		Capacitance			-	-	
	36	Segment		Device Address			-	-	
	37	Device Class		Simulate			-	-	
	38	Nominal Current		Operating Voltage			-	-	
OPTIONS	39	Manifold Supplied		Manifold Rating			Required (5-valves)	6000 psi	
	40	Process Connection		Manifold Model			1/2" NPT-F	MAN5-D1	
	41	Integral Meter		Scale			Required	-	
	42	Lightning Protection		Hydrostatic Testing			-	Required	
	43	Mounting Brackets					Required		
	44	Barrier - Manufacturer / Model					-		
PURCHASE	45	Manufacturer					TERRANOVA SRL		
	46	Model					SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		
	47	Purchase Order Number					4718_OS		

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ITEM	Tag	43-LT-003	: Level DP Transmitter - H2 Vent Q-43004 Low Level		Dwg	123A90-DDL-IN-DS-40039	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10000939	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity STS	Discipline Instrumental	Form	TJX04	Analogue O/P

DATA

VENDOR CALIBRATION MANUAL N° 1724000979-QC-PRO-00005

CALIBRATION/TEST PROCEDURE N° : 123A90-PML-QHSE-PRO-00122

MODEL N° :	SST77B-SERIES	SERIAL N° :	SE240633
DATA SHEET N° :	1724000979-IN-DS-00004	Rev :	3
~~TEST EQUIPMENT :~~		~~SERIAL N° :~~	

Instrument calibration is not required prior to the installation, as long as Manufacturer's calibration certificate is provided and transportation or storage conditions have not corrupted the instrument.

Manufacturer's calibration certificate is valid, not expired and attached to this check sheet

Following section must be filled only if certificate is not valid or missing

See Attachment

TEST DETAILS
CALIBRATION FIGURES

CALIBRATION POINTS	RISING	FALLING	UNITS
INPUT A			
INPUT B *			
INPUT C *			
OUTPUT			

* NOTE : COMPLETE IF APPLICABLE

TESTED LABEL AFFIXED

DATA SHEET ATTACHED

~~If required produce Red Line Mark Up for "AS BUILT"~~

Comments:

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS Impianti	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-09-17	2024-10-02	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-09-17T06:41:06.296Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-02T09:45:26.887Z	

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Plant	CROSSWIND	Description	HYDROGEN VENT Q-43004		
Area	Q-43004	Loop Tag	43-LI-003	Instrument Tag	43-LT-003
Type of verification	periodic	Calibration range	0,00 ÷ 1000,00 mmH2O	Report N°	030
Type of instrument	Level meter diaphragm	Max uncertainty required	± 0,1 % s.r.	Reference procedure data sheet	123A90-PML-QHSE-PRO-00122 Page N°10

UNDER EXAMINATION INSTRUMENT 'S DATA

Tag	Manufacture	Model	S/N
43-LT-003	SPRIANO	SST77B	SE240633

USED REFERENCE SAMPLE 'S DATA

Manufacture	Model	S/N	n° of certification and calibration center	uncertainty (u.m.)	Date of issue
BEAMEX	MC5-IS	20177766	0640/MP/2024 _LAT 150	± 0,001 c.s.	24/04/2024
Digital pressure gauge				± 0,001 c.s.	24/04/2024

environment temperature at the time of check 25 °C

Value indicated before starting the check 0 mmH2O

CHECK RESULT: as found

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
mmH2O	mA	mA	mA	
0,0	4,000	4,000	+0,000	+0,000
250,0	8,000	8,002	+0,002	+0,013
500,0	12,000	12,002	+0,002	+0,013
750,0	16,000	16,001	+0,001	+0,006
1000,0	20,000	19,997	-0,003	-0,018
750,0	16,000	16,002	+0,002	+0,012
500,0	12,000	11,998	-0,002	-0,013
250,0	8,000	8,001	+0,001	+0,006
0,0	4,000	4,001	+0,001	+0,006
		max error detected %		0,018

Check: PASSED

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
mmH2O					

Blocks/alarms check:

Corrective action

CHECK RESULT: as left

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
mmH2O	mA	mA	mA	
		errore massimo rilevato %		0,00

Check:

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
mmH2O	DESCENT				

Blocks/alarms check:

Value indicated after the check 0 mmH2O

Note:

FINAL OUTCOME OF THE VERIFICATION: The instrument is SUITABLE

Verification Date	Verification Expiration	Technical Executor	Viewed	Approved by
18/09/2024	09/2025	PENSO SILVIO		
		signature	signature	signature

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C.F. e P.IVA 02764420390

GENERAL	1	Tag Number						43-LT-003		
	2	Service						HYDROGEN VENT (Q-43004)		
	3	P&ID Number						123A90-DDL-PR-PID-80029		
	4	Equipment Number		Line Number				Q-43004	-	
	5	Area Classification						ATEX Zone2 - IIC (IIB+H2) T1		
	6	Mounting						REMOTE		
PROCESS CONDITIONS	7	Fluid		State				Mono Ethylene Glyco (50%vol) + water	LIQUID	
	8	Pressure	Unit	Min.	Oper.	Max.			Atm (op.)	
	9	Temperature	Unit	Min.	Oper.	Max.			Amb. (op)	
	10	Design Pressure		Min.		Max.		3.5 barg		
	11	Design Temperature		Min.		Max.		-10 / + 80 °C		
	12	Lower Oper. S.G.		Lower Oper. Visc.				1.063	1 - 2 cP	
	13	Vacuum		Over Pressure				-		
	14	Ambient Temperature						Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.		
TRANSMITTER	15	Application						LEVEL MEASUREMENT		
	16	Type						Diaphragm		
	17	ATEX Certification		Ingress Protection				ATEX Ex II 2G Ex db IIC T5	IP66	
	18	Housing		Paint				SS AISI 316/316L	N/A	
	19	Power Supply						24 Vdc		
	20	Process Connection		Electrical Connection				2 x 1/4” NPT-F	2 x M20x1.5	
	21	Accuracy						0.07% of Nominal Range		
	22	Max. Static Pressure		Element Material				100 bar	SS AISI 316/316L Gold Plated	
	23	Wetted O - Ring Material		Fill Fluid				Dow Corning Siliconic Oil		
	24	Instrument Range		Min.		0 mbar		0 mbar	350 mbar	
	25	Calibration Range		Min.		0		0 mmH_2O	1000 mmH_2O	
	26	Elevation		Suppression				-	-	
	27	Allow.Oper. Pressure		Allow.Oper.Temp.				Static Pressure 100 bar	85 °C	
	28	SIL Certification		PED Certification				-	Required	
DIAPHRAGM SEAL	29	Process Conn. & Rating		Diaphragm Material				-	-	
	30	Capillary Material		Fill Fluid				-	-	
	31	Housing Material		Allow.Oper.Temp.				-	-	
COMMUNICATION AND SOFTWARE	32	Communication Type		Signal Type				HART 6	4-20mA Loop Powered 24 Vdc	
	33	D D Revision		CFF Revision				-	-	
	34	Hart Descriptor		Hart Tag				-	-	
	35	Internal Diagnostics		Capacitance				-	-	
	36	Segment		Device Address				-	-	
	37	Device Class		Simulate				-	-	
	38	Nominal Current		Operating Voltage				-	-	
OPTIONS	39	Manifold Supplied		Manifold Rating				Required (5-valves)	6000 psi	
	40	Process Connection		Manifold Model				1/2" NPT-F	MAN5-D1	
	41	Integral Meter		Scale				Required	-	
	42	Lightning Protection		Hydrostatic Testing				-	Required	
	43	Mounting Brackets						Required		
	44	Barrier - Manufacturer / Model						-		
PURCHASE	45	Manufacturer						TERRANOVA SRL		
	46	Model						SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		
	47	Purchase Order Number						4718_OS		

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ITEM	Tag	43-PT-001	: Pressure Transmitter - KO Drum V-43001 Pressure			Dwg	123A90-DDL-IN-DS-40039
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10000940		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Instrumental	Form	TJX04 Analogue O/P

DATA

VENDOR CALIBRATION MANUAL N° 1724000979-QC-PRO-00005

CALIBRATION/TEST PROCEDURE N° : 123A90-PML-QHSE-PRO-00122

MODEL N° :	SST76-SERIES	SERIAL N° :	SE240650
DATA SHEET N° :	1724000979-IN-DS-00004	Rev :	3
TEST EQUIPMENT :		SERIAL N° :	

Instrument calibration is not required prior to the installation, as long as Manufacturer's calibration certificate is provided and transportation or storage conditions have not corrupted the instrument.

Manufacturer's calibration certificate is valid, not expired and attached to this check sheet

Following section must be filled only if certificate is not valid or missing

See Attachment

TEST DETAILS
CALIBRATION FIGURES

CALIBRATION POINTS	RISING	FALLING	UNITS
INPUT A			
INPUT B *			
INPUT C *			
OUTPUT			

* NOTE : COMPLETE IF APPLICABLE

TESTED LABEL AFFIXED

DATA SHEET ATTACHED

If required produce Red Line Mark Up for "AS BUILT"

Comments:

	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS Impianti	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-09-17	2024-10-02	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-09-17T06:41:18.849Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-02T09:46:20.317Z	

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C.F. Part. IVA 02764420390

Plant	CROSSWIND	Description	HYDROGEN VENT KO DRUM V-43001		
Area	V-43001	Loop Tag	43-PI-001	Instrument Tag	43-PT-001
Type of verification	periodic	Calibration range	0,00 ÷ 3,50 bar	Report N°	017
Type of instrument	Pressure meter	Max uncertainty required	± 0,070 % s.r.	Reference procedure data sheet	123A90-PML-QHSE-PRO-00122 Page N°8

UNDER EXAMINATION INSTRUMENT 'S DATA

Tag	Manufacture	Model	S/N
43-PT-001	SPRIANO	SST76	SE240650

USED REFERENCE SAMPLE 'S DATA

Manufacture	Model	S/N	n° of certification and calibration center	uncertainty (u.m.)	Date of issue
BEAMEX	MC5-IS	20177766	0640/MP/2024 _LAT 150	± 0,001 c.s.	24/04/2024
Digital pressure gauge				± 0,001 c.s.	24/04/2024

environment temperature at the time of check 25 °C

Value indicated before starting the check 0 bar

CHECK RESULT: *as found*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
bar	mA	mA	mA	
0,000	4,000	4,001	+0,001	+0,006
0,875	8,000	8,001	+0,001	+0,006
1,750	12,000	12,001	+0,001	+0,006
2,625	16,000	16,000	+0,000	+0,001
3,500	20,000	20,002	+0,002	+0,011
2,625	16,000	16,001	+0,001	+0,006
1,750	12,000	12,002	+0,002	+0,013
0,875	8,000	8,000	+0,000	+0,000
0,000	4,000	4,000	+0,000	+0,000

max error detected % 0,013

Check: PASSED

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
bar					

Blocks/alarms check:

Corrective action

CHECK RESULT: *as left*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
bar	mA	mA	mA	

errore massimo rilevato % 0,00

Check:

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
bar	DESCENT				

Blocks/alarms check:

Value indicated after the check 0 bar

Note:

FINAL OUTCOME OF THE VERIFICATION: *The instrument is SUITABLE*

Verification Date	Verification Expiration	Technical Executor	Viewed	Approved by
18/09/2024	09/2025	PENSO SILVIO		
		signature	*signature*	*signature*

ABR SERVICE srl
Via M. Monti, 40 - 48123 RAVENNA
Tel. 0544 685411
C.F. e P.IVA 02764420390

GENERAL	1	Tag Number			43-PT-001	
	2	Service			HYDROGEN VENT KO DRUM (V-43001)	
	3	P&ID Number	Location		123A90-DDL-PR-PID-80029	V-43001
	4	Function			PRESSURE MEASUREMENT	
	5	Mounting			DIRECT ON-LINE	
	6	Area Classification			ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature			Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid			HYDROGEN	
	9	Pressure Des.	Oper.	[barg]	3.5	Atm
	10	Temperature Des.	Oper.	[°C]	-10 / + 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity		-	-
	12	Flow Rate	Allowable Temp.		-	-
TRANSMITTER	13	Instrument Range Min.	Max.	[barg]	0	5
	14	Calibration Range Min.	Max.	[barg]	0	3.5
	15	Elevation	Suppression		-	-
	16	Element Type			Diaphragm	
	17	Element Material			SS AISI 316/316L GOLD PLATED	
	18	Body Material	Body Rating		AISI 316 SS	50 bar
	19	Process Connection			1/2” NPT-M	
	20	Wetted O-Rings Material			-	
	21	Fill Fluid			-	
	22	Bolts	Housing		Manifold/Instrument assembly	SS AISI 316/316L
	23	Paint			N/A	
	24	ATEX Certification	Ingress Protection		ATEX Ex II 2G Ex db IIC T5	IP66
	25	Process Connection	Electrical Connection		1/2” NPT-M	2 X M20X1.5
	26	Accuracy			0.07% of Nominal Range	
	27	SIL Certification	PED Certification		-	Required
DIAPHRAGM SEAL	28	Process Connection & Rating			-	
	29	Diaphragm Material	Housing Material		-	-
	30	Fill Fluid	Capillary Material		-	-
	31	Capillary Type	Capillary Length		-	-
	32	Flushing Connection			-	
OPTIONS	33	Integral Meter	Scale		Required	-
	34	Hydrostatic Testing	Cleaning		Required	-
	35	Mounting Brackets	Manifold Model No		Required	MAN2-R6
	36	Lightning Protection	Barrier Manuf./Model		-	-
COMMUNICATION AND SOFTWARE	37	Communication Type	Signal Type		HART 6	4-20mA Loop Powered 24 Vdc
	38	D D Revision	CFF Revision		-	-
	39	Device Tag	Hart Tag		-	-
	40	Internal Diagnostics	Capacitance		-	-
	41	Segment	Device Address		-	-
	42	Device Class	Simulate		-	-
	43	Nominal Current	Operating Voltage		-	-
PURCHASE	44	Manufacturer			TERRANOVA SRL	
	45	Model			SST76-H-7-G-2-9-2-1-4 + MAN2-R6	
	46	Purchase Order Number			4718_OS	

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as “NOT CONTROLLED” copy

ITEM	Tag	80-RO-001	: Restriction Orifice - Hyrogen storage to A-80000 Package vent system		Dwg	123A90-DDL-PR-PID-80012	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10001218	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX11	Orifice Plate

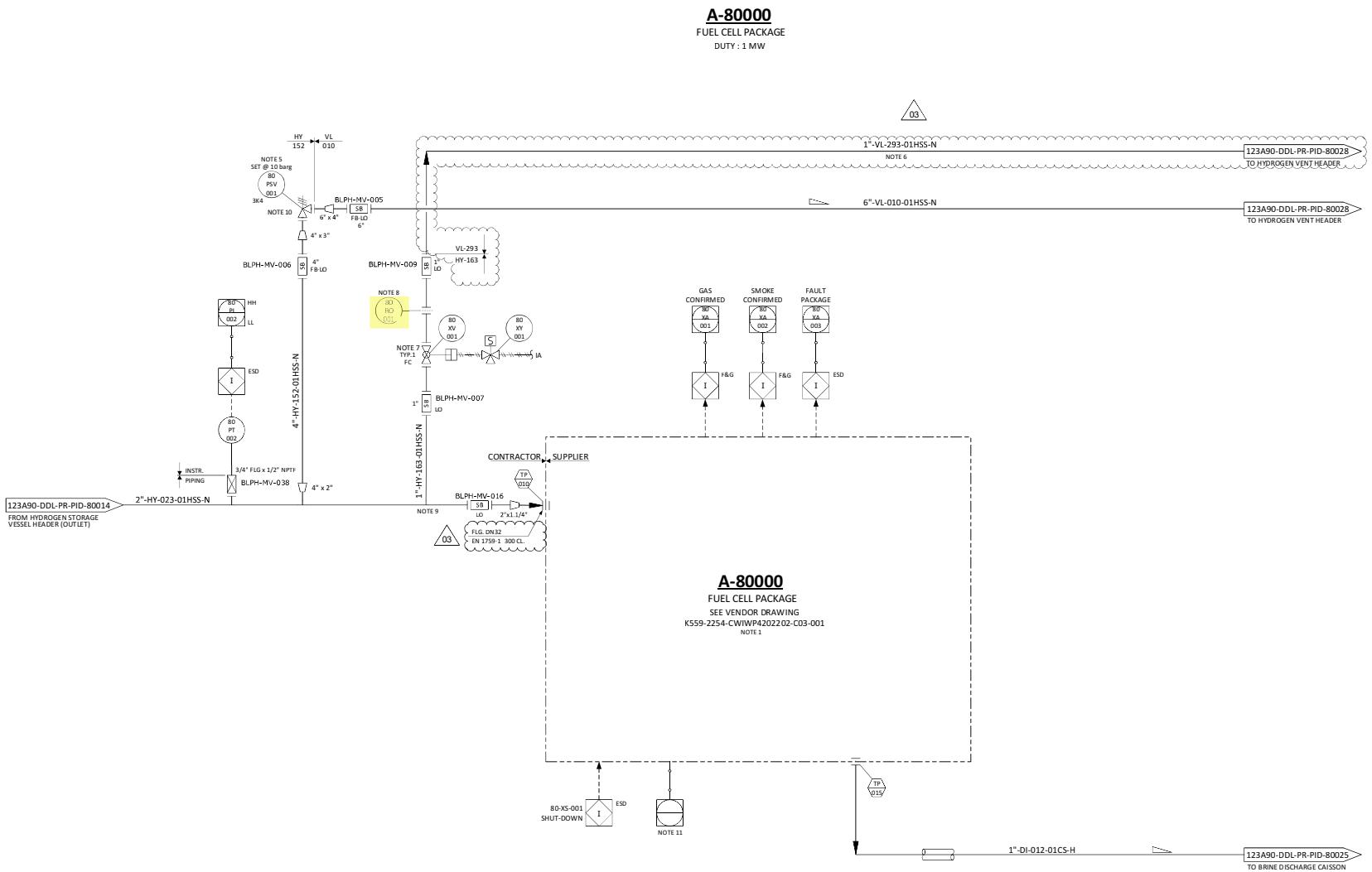
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check that flow orifice is installed with correct flow direction clearly identified on the tab.	OK
5	Check tag number is stamped or engraved on tab.	OK
6	Check accessibility conforms to specifications, with platforming where necessary.	OK
7	Check calibration certificate/conformity.	OK
8	Check plate flatness and surface finish.	OK
9	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-07	2025-02-15	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-07T13:15:59.464Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-02-15T13:49:06.367Z	

DRAWING NO. DRAWING_NO.

REV. REV.



NOTES

1. THE VENDOR PACKAGE WILL CONTAIN AIR INTAKE AND EXHAUST, SUITABLY SAFEGUARDED AND SEPARATED.
2. DELETED.
3. DELETED.
4. DELETED
5. ONE UNINSTALLED SPARE PSV SHALL BE AVAILABLE.
6. LINE REQUIRED FOR PURGING OF PIPING WORK.
7. TIGHT SHUT-OFF VALVE.
8. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
9. LINE 1"-HY-163-01HSS-N WILL BE LOCATED AS CLOSE TO THE PACKAGE AS POSSIBLE TO ENSURE COMPLETE PURGING OF THE LINE.
10. 80-PSV-001 SIZED FOR CV FAILURE OF UPSTREAM CONTROL VALVE 25-PV-055A/B.
11. SERIAL COMMUNICATION WITH CONTROL SYSTEM.

HOLDS

1. DELETED.
2. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

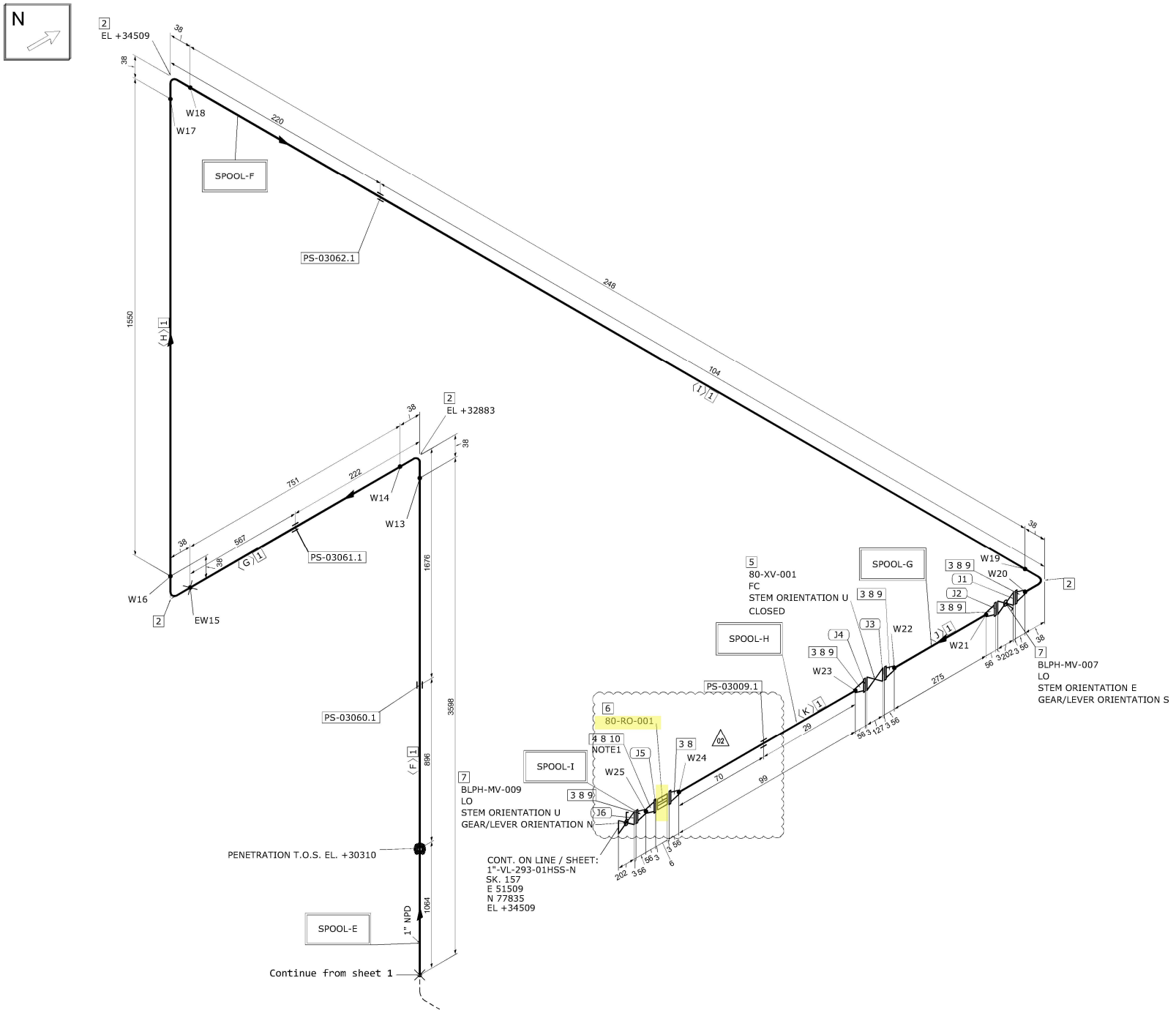
ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
FUEL CELL PACKAGE

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80012	SHEET 001	REV. 03

File Name : FILE_NAME



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	6.5M	16.6
2	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	4	0.6
3	1	FLW0SS00930100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F316/316L	6	8.5
4	1	FLWDSS00760100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1		Restriction Orifice 150#RF	1	1.0
7	1	VLBLNN01320100	Block & Bleed Valve API 6D FLG 150LB RF BS01C01RFHS	2	20.6
8	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	0.4
9	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	20	2.4
10	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	27.1
ERECTION WEIGHT [kg]	64.9
OVERALL WEIGHT [kg]	92.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W13	1	BW
W14	1	BW
EW15	1	BW
W16	1	BW
W17	1	BW
W18	1	BW
W19	1	BW
W20	1	BW
W21	1	BW
W22	1	BW
W23	1	BW
W24	1	BW
W25	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
F	1	3598	BEVEL	BEVEL
G	1	751	BEVEL	BEVEL
H	1	1550	BEVEL	BEVEL
I	1	248	BEVEL	BEVEL
J	1	275	BEVEL	BEVEL
K	1	99	BEVEL	BEVEL
		02		

SUPPORT LIST

PS-03060.1
PS-03061.1
PS-03062.1
PS-03009.1

SPOOL	WELD [inches]	WEIGHT [kg]
E	2	11.2
F	5	6.4
G	2	3.5
H	2	3.1
I	1	2.8
MONT	1	64.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-163-01HSS-N

SK.068

LINE DATA

NDT INSPECTION CATEGORY	1	PED CATEGORY	I		
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS	
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 10 [barg] TEMP. -29 / 100 [°C]	
HEAT TRACING	--		TEST	PRESS. 15 [barg] TEMP. AMB MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80012
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION E /W

MASTER

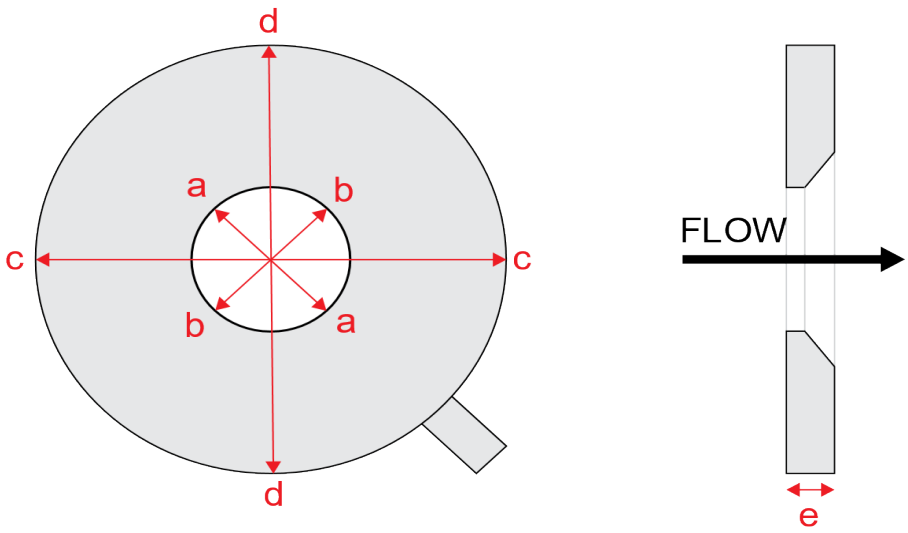
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	17-09-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00068	SHEET / OF	2/2	REV.	02

ITEM	Tag	80-RO-001	: Restriction Orifice - Hyrogen storage to A-80000 Package vent system	Dwg	123A90-DDL-PR-PID-80012
	S/Sys	43-00	: Hydrogen Vent Header & Drum System	Module	UD
TASK	code	C10001446	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: STS	Discipline: Instrumental	Form: TJX11		Orifice Plate

EQUIPMENT DATA

CALCULATION SHEET REF:	1724001690-IN-CA-00005		
DATA SHEET N°:	123A90-DDL-IN-DS-40054		
MATERIAL	AISI 316/316L	SPECIFIED THICKNESS:	6 mm
SPECIFIED OD:	67 mm	MODEL N°:	Restriction orifice - single hole
TEST EQUIPMENT:	Vernier caliper	SPECIFIED ID:	4,26 mm

TEST DETAILS



Measured Diameter : **a**	4,2 mm	Measured Diameter : **b**	4,2 mm
Measured Diameter : **c**	67 mm	Measured Diameter : **d**	67 mm
Actual plate thickness : **e**	6 mm	Flow element correctly stamped:	OK
Presence of degasing holes	No	Presence of degasing holes	No
TESTED LABEL AFFIXED	No	DATA SHEET ATTACHED	Yes

If required produce Red Line Mark Up for "AS BUILT"

Comments:

	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2024-12-18	2024-12-20	
Signature	Digitaly signed by Emanuele Delfino 2024-12-18T05:19:39.087Z	Digitaly signed by Massimo Bruschi 2024-12-20T07:29:24.899Z	

TERRANOVA®

WE DO PROCESS INSTRUMENTATION PRECISELY

SPRIANO Valcom MEC·RELA

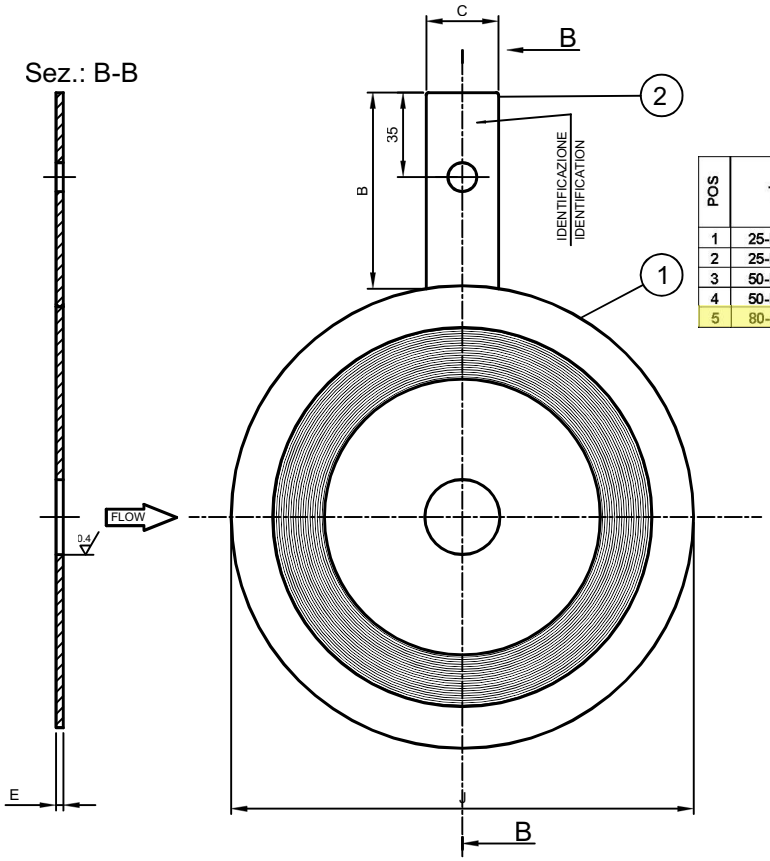
Customer:	ROSETTI MARINO	PO	:4791_OS
TAG	:80-RO-001	Doc	:1724001690-IN-CA-00005-01
TAGFluid	:Nitrogen	Sales Order:	/
Fluid Ref.	:MBWR State Equation	Service	:NITROGEN
Pipe	:316 Stainless Steel	Primary	:316 Stainless Steel
Meter	:Orifice:Choked Flow	Taps	:Upstream
Coeff Eq	:Ward-Smith	Calculation	:SIZE
Preparer	:THORAT	Printed	:31/07/2024

---------- Flow ----------		
Flow Rate	30,0000	kg/h
Pipe Reynolds Number	22145,	
---------- Measurements ----------		
Pressure (Upstream pG1)	2,0000	Bar,gage
Pressure (Downstream pG2)	0,5770	Bar,gage
Choking Pressure Ratio pf2/pf1	0,5277	
Barometric	1,0133	Bar,abs
Temperature Flowing	25,0000	degC
---------- Fluid Properties @ dry conditions ----------		
Density Flowing	3,4072	kg/m^3
Specific Gravity, G	0,9672	
Molecular Weight (Mw)	28,0134	
Compressibilty (Zf)	0,9994	
Viscosity	0,0180	cP
Isentropic Exponent(Cp/Cv)	1,4032	
----------Factors----------		
Discharge Coefficient(C)	0,8392	
Pipe Thermal Expansion (FaD)	1,0001	
Critical Flow Function (Ycr)	0,6855	
---------- Design Information ----------		
Pipe Diameter(D)	26,64460	mm@20, degC
Bore Diameter (d)	4,26646	mm@20, degC
Beta	0,16012	@20, degC
Orifice Minimum Thickness (tPE)	4,2665	mm
Pipeline Velocity V	4,39	m/s
Overall Pressure Loss	1,4230	Bar

BORE DIAMETER AND THICKNESS AS DISPLAYED ON THE GAD TABLE

R.W. Miller and Associates, Inc. The FLOW CONSULTANT TM Licensed Software C1987-2012 Version 7.1.0007

ORI ORIFICE PLATES (SINGLE HOLE)



POS	TAG	ND	RATING	SCH	PIPE			RESTRICTION ORIFICE								NOISE LEVEL [Dba]	CAV. NUMBER	NOTE	
					O.D. [mm]	I.D. [mm]	THK [mm]	MTL	n°OF HOLES	d [mm]	d1 [mm]	E [mm]	J [mm]	B [mm]	C [mm]				
1	25-RO-022	1"	300	40S	33,4	26,64	3,38	SS 316/316L	1	5,19	5,19	6	73,0	115	30	86		CRITICAL	THICK PLATE RESTRICTION
2	25-RO-024	1"	300	40S	33,4	26,64	3,38	SS 316/316L	1	4,26	4,26	6	73,0	115	30	65		CRITICAL	THICK PLATE RESTRICTION
3	50-RO-001	1"	150	40S	33,4	26,64	3,38	SS 316/316L	1	0,12	0,12	3	67,0	110	30	65	1,22		
4	50-RO-002	1"	150	40S	33,4	26,64	3,38	SS 316/316L	1	0,12	0,12	3	67,0	110	30	65	1,22		
5	80-RO-001	1"	150	40S	33,4	26,64	3,38	SS 316/316L	1	4,26	4,26	6	67,0	110	30	65		CRITICAL	THICK PLATE RESTRICTION

TAGS 50-RO-001 AND 50-RO-002 KEPT IN HOLD STATUS.

NOTES:
1. FLOW METER REFERENCE CODE: ISO 5167 / MILLER ENGINEERING HANDBOOK
2. MARKING: MARKING DETAIL AS PER CUSTOMER SPECIFICATION (TAG / d / ID / SIZE / RATING / MATERIAL / REF CODE / DIRECTION OF FLOW (as minimum)
3. d, PRESSURE DROP: refer to CALCULATION SHEETS

CERTIFICATES
- Material Certificates 3.1 (EN 10204)
- PMI Test on all Plates
- Visual & Dimensional Test

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SPRIANO Nuovo Pignone MEC-REL

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/10/24	MZ	GA	GO	ACCEPTED FOR CONSTRUCTION (AFC)
00	03/10/24	MZ	GA	GO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT DRAWINGS-RESTRICTION ORIFICE
RESTRICTION ORIFICE (SINGLE HOLE)

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:2

A3 | DRAWING NO. 1724001690-IN-DA-00003 | SHEET 003 | REV. 01

File Name : 123A90.DDL.XX.XXXXXX Rev. 00

F.to UNI A3: 420mmx297mm

GENERAL	1	Tag Number			80-RO-001			
	2	Service			HYDROGEN FROM STORAGE VESSEL TO FUEL CELL			
	3	P&ID Number			123A90-DDL-PR-PID-80012			
	4	Line Number			1"-HY-163-01HSS-N			
	5	Line Size	Line Schedule		1"		Thk (mm) = 3.38	
	6	Line Material			ASTM A312 Gr.TP316/316L			
	7							
PROCESS CONDITIONS	8	Fluid	State		NITROGEN		GAS	
	9	Design Pressure	Min.	Max.			10	
	10	Design Temperature	Min.	Max.			80	
	11	Base Pressure	Base Temperature					
	12	Critical Pressure						
	13	Permanent Pressure Loss Across Meter						
	14	Entrained Gas / Liquid (% Mass)						
	15				Units			
	16	Flow Operating			kg/h	30		
	17	Upsteam Pressure			barg	2		
	18	Temperature			°C	25		
	19	Density			kg/m^3	3.4		
	20	Compressibility Factor			-	1		
	21	Viscosity			cP	0.018		
	22	Vapour Pressure						
	23	Specific Heat Ratio Cp/Cv			-	1.4		
	24	Molecular Weight			28			
ORIFICE PLATE	25	Type			RESTRICTION ORIFICE CONCENTRIC TYPE (Choked Flow)			
	26	Material			AISI 316/316L			
	27	Thickness			6mm			
	28	Bore Diameter			4.26mm (1)			
	29	Beta Ratio			0.16012			
	30	Drain or Vent Hole			N.A.			
	31	Flow Full Scale			30 kg/h			
	32	Differential Pressure @ Full scale			2 barg - 0.5770 barg = 1.423 bar			
	33	Choking Pressure Ratio			0.5277			
ORIFICE FLANGES	34	Size			1" (Flanges are Out of scope of Vendor's supply)			
	35	Rating			150#			
	36	Type			Flanged			
	37	Facing			RF			
	38	Flange Material			ASTM A182 Gr.F316/316L			
	39	Gasket Material			(Gaskets are Out of scope of Vendor's supply)			
	40	Taps Type	Quantity		-		-	
	41	Taps Size	Connection		-		-	
	42	Taps Orientation			-			
	43							
	44							
PURCHASE	45	Manufacturer			TECNOMATIC			
	46	Model			-			
	47	Purchase Order Number			1724001690			

Notes: (1) Downstream Pressure = atm

						INSTRUMENT DATASHEET	CROSSWIND	
						Orifice Plate	ROSETTI MARINO	
02	06/12/2024	VBA	LCA	DLO	Accepted for Construction (AFC)		Sheet 15 of 15	
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)			
00	22/02/2024	VBA	LCA	DLO	Issued for Review (IFR)			
No.	Date	By	Chkd	Appr	Description	Code: 314	Doc. No.: 123A90-DDL-IN-DS-40054	Rev 02

ITEM	Tag	43-FT-001	: Flow Transmitter - Hydrogen form KO DRUM V-43001 to vent stack Q-43004			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10001471		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Instrumental	Form	TJX04 Analogue O/P

DATA

VENDOR CALIBRATION MANUAL N° 1724001317-QC-PRO-00010

CALIBRATION/TEST PROCEDURE N° : 123A90-PML-QHSE-PRO-00122

MODEL N° :	XGF868I-2-2-OI-H7-3-4-0-CC	SERIAL N° :	XGFI-2588E
DATA SHEET N° :	123A90-DDL-IN-DS-40048	Rev :	1
TEST EQUIPMENT :	Note	SERIAL N° :	Note

Instruments calibration is not required prior to the installation, as long as Manufacturer's calibration certificate is provided and transportation or storage conditions have not corrupted the instrument.

Manufacturer's calibration certificate is valid, not expired and attached to this check sheet Yes

Following section must be filled only if certificate is not valid or missing

TEST DETAILS
CALIBRATION FIGURES

CALIBRATION POINTS	RISING						FALLING						UNITS
INPUT A	NA												
INPUT B *	NA												
INPUT C *	NA												
OUTPUT	NA												

* NOTE : COMPLETE IF APPLICABLE

TESTED LABEL AFFIXED NA

DATA SHEET ATTACHED X

If required produce Red Line Mark Up for "AS BUILT"

Comments: Note: Calibration raised by Vendor- See attached report.

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Eleonora Carotenuto	
Date	2025-02-19	2025-02-26	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-19T13:40:16.327Z	PROVERLIS Digitaly signed by Eleonora Carotenuto 2025-02-26T11:47:00.049Z	

G-FAST RESULTS SUMMARY

Flowmeter Application Calculator and Test System® Ver. 2.73, Dec-6-2023

Customer Name: ROSSETTI MARINO
CPO#: 2721420
Tag Number: 43-FT-001

Pipe Data

Pipe Material:	316 Stainless Steel	
Pipe Size:	10	in
Pipe Schedule:	10S	
Outer Diameter:	10.75	in
Inner Diameter:	10.42	in
Wall thickness:	0.165	in
Interal Area:	0.59219	ft²

Fluid Data

Fluid Name/Type: Gas Composition Tab 100%H2

Variables	Min	Nom	Max	Units
Provided Flowrate	153.00	1,067.00	2,381.50	kg/Hour
Velocity	6.43	44.80	100.00	m/s
Temperature	25.00	25.00	25.00	°C
Pressure	40	40	40	kPa
Density	0.120	0.120	0.120	kg/m³
Sound Speed	1314.8	1314.8	1314.8	m/s
Reynold's No.	23,059	160,787	358,874	

Base Temperature	15.6	°C
Base Pressure	101	kPa
Barometric Pressure	101	kPa
Molecular Weight	2.02	
Max Allowed Vel.	100	m/s

Configuration Data

Transducer Configuration:	Custom, Diameter (45°)
Traverses/Paths:	1 Traverse , 1 Path
Transducer Material:	316SS
PREAMP GAIN:	40

minimun measurable 0.75 kg/h / 0.03 m/s
estimated accuracy 155%

Repeatability Results (% of Reading)

Accuracy/repeatability calculated is based on velocity

	Temperature		
Flow Rate:	Min	Nom	Max
Min	0.76%		
Nom		0.75%	
Max			0.75%

Calculations evaluated at **specified** conditions:

Min Flow @ Min Temp, Min Pressure, and Min Density (if applicable)
Max Flow @ Max Temp, Max Pressure, and Max Density (if applicable)

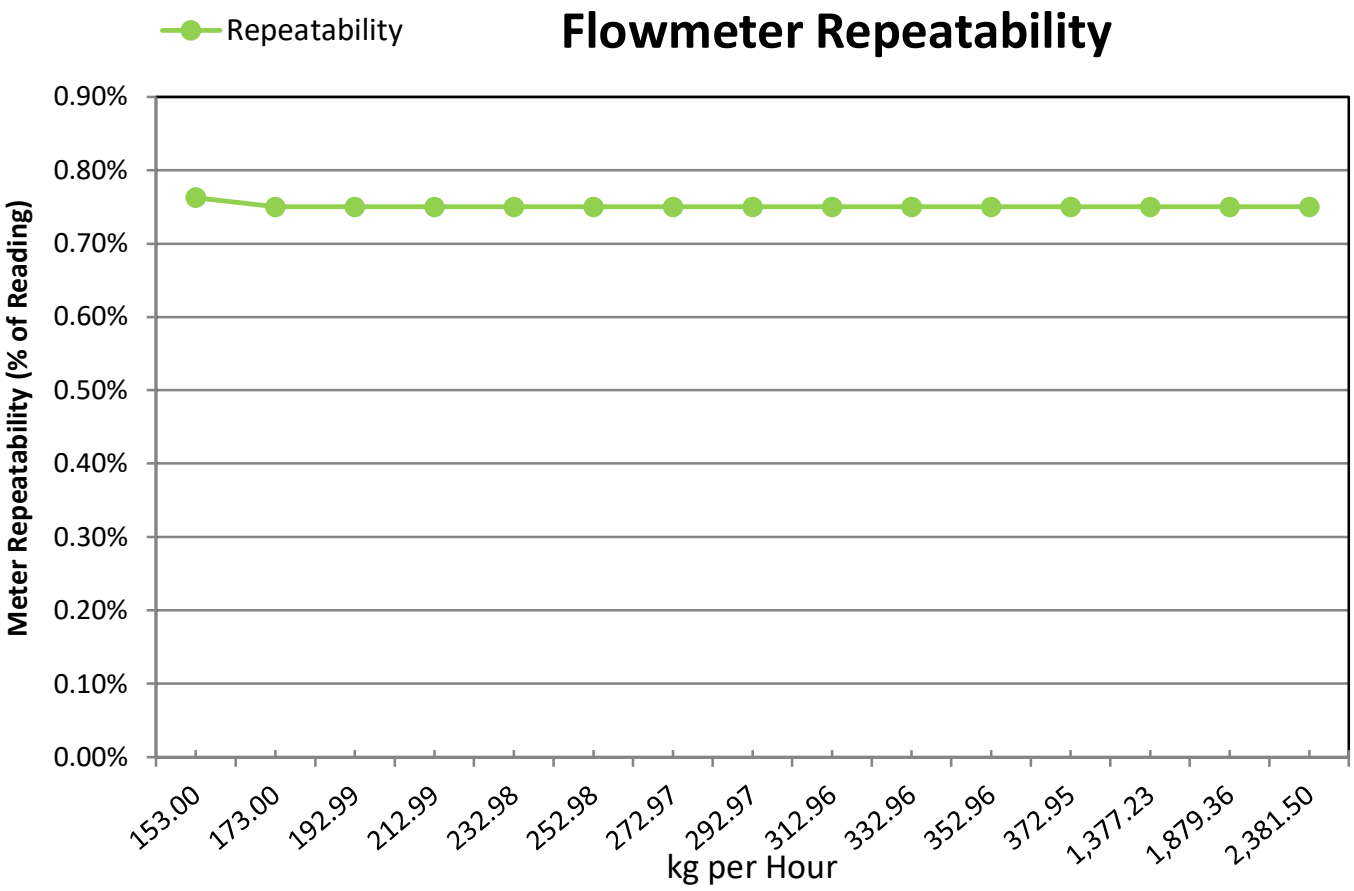
Calibrated Accuracy Results (% of Reading)

	Temperature		
Flow Rate:	Min	Nom	Max
Min	0.76%		
Nom		0.75%	
Max			0.75%

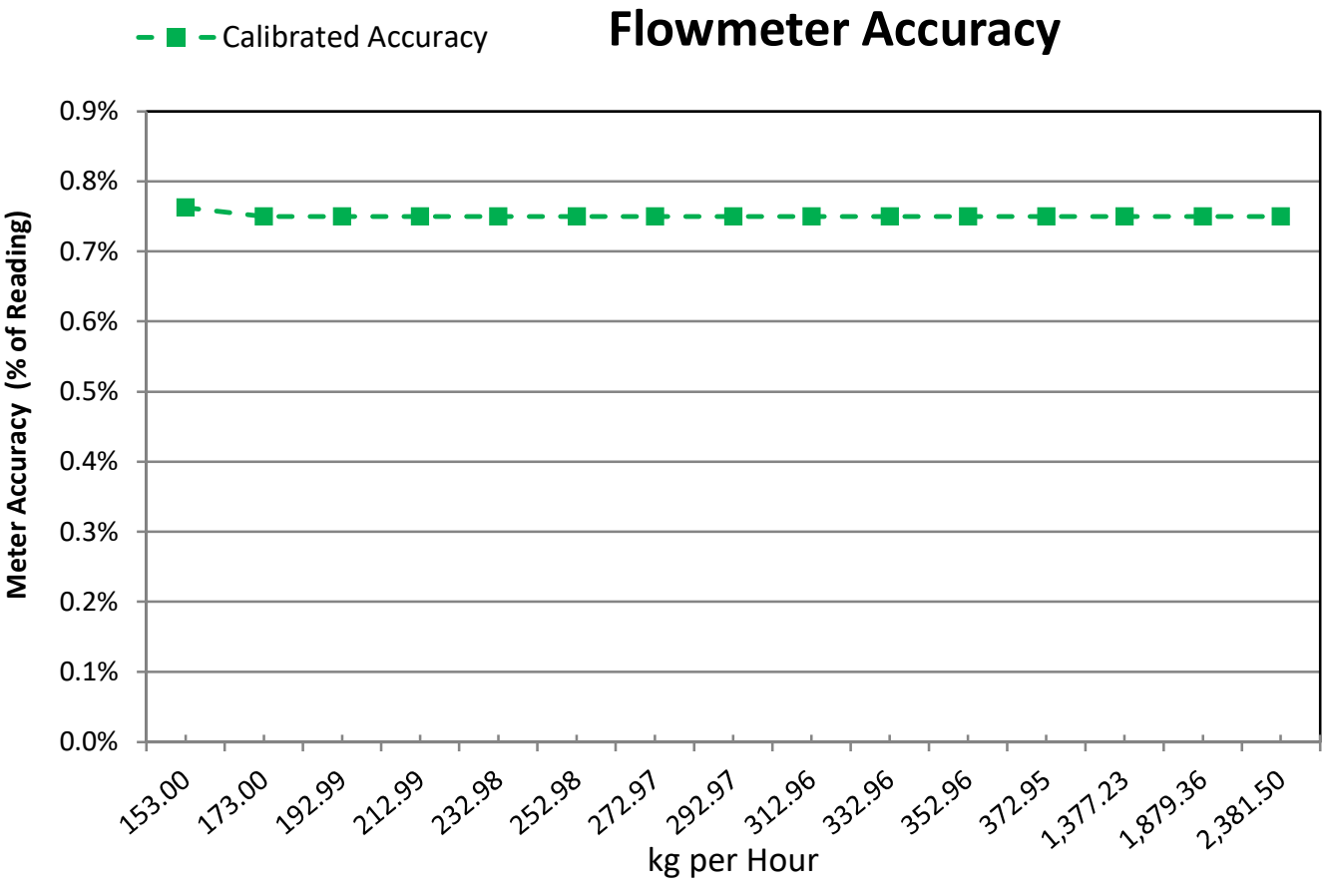
Calculations evaluated at **specified** conditions:

Min Flow @ Min Temp, Min Pressure, and Min Density (if applicable)
Max Flow @ Max Temp, Max Pressure, and Max Density (if applicable)

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kg / Hour	Repeat-ability
153	0.8%
173	0.8%
193	0.8%
213	0.8%
233	0.8%
253	0.8%
273	0.8%
293	0.8%
313	0.8%
333	0.8%
353	0.8%
373	0.8%
1,377	0.8%
1,879	0.8%
2,382	0.8%



kg / Hour	Calibrated Accuracy
153	0.8%
173	0.8%
193	0.8%
213	0.8%
233	0.8%
253	0.8%
273	0.8%
293	0.8%
313	0.8%
333	0.8%
353	0.8%
373	0.8%
1,377	0.8%
1,879	0.8%
2,382	0.8%

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GENERAL	1	Tag Number				43-FT-001		
	2	Service				HDROGEN FROM KO DRUM TO HYDROGEN VENT (Q-43004)		
	3	P&ID Number		Special Regulation		123A901-DDL-PR-PID-80029	-	
	4	Line Size		Line No.		10"	10"-VL-117-01HSS-N	
	5	Line Schedule		Area Classification		Thk (mm) = 4.19	ATEX Zone2 - IIC (IIB+H2) T1	
PROCESS CONDITIONS	6	Fluid	Phase		State	HYDROGEN	SINGLE	GAS
	7	Spec Cond.		Sour Serv.				
	8	Flow		Min. / Norm. / Max.	Units		note 17	
	9	Oper. Pressure		Oper. Temperature		0 / 0.5 barg	AMB	
	10	Des. Pressure		Des. Temp. Max. / Min.		3.5 barg	80 °C	
	11	Density @ Fl. Norm.		Viscosity @ Fl. Norm.		0.11 kg/m^3 (@25°C, 0.4 barg)	0.01	
	12	Max. Allowable DP across Meter				N/A		
	13	Molecul. Wt. @ Fl. Nor.		Entrained Gas		2		
	14	Vapour Pressure		Critical Pressure		N/A	N/A	
METER	15	Meter Type				Spool Piece		
	16	Size	Rating	Facing		10" #150	RF	
	17	Range From	To	Eng. Units				
	18	Housing				ASTM A312 Gr.TP316/316L (ASME B31.12)		
	19	Electrical Connections				M20		
	20	Accuracy		Tracing		See Vendor Calculation Sheet	-	
	21	Trace Size	Rating	Facing		-	-	-
	22							
METER MATERIALS	23	Process Flanges				10" FLANGED #150		
	24	Tube Material				ASTM A312 Gr.TP316/316L		
	25	Sensor Housing Material				AISI 316/316L		
TRANSMITTER	26	Measurement Type		Beam / PATH No.		TRANSIT TIME	SINGLE / SINGLE	
	27	Mounting		Housing Material		Remote	AISI 316	
	28	Calibration Range				See Vendor Calculation Sheet		
	29	Electrical Connection		Electrical Class		M20x1,5MM	-	
	30	Output Signal		Load		4-20mA	600Ω	
	31	Other Output Signal				-		
	32	Power Supply		Consumption		24Vdc	20W	
	33	Ingress Protection		ATEX Certification		IP66	Ex-d IIC T6 Gb	
COMMUNICATION AND SOFTWARE	34	Communication Type		Signal Type		Conventional + HART Rev.7	4-20mA	
	35	DD Revision		CFF Revision		-	-	
	36	Hart Desciptor		Hart Tag		-	-	
	37	Internal Diagnostics		Capacitance		-	-	
	38	Segment		Device Address		-	-	
	39	Device Class		Simulate		-	-	
	40	Nominal Current		Operating Voltage		-	-	
ACCESSORIES	41	Environ. Protection				-		
	42	Measuring Cable Length		Special Cable Length		-	10m (Sensor - Transmitter)	
	43	Mounting Kit		Cable Glands		Mounting Bracket for 2" pole	Required	
	44	Isolating Ball Valve				Required according to piping class 01HSS		
PURCHASE	45	Manufacturer				Panametrics		
	46	Model	Sensor	Transmitter		Flowcell	XGF868I	
	47	Purchase Order Number				1724001317		
	48	Weight				See Sheet 9		

No.	Date	By	Chkd	Appr	Description
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)
00	13/03/2024	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

Ultrasonic Flowmeter

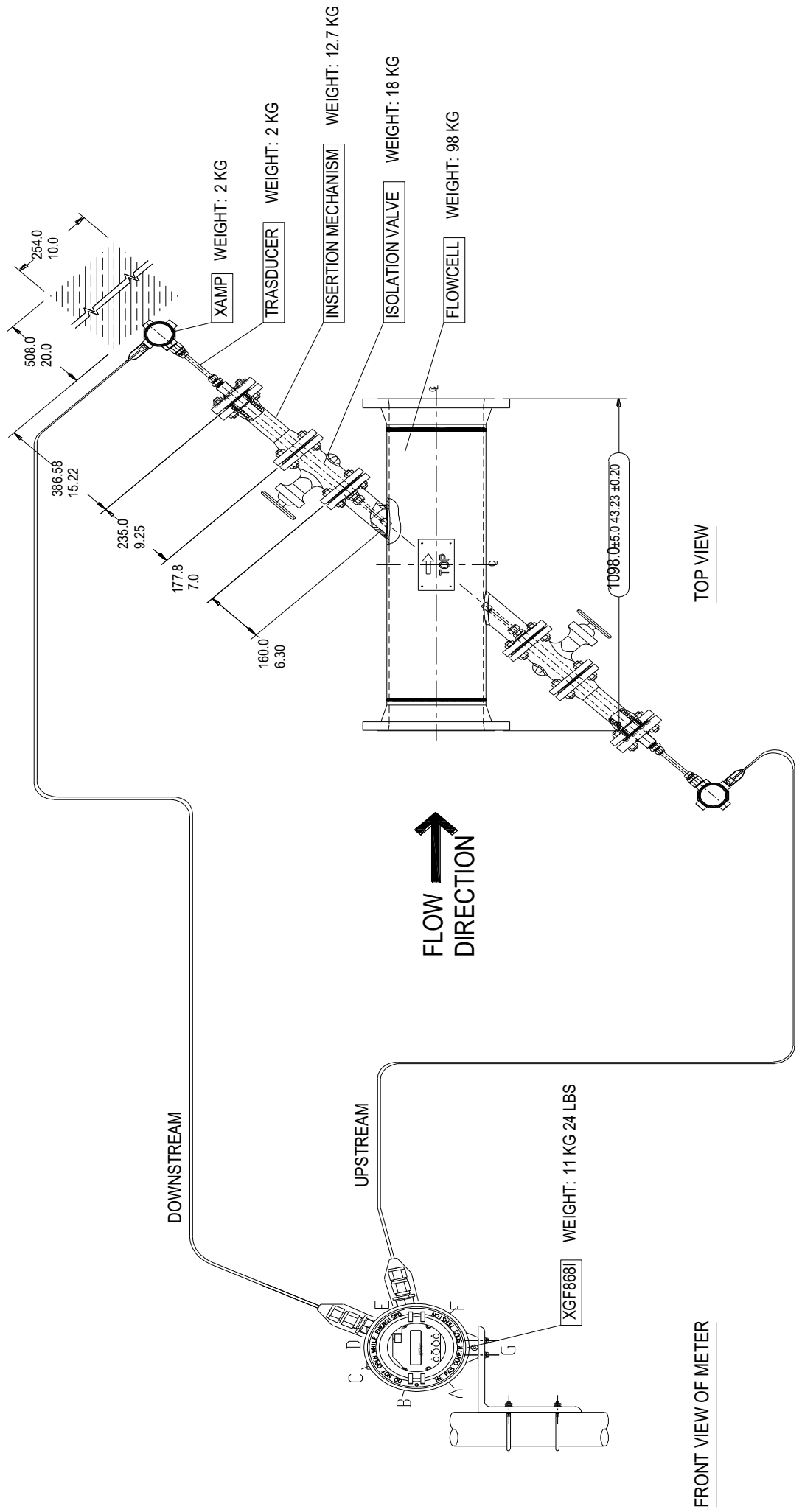
CROSSWIND

ROSETTI MARINO

Sheet 5 of 6

Code : Dwg. No.: 123A90-DDL-IN-DS-40048 Rev 01

43-FT-001 GENERAL ARRANGEMENT DRAWING



						INSTRUMENT DATASHEET	CROSSWIND	
						Ultrasonic Flowmeter	ROSETTI MARINO	
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)		Sheet 6 of 6	
No.	Date	By	Chkd	Appr	Description	Code :	Dwg. No.: 123A90-DDL-IN-DS-40048	Rev 01

Baker Hughes

ULTRSONIC FLOWMETER APPLICATION DATA SHEET
Rev B

1	Tag Number	43-FT-001			
2	P&ID Number	123A901-DDL-PR-PID-80029			
3	Service	HDROGEN FROM KO DRUM TO HYDROGEN VENT (Q-43004)			
4	Line Size/Schedule	10"/Sch 10			
5	Line Material	ASTM 316/316L			
6	Flowcell	A312 Gr TP316/316L, Sch 40 (pipe), taper bored to Sch 10, A182 Gr F316/316L (flanges)			
7	Pre-amplifer	Xamp, 316SS enclosure, IP65/66			
8	IVA	2" 150# Gate valve, Body A351 CF8M, Trim 316SS			
9	Fluid / Phase	Gas/Single			
7		**MIN**	**NORMAL**	**MAX**	**UNIT**
8	Operating Flow Rate	690	1067	3095	kg/hr
9	Operating Pressure	0	50	50	kPa
10	Operating Temperature	-8.4	10.5	25	°C
11	Viscosity	0.01	0.01	0.01	cP
12	Density	0.11	0.11	0.11	kg/m³
13	Power Supply	12-28 VDC			
14	Measurement Mode	Transit Time			
15	Meter Range	bi-directional -100 to 100 m/s			
16	Accuracy	± 0.8% full scale			
17	Input/Output Signals	2x 4-20mA ip, 2x 4-20mA op			
18	Hazardous Protection	Exd IIG/C T6			
19	Ingress Protection	IP66			
20	Housing Material	Stainless Steel			
21	Mounting	Remote (c/w 2" pipe mount bracket)			
22	Flowmeter cable Length	10m			
23	Transducer Type	T5MAXS			
24	No of Paths/Traverse	1x Path/ 1x Traverse			
25	Transducer Material	316SS			
26	Insertion/retraction Type	IMA72			
27	Size/Rating	2" 150#			
28	Material Of Construction	316/316LSS			
29	Connection	Flange			
30	Clamping Fixture	Bolt on			
31	Material Of Construction	316SS			
32	Manufacturer	Baker Hughes			
33	Meter Model No.	XGF868i-2-2-OI-H7-3-4-0-CC			
34	Accessories	-1 x NAMEPLATE - 5 x REDUCER STAINLESS STEEL, 3/4" NPT X M20			

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ROSETTI MARINO | CROSSWIND

ITEM	Tag	PD-43-FT-001/00-JE-13001 : FLOW TRANSMITTER POWER SUPPLY / MARSHALLING PCS			Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	43-00 : Hydrogen Vent Header & Drum System			Module	UD	
TASK	code	C10001838	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity	CCK	Discipline	Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	2X2,5 mm2	Color	GREY
From	43-FT-001	To	00-JE-13001		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH		>999	MΩ
	CORE to CORE		>999	MΩ
	CORE to SCREEN		>999	MΩ
	CORE to ARMr		>999	MΩ
	SCREEN to EARTH		>999	MΩ
	SCREEN to ARMr		>999	MΩ
CONTINUITY	CORES		0,25	Ω
	SCREEN		0,25	Ω
	EARTH		NA	Ω
	ARMr		0,25	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

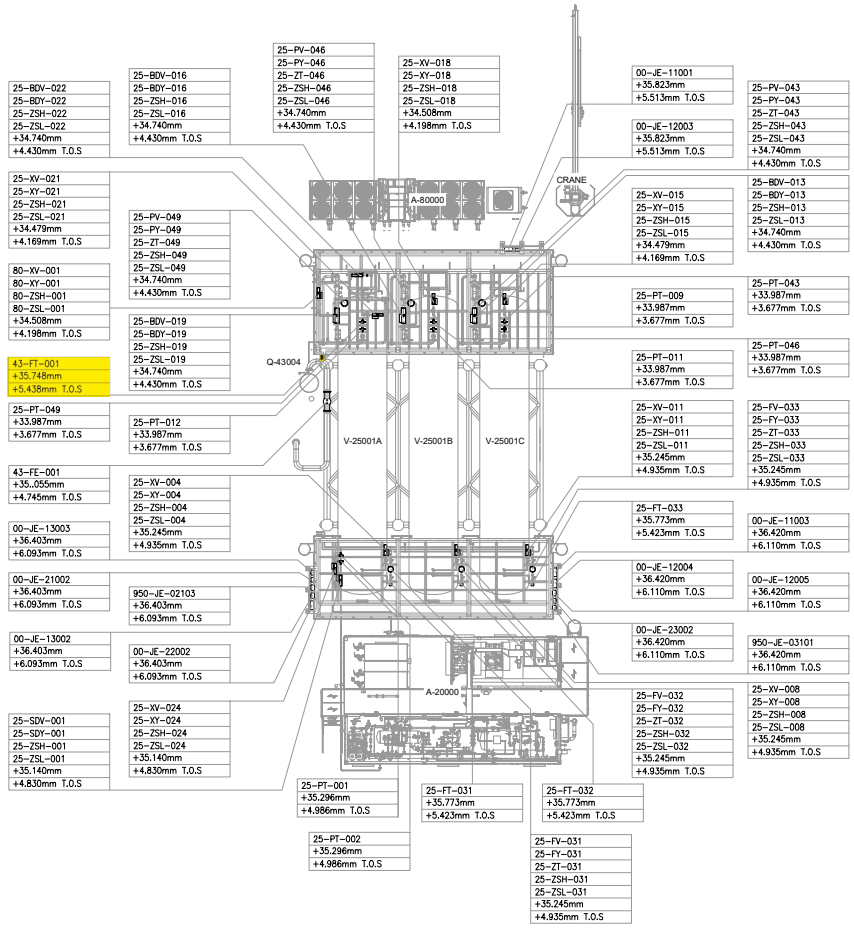
TESTING INSTRUMENTS USED

TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-18	2025-02-25	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T07:15:04.044Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-25T15:45:35.139Z	

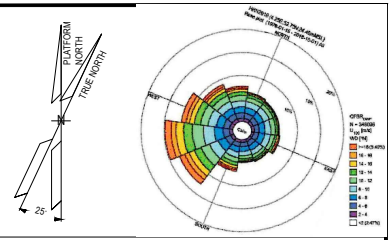
DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

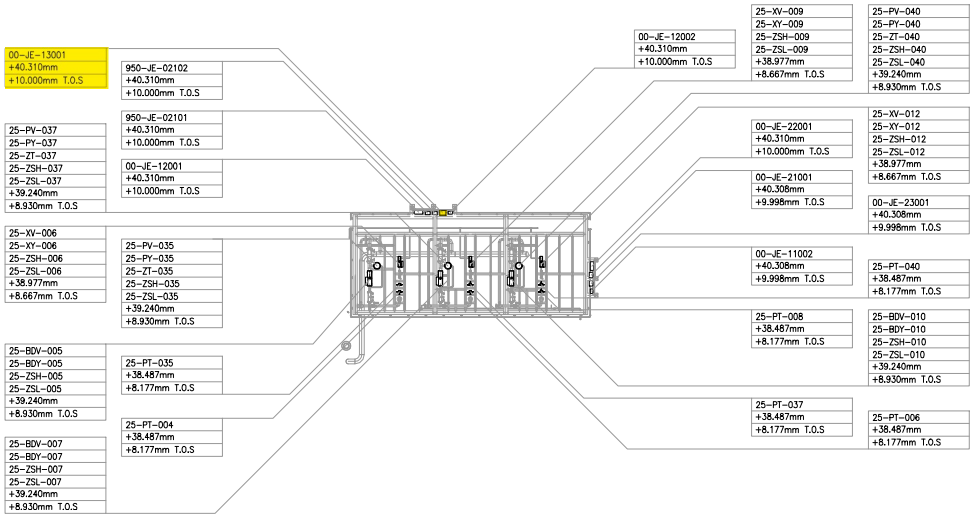
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

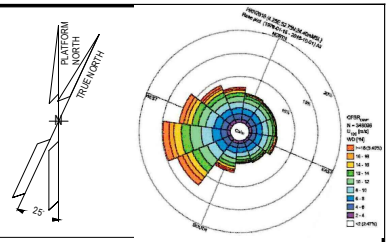
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DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 02



UPPER DECK
SCALE: 1:100

VIEW EL. 36500mm to 47060mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPT FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 003	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-13001	No.	MARSHALLING CABINET B400-PCS-002

<01>

INSTRUMENTS	JUNCTION BOX 00-JE-13001	MULTICABLE No.	MARSHALLING CABINET B400-PCS-002
25-XY-006 (+ 1BK, - 2BK) NOTE-2	C-25-XY-006/00-JE-13001 2x2.5mm2,ShT+ARM,F.Ret,GREY,NIS	00-JE-13001/B400-PCS-002 24x2.5mm2,ShT+ARM,F.Ret,GREY,NIS	TB-00-JE-13001 1 → 25-XY-006
25-XY-009 (+ 1BK, - 2BK) NOTE-2	C-25-XY-009/00-JE-13001 2x2.5mm2,ShT+ARM,F.Ret,GREY,NIS		3 → 25-XY-009
25-XY-012 (+ 1BK, - 2BK) NOTE-2	C-25-XY-012/00-JE-13001 2x2.5mm2,ShT+ARM,F.Ret,GREY,NIS		5 → 25-XY-012
25-XY-015 (+ 1BK, - 2BK) NOTE-2	C-25-XY-015/00-JE-13001 2x2.5mm2,ShT+ARM,F.Ret,GREY,NIS		7 → 25-XY-015
25-XY-018 (+ 1BK, - 2BK) NOTE-2	C-25-XY-018/00-JE-13001 2x2.5mm2,ShT+ARM,F.Ret,GREY,NIS		9 → 25-XY-018
25-XY-021 (+ 1BK, - 2BK) NOTE-2	C-25-XY-021/00-JE-13001 2x2.5mm2,ShT+ARM,F.Ret,GREY,NIS		11 → 25-XY-021
80-XY-001 (+ 1BK, - 2BK) NOTE-2	C-80-XY-001/00-JE-13001 2x2.5mm2,ShT+ARM,F.Ret,GREY,NIS		13 → 80-XY-001
PD-43-FT-001 (1+ 1BK, 2- 2BK) NOTE-2	PD-43-FT-001/00-JE-13001 2x2.5mm2,ShT+ARM,F.Ret,GREY,NIS		15 → PD-43-FT-001 (24Vdc)
	SPARE		17 → SPARE
	SPARE		19 → SPARE
	SPARE		21 → SPARE
	SPARE		23 → SPARE
	SH, OS		Shield Bar → I.E.

TB-1: 1, 2, SH, 3, 4, SH, 5, 6, SH, 7, 8, SH, 9, 10, SH, 11, 12, SH, 13, 14, SH, 15, 16, SH, 17, 18, SH, 19, 20, SH, 21, 22, SH, 23, 24, SH, OS

TB-00-JE-13001: 1 … 24

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_J	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00-JE-13001

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 028	REV. 01

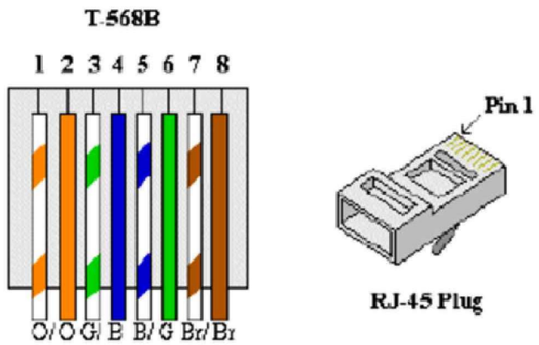
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



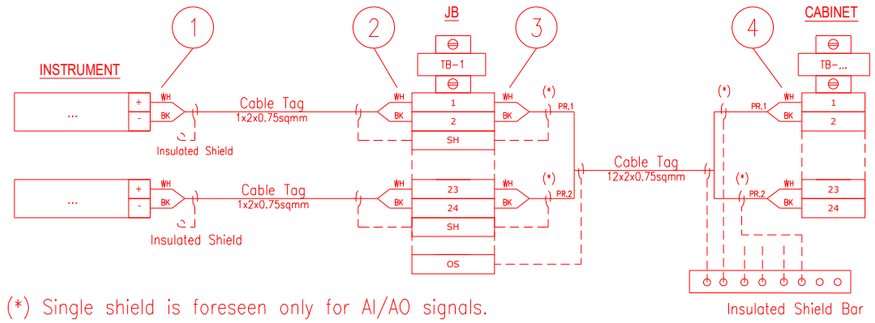
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

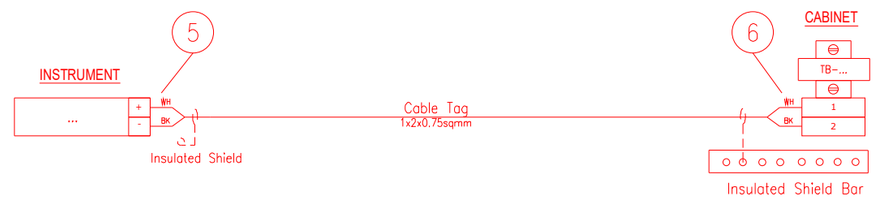
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

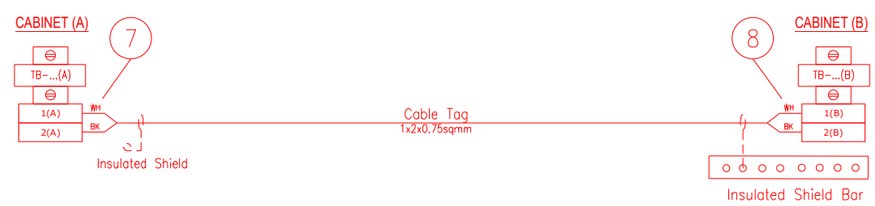
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_J	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

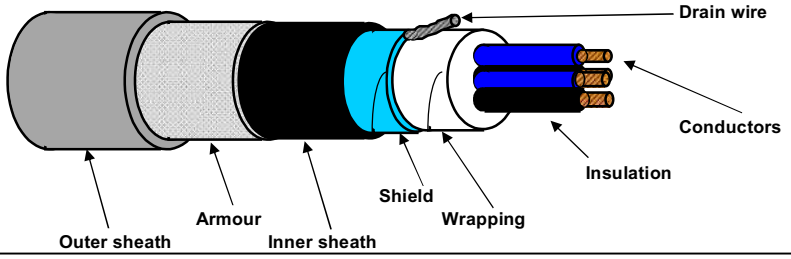
CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
PD-43-FT-001/00-JE-13001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						43-FT-001	Flow Transmitter	Upper Deck		00-JE-13001	DO JB to PCS	Upper Deck	Junction Box	SMICVD5-2X2,5	Cable Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Grey	M20	T2_M20_Double			T2_M20_Double				U-SEC-21B / U-SEC-21A / U-SEC-7 / U-SEC-1F / U-SEC-6

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

2X2,5 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires **IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,6 mm
Cores colour code :	**Black NUMBERED (from 1 to 2)**
Pair Assembling :	Not required
Pair Wrapping:	Not required
Drain wire :	Not required
Pair Shield :	Not required
Shield Insulation :	Not required
Total Assembling :	9/1mt
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 1,0 sqmm**, in continuous contact with the shield
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,1 mm
Inner sheath color code:	**Black**
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - 2X2,5 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(8,9 ± 10%) mm
Over armour diameter :	(9,7 ± 10%) mm
Outer diameter :	(12,1 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)
Conductors DC Resistance :	≤ 7,86 Ω/km (@ 20°C)
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)
Applicable Standards	
Design Guidelines :	**IEC 60092.376**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE	
During Operation :	(-20°C up to +90°C) (in fixed installation)
During installation :	(- 5°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ITEM	Tag	BLPH-MV-404/43-LT-001	: Process Connection Water - 43-LT-001		Dwg	123A90-DDL-IN-LIS-40092	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10001996		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX06 Tubing Hydraulic

General

1	Drawings (P&ID tube) attached.	OK
2	Isometric drawings (P&ID pipe) attached.	NA
3	Check drawings at last revision.	OK
4	Material certificates for pipe/tube/fittings/flanges/hose and support clamps checked	OK
5	Welders certificates checked	NA
6	Certificate and mark-up drawings for welding WPS and WPQR and material certificates checked	NA
7	Certificates and mark-up drawings for NDT report checked	NA

Check before Flushing and/or Testing

8	Installation complete and in compliance with drawings and specifications.	PL
9	Tubing/Piping tray checked.	NA
10	Hose according to specifications and tightened	NA
11	Flanges - nuts and bolts tightened.	NA
12	Fittings are mounted and tightened.	OK
13	Pipe supports completed and installed as required.	OK
14	Cable ladders, trays, sharp edges protected, cut ends sealed.	NA
15	Maintenance evaluation.	OK

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	BLPH-MV-404/43-LT-001	: Process Connection Water - 43-LT-001	Dwg	123A90-DDL-IN-LIS-40092		
	S/Sys	43-00	: Hydrogen Vent Header & Drum System	Module	UD		
TASK	code	C10001996	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form CJX06	Tubing Hydraulic

Flushing / Pressure testing

16	Drawings of flushing loops (P&ID tube) attached	NA
17	Equipment & valves bypassed and blinded	OK
18	Calibration certificates attached	OK
19	Type of flushing medium correct	NA
20	Printout from recorder/particle counter	NA
21	Printout from pressure indicator	OK

Final Check

22	Final inspection of pipework.	OK
23	Preservation of tested pipework.	NA
24	System/equipment labelled with: "Hot Oil flushing performed".	NA
25	If required produce Red Line Mark Up for "AS BUILT"	

TEST SPECIFIED USED

TEST FLUID: IA TEST PRESSURE BAR G: 5.5 TEST DURATION : 11 MIN

TEST EQUIPMENT: CPG 1500 SERIAL N°: 1A014ILJJIM

HOOK UP DIAGRAM Number: 123A90-DDL-IN-HD-40078

Line FROM	Line TO	Tubing cleaned			Tubing flushed			Diam ID/OD
		Yes	No	N/A	Yes	No	N/A	
BLPH-MV-404	43-LT-001	●					●	1/2" OD x Thk. 0,049"

TESTED LABEL AFFIXED DATA SHEET ATTACHED

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-02-04	2025-02-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-04T13:15:20.072Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-02-06T11:27:33.556Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	BLPH-MV-404/43-LT-001

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILJJIM
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:DD:8D)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	15000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:11:26
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	02:43:11 pm

Logger protocol

Protocollo di acquisizione elenco dati

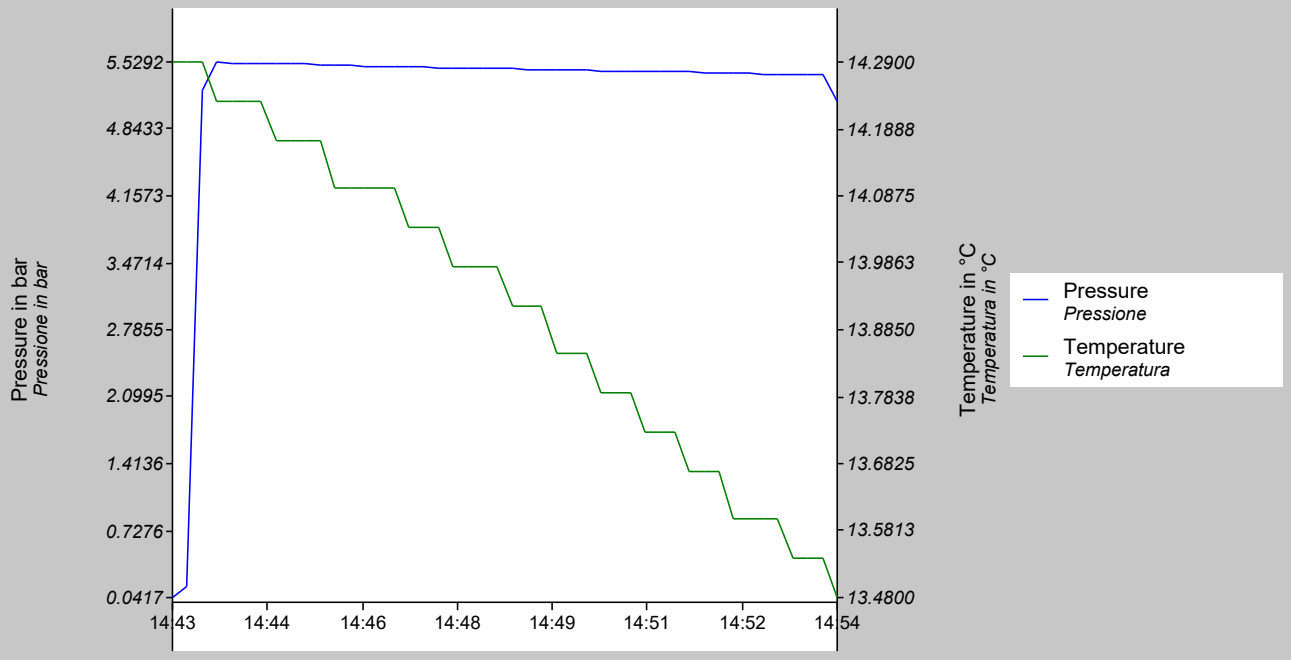
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	BLPH-MV-404/43-LT-001

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:43:11.000	0.0417	14.2900
02/01/2025 14:43:26.000	0.1617	14.2900
02/01/2025 14:43:41.000	5.2393	14.2900
02/01/2025 14:43:56.000	5.5292	14.2300
02/01/2025 14:44:11.000	5.5158	14.2300
02/01/2025 14:44:26.000	5.5152	14.2300
02/01/2025 14:44:41.000	5.5128	14.2300
02/01/2025 14:44:56.000	5.5121	14.1700
02/01/2025 14:45:11.000	5.5100	14.1700
02/01/2025 14:45:26.000	5.5060	14.1700
02/01/2025 14:45:41.000	5.5025	14.1700
02/01/2025 14:45:56.000	5.5047	14.1000
02/01/2025 14:46:11.000	5.4959	14.1000
02/01/2025 14:46:26.000	5.4860	14.1000
02/01/2025 14:46:41.000	5.4885	14.1000
02/01/2025 14:46:56.000	5.4806	14.1000
02/01/2025 14:47:11.000	5.4785	14.0400

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	BLPH-MV-404/43-LT-001

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:47:26.000	5.4750	14.0400
02/01/2025 14:47:41.000	5.4672	14.0400
02/01/2025 14:47:56.000	5.4710	13.9800
02/01/2025 14:48:11.000	5.4613	13.9800
02/01/2025 14:48:26.000	5.4642	13.9800
02/01/2025 14:48:41.000	5.4566	13.9800
02/01/2025 14:48:56.000	5.4579	13.9200
02/01/2025 14:49:11.000	5.4546	13.9200
02/01/2025 14:49:26.000	5.4452	13.9200
02/01/2025 14:49:41.000	5.4448	13.8500
02/01/2025 14:49:56.000	5.4428	13.8500
02/01/2025 14:50:11.000	5.4417	13.8500
02/01/2025 14:50:26.000	5.4401	13.7900
02/01/2025 14:50:41.000	5.4339	13.7900
02/01/2025 14:50:56.000	5.4281	13.7900
02/01/2025 14:51:11.000	5.4322	13.7300
02/01/2025 14:51:26.000	5.4254	13.7300
02/01/2025 14:51:41.000	5.4268	13.7300
02/01/2025 14:51:56.000	5.4249	13.6700
02/01/2025 14:52:11.000	5.4192	13.6700
02/01/2025 14:52:26.000	5.4207	13.6700
02/01/2025 14:52:41.000	5.4176	13.6000
02/01/2025 14:52:56.000	5.4129	13.6000
02/01/2025 14:53:11.000	5.4077	13.6000
02/01/2025 14:53:26.000	5.4060	13.6000
02/01/2025 14:53:41.000	5.4031	13.5400
02/01/2025 14:53:56.000	5.3986	13.5400
02/01/2025 14:54:11.000	5.3972	13.5400
02/01/2025 14:54:26.000	5.1268	13.4800

CROSSWIND

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

INSTRUMENT TUBING LIST

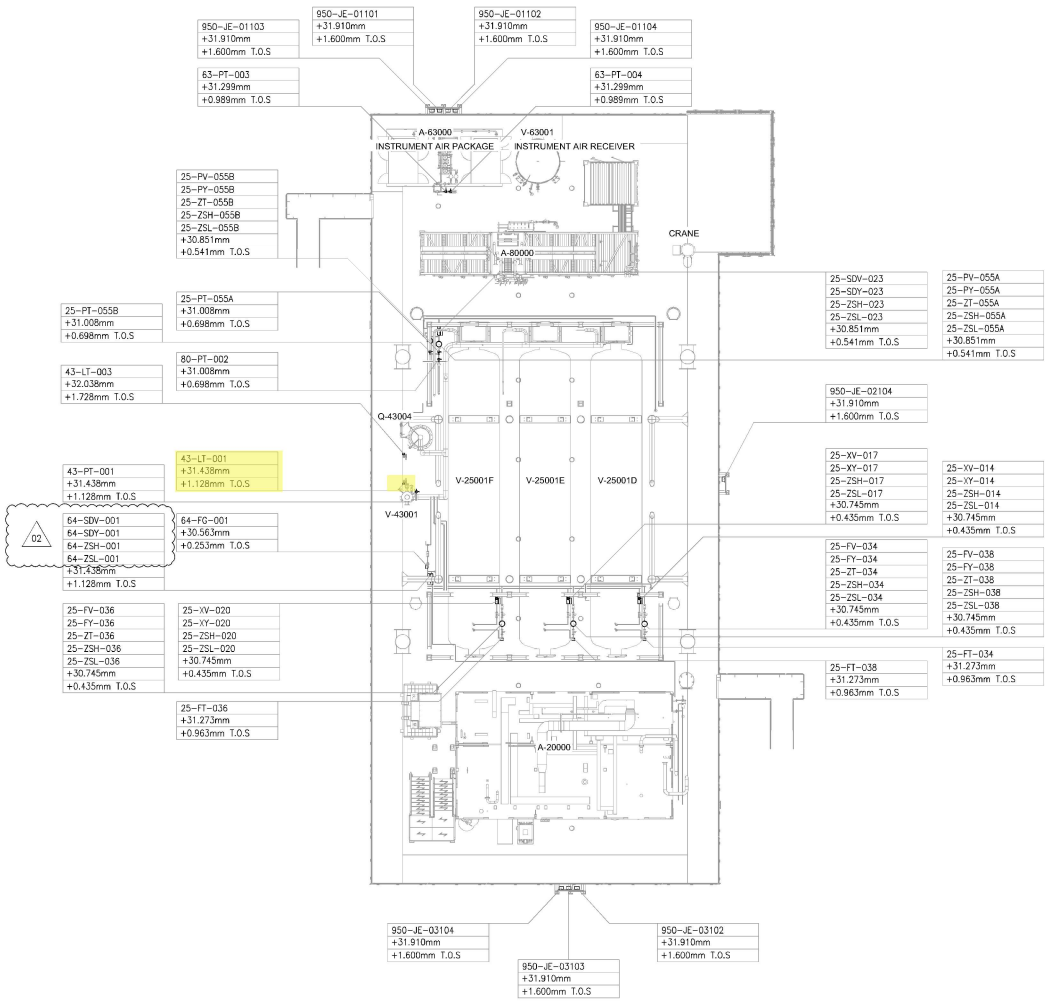
ROSETTI MARINO

Sh. 4 of 4 REV. 00 01 02 03 04 — X X X X X

								DATA TUBING									FROM AREA					TO AREA					
POS.	REV	SUPPLY SCOPE	LAINING SCOPE	TAG Tubing	P&ID	MAIN FUNCTION	SERVICE	DESIGN TEMPERATURE(C°)	OPERATING PRESSURE (Barg)	DESIGN PRESSURE (Barg)	TEST PRESSURE (Barg)	FLUID TEST	DIMENSIONS	MATERIAL	REF. DOC.	Q.TY (m)	FIRE PROOFING	HEAT TRACING	MODULE	AREA	FROM ITEM	REF. P&I	DESCRIPTION	MODULE	AREA	TO ITEM	REF. LAYOUT	DESCRIPTION	NOTE
01	04	RM	RM	**AV-63001/25-XV-011**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N_2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-011	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
02	04	RM	RM	**AV-63001/25-FV-033**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-033	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
03	04	RM	RM	**AV-63001/25-XV-008**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-008	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
04	04	RM	RM	**AV-63001/25-FV-032**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-032	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
05	04	RM	RM	**AV-63002/25-XV-020**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-020	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
06	04	RM	RM	**AV-63002/25-FV-036**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-036	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
07	04	RM	RM	**AV-63002/25-XV-017**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-017	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
08	04	RM	RM	**AV-63002/25-FV-038**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-038	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
09	04	RM	RM	**AV-63002/25-XV-014**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-014	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
10	04	RM	RM	**AV-63002/25-FV-034**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-034	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
11	04	RM	RM	**AV-63003/25-BDV-010**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-BDV-010	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
12	04	RM	RM	**AV-63003/25-PV-040**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-PV-040	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
13	04	RM	RM	**AV-63003/25-XV-012**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-012	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
14	04	RM	RM	**AV-63003/25-XV-009**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**13**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-009	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
15	04	RM	RM	**AV-63004/25-BDV-013**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-BDV-013	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
16	04	RM	RM	**AV-63004/25-PV-043**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-PV-043	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
17	04	RM	RM	**AV-63004/25-XV-015**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-XV-015	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
18	04	RM	RM	**AV-63005/64-PV-031A**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031A	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
19	04	RM	RM	**AV-63005/64-PV-031B**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**3**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031B	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
20	04	RM	RM	**AV-63006/25-BDV-022**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-022	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
21	04	RM	RM	**AV-63006/25-XV-021**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-XV-021	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
22	04	RM	RM	**AV-63006/25-PV-049**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-PV-049	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
23	04	RM	RM	**AV-63006/25-BDV-019**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-019	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
24	04	RM	RM	**AV-63006/80-XV-001**	123A90-DDL-PR-PID-80012	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	80-XV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
25	04	RM	RM	**AV-63007/25-XV-006**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-XV-006	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
26	04	RM	RM	**AV-63007/25-PV-035**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-035	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
27	04	RM	RM	**AV-63007/25-BDV-005**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
28	04	RM	RM	**AV-63007/25-PV-037**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-037	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
29	04	RM	RM	**AV-63007/25-BDV-007**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-007	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
30	04	RM	RM	**AV-63008/50-XV-001**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-001	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
31	04	RM	RM	**AV-63008/50-XV-002**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-002	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
32	04	RM	RM	**AV-63008/50-XV-003**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-003	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33	04	RM	RM	**AV-63008/50-XV-004**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-004	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33A	04	RM	RM	**AV-63009/50-XV-005**	123A90-DDL-PR-PID-80025	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63009	123A90-DDL-PR-PID-80041	Distribution Pot 9	BLPH	Lower Deck	50-XV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
34	04	RM	RM	**AV-63010/25-SDV-001**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
35	04	RM	RM	**AV-63010/25-XV-024**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-024	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
36	04	RM	RM	**AV-63010/25-XV-004**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-004	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
37	04	RM	RM	**AV-63010/25-FV-031**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-FV-031	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
38	04	RM	RM	**AV-63010/64-SDV-001**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**15**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	64-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
39	04	RM	RM	**AV-63011/25-SDV-023**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-SDV-023	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
40	04	RM	RM	**AV-63011/25-PV-055A**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055A	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
41	04	RM	RM	**AV-63011/25-PV-055B**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055B	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
42	04	RM	RM	**AV-63012/25-XV-018**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-XV-018	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
43	04	RM	RM	**AV-63012/25-PV-046**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-PV-046	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
44	04	RM	RM	**AV-63012/25-BDV-016**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-BDV-016	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
~~45~~	03	DELETED	DELETED	~~**BLPH-MV-014/26-PT-001**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-014~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~46~~	03	DELETED	DELETED	~~**BLPH-MV-013/25-PT-002**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-013~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~47~~	03	DELETED	DELETED	~~**BLPH-MV-025/26-PT-055A**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~17,7~~	~~10~~	~~17,7~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-025~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~26-PT-055A~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~48~~	03	DELETED	DELETED	~~**BLPH-MV-213/26-PT-055B**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6,5~~	~~10~~	~~3,5 / 6,5~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-213~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055B~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~49~~	03	DELETED	DELETED	~~**BLPH-MV-407/43-PT-001**~~	~~123A90-DDL-PR-PID-80029~~	~~Process Connection~~	~~Hydrogen~~	~~-10 / +80~~	~~ATM~~	~~3,5~~	~~ATM~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-407~~	~~123A90-DDL-PR-PID-80029~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~43-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~50~~	03	DELETED	DELETED	~~**BLPH-MV-411/50-PT-014**~~	~~123A90-DDL-PR-PID-80026~~	~~Process Connection~~	~~Waste Water~~	~~100~~	~~ATM~~	~~17,7~~	~~ATM~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	**0,5**	~~N.A.~~	~~YES~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-411~~	~~123A90-DDL-PR-PID-80026~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~50-PT-014~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~51~~	03	DELETED	DELETED	~~**BLPH-MV-150/63-PT-003**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-150~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-003~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~52~~	03	DELETED	DELETED	~~**BLPH-MV-151/63-PT-004**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-151~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-004~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
53	04	RM	RM	**BLPH-MV-386/64-PT-031A**	123A90-DDL-PR-PID-80027	Process Connection	Nitrogen Gas	100	6	10	11	N2 / Dry Air	1/2" OD x Thk

DRAWING NO. 123A90-DDL-IN-DL-40081

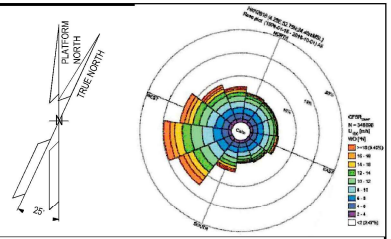
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. DRAWING_NO.

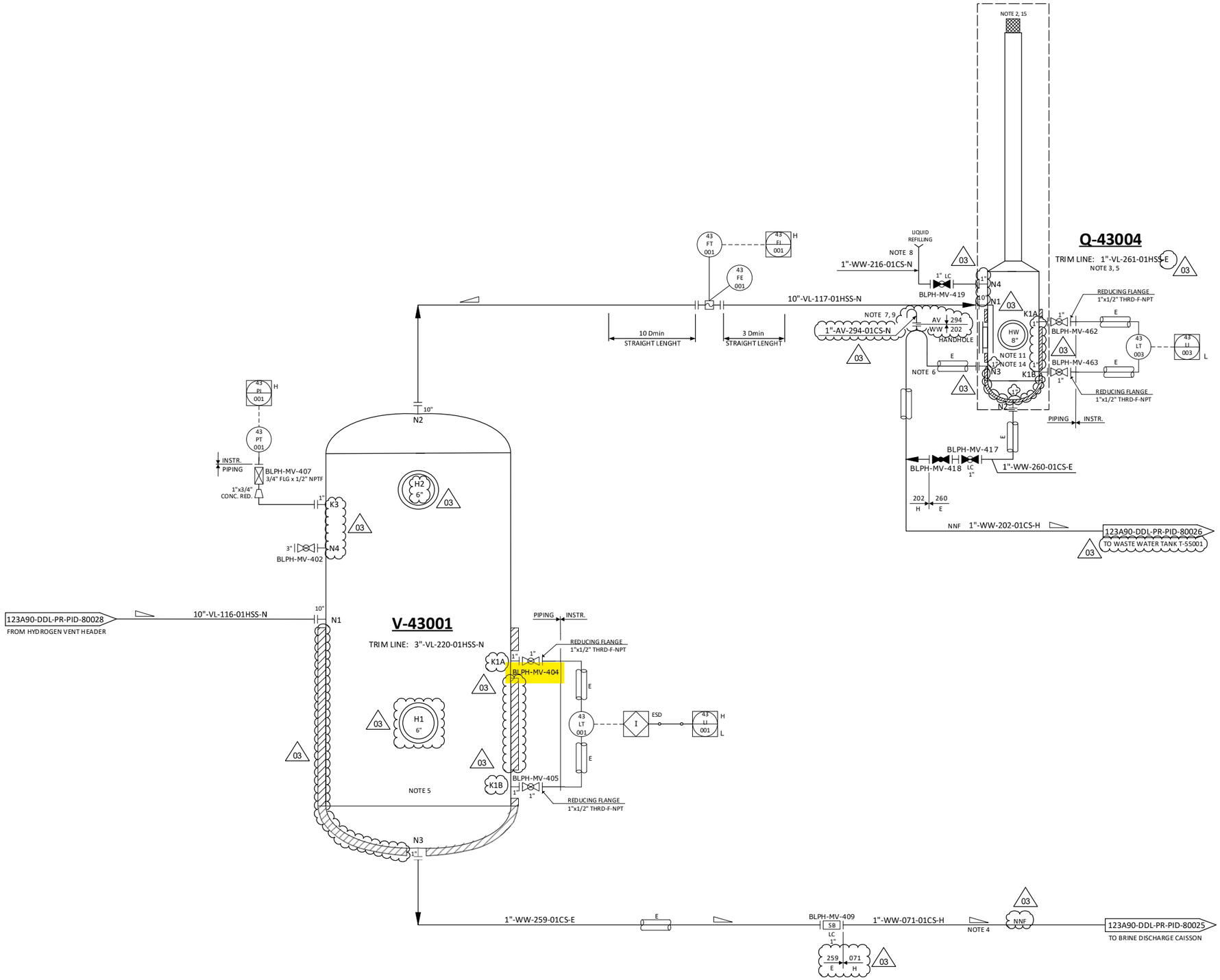
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

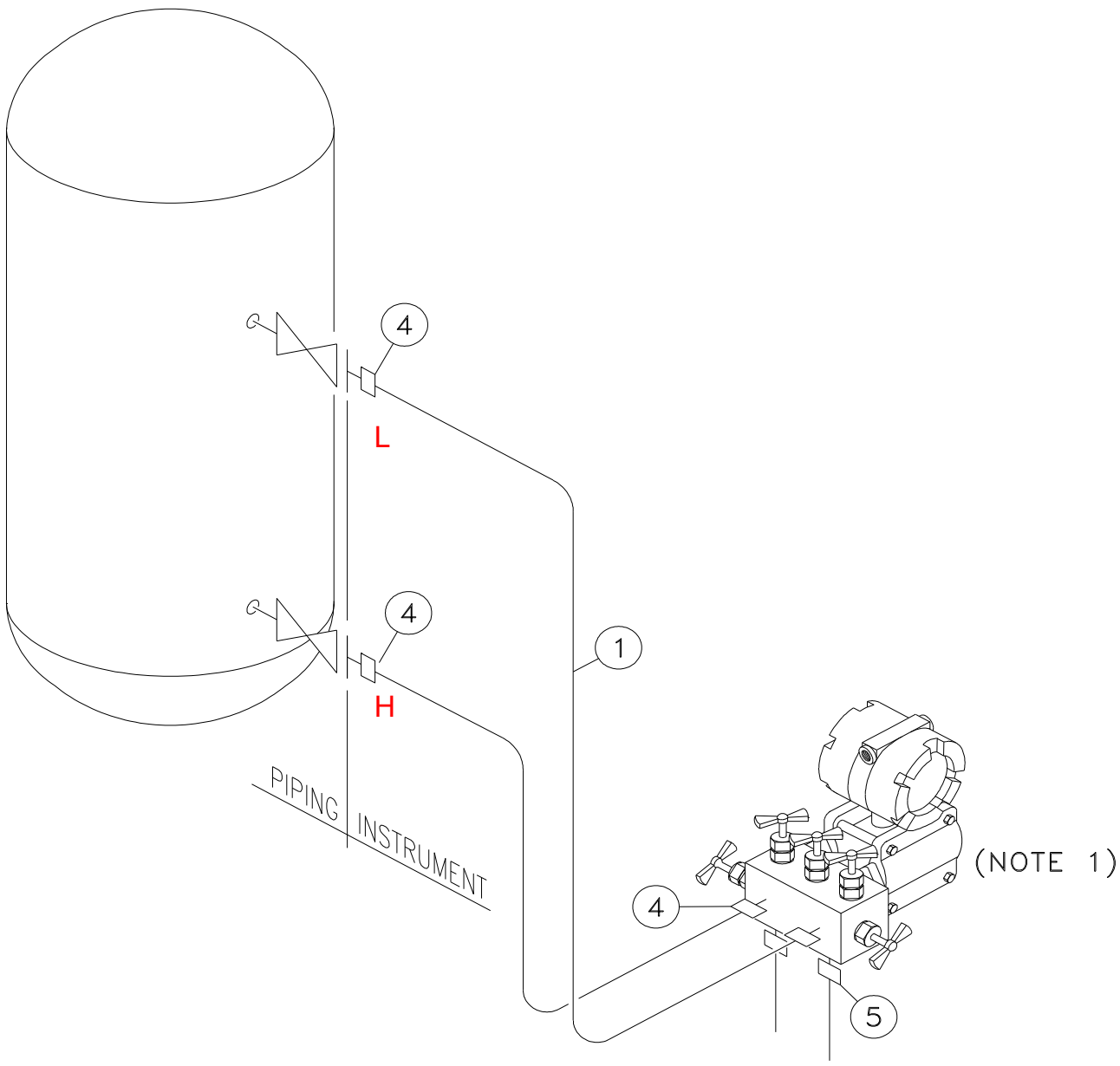
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

File Name : FILE_NAME

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Process Hook-Ups	Sh. 8 of 8 Date: 06/12/2024 Rev. 02

LEVEL TRANSMITTERS - DP Cell Type

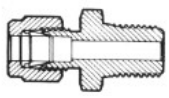
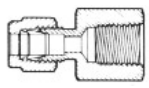
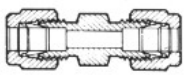


	INSTRUMENT TAG
1	43-LT-001
2	43-LT-003
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NOTES:
(1) MANIFOLD IS SUPPLIED WITH INSTRUMENT
(2) VENDOR SHALL GUARANTEE THE MATERIAL COUPLING BETWEEN TUBING AND FITTINGS.

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
4		SS316 MALE CONNECTOR	1/2" NPT x 1/2" O.D.	N. 4
1		SS 316L TUBING (NOTE 2)	1/2" x 0,049"Thk	6 m

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POS	PICTURE	DESCRIPTION		ITEM ID CODE	TOTAL					
		COMPRESSION FITTING TYPE: **DOUBLE FERRULE** THREADING: ASME B1.20.1 NPT MATERIAL: AISI 316 WORKING PRESSURE AS PER ASME B31.1 TUBING TYPE: ■ INCHES ☐ METRIC			UNIT	Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1		STRAIGHT MALE CONNECTOR	1/2" NPT-M x 3/8" O.D.		nr.					
2			1/4" NPT-M x 1/2" O.D.		nr.	102	102	102		
3			1/2" NPT-M x 1/2" O.D.		nr.	36	36	-		
4			1/2" NPT-M x 3/4" O.D.		nr.					
5			3/4" NPT-M x 3/4" O.D.		nr.					
6			3/8" NPT-M x 3/8" O.D.		nr.					
7		STRAIGHT FEMALE CONNECTOR	1/2" NPT-F x 3/8" O.D.		nr.					
8			1/4" NPT-F x 1/2" O.D.		nr.					
9			1/2" NPT-F x 1/2" O.D.		nr.					
10			1/2" NPT-F x 3/4" O.D.		nr.					
11		UNION CONNECTOR	1/4" O.D. x 1/4" O.D.		nr.					
12			3/8" O.D. x 3/8" O.D.		nr.					
13			1/2" O.D. x 1/2" O.D.		nr.	49	49	49		
14			3/4" O.D. x 3/4" O.D.		nr.					
15		ELBOW CONNECTOR	1/4" NPT-M x 1/2" O.D.		nr.	27	27	27		
16			1/2" NPT-M x 1/2" O.D.		nr.					
17										
18										
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34										

VENDOR / ORDER : **AF SYSTEM / 1724001332**

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	TDS - Tubing and Fittings	Sh. 6 of 6 Date: 06/09/2024 Rev. 01

POS	SIZE	RATING	DESCRIPTION	ITEM ID CODE	UNIT	TOTAL				
						Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1	1/2"		SS316 NIPPLE 1/2" NPT - L=100mm			40	40	2		
2	1/4"		SS316 PLUG 1/4" NPT			27	27	27		
3	1"		SS316L AIR DISTRIBUTION POT 1" 150#RF - N. 7 1/4" BALL VALVES			14	14	13		
4	1/2"	0,049"	SEAMLESS TUBING AISI 316L		m	558	558	276		
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

VENDOR / ORDER : AF SYSTEM / 1724001332

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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WIKA Italia S.r.l. & C. s.a.s.
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70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0435-SM-24
Certificate of Calibration

- data di emissione date of issue	2024-09-20
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILJJIM
- data di ricev. oggetto *date of receipt of item*	2024-09-17
- data delle misure *date of measurements*	2024-09-20
- registro di laboratorio *laboratory reference*	0435-SM-24

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico ***Electrical pressure gauge***	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILJJIM
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione ***Reference standard (RS) Dead-weight tester***	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1009,3 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	99,9	99,9
199,82	199,9	199,9	199,9
299,73	299,8	299,8	299,8
399,63	399,7	399,7	399,7
499,53	499,5	499,6	499,6
599,44	599,4	599,4	599,4
699,34	699,3	699,3	699,3
799,25	799,1	799,2	799,1
899,14	899,0	899,1	899,0
999,04	999,0	999,0	999,0

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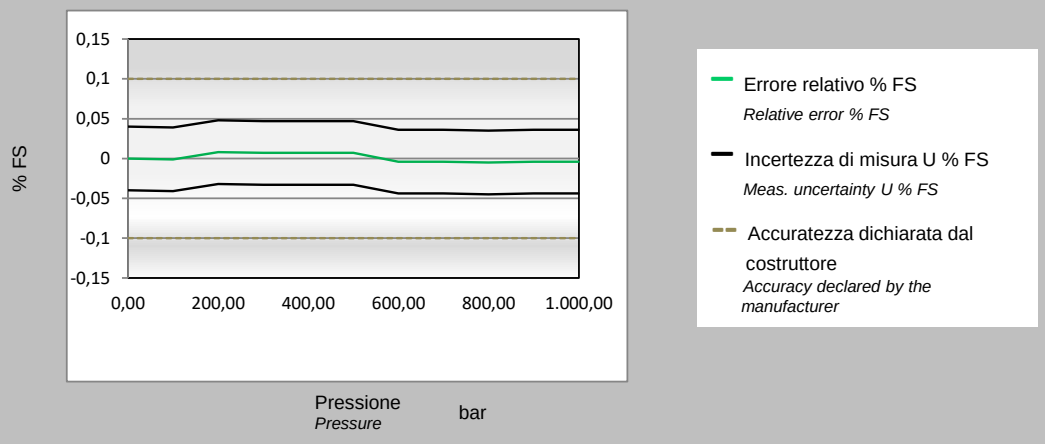
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LAT N° 114

Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	99,9	0,0	0,0	0,0	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,73	299,8	0,1	0,0	0,0	0,40
399,63	399,7	0,1	0,0	0,0	0,40
499,53	499,6	0,1	0,1	0,1	0,40
599,44	599,4	0,0	0,0	0,0	0,40
699,34	699,3	0,0	0,0	0,0	0,40
799,25	799,2	0,0	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,1	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,5 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

ITEM	Tag	BLPH-MV-405/43-LT-001	: Process Connection Water - 43-LT-001		Dwg	123A90-DDL-IN-LIS-40092	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10001997		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX06 Tubing Hydraulic

General

1	Drawings (P&ID tube) attached.	OK
2	Isometric drawings (P&ID pipe) attached.	NA
3	Check drawings at last revision.	OK
4	Material certificates for pipe/tube/fittings/flanges/hose and support clamps checked	OK
5	Welders certificates checked	NA
6	Certificate and mark-up drawings for welding WPS and WPQR and material certificates checked	NA
7	Certificates and mark-up drawings for NDT report checked	NA

Check before Flushing and/or Testing

8	Installation complete and in compliance with drawings and specifications.	PL
9	Tubing/Piping tray checked.	NA
10	Hose according to specifications and tightened	NA
11	Flanges - nuts and bolts tightened.	NA
12	Fittings are mounted and tightened.	OK
13	Pipe supports completed and installed as required.	OK
14	Cable ladders, trays, sharp edges protected, cut ends sealed.	NA
15	Maintenance evaluation.	OK

REFER TO FINAL SHEET FOR ACCEPTANCE

ITEM	Tag	BLPH-MV-405/43-LT-001	: Process Connection Water - 43-LT-001		Dwg	123A90-DDL-IN-LIS-40092	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10001997	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX06	Tubing Hydraulic

Flushing / Pressure testing

16	Drawings of flushing loops (P&ID tube) attached	NA
17	Equipment & valves bypassed and blinded	OK
18	Calibration certificates attached	OK
19	Type of flushing medium correct	NA
20	Printout from recorder/particle counter	NA
21	Printout from pressure indicator	OK

Final Check

22	Final inspection of pipework.	OK
23	Preservation of tested pipework.	NA
24	System/equipment labelled with: "Hot Oil flushing performed".	NA
25	If required produce Red Line Mark Up for "AS BUILT"	

TEST SPECIFIED USED

TEST FLUID: IA TEST PRESSURE BAR G: 5.5 TEST DURATION : 11 MIN

TEST EQUIPMENT: CPG 1500 SERIAL N°: 1A014ILJJIM

HOOK UP DIAGRAM Number: 123A90-DDL-IN-HD-40078

Line FROM	Line TO	Tubing cleaned			Tubing flushed			Diam ID/OD
		Yes	No	N/A	Yes	No	N/A	
BLPH-MV-405	43-LT-001	●					●	1/2" OD x Thk. 0,049"

TESTED LABEL AFFIXED DATA SHEET ATTACHED

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-02-04	2025-02-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-04T13:15:34.640Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-02-06T11:29:20.827Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	BLPH-MV-405/43-LT-001

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILJJIM
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:DD:8D)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	15000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:11:26
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	02:43:11 pm

Logger protocol

Protocollo di acquisizione elenco dati

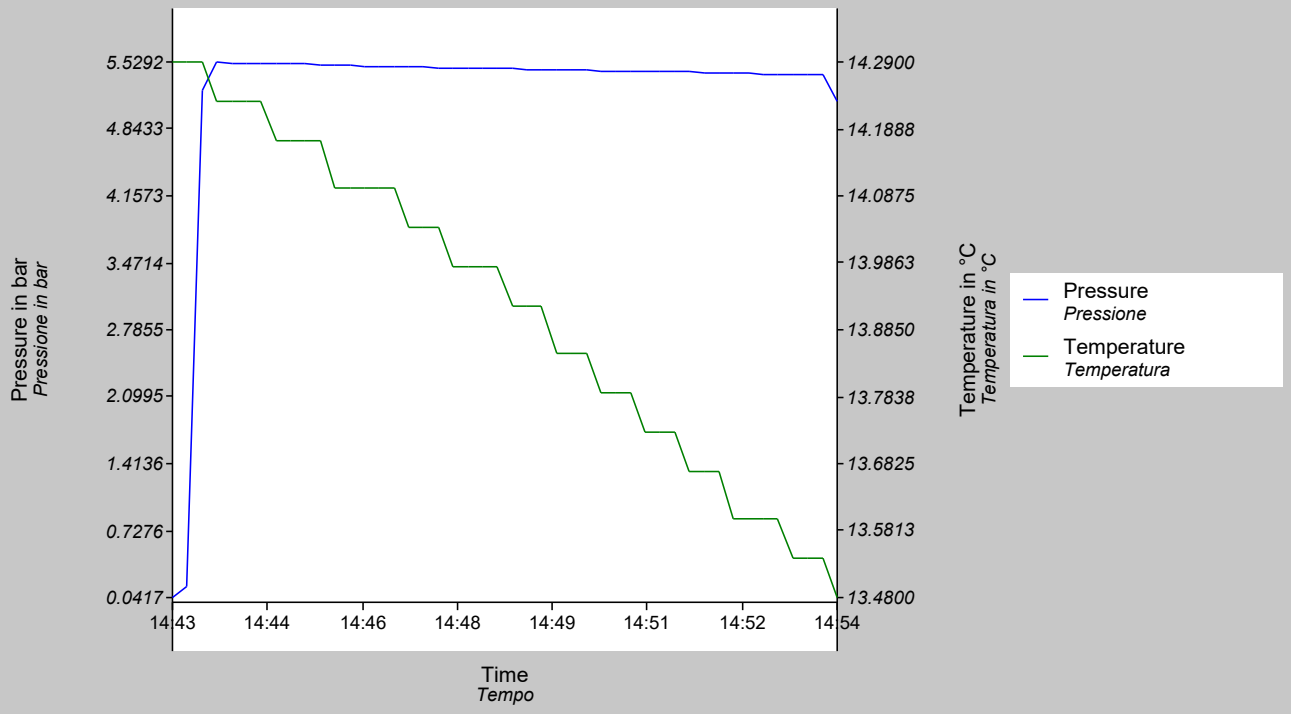
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	BLPH-MV-405/43-LT-001

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:43:11.000	0.0417	14.2900
02/01/2025 14:43:26.000	0.1617	14.2900
02/01/2025 14:43:41.000	5.2393	14.2900
02/01/2025 14:43:56.000	5.5292	14.2300
02/01/2025 14:44:11.000	5.5158	14.2300
02/01/2025 14:44:26.000	5.5152	14.2300
02/01/2025 14:44:41.000	5.5128	14.2300
02/01/2025 14:44:56.000	5.5121	14.1700
02/01/2025 14:45:11.000	5.5100	14.1700
02/01/2025 14:45:26.000	5.5060	14.1700
02/01/2025 14:45:41.000	5.5025	14.1700
02/01/2025 14:45:56.000	5.5047	14.1000
02/01/2025 14:46:11.000	5.4959	14.1000
02/01/2025 14:46:26.000	5.4860	14.1000
02/01/2025 14:46:41.000	5.4885	14.1000
02/01/2025 14:46:56.000	5.4806	14.1000
02/01/2025 14:47:11.000	5.4785	14.0400

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	BLPH-MV-405/43-LT-001

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:47:26.000	5.4750	14.0400
02/01/2025 14:47:41.000	5.4672	14.0400
02/01/2025 14:47:56.000	5.4710	13.9800
02/01/2025 14:48:11.000	5.4613	13.9800
02/01/2025 14:48:26.000	5.4642	13.9800
02/01/2025 14:48:41.000	5.4566	13.9800
02/01/2025 14:48:56.000	5.4579	13.9200
02/01/2025 14:49:11.000	5.4546	13.9200
02/01/2025 14:49:26.000	5.4452	13.9200
02/01/2025 14:49:41.000	5.4448	13.8500
02/01/2025 14:49:56.000	5.4428	13.8500
02/01/2025 14:50:11.000	5.4417	13.8500
02/01/2025 14:50:26.000	5.4401	13.7900
02/01/2025 14:50:41.000	5.4339	13.7900
02/01/2025 14:50:56.000	5.4281	13.7900
02/01/2025 14:51:11.000	5.4322	13.7300
02/01/2025 14:51:26.000	5.4254	13.7300
02/01/2025 14:51:41.000	5.4268	13.7300
02/01/2025 14:51:56.000	5.4249	13.6700
02/01/2025 14:52:11.000	5.4192	13.6700
02/01/2025 14:52:26.000	5.4207	13.6700
02/01/2025 14:52:41.000	5.4176	13.6000
02/01/2025 14:52:56.000	5.4129	13.6000
02/01/2025 14:53:11.000	5.4077	13.6000
02/01/2025 14:53:26.000	5.4060	13.6000
02/01/2025 14:53:41.000	5.4031	13.5400
02/01/2025 14:53:56.000	5.3986	13.5400
02/01/2025 14:54:11.000	5.3972	13.5400
02/01/2025 14:54:26.000	5.1268	13.4800

CROSSWIND

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

INSTRUMENT TUBING LIST

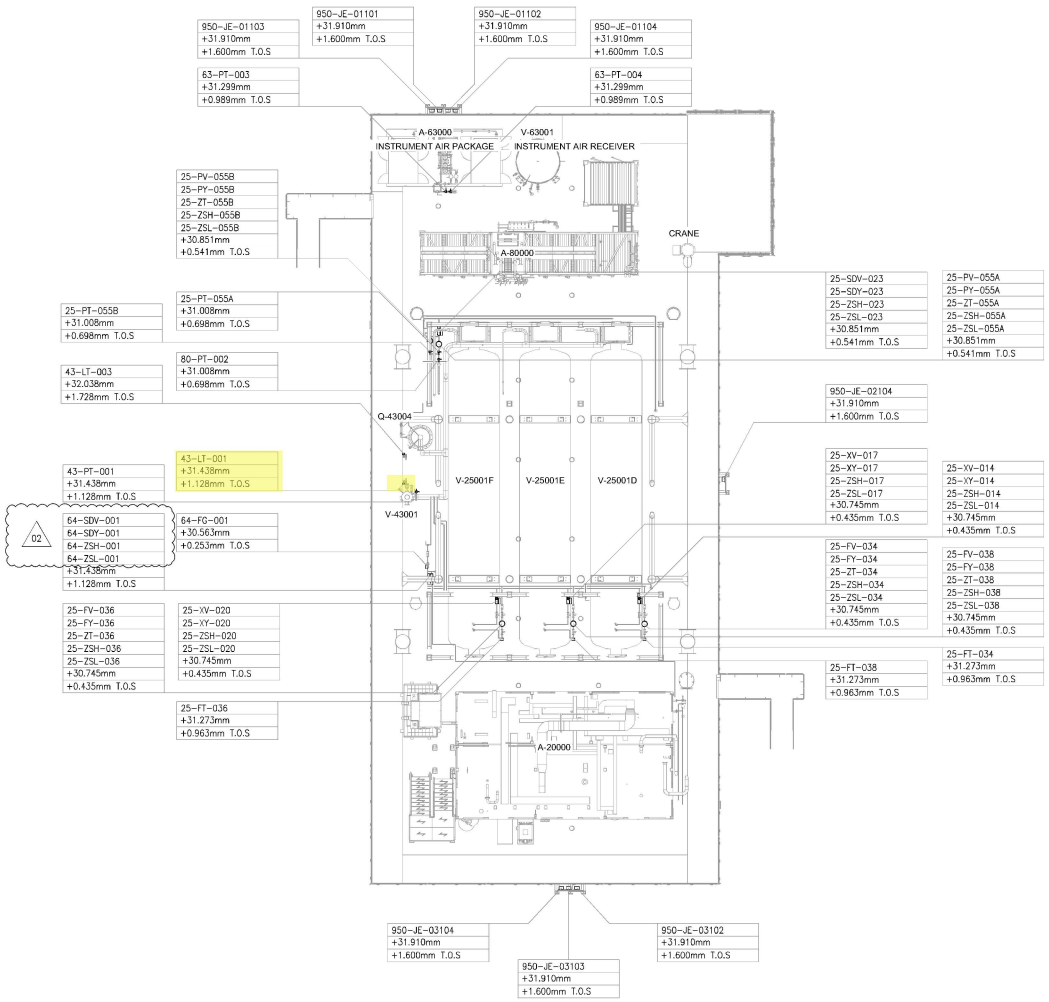
ROSETTI MARINO

Sh. 4 of 4 REV. 00 01 02 03 04 — X X X X X

					DATA TUBING											FROM AREA					TO AREA								
POS.	REV	SUPPLY SCOPE	LAINING SCOPE	TAG Tubing	P&ID	MAIN FUNCTION	SERVICE	DESIGN TEMPERATURE(C°)	OPERATING PRESSURE (Barg)	DESIGN PRESSURE (Barg)	TEST PRESSURE (Barg)	FLUID TEST	DIMENSIONS	MATERIAL	REF. DOC.	Q.TY (m)	FIRE PROOFING	HEAT TRACING	MODULE	AREA	FROM ITEM	REF. P&I	DESCRIPTION	MODULE	AREA	TO ITEM	REF. LAYOUT	DESCRIPTION	NOTE
01	04	RM	RM	**AV-63001/25-XV-011**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-011	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
02	04	RM	RM	**AV-63001/25-FV-033**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-033	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
03	04	RM	RM	**AV-63001/25-XV-008**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-008	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
04	04	RM	RM	**AV-63001/25-FV-032**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-032	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
05	04	RM	RM	**AV-63002/25-XV-020**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-020	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
06	04	RM	RM	**AV-63002/25-FV-036**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-036	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
07	04	RM	RM	**AV-63002/25-XV-017**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-017	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
08	04	RM	RM	**AV-63002/25-FV-038**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-038	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
09	04	RM	RM	**AV-63002/25-XV-014**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-014	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
10	04	RM	RM	**AV-63002/25-FV-034**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-034	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
11	04	RM	RM	**AV-63003/25-BDV-010**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-BDV-010	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
12	04	RM	RM	**AV-63003/25-PV-040**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-PV-040	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
13	04	RM	RM	**AV-63003/25-XV-012**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-012	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
14	04	RM	RM	**AV-63003/25-XV-009**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**13**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-009	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
15	04	RM	RM	**AV-63004/25-BDV-013**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-BDV-013	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
16	04	RM	RM	**AV-63004/25-PV-043**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-PV-043	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
17	04	RM	RM	**AV-63004/25-XV-015**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-XV-015	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
18	04	RM	RM	**AV-63005/64-PV-031A**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031A	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
19	04	RM	RM	**AV-63005/64-PV-031B**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**3**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031B	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
20	04	RM	RM	**AV-63006/25-BDV-022**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-022	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
21	04	RM	RM	**AV-63006/25-XV-021**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-XV-021	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
22	04	RM	RM	**AV-63006/25-PV-049**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-PV-049	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
23	04	RM	RM	**AV-63006/25-BDV-019**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-019	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
24	04	RM	RM	**AV-63006/80-XV-001**	123A90-DDL-PR-PID-80012	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	80-XV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
25	04	RM	RM	**AV-63007/25-XV-006**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-XV-006	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
26	04	RM	RM	**AV-63007/25-PV-035**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-035	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
27	04	RM	RM	**AV-63007/25-BDV-005**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
28	04	RM	RM	**AV-63007/25-PV-037**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-037	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
29	04	RM	RM	**AV-63007/25-BDV-007**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-007	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
30	04	RM	RM	**AV-63008/50-XV-001**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-001	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
31	04	RM	RM	**AV-63008/50-XV-002**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-002	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
32	04	RM	RM	**AV-63008/50-XV-003**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-003	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33	04	RM	RM	**AV-63008/50-XV-004**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-004	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33A	04	RM	RM	**AV-63009/50-XV-005**	123A90-DDL-PR-PID-80025	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63009	123A90-DDL-PR-PID-80041	Distribution Pot 9	BLPH	Lower Deck	50-XV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
34	04	RM	RM	**AV-63010/25-SDV-001**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
35	04	RM	RM	**AV-63010/25-XV-024**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-024	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
36	04	RM	RM	**AV-63010/25-XV-004**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-004	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
37	04	RM	RM	**AV-63010/25-FV-031**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-FV-031	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
38	04	RM	RM	**AV-63010/64-SDV-001**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**15**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	64-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
39	04	RM	RM	**AV-63011/25-SDV-023**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-SDV-023	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
40	04	RM	RM	**AV-63011/25-PV-055A**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055A	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
41	04	RM	RM	**AV-63011/25-PV-055B**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055B	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
42	04	RM	RM	**AV-63012/25-XV-018**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-XV-018	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
43	04	RM	RM	**AV-63012/25-PV-046**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-PV-046	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
44	04	RM	RM	**AV-63012/25-BDV-016**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-BDV-016	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
~~45~~	03	DELETED	DELETED	~~**BLPH-MV-014/25-PT-001**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-014~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~46~~	03	DELETED	DELETED	~~**BLPH-MV-013/25-PT-002**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-013~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~26 PT 002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~47~~	03	DELETED	DELETED	~~**BLPH-MV-025/26-PT-055A**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~17,7~~	~~10~~	~~17,7~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-025~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~26 PT 055A~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~48~~	03	DELETED	DELETED	~~**BLPH-MV-213/26-PT-055B**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6,5~~	~~10~~	~~3,5 / 6,5~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-213~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055B~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~49~~	03	DELETED	DELETED	~~**BLPH-MV-407/43-PT-001**~~	~~123A90-DDL-PR-PID-80029~~	~~Process Connection~~	~~Hydrogen~~	~~-10 / +80~~	~~ATM~~	~~3,5~~	~~ATM~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-407~~	~~123A90-DDL-PR-PID-80029~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~43-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~50~~	03	DELETED	DELETED	~~**BLPH-MV-411/50-PT-014**~~	~~123A90-DDL-PR-PID-80026~~	~~Process Connection~~	~~Waste Water~~	~~100~~	~~ATM~~	~~17,7~~	~~ATM~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~YES~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-411~~	~~123A90-DDL-PR-PID-80026~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~60-PT-014~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~51~~	03	DELETED	DELETED	~~**BLPH-MV-150/63-PT-003**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-150~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-003~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~52~~	03	DELETED	DELETED	~~**BLPH-MV-151/63-PT-004**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-151~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-004~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
53	04	RM	RM	**BLPH-MV-386/64-PT-031A**	123A90-DDL-PR-PID-80027	Process Connection	Nitrogen Gas	100	6	10	11	N2 /

DRAWING NO. 123A90-DDL-IN-DL-40081

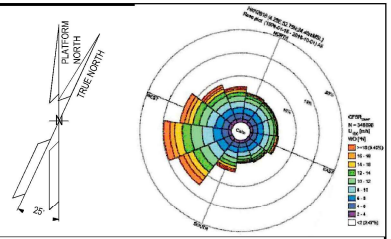
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. DRAWING_NO.

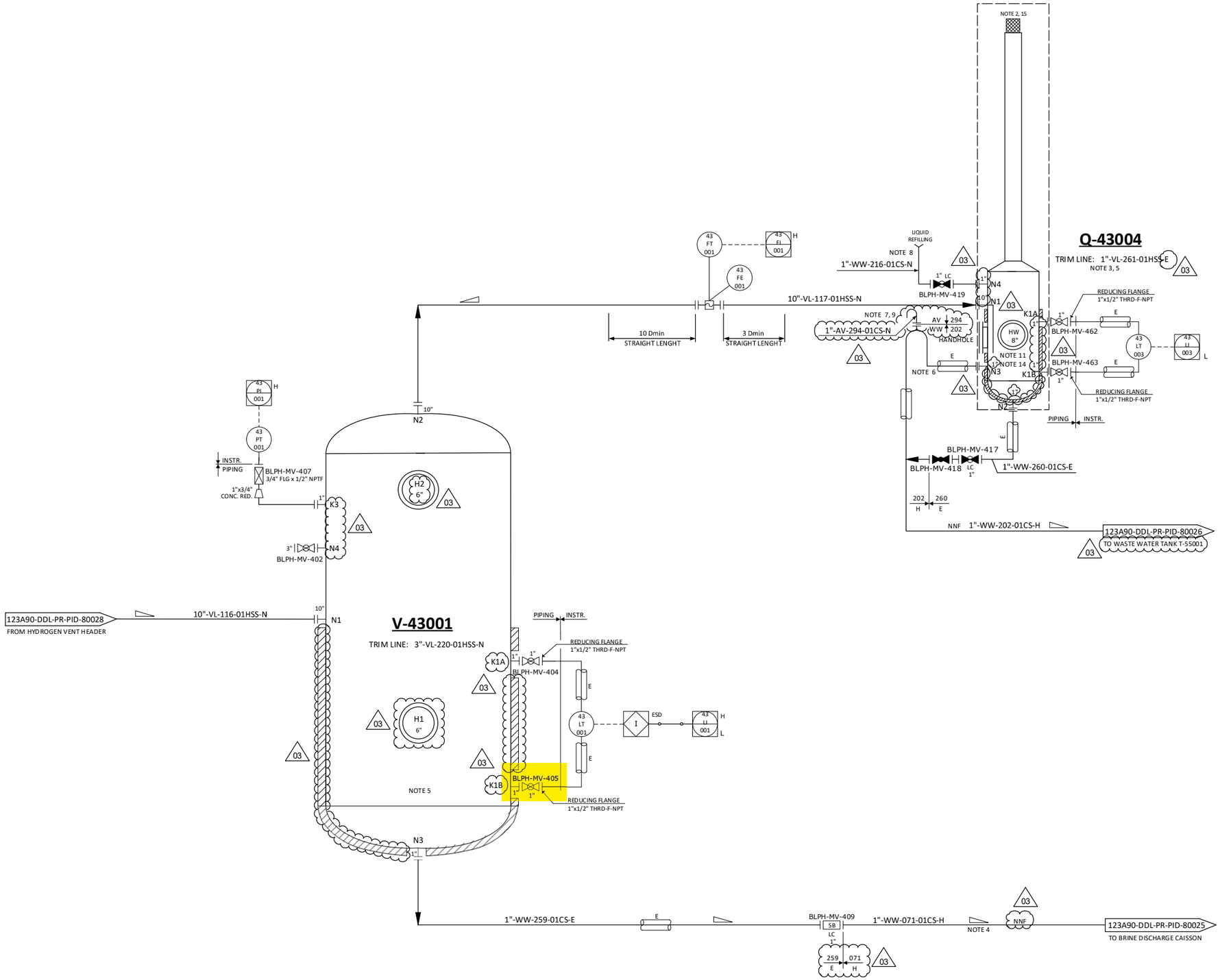
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

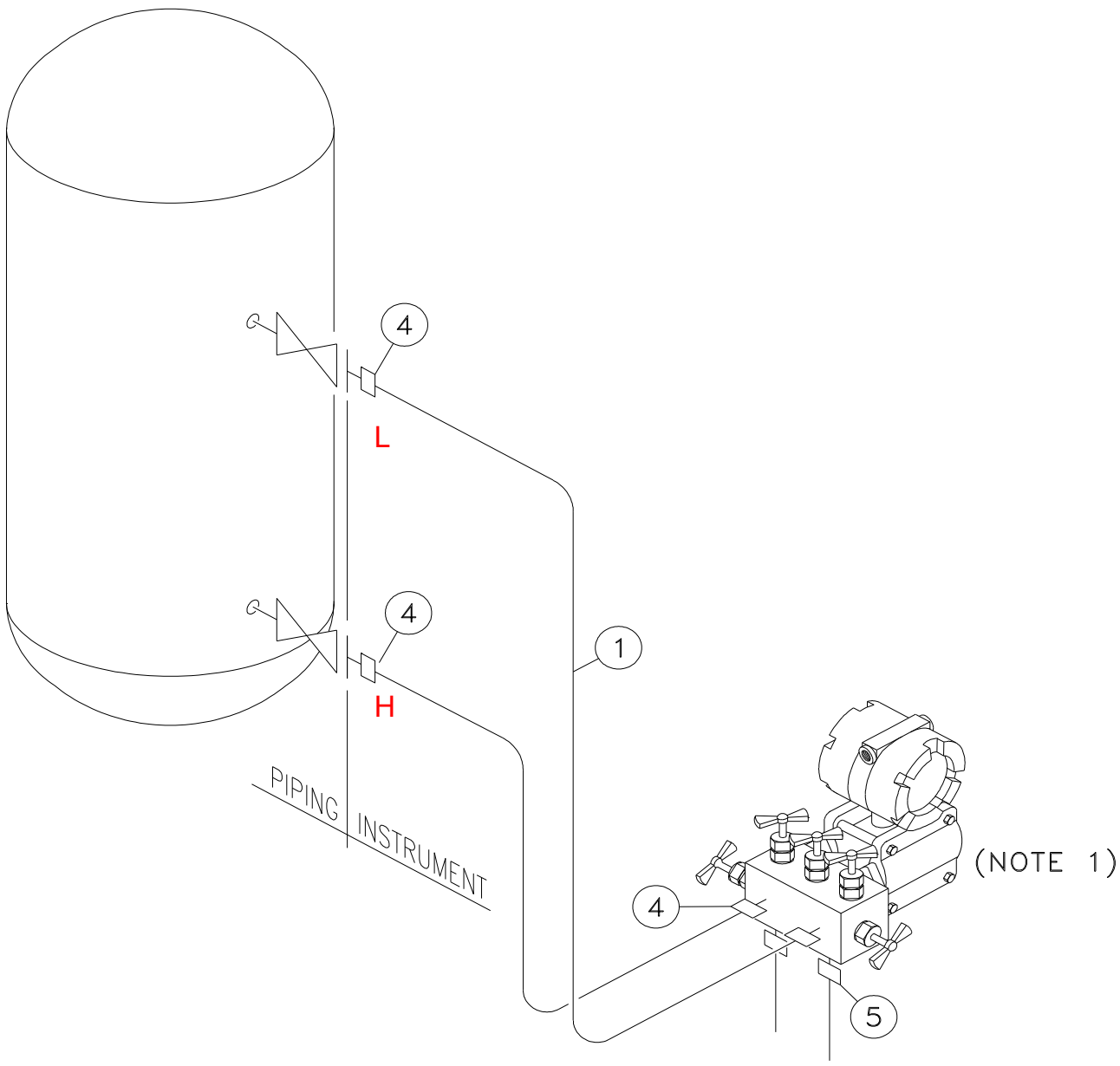
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029		SHEET 001 / REV. 03

File Name : FILE_NAME

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Process Hook-Ups	Sh. 8 of 8 Date: 06/12/2024 Rev. 02

LEVEL TRANSMITTERS - DP Cell Type

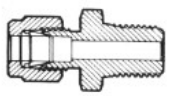
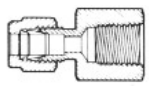
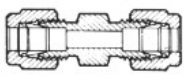


	INSTRUMENT TAG
1	43-LT-001
2	43-LT-003
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NOTES:
(1) MANIFOLD IS SUPPLIED WITH INSTRUMENT
(2) VENDOR SHALL GUARANTEE THE MATERIAL COUPLING BETWEEN TUBING AND FITTINGS.

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
4		SS316 MALE CONNECTOR	1/2" NPT x 1/2" O.D.	N. 4
1		SS 316L TUBING (NOTE 2)	1/2" x 0,049"Thk	6 m

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POS	PICTURE	DESCRIPTION		ITEM ID CODE	TOTAL					
		COMPRESSION FITTING TYPE: **DOUBLE FERRULE** THREADING: ASME B1.20.1 NPT MATERIAL: AISI 316 WORKING PRESSURE AS PER ASME B31.1 TUBING TYPE: ■ INCHES ☐ METRIC			UNIT	Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1		STRAIGHT MALE CONNECTOR	1/2" NPT-M x 3/8" O.D.		nr.					
2			1/4" NPT-M x 1/2" O.D.		nr.	102	102	102		
3			1/2" NPT-M x 1/2" O.D.		nr.	36	36	-		
4			1/2" NPT-M x 3/4" O.D.		nr.					
5			3/4" NPT-M x 3/4" O.D.		nr.					
6			3/8" NPT-M x 3/8" O.D.		nr.					
7		STRAIGHT FEMALE CONNECTOR	1/2" NPT-F x 3/8" O.D.		nr.					
8			1/4" NPT-F x 1/2" O.D.		nr.					
9			1/2" NPT-F x 1/2" O.D.		nr.					
10			1/2" NPT-F x 3/4" O.D.		nr.					
11		UNION CONNECTOR	1/4" O.D. x 1/4" O.D.		nr.					
12			3/8" O.D. x 3/8" O.D.		nr.					
13			1/2" O.D. x 1/2" O.D.		nr.	49	49	49		
14			3/4" O.D. x 3/4" O.D.		nr.					
15		ELBOW CONNECTOR	1/4" NPT-M x 1/2" O.D.		nr.	27	27	27		
16			1/2" NPT-M x 1/2" O.D.		nr.					
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
27										
28										
29										
30										
31										
32										
33										
34										

VENDOR / ORDER : **AF SYSTEM / 1724001332**

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	TDS - Tubing and Fittings	Sh. 6 of 6 Date: 06/09/2024 Rev. 01

POS	SIZE	RATING	DESCRIPTION	ITEM ID CODE	UNIT	TOTAL				
						Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1	1/2"		SS316 NIPPLE 1/2" NPT - L=100mm			40	40	2		
2	1/4"		SS316 PLUG 1/4" NPT			27	27	27		
3	1"		SS316L AIR DISTRIBUTION POT 1" 150#RF - N. 7 1/4" BALL VALVES			14	14	13		
4	1/2"	0,049"	SEAMLESS TUBING AISI 316L		m	558	558	276		
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

VENDOR / ORDER : AF SYSTEM / 1724001332

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0435-SM-24
Certificate of Calibration

- data di emissione date of issue	2024-09-20
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILJJIM
- data di ricev. oggetto *date of receipt of item*	2024-09-17
- data delle misure *date of measurements*	2024-09-20
- registro di laboratorio *laboratory reference*	0435-SM-24

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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LAT N° 114

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico ***Electrical pressure gauge***	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILJJIM
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione ***Reference standard (RS) Dead-weight tester***	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1009,3 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	99,9	99,9
199,82	199,9	199,9	199,9
299,73	299,8	299,8	299,8
399,63	399,7	399,7	399,7
499,53	499,5	499,6	499,6
599,44	599,4	599,4	599,4
699,34	699,3	699,3	699,3
799,25	799,1	799,2	799,1
899,14	899,0	899,1	899,0
999,04	999,0	999,0	999,0

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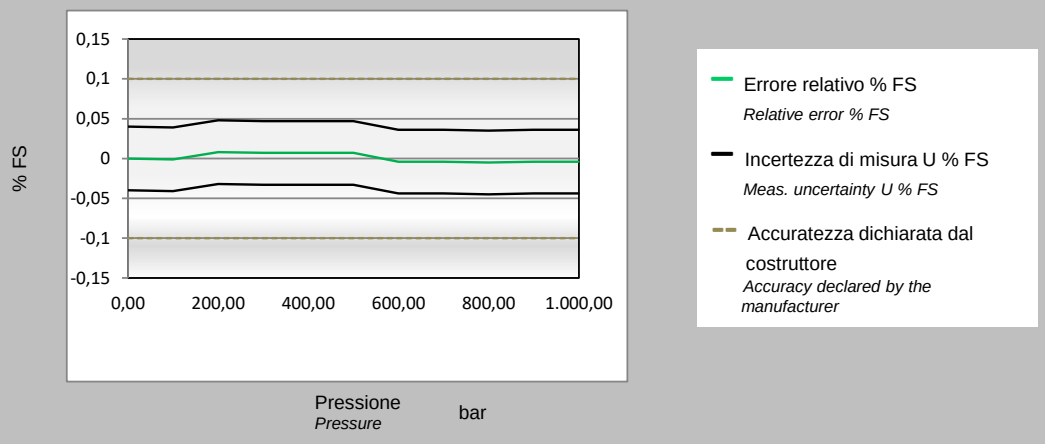
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Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	99,9	0,0	0,0	0,0	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,73	299,8	0,1	0,0	0,0	0,40
399,63	399,7	0,1	0,0	0,0	0,40
499,53	499,6	0,1	0,1	0,1	0,40
599,44	599,4	0,0	0,0	0,0	0,40
699,34	699,3	0,0	0,0	0,0	0,40
799,25	799,2	0,0	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,1	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,5 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

ITEM	Tag	BLPH-MV-462/43-LT-003	: Process Connection Water - 43-LT-003			Dwg	123A90-DDL-IN-LIS-40092
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10001998		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX06 Tubing Hydraulic

General

1	Drawings (P&ID tube) attached.	OK
2	Isometric drawings (P&ID pipe) attached.	NA
3	Check drawings at last revision.	OK
4	Material certificates for pipe/tube/fittings/flanges/hose and support clamps checked	OK
5	Welders certificates checked	NA
6	Certificate and mark-up drawings for welding WPS and WPQR and material certificates checked	NA
7	Certificates and mark-up drawings for NDT report checked	NA

Check before Flushing and/or Testing

8	Installation complete and in compliance with drawings and specifications.	PL
9	Tubing/Piping tray checked.	NA
10	Hose according to specifications and tightened	NA
11	Flanges - nuts and bolts tightened.	NA
12	Fittings are mounted and tightened.	OK
13	Pipe supports completed and installed as required.	OK
14	Cable ladders, trays, sharp edges protected, cut ends sealed.	NA
15	Maintenance evaluation.	OK

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	BLPH-MV-462/43-LT-003	: Process Connection Water - 43-LT-003	Dwg	123A90-DDL-IN-LIS-40092		
	S/Sys	43-00	: Hydrogen Vent Header & Drum System	Module	UD		
TASK	code	C10001998	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form CJX06	Tubing Hydraulic

Flushing / Pressure testing

16	Drawings of flushing loops (P&ID tube) attached	NA
17	Equipment & valves bypassed and blinded	OK
18	Calibration certificates attached	OK
19	Type of flushing medium correct	NA
20	Printout from recorder/particle counter	NA
21	Printout from pressure indicator	OK

Final Check

22	Final inspection of pipework.	OK
23	Preservation of tested pipework.	NA
24	System/equipment labelled with: "Hot Oil flushing performed".	NA
25	If required produce Red Line Mark Up for "AS BUILT"	

TEST SPECIFIED USED

TEST FLUID: IA TEST PRESSURE BAR G: 5.5 TEST DURATION : 11 MIN

TEST EQUIPMENT: CPG 1500 SERIAL N°: 1A014ILJJIM

HOOK UP DIAGRAM Number: 123A90-DDL-IN-HD-40077

Line FROM	Line TO	Tubing cleaned			Tubing flushed			Diam ID/OD
		Yes	No	N/A	Yes	No	N/A	
BLPH-MV-462	43-LT-003	●					●	1/2" OD x Thk. 0,049"

TESTED LABEL AFFIXED DATA SHEET ATTACHED

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-02-03	2025-02-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-03T13:58:40.830Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-02-06T11:30:51.391Z	

Logger protocol
Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	BLPH-MV-462/43-LT-003

Instrument
Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILJJIM
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:DD:8D)

Measurement conditions
Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	15000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:11:26
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	02:43:11 pm

Logger protocol

Protocollo di acquisizione elenco dati

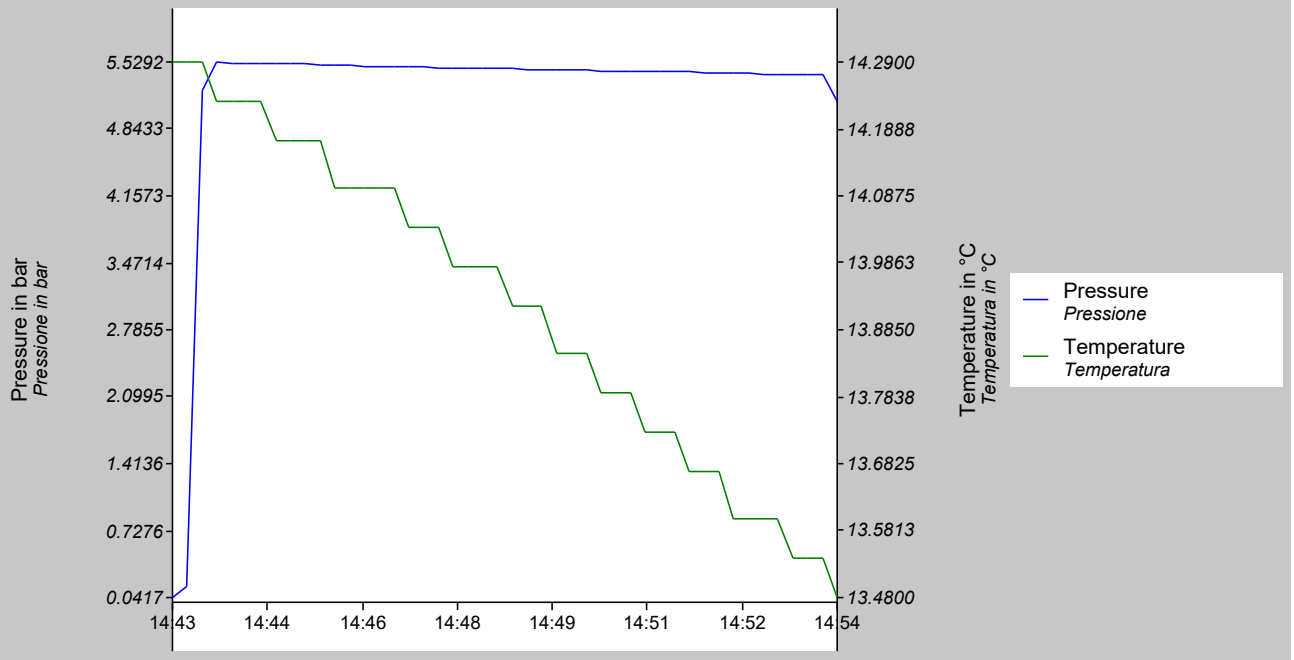
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	BLPH-MV-462/43-LT-003

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:43:11.000	0.0417	14.2900
02/01/2025 14:43:26.000	0.1617	14.2900
02/01/2025 14:43:41.000	5.2393	14.2900
02/01/2025 14:43:56.000	5.5292	14.2300
02/01/2025 14:44:11.000	5.5158	14.2300
02/01/2025 14:44:26.000	5.5152	14.2300
02/01/2025 14:44:41.000	5.5128	14.2300
02/01/2025 14:44:56.000	5.5121	14.1700
02/01/2025 14:45:11.000	5.5100	14.1700
02/01/2025 14:45:26.000	5.5060	14.1700
02/01/2025 14:45:41.000	5.5025	14.1700
02/01/2025 14:45:56.000	5.5047	14.1000
02/01/2025 14:46:11.000	5.4959	14.1000
02/01/2025 14:46:26.000	5.4860	14.1000
02/01/2025 14:46:41.000	5.4885	14.1000
02/01/2025 14:46:56.000	5.4806	14.1000
02/01/2025 14:47:11.000	5.4785	14.0400

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	BLPH-MV-462/43-LT-003

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:47:26.000	5.4750	14.0400
02/01/2025 14:47:41.000	5.4672	14.0400
02/01/2025 14:47:56.000	5.4710	13.9800
02/01/2025 14:48:11.000	5.4613	13.9800
02/01/2025 14:48:26.000	5.4642	13.9800
02/01/2025 14:48:41.000	5.4566	13.9800
02/01/2025 14:48:56.000	5.4579	13.9200
02/01/2025 14:49:11.000	5.4546	13.9200
02/01/2025 14:49:26.000	5.4452	13.9200
02/01/2025 14:49:41.000	5.4448	13.8500
02/01/2025 14:49:56.000	5.4428	13.8500
02/01/2025 14:50:11.000	5.4417	13.8500
02/01/2025 14:50:26.000	5.4401	13.7900
02/01/2025 14:50:41.000	5.4339	13.7900
02/01/2025 14:50:56.000	5.4281	13.7900
02/01/2025 14:51:11.000	5.4322	13.7300
02/01/2025 14:51:26.000	5.4254	13.7300
02/01/2025 14:51:41.000	5.4268	13.7300
02/01/2025 14:51:56.000	5.4249	13.6700
02/01/2025 14:52:11.000	5.4192	13.6700
02/01/2025 14:52:26.000	5.4207	13.6700
02/01/2025 14:52:41.000	5.4176	13.6000
02/01/2025 14:52:56.000	5.4129	13.6000
02/01/2025 14:53:11.000	5.4077	13.6000
02/01/2025 14:53:26.000	5.4060	13.6000
02/01/2025 14:53:41.000	5.4031	13.5400
02/01/2025 14:53:56.000	5.3986	13.5400
02/01/2025 14:54:11.000	5.3972	13.5400
02/01/2025 14:54:26.000	5.1268	13.4800

CROSSWIND

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

INSTRUMENT TUBING LIST

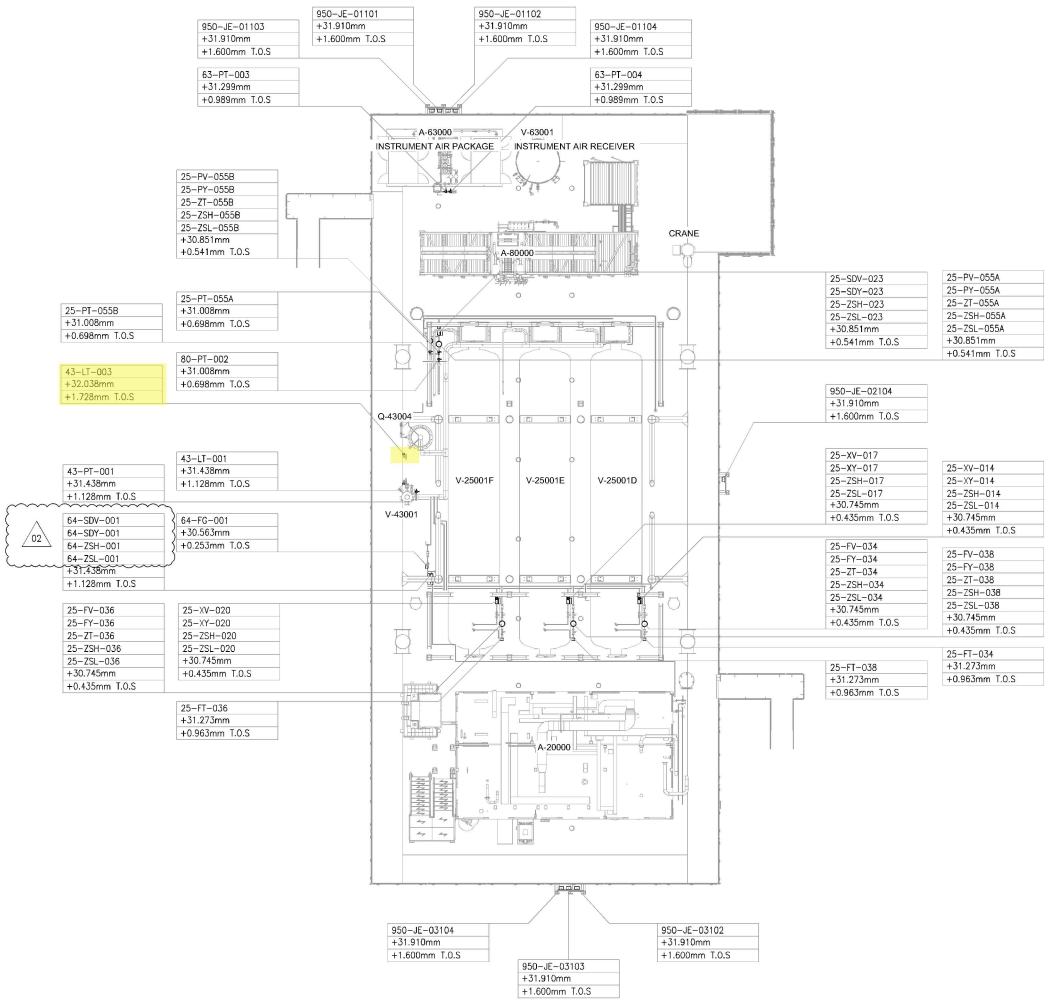
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Sh. 4 of 4 REV. 00 01 02 03 04 — X X X X X

								DATA TUBING									FROM AREA					TO AREA					
POS.	REV	SUPPLY SCOPE	LAINING SCOPE	TAG Tubing	P&ID	MAIN FUNCTION	SERVICE	DESIGN TEMPERATURE(C°)	OPERATING PRESSURE (Barg)	DESIGN PRESSURE (Barg)	TEST PRESSURE (Barg)	FLUID TEST	DIMENSIONS	MATERIAL	REF. DOC.	Q.TY (m)	FIRE PROOFING	HEAT TRACING	MODULE	AREA	FROM ITEM	REF. P&I	DESCRIPTION	MODULE	AREA	TO ITEM	REF. LAYOUT	DESCRIPTION	NOTE
01	04	RM	RM	**AV-63001/25-XV-011**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-011	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
02	04	RM	RM	**AV-63001/25-FV-033**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-033	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
03	04	RM	RM	**AV-63001/25-XV-008**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-008	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
04	04	RM	RM	**AV-63001/25-FV-032**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-032	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
05	04	RM	RM	**AV-63002/25-XV-020**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-020	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
06	04	RM	RM	**AV-63002/25-FV-036**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-036	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
07	04	RM	RM	**AV-63002/25-XV-017**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-017	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
08	04	RM	RM	**AV-63002/25-FV-038**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-038	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
09	04	RM	RM	**AV-63002/25-XV-014**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-014	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
10	04	RM	RM	**AV-63002/25-FV-034**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-034	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
11	04	RM	RM	**AV-63003/25-BDV-010**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-BDV-010	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
12	04	RM	RM	**AV-63003/25-PV-040**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-PV-040	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
13	04	RM	RM	**AV-63003/25-XV-012**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-012	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
14	04	RM	RM	**AV-63003/25-XV-009**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**13**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-009	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
15	04	RM	RM	**AV-63004/25-BDV-013**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-BDV-013	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
16	04	RM	RM	**AV-63004/25-PV-043**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-PV-043	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
17	04	RM	RM	**AV-63004/25-XV-015**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-XV-015	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
18	04	RM	RM	**AV-63005/64-PV-031A**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031A	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
19	04	RM	RM	**AV-63005/64-PV-031B**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**3**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031B	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
20	04	RM	RM	**AV-63006/25-BDV-022**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-022	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
21	04	RM	RM	**AV-63006/25-XV-021**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-XV-021	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
22	04	RM	RM	**AV-63006/25-PV-049**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-PV-049	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
23	04	RM	RM	**AV-63006/25-BDV-019**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-019	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
24	04	RM	RM	**AV-63006/80-XV-001**	123A90-DDL-PR-PID-80012	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	80-XV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
25	04	RM	RM	**AV-63007/25-XV-006**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-XV-006	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
26	04	RM	RM	**AV-63007/25-PV-035**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-035	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
27	04	RM	RM	**AV-63007/25-BDV-005**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
28	04	RM	RM	**AV-63007/25-PV-037**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-037	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
29	04	RM	RM	**AV-63007/25-BDV-007**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-007	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
30	04	RM	RM	**AV-63008/50-XV-001**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-001	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
31	04	RM	RM	**AV-63008/50-XV-002**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-002	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
32	04	RM	RM	**AV-63008/50-XV-003**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-003	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33	04	RM	RM	**AV-63008/50-XV-004**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-004	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33A	04	RM	RM	**AV-63009/50-XV-005**	123A90-DDL-PR-PID-80025	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63009	123A90-DDL-PR-PID-80041	Distribution Pot 9	BLPH	Lower Deck	50-XV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
34	04	RM	RM	**AV-63010/25-SDV-001**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
35	04	RM	RM	**AV-63010/25-XV-024**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-024	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
36	04	RM	RM	**AV-63010/25-XV-004**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-004	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
37	04	RM	RM	**AV-63010/25-FV-031**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-FV-031	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
38	04	RM	RM	**AV-63010/64-SDV-001**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**15**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	64-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
39	04	RM	RM	**AV-63011/25-SDV-023**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-SDV-023	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
40	04	RM	RM	**AV-63011/25-PV-055A**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055A	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
41	04	RM	RM	**AV-63011/25-PV-055B**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055B	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
42	04	RM	RM	**AV-63012/25-XV-018**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-XV-018	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
43	04	RM	RM	**AV-63012/25-PV-046**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-PV-046	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
44	04	RM	RM	**AV-63012/25-BDV-016**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-BDV-016	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
~~45~~	03	DELETED	DELETED	~~**BLPH-MV-014/25-PT-001**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-014~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~46~~	03	DELETED	DELETED	~~**BLPH-MV-013/25-PT-002**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-013~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~47~~	03	DELETED	DELETED	~~**BLPH-MV-025/26-PT-055A**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~17,7~~	~~10~~	~~17,7~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-025~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~26-PT-055A~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~48~~	03	DELETED	DELETED	~~**BLPH-MV-213/26-PT-055B**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6,5~~	~~10~~	~~3,5 / 6,5~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-213~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055B~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~49~~	03	DELETED	DELETED	~~**BLPH-MV-407/43-PT-001**~~	~~123A90-DDL-PR-PID-80029~~	~~Process Connection~~	~~Hydrogen~~	~~-10 / +80~~	~~ATM~~	~~3,5~~	~~ATM~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-407~~	~~123A90-DDL-PR-PID-80029~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~43-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~50~~	03	DELETED	DELETED	~~**BLPH-MV-411/50-PT-014**~~	~~123A90-DDL-PR-PID-80026~~	~~Process Connection~~	~~Waste Water~~	~~100~~	~~ATM~~	~~17,7~~	~~ATM~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~YES~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-411~~	~~123A90-DDL-PR-PID-80026~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~60-PT-014~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~51~~	03	DELETED	DELETED	~~**BLPH-MV-150/63-PT-003**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-150~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-003~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~52~~	03	DELETED	DELETED	~~**BLPH-MV-151/63-PT-004**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-151~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-004~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
53	04	RM	RM	**BLPH-MV-386/64-PT-031A**	123A90-DDL-PR-PID-80027	Process Connection	Nitrogen Gas	100	6	10	11	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DD

DRAWING NO. 123A90-DDL-IN-DL-40081

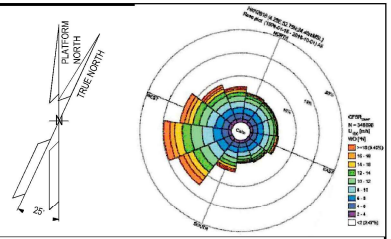
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. DRAWING_NO.

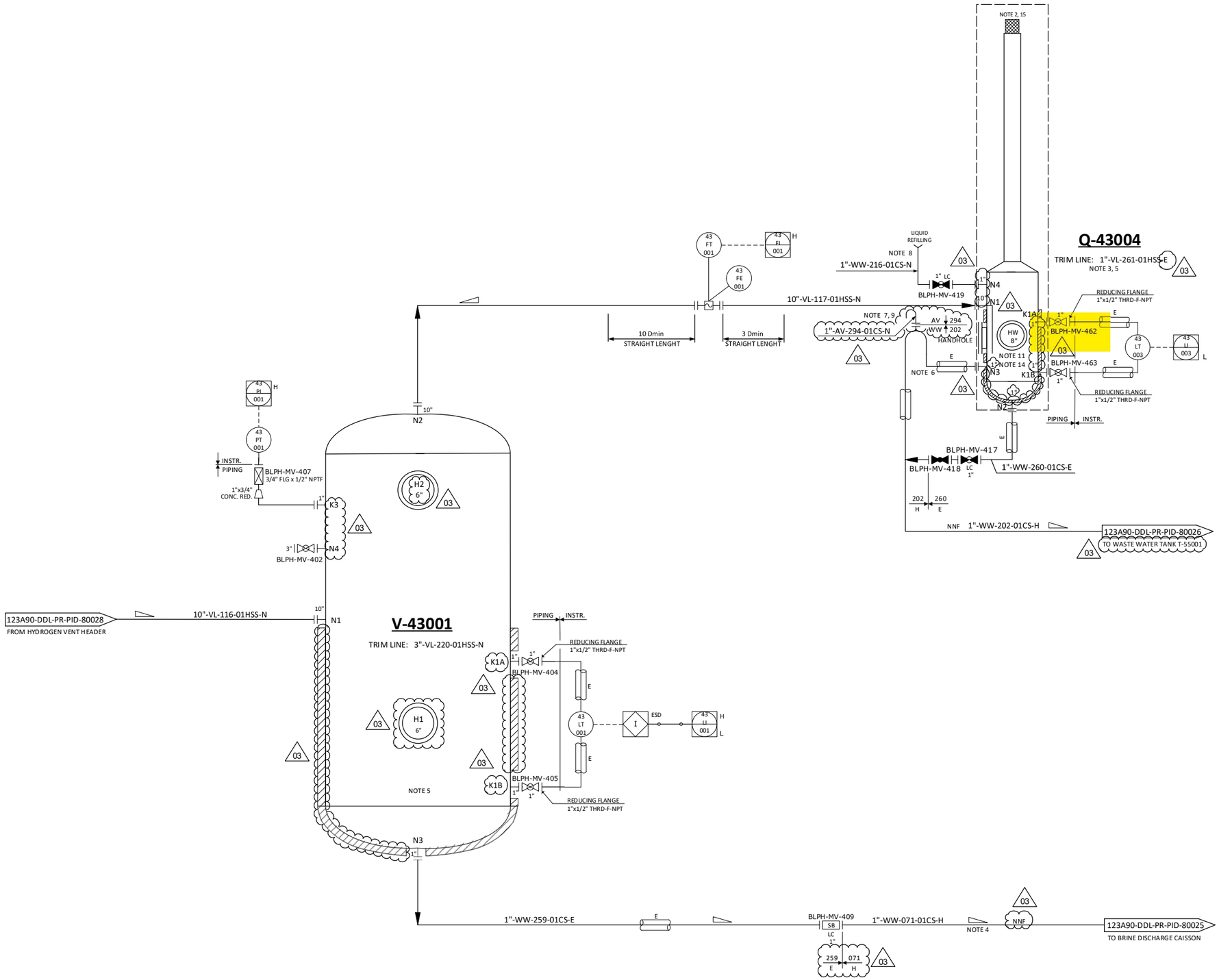
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

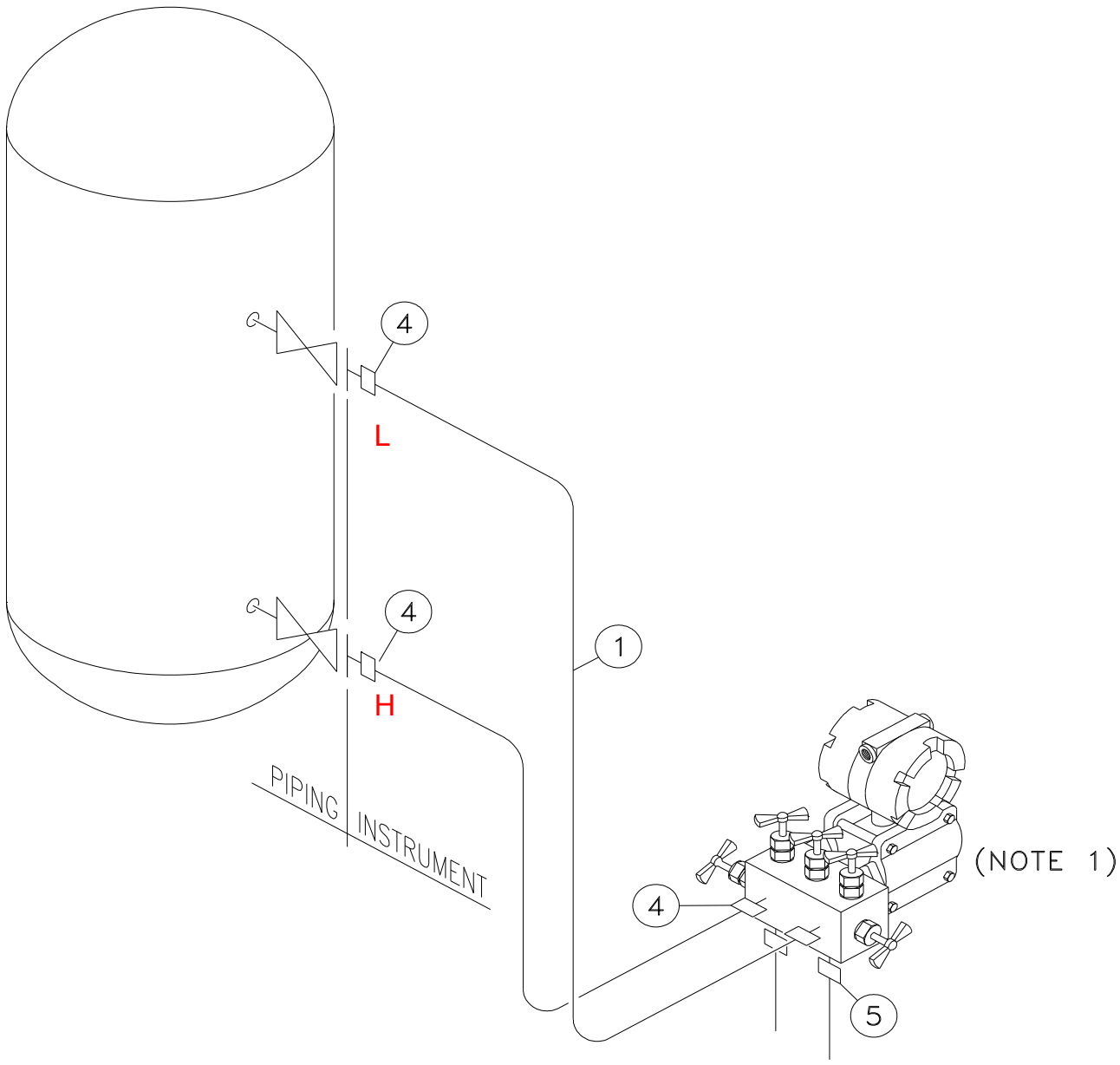
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80029		SHEET 001	REV. 03

File Name : FILE_NAME

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Process Hook-Ups	Sh. 8 of 8 Date: 06/12/2024 Rev. 02

LEVEL TRANSMITTERS - DP Cell Type

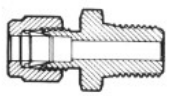
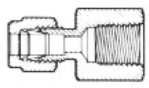
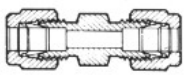


INSTRUMENT TAG	
1	43-LT-001
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NOTES:
(1) MANIFOLD IS SUPPLIED WITH INSTRUMENT
(2) VENDOR SHALL GUARANTEE THE MATERIAL COUPLING BETWEEN TUBING AND FITTINGS.

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
4		SS316 MALE CONNECTOR	1/2" NPT x 1/2" O.D.	N. 4
1		SS 316L TUBING (NOTE 2)	1/2" x 0,049"Thk	6 m

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POS	PICTURE	DESCRIPTION		ITEM ID CODE	TOTAL					
		COMPRESSION FITTING TYPE: **DOUBLE FERRULE** THREADING: ASME B1.20.1 NPT MATERIAL: AISI 316 WORKING PRESSURE AS PER ASME B31.1 TUBING TYPE: ■ INCHES ☐ METRIC			UNIT	Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1		STRAIGHT MALE CONNECTOR	1/2" NPT-M x 3/8" O.D.		nr.					
2			1/4" NPT-M x 1/2" O.D.		nr.	102	102	102		
3			1/2" NPT-M x 1/2" O.D.		nr.	36	36	-		
4			1/2" NPT-M x 3/4" O.D.		nr.					
5			3/4" NPT-M x 3/4" O.D.		nr.					
6			3/8" NPT-M x 3/8" O.D.		nr.					
7		STRAIGHT FEMALE CONNECTOR	1/2" NPT-F x 3/8" O.D.		nr.					
8			1/4" NPT-F x 1/2" O.D.		nr.					
9			1/2" NPT-F x 1/2" O.D.		nr.					
10			1/2" NPT-F x 3/4" O.D.		nr.					
11		UNION CONNECTOR	1/4" O.D. x 1/4" O.D.		nr.					
12			3/8" O.D. x 3/8" O.D.		nr.					
13			1/2" O.D. x 1/2" O.D.		nr.	49	49	49		
14			3/4" O.D. x 3/4" O.D.		nr.					
15		ELBOW CONNECTOR	1/4" NPT-M x 1/2" O.D.		nr.	27	27	27		
16			1/2" NPT-M x 1/2" O.D.		nr.					
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VENDOR / ORDER : **AF SYSTEM / 1724001332**

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	TDS - Tubing and Fittings	Sh. 6 of 6 Date: 06/09/2024 Rev. 01

POS	SIZE	RATING	DESCRIPTION	ITEM ID CODE	UNIT	TOTAL				
						Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1	1/2"		SS316 NIPPLE 1/2" NPT - L=100mm			40	40	2		
2	1/4"		SS316 PLUG 1/4" NPT			27	27	27		
3	1"		SS316L AIR DISTRIBUTION POT 1" 150#RF - N. 7 1/4" BALL VALVES			14	14	13		
4	1/2"	0,049"	SEAMLESS TUBING AISI 316L		m	558	558	276		
5										
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VENDOR / ORDER : AF SYSTEM / 1724001332

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0435-SM-24
Certificate of Calibration

- data di emissione date of issue	2024-09-20
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILJJIM
- data di ricev. oggetto *date of receipt of item*	2024-09-17
- data delle misure *date of measurements*	2024-09-20
- registro di laboratorio *laboratory reference*	0435-SM-24

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico ***Electrical pressure gauge***	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILJJIM
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione ***Reference standard (RS) Dead-weight tester***	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1009,3 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	99,9	99,9
199,82	199,9	199,9	199,9
299,73	299,8	299,8	299,8
399,63	399,7	399,7	399,7
499,53	499,5	499,6	499,6
599,44	599,4	599,4	599,4
699,34	699,3	699,3	699,3
799,25	799,1	799,2	799,1
899,14	899,0	899,1	899,0
999,04	999,0	999,0	999,0

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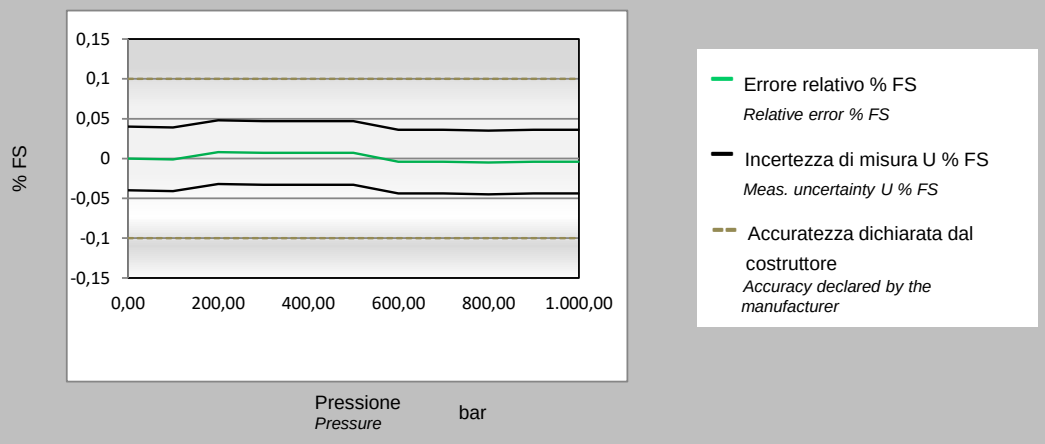
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Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	99,9	0,0	0,0	0,0	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,73	299,8	0,1	0,0	0,0	0,40
399,63	399,7	0,1	0,0	0,0	0,40
499,53	499,6	0,1	0,1	0,1	0,40
599,44	599,4	0,0	0,0	0,0	0,40
699,34	699,3	0,0	0,0	0,0	0,40
799,25	799,2	0,0	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,1	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,5 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

ITEM	Tag	BLPH-MV-463/43-LT-003	: Process Connection Water - 43-LT-003			Dwg	123A90-DDL-IN-LIS-40092
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10001999		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX06 Tubing Hydraulic

General

1	Drawings (P&ID tube) attached.	OK
2	Isometric drawings (P&ID pipe) attached.	NA
3	Check drawings at last revision.	OK
4	Material certificates for pipe/tube/fittings/flanges/hose and support clamps checked	OK
5	Welders certificates checked	NA
6	Certificate and mark-up drawings for welding WPS and WPQR and material certificates checked	NA
7	Certificates and mark-up drawings for NDT report checked	NA

Check before Flushing and/or Testing

8	Installation complete and in compliance with drawings and specifications.	PL
9	Tubing/Piping tray checked.	NA
10	Hose according to specifications and tightened	NA
11	Flanges - nuts and bolts tightened.	NA
12	Fittings are mounted and tightened.	OK
13	Pipe supports completed and installed as required.	OK
14	Cable ladders, trays, sharp edges protected, cut ends sealed.	NA
15	Maintenance evaluation.	OK

REFER TO FINAL SHEET FOR ACCEPTANCE

ITEM	Tag	BLPH-MV-463/43-LT-003	: Process Connection Water - 43-LT-003			Dwg	123A90-DDL-IN-LIS-40092
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10001999		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental Form CJX06		Tubing Hydraulic

Flushing / Pressure testing

16	Drawings of flushing loops (P&ID tube) attached	NA
17	Equipment & valves bypassed and blinded	OK
18	Calibration certificates attached	OK
19	Type of flushing medium correct	NA
20	Printout from recorder/particle counter	NA
21	Printout from pressure indicator	OK

Final Check

22	Final inspection of pipework.	OK
23	Preservation of tested pipework.	NA
24	System/equipment labelled with: "Hot Oil flushing performed".	NA
25	If required produce Red Line Mark Up for "AS BUILT"	

TEST SPECIFIED USED

TEST FLUID: IA TEST PRESSURE BAR G: 5.5 TEST DURATION : 11 MIN

TEST EQUIPMENT: CPG 1500 SERIAL N°: 1A014ILJJIM

HOOK UP DIAGRAM Number: 123A90-DDL-IN-HD-40077

Line FROM	Line TO	Tubing cleaned			Tubing flushed			Diam ID/OD
		Yes	No	N/A	Yes	No	N/A	
BLPH-MV-463	43-LT-003	●					●	1/2" OD x Thk. 0,049"

TESTED LABEL AFFIXED DATA SHEET ATTACHED

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-02-03	2025-02-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-03T13:58:58.292Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-02-06T11:34:16.479Z	

Logger protocol
Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	BLPH-MV-462/43-LT-003

Instrument
Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILJJIM
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:DD:8D)

Measurement conditions
Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	15000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:11:26
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	02:43:11 pm

Logger protocol

Protocollo di acquisizione elenco dati

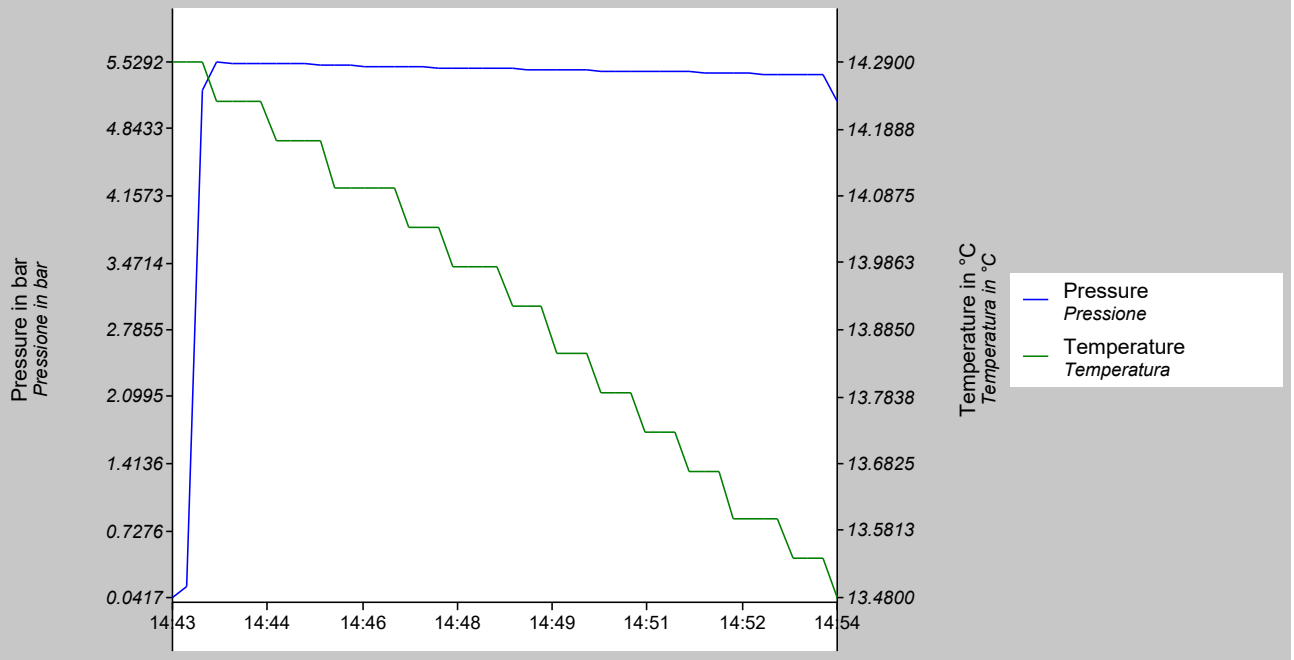
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	BLPH-MV-462/43-LT-003

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:43:11.000	0.0417	14.2900
02/01/2025 14:43:26.000	0.1617	14.2900
02/01/2025 14:43:41.000	5.2393	14.2900
02/01/2025 14:43:56.000	5.5292	14.2300
02/01/2025 14:44:11.000	5.5158	14.2300
02/01/2025 14:44:26.000	5.5152	14.2300
02/01/2025 14:44:41.000	5.5128	14.2300
02/01/2025 14:44:56.000	5.5121	14.1700
02/01/2025 14:45:11.000	5.5100	14.1700
02/01/2025 14:45:26.000	5.5060	14.1700
02/01/2025 14:45:41.000	5.5025	14.1700
02/01/2025 14:45:56.000	5.5047	14.1000
02/01/2025 14:46:11.000	5.4959	14.1000
02/01/2025 14:46:26.000	5.4860	14.1000
02/01/2025 14:46:41.000	5.4885	14.1000
02/01/2025 14:46:56.000	5.4806	14.1000
02/01/2025 14:47:11.000	5.4785	14.0400

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	BLPH-MV-462/43-LT-003

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:47:26.000	5.4750	14.0400
02/01/2025 14:47:41.000	5.4672	14.0400
02/01/2025 14:47:56.000	5.4710	13.9800
02/01/2025 14:48:11.000	5.4613	13.9800
02/01/2025 14:48:26.000	5.4642	13.9800
02/01/2025 14:48:41.000	5.4566	13.9800
02/01/2025 14:48:56.000	5.4579	13.9200
02/01/2025 14:49:11.000	5.4546	13.9200
02/01/2025 14:49:26.000	5.4452	13.9200
02/01/2025 14:49:41.000	5.4448	13.8500
02/01/2025 14:49:56.000	5.4428	13.8500
02/01/2025 14:50:11.000	5.4417	13.8500
02/01/2025 14:50:26.000	5.4401	13.7900
02/01/2025 14:50:41.000	5.4339	13.7900
02/01/2025 14:50:56.000	5.4281	13.7900
02/01/2025 14:51:11.000	5.4322	13.7300
02/01/2025 14:51:26.000	5.4254	13.7300
02/01/2025 14:51:41.000	5.4268	13.7300
02/01/2025 14:51:56.000	5.4249	13.6700
02/01/2025 14:52:11.000	5.4192	13.6700
02/01/2025 14:52:26.000	5.4207	13.6700
02/01/2025 14:52:41.000	5.4176	13.6000
02/01/2025 14:52:56.000	5.4129	13.6000
02/01/2025 14:53:11.000	5.4077	13.6000
02/01/2025 14:53:26.000	5.4060	13.6000
02/01/2025 14:53:41.000	5.4031	13.5400
02/01/2025 14:53:56.000	5.3986	13.5400
02/01/2025 14:54:11.000	5.3972	13.5400
02/01/2025 14:54:26.000	5.1268	13.4800

CROSSWIND

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

INSTRUMENT TUBING LIST

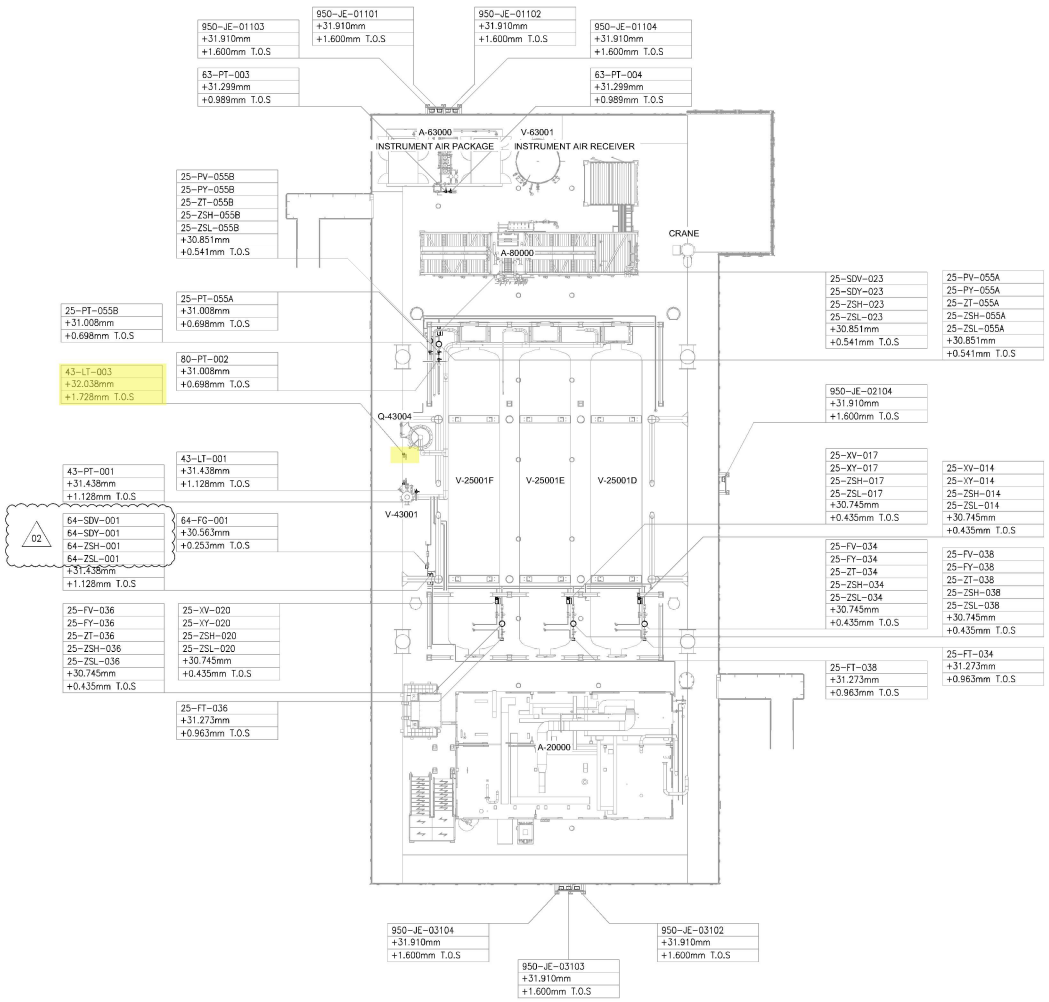
ROSETTI MARINO

Sh. 4 of 4 REV. 00 01 02 03 04 — X X X X X

								DATA TUBING									FROM AREA					TO AREA					
POS.	REV	SUPPLY SCOPE	LAINING SCOPE	TAG Tubing	P&ID	MAIN FUNCTION	SERVICE	DESIGN TEMPERATURE(C°)	OPERATING PRESSURE (Barg)	DESIGN PRESSURE (Barg)	TEST PRESSURE (Barg)	FLUID TEST	DIMENSIONS	MATERIAL	REF. DOC.	Q.TY (m)	FIRE PROOFING	HEAT TRACING	MODULE	AREA	FROM ITEM	REF. P&I	DESCRIPTION	MODULE	AREA	TO ITEM	REF. LAYOUT	DESCRIPTION	NOTE
01	04	RM	RM	**AV-63001/25-XV-011**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-011	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
02	04	RM	RM	**AV-63001/25-FV-033**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-033	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
03	04	RM	RM	**AV-63001/25-XV-008**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-008	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
04	04	RM	RM	**AV-63001/25-FV-032**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-032	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
05	04	RM	RM	**AV-63002/25-XV-020**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-020	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
06	04	RM	RM	**AV-63002/25-FV-036**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-036	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
07	04	RM	RM	**AV-63002/25-XV-017**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-017	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
08	04	RM	RM	**AV-63002/25-FV-038**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-038	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
09	04	RM	RM	**AV-63002/25-XV-014**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-014	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
10	04	RM	RM	**AV-63002/25-FV-034**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-034	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
11	04	RM	RM	**AV-63003/25-BDV-010**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-BDV-010	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
12	04	RM	RM	**AV-63003/25-PV-040**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-PV-040	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
13	04	RM	RM	**AV-63003/25-XV-012**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-012	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
14	04	RM	RM	**AV-63003/25-XV-009**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**13**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-009	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
15	04	RM	RM	**AV-63004/25-BDV-013**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-BDV-013	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
16	04	RM	RM	**AV-63004/25-PV-043**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-PV-043	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
17	04	RM	RM	**AV-63004/25-XV-015**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-XV-015	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
18	04	RM	RM	**AV-63005/64-PV-031A**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031A	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
19	04	RM	RM	**AV-63005/64-PV-031B**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**3**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031B	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
20	04	RM	RM	**AV-63006/25-BDV-022**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-022	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
21	04	RM	RM	**AV-63006/25-XV-021**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-XV-021	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
22	04	RM	RM	**AV-63006/25-PV-049**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-PV-049	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
23	04	RM	RM	**AV-63006/25-BDV-019**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-019	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
24	04	RM	RM	**AV-63006/80-XV-001**	123A90-DDL-PR-PID-80012	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	80-XV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
25	04	RM	RM	**AV-63007/25-XV-006**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-XV-006	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
26	04	RM	RM	**AV-63007/25-PV-035**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-035	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
27	04	RM	RM	**AV-63007/25-BDV-005**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
28	04	RM	RM	**AV-63007/25-PV-037**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-037	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
29	04	RM	RM	**AV-63007/25-BDV-007**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-007	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
30	04	RM	RM	**AV-63008/50-XV-001**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-001	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
31	04	RM	RM	**AV-63008/50-XV-002**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-002	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
32	04	RM	RM	**AV-63008/50-XV-003**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-003	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33	04	RM	RM	**AV-63008/50-XV-004**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-004	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33A	04	RM	RM	**AV-63009/50-XV-005**	123A90-DDL-PR-PID-80025	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63009	123A90-DDL-PR-PID-80041	Distribution Pot 9	BLPH	Lower Deck	50-XV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
34	04	RM	RM	**AV-63010/25-SDV-001**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
35	04	RM	RM	**AV-63010/25-XV-024**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-024	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
36	04	RM	RM	**AV-63010/25-XV-004**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-004	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
37	04	RM	RM	**AV-63010/25-FV-031**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-FV-031	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
38	04	RM	RM	**AV-63010/64-SDV-001**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**15**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	64-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
39	04	RM	RM	**AV-63011/25-SDV-023**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-SDV-023	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
40	04	RM	RM	**AV-63011/25-PV-055A**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055A	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
41	04	RM	RM	**AV-63011/25-PV-055B**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055B	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
42	04	RM	RM	**AV-63012/25-XV-018**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-XV-018	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
43	04	RM	RM	**AV-63012/25-PV-046**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-PV-046	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
44	04	RM	RM	**AV-63012/25-BDV-016**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-BDV-016	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
~~45~~	03	DELETED	DELETED	~~**BLPH-MV-014/25-PT-001**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-014~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~46~~	03	DELETED	DELETED	~~**BLPH-MV-013/25-PT-002**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-013~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~47~~	03	DELETED	DELETED	~~**BLPH-MV-025/26-PT-055A**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~17,7~~	~~10~~	~~17,7~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-025~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~26-PT-055A~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~48~~	03	DELETED	DELETED	~~**BLPH-MV-213/26-PT-055B**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6,5~~	~~10~~	~~3,5 / 6,5~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-213~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055B~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~49~~	03	DELETED	DELETED	~~**BLPH-MV-407/43-PT-001**~~	~~123A90-DDL-PR-PID-80029~~	~~Process Connection~~	~~Hydrogen~~	~~-10 / +80~~	~~ATM~~	~~3,5~~	~~ATM~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-407~~	~~123A90-DDL-PR-PID-80029~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~43-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~50~~	03	DELETED	DELETED	~~**BLPH-MV-411/50-PT-014**~~	~~123A90-DDL-PR-PID-80026~~	~~Process Connection~~	~~Waste Water~~	~~100~~	~~ATM~~	~~17,7~~	~~ATM~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~YES~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-411~~	~~123A90-DDL-PR-PID-80026~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~60-PT-014~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~51~~	03	DELETED	DELETED	~~**BLPH-MV-150/63-PT-003**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-150~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-003~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~52~~	03	DELETED	DELETED	~~**BLPH-MV-151/63-PT-004**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-151~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-004~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
53	04	RM	RM	**BLPH-MV-386/64-PT-031A**	123A90-DDL-PR-PID-80027	Process Connection	Nitrogen Gas	100	6	10	11	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DD

DRAWING NO. 123A90-DDL-IN-DL-40081

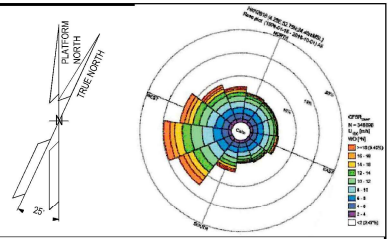
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. DRAWING_NO.

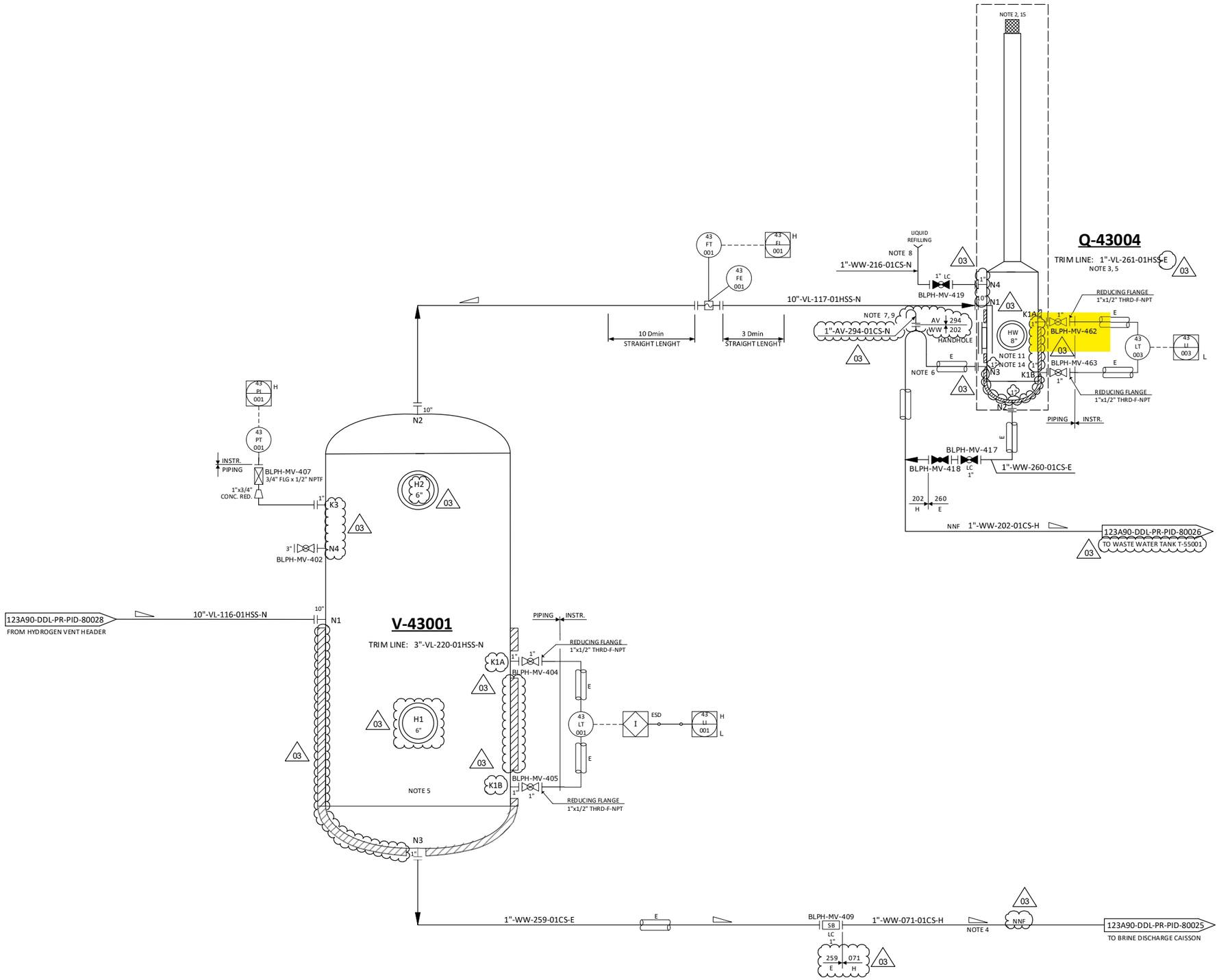
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

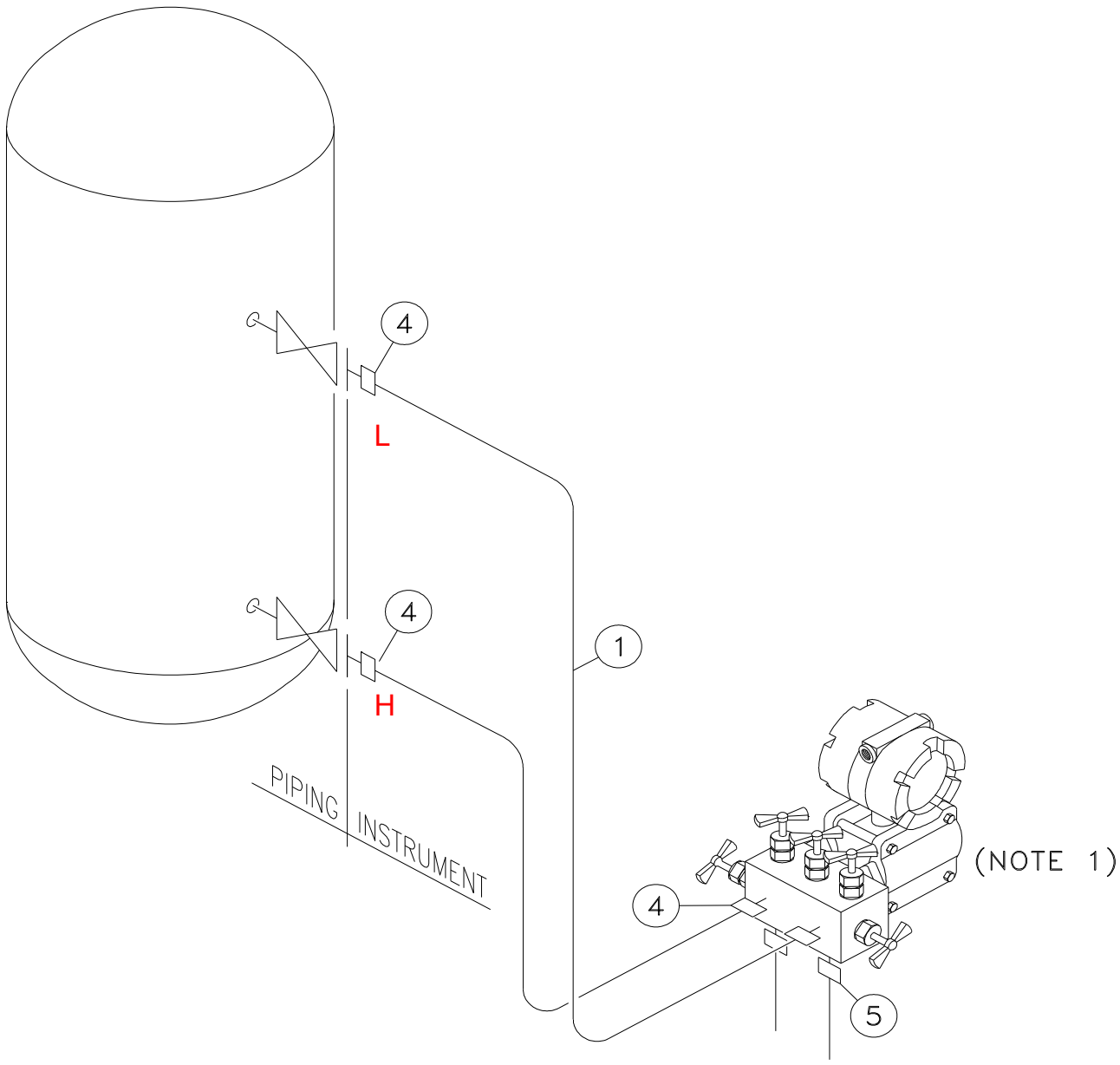
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80029		SHEET 001	REV. 03

File Name : FILE_NAME

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Process Hook-Ups	Sh. 8 of 8 Date: 06/12/2024 Rev. 02

LEVEL TRANSMITTERS - DP Cell Type

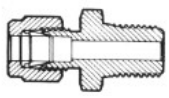
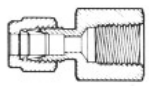
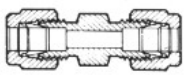


INSTRUMENT TAG	
1	43-LT-001
2	43-LT-003
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NOTES:
(1) MANIFOLD IS SUPPLIED WITH INSTRUMENT
(2) VENDOR SHALL GUARANTEE THE MATERIAL COUPLING BETWEEN TUBING AND FITTINGS.

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
4		SS316 MALE CONNECTOR	1/2" NPT x 1/2" O.D.	N. 4
1		SS 316L TUBING (NOTE 2)	1/2" x 0,049"Thk	6 m

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POS	PICTURE	DESCRIPTION		ITEM ID CODE	TOTAL					
		COMPRESSION FITTING TYPE: **DOUBLE FERRULE** THREADING: ASME B1.20.1 NPT MATERIAL: AISI 316 WORKING PRESSURE AS PER ASME B31.1 TUBING TYPE: ■ INCHES ☐ METRIC			UNIT	Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1		STRAIGHT MALE CONNECTOR	1/2" NPT-M x 3/8" O.D.		nr.					
2			1/4" NPT-M x 1/2" O.D.		nr.	102	102	102		
3			1/2" NPT-M x 1/2" O.D.		nr.	36	36	-		
4			1/2" NPT-M x 3/4" O.D.		nr.					
5			3/4" NPT-M x 3/4" O.D.		nr.					
6			3/8" NPT-M x 3/8" O.D.		nr.					
7		STRAIGHT FEMALE CONNECTOR	1/2" NPT-F x 3/8" O.D.		nr.					
8			1/4" NPT-F x 1/2" O.D.		nr.					
9			1/2" NPT-F x 1/2" O.D.		nr.					
10			1/2" NPT-F x 3/4" O.D.		nr.					
11		UNION CONNECTOR	1/4" O.D. x 1/4" O.D.		nr.					
12			3/8" O.D. x 3/8" O.D.		nr.					
13			1/2" O.D. x 1/2" O.D.		nr.	49	49	49		
14			3/4" O.D. x 3/4" O.D.		nr.					
15		ELBOW CONNECTOR	1/4" NPT-M x 1/2" O.D.		nr.	27	27	27		
16			1/2" NPT-M x 1/2" O.D.		nr.					
17										
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34										

VENDOR / ORDER : **AF SYSTEM / 1724001332**

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	TDS - Tubing and Fittings	Sh. 6 of 6 Date: 06/09/2024 Rev. 01

POS	SIZE	RATING	DESCRIPTION	ITEM ID CODE	UNIT	TOTAL				
						Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1	1/2"		SS316 NIPPLE 1/2" NPT - L=100mm			40	40	2		
2	1/4"		SS316 PLUG 1/4" NPT			27	27	27		
3	1"		SS316L AIR DISTRIBUTION POT 1" 150#RF - N. 7 1/4" BALL VALVES			14	14	13		
4	1/2"	0,049"	SEAMLESS TUBING AISI 316L		m	558	558	276		
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

VENDOR / ORDER : AF SYSTEM / 1724001332

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0435-SM-24
Certificate of Calibration

- data di emissione date of issue	2024-09-20
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILJJIM
- data di ricev. oggetto *date of receipt of item*	2024-09-17
- data delle misure *date of measurements*	2024-09-20
- registro di laboratorio *laboratory reference*	0435-SM-24

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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LAT N° 114

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico ***Electrical pressure gauge***	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILJJIM
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione ***Reference standard (RS) Dead-weight tester***	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1009,3 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	99,9	99,9
199,82	199,9	199,9	199,9
299,73	299,8	299,8	299,8
399,63	399,7	399,7	399,7
499,53	499,5	499,6	499,6
599,44	599,4	599,4	599,4
699,34	699,3	699,3	699,3
799,25	799,1	799,2	799,1
899,14	899,0	899,1	899,0
999,04	999,0	999,0	999,0

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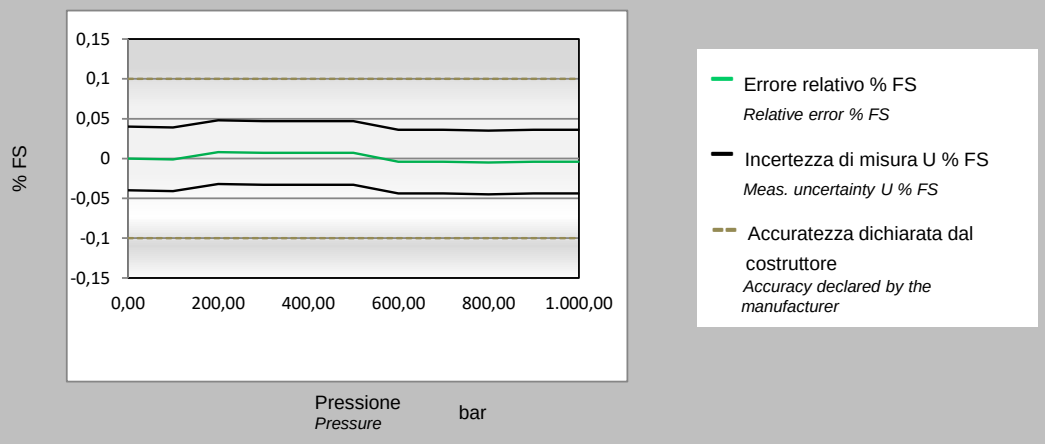
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Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	99,9	0,0	0,0	0,0	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,73	299,8	0,1	0,0	0,0	0,40
399,63	399,7	0,1	0,0	0,0	0,40
499,53	499,6	0,1	0,1	0,1	0,40
599,44	599,4	0,0	0,0	0,0	0,40
699,34	699,3	0,0	0,0	0,0	0,40
799,25	799,2	0,0	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,1	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,5 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-43-FT-001/43-FE-001A	: 43-FT-001/43-FE-001A		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10004547	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Armoured Coaxial Cable | Cores/Size mm²: RG62A/U | Color: Black

From: 43-FT-001 To: 43-FE-001A

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	OK
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	N/A	MΩ
	CORE to CORE	N/A	MΩ
	CORE to SCREEN	N/A	MΩ
	CORE to ARMr	N/A	MΩ
	SCREEN to EARTH	N/A	MΩ
	SCREEN to ARMr	N/A	MΩ
CONTINUITY	CORES	N/A	Ω
	SCREEN	N/A	Ω
	EARTH	N/A	Ω
	ARMr	N/A	Ω
	TEST VOLTS	N/A	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

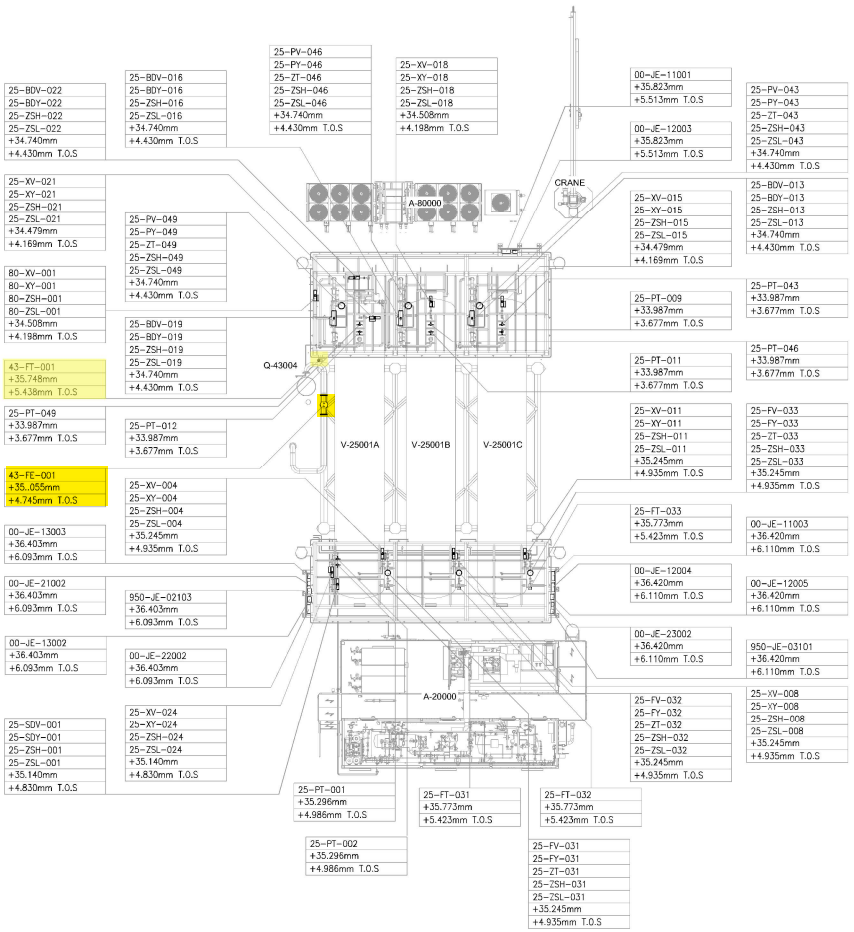
TYPE / SERIAL N°: Calibration date:

Comments

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-10	2025-03-13	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-10T10:31:47.353Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-13T12:57:05.381Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

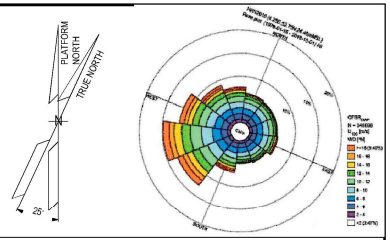
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

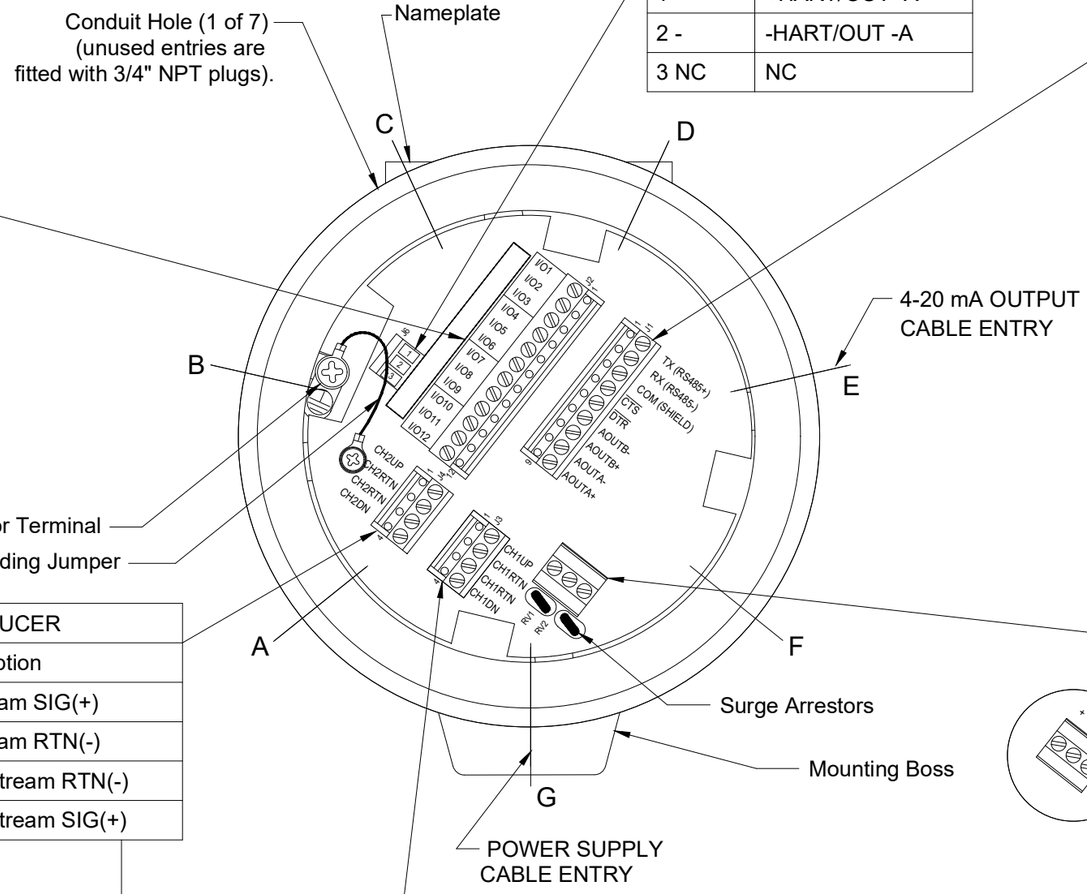
File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

C:\USERS\GOVESHU\ONEDRIVE - BAKER HUGHES\DESKTOP\MY WORK\12_JULY_2024\09_SO_1706864\OUTPUT\WD\SK18027

INPUT/OUTPUT CONNECTIONS	
Pin No.	Description
1 I/O1	NC
2 I/O2	NC
3 I/O3	NC
4 I/O4	NC
5 I/O5	NC
6 I/O6	NC
7 I/O7	OUT C +24V
8 I/O8	INPUT C - +
9 I/O9	INPUT C - RTN
10 I/O10	OUT D +24V
11 I/O11	INPUT D - +
12 I/O12	INPUT D - RTN

HART	
Pin No.	Description
1 +	+HART/OUT -A
2 -	-HART/OUT -A
3 NC	NC

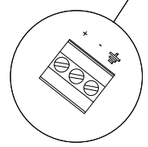
RS232 / 4-20 OUTPUT		
Pin #	Designation	Description
1	TX(RS485+)	Transmit / +
2	RX(RS485-)	Receive / -
3	COM (SHLD)	Ground
4	$\overline{CTS}$	Clear To Send
5	$\overline{DTR}$	Data Terminal Ready
6	AOUT B-	4-20 Output 2 RTN(-)
7	AOUT B+	4-20 Output 2 SIG(+)
8	AOUT A-	4-20 Output 1 RTN(-)
9	AOUT A+	4-20 Output 1 SIG(+)

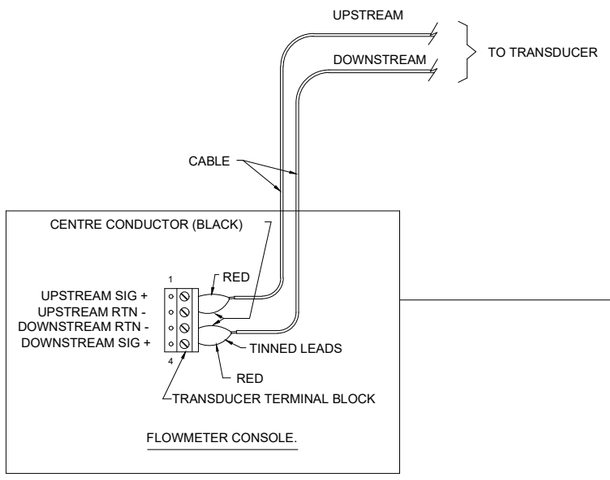


CH2 TRANSDUCER	
Pin No.	Description
1 CH2UP	Upstream SIG(+)
2 CH2RTN	Upstream RTN(-)
3 CH2RTN	Downstream RTN(-)
4 CH2DN	Downstream SIG(+)

CH1 TRANSDUCER	
Pin No.	Description
1 CH1UP	Upstream SIG(+)
2 CH1RTN	Upstream RTN(-)
3 CH1RTN	Downstream RTN(-)
4 CH1DN	Downstream SIG(+)

DC POWER INPUT	
12 TO 28 VDC	
Pin #	Description
1 +	LINE POSITIVE
2 -	LINE NEGATIVE
3 ⏚	NO CONNECTION





TRANSDUCER CONNECTION DETAIL

NOTE: Unit shown from rear with rear cover removed.

TAG No's :
43-FT-001

NOTES:
1. POWER SUPPLY SURGE PROTECTION IS IN-BUILT ON THE POWER SUPPLY BOARD.
2. TROPICALIZATION OF ELECTRONICS.

XGF868I-2-2-OI-H7-3-4-0-CC

Rev	Description of Changes	Checked	Approved	Date
-	Issued for Approval	SG	TG	12/07/24

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TITLE
INTERCONNECTION DIAGRAM
FOR XGF868i FLOWMETER
TWO CHANNEL

SCALE		SHEET	OF
NTS	DO NOT SCALE DRAWING	1	1

SIZE	DRAWING NUMBER	REV
A3	SK18027 / 1706864	-

L:\COMMON\DRA\FLOW\170XXXX\1706864\GA\SK18028B | GRIFTOM

1. FLOWMETER (QTY: 1)

TYPE:	XGF868I
ENCLOSURE:	316SS
VOLTAGE:	12 - 28 VDC
POWER USAGE:	20W
IP RATING:	IP66
HAZ AREA:	EX dIIC T6 Gb
CERT NUMBER:	SIRA 17ATEX1304X
WEIGHT:	11 kg [24 lb] B

FINISH : AS PER MANUFACTURER STANDARD

2. FLOWMETER CABLE (QTY: 1 PAIR)

TYPE:	FLAME RETARDENT RG-62
ARMOUR:	SWA
LENGTH:	10 M
CONNECTION (METER):	3/4" NPT
CONNECTION (XDUCER):	3/4" NPT
GLAND MAT'L:	316SS
HAZ AREA :	Ex nR IIC Gc
CERT. NUMBER :	CML-19ATEX4109X
WEIGHT:	0.28 kg/m B

FINISH : N/A

3. PRE-AMPLIFIER (QTY: 2)

TYPE :	XAMP
ENCLOSURE :	316SS
IP RATING :	IP65/66
HAZ. AREA :	Ex d IIC T6 Gb
CERT NUMBER :	SIRA 20ATEX1001X
WEIGHT :	2 kg [4.4 lb] EA B

FINISH : AS PER MANUFACTURER STANDARD

4. TRANSDUCER (QTY: 2)

TYPE :	T5
MATERIAL :	TITANIUM
TEMP RANGE :	-55 to 150°C (-67 to 302°F) (NT)
HAZ. AREA :	Ex d IIC T6 Gb
CERT NUMBER :	SIRA 20ATEX1001X
MAT'L CERTS :	EN10204 3.1 & NACE MR-01-75
JUNCTION BOX:	316SS
IP RATING :	IP66
WEIGHT :	2 kg [4.4 lb] EA B

FINISH : AS PER MANUFACTURER STANDARD

5. INSERTION MECHANISM (QTY: 2)

TYPE:	IMA72
SIZE:	2" x 2"
RATING:	150#
MATERIAL	
PACKING GLAND :	316SS
BARREL HOLDER:	316 / 316L SS
HYDROTEST:	PER ASME B31.3
MAT'L CERTS:	EN10204 3.1 & NACE MR-01-75
WEIGHT:	12.7 kg [28 lb] EA B

FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A

6. ISOLATION VALVE (QTY: 2)

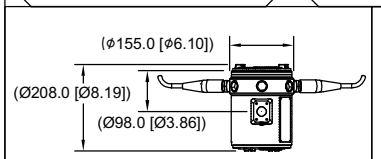
TYPE :	GATE VALVE
SIZE :	2", 150# RF
F/F LENGTH:	177.8MM (7")
MATERIAL	
BODY:	A351 CF8M
TRIM:	316SS
MAT'L CERTS:	EN10204 3.1 & NACE MR-01-75
WEIGHT:	18 kg [39.7 lb] EA B

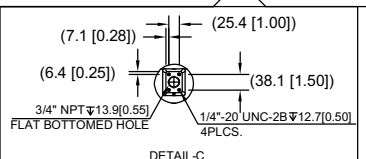
FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A

7. FLOWCELL (QTY : 1)

FOR DETAILS OF THE FLOWCELL, PLEASE REFER TO THE FLOWCELL FABRICATION DRAWING, REF: 182M4103
WEIGHT : 98 kg [216 lb] B

FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A





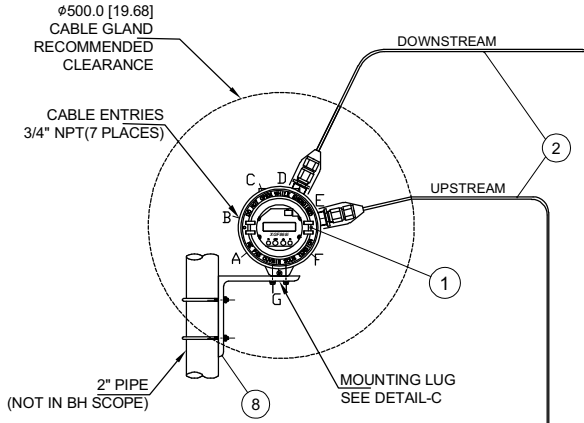
DETAIL-C
(FOR 2" PIPE MOUNTING)

8. 2" PIPE MOUNTING BRACKET (QTY: 1)

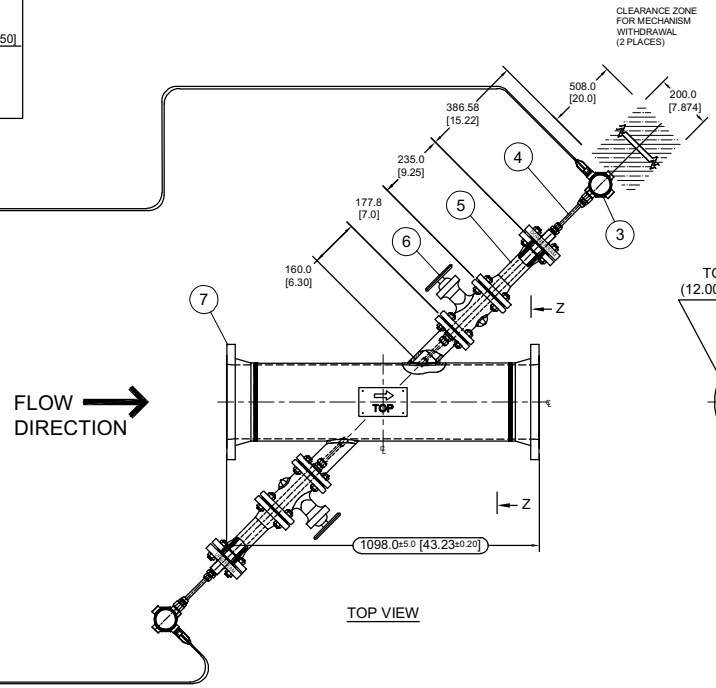
MATERIAL : 316SS

WEIGHT : 5 kg B

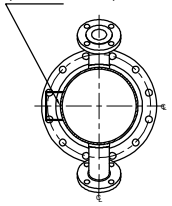
MISC ITEMS (NOT SHOWN)
-1x NAMEPLATE
-5x 3/4" x M20 ADAPTORS SS



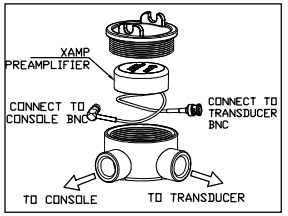
FRONT VIEW OF METER



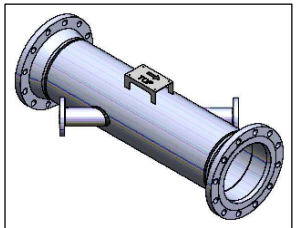
TOP VIEW



SECTION Z-Z



XAMP DETAIL

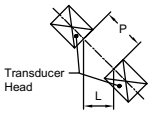


ISOMETRIC VIEW

NOTES:

1. EACH PAIR OF CABLES MUST BE CONTINUOUS IN LENGTH (NO JOINTS) AND EACH CABLE (WITHIN THE PAIR) MUST BE EQUAL IN LENGTH TO WITHIN 2.0 INCHS (50mm) OF EACH OTHER.
2. WHEN USING ARMOURED CABLE, ENSURE THAT THE ARMOURING OF THE COAXIAL CABLE AT THE INSTRUMENT ENCLOSURE END IS CONNECTED TO THE INSTRUMENT SUPPLY EARTH LINE.
3. USE ONLY Ex d CERTIFIED CABLE GLANDS / ADAPTORS PROVIDED.

WARNING
DO NOT REMOVE / REINSTALL TRANSDUCERS IF LINE PRESSURE EXCEEDS 5.5 BARG.



Path Length, P = 368.20mm[14.496"]
Axial Length, L = 260.32mm[10.248"]

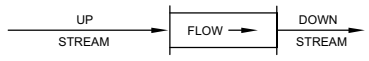
Final P & L Values will be provided on Flowcell Nameplate

TAG NUMBER : 43-FT-001
PIPE SIZE : 10", 150#, SCH 20, RF
XDCR CONFIG : TILTED DIA, 1P/1T

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN "MM[INCHES]".

FLOWCELL INSTALLATION RECOMMENDATION

INSTALL FLOWCELL ON PIPELINE TO ENSURE A FULLY DEVELOPED FLOW PROFILE IS PRESENTED TO THE FLOWMETER. BAKER HUGHES RECOMMENDS A MINIMUM OF 20 DIAMETERS OF UNOBSTRUCTED STRAIGHT RUN OF PIPELINE EXIST UPSTREAM OF THE FLOWCELL LOCATION AND 10 DIAMETERS OF SAME DOWNSTREAM.



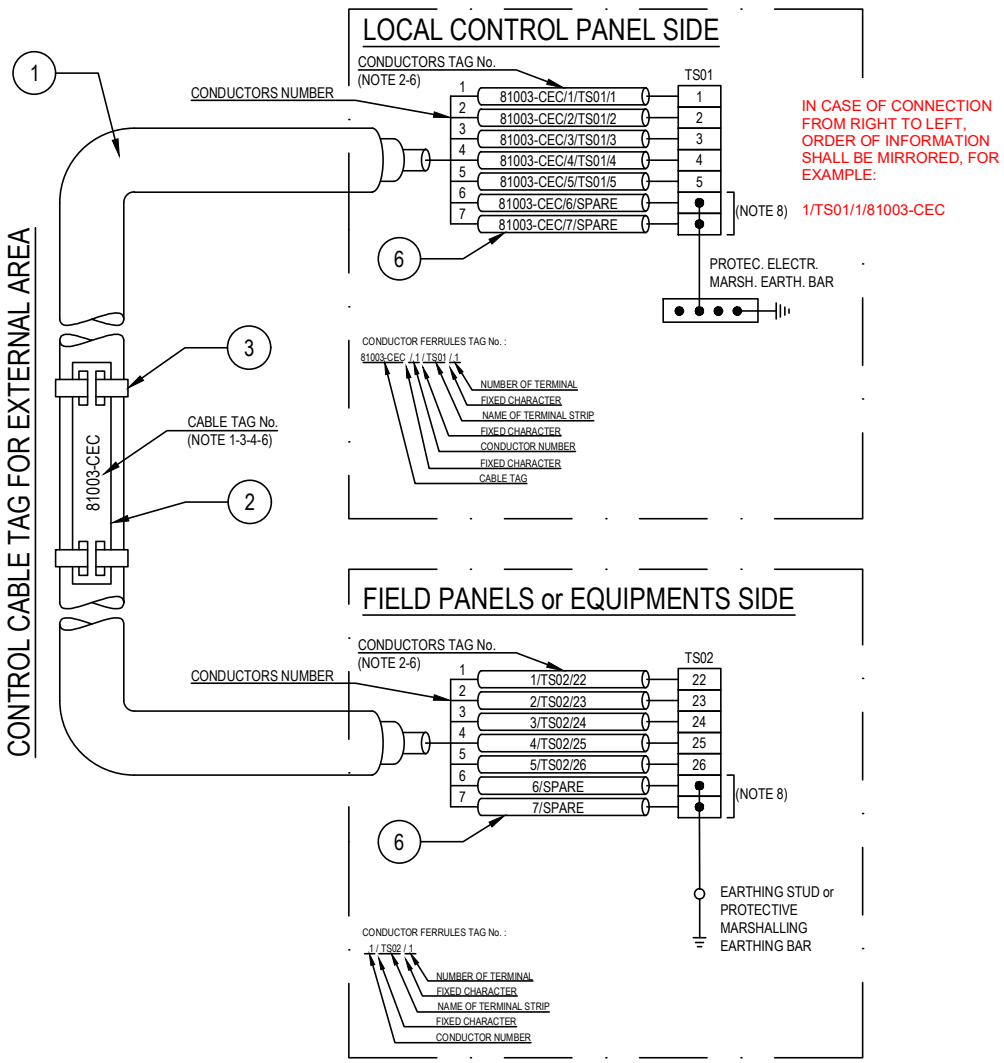
Rev	Description of Changes	Drawn	Checked	Date
B	Issued for Approval	TG	TG	14/10/24
A	Issued for Approval	TG	TG	19/09/24
-	Issued for Approval	SG	TG	12/07/24

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TITLE: GENERAL ARRANGEMENT FOR XGF868i FLOWMETER C/W T5 TRANSDUCERS

SCALE	NTS	DO NOT SCALE DRAWING	SHEET 1 OF 1
SIZE A3	DRAWING NUMBER SK18028 / 1706864		REV B

C04



IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED, FOR EXAMPLE:

1/TS01/1/81003-CEC

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	UNARMOURED CABLE				
2	CABLE TAG FOR EXTERNAL AREA	HDG/SS			NOTE 1 NOTE 4
3	TIE FOR CABLE TAG IN EXTERNAL AREA	HDG/SS			
4	CABLE TAG FOR INTERNAL AREA	PVC			NOTE 1 NOTE 5
5	TIE FOR CABLE TAG IN INTERNAL AREA	NYLON 6.6			
6	CORE FERRULES	PVC			

NOTES:

1) ALL CABLES SHALL BE IDENTIFIED AT EACH TERMINATION AND EACH SIDE OF ANY OBSTACLE (E.G. CABLE TRANSIT ON WALLS INSIDE SHELTER AND FLOOR DECK CROSSING, BY THEIR RESPECTIVE TAGS/NUMBERS, AS INDICATED ON THE CABLE SCHEDULE.
CABLE IDENTIFICATION SHALL BE ALSO DONE BELOW AND IN THE SWITCHBOARD CABLE COMPARTMENT.

2) CABLE CORE FERRULES SHALL BE FITTED AT EVERY TERMINATION. THESE FERRULES SHALL BE OF ENGRAVED PLASTIC SLIP ON, INTERLOCKED AND SELF GRIP TYPE.

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 50 METERS.

4) THE CABLE TAG FOR EXTERNAL AREA SHALL DONE BY 316L STAINLESS STEEL LABELS, TAG (H=5mm) SHALL BE LASER PRINTED PREFERABLY OR EMBOSSED, LABEL HELD BY TWO 316L STAINLESS STEEL TIES.

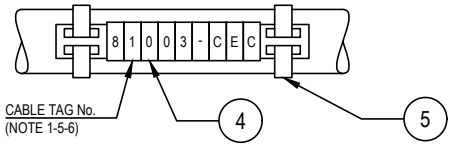
5) THE CABLE TAG FOR INTERNAL AREA SHAL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) THE EARTHING CONNECTION OF THE ARMOUR CABLE IS NOT APPLICABILE IF THE ARMOUR IS CONNECTED TO EARTH WITH METALLIC CABLE GLAND.
WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH RING
- EARTHING BOSS AND EARTH RING
- EARTH BAR AND EARTH BAR (IF ANY).

8) ONLY IF NECESSARY, SHRINK TUBES OF THE APPROPRIATE COLOR WILL BE INSTALLED TO COVER THE WRONG CONDUCTOR COLOR, THIS WILL BE PERFORMED IN EACH SIDE OF THE CABLES WHERE NECESSARY.

CONTROL CABLE TAG FOR INTERNAL AREA



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20092**

REV.:	DATE:	SIGNATURE:
2_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION
CABLES INSTALLATION SYSTEM IDENTIFICATION FOR CONTROL CABLES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20092	008	02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

GENERAL	1	Tag Number				43-FT-001		
	2	Service				HDROGEN FROM KO DRUM TO HYDROGEN VENT (Q-43004)		
	3	P&ID Number		Special Regulation		123A901-DDL-PR-PID-80029	-	
	4	Line Size		Line No.		10"	10"-VL-117-01HSS-N	
	5	Line Schedule		Area Classification		Thk (mm) = 4.19	ATEX Zone2 - IIC (IIB+H2) T1	
PROCESS CONDITIONS	6	Fluid	Phase		State	HYDROGEN	SINGLE	GAS
	7	Spec Cond.		Sour Serv.				
	8	Flow		Min. / Norm. / Max.	Units		note 17	
	9	Oper. Pressure		Oper. Temperature		0 / 0.5 barg	AMB	
	10	Des. Pressure		Des. Temp. Max. / Min.		3.5 barg	80 °C	
	11	Density @ Fl. Norm.		Viscosity @ Fl. Norm.		0.11 kg/m^3 (@25°C, 0.4 barg)	0.01	
	12	Max. Allowable DP across Meter				N/A		
	13	Molecul. Wt. @ Fl. Nor.		Entrained Gas		2		
	14	Vapour Pressure		Critical Pressure		N/A	N/A	
METER	15	Meter Type				Spool Piece		
	16	Size	Rating	Facing		10" #150	RF	
	17	Range From	To	Eng. Units				
	18	Housing				ASTM A312 Gr.TP316/316L (ASME B31.12)		
	19	Electrical Connections				M20		
	20	Accuracy		Tracing		See Vendor Calculation Sheet	-	
	21	Trace Size	Rating	Facing		-	-	-
	22							
METER MATERIALS	23	Process Flanges				10" FLANGED #150		
	24	Tube Material				ASTM A312 Gr.TP316/316L		
	25	Sensor Housing Material				AISI 316/316L		
TRANSMITTER	26	Measurement Type		Beam / PATH No.		TRANSIT TIME	SINGLE / SINGLE	
	27	Mounting		Housing Material		Remote	AISI 316	
	28	Calibration Range				See Vendor Calculation Sheet		
	29	Electrical Connection		Electrical Class		M20x1,5MM	-	
	30	Output Signal		Load		4-20mA	600Ω	
	31	Other Output Signal				-		
	32	Power Supply		Consumption		24Vdc	20W	
	33	Ingress Protection		ATEX Certification		IP66	Ex-d IIC T6 Gb	
COMMUNICATION AND SOFTWARE	34	Communication Type		Signal Type		Conventional + HART Rev.7	4-20mA	
	35	DD Revision		CFF Revision		-	-	
	36	Hart Desciptor		Hart Tag		-	-	
	37	Internal Diagnostics		Capacitance		-	-	
	38	Segment		Device Address		-	-	
	39	Device Class		Simulate		-	-	
	40	Nominal Current		Operating Voltage		-	-	
ACCESSORIES	41	Environ. Protection				-		
	42	Measuring Cable Length		Special Cable Length		-	10m (Sensor - Transmitter)	
	43	Mounting Kit		Cable Glands		Mounting Bracket for 2" pole	Required	
	44	Isolating Ball Valve				Required according to piping class 01HSS		
PURCHASE	45	Manufacturer				Panametrics		
	46	Model	Sensor	Transmitter		Flowcell	XGF868I	
	47	Purchase Order Number				1724001317		
	48	Weight				See Sheet 9		

No.	Date	By	Chkd	Appr	Description
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)
00	13/03/2024	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

Ultrasonic Flowmeter

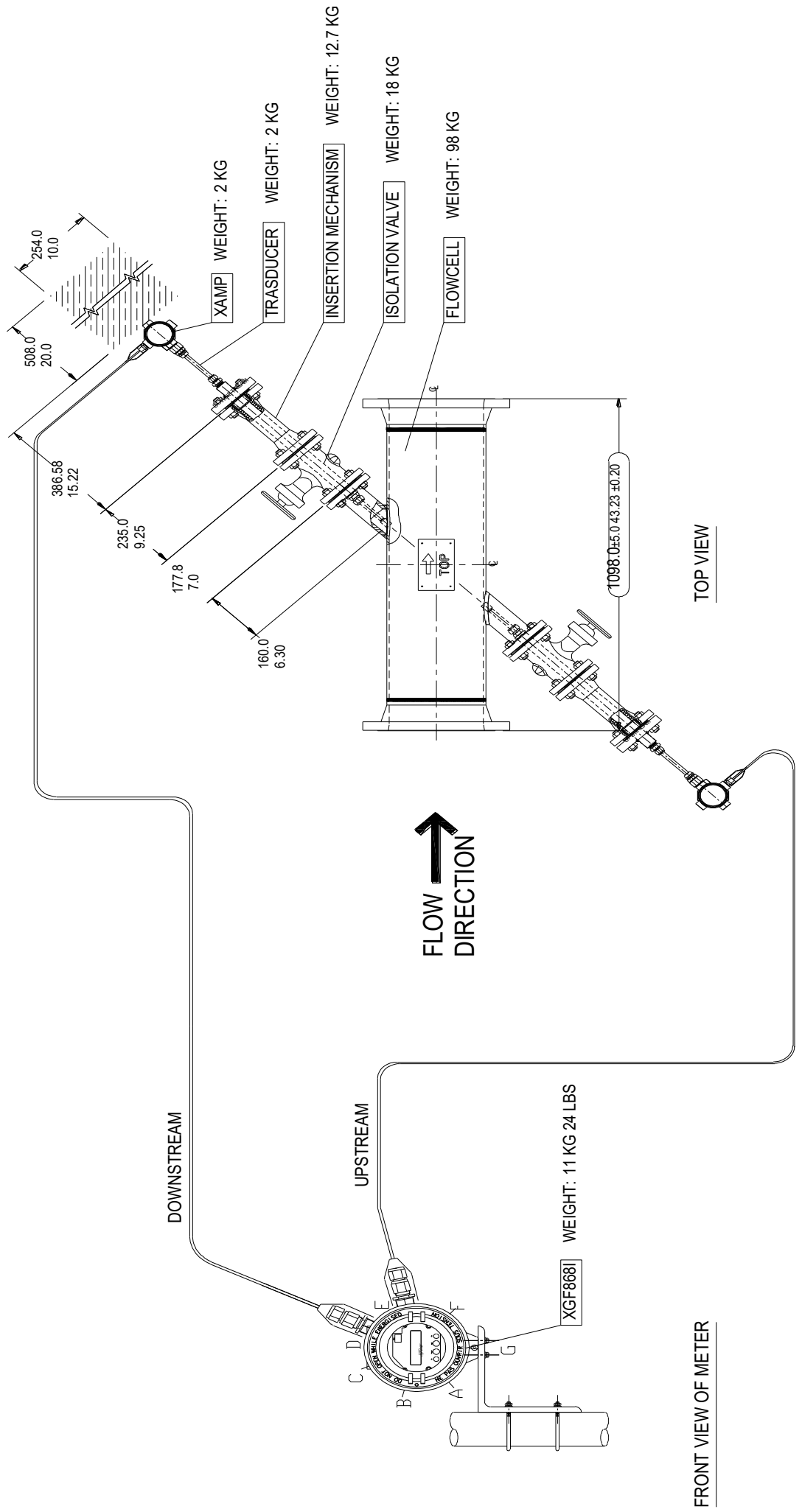
CROSSWIND

ROSETTI MARINO

Sheet 5 of 6

Code : Dwg. No.: 123A90-DDL-IN-DS-40048 Rev 01

43-FT-001 GENERAL ARRANGEMENT DRAWING



						INSTRUMENT DATASHEET	CROSSWIND	
						Ultrasonic Flowmeter	ROSETTI MARINO	
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)		Sheet 6 of 6	
No.	Date	By	Chkd	Appr	Description	Code :	Dwg. No.: 123A90-DDL-IN-DS-40048	Rev 01

Qty	Description
1	**FC-ARCOAX-10-M-FL150-075HAZLOC-BNC75-075HAZLOC-SS-0** Model: Flowmeter Cable Cable Type: Pair of armored coaxial cables (Price shown is price per pair) Cable Length: Cable Length: 10 Units: Meters Front Connector: Flying leads for XGX868i, XMT868i, XMT1000, IGM878, NEMA 4X DF868, GX868 Front Gland: For use with XGX868i, XMT868i, XMT1000 or IGM878 End Connector: BNC Plug for standard transducers End Gland: 3/4 Inch NPT for hazardous areas Material: 316 Stainless Steel Special: None

ROSETTI MARINO — PROVERLIS — CROSSWIND

ITEM	Tag	C-43-FT-001/43-FE-001B	: 43-FT-001/43-FE-001B		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10004548	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Armoured Coaxial Cable — Cores/Size mm²: RG62A/U — Color: Black

From: 43-FT-001 — To: 43-FE-001B

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	OK
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	N/A	MΩ
	CORE to CORE	N/A	MΩ
	CORE to SCREEN	N/A	MΩ
	CORE to ARMr	N/A	MΩ
	SCREEN to EARTH	N/A	MΩ
	SCREEN to ARMr	N/A	MΩ
CONTINUITY	CORES	N/A	Ω
	SCREEN	N/A	Ω
	EARTH	N/A	Ω
	ARMr	N/A	Ω
	TEST VOLTS	N/A	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

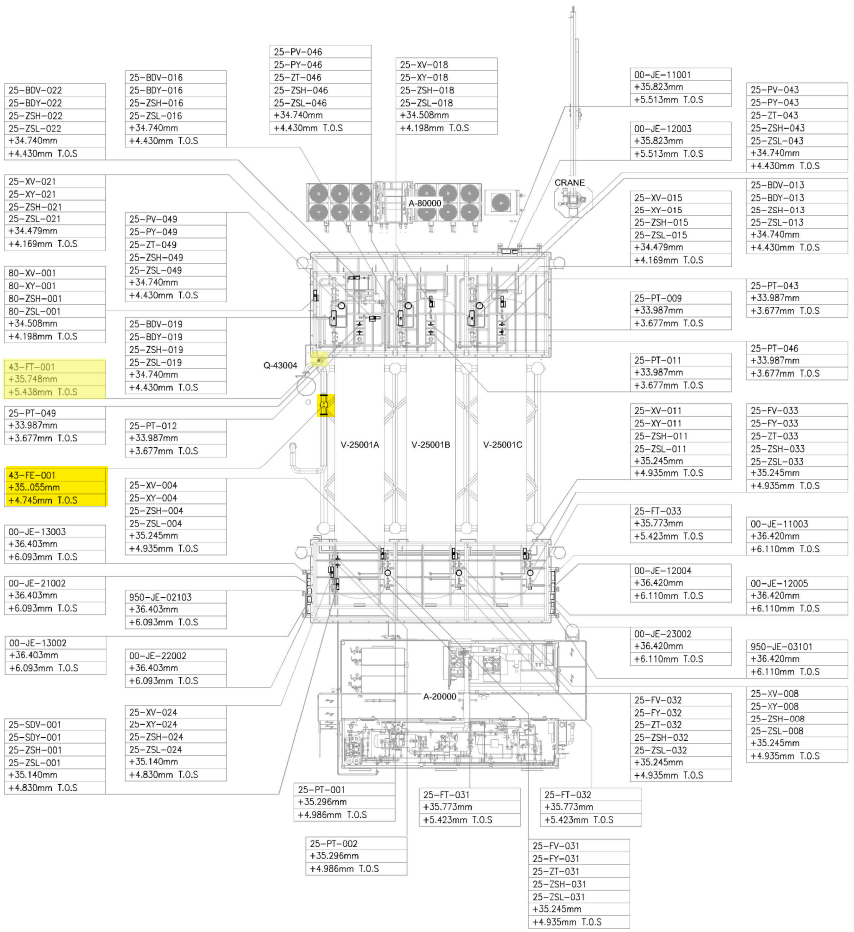
TYPE / SERIAL N°: Calibration date:

Comments

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-10	2025-03-13	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-10T10:32:18.489Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-13T13:00:26.093Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

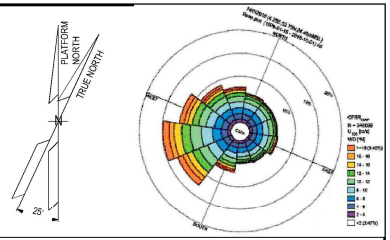
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

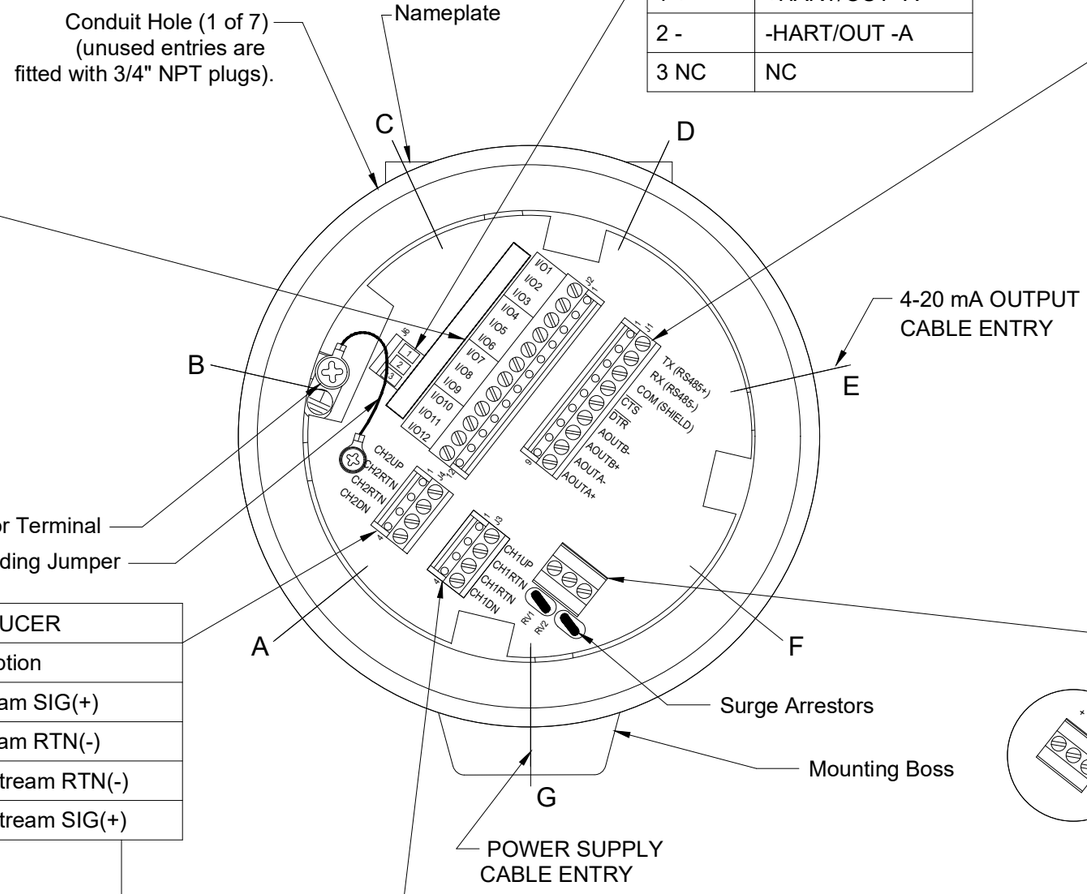
File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

C:\USERS\GOVESHU\ONEDRIVE - BAKER HUGHES\DESKTOP\MY WORK\12_JULY_2024\09_SO_1706864\OUTPUT\WD\SK18027

INPUT/OUTPUT CONNECTIONS	
Pin No.	Description
1 I/O1	NC
2 I/O2	NC
3 I/O3	NC
4 I/O4	NC
5 I/O5	NC
6 I/O6	NC
7 I/O7	OUT C +24V
8 I/O8	INPUT C - +
9 I/O9	INPUT C - RTN
10 I/O10	OUT D +24V
11 I/O11	INPUT D - +
12 I/O12	INPUT D - RTN

HART	
Pin No.	Description
1 +	+HART/OUT -A
2 -	-HART/OUT -A
3 NC	NC

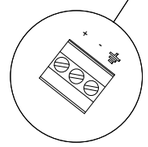
RS232 / 4-20 OUTPUT		
Pin #	Designation	Description
1	TX(RS485+)	Transmit / +
2	RX(RS485-)	Receive / -
3	COM (SHLD)	Ground
4	$\overline{CTS}$	Clear To Send
5	$\overline{DTR}$	Data Terminal Ready
6	AOUT B-	4-20 Output 2 RTN(-)
7	AOUT B+	4-20 Output 2 SIG(+)
8	AOUT A-	4-20 Output 1 RTN(-)
9	AOUT A+	4-20 Output 1 SIG(+)

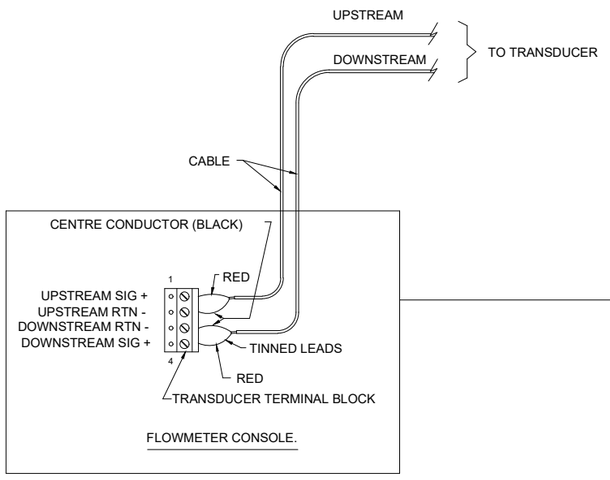


CH2 TRANSDUCER	
Pin No.	Description
1 CH2UP	Upstream SIG(+)
2 CH2RTN	Upstream RTN(-)
3 CH2RTN	Downstream RTN(-)
4 CH2DN	Downstream SIG(+)

CH1 TRANSDUCER	
Pin No.	Description
1 CH1UP	Upstream SIG(+)
2 CH1RTN	Upstream RTN(-)
3 CH1RTN	Downstream RTN(-)
4 CH1DN	Downstream SIG(+)

DC POWER INPUT	
12 TO 28 VDC	
Pin #	Description
1 +	LINE POSITIVE
2 -	LINE NEGATIVE
3 ⏚	NO CONNECTION





TRANSDUCER CONNECTION DETAIL

NOTE: Unit shown from rear with rear cover removed.

TAG No's :
43-FT-001

NOTES:
1. POWER SUPPLY SURGE PROTECTION IS IN-BUILT ON THE POWER SUPPLY BOARD.
2. TROPICALIZATION OF ELECTRONICS.

XGF868I-2-2-OI-H7-3-4-0-CC

Rev	Description of Changes	Checked	Approved	Date
-	Issued for Approval	SG	TG	12/07/24

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TITLE
INTERCONNECTION DIAGRAM
FOR XGF868i FLOWMETER
TWO CHANNEL

SCALE		SHEET	OF
NTS	DO NOT SCALE DRAWING	1	1

SIZE	DRAWING NUMBER	REV
A3	SK18027 / 1706864	-

L:\COMMON\DRA\FLOW\170XXXX\1706864\GA\SK18028B | GRIFTOM

1. FLOWMETER (QTY: 1)

TYPE:	XGF868I
ENCLOSURE:	316SS
VOLTAGE:	12 - 28 VDC
POWER USAGE:	20W
IP RATING:	IP66
HAZ AREA:	EX dIIC T6 Gb
CERT NUMBER:	SIRA 17ATEX1304X
WEIGHT:	11 kg [24 lb] B

FINISH : AS PER MANUFACTURER STANDARD

2. FLOWMETER CABLE (QTY: 1 PAIR)

TYPE:	FLAME RETARDENT RG-62
ARMOUR:	SWA
LENGTH:	10 M
CONNECTION (METER):	3/4" NPT
CONNECTION (XDUCER):	3/4" NPT
GLAND MAT'L:	316SS
HAZ AREA :	Ex nR IIC Gc
CERT. NUMBER :	CML-19ATEX4109X
WEIGHT:	0.28 kg/m B

FINISH : N/A

3. PRE-AMPLIFIER (QTY: 2)

TYPE :	XAMP
ENCLOSURE :	316SS
IP RATING :	IP65/66
HAZ. AREA :	Ex d IIC T6 Gb
CERT NUMBER :	SIRA 20ATEX1001X
WEIGHT :	2 kg [4.4 lb] EA B

FINISH : AS PER MANUFACTURER STANDARD

4. TRANSDUCER (QTY: 2)

TYPE :	T5
MATERIAL :	TITANIUM
TEMP RANGE :	-55 to 150°C (-67 to 302°F) (NT)
HAZ. AREA :	Ex d IIC T6 Gb
CERT NUMBER :	SIRA 20ATEX1001X
MAT'L CERTS :	EN10204 3.1 & NACE MR-01-75
JUNCTION BOX:	316SS
IP RATING :	IP66
WEIGHT :	2 kg [4.4 lb] EA B

FINISH : AS PER MANUFACTURER STANDARD

5. INSERTION MECHANISM (QTY: 2)

TYPE:	IMA72
SIZE:	2" x 2"
RATING:	150#
MATERIAL	
PACKING GLAND :	316SS
BARREL HOLDER:	316 / 316L SS
HYDROTEST:	PER ASME B31.3
MAT'L CERTS:	EN10204 3.1 & NACE MR-01-75
WEIGHT:	12.7 kg [28 lb] EA B

FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A

6. ISOLATION VALVE (QTY: 2)

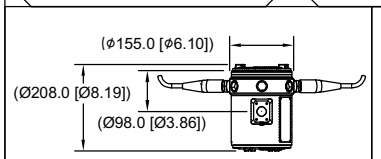
TYPE :	GATE VALVE
SIZE :	2", 150# RF
F/F LENGTH:	177.8MM (7")
MATERIAL	
BODY:	A351 CF8M
TRIM:	316SS
MAT'L CERTS:	EN10204 3.1 & NACE MR-01-75
WEIGHT:	18 kg [39.7 lb] EA B

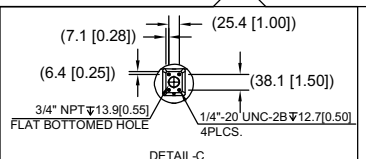
FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A

7. FLOWCELL (QTY : 1)

FOR DETAILS OF THE FLOWCELL, PLEASE REFER TO THE FLOWCELL FABRICATION DRAWING, REF: 182M4103
WEIGHT : 98 kg [216 lb] B

FINISH : PAINTED PER SPEC: NORSOK M-501 SYSTEM 6A





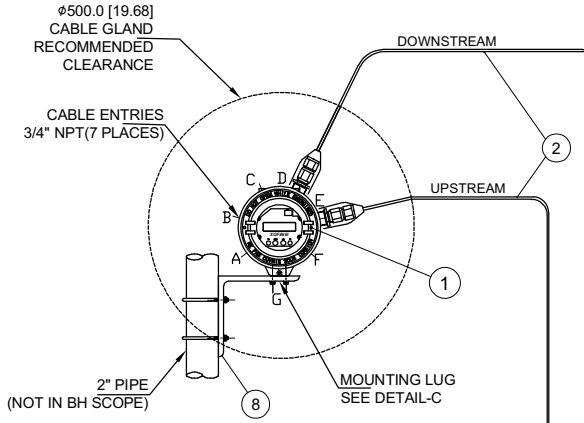
DETAIL-C
(FOR 2" PIPE MOUNTING)

8. 2" PIPE MOUNTING BRACKET (QTY: 1)

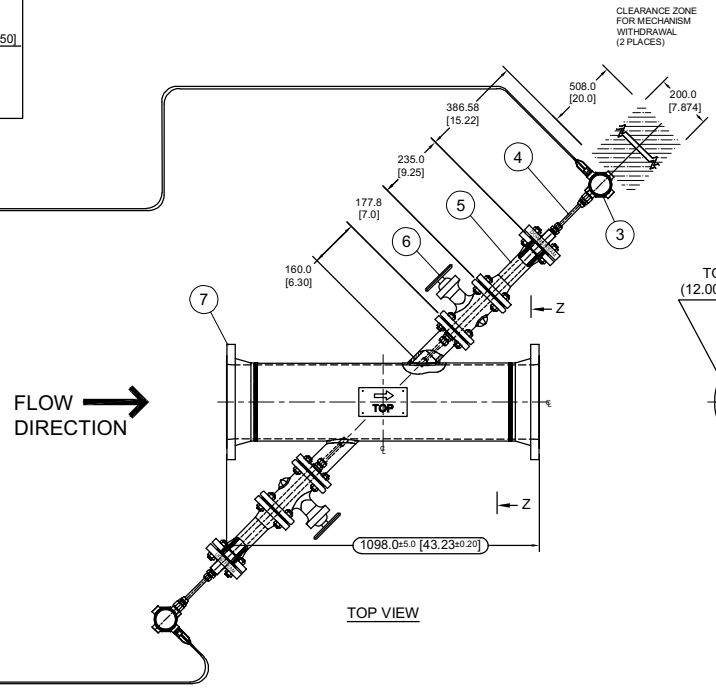
MATERIAL : 316SS

WEIGHT : 5 kg B

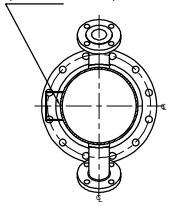
MISC ITEMS (NOT SHOWN)
-1x NAMEPLATE
-5x 3/4" x M20 ADAPTORS SS



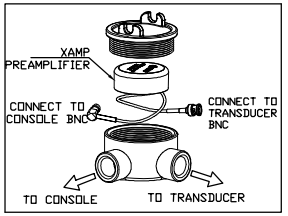
FRONT VIEW OF METER



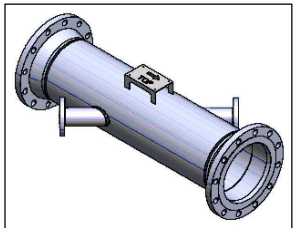
TOP VIEW



SECTION Z-Z



XAMP DETAIL

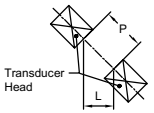


ISOMETRIC VIEW

NOTES:

1. EACH PAIR OF CABLES MUST BE CONTINUOUS IN LENGTH (NO JOINTS) AND EACH CABLE (WITHIN THE PAIR) MUST BE EQUAL IN LENGTH TO WITHIN 2.0 INCHS (50mm) OF EACH OTHER.
2. WHEN USING ARMOURED CABLE, ENSURE THAT THE ARMOURING OF THE COAXIAL CABLE AT THE INSTRUMENT ENCLOSURE END IS CONNECTED TO THE INSTRUMENT SUPPLY EARTH LINE.
3. USE ONLY Ex d CERTIFIED CABLE GLANDS / ADAPTORS PROVIDED.

WARNING
DO NOT REMOVE / REINSTALL TRANSDUCERS IF LINE PRESSURE EXCEEDS 5.5 BARG.



Path Length, P = 368.20mm[14.496"]
Axial Length, L = 260.32mm[10.248"]

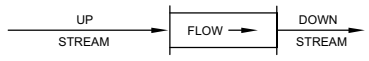
Final P & L Values will be provided on Flowcell Nameplate

TAG NUMBER : 43-FT-001
PIPE SIZE : 10", 150#, SCH 20, RF
XDCR CONFIG : TILTED DIA, 1P/1T

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN "MM[INCHES]".

FLOWCELL INSTALLATION RECOMMENDATION

INSTALL FLOWCELL ON PIPELINE TO ENSURE A FULLY DEVELOPED FLOW PROFILE IS PRESENTED TO THE FLOWMETER. BAKER HUGHES RECOMMENDS A MINIMUM OF 20 DIAMETERS OF UNOBSTRUCTED STRAIGHT RUN OF PIPELINE EXIST UPSTREAM OF THE FLOWCELL LOCATION AND 10 DIAMETERS OF SAME DOWNSTREAM.



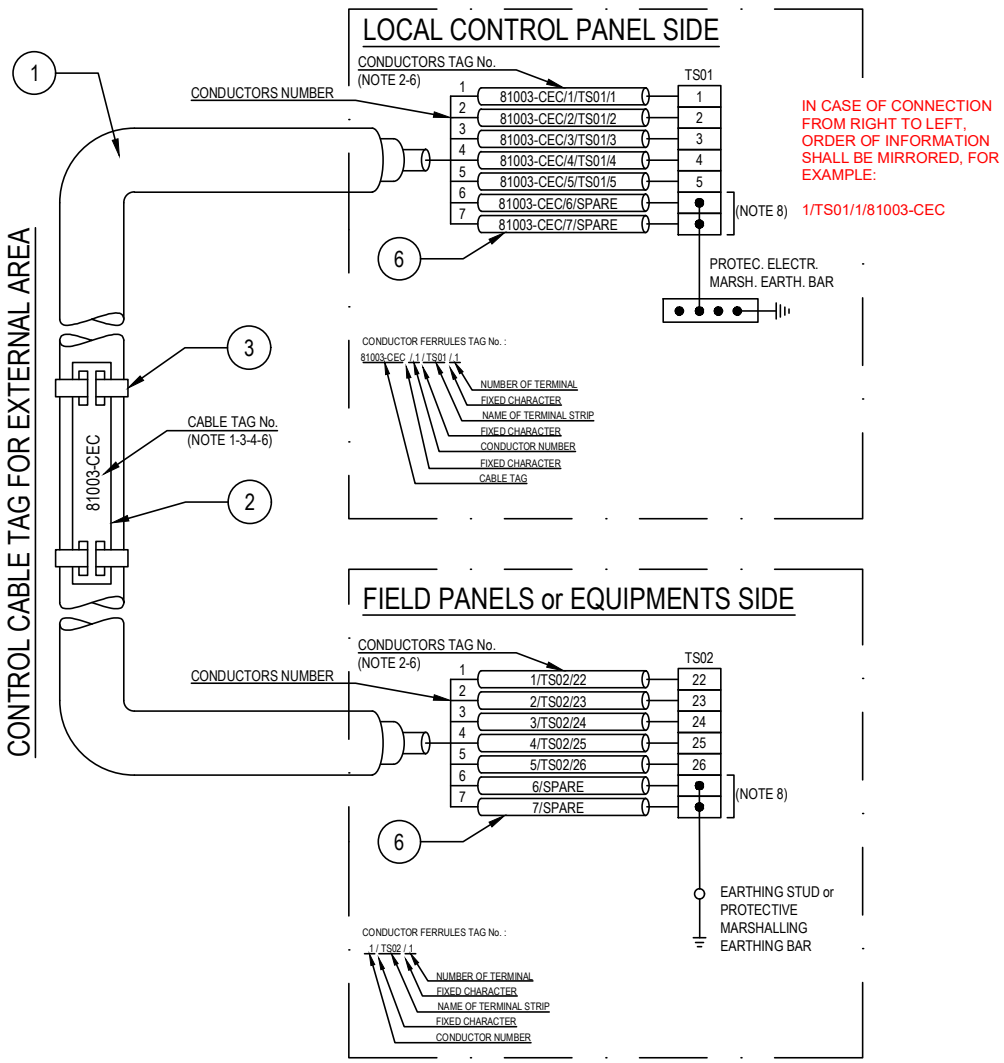
Rev	Description of Changes	Drawn	Checked	Date
B	Issued for Approval	TG	TG	14/10/24
A	Issued for Approval	TG	TG	19/09/24
-	Issued for Approval	SG	TG	12/07/24

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TITLE: GENERAL ARRANGEMENT FOR XGF868i FLOWMETER C/W T5 TRANSDUCERS

SCALE	NTS	DO NOT SCALE DRAWING	SHEET 1 OF 1
SIZE A3	DRAWING NUMBER SK18028 / 1706864		REV B

C04



IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED, FOR EXAMPLE:

1/TS01/1/81003-CEC

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	UNARMOURED CABLE				
2	CABLE TAG FOR EXTERNAL AREA	HDG/SS			NOTE 1 NOTE 4
3	TIE FOR CABLE TAG IN EXTERNAL AREA	HDG/SS			
4	CABLE TAG FOR INTERNAL AREA	PVC			NOTE 1 NOTE 5
5	TIE FOR CABLE TAG IN INTERNAL AREA	NYLON 6.6			
6	CORE FERRULES	PVC			

NOTES:

1) ALL CABLES SHALL BE IDENTIFIED AT EACH TERMINATION AND EACH SIDE OF ANY OBSTACLE (E.G. CABLE TRANSIT ON WALLS INSIDE SHELTER AND FLOOR DECK CROSSING, BY THEIR RESPECTIVE TAGS/NUMBERS, AS INDICATED ON THE CABLE SCHEDULE.
CABLE IDENTIFICATION SHALL BE ALSO DONE BELOW AND IN THE SWITCHBOARD CABLE COMPARTMENT.

2) CABLE CORE FERRULES SHALL BE FITTED AT EVERY TERMINATION. THESE FERRULES SHALL BE OF ENGRAVED PLASTIC SLIP ON, INTERLOCKED AND SELF GRIP TYPE.

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 50 METERS.

4) THE CABLE TAG FOR EXTERNAL AREA SHALL DONE BY 316L STAINLESS STEEL LABELS, TAG (H=5mm) SHALL BE LASER PRINTED PREFERABLY OR EMBOSSED, LABEL HELD BY TWO 316L STAINLESS STEEL TIES.

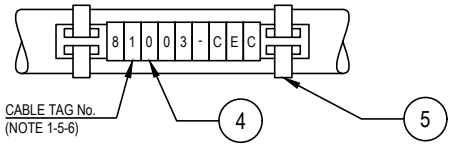
5) THE CABLE TAG FOR INTERNAL AREA SHAL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) THE EARTHING CONNECTION OF THE ARMOUR CABLE IS NOT APPLICABILE IF THE ARMOUR IS CONNECTED TO EARTH WITH METALLIC CABLE GLAND.
WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH RING
- EARTHING BOSS AND EARTH RING
- EARTH BAR AND EARTH BAR (IF ANY).

8) ONLY IF NECESSARY, SHRINK TUBES OF THE APPROPRIATE COLOR WILL BE INSTALLED TO COVER THE WRONG CONDUCTOR COLOR, THIS WILL BE PERFORMED IN EACH SIDE OF THE CABLES WHERE NECESSARY.

CONTROL CABLE TAG FOR INTERNAL AREA



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20092**

REV.:	DATE:	SIGNATURE:
2_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION
CABLES INSTALLATION SYSTEM IDENTIFICATION FOR CONTROL CABLES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20092	008	02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

GENERAL	1	Tag Number				43-FT-001		
	2	Service				HDROGEN FROM KO DRUM TO HYDROGEN VENT (Q-43004)		
	3	P&ID Number		Special Regulation		123A901-DDL-PR-PID-80029	-	
	4	Line Size		Line No.		10"	10"-VL-117-01HSS-N	
	5	Line Schedule		Area Classification		Thk (mm) = 4.19	ATEX Zone2 - IIC (IIB+H2) T1	
PROCESS CONDITIONS	6	Fluid	Phase		State	HYDROGEN	SINGLE	GAS
	7	Spec Cond.		Sour Serv.				
	8	Flow		Min. / Norm. / Max.	Units		note 17	
	9	Oper. Pressure		Oper. Temperature		0 / 0.5 barg	AMB	
	10	Des. Pressure		Des. Temp. Max. / Min.		3.5 barg	80 °C	
	11	Density @ Fl. Norm.		Viscosity @ Fl. Norm.		0.11 kg/m^3 (@25°C, 0.4 barg)	0.01	
	12	Max. Allowable DP across Meter				N/A		
	13	Molecul. Wt. @ Fl. Nor.		Entrained Gas		2		
	14	Vapour Pressure		Critical Pressure		N/A	N/A	
METER	15	Meter Type				Spool Piece		
	16	Size	Rating	Facing		10" #150	RF	
	17	Range From	To	Eng. Units				
	18	Housing				ASTM A312 Gr.TP316/316L (ASME B31.12)		
	19	Electrical Connections				M20		
	20	Accuracy		Tracing		See Vendor Calculation Sheet	-	
	21	Trace Size	Rating	Facing		-	-	-
	22							
METER MATERIALS	23	Process Flanges				10" FLANGED #150		
	24	Tube Material				ASTM A312 Gr.TP316/316L		
	25	Sensor Housing Material				AISI 316/316L		
TRANSMITTER	26	Measurement Type		Beam / PATH No.		TRANSIT TIME	SINGLE / SINGLE	
	27	Mounting		Housing Material		Remote	AISI 316	
	28	Calibration Range				See Vendor Calculation Sheet		
	29	Electrical Connection		Electrical Class		M20x1,5MM	-	
	30	Output Signal		Load		4-20mA	600Ω	
	31	Other Output Signal				-		
	32	Power Supply		Consumption		24Vdc	20W	
	33	Ingress Protection		ATEX Certification		IP66	Ex-d IIC T6 Gb	
COMMUNICATION AND SOFTWARE	34	Communication Type		Signal Type		Conventional + HART Rev.7	4-20mA	
	35	DD Revision		CFF Revision		-	-	
	36	Hart Desciptor		Hart Tag		-	-	
	37	Internal Diagnostics		Capacitance		-	-	
	38	Segment		Device Address		-	-	
	39	Device Class		Simulate		-	-	
	40	Nominal Current		Operating Voltage		-	-	
ACCESSORIES	41	Environ. Protection				-		
	42	Measuring Cable Length		Special Cable Length		-	10m (Sensor - Transmitter)	
	43	Mounting Kit		Cable Glands		Mounting Bracket for 2" pole	Required	
	44	Isolating Ball Valve				Required according to piping class 01HSS		
PURCHASE	45	Manufacturer				Panametrics		
	46	Model	Sensor	Transmitter		Flowcell	XGF868I	
	47	Purchase Order Number				1724001317		
	48	Weight				See Sheet 9		

No.	Date	By	Chkd	Appr	Description
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)
00	13/03/2024	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

Ultrasonic Flowmeter

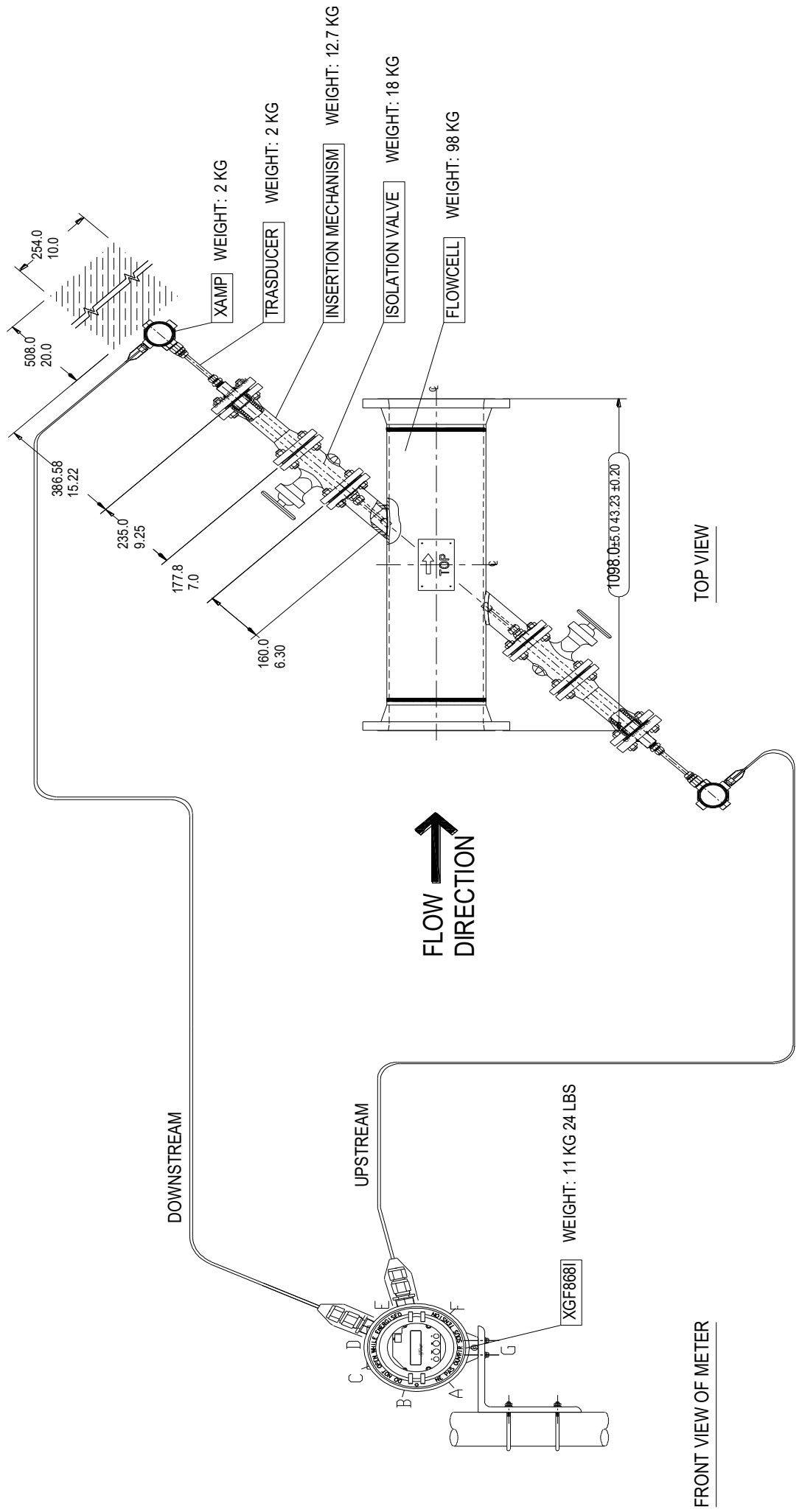
CROSSWIND

ROSETTI MARINO

Sheet 5 of 6

Code : Dwg. No.: 123A90-DDL-IN-DS-40048 Rev 01

43-FT-001 GENERAL ARRANGEMENT DRAWING



						INSTRUMENT DATASHEET	CROSSWIND	
						Ultrasonic Flowmeter	ROSETTI MARINO	
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)		Sheet 6 of 6	
No.	Date	By	Chkd	Appr	Description	Code :	Dwg. No.: 123A90-DDL-IN-DS-40048	Rev 01

Qty	Description
1	**FC-ARCOAX-10-M-FL150-075HAZLOC-BNC75-075HAZLOC-SS-0** Model: Flowmeter Cable Cable Type: Pair of armored coaxial cables (Price shown is price per pair) Cable Length: Cable Length: 10 Units: Meters Front Connector: Flying leads for XGX868i, XMT868i, XMT1000, IGM878, NEMA 4X DF868, GX868 Front Gland: For use with XGX868i, XMT868i, XMT1000 or IGM878 End Connector: BNC Plug for standard transducers End Gland: 3/4 Inch NPT for hazardous areas Material: 316 Stainless Steel Special: None

Section 7 MECHANICAL COMPLETION STATUS INDEX - MECHANICAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC & discipline : M

Mechanical	43-00 Hydrogen Vent Header & Drum System						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
Q-43004	Hydrogen Vent	ONSHORE	C10004526	CZX01M	100	2025-02-08	RFC 1
V-43001	Hydrogen Vent KO Drum	ONSHORE	C10004521	CDX01	100	2025-02-07	RFC 1

ITEM	Tag	V-43001	: Hydrogen Vent KO Drum			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004521		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Mechanical Form CDX01		Storage Tank

1	Check that the nameplate details are correct.	OK
2	Check the location, elevation, orientation and that the vessel is level.	OK
3	Check that the holding down arrangements are correct.	PL
4	Check for any installation damage.	OK
5	Check the vessel internals are as per approved drawings.	OK
6	Check the vessel internally for cleanliness.	NA
7	Check all platforms and ladders are installed as per approved drawings. Also man ways are accessible and suitable for operation.	NA
8	Check out the painting, insulation and the lining for damage.	PL
9	Check the earthing and bonding are as per Project Specifications.	PL
10	Check that the pipe supports are in accordance with the approved design.	OK
11	Check the disconnected pipework flanges against the nozzle flanges for correct alignment.	PL
12	Atmospheric Transportable Drain Vessel to be equipped with Breathing / Vacuum breaker valve.	NA
13	Check Flame Arrestor (if any).	NA
14	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-21	2025-02-07	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-21T05:40:53.001Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-02-07T15:05:45.941Z	

DRAWING NO. DRAWING_NO.

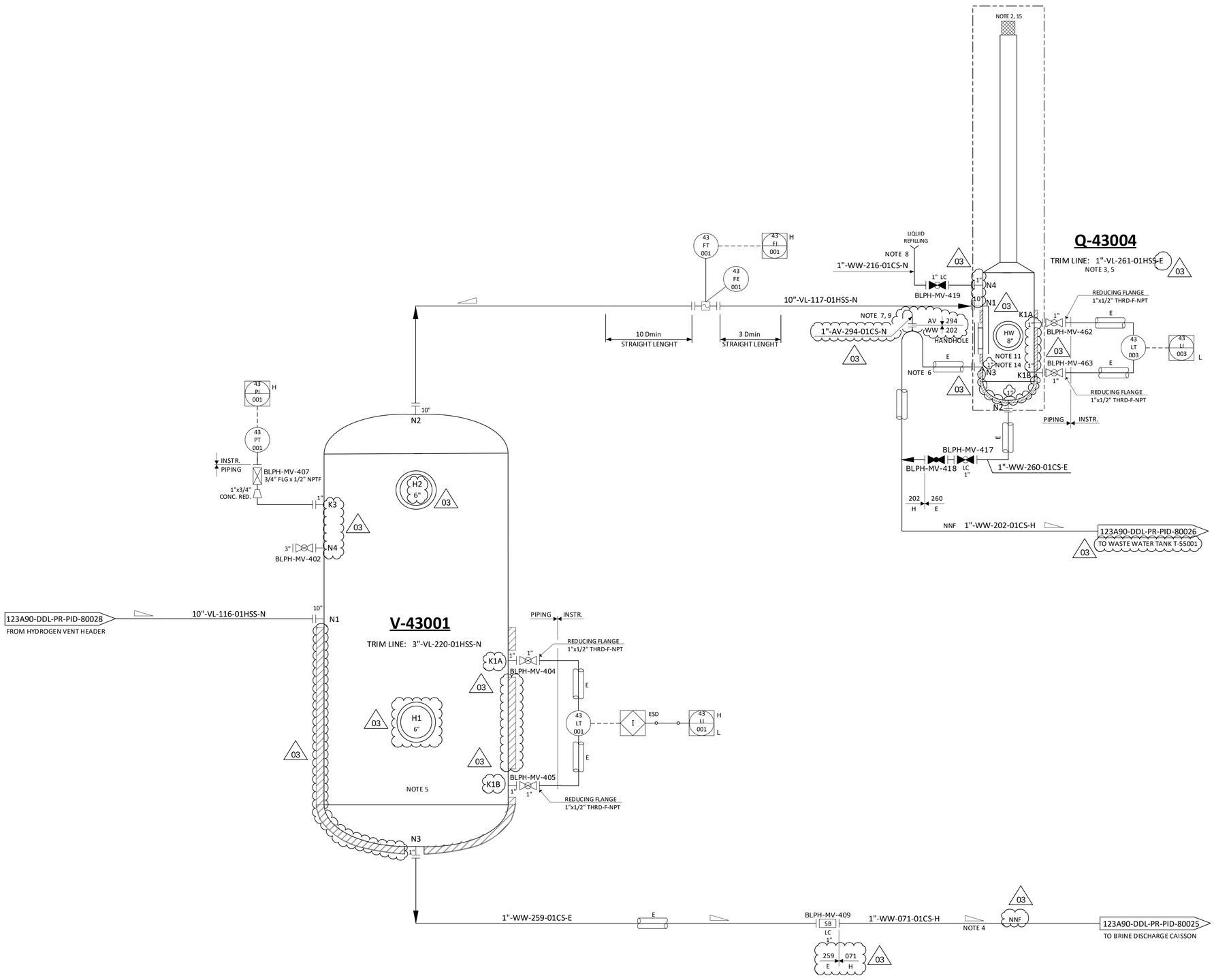
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

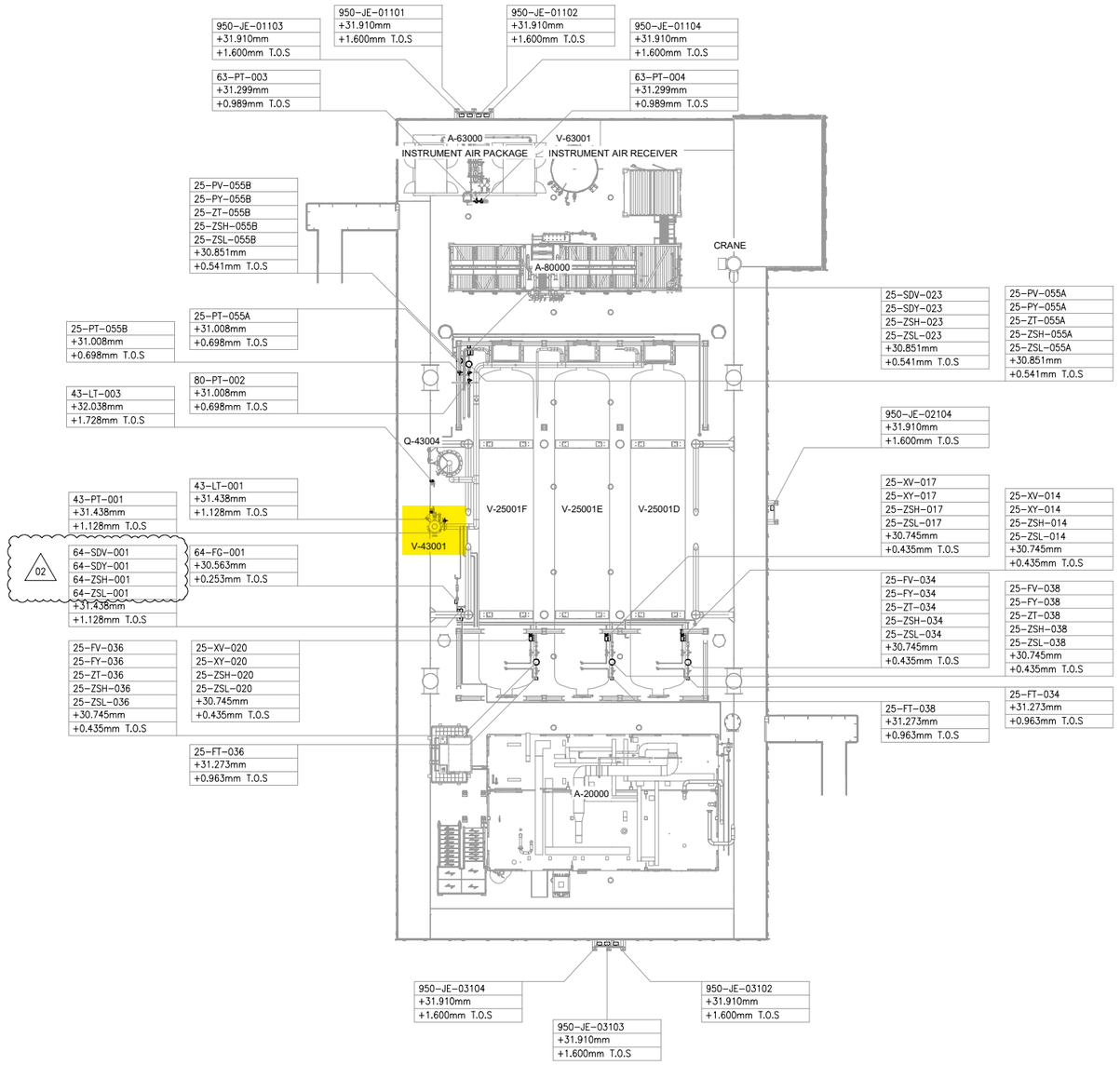
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DL-40081

REV. 01

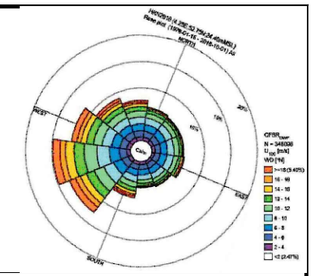


UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24

A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 001	REV. 02

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

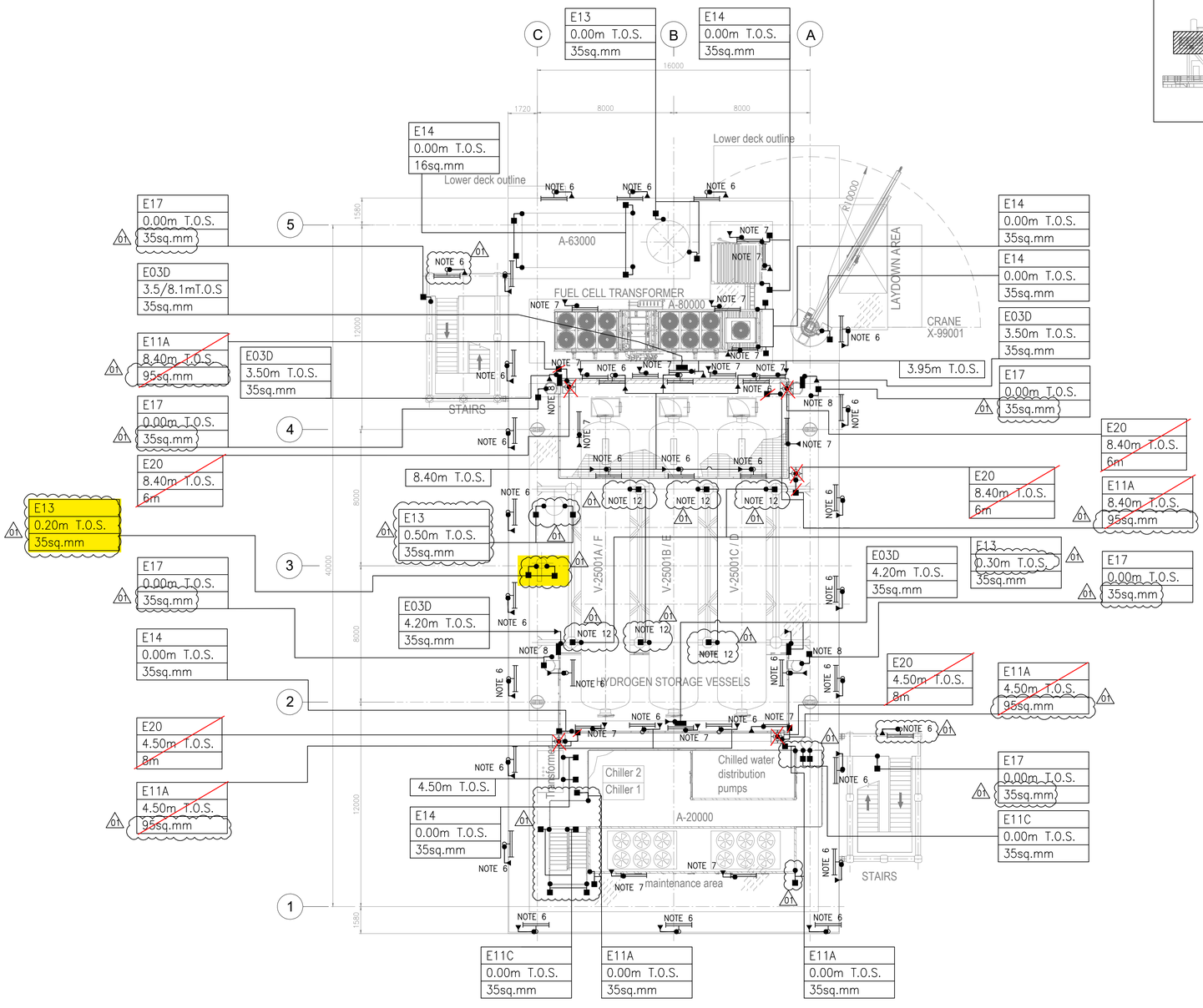
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DRAWING NO. 123A90-DDL-EL-DL-20132

REV. 01

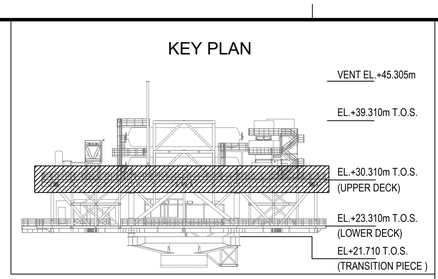
RLMU LIST

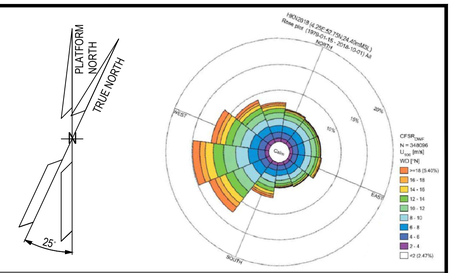
REV. 01_B: Sheet 1, 3



PLAN ON TOP DECK
EL+30.310 T.O.S.

KEY PLAN





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DOCUMENT IS ONLY VALID FOR EARTHING LAYOUT.
4. ALL ELECTRICAL EQUIPMENT NOT DIRECTLY WELDED TO SKID FRAME SHALL BE BONDED TO STEEL TO THE STRUCTURE OF SKID BASEFRAME.
5. FOR LIGHTNING PROTECTION SYSTEM SURGE PROTECTIVE DEVICES (SPD), REFER TO THE DOCUMENT 123A90-DDL-EL-RE-20154.
6. ALL NON-WELDED POLES WILL BE EARTHED AS PER TYPICAL E05 AND E24. 01
7. ALL LINEAR LIGHTING FIXTURE WILL BE EARTHED AS PER TYPICAL E32.
8. LADDER MUST BE EARTHED IF NOT WELDED TO THE STRUCTURE. LADDER MUST BE EARTHED TO THE UPPER BEAM OF THE STRUCTURE, COMPLETE EARTHING INCLUDING WITH 2 THREADED STUDS AS PER TYPICAL E17D.
9. ALL EARTH BAR WILL BE EARTHED AS PER TYPICAL E03D.
10. ALL POLE MOUNTED EQUIPMENTS WILL BE EARTHED AS PER TYPICAL E05.
11. EQUIPOTENTIAL BONDING GROUPING FOR BOLTED HANDRAILS ARE PROVIDED EVERY 3M FOR THE ENTIRE PERIMETER AS TYPICAL E16 AND WILL BE DEFINED DURING ASSEMBLY PHASE
12. EARTHED VESSELS V-25001D/E/F. FOR EARTHING V-25001A/B/C SEE SHEET 2 01

LEGEND

- LIGHTING FIXTURE POLE MOUNTED
- LINEAR LIGHTING FIXTURE
- EARTHING BOSS AISI316L
- COMPRESSION TYPE LUG TINNED COPPER
- THREADED STUD FOR EARTHING CONNECTION
- AIR TERMINATION ROD FOR LIGHTNING PROTECTION
- Exx EARTHING TYPICAL CODE
- EARTHING BAR

TYP.	TYPICAL
ELE	ELEVATION
SIZE	

E20	AIR TERMINATION ROD NO.
ELE	ELEVATION
HEIGHT	

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-EL-DL-20100	ELECTRICAL EQUIPMENT LAYOUT - TOP DECK
123A90-DDL-EL-DD-20090	ELECTRICAL TYPICAL INSTALLATION DETAILS - EARTHING SYSTEM
123A90-DDL-EL-RE-20154	LIGHTNING PROTECTION SYSTEM CALCULATION REPORT
123A90-DDL-EL-DL-20118	LIGHTING & SOCKET LAYOUT - TOP DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	31/07/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	27/05/24	NLK	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EARTHING & LIGHTNING LAYOUT
TOP DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN NLK	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 31/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20132	SHEET 001	REV. 01

File Name : 123A90-DDL-EL-DL-20132

VALID FOR CONSTRUCTION

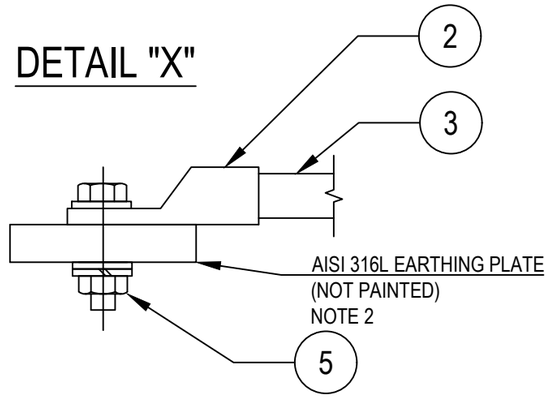
REV.:	DATE:	SIGNATURE:
1_B	08/11/24	V.Ramponi

ROSETTI MARINO SpA

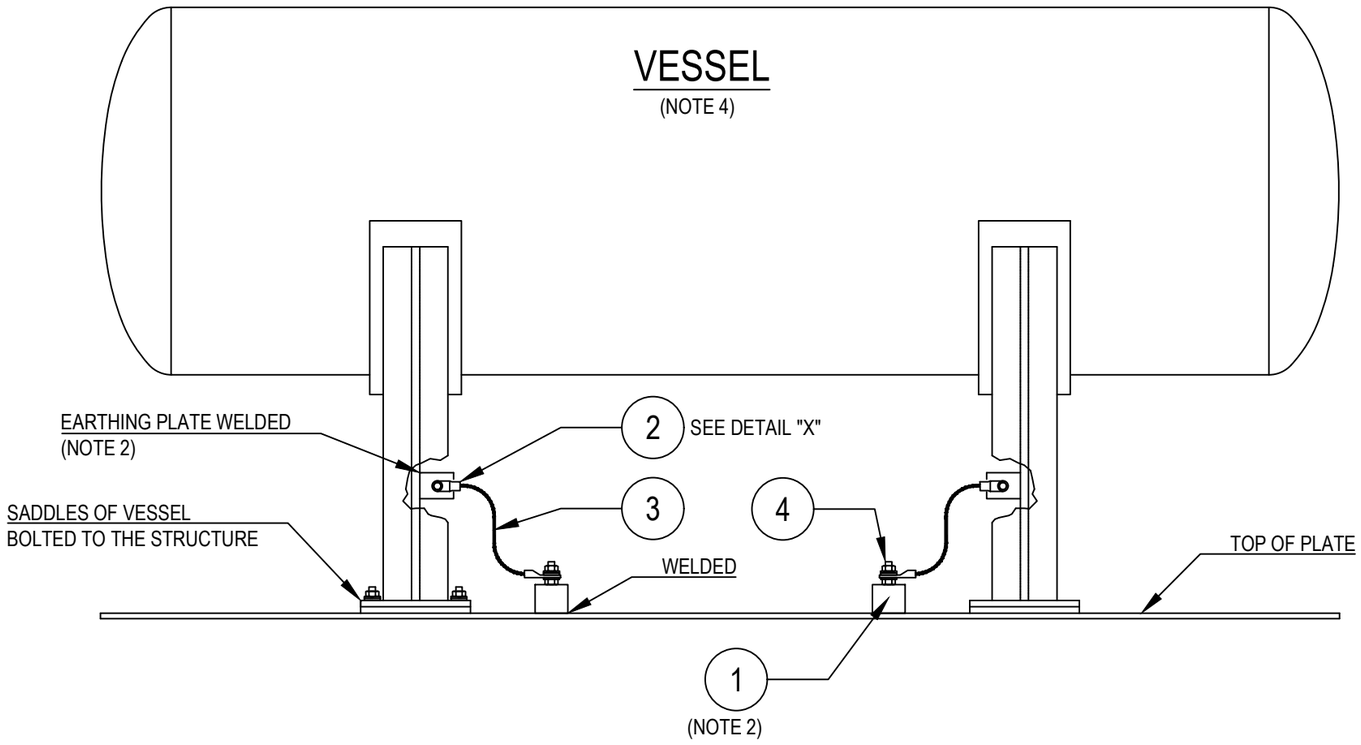
SHEET 001 OF 002

E13

DETAIL "X"



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	EARTHING BOSS WITH THREADED HOLE M10	AISI 316L	50X50	2	NOTE 3
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	35mm^2	4	~~NOTE 1~~
3	Y/G INSULATING COPPER CONDUCTOR	COPPER	35mm^2		~~NOTE 1~~
4	STUD BOLT WITH PLANE WASHER, SPRING WASHER AND NUT	AISI 316L	M10X50	2	
5	HEXAG. BOLT COMPLETE WITH PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M10X30	2	



NOTES:
~~1) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.~~
2) FOR EARTHING BOSS/PLATE DETAIL SEE TYPICAL DETAIL E11A
3) EARTHING BOSS SHALL BE PROTECTED AGAINST CORROSION USING AN OXIDE RESISTANT COMPOUND

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR VESSEL WITH LEGS BOLTED ON STRUCTURE

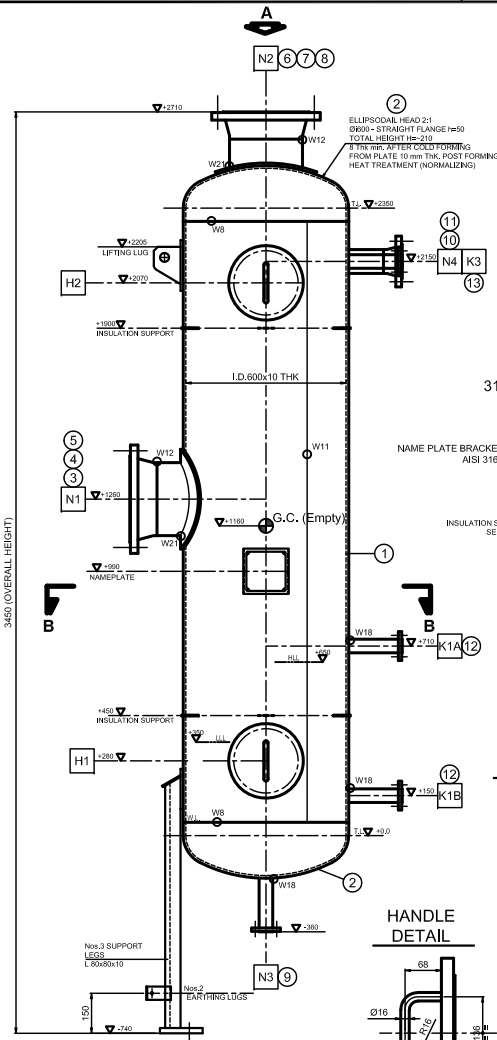
CONTRACT NO./TITLE CW–I–WP4–2023–05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

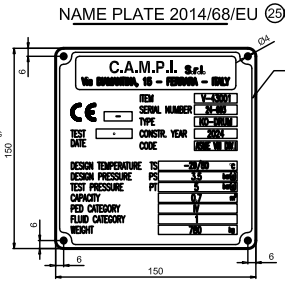
A3 | DRAWING NO. 123A90–DDL–EL–DD–20090 | SHEET 016 | REV. 02

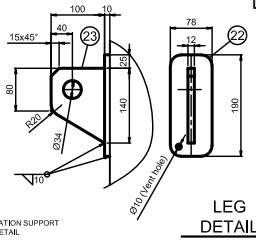
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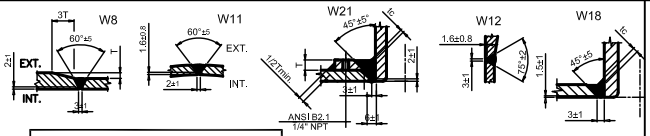
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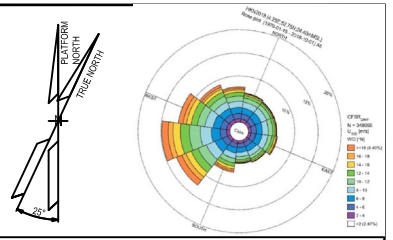

A
N2 6 7 8
ELLIPSOIDAIL HEAD 2:1
Ø600 + STRAIGHT FLANGE h=50
TOTAL HEIGHT H=~210
8 Thk min. AFTER COLD FORMING
FROM PLATE 10 mm Thk, POST FORMING
HEAT TREATMENT (NORMALIZING)
LIFTING LUG
INSULATION SUPPORT
I.D.600x10 THK
G.C. (Empty)
NAMEPLATE
INSULATION SUPPORT
INSULATION SUPPORT
Nos.3 SUPPORT LEGS L 80x80x10
Nos.2 EARTHING LUGS
B.C.D. 570
NO.3 ANCHOR BOLTS M24
3450 (OVERALL HEIGHT)
B
B


NAME PLATE 2014/68/EU 25 26
C.A.M.P.I. S.r.l.
Via Ghiardina, 15 - FERRARA - ITALY
ITEM
SERIAL NUMBER
TYPE
CONSTR. YEAR
CODE
TEST DATE
DESIGN TEMPERATURE TS
DESIGN PRESSURE PS
TEST PRESSURE PT
CAPACITY
PED CATEGORY
FLUID CATEGORY
WEIGHT
AISI 316L THK. 2 MM





NOTE - tc min : The SMALLER of 6mm / 0.7xTmin

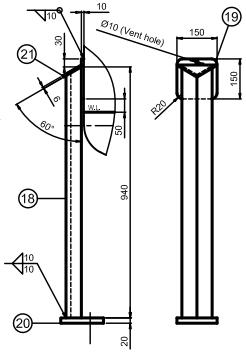


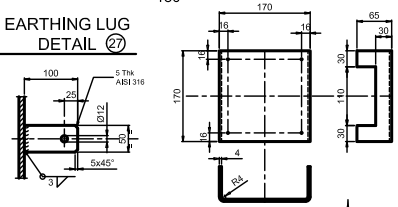
123A90-DDL-MAC-SP-50026	TECHNICAL SPECIFICATION FOR CS HORIZONTAL PRESSURE VESSELS IN H2 SERVICE	01
123A90-DDL-MAC-DS-50028	TDS - HYDROGEN VENT KO DRUM - V-43001	00
123A90-DDL-MAT-SP-60006	COATING AND PAINTING SPECIFICATION	02
123A90-DDL-ST-SP-90017	STRUCTURAL DESIGN BASIS	02
123A90-DDL-ST-SP-90018	STRUCTURAL MATERIAL SPECIFICATION	01
NUMBER	TITLE	REV.

REFERENCE DOCUMENTS

JOINT CATEGORY	RT	UT	PT/MT
A (SHELL LONGITUDINAL BUTT JOINT)	10% (100% for cross)	100%	-
B (SHELL CIRCUMFERENTIAL BUTT JOINT)	10% (100% for cross)	100%	-
C (NOZZLE-FLANGE BUTT JOINT)	10%	-	-
D (NOZZLE-SHELL/HEAD CORNER JOINT)	-	-	100%
LIFTING LUG AND LEGS	-	-	100%
WELD REPAIRS .	AS PER ORIGINAL WELD NDE		

WELDING EXAMINATIONS

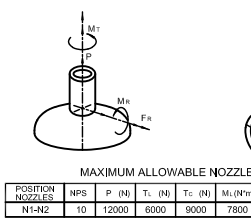




GASKETS FOR NOZZLES	1/16" FLEXIBLE GRAPHITE W/304 S.S. INSERT		-
STUD BOLTS / NUTS (EXTERNAL)	SA-320 Gr.L7 / SA-194 Gr.7		GALV., ACC. TO ASTM B633 Fe/Zn12
SUPPORT LEGS / BASE PLATES	S355J2 / SA-516 Gr.70		-
FLANGES NOZZLES AND BLIND	SA-350 LF2 CL1		-
NOZZLE NECKS	SA-333 Gr.6		-
REINFORCING PAD	SA-516 Gr.60N		-
SHELL / HEADS	SA-516 Gr.60N		-
DESCRIPTION	MATERIAL	CERT.	NOTES

MATERIAL LIST

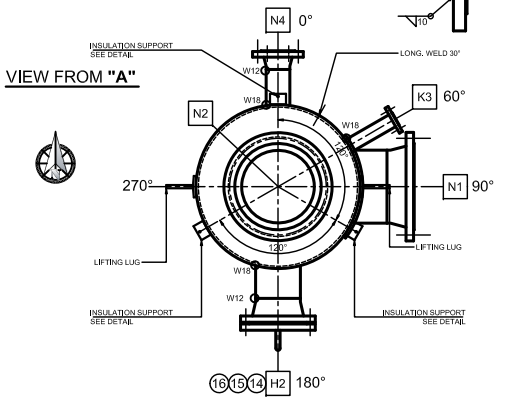
MATERIALS CERTIFICATION	THICKNESSES TOLERANCE
CERTIFICATE EN 10204 3.2	PLATES: -0,2 mm
CERTIFICATE EN 10204 3.1	PIPES: -12.5%
CERTIFICATE EN 10204 2.2	HEADS: -



MAXIMUM ALLOWABLE NOZZLE LOADS TABLE

POSITION NOZZLES	NPS	P (N)	T_L (N)	T_C (N)	M_L (N*m)	M_C (N*m)	M_T (N*m)
N1-N2	10	12000	6000	9000	7800	6000	9000

NOTE: NOZZLE FLANGE VERIFIED ACCORDING TO MANDATORY UG-44 TAKING INTO ACCOUNT THE EXTERNAL LOADS



N1	1	10	XS/12.7	150#	GAS INLET	WN-RF	3.2 ÷ 6.3 µm Ra	10x50	510	
N2	1	10	XS/12.7	150#	GAS OUTLET	WN-RF	3.2 ÷ 6.3 µm Ra	10x50	SEE DWG	
N3	1	1	- /12.7	150#	LIQUID OUTLET	LWN-RF	3.2 ÷ 6.3 µm Ra	-	SEE DWG	
N4	1	3	XS /7.62	150#	VENT	WN-RF	3.2 ÷ 6.3 µm Ra	-	510	
K1A	1	1	- /12.7	150#	LT FOR ALARM	LWN-RF	3.2 ÷ 6.3 µm Ra	-	510	
K1B	1	1	- /12.7	150#	LT FOR ALARM	LWN-RF	3.2 ÷ 6.3 µm Ra	-	510	
K3	1	1	- /12.7	150#	PT	LWN-RF	3.2 ÷ 6.3 µm Ra	-	510	
H1	1	6	XS /10.97	150#	INSPECTION PORT	WN-RF + BF	3.2 ÷ 6.3 µm Ra	-	510	1)
H2	1	6	XS /10.97	150#	INSPECTION PORT	WN-RF + BF	3.2 ÷ 6.3 µm Ra	-	510	1)
POSITION NOZZLE	N° OF	ND (NPS)	SCHEDULE/ THICKNESS	ASME PRESS. CLASS	SERVICE	TYPE AND FACING FLANGE	FLANGE FACE FINISH	REINFORCING PLATE THK./WIDTH	PROJ. FROM CENTER LINE	NOTES

LIST OF CONNECTIONS

NOZZLE NOTES

1) WITH BLIND FLANGE, GASKET, STUD BOLTS, NUTS, HANDLE

NOTES

27) NO WELD REPAIR ARE ADMITTED AFTER PWHT
26) MECHANICAL TEST ON PRODUCTION TEST COUPON (TENSILE TEST AT ROOM TEMPERATURE AND CHARPY TESTING AT -29°C, TEST ISO 17025 IN ACCREDITATED LABORATORY)
25) FOR SHIPMENT ALL NOZZLES SHALL BE BLANKED OF (WITH METALLIC BLIND, BOLTS AND GASKETS)
24) FOR PRESERVATION AND PREPARATION FOR SHIPMENT DESSICANT BAG WILL BE USED
23) COMMISSIONING SPARE PARTS:
- 10% SPARE BOLTING FOR EACH SIZE, WITH A MINIMUM OF 2 BOLTS WITH 4 NUTS AND WASHERS
- TWO COMPLETE SETS OF NEW SPARE GASKETS OF THE SAME MATERIAL THAN GASKETS INSTALLED ON THE EQUIPMENT, FOR EACH SIZE.

22) SURFACE PREPARATION AND PAINTING AS PER C3 CORROSIVITY CATEGORY OF ISO 9223
21) MATERIALS SHALL BE CERTIFIED EN 10204 TYPE 3.1 FOR PRESSURE PARTS AND TYPE 2.2 FOR OTHER PARTS.
20) CS FABRICATION MATERIAL FOR PRESSURE VESSELS IN HYDROGEN SERVICE SHALL HAVE CE MAX. = 0,35%.
19) PHOSPHORUS MAXIMUM TO BE 0,015%
18) IMPACT TESTING SHALL BE AT -46°C FOR BASE METAL AND WELD METAL IN H2 SERVICE REGARDLESS OF MDMT
17) STEEL SHALL BE HIC RESISTANT TO ISO 15156-2
16) MAX HARDNESS IN BASE METAL SHALL BE 235 HV10
15) ALL CARBON STEEL MATERIALS SHALL BE SUPPLIED IN FULLY KILLED AND NORMALIZED CONDITIONS,
14) COLD FORMED CARBON STEEL HEADS SHALL BE NORMALIZED AFTER FORMING.
13) FLANGES SHALL BE THROUGH-BOLTED WITH STUD BOLTS. THREADED FULL-LENGTH WITH A REMOVABLE NUT ON EACH END. THE LENGTH OF THE STUD BOLTS SHALL BE SELECTED SUCH THAT AFTER ASSEMBLY THE LENGTH OF THE STUD PROTRUDING BEYOND THE NUT IS 3,5MM ÷ 7,5MM.
12) WELDS ON REINFORCING PADS SHALL BE TESTED WITH BUBBLE (SOAP) SOLUTION AND COMPRESSED AIR AT A PRESSURE OF 0,5 TO 1 ,0 BAR (G), BEFORE PWHT AND HYDROSTATIC TESTING OF THE VESSEL.
11) REINFORCING PADS SHALL PREFERABLY BE OF ONE-PIECE CONSTRUCTION, IF THIS IS NOT POSSIBLE, THE WELDS IN SEGMENTED REINFORCING PADS SHALL BE ALIGNED IN THE DIRECTION OF THE VESSEL'S CIRCUMFERENCE.
10) REINFORCING PADS SHALL BE PROVIDED WITH ONE ½" NPT TELLTALE HOLE. TWO-PIECE REINFORCING PADS SHALL BE PROVIDED WITH TWO TELLTALE HOLES (ONE PER SEGMENT), AFTER TESTING, THE TELLTALE HOLE SHALL BE PLUGGED.
9) FABRICATION TEST COUPONS SHALL INCLUDE AS MINIMUM 1(ONE) TEST PIECE OF BASE MATERIAL BEFORE PWHT AND ANOTHER 1(ONE) OF MATERIAL WITH PWHT. TEST PLATES SHALL BE OF THE SAME HEAT OF THE SHELL MATERIAL USED IN THE CONSTRUCTION OF THE VESSEL AND SHALL BE HEAT TREATED WITH THE VESSEL IN THE SAME FURNACE WHEN APPLICABLE.
8) MACHINED SURFACES, FLANGE FACES, ETC., SHALL BE PROTECTED FROM OXIDATION DURING HEAT TREATMENT. NO WELDING, HAMMERING OR DEFORMATION IS PERMITTED AFTER PWHT.
7) THE MINIMUM DISTANCE BETWEEN THE EDGE OF THE NOZZLE WELDS OR REINFORCEMENT PLATE WELDS AND THE EDGE OF THE WELDED SEAM SHALL BE AS FOLLOWS:
- FOR A LONGITUDINAL WELD, THE GREATER OF 100 MM AND 2*t (WHERE t IS THE WALL THICKNESS);
- FOR CIRCUMFERENTIAL WELD, THE GREATER OF 50 MM AND 2*t.

6) NOZZLES PROJECTIONS REFERRED FROM EQUIPMENT CENTERLINE TO FLANGE CONTACT FACE. NOZZLE PROJECTIONS : FOR NOZZLE INSTALLED ON HEADS ARE REFERRED TO TANGENT LINE.
5) NOZZLES FLANGE STUD BOLTS HOLES STRADDLE C.L.
4) ALL THICKNESS SHOWN ON THIS DRAWING ARE MINIMUM AFTER FORMING AND MACHINING.
3) FLANGES ACCORDING TO ASME B16.5/2020 - , PIPES CARBON STEEL ACCORDING TO ASME B36.10/2022, PIPE FITTING ACCORDING TO ASME B16.9/2018 + B16.11/2021
2) CONSTRUCTION TOLERANCES AS PER ASME VIII DIV.1 ED.2023 PAR. UG-80 + UG-81. FOR ANGULAR AND LINEAR PARTS SEE C.A.M.P.I. SPEC. CTD-004/09 REV. 0
1) ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

DESIGN DATA

			SIDE	SHELL	NOTES
DESIGN CODES				ASME VIII Div.1 _ 2023 Ed.+2014/68/EU	
AUTHORIZED INSPECTION AGENCY				-	
ASME CERTIFICATION				NONE	
NATIONAL BOARD REGISTRATION				NONE	
PED CATEGORY				IV	
MODULE				G	
ATEX CLASSIFICATION				ZONE IIB T1+H2	
PRESSURE	DESIGN	bar (g)		3.5	
	OPERATING	bar (g)		ATM	
	HYDROTEST	bar (g)		5,0	
	M.A.W.P. (HOT AND CORRODED)	bar (g)		18 @ 80°C	
TEMPERATURE	DESIGN	°C		80	
	OPERATING	°C		25	
	MDMT	°C		-29 @ 18 bar (g)	18)
CORROSION ALLOWANCE		mm		1.0	
FLUID	TYPE			HYDROGEN / WATER	
	FLUID GROUP			1 / 2	
	PHYSICAL STATE			GAS / LIQUID	
	DENSITY	Kg/m³		0.085/1000	
	CAPACITY	m³		0.7	
JOINTS EFFICIENCY		SHELL		0.85	
		HEADS		0.85	
X-RAY TEST				SPOT	
POSTWELD HEAT TREATMENT AS PER UCS-56				YES (FOR PROCESS REQUIREMENT)	
OUT OF ROUND AS PER UG-80(a)		%		<1	
EXTREME FIBER ELONG SHELL AS PER UG-79-1		%		1.31 (NO Post forming heat treatment)	
EXTREME FIBER ELONG HEAD AS PER UG-79-1		%		7 (Post forming heat treatment see note 14)	
IMPACT TEST				SEE NOTE 18)	
INSPECTION OPENING AS PER UG-46(f)				SEE CONNECTION "H1" & "H2"	
SERVICE RESTRICTION AS PER UW-2				NONE	
INSULATION				YES / BY OTHERS	
FIREPROOFING				NONE	
SEISMIC ZONE FACTOR				NONE	
WIND DATA				1 Year Return, 3 sec. gust = 35 m/sec, 100 Year Return, 3 sec. gust = 45 m/sec	
INSTALLATION	VERTICAL			SUPPLY WEIGHT (MASS) 780 kg	
LOCATION	OFFSHORE			OPERATING WEIGHT 1015 kg	
				WEIGHT FULL OF WATER 1500 kg	

PAINTING (IN WORKSHOP)

EXTERNAL SURFACES:
- SANDBLASTING SA 2½ Std ISO 8501-1 (SSPC - SP10).
- COATING SYSTEM : N°1 OF NORSOK M-501
- TOP COAT COLOUR : WHITE RAL 9002

LOADS ON FOUNDATION

		ERECTION	TEST	OPERATING
VERTICAL LOAD	kN	7.6	14.7	9.9
SHEAR	kN	3.6	0.9	3.1
MOMENT	kN*m	3.8	0.95	3.2

LEGEND

HOLDS

A) -
B) -
C) -
D) -

FERRARA C.A.M.P.I. ITALY
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Tel. (+39) 0532 770048-772232 e-mail: camp@campi.it

C.A.M.P.I. DWG No. 24003-VE-10
Manufacturer Serial No. 24-003

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
04	02/09/24	CATTINI	BENINI	DALL'ARCHE	ACCEPTED FOR CONSTRUCTION (AFC)
03	01/07/24	CATTINI	BENINI	DALL'ARCHE	ACCEPTED FOR CONSTRUCTION (AFC)
02	14/06/24	CERVELLATI	BENINI	DALL'ARCHE	ADDED INSULATION SUPPORT
01	22/03/24	CERVELLATI	BENINI	DALL'ARCHE	ISSUE FOR CLIENT REVIEW (ICR)
00	29/02/24	CERVELLATI	BENINI	DALL'ARCHE	ISSUE FOR CLIENT REVIEW (ICR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
HYDROGEN VENT KO DRUM V-43001
GA DRAWING & FOUNDATION LOADING

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:10
DRAWN CERVELLATI | CHECKED BENINI | APPROVED DALL'ARCHE | DATE 28/02/24
A1 | DRAWING NO. 1724000163-MAC-DA-00004 | SHEET 1/3 | REV. 04

File Name : 1724000163-MAC-DA-00004

MATERIAL LIST

Job 24003

ROSETTI Ref 1724000163-MAC-DA-00004

Drawn CERVELLATI

Customer ROSETTI MARINO

Dwg Ref 24003-VE-10

Serial N° 24-003

Checked BENINI

P.O. No.

ITEM G.A. DRAWING FOR 38-V-001

Q.ty 1

Date 22.03.2024

ITEM .	REV	Q.TY	DESCRIPTION	DIMENSIONS		MATERIAL CODE DESIGNATION	APPLICABLE CODE	MATERIAL CERT.	OIS N°	NOTES
1		1	SHELL PLATE	2250x1916	10 Thk	SA 516 Gr. 60N		EN10204 - 3.1		
2		2	ELLIPSOIDAL HEAD 2:1	Øi600 h50 H210	8 Thk	SA 516 Gr. 60N		EN10204 - 3.1		Thk min AFTER COLD FORMING
3		1	FLANGE ASME W.N. R.F. Sch.XS	10"	150#	SA 350 LF2 Cl.1		EN10204 - 3.1		
4		1	PIPE	Ø273x12,7	~143	SA 333 Gr.6		EN10204 - 3.1		**N1**
5		1	PLATE	Ø373/277	10 Thk	SA 516 Gr. 60N		EN10204 - 3.1		
6		1	FLANGE ASME W.N. R.F. Sch.XS	10"	150#	SA 350 LF2 Cl.1		EN10204 - 3.1		
7		1	PIPE	Ø273x12,7	~126	SA 333 Gr.6		EN10204 - 3.1		**N2**
8		1	PLATE	Ø373/277	10 Thk	SA 516 Gr. 60N		EN10204 - 3.1		
9		1	FLANGE ASME L.W.N. R.F. L=STD	1"	150#	SA 350 LF2 Cl.1		EN10204 - 3.1		***N3***
10		1	FLANGE ASME W.N. R.F. Sch.XS	3"	150#	SA 350 LF2 Cl.1		EN10204 - 3.1		**N4**
11		1	PIPE	Ø88,9x7,62	~144	SA 333 Gr.6		EN10204 - 3.1		
12		2	FLANGE ASME L.W.N. R.F. L=STD	1"	150#	SA 350 LF2 Cl.1		EN10204 - 3.1		***K1A-K1B***
13		1	FLANGE ASME L.W.N. R.F. L=STD	1"	150#	SA 350 LF2 Cl.1		EN10204 - 3.1		***K3***
14		2	FLANGE ASME W.N. R.F. Sch.XS	6"	150#	SA 350 LF2 Cl.1		EN10204 - 3.1		
15		2	PIPE	Ø168,3x10,97	~133	SA 333 Gr.6		EN10204 - 3.1		
16		2	BLIND FLANGE ASME R.F.	6"	150#	SA 350 LF2 Cl.1		EN10204 - 3.1		
16a		2	GASKET	6"	150#	1/16" FLEXIBLE GRAPHITE W/304 S.S. INSERT		EN10204 - 2.2		***H1-H2***
16b		16	STUD BOLT	3/4"X120 10UNC-2A		SA 320 Gr. L7		EN10204 - 3.1		
16c		32	HEXAGONAL NUT	3/4" 10UNC-2B		SA 194 Gr. 4		EN10204 - 3.1		
16d		32	PLAIN WASHER	3/4"		F 436 Gr. 1				

MATERIAL LIST

Job 24003

ROSETTI Ref 1724000163-MAC-DA-00004

Drawn CERVELLATI

Customer ROSETTI MARINO

Dwg Ref 24003-VE-10

Serial N° 24-003

Checked BENINI

P.O. No.

ITEM G.A. DRAWING FOR 38-V-001

Q.ty 1

Date 22.03.2024

ITEM .	REV	Q.TY	DESCRIPTION	DIMENSIONS		MATERIAL CODE DESIGNATION	APPLICABLE CODE	MATERIAL CERT.	OIS N°	NOTES
17		2	ROD	Ø16	251	S355J2				
18		3	L-SHAPE	80x80x10	940	S355J2				
19		3	PLATE	150x150	10 Thk	SA 516 Gr. 60N		EN10204 - 3.1		
20		3	PLATE	150x160	20 Thk	SA 516 Gr. 60N				
21		3	PLATE	140x80	6 Thk	C.S.				
22		2	PLATE	78x190	10 Thk	SA 516 Gr. 60N		EN10204 - 3.1		
23		2	PLATE	100x140	12 Thk	SA 516 Gr. 60N				
24		1	PLATE	170x286	4 Thk	AISI 316L				
25		1	NAME PLATE	150x150	2 Thk	AISI 316L				
26		4	RIVET	Ø3,5x11		AISI 316L				
27		2	PLATE	50x100	5 Thk	AISI 316				
SPARE PARTS (Commissioning) - 2 SET OF GASKET (FOR EACH SIZE) + 10% OF BOLTS (FOR EACH SIZE) Min. 2 PCS.										
A		4	GASKET	6"	150#	1/16" FLEXIBLE GRAPHITE W/304 S.S. INSERT		EN10204 - 2.2		*Pos.16a*
B		2	STUD BOLT	3/4"X120 10UNC-2A		SA 320 Gr. L7		EN10204 - 3.1		*Pos.16b*
C		2	HEXAGONAL NUT	3/4" 10UNC-2B		SA 194 Gr. 4		EN10204 - 3.1		*Pos.16c*
D		2	PLAIN WASHER	3/4"		F 436 Gr. 1				*Pos.16d*
			NOTE >>>>> *- STUD BOLTS, NUTS AND WASHER SHALL BE GALVANIZED ACCORDING TO ASTM B633 FeZn12*							
		*	APPLICABLE CODE (for all materials certified 3.1) : ASME VIII							

DESIGN DATA

Rev							
1	Design Conditions	Internal	3.5	bar	at	-10 / 80	°C
1		External		bar	at		°C
		Volume	3	m^3			
1		Dimension (Nominal)	0,6 ID x 2,35 T/T				
1	Minimum Design Metal Temp		-29	°C (MDMT)	at	0	bar
1	Operating Conditions	Internal	atm	bar	at	25	°C
	Corrosion Allowance		1	mm			
1	Liquid Specific Gravity		1,0 max				
	PWHT Required		Per ASME Sect VIII Div 1	☑ Service PWHT	Yes		
	Radiography Requirements		Spot (RT-3)				
	Shop Hydrotest Pressure		Per Code				
	Field Hydrotest Pressure		TBC				
1	Painting Per		According to specification 123A90-DDL-MAT-SP-60006				
1	Insulation		YES	mm	**(*) Insulation by others (RM) - Vendor to provide support clips**		
	Fireproofing		N/A	mm			
1	Erection Weight		0	kg (Includes saddles / legs)			
1	Empty Weight		by vendor	kg (Start-Up Ready)			
1	Operating Weight		by vendor	kg -			
1	Test Weight		by vendor	kg			
1	Vessel Designed For Wind		1 Year Return, 3 sec. gust = 35 m/sec, 100 Year Return, 3 sec. gust = 45 m/sec				
	Vessel Designed For Earthquake		N/A				
	Moment At POS	Wind:	0	N-M			
	Shear Force At POS	Wind:	0	N			
	Moment At POS	Earthquake:	0	N-M (Operating)	0	N-M (Empty)	
	Shear Force At POS	Earthquake:	0	N (Operating)	0	N (Empty)	

DESIGN CODE & MATERIAL SPECIFICATIONS

Rev					
1	Construction Code	2004 ASME Section VIII Div.1 With Latest Addenda + PED 2014/68/EU	YES		
	Materials for Pressure Components and Parts Welded to Pressure Components:				
1	Shell and Heads	SA-516-60 (P355GH)	Thickness (mm)	by vendor	
	Standard ANSI Weld Neck and LWN Flanges	SA-105			
	Fittings	General Note VM-8			
	Self Reinforcing & Special Forgings	SA-765-II			
	Nozzle Necks	SA-106-B			
1	Shell Attachments	Plate (Including Wear Plate)	SA-516-60		
		Pipe	SA-106-B		
		Structural Shapes	A-36		
	Materials for Parts Not Welded to Pressure Components:				
	Saddles	A-36			
	Plate	A-516-70			
	Pipe	A-106-B			
	Pressure Bolting	SA-193-B7 / SA-194-2H			
	Internal Bolting	A-193 Gr B6 / A-194 Gr 6			
	Internal Piping	Carbon Steel			
	Other Internals	Carbon Steel			
	Gaskets	Pressure Gaskets	1/16" Flexible Graphite w/ 304 S.S. Insert		
		Non-pressure Gaskets	1/16" Flexible Graphite w/ 304 S.S. Insert		

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GENERAL NOTES (If Applicable)

Rev		
	VM-1.	All materials shown on this data sheet are to be furnished and installed by the Vessel Supplier unless otherwise noted.
1	VM-2.	Substitutions of materials will not be allowed without RM's prior approval. This approval can only be obtained at the time Vessel Supplier submits his quotation.
	VM-3.	The inside diameter of manholes shall be equal to the size specified in the table of connections for 18" (450 mm) and smaller size manholes. Manholes size 20" (500 mm) and larger may have a minimum inside diameter 25 mm less than the nominal size listed in the table of connections.
	VM-4.	Manholes and handholes shall be furnished with blind flange, bolts and gasket. Each manhole shall be provided with a davit or hinge and internal manhole grip.
	VM-5.	Internal ladder rungs shall be provided below the manway.
1	VM-6.	Supports for vessel insulation and fireproofing shall be furnished and installed by the Vessel Supplier when vessel is required to be insulated or fireproofed.
1	VM-7.	Vessel Supplier to provide vessel grounding lugs.
	VM-8.	In addition to meeting Code requirements for fittings, piping fittings shall be made from a material specification listed for plate, forging, or pipe pressure components on page 1 of this data sheet.
	VM-9	Below is not mandatory. Vendor to indicate values relevant to Material Specifications from their material supplier Max hardness in base metal shall be 235 HV10 - Steel shall be HIC resistant to ISO 15156-2 - Impact testing shall be at -46°C for base metal and weld metal in H2 service regardless of MDMT - Phosphorus maximum to be 0.015% (from EIGA 121/14) - Max strength 355Mpa yield - max CE of 0.35 should ideally be by product analysis not ladle analysis

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Rev

TABLE OF CONNECTIONS

General Notes for Table of Connections:

A. Connections shown in sketch are diagrammatic only. True location will be shown on Vendor Data Gen Arrangement Drawing

B. Unless otherwise noted the dimensions from the face of flange to inside shall comply with Table 4 of Doc n° 123A90-DDL-MAC-50026

C. All pressure connections are to be flanged.

D. Elevations in the table are to centreline of connection or face of flange unless noted otherwise.

E. For hill side connections see plan or end view.

F. Dimension "A" is the distance from the reference tangent line to the centreline of connection / face of flange.

G. Flanges over 24" shall be per ASME B16.47 Series B.

H. All flange faces shall have a stock finish.

J. For specific notes to TABLE OF CONNECTIONS see next page.

	Mark	Size	Rating	Face	Service	Elevation	Dim"A"	Specific Notes
1	N1	10"	150#	RF	GAS INLET			
1	N2	10"	150#	RF	GAS OUTLET			
1	N3	1"	150#	RF	LIQUID DRAIN			
1	N4	3"	150#	RF	VENT			
1	K1A	1"	150#	RF	LT			
1	K1B	1	150#	RF	LT			
1	K3	1"	150#	RF	PT			
1	K4	1"	150#	RF	LT			
1	H1	6"	150#	RF	HANDHOLE			
1	H2	6"	150#	RF	HANDHOLE			

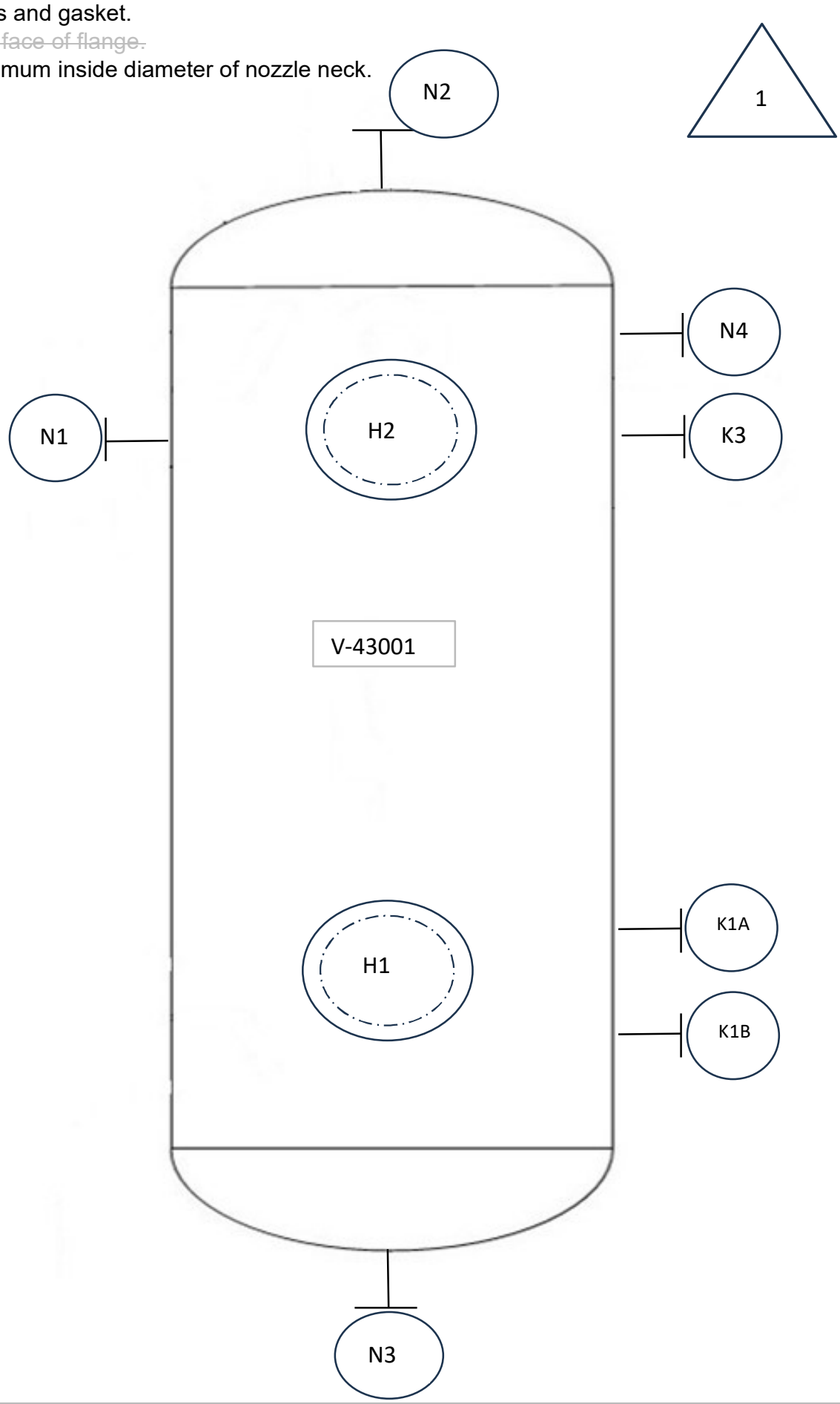
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SPECIFIC NOTES TO TABLE OF CONNECTIONS - SKETCH

(All Notes Listed Hereunder Shall Apply Only If Called For By Number In The Table Of Connections)

Rev

1 Use this information for quotation purpose only.
2 Supply blind flange, bolts and gasket.
3 ~~Elevation is given to the face of flange.~~
4 Nozzle size listed is minimum inside diameter of nozzle neck.
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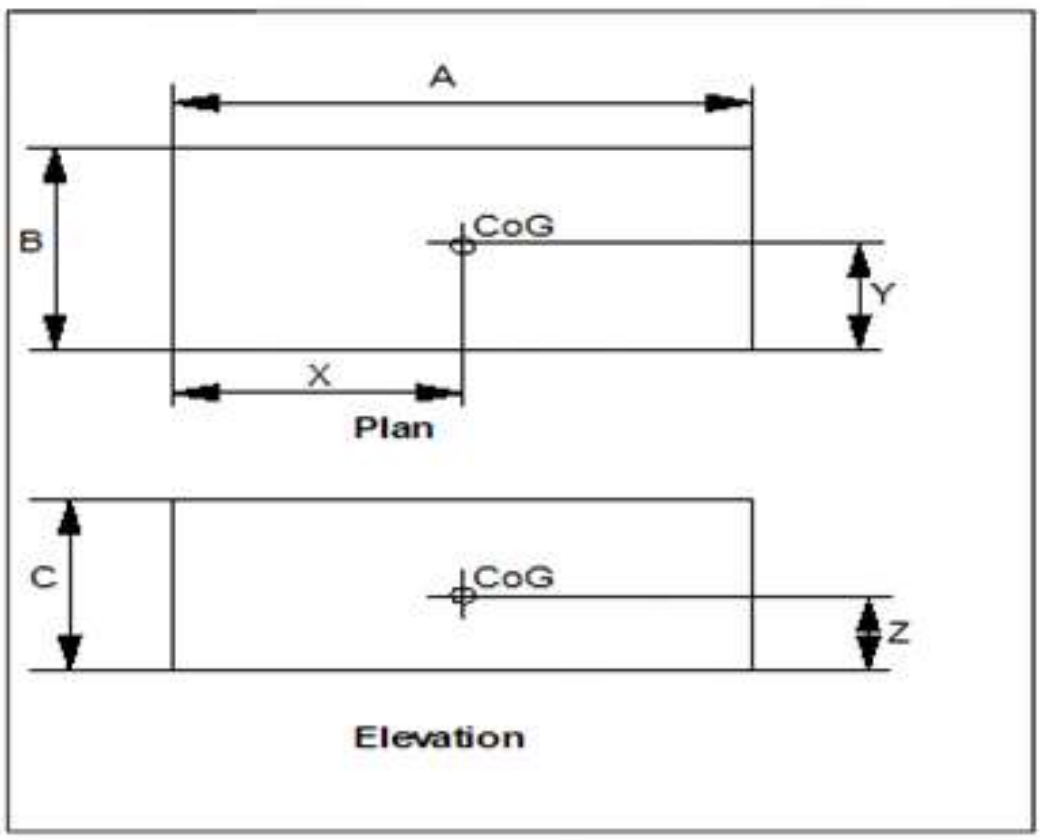
Note : the revision mark on the upper right is referred to the overall vessel sketch

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WEIGHT DATA (kg)

		Areas for input by Supplier	
Dry Weight	(I)		kg
Content	(II)		kg
Operating Weight	(I+II)		kg
Auxiliaries' weight, included in I (specify under Notes)			kg
Test weight, i.e. filled with water			kg
Transport weight			kg

CENTRE OF GRAVITY (CoG) DATA FOR INSTALLED DRY CONDITION



Overall dimensions	
A =	mm
B =	mm
C =	mm

CoG location (mm)	
X =	mm
Y =	mm
Z =	mm

NOTES

WEIGHT AND CoG STATUS (TICK OFF AS APPROPRIATE)

☐ Estimated	☐ Calculated
☐ Catalogue data	☐ Weighed

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ITEM	Tag	Q-43004	: Hydrogen Vent			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004526		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Mechanical Form CZX01M		Package - M

1	Check that the nameplate details and tag number are complete and correct.	OK
2	Check that the holding down arrangements are correct.	OK
3	Check for all interface piping/mechanical reinstated on site by contractor.	NA
4	Check that the package Mechanical equipment is complete and not damaged.	NA
5	Check all the equipment for correct lubrication, for oil leaks and cleanliness.	NA
6	Check for the free rotation of rotating equipment.	NA
7	Check the insulation, painting and for correct tagging and identification.	PL
8	Check that the earthing system of the equipment is as per specification.	NA
9	Check that the Package is fixed and tightened to the structures.	OK
10	Check the release note, FAT report and outstanding Punch list for the Package	OK
11	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-21	2025-02-08	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-21T05:41:04.569Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-02-08T11:46:07.475Z	

DRAWING NO. DRAWING_NO.

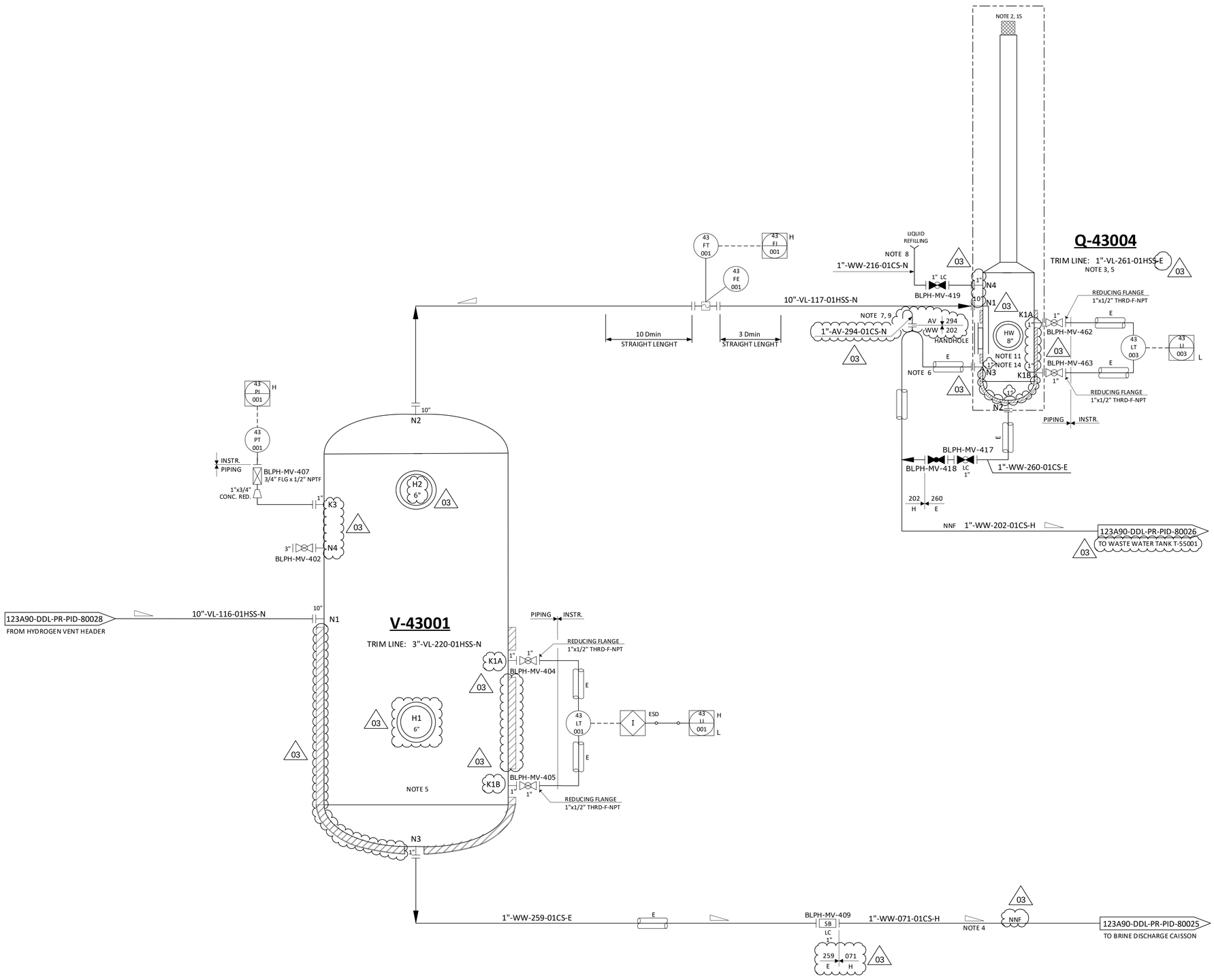
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

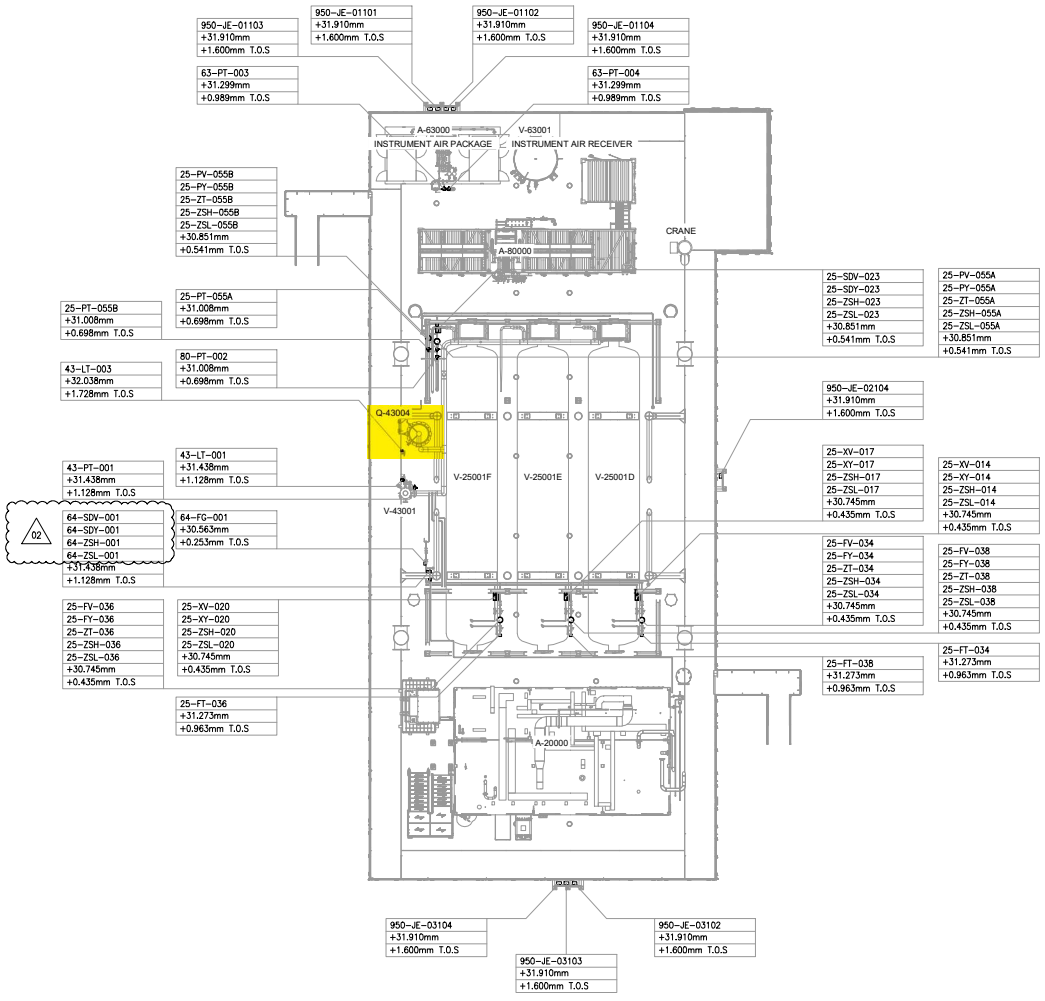
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

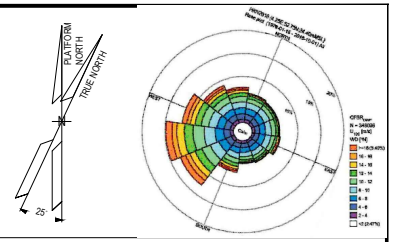
File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 01



UPPER DECK
SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT-UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 001	REV. 02

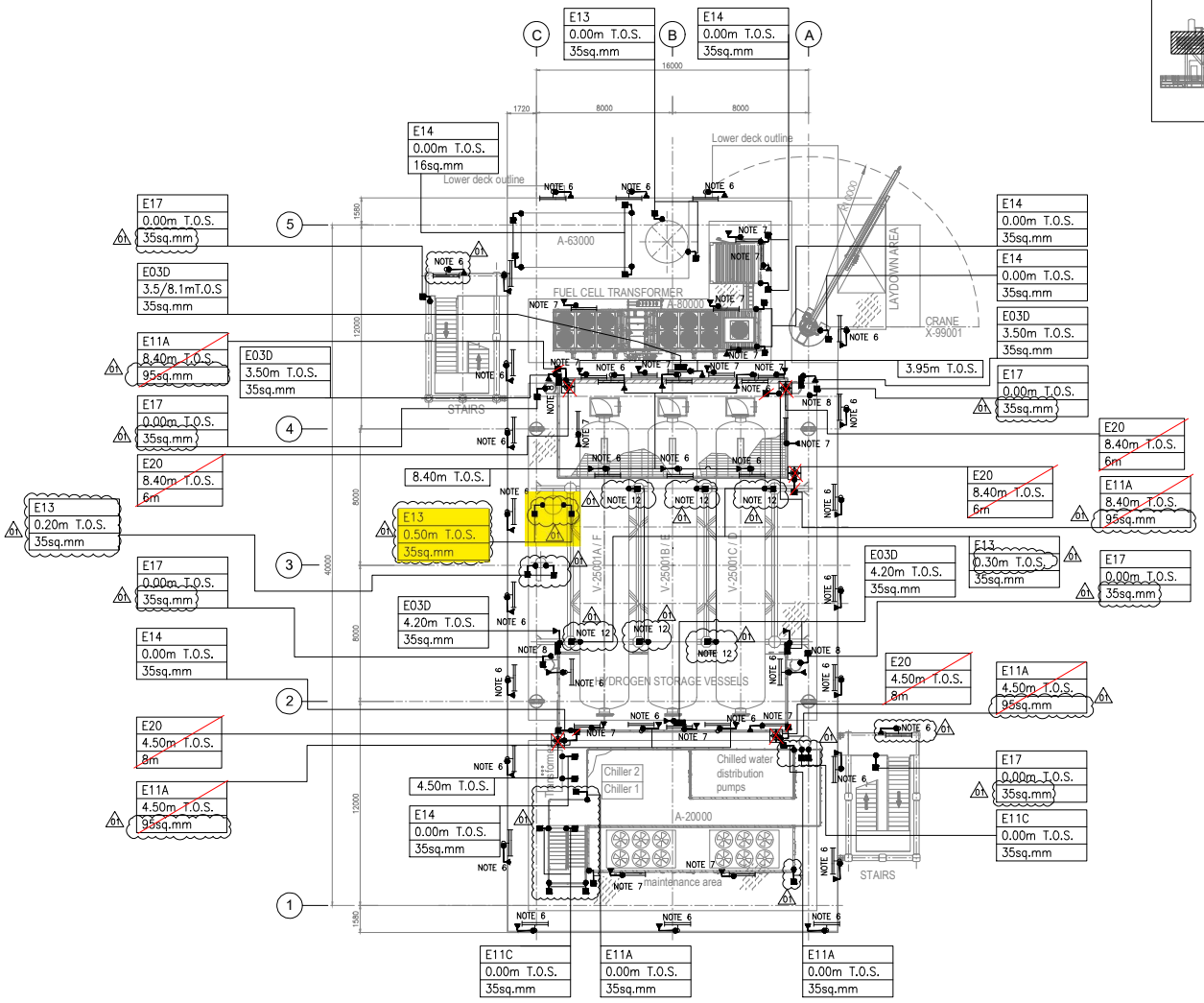
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DRAWING NO. 123A90-DDL-EL-DL-20132

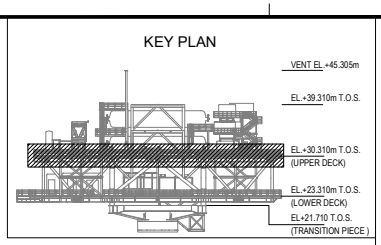
REV. 01

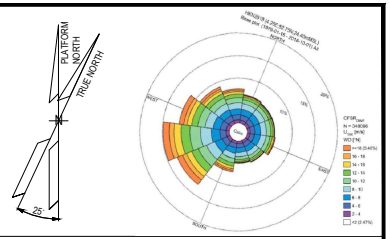
RLMU LIST

REV. 01_B: Sheet 1, 3



PLAN ON TOP DECK
EL+30.310 T.O.S.





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DOCUMENT IS ONLY VALID FOR EARTHING LAYOUT.
4. ALL ELECTRICAL EQUIPMENT NOT DIRECTLY WELDED TO SKID FRAME SHALL BE BONDED TO STEEL TO THE STRUCTURE OF SKID BASEFRAME.
5. FOR LIGHTNING PROTECTION SYSTEM SURGE PROTECTIVE DEVICES (SPD), REFER TO THE DOCUMENT 123A90-DDL-EL-RE-20154.
6. ALL NON-WELDED POLES WILL BE EARTHED AS PER TYPICAL E05 AND E24.
7. ALL LINEAR LIGHTING FIXTURE WILL BE EARTHED AS PER TYPICAL E32.
8. LADDER MUST BE EARTHED IF NOT WELDED TO THE STRUCTURE. LADDER MUST BE EARTHED TO THE UPPER BEAM OF THE STRUCTURE, COMPLETE EARTHING INCLUDING WITH 2 THREADED STUDS AS PER TYPICAL E17D.
9. ALL EARTH BAR WILL BE EARTHED AS PER TYPICAL E03D.
10. ALL POLE MOUNTED EQUIPMENTS WILL BE EARTHED AS PER TYPICAL E05.
11. EQUIPOTENTIAL BONDING GROUPING FOR BOLTED HANDRAILS ARE PROVIDED EVERY 3M FOR THE ENTIRE PERIMETER AS TYPICAL E16 AND WILL BE DEFINED DURING ASSEMBLY PHASE
12. EARTHED VESSELS V-25001D/E/F, FOR EARTHING V-25001A/B/C SEE SHEET 2

LEGEND

- LIGHTING FIXTURE POLE MOUNTED
- LINEAR LIGHTING FIXTURE
- EARTHING BOSS AISI316L
- COMPRESSION TYPE LUG TINNED COPPER
- THREADED STUD FOR EARTHING CONNECTION
- AIR TERMINATION ROD FOR LIGHTNING PROTECTION
- Exx EARTHING TYPICAL CODE
- EARTHING BAR

TYP.	TYPICAL
ELE	ELEVATION
SIZE	
E20	AIR TERMINATION ROD NO.
ELE	ELEVATION
HEIGHT	

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-EL-DL-20100	ELECTRICAL EQUIPMENT LAYOUT - TOP DECK
123A90-DDL-EL-DD-20090	ELECTRICAL TYPICAL INSTALLATION DETAILS - EARTHING SYSTEM
123A90-DDL-EL-RE-20154	LIGHTNING PROTECTION SYSTEM CALCULATION REPORT
123A90-DDL-EL-DL-20118	LIGHTING & SOCKET LAYOUT - TOP DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	31/07/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	27/05/24	NLK	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

REV.:	DATE:	SIGNATURE:
1_B	08/11/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EARTHING & LIGHTNING LAYOUT
TOP DECK

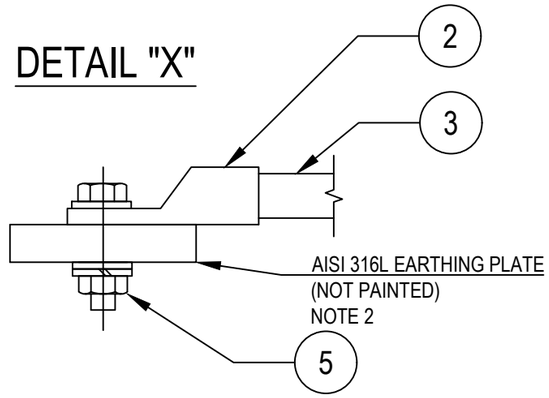
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN NLK	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 31/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20132	SHEET 001	REV. 01

SHEET 001 OF 002

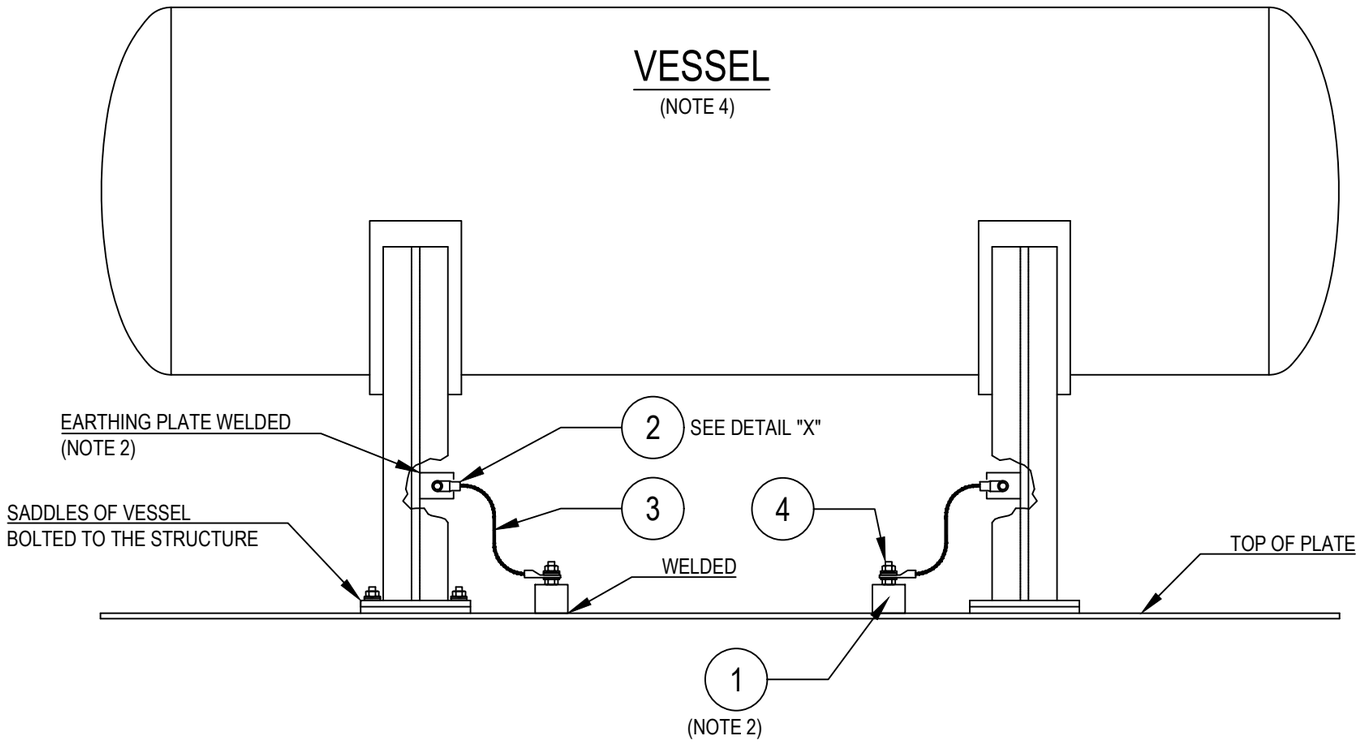
File Name : 123A90-DDL-EL-DL-20132

E13

DETAIL "X"



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	EARTHING BOSS WITH THREADED HOLE M10	AISI 316L	50X50	2	NOTE 3
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	35mm^2	4	~~NOTE 1~~
3	Y/G INSULATING COPPER CONDUCTOR	COPPER	35mm^2		~~NOTE 1~~
4	STUD BOLT WITH PLANE WASHER, SPRING WASHER AND NUT	AISI 316L	M10X50	2	
5	HEXAG. BOLT COMPLETE WITH PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M10X30	2	



NOTES:
~~1) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.~~
2) FOR EARTHING BOSS/PLATE DETAIL SEE TYPICAL DETAIL E11A
3) EARTHING BOSS SHALL BE PROTECTED AGAINST CORROSION USING AN OXIDE RESISTANT COMPOUND

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR VESSEL WITH LEGS BOLTED ON STRUCTURE

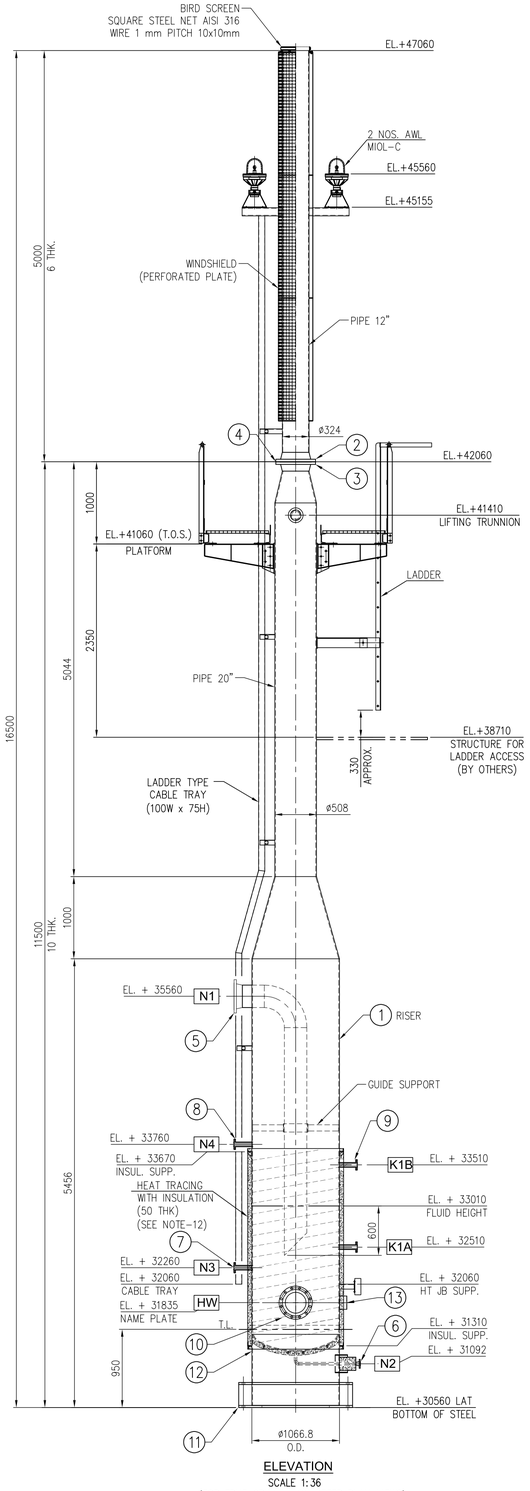
CONTRACT NO./TITLE CW–I–WP4–2023–05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90–DDL–EL–DD–20090 | SHEET 016 | REV. 02

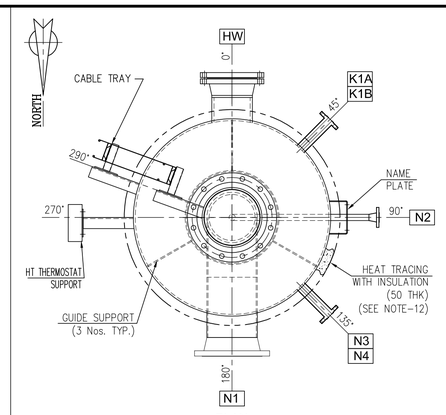
F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

DRAWING NO. 1724000887-MAC-DA-00003_04 REV. 04

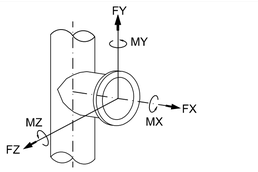


ELEVATION
SCALE 1:36
(FOR TRUE ORIENTATION REFER PLAN VIEWS)

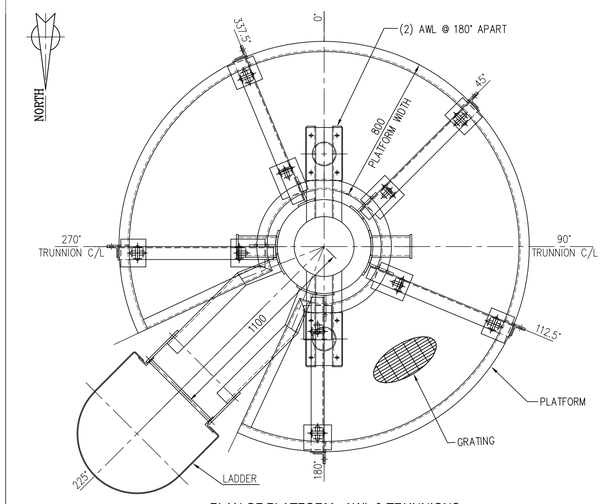


PLAN

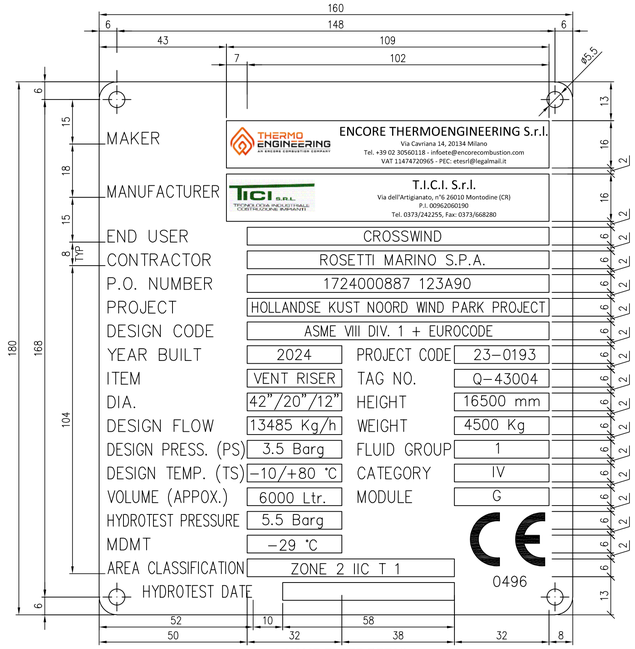
PLATFORM, AWL & TRUNNION NOT SHOWN FOR CLARITY



NOZZLE LOADS						
	LOADS [kN]			MOMENTS [kN x m]		
	FX	FY	FZ	MX	MY	MZ
INLET N1 (10")	7.78	14.45	14.45	6.31	4.74	4.74



PLAN OF PLATFORM , AWL & TRUNNIONS



NAME PLATE DETAIL

MATERIAL LIST

ITEM	Q.TY	DESCRIPTION	DIMENSION	MATERIALS
1	1	RISER SHELL	42" (1066.8) OD. x 10 THK	A516 GR.60/EQUIV
		RISER SHELL	20" (508) OD. x 10 THK	A516 GR.60/EQUIV
		VENT TIP SHELL	12" (323.9) OD. x 6 THK	AISI 316
2	1	VENT TIP FLANGE	ø12" 150# WNRF ASME B16.5	AISI 316L
3	1	RISER OUTLET FLANGE	ø12" 150# WNRF ASME B16.5	A350 GR LF2
4	1	GASKET	ø12" 150#, SPIRAL WOUND	NOTE-10
5	1	VENT INLET FLANGE	ø10" 150# WNRF, SCH.40 ASME B16.5	A350 GR LF2
5A	1	VENT INLET PIPE (DIP PIPE)	ø10" SCH.40 (SMLS)	A333 GR.6
6	1	DRAIN CONNECTION FLANGE	ø1" 150# WNRF, SCH. 80 ASME B16.5	A350 GR LF2
7	1	SWAN NECK CONNECTION FLG.	ø1" 150# LWNRF ASME B16.5	A350 GR LF2
8	1	FILLING LINE FLANGE	ø1" 150# LWNRF ASME B16.5	A350 GR LF2
9	2	LEVEL TRANSMITTER CONNECTION	ø1" 150# LWNRF ASME B16.5	A350 GR LF2
10	1	HAND HOLE FLANGE	ø8" 150# WNRF, SCH.40 ASME B16.5	A350 GR LF2
11	1	ANCHOR CHAIR	-	S275J0 or EQUIV.
12	1	SKIRT SHELL	42" (1066.8) OD.	S275J0 or EQUIV.
13	1	NAMEPLATE	-	AISI 316L

NOZZLES LIST

POS.	Q'TY	SIZE	RATING	FLANGE	SERVICE	PROJECTION FROM RISER C/L
N1	1	10"	150#	WNRF	VENT INLET FROM V-43001 W/ DIP PIPE	750
N2	1	1"	150#	WNRF	DRAIN	800
N3	1	1"	150#	LWNRF	SWAN NECK CONNECTION	750
N4	1	1"	150#	LWNRF	FILLING LINE	750
K1A/B	2	1"	150#	LWNRF	LEVEL TRANSMITTER	750
HW	1	8"	150#	WNRF	HAND HOLE W/ BLIND	750

LOADS AT THE BASE

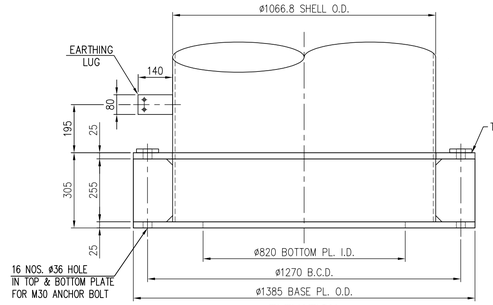
		Vertical [kN]	Shear [kN]	Moment [kN]
DEAD LOAD	DL	-27.66	0.00	0.00
DEAD LOAD CONTENT	DL_O	-17.06	0.00	0.00
LIVE LOAD ON PLATFORM	LL	-13.34	0.00	0.00
NOZZLE LOADS	NL	4.97	24.63	134.99
THERMAL	TL	0.00	0.00	0.00
WIND LOAD	WL	0.00	28.845	235.65
WAVE AND CURRENT LOADS	HL	0.00	-6.99	-55.95

THESE ARE THE RESULTANT FORCES AND THE SHEAR AND MOMENT CAN OCCUR IN ANY DIRECTION.

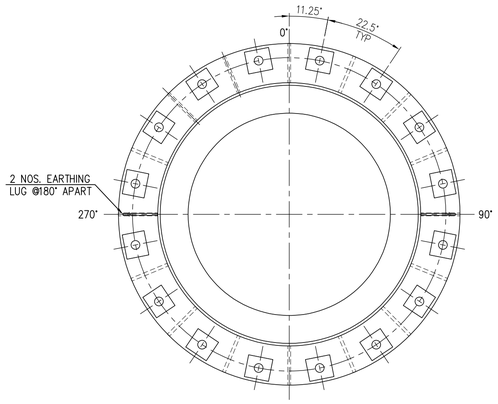
SHEAR = RESULTANT SHEAR: (FX^2 + FZ^2)^0.5

MOMENT = RESULTANT MOM: (MX^2 + MZ^2)^0.5

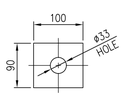
VERTICAL LOAD IS POSITIVE UPWARD



ELEVATION
ANCHOR CHAIR DETAIL
SCALE 1:12

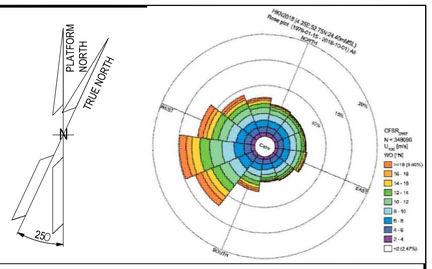


180°
PLAN VIEW



WASHER DETAIL

REFERENCE DOCUMENT	No.
MECHANICAL CALCULATION - HYDROGEN VENT	1724000887-MAC-CA-00004
DETAILED DRAWING WITH PART LIST - HYDROGEN VENT	1724000887-MAC-DD-00005
LIFTING DRAWING - HYDROGEN VENT	1724000887-MAC-DD-00019
-	-



NOTES

GENERAL NOTES:

1. ALL DIMENSION ARE IN mm UNLESS OTHERWISE STATED.
2. ALL ELEVATIONS ARE IN mm UNLESS OTHERWISE STATED.
3. ALL WELDING SHALL BE CONTINUOUS WITH CATHETUS EQUAL TO MINIMUM THK. TO BE WELDED.
4. REFERRING TO MAJOR AXIS FLANGE HOLES SHALL BE SYMMETRICALLY DISPOSED WITH EXCEPTION OF PILOTS FLANGES.
5. ALL FLANGES <= 24" ARE ACCORDING TO ASME B16.5 WITH FINISHING 125 AARH.
6. FOR SURFACE TREATMENT PLEASE REFER TO THE DOCUMENT NO. 1724000887-MAT-PRO-00010 (23-0193-0030).
7. MAIN COMPONENT WEIGHTS (APPROX.):
   RISER WEIGHT : 3950 kg (INCLUDING PLATFORM & LADDER)
   VENT TIP : 450 kg
8. FOR WIRING DIAGRAM (JB AND HT) REFER DOCUMENT NO. 1724000887-MAC-DG-00007 (23-0193-0170)
9. DELETED.
10. GASKET SHALL BE STAINLESS STEEL, SPIRAL WOUND, GRAPHITE FILLED, EPOXY-COATED CARBON STEEL CENTERING RING AND STAINLESS STEEL INNER RING.
11. FOR RISER CONSTRUCTION DETAILS REFER DRAWING NO. 1724000887-MAC-DD-00005 (23-0193-131).
12. HEAT TRACING CABLES AND INSULATION SUPPORTS ARE IN ETE SCOPE OF WORK. INSULATION SUPPLY & INSTALLATION BY OTHERS.

NAME PLATE NOTES:

a. ALL DIMENSIONS ARE IN mm, UNLESS OTHERWISE STATED.
b. NAMEPLATE MATERIAL : AISI 316L
   NAMEPLATE THK. : 2 mm
   TEXT COLOR : BLACK
   TEXT ENGRAVED
C. NAMEPLATE WILL BE FIXED ON VENT RISER REFER TO DOC. 1724000887-MAC-DD-00005 (23-0193-0131).

DESIGN DATA

DESCRIPTION	VALUES
DESIGN CODE	ASME VIII DIV. 1 + EUROCODE
MAX. GAS FLOW	13485 kg/h
AMBIENT TEMPERATURE	-8.4 / +25 °C
OPERATING PRESSURE	ATM barg
DESIGN TEMPERATURE	-10 / +80 °C
DESIGN PRESSURE	3.5 barg
CORROSION ALLOWANCE	3 mm (FOR CARBON STEEL ONLY)
HYDROTEST PRESSURE	5.5 barg
AREA CLASIFICATION	ZONE 2 IIC T 1
MDMT	-29 °C
FLUID GROUP	1
CATEGORY	IV
MODULE	G
SEISMIC	N/A
WIND VELOCITY	28 m/s
TYPE OF FLUID	HYDROGEN GAS
WELDING EFFICIENCY	0.85
RADIOGRAPHY	SPOT RT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
04	13-11-2024	SCB	VT	AL	ACCEPTANCE FOR CONSTRUCTION
03	10-10-2024	SCB	VT	AL	ACCEPTANCE FOR CONSTRUCTION
02	05-09-2024	SCB	VT	AL	ACCEPTANCE FOR CONSTRUCTION
01	30-07-2024	SCB	VT	AL	ISSUED FOR REVIEW
00	03-06-2024	RJS	SCB	AL	ISSUED FOR REVIEW

THERMO ENGINEERING — AN ENCORE COMBUSTION COMPANY

ETE JOB 23-0193
ETE DWG NR. 23-0193-0101

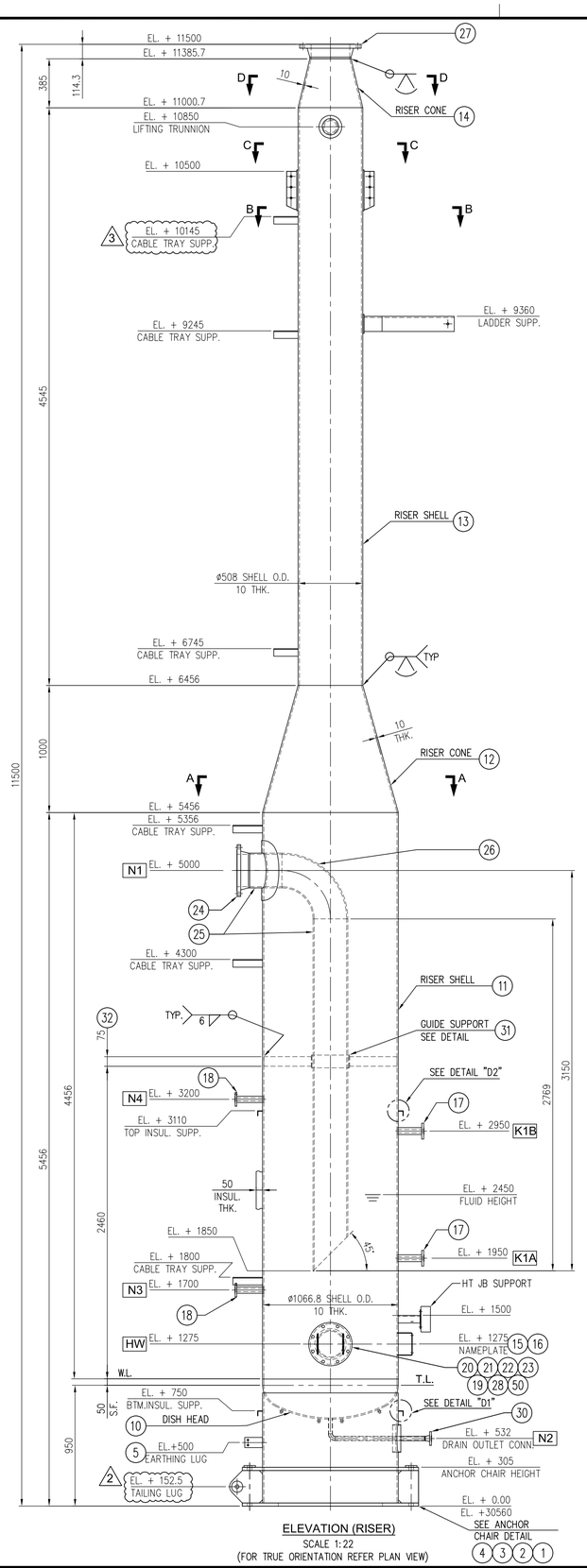
CROSSWIND — ROSETTI MARINO

TITLE :
HYDROGEN VENT
GENERAL ARRANGEMENT
INCLUDING FOUNDATION LOADS

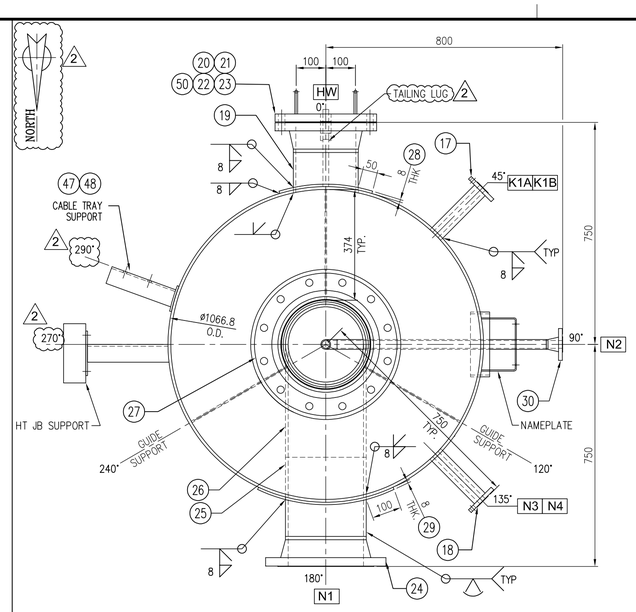
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:36
DRAWN RJS | CHECKED SCB | APPROVED AL | DATE 03/06/24
A1 | DRAWING NO. 1724000887-MAC-DA-00003 | SHEET 001 | REV. 04

File Name : 1724000887-MAC-DA-00003_04

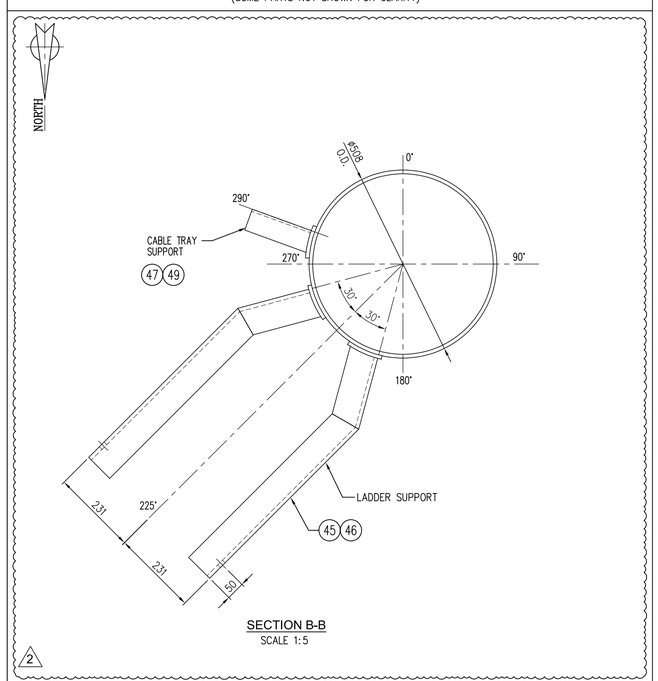
DRAWING NO. 1724000887-MAC-DD-00005_03 REV. 03



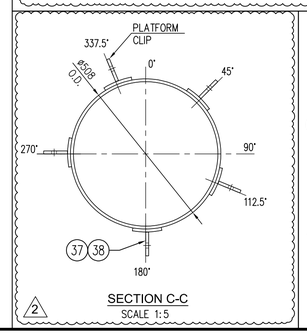
ELEVATION (RISER)
SCALE 1:22
(FOR TRUE ORIENTATION REFER PLAN VIEW)



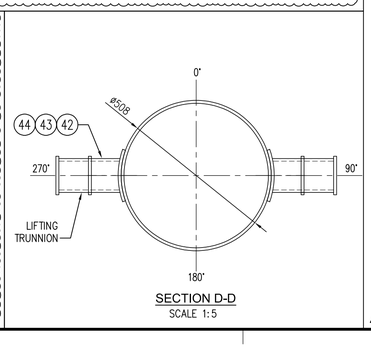
SECTION A-A
SCALE 1:10
(SOME PARTS NOT SHOWN FOR CLARITY)



SECTION B-B
SCALE 1:5



SECTION C-C
SCALE 1:5



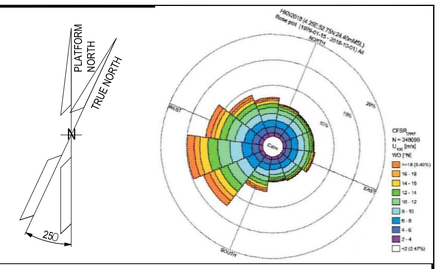
SECTION D-D
SCALE 1:5

BILL OF MATERIAL (RISER)

ITEM	QTY	DESCRIPTION	DIMENSION	MATERIAL	PED
1	1	BOTTOM ANCHOR PLATE	25 THK x 1385 O.D. x 820 I.D.	S275 J0	–
2	1	TOP ANCHOR PLATE	25 THK x 1385 O.D. x 1070 I.D.	S275 J0	–
3	15	GUSSET PLATE	12 THK x 159 x 255	S275 J0	–
4	16	WASHER PLATE	15 THK x 90 x 100	S275 J0	–
5	2	EARTHING LUG	6 THK x 80 x 140	AISI 304	–
6	1	SKIRT SHELL	10 THK x 865 LG. x 3320 (ROLL TO 1066.8 O.D.)	S275 J0	–
7	1	SLEEVE PIPE	8", SCH.20 (6.35 THK) x 97 LG.	A333 GR.6	–
8	1	PIPE (N2) (SMLS)	1", SCH.80 (4.55) x 1000 LG. (CUT TO SUIT)	A333 GR.6	ASME/EN
9	1	ELBOW	1", SCH.80 (4.55), 90DEG LR, BW.	A420 WPL6	ASME/EN
10	1	DISH END	2:1 ELLIPSOIDAL HEAD, 50 S.F. 12 THK (BEFORE FORMING) x 1066.8 O.D.	A516 Gr.60 /EQUIV.	ASME/EN
11	1	RISER SHELL	10 THK x 4456 LG. x 3320 (ROLL TO 1066.8 O.D.)	A516 Gr.60 /EQUIV.	ASME/EN
12	1	CONE	ø1066.8 LARGE O.D. x ø508 SMALL OD x 10 THK x 1000 HEIGHT.	A516 Gr.60 /EQUIV.	ASME/EN
13	1	RISER SHELL	10 THK x 4545 LG. x 1565 (ROLL TO 508 O.D.)	A516 Gr.60 /EQUIV.	–
14	1	CONE	ø508 LARGE O.D. x ø323.8 SMALL OD x 10 THK x 385 HEIGHT.	A516 Gr.60 /EQUIV.	–
15	1	NAMEPLATE SUPPORT	4 THK x 210 x 385	A516 Gr.60 /EQUIV.	ASME/EN
16	4	RIVETS	ø5	AISI 316	–
17	2	FLANGE FOR K1A & K1B	ø1" 150# LWNRF x 230 LG. ASME B16.5	A350 GR LF2	ASME/EN
18	2	FLANGE FOR N3 & N4	ø1" 150# LWNRF x 230 LG ASME B16.5	A350 GR LF2	ASME/EN
19	1	PIPE (HW) (SMLS)	8", SCH.40 (8.18 THK) x 122 LG. (CUT TO SUIT)	A333 GR.6	ASME/EN
20	1	FLANGE (HW)	8", SCH.40 (8.18 THK) x 150#, WNRF	A350 GR LF2	ASME/EN
21	1	FLANGE (HW)	8" x 150#, BLRF	A350 GR LF2	ASME/EN
22	1	GASKET (HW)	8", 150# SPIRAL WOUND ASME B16.20	SEE NOTE-9	ASME/EN
23	8	STUD BOLT + 2 NUT FOR (HW)	M20 x 110 LG.	A193 GR. B7/ SA194 GR.2H (HDG)	ASME/EN
24	1	FLANGE (N1)	10", SCH.40 (9.27 THK) x 150#, WNRF	A350 GR LF2	ASME/EN
25	1	PIPE (N1) (SMLS)	10", SCH.40 (9.27 THK) x 3200 LG. (CUT TO SUIT)	A333 GR.6	ASME/EN
26	1	ELBOW	10", SCH.40 (9.27), 90DEG LR, BW.	A420 WPL6	ASME/EN
27	1	FLANGE (RISER OUTLET)	12", SCH.STD (10 THK) x 150#, WNRF	A350 GR LF2	–
28	1	REPAD PLATE (HW)	8 THK x 50 WIDTH (CUT TO SUIT INNER OUTER ELLIPTICAL HOLES)	A516 Gr.60 /EQUIV.	ASME/EN
29	1	REPAD PLATE (N1)	8 THK x 100 WIDTH (CUT TO SUIT INNER OUTER ELLIPTICAL HOLES)	A516 Gr.60 /EQUIV.	ASME/EN
30	1	FLANGE (N2)	1", SCH.80 (4.55 THK) x 150#, WNRF	A350 GR LF2	ASME/EN
31	1	GUIDE SUPP. PLATE	6 THK x 100 LG. x 924 (ROLL TO 300 O.D.)	A516 Gr.60 /EQUIV.	ASME/EN
32	3	GUIDE SUPP. RIBS	6 THK x 75 x 375	A516 Gr.60 /EQUIV.	ASME/EN
3	33		DELETED		–
3	33A		DELETED		–
3	34		DELETED		–
3	35	2	INSUL. SUPP. ANGLE	L50x50x4 x 3666 LG. (ROLL TO 1146.8 O.D.)	S275 J0	ASME/EN
36	25	SQUARE NUT	M16	A194 GR. 2H (HDG)	–
37	5	PLATFORM CLEAT PAD	10 THK x 100 x 320	A516 Gr.60 /EQUIV.	–
38	5	PLATFORM CLEAT	10 THK x 80 x 300	A516 Gr.60 /EQUIV.	–
39	1	JB SUPP. PAD	6 THK x 90 x 90	A516 Gr.60 /EQUIV.	ASME/EN
40	1	JB SUPP. ANGLE	L60x60x6 x 197 LG.	S275 J0	–
41	1	JB SUPP, PLATE	6 THK x 150 x 150	S275 J0	–
42	2	TRUNNION PLATE	10 THK x ø130	S275 J0	–
43	2	TRUNNION PAD	10 THK x ø180	S275 J0	–
44	2	TRUNNION PIPE	4", SCH.80 (8.56 THK) x 196 LG.	A333 GR.6	–
2	44A	2	TRUNNION STOPPER	10 THK x ø130 O.D. x ø116 I.D.	S275 J0	
45	2	LADDER CLIP	L120x80x10 x 800 LG.	S275 J0	–
46	2	LADDER CLIP PAD	6 THK x 111 x 150	A516 Gr.60 /EQUIV.	–
47	6	CABLE TRAY SUPP. PAD	6 THK x 90 x 90	A516 Gr.60 /EQUIV.	ASME/EN
48	3	CABLE TRAY SUPP.	L60x60x6 x 232 LG.	S275 J0	–
49	3	CABLE TRAY SUPP.	L60x60x6 x 188 LG.	S275 J0	–
50	2	HANDLE (HW)	ø10 ROD x 300 LG.	S275 J0	ASME/EN
51	2	CONNECTION PLATE	6 THK x 30 x 80	S275 J0	–
52	2	HEX BOLT	M10 x 30 LG.	CS (HDG)	–
53	2	HEX NUT	M10 (H=D)	CS (HDG)	–
54	1	TAILING LUG	20 THK x 255 x 260	S275 J0	
2	55	2	TAILING LUG COLLAR PLATE	8 THK x ø90 O.D. x ø30 I.D.	S275 J0	

BILL OF MATERIAL (TIP, WINDSHIELD & BIRD SCREEN)

ITEM	QTY	DESCRIPTION	DIMENSION	MATERIAL	PED
101	1	FLANGE (VENT TIP)	ø12", (6 THK) x 150#, WNRF	AISI 316L	–
102	1	GASKET (VENT TIP CONN.)	ø12", 150# SPIRAL WOUND ASME B16.20	SEE NOTE-9	–
103	12	STUD BOLT + 2 NUT FOR VENT TIP FLG.	M24 x 135 LG.	A193 Gr. B7 SA194 Gr. 2H (HDG)	–
104	1	VENT TIP SHELL	ø12", 6 THK x 4886 LG.	AISI 316	–
105	5	WINDSHIELD SUPP. RING PL.	6 THK x ø416 O.D. x ø328 I.D.	AISI 316	–
106	1	WINDSHIELD & BIRD SCREEN SUPP. RING PL.	6 THK x ø416 O.D. x ø328 I.D. (SEE DETAIL)	AISI 316	–
107	8	NUT	M12	AISI 316	–
108	2	PERFORATED SHEET METAL	2 THK x 1491 LG. x 1314 (ROLL TO 420 O.D.)	AISI 316	–
109	1	PERFORATED SHEET METAL	2 THK x 973 LG. x 1314 (ROLL TO 420 O.D.)	AISI 316	–
110	1	PERFORATED SHEET METAL	2 THK x 139 LG. x 1314 (ROLL TO 420 O.D.)	AISI 316	–
111	1	PERFORATED SHEET METAL	2 THK x 375 LG. x 1314 (ROLL TO 420 O.D.)	AISI 316	–
112	1	BIRD SCREEN MTG. RING PL.	6 THK x ø416 O.D. x ø336 I.D. (SEE DETAIL)	AISI 316	–
113	1	BIRD SCREEN HOLDING SHELL	6 THK x 60 LG. x 1075 (ROLL TO 348 O.D.)	AISI 316	–
114	1	BIRD SCREEN STIFFENER RING	6 THK x 25 LG. x 1119 (ROLL TO 362 O.D.)	AISI 316	–
115	1	BIRD SCREEN	SQUARE STEEL NET WIRE, 1MM PITCH 10x10MM	AISI 316	–
116	8	HEX BOLT	M12 x 35 LG.	AISI 316	–
117	4	AWL SUPP.	UPN100 x 471 LG.	AISI 316	–
118	2	LIFTING LUG	10 THK x 90 x 145	AISI 316	–
119	2	CABLE TRAY SUPP.	L60x60x6 x 295 LG.	AISI 316	–
6	120	1	SPIRAL VENTURI SEAL	12"-SVS-9	AISI 316	–



NOTES

GENERAL NOTES :

1 – ALL DIMENSION ARE IN mm UNLESS OTHERWISE STATED.
2 – ALL ELEVATIONS ARE IN mm UNLESS OTHERWISE STATED.
3 – ALL WELDING SHALL BE CONTINUOS WITH CATHETUS EQUAL TO MINIMUN THK. TO BE WELDED.
4 – UNLESS OTHERWISE STATED, FLANGES WILL HAVE BOLT HOLES STRADDLING CENTERLINE.
5 – FOR SURFACE TREATMENT PLEASE REFER TO THE DOCUMENT NO. 1724000887-MAT-PRO-00010 (23-0193-0030).
6 – THE FACES OF FLANGES SHALL BE SMOOTH FINISH. SMOOTH FINISH SHALL BE ACHIEVED IN ACCORDANCE WITH ASME B16.5.
7 – FLANGE UP TO 24" SHALL COMPLY WITH ASME B16.5.
8 – REINFORCING PADS SHALL BE PROVIDED WITH ONE ¼" NPT TELLTALE HOLE. TWO-PIECE REINFORCING PADS SHALL BE PROVIDED WITH TWO TELLTALE HOLES (ONE PER SEGMENT). AFTER TESTING, THE TELLTALE HOLE SHALL BE PLUGGED. REINFORCING PADS SHALL NOT BE LOCATED ON THE WELDED SEAMS.
9 – GASKET SHALL BE STAINLESS STEEL, SPIRAL WOUND, GRAPHITE FILLED, EPOXY-COATED CARBON STEEL CENTERING RING AND STAINLESS STEEL INNER RING.
10 – WELDING FOR BIRD SCREEN (ITEM 114) SHALL BE DONE AFTER PROPER INSERTION OF ITEM 115 BETWEEN ITEM 113 AND 114
11 – RISER TOTAL NET WEIGHT: 3300 kg.
TIP TOTAL NET WEIGHT: 450 kg.
CABLE TRAY & ACCESSORIES NET WEIGHT: 90 kg.
PLATFORM & LADDER NET WEIGHT: 650 kg. (INCLUDING GRATING)
12 – BASE PLATE HOLE SHALL BE USED AS TAILING LUG FOR LIFTING OF RISER.
13 – SUITABLE CUTOUTS SHALL BE TAKEN INTO WINDSHIELD FOR WELDING OF AWL SUPPORT & CABLE TRAY SUPPORTS TO TIP SHELL.

HOLDS

THERMO ENGINEERING AN ENCORE COMBUSTION COMPANY					ETE JOB	23-0193
					ETE DWG NR.	23-0193-0131
03	06-11-2024	RJ	SCB	AL	ISSUED FOR INFORMATION	
02	08-10-2024	RJ	SCB	AL	ISSUED FOR INFORMATION	
01	05-09-2024	RJ	SCB	AL	ISSUED FOR INFORMATION	
00	02-08-2024	RJ	SCB	AL	ISSUED FOR INFORMATION	
REV.	DATE	DRN	CHKD	APPD	DESCRIPTION	

CROSSWIND — ROSETTI MARINO

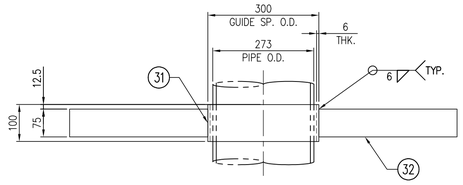
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HYDROGEN VENT
DETAILED DRAWING WITH PART LIST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:22	
DRAWN RJ	CHECKED SCB	APPROVED AL	DATE 02-08-24
A1	DRAWING NO. 1724000887-MAC-DD-00005	SHEET 001	REV. 03

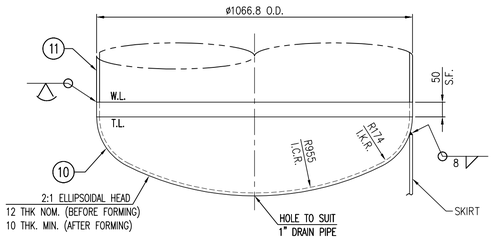
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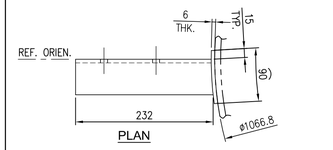
REV. 03



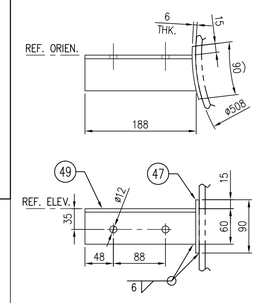
DETAIL OF GUIDE SUPPORT FOR NOZZ. "N1"



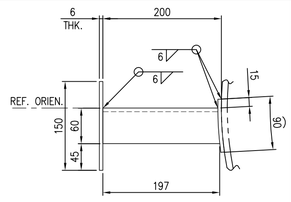
1066.8 O.D. DISH END DETAIL



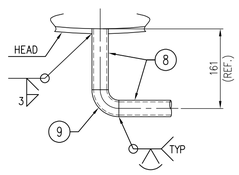
DETAIL OF CABLE TRAY SUPPORT ON Ø1066.8 O.D.



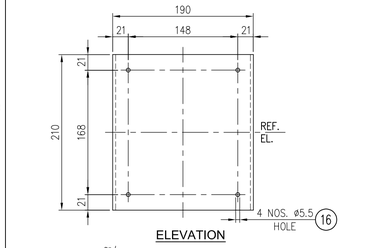
DETAIL OF CABLE TRAY SUPPORT ON Ø508 O.D.



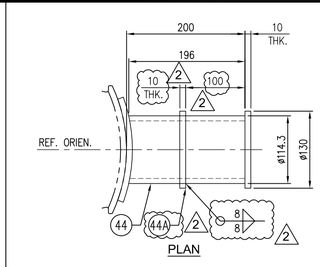
DETAIL OF HT. JB. SUPPORT



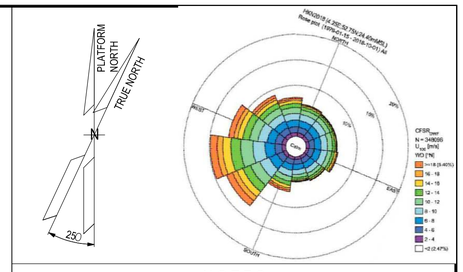
1" DRAIN DETAIL
SCALE 1:6

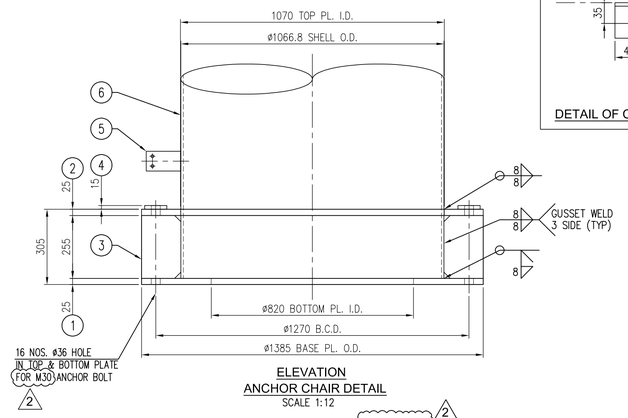


SCALE 1:4

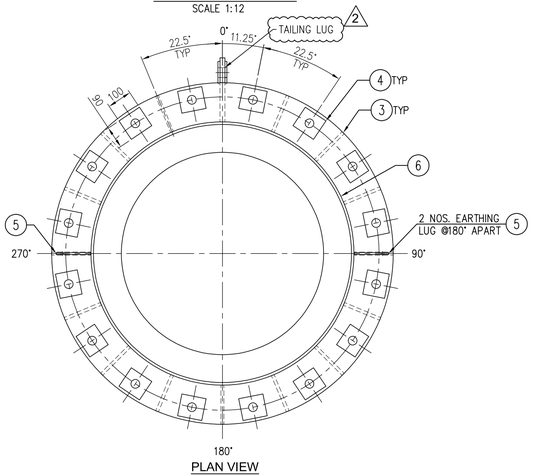


DETAIL OF LIFTING TRUNNION

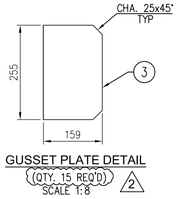




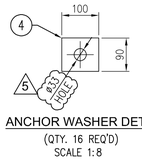
ELEVATION
ANCHOR CHAIR DETAIL
SCALE 1:12



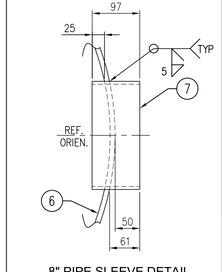
PLAN VIEW



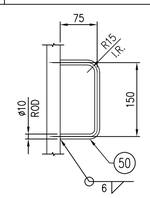
GUSSET PLATE DETAIL
(QTY. 15 REQ'D)
SCALE 1:8
2



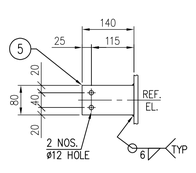
ANCHOR WASHER DETAIL
(QTY. 16 REQ'D)
SCALE 1:8



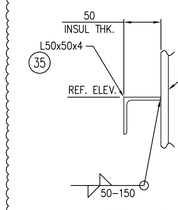
8" PIPE SLEEVE DETAIL
(FOR NOZZLE N2)
SCALE 1:6



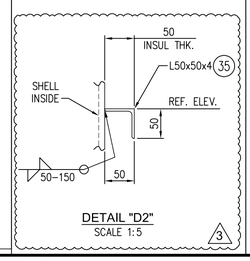
DETAIL OF HANDLE (HW)
SCALE 1:6



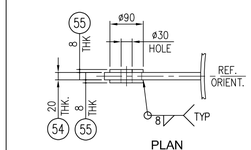
EARTHING LUG DETAIL
SCALE 1:8

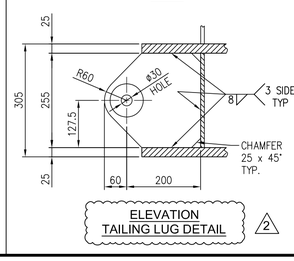


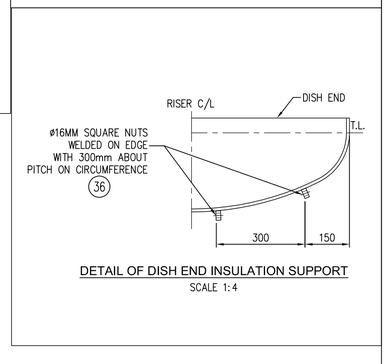
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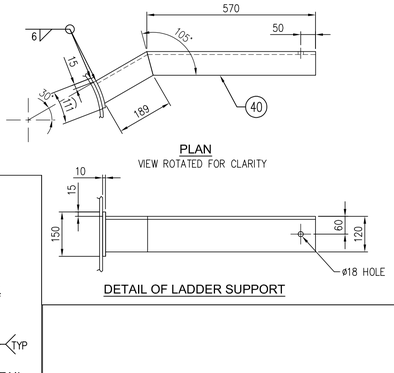


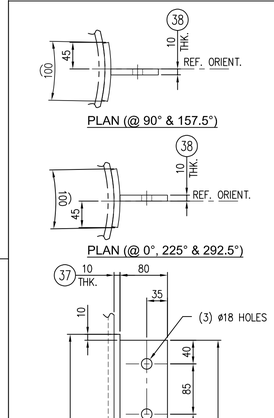
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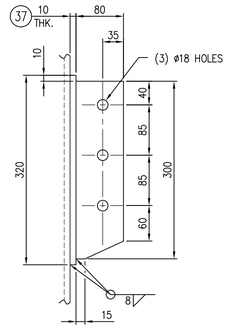




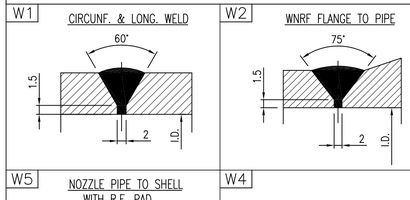








WELDING DETAILS



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	06-11-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
02	08-10-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
01	05-09-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
00	02-08-2024	RJ	SCB	AL	ISSUED FOR INFORMATION

THERMO ENGINEERING — AN ANSALDO ENERGIA COMPANY

ETE JOB 23-0193

ETE DWG NR. 23-0193-0131

CROSSWIND

ROSETTI MARINO

TITLE :

HYDROGEN VENT
DETAILED DRAWING WITH PART LIST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE 1:22

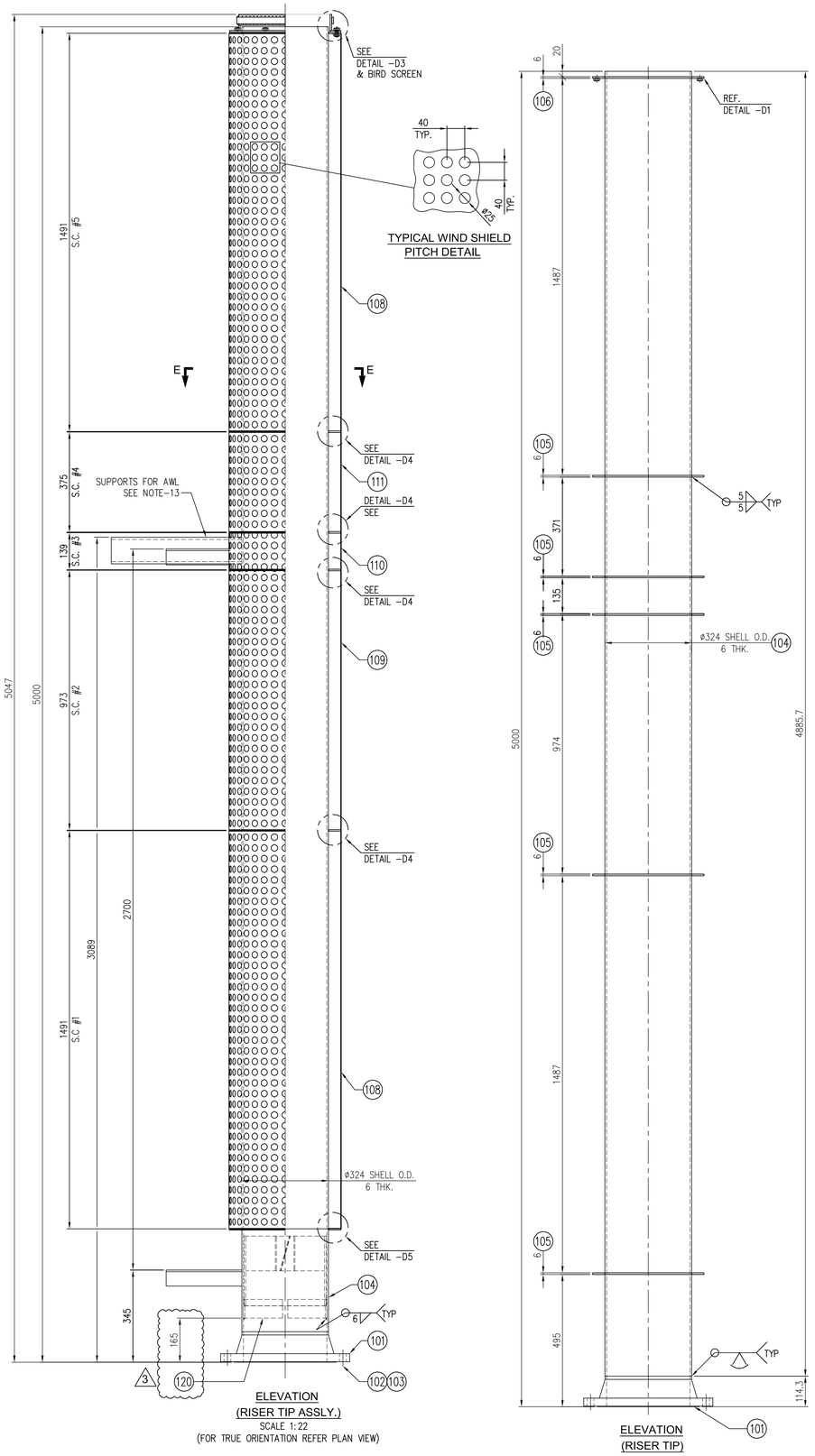
DRAWN RJ | CHECKED SCB | APPROVED AL | DATE 02-08-24

A1 | DRAWING NO. 1724000887-MAC-DD-00005 | SHEET 002 | REV. 03

File Name : 1724000887-MAC-DD-00005_03

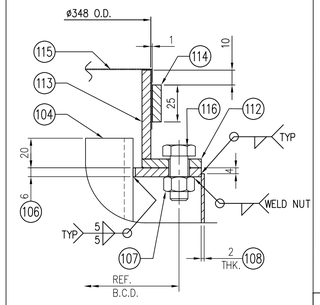
DRAWING NO. 1724000887-MAC-DD-00005_03

REV. 03

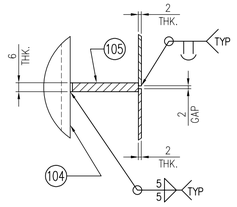


ELEVATION
(RISER TIP ASSLY.)
SCALE 1:22
(FOR TRUE ORIENTATION REFER PLAN VIEW)

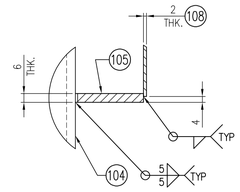
ELEVATION
(RISER TIP)



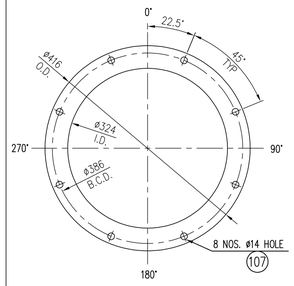
SECTIONAL DETAIL-D3
SCALE 1:2



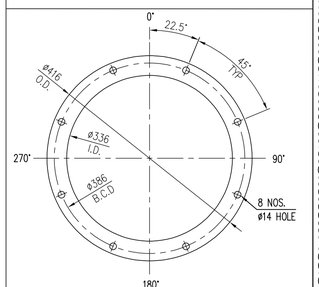
SECTIONAL DETAIL-D4
SCALE 1:2



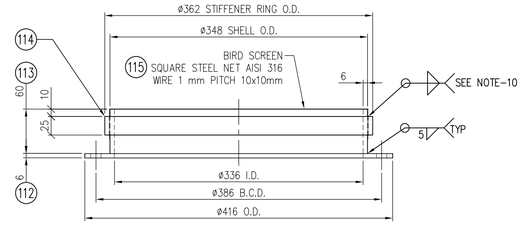
TYPICAL SECTIONAL DETAIL-D5
SCALE 1:2



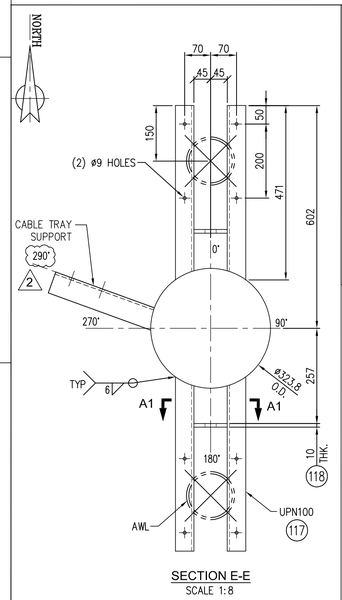
DETAIL OF ITEM (106)
SCALE 1:6



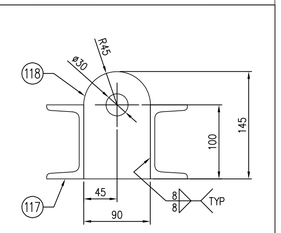
DETAIL OF ITEM (112)
SCALE 1:6



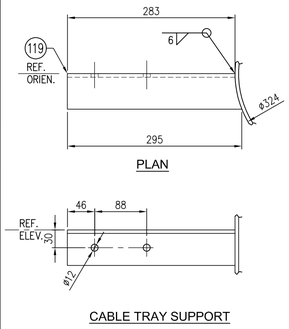
BIRD SCREEN ASSY. DETAIL
SCALE 1:4



SECTION E-E
SCALE 1:8

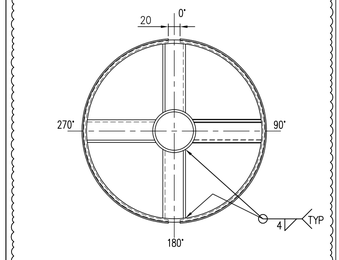


SECTION "A1-A1"
SCALE 1:4

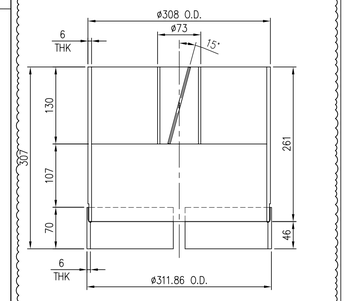


PLAN

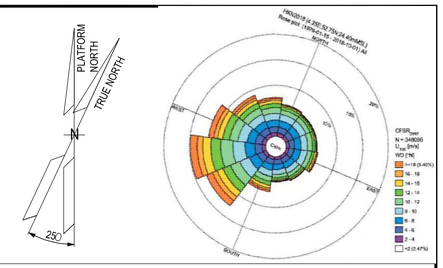
CABLE TRAY SUPPORT



PLAN VIEW



3 DETAIL OF VENTURI SEAL (120)
SCALE 1:6



NOTES

03	06-11-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
02	08-10-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
01	05-09-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
00	02-08-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
REV.	DATE	DRN	CHKD	APPD	DESCRIPTION

THERMO ENGINEERING — AN ENCORE COMPANY

ETE JOB 23-0193

ETE DWG NR. 23-0193-0131

CROSSWIND

ROSETTI MARINO

TITLE :

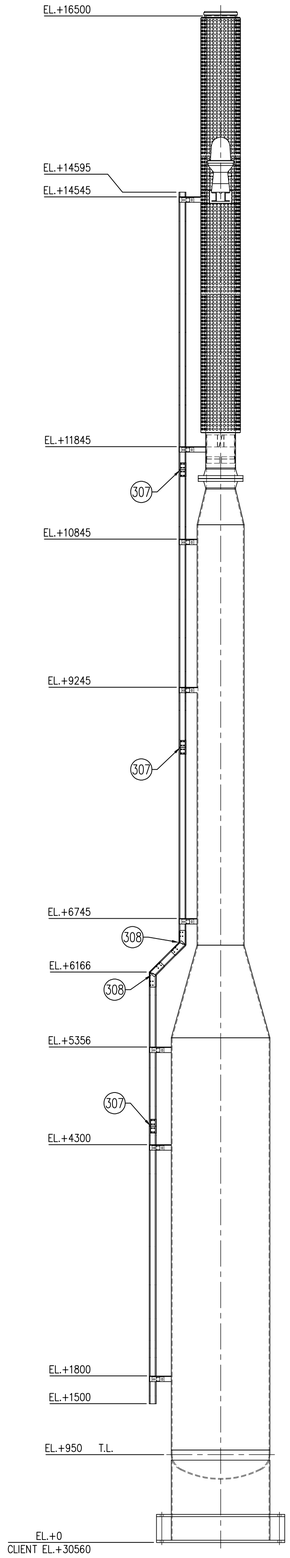
HYDROGEN VENT DETAILED DRAWING WITH PART LIST

CONTRACT NO./TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:22
DRAWN RJ	CHECKED SCB	APPROVED AL	DATE 02-08-24
A1	DRAWING NO. 1724000887-MAC-DD-00005	SHEET 003	REV. 03

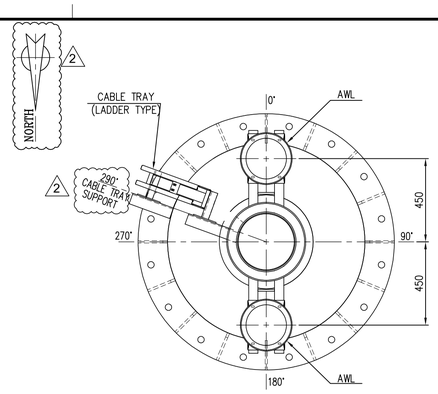
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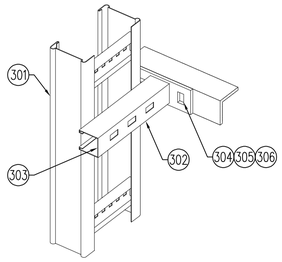
REV. 03



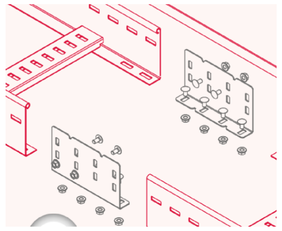
ELEVATION
SCALE 1:32
(REFER THIS VIEW ONLY FOR CABLE TRAY DETAIL)



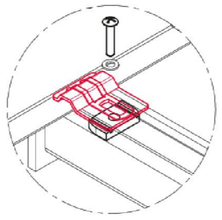
PLAN VIEW
SCALE 1:16
(REFER THIS VIEW ONLY FOR CABLE TRAY)



TYP. CABLE TRAY SUPPORT ARRANGEMENT



TYP. CABLE TRAY JOINT DETAIL
PART NO. 307,313,314



Profili e mensole / Channels and brackets:
UR1

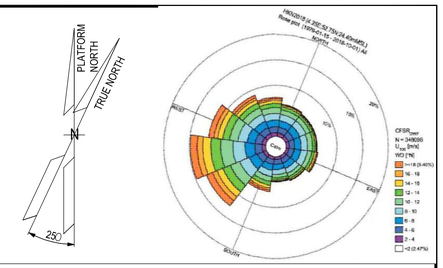
TYP. CABLE TRAY FIXING DETAILS
PART NO. 309,310,311,312



TYP. HINGE JOINT DETAIL
PART NO. 308,313,314

BILL OF MATERIAL (CABLE TRAY)

ITEM	QTY	DESCRIPTION	DIMENSION	MATERIAL
301	14 mtr	CABLE TRAY 100x75	(B2 Z 01B3C100HH10)	HOT DIP GALV.
302	8	58 UR1 SINGLE BRACKET	(A0 Z 58S7R100MU)	HOT DIP GALV.
303	16	PLUG FOR BRACKET FOR UR1	(A0 P 4TXXI040N)	LDPE
304	16	HEX. HEAD BOLT	M10 X 30LG.	CS (HDG)
305	16	HEX. HD. NUT	M10	CS (HDG)
306	16	WASHER	M10	CS (HDG)
307	8	CABLE TRAY JOINT	JOINT (B2 Z 60A4H025M)	HOT DIP GALV.
308	4	VERTICAL HINGE JOINT	(B2 Z 63A5H025M)	HOT DIP GALV.
309	16	NUT FOR CABLE TRAY	M8 (D0C25S08X40 Z)	HOT DIP GALV.
310	16	CABLE TRAY LOCKING DEVICE	(B2 X 84XXXO40M)	HOT DIP GALV.
311	16	WIDE CROWNED HEAD SCREW	M8 (D0C13L08X20 D)	HOT DIP GALV.
312	16	PLANE WASHER	M8 (D0C36S08X17 Z)	HOT DIP GALV.
313	160	ROUND HEAD SCREW WITH SQ. NECK	M6 (D0C10A06X15 E)	HOT DIP GALV.
314	160	FLANGED HEX. NUT	M6 (D0C16S06 E)	HOT DIP GALV.
315	14 mtr	SELF LOCKING COVER	100x15 (B2 Z 05Q3P100D)	HOT DIP GALV.
316	10	EARTHING BAR FOR COVERS EQUIPOTENTIAL CONNECTION W/2 NOS. M6 SCREW	(A3 R 62X1X015M)	HOT DIP GALV.



NOTES

03	06-11-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
02	08-10-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
01	05-09-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
00	02-08-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
REV.	DATE	DRN	CHKD	APPD	DESCRIPTION

THERMO ENGINEERING — AN ARCADIS COMPANY

ETE JOB 23-0193
ETE DWG NR. 23-0193-0131

CROSSWIND

ROSETTI MARINO

TITLE :

HYDROGEN VENT
DETAILED DRAWING WITH PART LIST

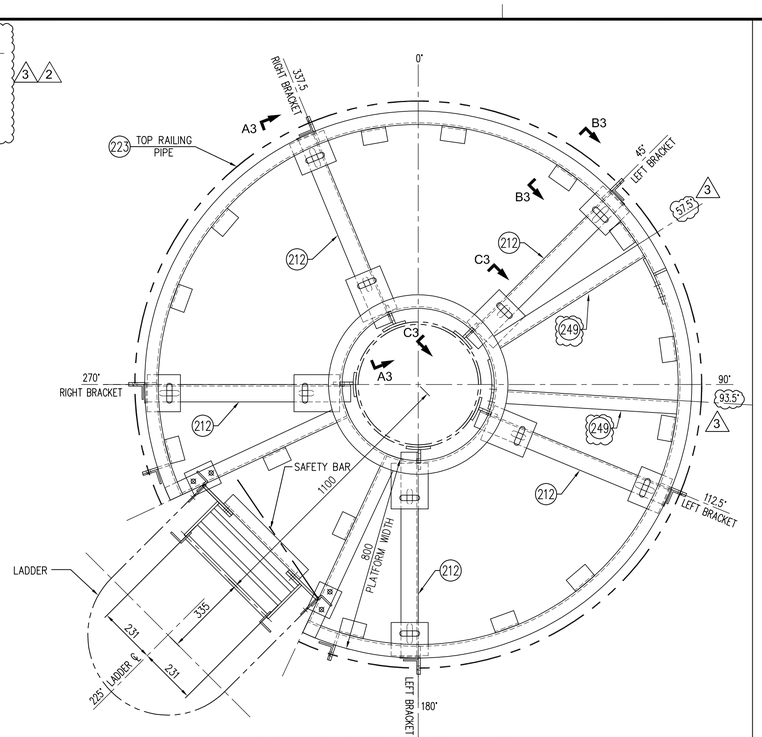
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:22
DRAWN RJ	CHECKED SCB	APPROVED AL	DATE 02-08-24

A1	DRAWING NO. 1724000887-MAC-DD-00005	SHEET 004	REV. 03

File Name : 1724000887-MAC-DD-00005_03

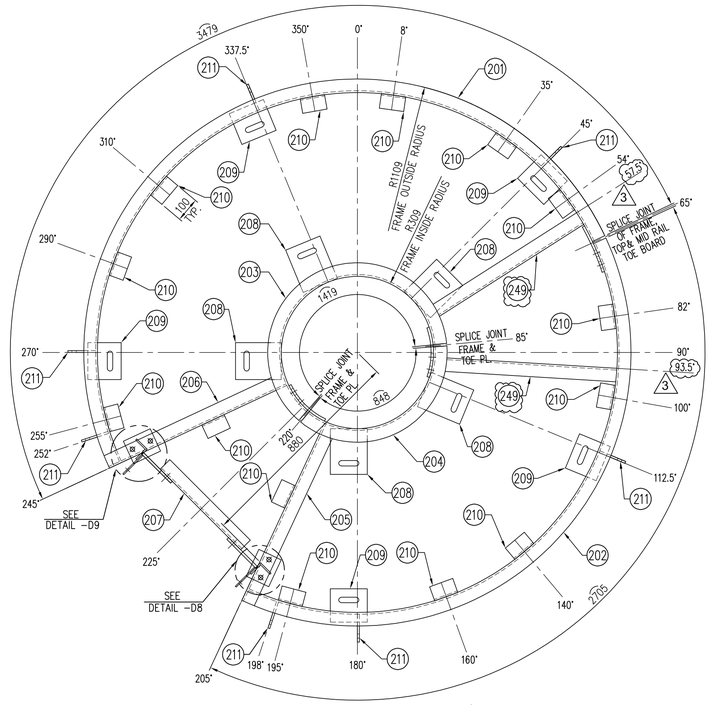
DRAWING NO. 1724000887-MAC-DD-00005_03

REV. 03



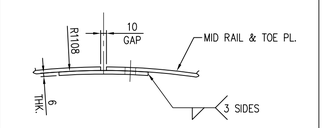
PLAN OF PLATFORM ASSEMBLY AT EL. +41060 (T.O.S.) 2

SCALE 1:12



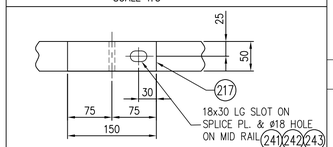
PLATFORM FRAME DETAIL 2

SCALE 1:12



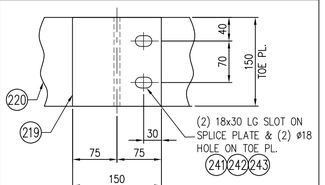
PLAN OF MID RAIL & TOE PL. SPLICE DETAIL

SCALE 1:5



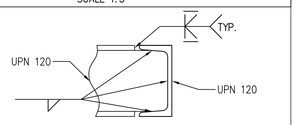
ELEVATION OF MID RAIL SPLICE DETAIL

SCALE 1:5



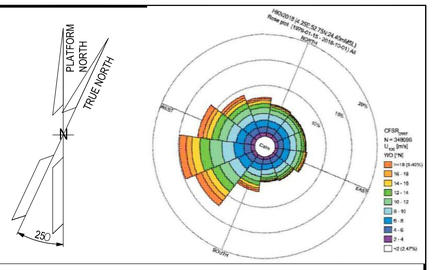
ELEVATION OF TOE PL. SPLICE DETAIL

SCALE 1:5



TYPICAL FRAME CONNECTION DETAIL

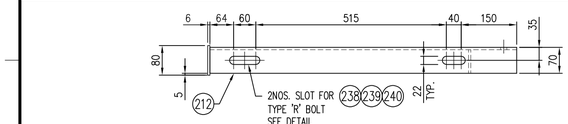
SCALE 1:5



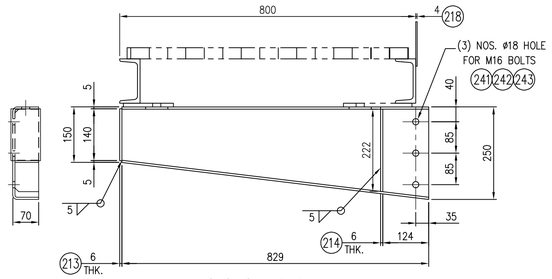
NOTES

GENERAL NOTES :

1 – ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.
2 – ALL ELEVATIONS ARE IN mm UNLESS OTHERWISE STATED.
3 – BOLTS, NUTS AND WASHERS ARE HOT DIP GALVANIZED.
4 – DIMENSION "S" OF NON-DIMENSIONED FILLET WELDS SHALL AT LEAST BE EQUAL TO 0.8 TIMES THE MINIMUM THICKNESS OF THE SMALLEST ELEMENTS TO BE WELDED.
5 – ALL WELDS SHALL BE CONTINUOUS UNLESS OTHERWISE STATED.
6 – PAINTING CYCLES SHALL BE IN ACCORDANCE WITH DOCUMENT No.23-0193-0030.
7 – A SPARE OF 10% OF NUTS, BOLTS, WASHERS WILL BE SUPPLIED.
8 – No. OF SEPARATIONS OF GRATINGS SHALL BE VERIFIED BY MANUFACTURER.
9 – EACH PANEL OF GRATING WILL BE PROVIDED WITH A MINIMUM OF 4 GRATING CLAMPS.
10 – GRATINGS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM 123.
11 – STEEL ASTM A10011/A1011M GRADE 36 [250] TYPE 1 OR EUROPEAN EQUIVALENT (S235 JR EN 10025).
13 – PLATFORMS & LADDER TOTAL WEIGHT : 650 Kg (GRATINGS INCLUDED).



PLAN



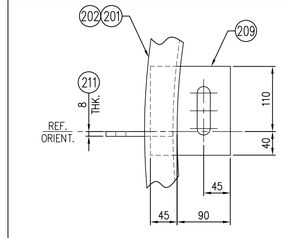
SECTION "A3-A3"

PLATFORM SUPPORT BRACKET DETAIL

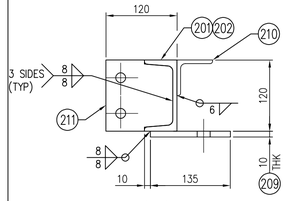
3 NOS. LEFT BRACKET (OPPOSITE)

2 NOS. RIGHT BRACKET (AS SHOWN)

SCALE 1:8

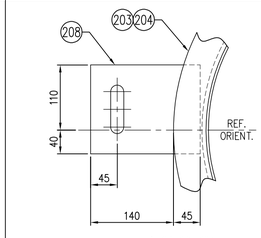


PLAN VIEW

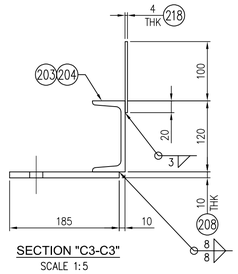


SECTION "B3-B3"

SCALE 1:5

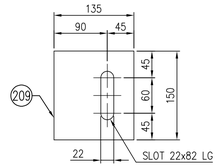


PLAN VIEW



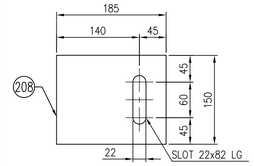
SECTION "C3-C3"

SCALE 1:5



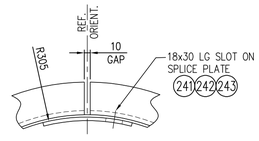
DETAIL OF PART NO. 209

SCALE 1:5

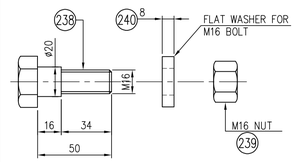


DETAIL OF PART NO. 208

SCALE 1:5

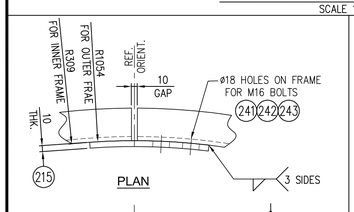


PLAN

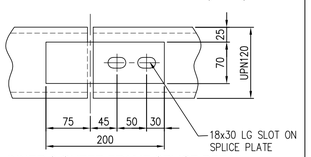


BOLT TYPE 'R' DETAIL

(SCALE 1:2)



PLAN

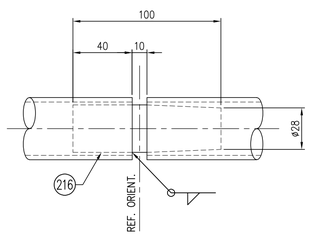


INNER & OUTER FRAME SPLICE DETAIL

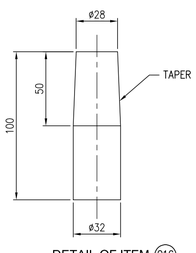
(1 SPLICE @ EXTERNAL FRAME)

(2 SPLICE @ INTERNAL FRAME)

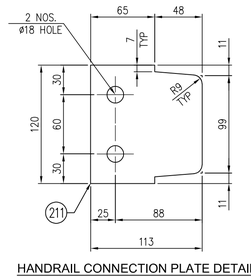
SCALE 1:5



TOP RAIL SPLICE DETAIL

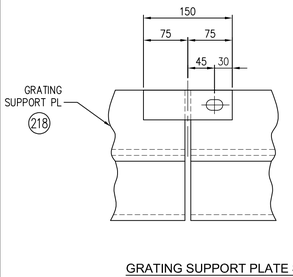


DETAIL OF ITEM 216



HANDRAIL CONNECTION PLATE DETAIL

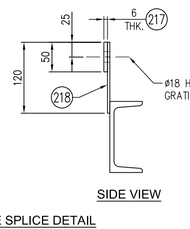
SCALE 1:3



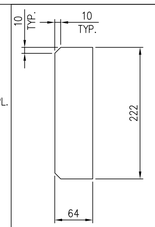
GRATING SUPPORT PLATE SPLICE DETAIL

(2 @ INTERNAL FRAME)

SCALE 1:5



SIDE VIEW



DETAIL OF PART NO. 214

SCALE 1:5

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	06-11-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
02	08-10-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
01	05-09-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
00	02-08-2024	RJ	SCB	AL	ISSUED FOR INFORMATION

THERMO ENGINEERING — AN ENGIE COMPANY

ETE JOB 23-0193

ETE DWG NR. 23-0193-0131

CROSSWIND

ROSETTI MARINO

TITLE :

HYDROGEN VENT
DETAILED DRAWING WITH PART LIST

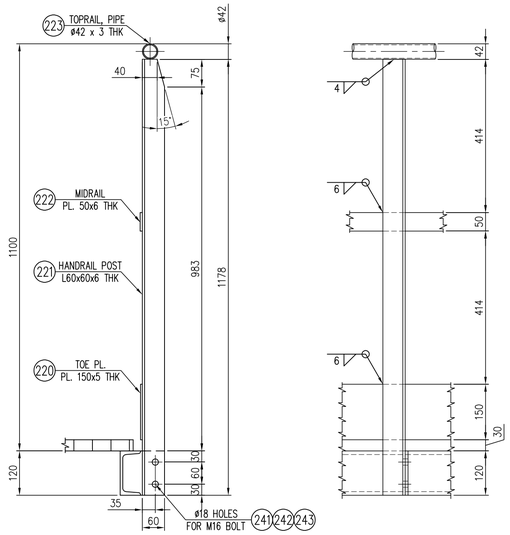
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:22

DRAWN RJ | CHECKED SCB | APPROVED AL | DATE 02-08-24

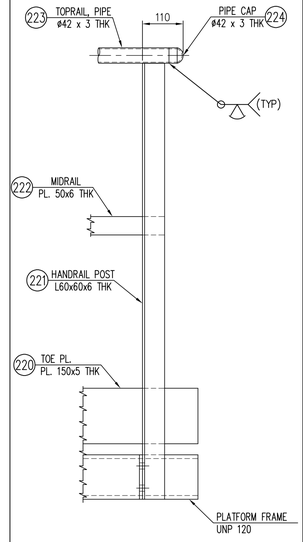
A1 | DRAWING NO. 1724000887-MAC-DD-00005 | SHEET 005 | REV. 03

File Name : 1724000887-MAC-DD-00005_03

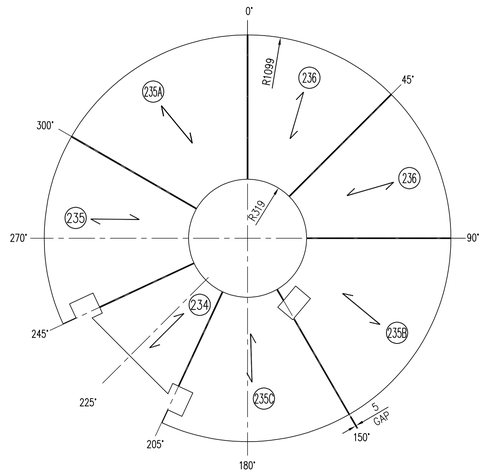
DRAWING NO. 1724000887-MAC-DD-00005_03 REV. 03



TYPICAL HANDRAIL DETAIL
(TYP. @ 5 PLCS.)
SCALE 1:8



TYPICAL HANDRAIL END DETAIL
(TYP. @ 2 PLCS.)
SCALE 1:8

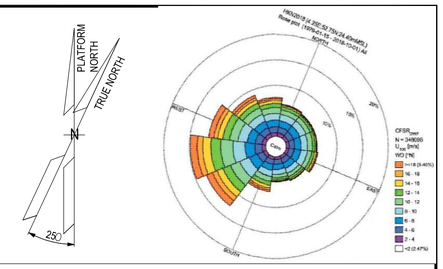


GRATING FOR PLATFORM DETAIL
(SCALE 1:16)

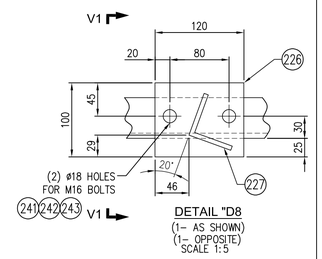
1

BILL OF MATERIAL (PLATFORM)

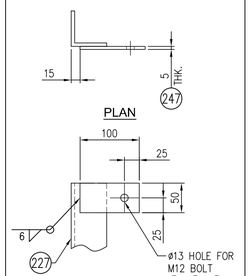
ITEM	QTY	DESCRIPTION	DIMENSION	MATERIAL
201	1	PLATFORM FRAME	UPN 120 x 3479 LG.	EN10025 S275 J0
202	1	PLATFORM FRAME	UPN 120 x 2705 LG.	EN10025 S275 J0
203	1	PLATFORM FRAME	UPN 120 x 1419 LG.	EN10025 S275 J0
204	1	PLATFORM FRAME	UPN 120 x 848 LG.	EN10025 S275 J0
205	1	PLATFORM FRAME	UPN 120 x 793 LG.	EN10025 S275 J0
206	1	PLATFORM FRAME	UPN 120 x 793 LG.	EN10025 S275 J0
207	1	PLATFORM FRAME	UPN 120 x 462 LG.	EN10025 S275 J0
208	5	CONNECTION PLATE (BRACKET)	10 THK x 185 x 150	EN10025 S275 J0
209	5	CONNECTION PLATE (BRACKET)	10 THK x 135 x 150	EN10025 S275 J0
210	14	GRATING SUPP. ANGLE	60 x 60 x 6 THK x 100 LG.	EN10025 S275 J0
211	7	CONNECTION PLATE (HANDRAIL POST)	8 THK x 113 x 120 LG.	EN10025 S275 J0
212	3R+2L	SUPPORT BRACKET	6 THK x 829 LG. (SEE DETAIL)	EN10025 S275 J0
213	5	BRACKET END PLATE	6 THK x 80 x 140 LG.	EN10025 S275 J0
214	5	BRACKET GUSSET	6 THK x 64 x 222 LG.	EN10025 S275 J0
215	1EX/2IN	SPLICE PL. (INNER/OUTER FRAME)	6 THK x 70 x 200 LG.	EN10025 S275 J0
216	1	SPLICE PL. (TOP RAIL)	ø32 ROD x 100 LG.	EN10025 S275 J0
217	3	SPLICE PL. (GRATING SUPP. PL.& MIDRAIL)	6 THK x 50 x 150 LG.	EN10025 S275 J0
218	1	GRATING SUPP. PL.	4 THK x 120 x 1950 LG.	EN10025 S275 J0
219	1	SPLICE PL. (TOE PLATE)	6 THK x 150 x 150 LG.	EN10025 S275 J0
220	1	TOE PLATE	5 THK x 150 x 7300 LG. (CUT TO SUIT)	EN10025 S275 J0
221	7	HANDRAIL POST	60 x 60 x 6 THK x 1178 LG.	EN10025 S275 J0
222	1	MID RAIL	6 THK x 50 x 7300 LG.	EN10025 S275 J0
223	1	TOP RAIL	ø42 x 3 THK x 7500 LG.	EN10025 S275 J0
224	2	TOP RAIL PIPE CAP	ø1.1/4" (42) x 3 THK, ASME B16.9	CS
225	2	PLATFORM STEP OVER SUPP. CLIP	10 THK x 120 x 167 LG.	EN10025 S275 J0
226	2	SAFETY GATE HANDRAIL BASE PL.	10 THK x 100 x 120 LG.	EN10025 S275 J0
227	2	SAFETY GATE HANDRAIL	60 x 60 x 6 THK x 1090 LG.	EN10025 S275 J0
228	1	PIPE (SAFETY BAR)	ø1" (33.4) x SCH.STD x 800 LG.	EN10025 S275 J0
229	1	PIPE (SAFETY BAR)	ø1" (33.4) x SCH.STD x 70 LG.	EN10025 S275 J0
230	1	PIPE (SAFETY BAR)	ø1" (33.4) x SCH.STD x 122 LG.	EN10025 S275 J0
231	2	END PLATE	3 THK x ø27	EN10025 S275 J0
232	1	ROD	ø22 x 125 LG.	EN10025 S275 J0
233	1	STOP PLATE	6 THK x 40 x 250 LG.	EN10025 S275 J0
234	1	GRATING	MESH 30x50, PL.30x5 THK, 0.26~ M² (IN 1 PANELS)	SEE NOTE,8,9,10,11
235	1	GRATING	MESH 30x50, PL.30x5 THK, 0.51~ M² (IN 1 PANELS)	SEE NOTE,8,9,10,11
235A	1	GRATING	MESH 30x50, PL.30x5 THK, 0.56~ M² (IN 1 PANELS)	SEE NOTE,8,9,10,11
235B	1	GRATING	MESH 30x50, PL.30x5 THK, 0.56~ M² (IN 1 PANELS)	SEE NOTE,8,9,10,11
235C	1	GRATING	MESH 30x50, PL.30x5 THK, 0.51~ M² (IN 1 PANELS)	SEE NOTE,8,9,10,11
236	2	GRATING	MESH 30x50, PL.30x5 THK, 0.42~ M² (IN 2 PANELS)	SEE NOTE,8,9,10,11
236A		DELETED		
237	32	GRATING FIXING CLAMPS	STAPLE & CLAMP, WITH M8 x 60LG. HEX. HED. BOLT + 2 SQ. NUT (SEE DETAIL)	CS
238	10	BOLT TYPE 'R' (SEE DETAIL)	M16 x 50 LG.	8.8
239	10	HEX. HEAD NUT	M16 (H=D)	8
240	10	WASHER	8 THK FOR M16 BOLT	CS
241	46	HEX. HEAD BOLT	M16 x 50 LG.	8.8
242	46	HEX. HEAD NUT	M16 (H=D)	8
243	46	FLAT WASHER	M16	CS
244	2	HEX. HEAD BOLT	M12 x 40 LG.	8.8
245	2	HEX. HEAD NUT	M12 (H=D)	8
246	2	FLAT WASHER	M12	CS
247	2	LADDER CLIP	6 THK x 50 x 100	EN10025 S275 J0
248	1	BANDING PLATE	3 THK x 185 x 1500 LG. (CUT TO SUIT)	EN10025 S275 J0
3 249	2	PLATFORM FRAME	UPN 120 x 690 LG.	EN10025 S275 J0



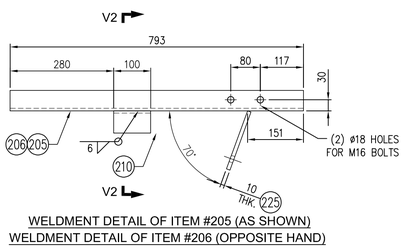
NOTES



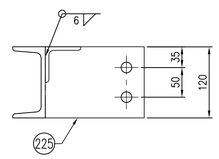
DETAIL "D8"
(1– AS SHOWN)
(1– OPPOSITE)
SCALE 1:5



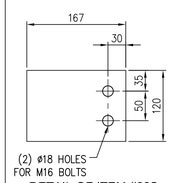
DETAIL "D9"
SCALE 1:5



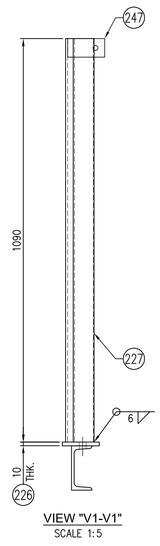
WELDMENT DETAIL OF ITEM #205 (AS SHOWN)
WELDMENT DETAIL OF ITEM #206 (OPPOSITE HAND)



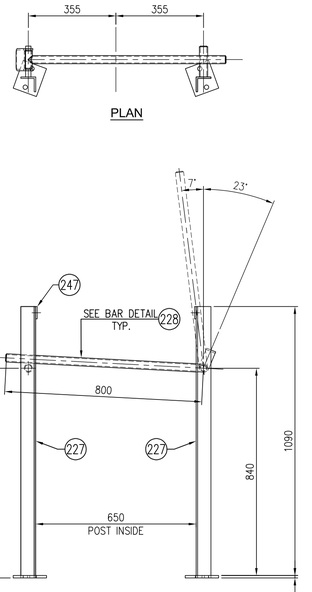
VIEW "V2-V2"
SCALE 1:5



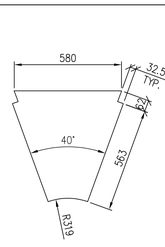
DETAIL OF ITEM #225
SCALE 1:5



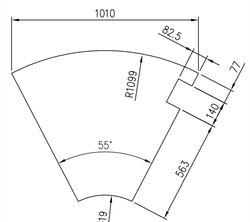
VIEW "V1-V1"
SCALE 1:5



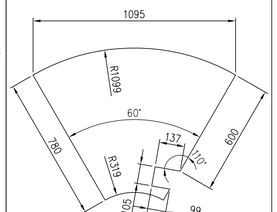
ELEVATION
SAFETY BAR TYPICAL DETAIL



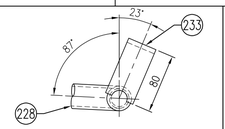
DETAIL OF ITEM #234
(SCALE 1:16)



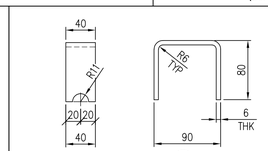
DETAIL OF ITEM #235
(SCALE 1:16)



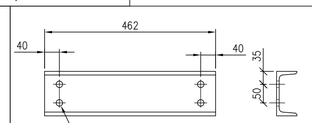
DETAIL OF ITEM #235B
(SCALE 1:16)



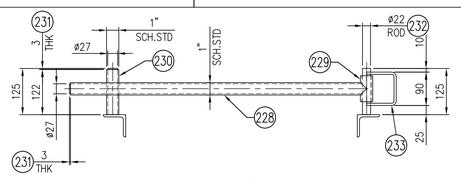
SAFETY BAR TYPICAL DETAIL



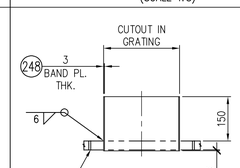
DETAIL PART 233



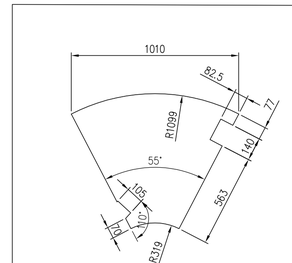
DETAIL OF ITEM #207
(SCALE 1:8)



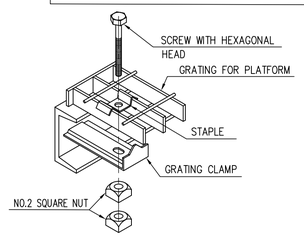
SAFETY BAR TYPICAL DETAIL



TYPICAL CUTOUT BANDING DETAIL



DETAIL OF ITEM #235C
(SCALE 1:16)



GRATING CLAMPS DETAIL 237
MINIMUM No.4 ANCHORS FOR EACH PANEL

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	06-11-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
02	08-10-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
01	05-09-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
00	02-08-2024	RJ	SCB	AL	ISSUED FOR INFORMATION

THERMO ENGINEERING — AN ENGLOBE CORPORATION COMPANY

ETE JOB 23-0193
ETE DWG NR. 23-0193-0131

CROSSWIND

ROSETTI MARINO

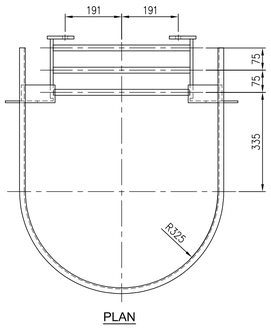
TITLE :
HYDROGEN VENT
DETAILED DRAWING WITH PART LIST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:22
DRAWN RJ | CHECKED SCB | APPROVED AL | DATE 07-08-24
A1 | DRAWING NO. 1724000887-MAC-DD-00005 | SHEET 006 | REV. 03

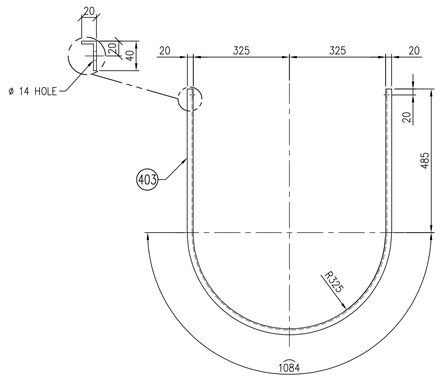
File Name : 1724000887-MAC-DD-00005_03

DRAWING NO. 1724000887-MAC-DD-00005_03

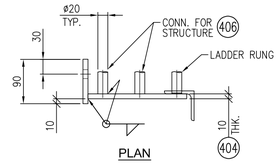
REV. 03



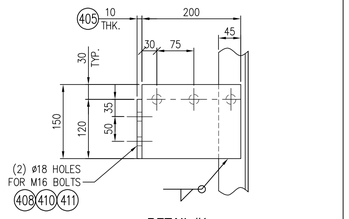
PLAN



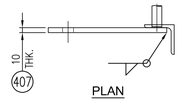
SECTION "A4-A4"



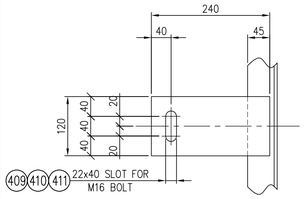
PLAN



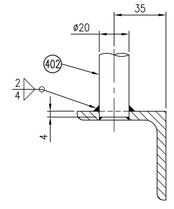
DETAIL #1



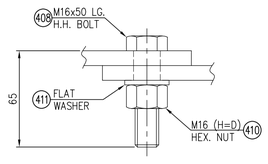
PLAN



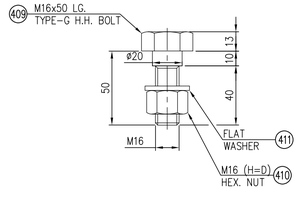
DETAIL #2



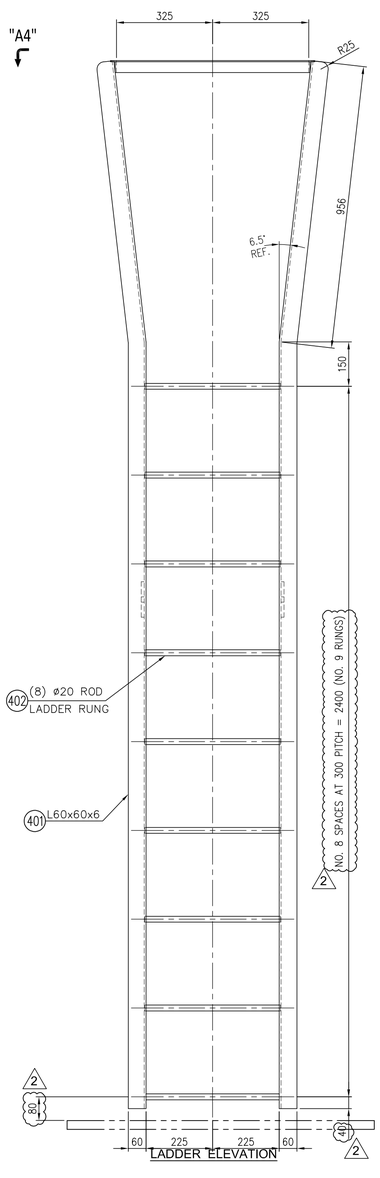
RUNGS WELDING DETAIL



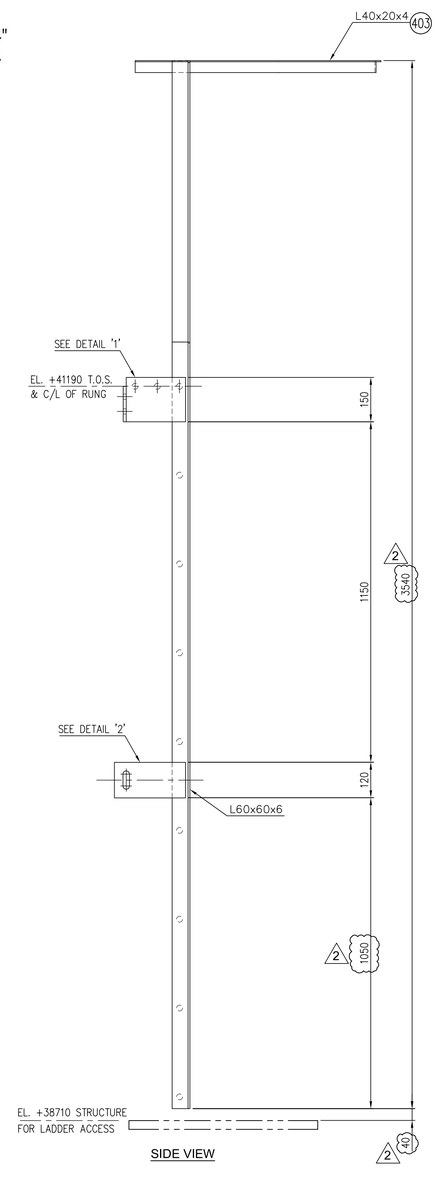
FIXED CLIP FIXING DETAIL



SLIDING CLIP FIXING DETAIL
(TYPE G BOLT)



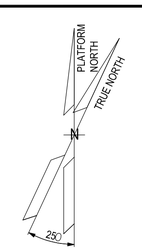
LADDER ELEVATION

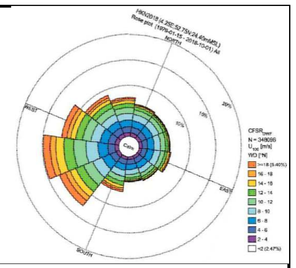


SIDE VIEW

BILL OF MATERIAL (LADDER)

ITEM	QTY	DESCRIPTION	DIMENSION	MATERIAL
401	2	LADDER STRINGER	L 60x60x6 x 3540 LG.	S275 J0
402	9	LADDER RUNG	ROD ø20 x 458 LG.	S275 J0
403	1	TOP HOOP	L 40x20x4 x 2055 LG.	S275 J0
404	2	LADDER CLIP (FIXED)	10 THK x 150 x 200 LG.	S275 J0
405	2	LADDER CLIP (FIXED)	10 THK x 90 x 120 LG.	S275 J0
406	2	CONN. STRUCT. RUNG	ROD ø20 x 462 LG.	S275 J0
407	2	LADDER CLIP (SLIDING)	10 THK x 120 x 240 LG.	S275 J0
408	4	HEXAGONAL HEAD BOLTS	M16 x 50 LG.	8.8
409	2	TYPE-G HEXAGONAL HEAD BOLTS (SEE DETAIL)	M16 x 65 LG.	8.8
410	6	HEXAGONAL NUTS	M16 (H=D)	8
411	6	FLAT WASHER	FOR M16 BOLT	CARBON STEEL





NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	06-11-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
02	08-10-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
01	05-09-2024	RJ	SCB	AL	ISSUED FOR INFORMATION
00	02-08-2024	RJ	SCB	AL	ISSUED FOR INFORMATION

THERMO ENGINEERING — AN ENCORE COMBUSTION COMPANY

ETE JOB 23-0193

ETE DWG NR. 23-0193-0131

CROSSWIND

ROSETTI MARINO

TITLE :

HYDROGEN VENT
DETAILED DRAWING WITH PART LIST

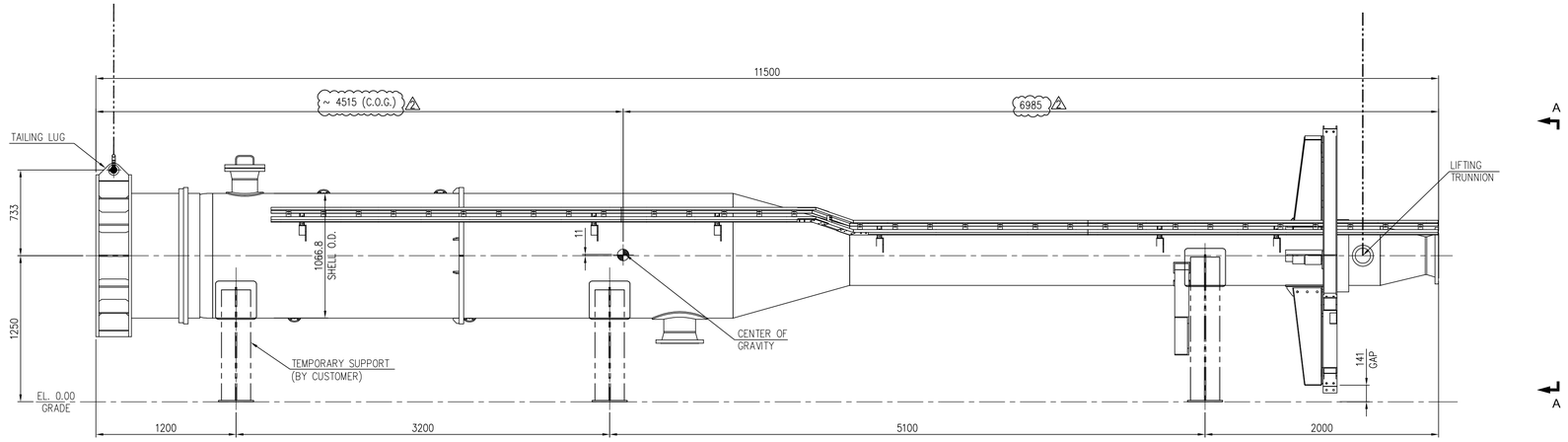
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:22

DRAWN RJ | CHECKED SCB | APPROVED AL | DATE 02-08-24

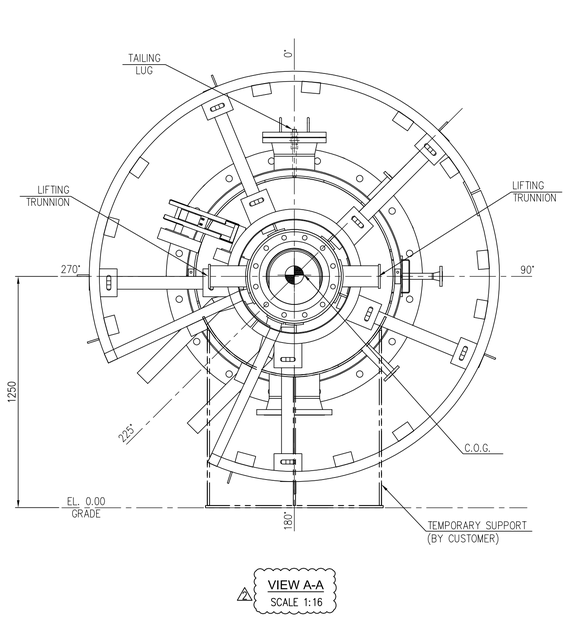
A1 | DRAWING NO. 1724000887-MAC-DD-00005 | SHEET 007 | REV. 03

File Name : 1724000887-MAC-DD-00005_03

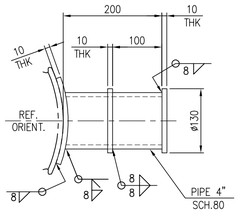
DRAWING NO. 1724000887-MAC-DD-00019_02 REV. 02



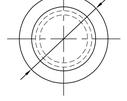
ELEVATION
⚠2 LIFTING WITHOUT INSTALLED TIP
SCALE 1:25



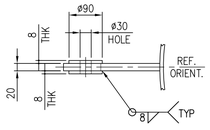
⚠2 VIEW A-A
SCALE 1:16



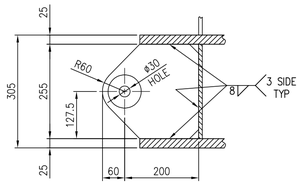
ELEVATION
LIFTING TRUNNION DETAIL



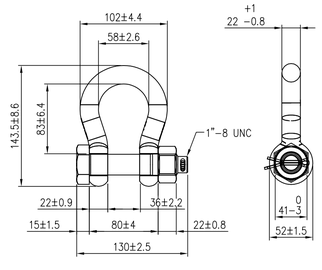
SIDE VIEW



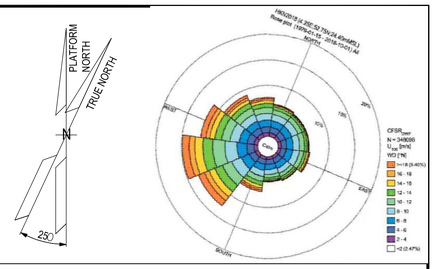
PLAN VIEW



ELEVATION
TAILING LUG DETAIL



SHACKLE DETAIL
GREEN PIN® BOW SHACKLE BN
GROUP : G-4163
PART : GPGHMB22
WLL :6.5t



NOTES

GENERAL NOTES:

1. ALL DIMENSION ARE IN mm UNLESS OTHERWISE STATED.
2. ALL ELEVATIONS ARE IN mm UNLESS OTHERWISE STATED.
3. DELETED..
4. THE LIFTING TRUNNIONS ARE PROVIDED TO LIFT THE ASSEMBLY IN FULLY DRESSED CONDITION.
5. VENT TIP, HANDRAIL, LADDER AND GRATINGS SHALL BE INSTALLED IN VERTICAL POSITION OF EQUIPMENT.
6. TOTAL LIFTING WEIGHT APPROX. : 4050 KG. (WITH 10% CONTINGENCY)

REFERENCE DOCUMENT	No.
MECHANICAL CALCULATION - HYDROGEN VENT	1724000887-MAC-CA-00004
DETAILED DRAWING WITH PART LIST - HYDROGEN VENT	1724000887-MAC-DD-00005
GENERAL ARRANGEMENT - HYDROGEN VENT	1724000887-MAC-DA-00003
-	-

THERMO ENGINEERING — AN ENGCON COMPANY

ETE JOB 23-0193
ETE DWG NR. 23-0193-0530A

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15-11-2024	SCB	RV	AL	ACCEPTED FOR CONSTRUCTION
01	20-09-2024	SCB	RV	AL	ISSUED FOR REVIEW
00	05-08-2024	SCB	RV	AL	ISSUED FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :
HYDROGEN VENT
LIFTING DRAWING

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:30

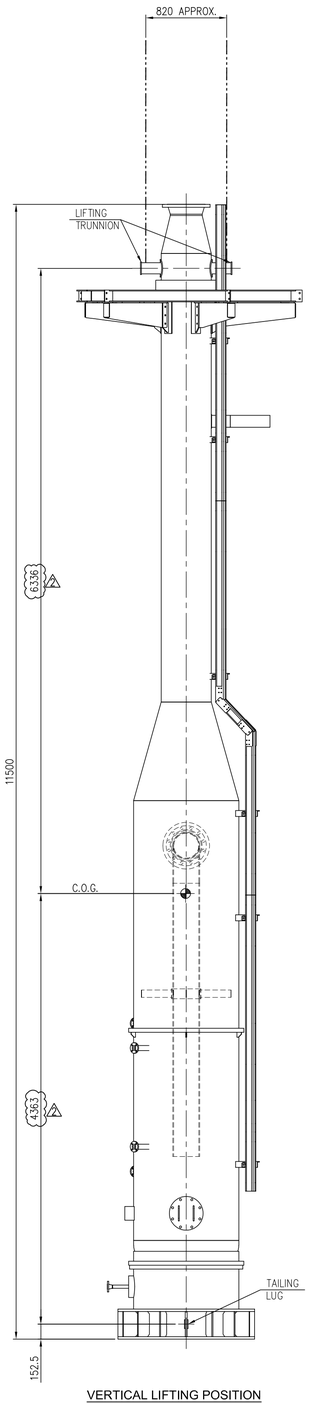
DRAWN SCB | CHECKED RV | APPROVED AL | DATE 05/08/24

A1 | DRAWING NO. 1724000887-MAC-DD-00019 | SHEET 001 | REV. 02

File Name : 1724000887-MAC-DD-00019_02

DRAWING NO. 1724000887-MAC-DA-00003_02

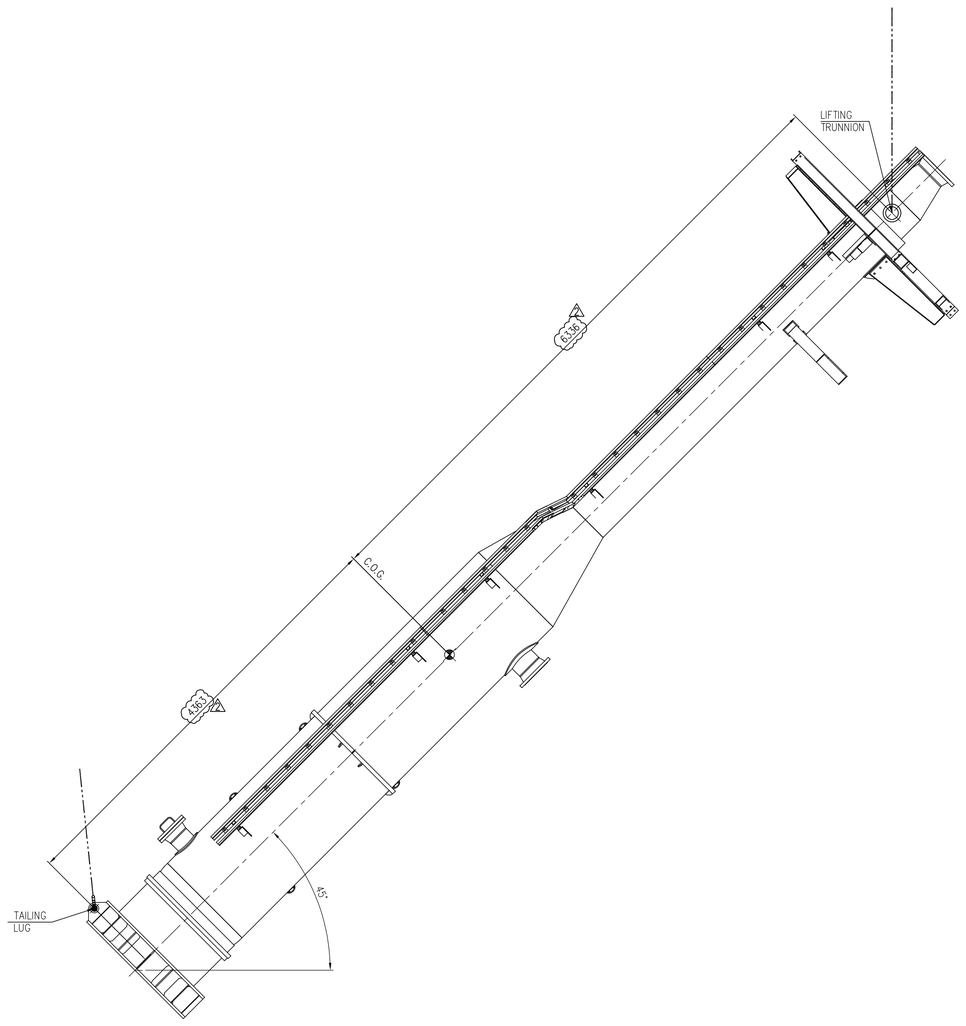
REV. 02



VERTICAL LIFTING POSITION

SCALE 1:30

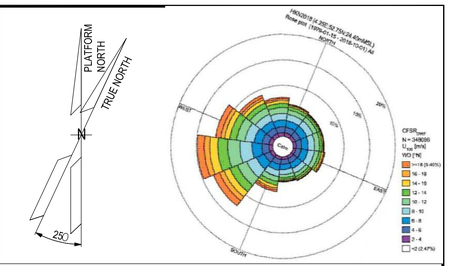
VIEW ROTATED FOR LIFTING TRUNNION CLARIFICATION



LIFTING VIEW AT 45° POSITION

SCALE 1:40

LIFT ANGLE Deg.	LIFTING LOAD kN	TAILING LOAD kN
0	24.95	34.62
10	25.37	34.20
20	25.80	33.77
30	26.29	33.29
40	26.86	32.71
50	27.60	31.97
60	28.68	30.89
70	30.51	29.06
80	34.76	24.82
90	59.57	0.00



NOTES

REFERENCE DOCUMENT	No.
MECHANICAL CALCULATION - HYDROGEN VENT	1724000887-MAC-CA-00004
DETAILED DRAWING WITH PART LIST - HYDROGEN VENT	1724000887-MAC-DD-00005
GENERAL ARRANGEMENT - HYDROGEN VENT	1724000887-MAC-DA-00003
-	-

THERMO ENGINEERING — AN ENCORE COMBUSTION COMPANY

ETE JOB 23-0193

ETE DWG NR. 23-0193-0530A

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15-11-2024	SCB	RV	AL	ACCEPTED FOR CONSTRUCTION
01	20-09-2024	SCB	RV	AL	ISSUED FOR REVIEW
00	05-08-2024	SCB	RV	AL	ISSUED FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE : HYDROGEN VENT LIFTING DRAWING

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:30

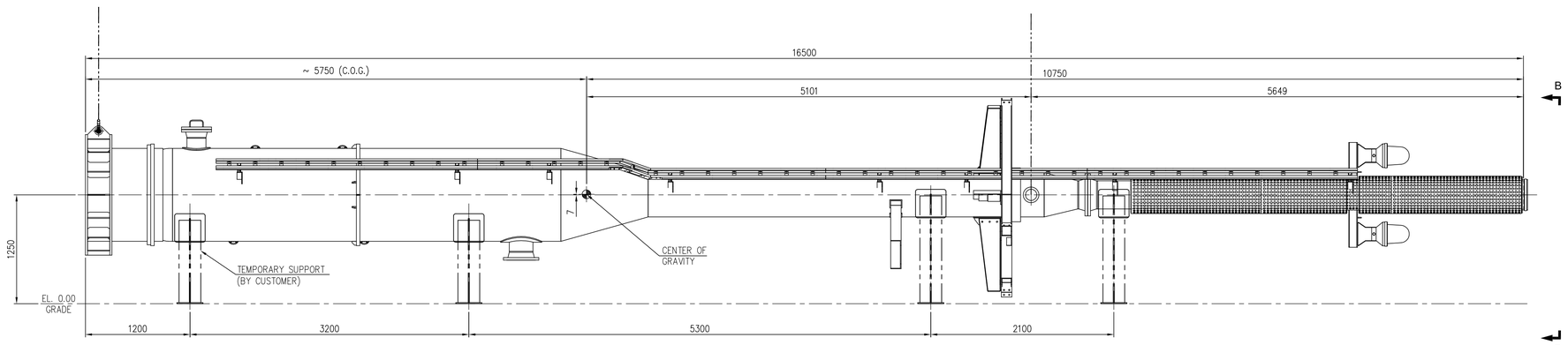
DRAWN SCB | CHECKED RV | APPROVED AL | DATE 05/08/24

A1 | DRAWING NO. 1724000887-MAC-DD-00019 | SHEET 002 | REV. 02

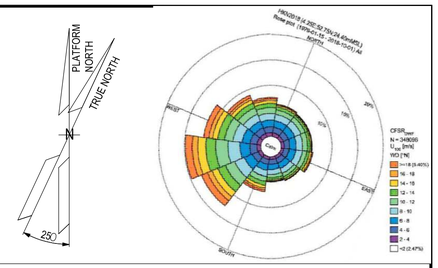
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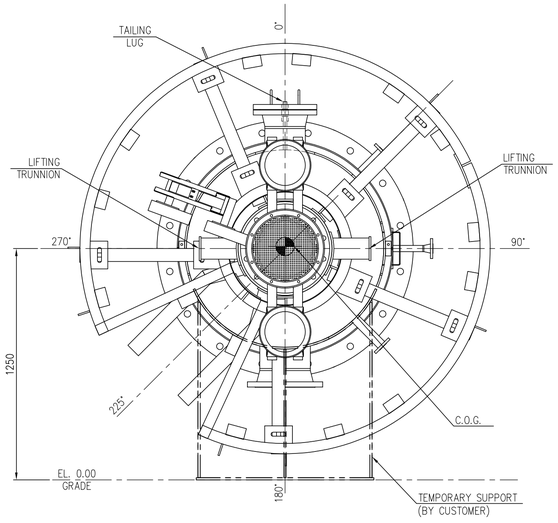
DRAWING NO. 1724000887-MAC-DD-00019_02

REV. 02



ELEVATION
LIFTING WITH INSTALLED TIP
SCALE 1:30





VIEW B-B
SCALE 1:16

NOTES

GENERAL NOTES:

1. ALL DIMENSION ARE IN mm UNLESS OTHERWISE STATED.
2. ALL ELEVATIONS ARE IN mm UNLESS OTHERWISE STATED.
3. DELETED..
4. THE LIFTING TRUNNIONS ARE PROVIDED TO LIFT THE ASSEMBLY IN FULLY DRESSED CONDITION.
5. VENT TIP, HANDRAIL, LADDER AND GRATINGS SHALL BE INSTALLED IN VERTICAL POSITION OF EQUIPMENT.
6. TOTAL LIFTING WEIGHT APPROX. : 4600 KG. (WITH 10% CONTINGENCY)

REFERENCE DOCUMENT	No.
MECHANICAL CALCULATION - HYDROGEN VENT	1724000887-MAC-CA-00004
DETAILED DRAWING WITH PART LIST - HYDROGEN VENT	1724000887-MAC-DD-00005
GENERAL ARRANGEMENT - HYDROGEN VENT	1724000887-MAC-DA-00003
-	-

THERMO ENGINEERING — AN ENCORE COMBUSTION COMPANY

ETE JOB	23-0193
ETE DWG NR.	23-0193-0530A

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15-11-2024	SCB	RV	AL	ACCEPTED FOR CONSTRUCTION
01	20-09-2024	SCB	RV	AL	ISSUED FOR REVIEW
00	05-08-2024	SCB	RV	AL	ISSUED FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE : HYDROGEN VENT LIFTING DRAWING

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:30

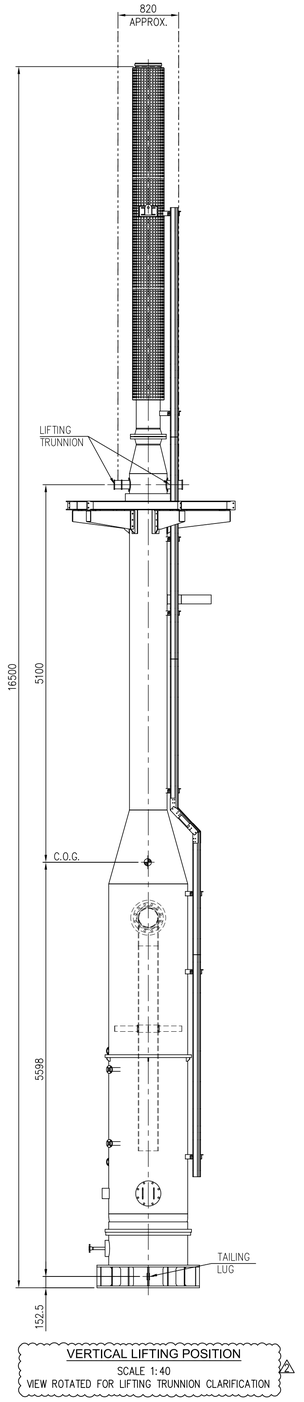
DRAWN SCB | CHECKED RV | APPROVED AL | DATE 05/08/24

A1 | DRAWING NO. 1724000887-MAC-DD-00019 | SHEET 001 | REV. 02

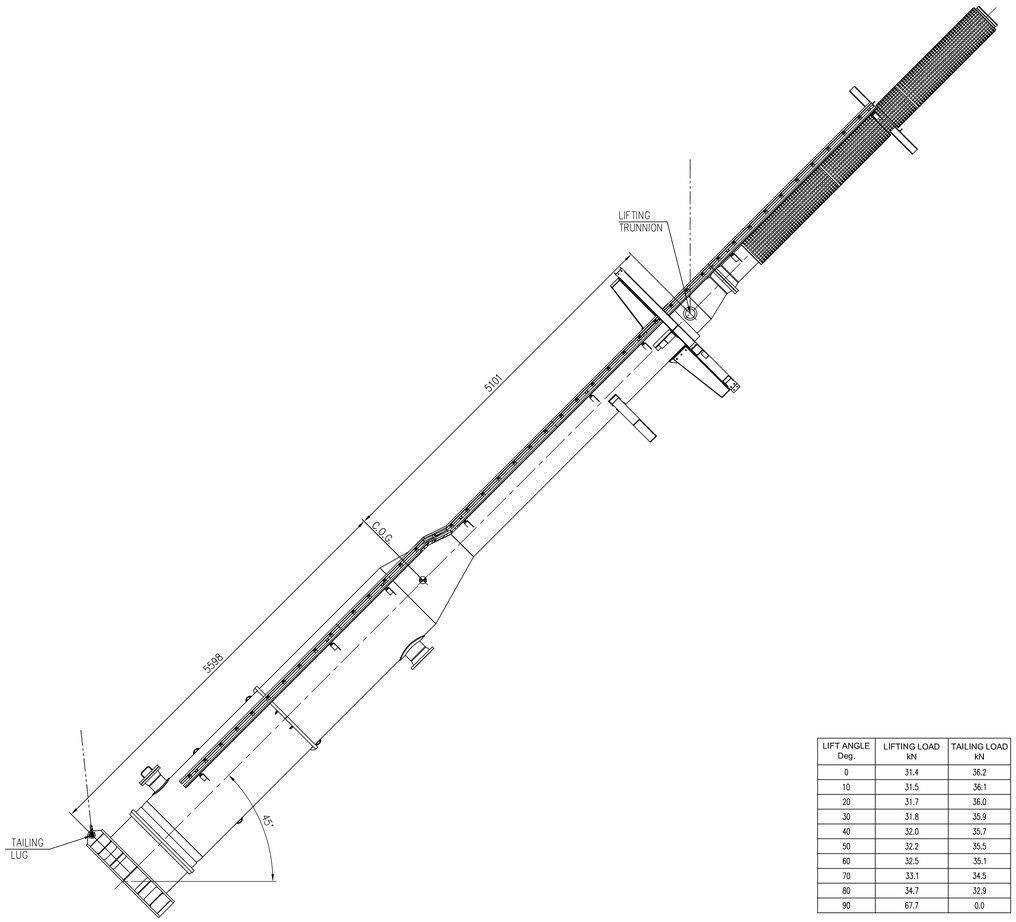
File Name : 1724000887-MAC-DD-00019_02

DRAWING NO. 1724000887-MAC-DD-00019_02

REV. 02

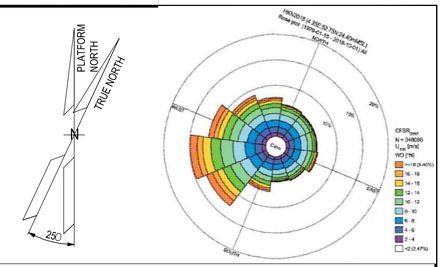


VERTICAL LIFTING POSITION
SCALE 1:40
VIEW ROTATED FOR LIFTING TRUNNION CLARIFICATION



LIFT ANGLE Deg	LIFTING LOAD kN	TAILING LOAD kN
0	31.4	36.2
10	31.5	36.1
20	31.7	36.0
30	31.8	35.9
40	32.0	35.7
50	32.2	35.5
60	32.5	35.1
70	33.1	34.5
80	34.7	32.9
90	67.7	0.0

LIFTING VIEW AT 45° POSITION
SCALE 1:40



NOTES

REFERENCE DOCUMENT	No.
MECHANICAL CALCULATION - HYDROGEN VENT	1724000887-MAC-CA-00004
DETAILED DRAWING WITH PART LIST - HYDROGEN VENT	1724000887-MAC-DD-00005
GENERAL ARRANGEMENT - HYDROGEN VENT	1724000887-MAC-DA-00003
-	-

THERMO ENGINEERING — AN ENCORE COMBUSTION COMPANY

ETE JOB	23-0193
ETE DWG NR.	23-0193-0530A

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15-11-2024	SCB	RV	AL	ACCEPTED FOR CONSTRUCTION
01	20-09-2024	SCB	RV	AL	ISSUED FOR REVIEW
00	05-08-2024	SCB	RV	AL	ISSUED FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE : HYDROGEN VENT LIFTING DRAWING

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:30

DRAWN SCB | CHECKED RV | APPROVED AL | DATE 05/08/24

A1 | DRAWING NO. 1724000887-MAC-DD-00019 | SHEET 001 | REV. 02

File Name : 1724000887-MAC-DD-00019_02

DESIGN DATA

Rev							
1	Design Conditions	Internal	3.5	bar	at	-10 / 80	°C
1		External		bar	at		°C
		Volume	3	m^3			
1		Dimension (Nominal)	0,6 ID x 2,35 T/T				
1	Minimum Design Metal Temp		-29	°C (MDMT)	at	0	bar
1	Operating Conditions	Internal	atm	bar	at	25	°C
	Corrosion Allowance		1	mm			
1	Liquid Specific Gravity		1,0 max				
	PWHT Required		Per ASME Sect VIII Div 1	☑ Service PWHT	Yes		
	Radiography Requirements		Spot (RT-3)				
	Shop Hydrotest Pressure		Per Code				
	Field Hydrotest Pressure		TBC				
1	Painting Per		According to specification 123A90-DDL-MAT-SP-60006				
1	Insulation		YES	mm	**(*) Insulation by others (RM) - Vendor to provide support clips**		
	Fireproofing		N/A	mm			
1	Erection Weight		0	kg (Includes saddles / legs)			
1	Empty Weight		by vendor	kg (Start-Up Ready)			
1	Operating Weight		by vendor	kg -			
1	Test Weight		by vendor	kg			
1	Vessel Designed For Wind		1 Year Return, 3 sec. gust = 35 m/sec, 100 Year Return, 3 sec. gust = 45 m/sec				
	Vessel Designed For Earthquake		N/A				
	Moment At POS	Wind:	0	N-M			
	Shear Force At POS	Wind:	0	N			
	Moment At POS	Earthquake:	0	N-M (Operating)	0	N-M (Empty)	
	Shear Force At POS	Earthquake:	0	N (Operating)	0	N (Empty)	

DESIGN CODE & MATERIAL SPECIFICATIONS

Rev					
1	Construction Code	2004 ASME Section VIII Div.1 With Latest Addenda + PED 2014/68/EU	YES		
	Materials for Pressure Components and Parts Welded to Pressure Components:				
1	Shell and Heads	SA-516-60 (P355GH)	Thickness (mm)	by vendor	
	Standard ANSI Weld Neck and LWN Flanges	SA-105			
	Fittings	General Note VM-8			
	Self Reinforcing & Special Forgings	SA-765-II			
	Nozzle Necks	SA-106-B			
1	Shell Attachments	Plate (Including Wear Plate)	SA-516-60		
		Pipe	SA-106-B		
		Structural Shapes	A-36		
	Materials for Parts Not Welded to Pressure Components:				
	Saddles	A-36			
	Plate	A-516-70			
	Pipe	A-106-B			
	Pressure Bolting	SA-193-B7 / SA-194-2H			
	Internal Bolting	A-193 Gr B6 / A-194 Gr 6			
	Internal Piping	Carbon Steel			
	Other Internals	Carbon Steel			
	Gaskets	Pressure Gaskets	1/16" Flexible Graphite w/ 304 S.S. Insert		
		Non-pressure Gaskets	1/16" Flexible Graphite w/ 304 S.S. Insert		

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GENERAL NOTES (If Applicable)

Rev		
	VM-1.	All materials shown on this data sheet are to be furnished and installed by the Vessel Supplier unless otherwise noted.
1	VM-2.	Substitutions of materials will not be allowed without RM's prior approval. This approval can only be obtained at the time Vessel Supplier submits his quotation.
	VM-3.	The inside diameter of manholes shall be equal to the size specified in the table of connections for 18" (450 mm) and smaller size manholes. Manholes size 20" (500 mm) and larger may have a minimum inside diameter 25 mm less than the nominal size listed in the table of connections.
	VM-4.	Manholes and handholes shall be furnished with blind flange, bolts and gasket. Each manhole shall be provided with a davit or hinge and internal manhole grip.
	VM-5.	Internal ladder rungs shall be provided below the manway.
1	VM-6.	Supports for vessel insulation and fireproofing shall be furnished and installed by the Vessel Supplier when vessel is required to be insulated or fireproofed.
1	VM-7.	Vessel Supplier to provide vessel grounding lugs.
	VM-8.	In addition to meeting Code requirements for fittings, piping fittings shall be made from a material specification listed for plate, forging, or pipe pressure components on page 1 of this data sheet.
	VM-9	Below is not mandatory. Vendor to indicate values relevant to Material Specifications from their material supplier Max hardness in base metal shall be 235 HV10 - Steel shall be HIC resistant to ISO 15156-2 - Impact testing shall be at -46°C for base metal and weld metal in H2 service regardless of MDMT - Phosphorus maximum to be 0.015% (from EIGA 121/14) - Max strength 355Mpa yield - max CE of 0.35 should ideally be by product analysis not ladle analysis

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Rev

TABLE OF CONNECTIONS

General Notes for Table of Connections:

A. Connections shown in sketch are diagrammatic only. True location will be shown on Vendor Data Gen Arrangement Drawing

B. Unless otherwise noted the dimensions from the face of flange to inside shall comply with Table 4 of Doc n° 123A90-DDL-MAC-50026

C. All pressure connections are to be flanged.

D. Elevations in the table are to centreline of connection or face of flange unless noted otherwise.

E. For hill side connections see plan or end view.

F. Dimension "A" is the distance from the reference tangent line to the centreline of connection / face of flange.

G. Flanges over 24" shall be per ASME B16.47 Series B.

H. All flange faces shall have a stock finish.

J. For specific notes to TABLE OF CONNECTIONS see next page.

	Mark	Size	Rating	Face	Service	Elevation	Dim"A"	Specific Notes
1	N1	10"	150#	RF	GAS INLET			
1	N2	10"	150#	RF	GAS OUTLET			
1	N3	1"	150#	RF	LIQUID DRAIN			
1	N4	3"	150#	RF	VENT			
1	K1A	1"	150#	RF	LT			
1	K1B	1	150#	RF	LT			
1	K3	1"	150#	RF	PT			
1	K4	1"	150#	RF	LT			
1	H1	6"	150#	RF	HANDHOLE			
1	H2	6"	150#	RF	HANDHOLE			

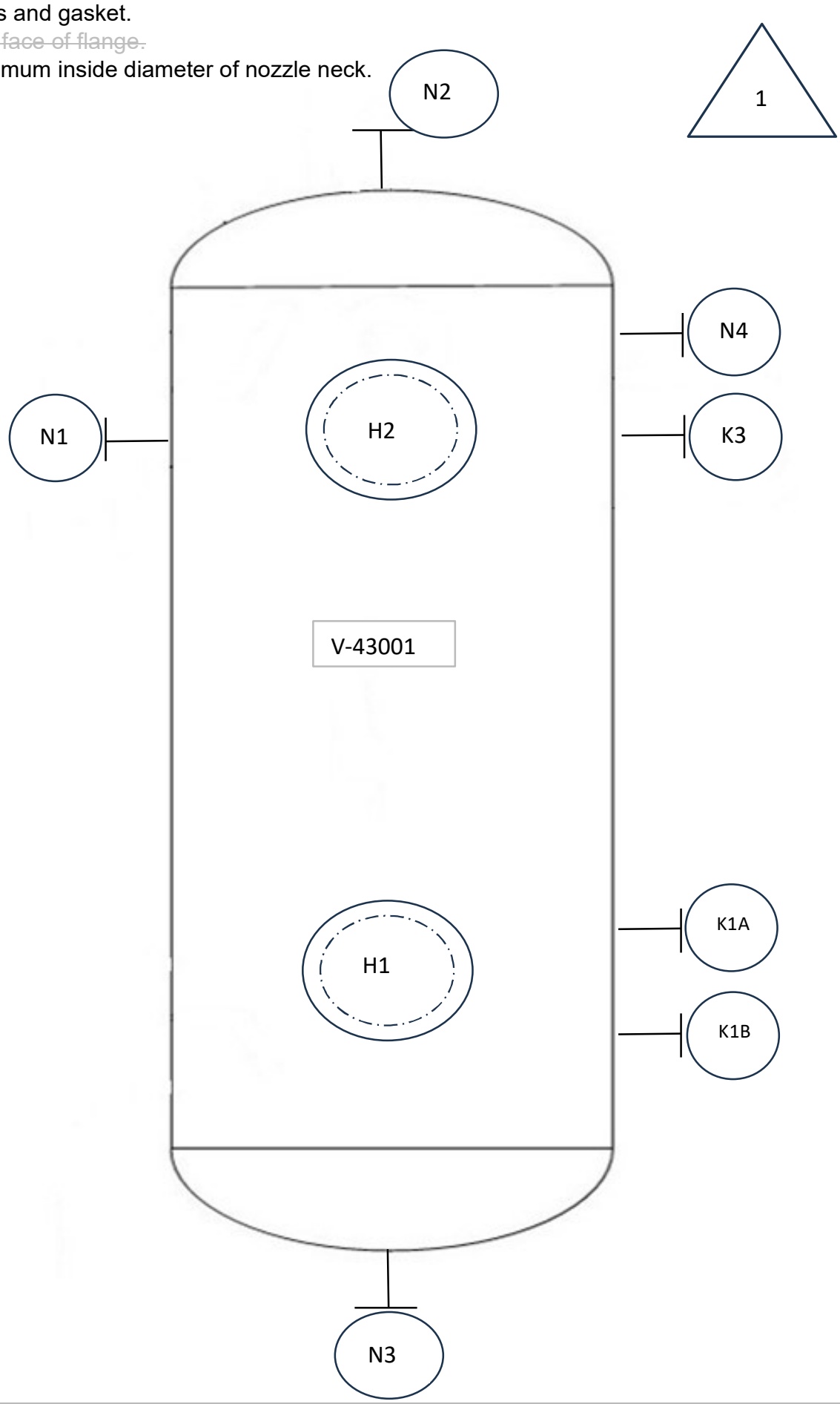
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SPECIFIC NOTES TO TABLE OF CONNECTIONS - SKETCH

(All Notes Listed Hereunder Shall Apply Only If Called For By Number In The Table Of Connections)

Rev

1 Use this information for quotation purpose only.
2 Supply blind flange, bolts and gasket.
3 ~~Elevation is given to the face of flange.~~
4 Nozzle size listed is minimum inside diameter of nozzle neck.
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20



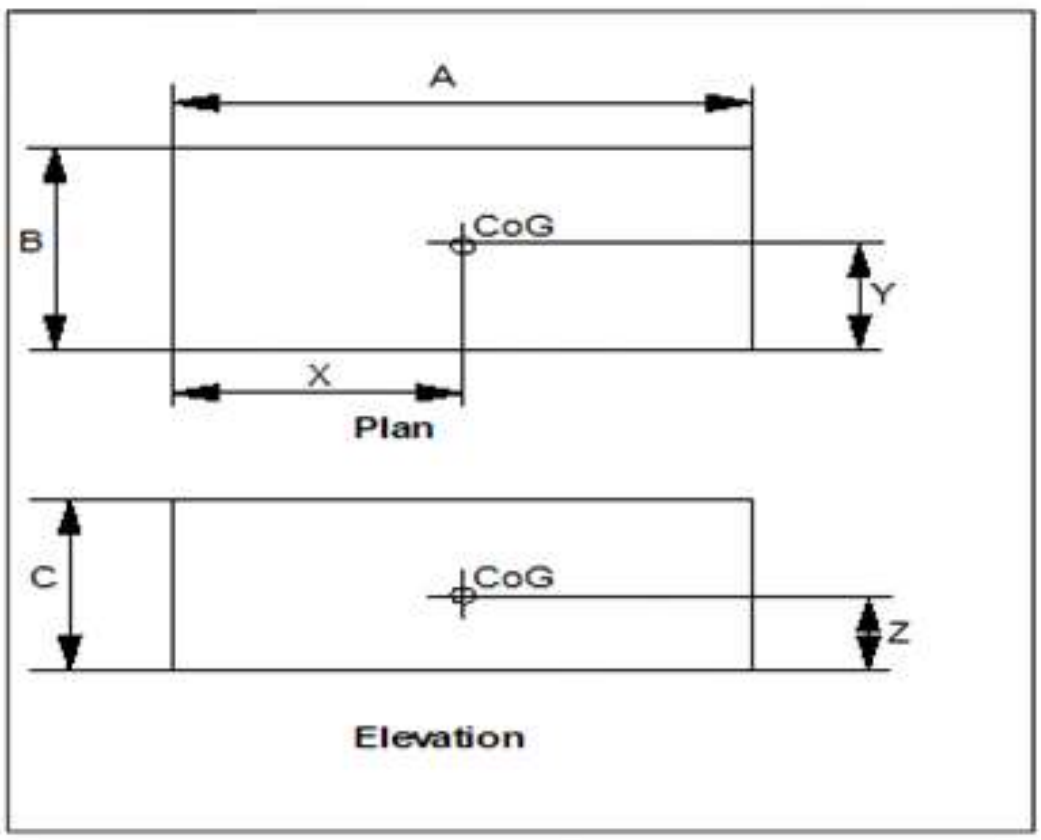
Note : the revision mark on the upper right is referred to the overall vessel sketch

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WEIGHT DATA (kg)

		Areas for input by Supplier	
Dry Weight	(I)		kg
Content	(II)		kg
Operating Weight	(I+II)		kg
Auxiliaries' weight, included in I (specify under Notes)			kg
Test weight, i.e. filled with water			kg
Transport weight			kg

CENTRE OF GRAVITY (CoG) DATA FOR INSTALLED DRY CONDITION



Overall dimensions	
A =	mm
B =	mm
C =	mm

CoG location (mm)	
X =	mm
Y =	mm
Z =	mm

NOTES

WEIGHT AND CoG STATUS (TICK OFF AS APPROPRIATE)

☐ Estimated	☐ Calculated
☐ Catalogue data	☐ Weighed

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Section 8 MECHANICAL COMPLETION STATUS INDEX - TELECOMMUNICATION DISCIPLINE

NOT APPLICABLE

Section 9 MECHANICAL COMPLETION STATUS INDEX - HVAC DISCIPLINE

NOT APPLICABLE

Section 10 MECHANICAL COMPLETION STATUS INDEX - PIPING DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC & discipline : P

Piping	43-00 Hydrogen Vent Header & Drum System						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
006-1-J1	Joint 006-1-J1	ONSHORE	C10004075	TMX27	100	2025-02-14	RFC 1
006-1-J2	Joint 006-1-J2	ONSHORE	C10004076	TMX27	100	2025-02-14	RFC 1
006-1-J3	Joint 006-1-J3	ONSHORE	C10004077	TMX27	100	2025-02-14	RFC 1
018-1-J1	Joint 018-1-J1	ONSHORE	C10004078	TMX27	100	2025-02-10	RFC 1
018-1-J2	Joint 018-1-J2	ONSHORE	C10004079	TMX27	100	2025-02-10	RFC 1
018-1-J3	Joint 018-1-J3	ONSHORE	C10004080	TMX27	100	2025-02-10	RFC 1
037-1-J1	Joint 037-1-J1	ONSHORE	C10004088	TMX27	100	2025-02-07	RFC 1
037-1-J2	Joint 037-1-J2	ONSHORE	C10004089	TMX27	100	2025-02-07	RFC 1
037-1-J3	Joint 037-1-J3	ONSHORE	C10004090	TMX27	100	2025-02-07	RFC 1
038-1-J1	Joint 038-1-J1	ONSHORE	C10004091	TMX27	100	2025-02-10	RFC 1
038-1-J2	Joint 038-1-J2	ONSHORE	C10004092	TMX27	100	2025-02-10	RFC 1
038-1-J3	Joint 038-1-J3	ONSHORE	C10004093	TMX27	100	2025-02-10	RFC 1
039-1-J1	Joint 039-1-J1	ONSHORE	C10004094	TMX27	100	2025-02-17	RFC 1
039-1-J2	Joint 039-1-J2	ONSHORE	C10004095	TMX27	100	2025-02-17	RFC 1
039-1-J3	Joint 039-1-J3	ONSHORE	C10004096	TMX27	100	2025-02-17	RFC 1
040-1-J1	Joint 040-1-J1	ONSHORE	C10004097	TMX27	100	2025-02-13	RFC 1
040-1-J2	Joint 040-1-J2	ONSHORE	C10004098	TMX27	100	2025-02-13	RFC 1
040-1-J3	Joint 040-1-J3	ONSHORE	C10004099	TMX27	100	2025-02-13	RFC 1
041-1-J1	Joint 041-1-J1	ONSHORE	C10004100	TMX27	100	2025-02-14	RFC 1
041-1-J2	Joint 041-1-J2	ONSHORE	C10004101	TMX27	100	2025-02-14	RFC 1
041-1-J3	Joint 041-1-J3	ONSHORE	C10004102	TMX27	100	2025-02-03	RFC 1
042-2-J1	Joint 042-2-J1	ONSHORE	C10004103	TMX27	100	2025-01-30	RFC 1
043-1-J1	Joint 043-1-J1	ONSHORE	C10004104	TMX27	100	2025-02-17	RFC 1
043-1-J2	Joint 043-1-J2	ONSHORE	C10004105	TMX27	100	2025-02-18	RFC 1
043-1-J3	Joint 043-1-J3	ONSHORE	C10004106	TMX27	100	2025-02-18	RFC 1
043-1-J4	Joint 043-1-J4	ONSHORE	C10004107	TMX27	100	2025-02-18	RFC 1
065-1-J4	Joint 065-1-J4	ONSHORE	C10004124	TMX27	100	2025-01-30	RFC 1
114-1-J1	Joint 114-1-J1	ONSHORE	C10004273	TMX27	100	2025-02-14	RFC 1
114-1-J2	Joint 114-1-J2	ONSHORE	C10004274	TMX27	100	2025-02-14	RFC 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC & discipline : P

Piping	43-00 Hydrogen Vent Header & Drum System						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
114-1-J3	Joint 114-1-J3	ONSHORE	C10004275	TMX27	100	2025-02-14	RFC 1
116-1-J1	Joint 116-1-J1	ONSHORE	C10004276	TMX27	100	2025-01-27	RFC 1
116-1-J2	Joint 116-1-J2	ONSHORE	C10004277	TMX27	100	2025-01-27	RFC 1
116-2-J3	Joint 116-2-J3	ONSHORE	C10004278	TMX27	100	2025-01-27	RFC 1
116-2-J4	Joint 116-2-J4	ONSHORE	C10004279	TMX27	100	2025-01-27	RFC 1
116-3-J5	Joint 116-3-J5	ONSHORE	C10004280	TMX27	100	2025-01-27	RFC 1
116-3-J6	Joint 116-3-J6	ONSHORE	C10004281	TMX27	100	2025-01-27	RFC 1
116-4-J7	Joint 116-4-J7	ONSHORE	C10004282	TMX27	100	2025-01-27	RFC 1
116-4-J8	Joint 116-4-J8	ONSHORE	C10004283	TMX27	100	2025-02-03	RFC 1
123-1-J1	Joint 123-1-J1	ONSHORE	C10004290	TMX27	100	2025-01-31	RFC 1
123-1-J2	Joint 123-1-J2	ONSHORE	C10004291	TMX27	100	2025-01-27	RFC 1
123-1-J3	Joint 123-1-J3	ONSHORE	C10004292	TMX27	100	2025-01-27	RFC 1
124-1-J1	Joint 124-1-J1	ONSHORE	C10004293	TMX27	100	2025-01-27	RFC 1
124-1-J2	Joint 124-1-J2	ONSHORE	C10004294	TMX27	100	2025-01-27	RFC 1
124-1-J3	Joint 124-1-J3	ONSHORE	C10004295	TMX27	100	2025-01-27	RFC 1
124-1-J4	Joint 124-1-J4	ONSHORE	C10004296	TMX27	100	2025-01-27	RFC 1
125-1-J1	Joint 125-1-J1	ONSHORE	C10004297	TMX27	100	2025-01-28	RFC 1
125-1-J2	Joint 125-1-J2	ONSHORE	C10004298	TMX27	100	2025-01-27	RFC 1
125-2-J3	Joint 125-2-J3	ONSHORE	C10004299	TMX27	100	2025-01-28	RFC 1
125-2-J4	Joint 125-2-J4	ONSHORE	C10004300	TMX27	100	2025-01-27	RFC 1
157-1-J1	Joint 157-1-J1	ONSHORE	C10004170	TMX27	100	2025-02-12	RFC 1
43-00-TP-022	Test Pack 43-00-TP-022	ONSHORE	C10003397	CLX02A	100	2025-01-03	RFC 2
		ONSHORE	C10003398	CLX02B	100	2025-02-04	RFC 2
		ONSHORE	C10003399	CXX01	100	2025-03-25	RFC 2
		ONSHORE	C10003400	CXX02	100	2025-02-05	RFC 2
		ONSHORE	C10003401	TMX03	100	2025-01-03	RFC 2
		ONSHORE	C10003402	TMX05	100	2025-01-03	RFC 2
		ONSHORE	C10003405	TPLX05	100	2025-01-03	RFC 2

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC & discipline : P

Piping	43-00 Hydrogen Vent Header & Drum System						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
43-00-TP-024	Test Pack 43-00-TP-024	ONSHORE	C10003413	CLX02A	100	2025-01-29	RFC 2
		ONSHORE	C10003414	CLX02B	100	2025-02-25	RFC 2
		ONSHORE	C10003415	CXX02	100	2025-03-24	RFC 2
		ONSHORE	C10003416	TMX03	100	2025-02-07	RFC 2
		ONSHORE	C10003417	TMX05	100	2025-02-07	RFC 2
		ONSHORE	C10003420	TPLX05	100	2025-02-07	RFC 2
43-00-TP-044	Test Pack 43-00-TP-044	ONSHORE	C10003569	CLX02A	100	2025-01-16	RFC 2
		ONSHORE	C10003570	CLX02B	100	2025-02-25	RFC 2
		ONSHORE	C10003571	CXX02	100	2025-03-24	RFC 2
		ONSHORE	C10003572	TMX03	100	2025-02-19	RFC 2
		ONSHORE	C10003573	TMX05	100	2025-02-19	RFC 2
		ONSHORE	C10003576	TPLX05	100	2025-02-19	RFC 2
43-00-TP-050	Test Pack 43-00-TP-050	ONSHORE	C10003604	CLX02A	100	2025-01-25	RFC 2
		ONSHORE	C10003605	CLX02B	100	2025-01-31	RFC 2
		ONSHORE	C10003606	CXX01	100	2025-03-25	RFC 2
		ONSHORE	C10003607	CXX02	100	2025-01-31	RFC 2
43-00-TP-058	Test Pack 43-00-TP-058	ONSHORE	C10003661	CLX02A	100	2025-02-20	RFC 1
		ONSHORE	C10003662	CLX02B	100	2025-02-20	RFC 1
		ONSHORE	C10003663	CXX02	100	2025-02-20	RFC 1
43-00-TP-064	Test Pack 43-00-TP-064	ONSHORE	C10003697	CLX02A	100	2025-01-30	RFC 1
		ONSHORE	C10003698	CLX02B	100	2025-02-22	RFC 1
		ONSHORE	C10003699	CXX02	100	2025-02-22	RFC 1
		ONSHORE	C10003700	TMX03	100	2025-02-07	RFC 1
		ONSHORE	C10003701	TMX05	100	2025-02-07	RFC 1
		ONSHORE	C10003703	TPLX05	100	2025-02-07	RFC 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 43-00 & process: MC & discipline : P

Piping	43-00 Hydrogen Vent Header & Drum System						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
43-00-TP-065	Test Pack 43-00-TP-065	ONSHORE	C10003704	CLX02A	100	2025-01-21	RFC 2
		ONSHORE	C10003705	CLX02B	100	2025-01-29	RFC 2
		ONSHORE	C10003706	CXX02	100	2025-01-30	RFC 2
		ONSHORE	C10003707	TMX03	100	2025-01-21	RFC 2
		ONSHORE	C10003708	TMX05	100	2025-01-21	RFC 2
		ONSHORE	C10003710	TPLX05	100	2025-01-21	RFC 2
		ONSHORE	C10004858	CXX01	100	2025-03-25	RFC 2
43-00-TP-066	Test Pack 43-00-TP-066	ONSHORE	C10004555	CLX02A	100	2025-01-25	RFC 1
		ONSHORE	C10004556	CLX02B	100	2025-02-25	RFC 1
		ONSHORE	C10004557	TMX05	100	2025-01-27	RFC 1
		ONSHORE	C10004558	TPLX05	100	2025-01-27	RFC 1
43-00-TP-067	Test Pack 43-00-TP-067	ONSHORE	C10004786	CLX02A	100	2025-02-03	RFC 1
		ONSHORE	C10004787	CLX02B	100	2025-02-21	RFC 1
		ONSHORE	C10004788	CXX02	100	2025-02-25	RFC 1
		ONSHORE	C10004789	TMX03	100	2025-02-04	RFC 1
		ONSHORE	C10004790	TMX05	100	2025-02-04	RFC 1
		ONSHORE	C10004792	TPLX05	100	2025-02-04	RFC 1
TP-001	H2 Vent System	ONSHORE	C10004888	TMX25	100	2025-02-26	RFC 1

ITEM	Tag	43-00-TP-022	: Test Pack 43-00-TP-022			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10003397		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	NA
4	Check that pipework at pump and vessel nozzles are free from spring.	PL
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	PL
6	Check bolt tightening and flange management (excluded battery limit joints).	PL
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	Note
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	OK
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	NA
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Inspection point n.7 to be verified only during installation of the valves during reinstatement.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-02	2025-01-03	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-02T06:22:08.700Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-01-03T16:32:59.644Z	

ITEM	Tag	43-00-TP-022	: Test Pack 43-00-TP-022			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10003398		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	OK
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	NA
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	OK
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	OK
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-02-04	2025-02-04	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-04T15:08:50.831Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-02-04T16:16:40.931Z	

ITEM	Tag	43-00-TP-022	: Test Pack 43-00-TP-022			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10003399		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX01 Thermal Insulation

1	Ensure CLX02B Pipework After Test (reinstatement) check completed.	OK
2	Ensure CXX02 "Painting Line" check (for the concerned insulated lines) completed.	OK
3	Ensure CPX22A "Heat tracing Before Insulation" check completed.	OK
4	Check that the insulation and cladding materials conform to the specifications.	PL
5	Check that the insulation is compatible with the Heat tracing system.	OK
6	Check that the surface condition prior to the application of the insulation	OK
7	Check the installation of wire mesh	OK
8	Check the overlap of the metal cladding.	OK
9	Check that each joint is sealed with a suitable sealant specified for water proofing.	OK
10	Check the staggering of the metal cladding joints and verify that they have been applied as per the specifications.	OK
11	Control that the locking devices boxes opretated satisfactorily.	PL
12	Check the blinds, the spectacles and the instruments are visible.	NA
13	Check the flange accessibility without damaging the insulation.	PL
14	Check that color coding/line marking/flow direction are correct	PL

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM_CONSTR (ROSETTI MARINO)	RM (ROSETTI MARINO)	
Name	Gianluca De Maglie	Lorenzo Novaga	
Date	2025-03-21	2025-03-25	
Signature	PROVERLIS Digitaly signed by Gianluca De Maglie 2025-03-21T15:19:05.784Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-03-25T13:08:38.833Z	

ITEM	Tag	43-00-TP-022	: Test Pack 43-00-TP-022			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10003400		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02 Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	Note
3	Check that the fluid direction is correct.	Note
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	PL
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 1. Checked the painting report made by Vendor and signed by RM coating Dpt.
Points 2 and 3 to be checked during thermal insulation.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (ROSETTI MARINO)	
Name	Alex Sanna	Kangi Albonetti	
Date	2025-02-05	2025-02-05	
Signature	PROVERLIS Digitaly signed by Alex Sanna 2025-02-05T06:48:53.006Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-02-05T12:05:29.738Z	

ITEM	Tag	43-00-TP-022	: Test Pack 43-00-TP-022			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10003401		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX03 Cleaning

CLEANING MEDIUM

Air		Water	●	Steam		Oil		Other		Mechanical	

Component	NA					
Chemical treatment	No	NA	Filtration	No	Screen size	NA

EQUIPMENTS

Equipment **removed**	No	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	02/01/2025: TP-022A-SS 03/01/2025: TP-022B-CS	Start time	02/01/2025: 14:00 03/01/2025: 10:00	End time	02/01/2025: 14:05 03/01/2025: 10:05
Flow rate	NA	Duration	5 min	Medium T°	NA

Operation Description

Connected the water source to the lowest point of the piping system.
Maintained a high flow rate to help dislodging and carry away debrises.
Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.

Safety Precautions

Restricting access to the area.

Result and comments

Water has been found clear of solid debris. All contaminants have been expelled.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-02	2025-01-03	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-02T06:22:23.790Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-01-03T16:41:47.888Z	

ITEM	Tag	43-00-TP-022	: Test Pack 43-00-TP-022		Dwg	123A90-DDL-PR-PID-80029	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	LD	
TASK	code	C10003402	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX05	Pressure Test

TEST DATA

Reference procedure	123A90-PML-QHSE-PRO-00092				
Design pressure	3.5 barg	Max test pressure	5.25 barg	Min hold period	30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium	WATER

TEST RESULTS

Test date	See attachment	Start time	See attachment	End time	See attachment
Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min See attachment	Max See attachment		Variation	See attachment
Line has been depressurised to	NA			At maximum of bar/min	See attachment
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes
If required produce Red Line Mark Up for "AS BUILT".					

Comments:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-02	2025-01-03	
Signature	Digitaly signed by Emanuele Delfino 2025-01-02T06:22:41.199Z	Digitaly signed by Kangi Albonetti 2025-01-03T16:43:44.283Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP22A+64-10-TP47

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FOOB2N
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:0E:DE:AF)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:48:48
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	04:09:38 pm

Logger protocol

Protocollo di acquisizione elenco dati

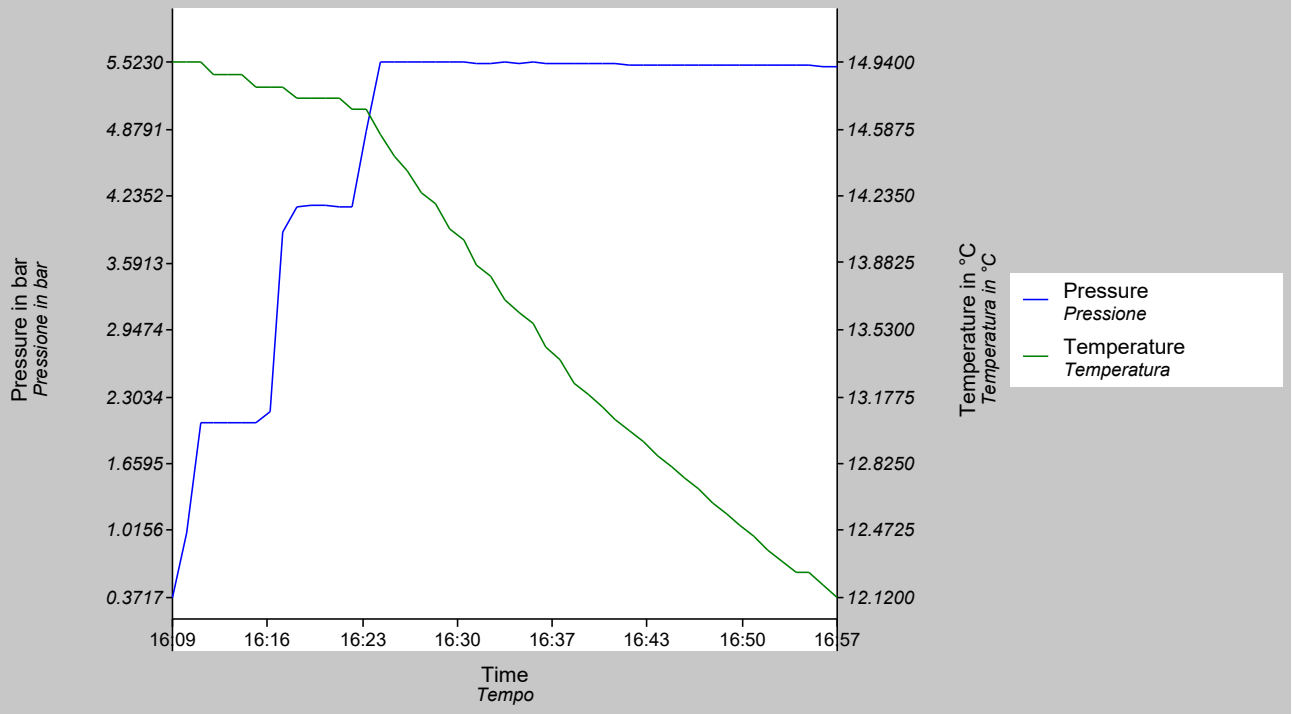
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP22A+64-10-TP47

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/02/2025 16:09:38.000	0.3717	14.9400
01/02/2025 16:10:38.000	0.9888	14.9400
01/02/2025 16:11:38.000	2.0535	14.9400
01/02/2025 16:12:38.000	2.0499	14.8700
01/02/2025 16:13:38.000	2.0517	14.8700
01/02/2025 16:14:38.000	2.0540	14.8700
01/02/2025 16:15:38.000	2.0560	14.8100
01/02/2025 16:16:38.000	2.1665	14.8100
01/02/2025 16:17:38.000	3.8889	14.8100
01/02/2025 16:18:38.000	4.1314	14.7500
01/02/2025 16:19:38.000	4.1382	14.7500
01/02/2025 16:20:38.000	4.1380	14.7500
01/02/2025 16:21:38.000	4.1323	14.7500
01/02/2025 16:22:38.000	4.1362	14.6900
01/02/2025 16:23:38.000	4.8594	14.6900
01/02/2025 16:24:38.000	5.5221	14.5600
01/02/2025 16:25:38.000	5.5190	14.4400

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-43-00-TP22A+64-10-TP47
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/02/2025 16:26:38.000	5.5230	14.3700
01/02/2025 16:27:38.000	5.5207	14.2500
01/02/2025 16:28:38.000	5.5228	14.1900
01/02/2025 16:29:38.000	5.5224	14.0600
01/02/2025 16:30:38.000	5.5162	14.0000
01/02/2025 16:31:38.000	5.5152	13.8700
01/02/2025 16:32:38.000	5.5130	13.8100
01/02/2025 16:33:38.000	5.5197	13.6900
01/02/2025 16:34:38.000	5.5149	13.6200
01/02/2025 16:35:38.000	5.5165	13.5600
01/02/2025 16:36:38.000	5.5106	13.4400
01/02/2025 16:37:38.000	5.5042	13.3700
01/02/2025 16:38:38.000	5.5041	13.2500
01/02/2025 16:39:38.000	5.5062	13.1900
01/02/2025 16:40:38.000	5.5035	13.1200
01/02/2025 16:41:38.000	5.5011	13.0600
01/02/2025 16:42:38.000	5.5000	13.0000
01/02/2025 16:43:38.000	5.4978	12.9400
01/02/2025 16:44:38.000	5.4985	12.8700
01/02/2025 16:45:38.000	5.4987	12.8100
01/02/2025 16:46:38.000	5.4953	12.7500
01/02/2025 16:47:38.000	5.4965	12.6900
01/02/2025 16:48:38.000	5.4951	12.6200
01/02/2025 16:49:38.000	5.4923	12.5600
01/02/2025 16:50:38.000	5.4931	12.5000
01/02/2025 16:51:38.000	5.4901	12.4400
01/02/2025 16:52:38.000	5.4894	12.3700
01/02/2025 16:53:38.000	5.4896	12.3100
01/02/2025 16:54:38.000	5.4880	12.2500
01/02/2025 16:55:38.000	5.4870	12.2500
01/02/2025 16:56:38.000	5.4838	12.1900
01/02/2025 16:57:38.000	5.4759	12.1200

Logger protocol
Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP22B+55-00-TP04

Instrument
Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FON32E
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:C5:19:D5)

Measurement conditions
Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	10000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:58:58
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	11:12:56 am

Logger protocol

Protocollo di acquisizione elenco dati

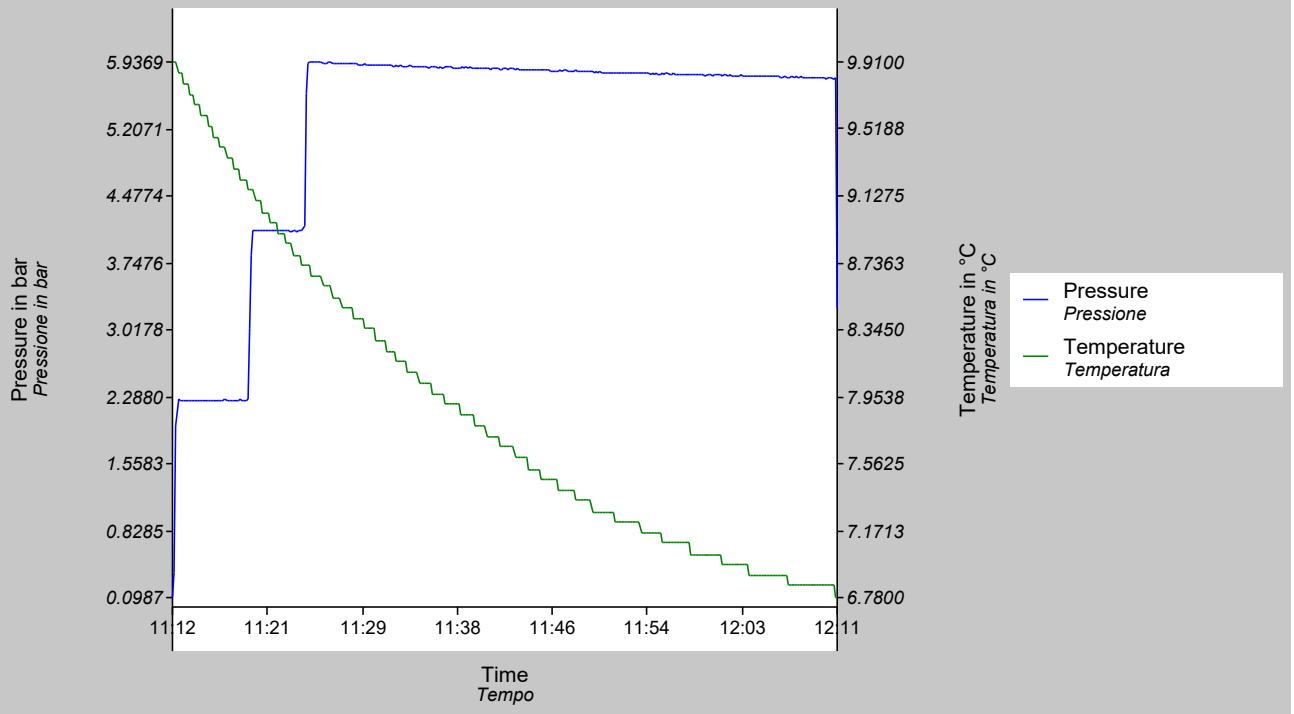
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP22B+55-00-TP04

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/03/2025 11:12:56.000	0.0987	9.9100
01/03/2025 11:13:06.000	0.3721	9.9100
01/03/2025 11:13:16.000	1.9741	9.9100
01/03/2025 11:13:26.000	2.2635	9.8500
01/03/2025 11:13:36.000	2.2471	9.8500
01/03/2025 11:13:46.000	2.2514	9.8500
01/03/2025 11:13:56.000	2.2519	9.7800
01/03/2025 11:14:06.000	2.2439	9.7800
01/03/2025 11:14:16.000	2.2458	9.7800
01/03/2025 11:14:26.000	2.2448	9.7200
01/03/2025 11:14:36.000	2.2460	9.7200
01/03/2025 11:14:46.000	2.2476	9.7200
01/03/2025 11:14:56.000	2.2536	9.6600
01/03/2025 11:15:06.000	2.2458	9.6600
01/03/2025 11:15:16.000	2.2489	9.6600
01/03/2025 11:15:26.000	2.2442	9.6000
01/03/2025 11:15:36.000	2.2429	9.6000

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-43-00-TP22B+55-00-TP04
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/03/2025 11:15:46.000	2.2443	9.6000
01/03/2025 11:15:56.000	2.2400	9.6000
01/03/2025 11:16:06.000	2.2512	9.5300
01/03/2025 11:16:16.000	2.2447	9.5300
01/03/2025 11:16:26.000	2.2509	9.5300
01/03/2025 11:16:36.000	2.2435	9.4700
01/03/2025 11:16:46.000	2.2428	9.4700
01/03/2025 11:16:56.000	2.2462	9.4700
01/03/2025 11:17:06.000	2.2527	9.4100
01/03/2025 11:17:16.000	2.2469	9.4100
01/03/2025 11:17:26.000	2.2527	9.4100
01/03/2025 11:17:36.000	2.2562	9.4100
01/03/2025 11:17:46.000	2.2518	9.3500
01/03/2025 11:17:56.000	2.2485	9.3500
01/03/2025 11:18:06.000	2.2468	9.3500
01/03/2025 11:18:16.000	2.2404	9.3500
01/03/2025 11:18:26.000	2.2505	9.2800
01/03/2025 11:18:36.000	2.2533	9.2800
01/03/2025 11:18:46.000	2.2515	9.2800
01/03/2025 11:18:56.000	2.2537	9.2200
01/03/2025 11:19:06.000	2.2435	9.2200
01/03/2025 11:19:16.000	2.2475	9.2200
01/03/2025 11:19:26.000	2.2436	9.2200
01/03/2025 11:19:36.000	2.2658	9.1600
01/03/2025 11:19:46.000	3.0322	9.1600
01/03/2025 11:19:56.000	3.8277	9.1600
01/03/2025 11:20:06.000	4.0958	9.1600
01/03/2025 11:20:16.000	4.1063	9.1000
01/03/2025 11:20:26.000	4.1026	9.1000
01/03/2025 11:20:36.000	4.0948	9.1000
01/03/2025 11:20:46.000	4.1025	9.1000
01/03/2025 11:20:56.000	4.0977	9.0300
01/03/2025 11:21:06.000	4.0963	9.0300
01/03/2025 11:21:16.000	4.0989	9.0300
01/03/2025 11:21:26.000	4.1046	9.0300
01/03/2025 11:21:36.000	4.1032	8.9700
01/03/2025 11:21:46.000	4.0937	8.9700
01/03/2025 11:21:56.000	4.0963	8.9700
01/03/2025 11:22:06.000	4.1018	8.9700
01/03/2025 11:22:16.000	4.1001	8.9100
01/03/2025 11:22:26.000	4.0960	8.9100
01/03/2025 11:22:36.000	4.0952	8.9100
01/03/2025 11:22:46.000	4.0969	8.9100
01/03/2025 11:22:56.000	4.0986	8.8500
01/03/2025 11:23:06.000	4.0946	8.8500
01/03/2025 11:23:16.000	4.0964	8.8500
01/03/2025 11:23:26.000	4.0899	8.8500
01/03/2025 11:23:36.000	4.0950	8.7800
01/03/2025 11:23:46.000	4.0950	8.7800

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-43-00-TP22B+55-00-TP04
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/03/2025 11:23:56.000	4.0906	8.7800
01/03/2025 11:24:06.000	4.0946	8.7800
01/03/2025 11:24:16.000	4.0958	8.7800
01/03/2025 11:24:26.000	4.0946	8.7200
01/03/2025 11:24:36.000	4.1514	8.7200
01/03/2025 11:24:46.000	5.6016	8.7200
01/03/2025 11:24:56.000	5.9271	8.7200
01/03/2025 11:25:06.000	5.9358	8.7200
01/03/2025 11:25:16.000	5.9326	8.6600
01/03/2025 11:25:26.000	5.9345	8.6600
01/03/2025 11:25:36.000	5.9324	8.6600
01/03/2025 11:25:46.000	5.9369	8.6600
01/03/2025 11:25:56.000	5.9322	8.6600
01/03/2025 11:26:06.000	5.9292	8.6600
01/03/2025 11:26:16.000	5.9268	8.6000
01/03/2025 11:26:26.000	5.9273	8.6000
01/03/2025 11:26:36.000	5.9230	8.6000
01/03/2025 11:26:46.000	5.9291	8.6000
01/03/2025 11:26:56.000	5.9285	8.6000
01/03/2025 11:27:06.000	5.9245	8.5300
01/03/2025 11:27:16.000	5.9241	8.5300
01/03/2025 11:27:26.000	5.9221	8.5300
01/03/2025 11:27:36.000	5.9159	8.5300
01/03/2025 11:27:46.000	5.9171	8.5300
01/03/2025 11:27:56.000	5.9148	8.4700
01/03/2025 11:28:06.000	5.9185	8.4700
01/03/2025 11:28:16.000	5.9162	8.4700
01/03/2025 11:28:26.000	5.9242	8.4700
01/03/2025 11:28:36.000	5.9188	8.4700
01/03/2025 11:28:46.000	5.9160	8.4700
01/03/2025 11:28:56.000	5.9179	8.4100
01/03/2025 11:29:06.000	5.9141	8.4100
01/03/2025 11:29:16.000	5.9119	8.4100
01/03/2025 11:29:26.000	5.9078	8.4100
01/03/2025 11:29:36.000	5.9055	8.4100
01/03/2025 11:29:46.000	5.9051	8.4100
01/03/2025 11:29:56.000	5.9135	8.3500
01/03/2025 11:30:06.000	5.9069	8.3500
01/03/2025 11:30:16.000	5.9069	8.3500
01/03/2025 11:30:26.000	5.9049	8.3500
01/03/2025 11:30:36.000	5.9025	8.3500
01/03/2025 11:30:46.000	5.9054	8.3500
01/03/2025 11:30:56.000	5.9065	8.2800
01/03/2025 11:31:06.000	5.8959	8.2800
01/03/2025 11:31:16.000	5.9047	8.2800
01/03/2025 11:31:26.000	5.9018	8.2800
01/03/2025 11:31:36.000	5.8968	8.2800
01/03/2025 11:31:46.000	5.8984	8.2800
01/03/2025 11:31:56.000	5.8977	8.2200

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-43-00-TP22B+55-00-TP04
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/03/2025 11:32:06.000	5.9020	8.2200
01/03/2025 11:32:16.000	5.8973	8.2200
01/03/2025 11:32:26.000	5.8916	8.2200
01/03/2025 11:32:36.000	5.8915	8.2200
01/03/2025 11:32:46.000	5.8960	8.1600
01/03/2025 11:32:56.000	5.8876	8.1600
01/03/2025 11:33:06.000	5.8940	8.1600
01/03/2025 11:33:16.000	5.8921	8.1600
01/03/2025 11:33:26.000	5.8923	8.1600
01/03/2025 11:33:36.000	5.8869	8.1600
01/03/2025 11:33:46.000	5.8917	8.1000
01/03/2025 11:33:56.000	5.8971	8.1000
01/03/2025 11:34:06.000	5.8923	8.1000
01/03/2025 11:34:16.000	5.8873	8.1000
01/03/2025 11:34:26.000	5.8912	8.1000
01/03/2025 11:34:36.000	5.8915	8.1000
01/03/2025 11:34:46.000	5.8892	8.0300
01/03/2025 11:34:56.000	5.8846	8.0300
01/03/2025 11:35:06.000	5.8807	8.0300
01/03/2025 11:35:16.000	5.8873	8.0300
01/03/2025 11:35:26.000	5.8846	8.0300
01/03/2025 11:35:36.000	5.8760	8.0300
01/03/2025 11:35:46.000	5.8807	8.0300
01/03/2025 11:35:56.000	5.8914	7.9700
01/03/2025 11:36:06.000	5.8796	7.9700
01/03/2025 11:36:16.000	5.8798	7.9700
01/03/2025 11:36:26.000	5.8762	7.9700
01/03/2025 11:36:36.000	5.8878	7.9700
01/03/2025 11:36:46.000	5.8763	7.9700
01/03/2025 11:36:56.000	5.8719	7.9700
01/03/2025 11:37:06.000	5.8833	7.9100
01/03/2025 11:37:16.000	5.8850	7.9100
01/03/2025 11:37:26.000	5.8772	7.9100
01/03/2025 11:37:36.000	5.8777	7.9100
01/03/2025 11:37:46.000	5.8767	7.9100
01/03/2025 11:37:56.000	5.8726	7.9100
01/03/2025 11:38:06.000	5.8746	7.9100
01/03/2025 11:38:16.000	5.8698	7.9100
01/03/2025 11:38:26.000	5.8739	7.8500
01/03/2025 11:38:36.000	5.8783	7.8500
01/03/2025 11:38:46.000	5.8717	7.8500
01/03/2025 11:38:56.000	5.8808	7.8500
01/03/2025 11:39:06.000	5.8706	7.8500
01/03/2025 11:39:16.000	5.8801	7.8500
01/03/2025 11:39:26.000	5.8691	7.8500
01/03/2025 11:39:36.000	5.8660	7.8500
01/03/2025 11:39:46.000	5.8710	7.7800
01/03/2025 11:39:56.000	5.8658	7.7800
01/03/2025 11:40:06.000	5.8660	7.7800

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-43-00-TP22B+55-00-TP04
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/03/2025 11:40:16.000	5.8631	7.7800
01/03/2025 11:40:26.000	5.8628	7.7800
01/03/2025 11:40:36.000	5.8654	7.7800
01/03/2025 11:40:46.000	5.8644	7.7200
01/03/2025 11:40:56.000	5.8703	7.7200
01/03/2025 11:41:06.000	5.8564	7.7200
01/03/2025 11:41:16.000	5.8648	7.7200
01/03/2025 11:41:26.000	5.8610	7.7200
01/03/2025 11:41:36.000	5.8619	7.7200
01/03/2025 11:41:46.000	5.8651	7.7200
01/03/2025 11:41:56.000	5.8583	7.6600
01/03/2025 11:42:06.000	5.8596	7.6600
01/03/2025 11:42:16.000	5.8631	7.6600
01/03/2025 11:42:26.000	5.8602	7.6600
01/03/2025 11:42:36.000	5.8588	7.6600
01/03/2025 11:42:46.000	5.8601	7.6600
01/03/2025 11:42:56.000	5.8598	7.6600
01/03/2025 11:43:06.000	5.8616	7.6600
01/03/2025 11:43:16.000	5.8552	7.6000
01/03/2025 11:43:26.000	5.8606	7.6000
01/03/2025 11:43:36.000	5.8577	7.6000
01/03/2025 11:43:46.000	5.8562	7.6000
01/03/2025 11:43:56.000	5.8486	7.6000
01/03/2025 11:44:06.000	5.8532	7.6000
01/03/2025 11:44:16.000	5.8512	7.6000
01/03/2025 11:44:26.000	5.8524	7.5300
01/03/2025 11:44:36.000	5.8494	7.5300
01/03/2025 11:44:46.000	5.8478	7.5300
01/03/2025 11:44:56.000	5.8487	7.5300
01/03/2025 11:45:06.000	5.8507	7.5300
01/03/2025 11:45:16.000	5.8529	7.5300
01/03/2025 11:45:26.000	5.8484	7.5300
01/03/2025 11:45:36.000	5.8486	7.4700
01/03/2025 11:45:46.000	5.8474	7.4700
01/03/2025 11:45:56.000	5.8453	7.4700
01/03/2025 11:46:06.000	5.8432	7.4700
01/03/2025 11:46:16.000	5.8445	7.4700
01/03/2025 11:46:26.000	5.8385	7.4700
01/03/2025 11:46:36.000	5.8404	7.4700
01/03/2025 11:46:46.000	5.8379	7.4700
01/03/2025 11:46:56.000	5.8398	7.4700
01/03/2025 11:47:06.000	5.8411	7.4100
01/03/2025 11:47:16.000	5.8434	7.4100
01/03/2025 11:47:26.000	5.8401	7.4100
01/03/2025 11:47:36.000	5.8428	7.4100
01/03/2025 11:47:46.000	5.8426	7.4100
01/03/2025 11:47:56.000	5.8377	7.4100
01/03/2025 11:48:06.000	5.8373	7.4100
01/03/2025 11:48:16.000	5.8389	7.4100

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-43-00-TP22B+55-00-TP04
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/03/2025 11:48:26.000	5.8362	7.4100
01/03/2025 11:48:36.000	5.8428	7.3500
01/03/2025 11:48:46.000	5.8370	7.3500
01/03/2025 11:48:56.000	5.8341	7.3500
01/03/2025 11:49:06.000	5.8339	7.3500
01/03/2025 11:49:16.000	5.8330	7.3500
01/03/2025 11:49:26.000	5.8373	7.3500
01/03/2025 11:49:36.000	5.8333	7.3500
01/03/2025 11:49:46.000	5.8291	7.3500
01/03/2025 11:49:56.000	5.8259	7.3500
01/03/2025 11:50:06.000	5.8312	7.2800
01/03/2025 11:50:16.000	5.8242	7.2800
01/03/2025 11:50:26.000	5.8301	7.2800
01/03/2025 11:50:36.000	5.8235	7.2800
01/03/2025 11:50:46.000	5.8275	7.2800
01/03/2025 11:50:56.000	5.8233	7.2800
01/03/2025 11:51:06.000	5.8252	7.2800
01/03/2025 11:51:16.000	5.8210	7.2800
01/03/2025 11:51:26.000	5.8219	7.2800
01/03/2025 11:51:36.000	5.8208	7.2800
01/03/2025 11:51:46.000	5.8250	7.2800
01/03/2025 11:51:56.000	5.8221	7.2800
01/03/2025 11:52:06.000	5.8192	7.2200
01/03/2025 11:52:16.000	5.8199	7.2200
01/03/2025 11:52:26.000	5.8235	7.2200
01/03/2025 11:52:36.000	5.8183	7.2200
01/03/2025 11:52:46.000	5.8194	7.2200
01/03/2025 11:52:56.000	5.8165	7.2200
01/03/2025 11:53:06.000	5.8146	7.2200
01/03/2025 11:53:16.000	5.8156	7.2200
01/03/2025 11:53:26.000	5.8113	7.2200
01/03/2025 11:53:36.000	5.8167	7.2200
01/03/2025 11:53:46.000	5.8084	7.2200
01/03/2025 11:53:56.000	5.8145	7.2200
01/03/2025 11:54:06.000	5.8126	7.2200
01/03/2025 11:54:16.000	5.8166	7.2200
01/03/2025 11:54:26.000	5.8197	7.1600
01/03/2025 11:54:36.000	5.8152	7.1600
01/03/2025 11:54:46.000	5.8128	7.1600
01/03/2025 11:54:56.000	5.8088	7.1600
01/03/2025 11:55:06.000	5.8098	7.1600
01/03/2025 11:55:16.000	5.8080	7.1600
01/03/2025 11:55:26.000	5.8156	7.1600
01/03/2025 11:55:36.000	5.8077	7.1600
01/03/2025 11:55:46.000	5.8091	7.1600
01/03/2025 11:55:56.000	5.8076	7.1600
01/03/2025 11:56:06.000	5.8065	7.1600
01/03/2025 11:56:16.000	5.8090	7.1000
01/03/2025 11:56:26.000	5.8059	7.1000

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-43-00-TP22B+55-00-TP04
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/03/2025 11:56:36.000	5.8109	7.1000
01/03/2025 11:56:46.000	5.8087	7.1000
01/03/2025 11:56:56.000	5.8068	7.1000
01/03/2025 11:57:06.000	5.8012	7.1000
01/03/2025 11:57:16.000	5.8101	7.1000
01/03/2025 11:57:26.000	5.8060	7.1000
01/03/2025 11:57:36.000	5.8045	7.1000
01/03/2025 11:57:46.000	5.8033	7.1000
01/03/2025 11:57:56.000	5.7979	7.1000
01/03/2025 11:58:06.000	5.8045	7.1000
01/03/2025 11:58:16.000	5.7974	7.1000
01/03/2025 11:58:26.000	5.7987	7.1000
01/03/2025 11:58:36.000	5.8058	7.1000
01/03/2025 11:58:46.000	5.7969	7.0300
01/03/2025 11:58:56.000	5.8032	7.0300
01/03/2025 11:59:06.000	5.7983	7.0300
01/03/2025 11:59:16.000	5.8011	7.0300
01/03/2025 11:59:26.000	5.8007	7.0300
01/03/2025 11:59:36.000	5.7987	7.0300
01/03/2025 11:59:46.000	5.7935	7.0300
01/03/2025 11:59:56.000	5.7958	7.0300
01/03/2025 12:00:06.000	5.7884	7.0300
01/03/2025 12:00:16.000	5.7933	7.0300
01/03/2025 12:00:26.000	5.7969	7.0300
01/03/2025 12:00:36.000	5.7967	7.0300
01/03/2025 12:00:46.000	5.7863	7.0300
01/03/2025 12:00:56.000	5.7967	7.0300
01/03/2025 12:01:06.000	5.7934	7.0300
01/03/2025 12:01:16.000	5.7916	7.0300
01/03/2025 12:01:26.000	5.7926	7.0300
01/03/2025 12:01:36.000	5.7863	6.9700
01/03/2025 12:01:46.000	5.7939	6.9700
01/03/2025 12:01:56.000	5.7916	6.9700
01/03/2025 12:02:06.000	5.7850	6.9700
01/03/2025 12:02:16.000	5.7943	6.9700
01/03/2025 12:02:26.000	5.7805	6.9700
01/03/2025 12:02:36.000	5.7854	6.9700
01/03/2025 12:02:46.000	5.7864	6.9700
01/03/2025 12:02:56.000	5.7896	6.9700
01/03/2025 12:03:06.000	5.7854	6.9700
01/03/2025 12:03:16.000	5.7914	6.9700
01/03/2025 12:03:26.000	5.7835	6.9700
01/03/2025 12:03:36.000	5.7865	6.9700
01/03/2025 12:03:46.000	5.7864	6.9700
01/03/2025 12:03:56.000	5.7876	6.9100
01/03/2025 12:04:06.000	5.7849	6.9100
01/03/2025 12:04:16.000	5.7824	6.9100
01/03/2025 12:04:26.000	5.7796	6.9100
01/03/2025 12:04:36.000	5.7755	6.9100

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-43-00-TP22B+55-00-TP04
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/03/2025 12:04:46.000	5.7884	6.9100
01/03/2025 12:04:56.000	5.7769	6.9100
01/03/2025 12:05:06.000	5.7840	6.9100
01/03/2025 12:05:16.000	5.7836	6.9100
01/03/2025 12:05:26.000	5.7781	6.9100
01/03/2025 12:05:36.000	5.7785	6.9100
01/03/2025 12:05:46.000	5.7806	6.9100
01/03/2025 12:05:56.000	5.7787	6.9100
01/03/2025 12:06:06.000	5.7804	6.9100
01/03/2025 12:06:16.000	5.7771	6.9100
01/03/2025 12:06:26.000	5.7742	6.9100
01/03/2025 12:06:36.000	5.7760	6.9100
01/03/2025 12:06:46.000	5.7736	6.9100
01/03/2025 12:06:56.000	5.7690	6.9100
01/03/2025 12:07:06.000	5.7738	6.9100
01/03/2025 12:07:16.000	5.7721	6.9100
01/03/2025 12:07:26.000	5.7684	6.8500
01/03/2025 12:07:36.000	5.7728	6.8500
01/03/2025 12:07:46.000	5.7758	6.8500
01/03/2025 12:07:56.000	5.7686	6.8500
01/03/2025 12:08:06.000	5.7763	6.8500
01/03/2025 12:08:16.000	5.7716	6.8500
01/03/2025 12:08:26.000	5.7711	6.8500
01/03/2025 12:08:36.000	5.7743	6.8500
01/03/2025 12:08:46.000	5.7703	6.8500
01/03/2025 12:08:56.000	5.7724	6.8500
01/03/2025 12:09:06.000	5.7626	6.8500
01/03/2025 12:09:16.000	5.7691	6.8500
01/03/2025 12:09:26.000	5.7691	6.8500
01/03/2025 12:09:36.000	5.7663	6.8500
01/03/2025 12:09:46.000	5.7644	6.8500
01/03/2025 12:09:56.000	5.7677	6.8500
01/03/2025 12:10:06.000	5.7663	6.8500
01/03/2025 12:10:16.000	5.7640	6.8500
01/03/2025 12:10:26.000	5.7678	6.8500
01/03/2025 12:10:36.000	5.7680	6.8500
01/03/2025 12:10:46.000	5.7558	6.8500
01/03/2025 12:10:56.000	5.7610	6.8500
01/03/2025 12:11:06.000	5.7600	6.8500
01/03/2025 12:11:16.000	5.7578	6.8500
01/03/2025 12:11:26.000	5.7565	6.8500
01/03/2025 12:11:36.000	5.7594	6.7800
01/03/2025 12:11:46.000	3.2552	6.7800

Kalibrierschein / Calibration Certificate

gem. DIN EN ISO/IEC 17025:2018 / acc. DIN EN ISO/IEC 17025:2018

erstellt durch das Kalibrierlaboratorium
issued by the calibration laboratory

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg

DAkkS Deutsche Akkreditierungsstelle D-K-15105-01-00

Mitglied im Deutschen Kalibrierdienst
Member of the Deutscher Kalibrierdienst

Kalibrierzeichen
Calibration mark

C01107773144
D-K-15105-01-00
2024-06

Gegenstand *Object*	Elektrisches Druckmessgerät Electrical pressure gauge
Hersteller *Manufacturer*	WIKA Alexander-Wiegand-Straße 30 DE-63911 Klingenberg
Typ *Type*	CPG1500
Fabrikat/Serien-Nr. *Serial number*	1A037FOOB2N
Auftraggeber *Customer*	ROSETTI MARINO SPA Via Del Marchesato, 37 Marina di Ravenna (RA) IT 48122 Ravenna
Auftragsnummer *Order No.*	S000343115/1
Anzahl der Seiten des Kalibrierscheines *Number of pages of the certificate*	4
Datum der Kalibrierung *Date of calibration*	18.06.2024

Dieser Kalibrierschein dokumentiert die metrologische Rückführbarkeit auf nationale Normale zur Darstellung der Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI).
Die DAkkS ist Unterzeichner der multilateralen Übereinkommen der European co-operation for Accreditation (EA) und der International Laboratory Accreditation Cooperation (ILAC) zur gegenseitigen Anerkennung der Kalibrierscheine.
Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.

This calibration certificate documents the metrological traceability to national standards, which realize the units of measurement according to the International System of Units (SI).
The DAkkS is signatory to the multilateral agreements of the European co-operation for Accreditation (EA) and of the International Laboratory Accreditation Cooperation (ILAC) for the mutual recognition of calibration certificates.
The user is obliged to have the object recalibrated at appropriate intervals.

Dieser Kalibrierschein darf nur vollständig und unverändert weiterverbreitet werden. Auszüge oder Änderungen bedürfen der Genehmigung des ausstellenden Kalibrierlaboratoriums. Kalibrierscheine ohne Unterschrift haben keine Gültigkeit.

This calibration certificate may not be reproduced other than in full except with the permission of the issuing laboratory. Calibration certificates without signature are not valid.

Datum *Date*	Stellv. Leiter des Kalibrierlaboratoriums *Ass. head of calibration laboratory*	Bearbeiter *Person in charge*
18.06.2024	Roland Schüßler	Christian Wunder

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WIKA Alexander Wiegand SE & Co. KG

C01107773144
D-K-15105-01-00
2024-06

Kalibriergegenstand (KG)
Device under test (DUT)

Elektrisches Druckmessgerät *Electrical pressure gauge*	
Typ *Model*	CPG1500
Seriennummer *Serial number*	1A037FOOB2N
Anzeigebereich *Scale range*	(0 ... 1000) bar g
Genauigkeit *Accuracy*	0,1 % FS
Auflösung (Skalenwert) *Resolution (scale division)*	0,1 bar
Messstellen-Nr. *Tag number*	

Kalibrierverfahren
Calibration procedure

Die Kalibrierung erfolgte nach der Richtlinie DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) Ablauf B, durch direkten Vergleich der Messwerte des Kalibriergegenstandes mit denen des Bezugs- oder Gebrauchsnormales. Der Kalibrierschein wurde mit WIKA-Cal Version 2.11.0.213 erstellt.
Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard. The calibration certificate has been created with WIKA-Cal version 2.11.0.213.

Ort der Kalibrierung
Place of calibration

Klingenberg Kalibrierlabor 2 *Klingenberg calibration laboratory 2*	g = (9,8100531 ± 0,00002) m/s²

Messbedingungen
Measurement conditions

Gebrauchsnormal (GN) Druckcontroller *Working standard (WS) Pressure controller*	
Typ *Model*	CPC8000
Kalibrierzeichen *Calibration mark*	07072415
Anzeigebereich *Scale range*	(0 ... 1000) bar g
Genauigkeit *Accuracy*	0,01 % FS

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WIKA Alexander Wiegand SE & Co. KG

C01107773144
D-K-15105-01-00
2024-06

Aufbau *Assembly*	
Druckübertragungsmedium *Pressure transmission medium*	Wasser *water*
Bezugsebene (für Referenzwert) *Reference height (for reference value)*	Dichtfläche KG *Sealing face DUT*
Lage bei der Kalibrierung *Position during calibration*	senkrecht *vertical*

Umgebungsbedingungen
Ambient conditions

Temperatur *Temperature*	(23,6 ± 0,5) °C
Atmosphärischer Luftdruck *Atmospheric pressure*	(997,7 ± 0,1) hPa
rel. Luftfeuchte *rel. humidity*	(40 ± 5) %

Messergebnisse
Measurement results

Referenzwert GN *Reference value WS* bar	Ablesung KG *Reading DUT* bar		
	↑	↓	↑
0,00	0,0	0,0	0,0
125,00	125,0	125,1	125,0
250,00	250,1	250,1	250,1
375,00	375,0	375,2	375,0
500,00	500,1	500,1	500,0
625,00	625,0	625,0	625,0
750,00	749,9	750,0	749,9
875,00	874,9	874,8	874,9
1000,00	999,9	999,9	999,9

Messunsicherheit
Measurement uncertainty

Referenzwert GN *Reference value WS* bar	Mittelwert *Mean value* bar	Messabweichung *Deviation* bar	Wiederholbarkeit *Repeatability* bar	Hysterese *Hysteresis* bar	Messunsicherheit *Meas. uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
125,00	125,1	0,1	0,0	0,1	0,40
250,00	250,1	0,1	0,0	0,0	0,40
375,00	375,1	0,1	0,0	0,2	0,40
500,00	500,1	0,1	0,1	0,0	0,40
625,00	625,0	0,0	0,0	0,0	0,40
750,00	750,0	0,0	0,0	0,1	0,40
875,00	874,9	-0,1	0,0	0,1	0,40
1000,00	999,9	-0,1	0,0	0,0	0,40

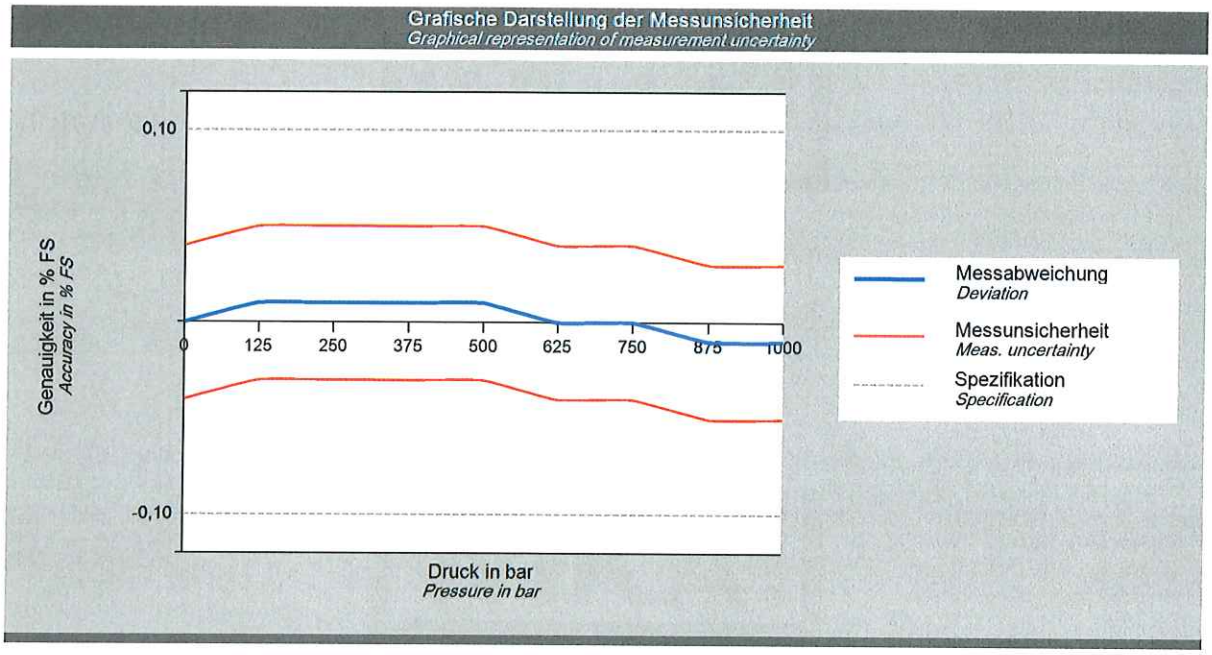
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WIKA Alexander Wiegand SE & Co. KG

C01107773144
D-K-15105-01-00
2024-06

Angegeben ist die erweiterte Messunsicherheit, die sich aus der Standardmessunsicherheit durch Multiplikation mit dem Erweiterungsfaktor k = 2 ergibt. Sie wurde gemäß EA-4/02 M ermittelt. Der Wert der Messgröße liegt mit einer Wahrscheinlichkeit von etwa 95 % im zugeordneten Werteintervall.
The uncertainty stated is the expanded uncertainty obtained by multiplying the standard uncertainty by the coverage factor k = 2. It has been determined in accordance with EA-4/02 M. The value of the measurand lies within the assigned range of values with a probability of approx. 95 %.



Die Genauigkeit des KG beträgt 0,50 bar
The accuracy of the DUT is 0.50 bar

Konformitätsaussage
Statement of compliance

Der Kalibriergegenstand hält die geforderte Spezifikation ein!
The calibration item keeps the required specification!

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I Traversa, n. 8
70026 - Modugno (BA) • Italy
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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24

Certificate of Calibration

- data di emissione date of issue	2024-12-10
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A037FON32E
- data di ricev. oggetto *date of receipt of item*	2024-11-29
- data delle misure *date of measurements*	2024-12-10
- registro di laboratorio *laboratory reference*	0580-SM-24

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura k corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore k vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

WIKA Italia S.r.l. & C. s.a.s.
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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico *Electrical pressure gauge*	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A037FON32E
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione *Reference standard (RS) Dead-weight tester*	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1007,5 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	100,0	100,0	100,0
199,82	200,0	200,0	200,0
299,73	299,9	300,0	299,9
399,63	399,8	399,9	399,8
499,53	499,6	499,7	499,7
599,44	599,5	599,6	599,5
699,34	699,3	699,4	699,3
799,24	799,2	799,3	799,2
899,14	899,1	899,1	899,1
999,04	999,0	999,0	999,0

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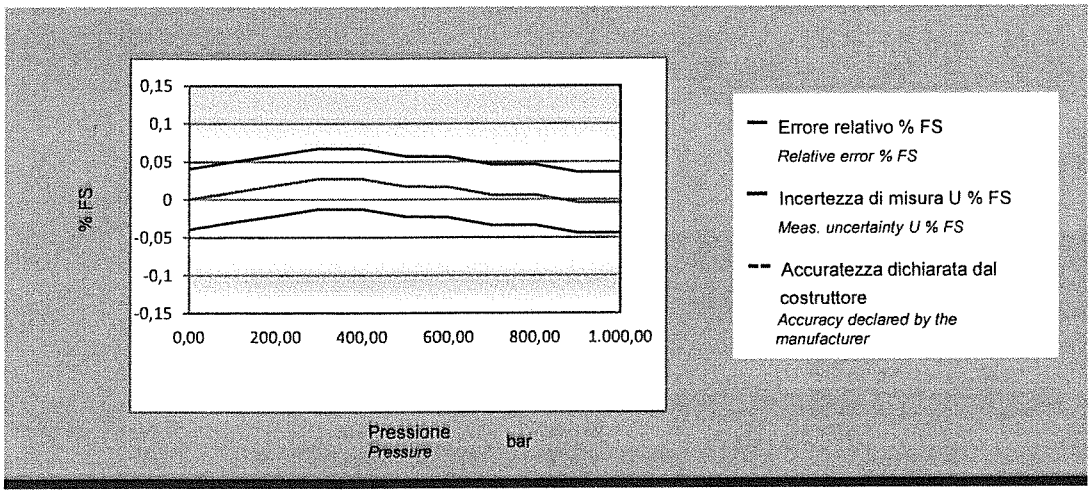
LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	100,0	0,1	0,0	0,0	0,40
199,82	200,0	0,2	0,0	0,0	0,40
299,73	300,0	0,3	0,0	0,1	0,40
399,63	399,9	0,3	0,0	0,1	0,40
499,53	499,7	0,2	0,1	0,1	0,40
599,44	599,6	0,2	0,0	0,1	0,40
699,34	699,4	0,1	0,0	0,1	0,40
799,24	799,3	0,1	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,0	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,7 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Base Load Power Hub (BLPH)

TEST PACK

N°43-00-TP-022
SUB-SYSTEM N° 43-00

System	43
Sub-System	43-00
Test Pressure	5.25 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

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1. COLOURED MARKED P&IDs
2. PIPING TEST 3D CIRCUIT
3. MATERIAL LIST FOR TEST
4. EXTRACT OF LINE LIST
5. ISOMETRIC RED-MARKED DRAWINGS & EXTRACT OF ISO LIST
6. EXTRACT OF SUPPORT LIST AND DETAILS – NOT APPLICABLE
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
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   - 8.2 CLX02B - Pipework After Test
   - 8.3 CXX01 - Thermal insulation
   - 8.4 CXX02 – Painting Line
   - 8.5 TMX03 – Cleaning
   - 8.6 TMX05 – Pressure test
   - 8.7 TMX25 – Gross Air Leak Test
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 - Drying

1. COLOURED MARKED P&IDs

DRAWING NO. DRAWING_NO.

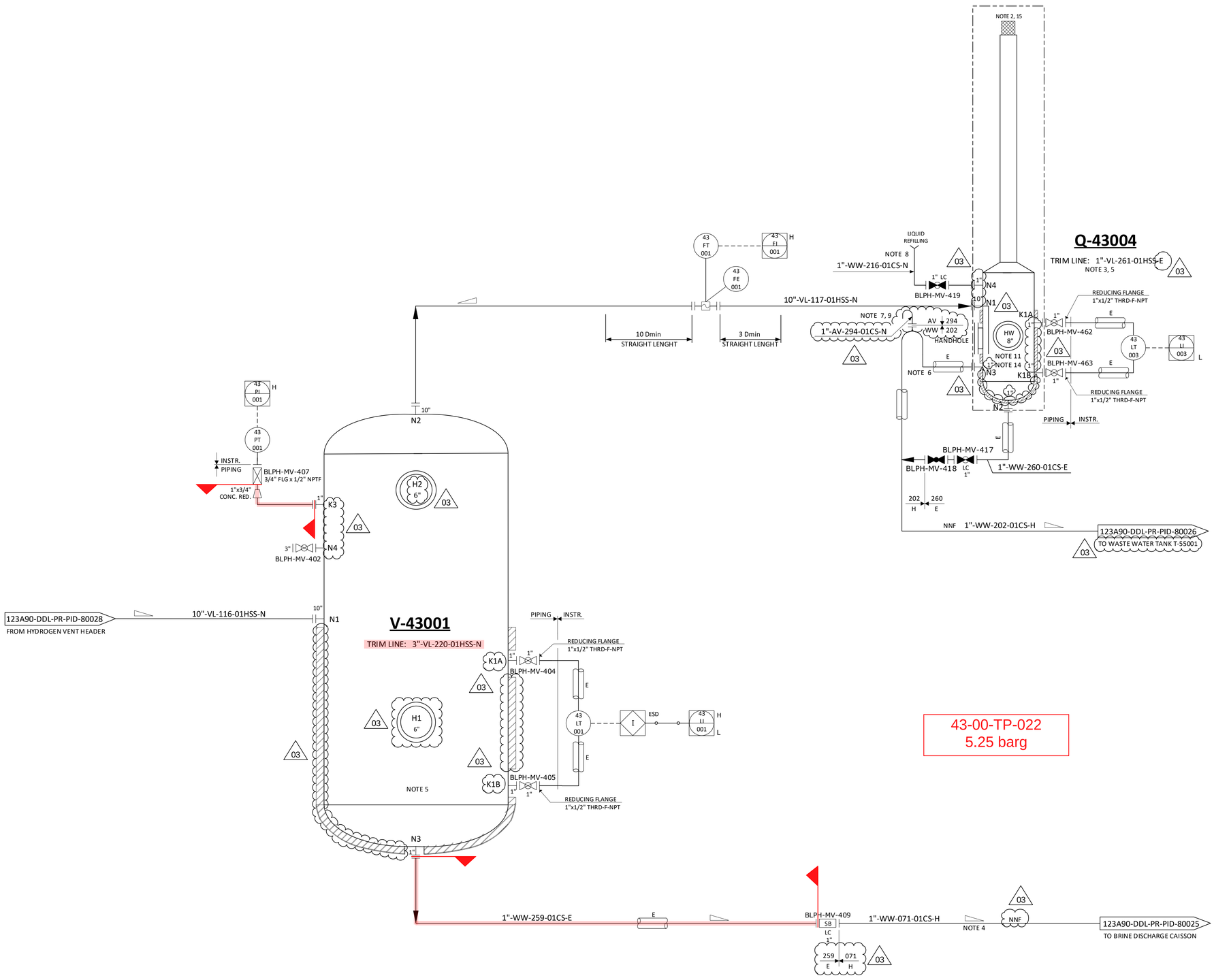
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029		SHEET 001 / REV. 03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT

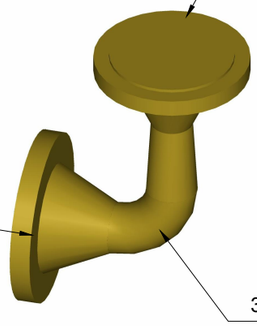
VENT POINT

TP-STD-REC/6000

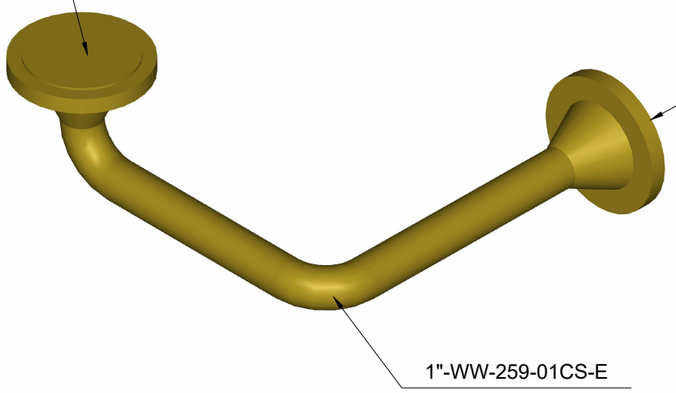
TP-STD-150RF-BLF/3/4"

CONNECT SPOOLS

TP-STD-150RF-GSK/1"



3"-VL-220-01HSS-N



FILLING POINT

TP-STD-FILL/6000

TP-STD-150RF-BLF/1"

1"-WW-259-01CS-E

43-00-TP-022

5.25 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
43-00-TP-022

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

CROSSWIND / ROSETTI MARINO	CONTRACTOR: Rosetti Marino SpA	JOB :	123A90
	PROJECT: Base Load Power Hub (BLPH)	DATE :	20/09/2024
	TITLE: MATERIAL LIST FOR HYDROSTATIC TEST	REV. :	00

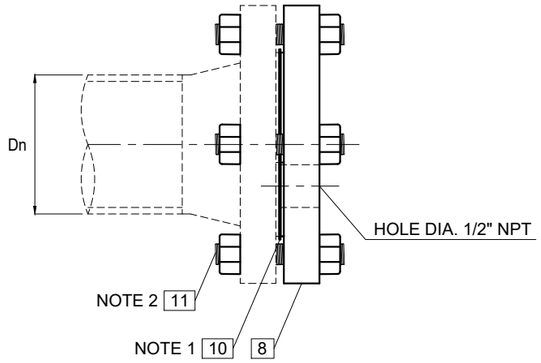
TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-022	TP-STD-150RF-BLF/3/4"	FLBHCS01363Q0H	Flange Blind c/w NPT Hole ø3/4"x1/2" 150LB RF ASTM/ASME A/SA105	1	1	1	
TP-022	TP-STD-150RF-BLF/3/4"	GSW0GK11093Q00	Gasket Spiral Wound Thk. 3.2 mm ø3/4" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	1	1	
TP-022	TP-STD-150RF-BLF/3/4"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1	4	
TP-022	TP-STD-150RF-BLF/1"	FLBHCS0022010H	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1	1	1	
TP-022	TP-STD-150RF-BLF/1"	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ø1" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	1	1	
TP-022	TP-STD-150RF-BLF/1"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1	4	
TP-022	TP-STD-150RF-GSK/1"	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ø1" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	1	1	
TP-022	TP-STD-150RF-GSK/1"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1	4	

STD NAME	RATING	DESCRIPTION
TP-STD-150RF	150 RF	STANDARD FOR BLIND POINT

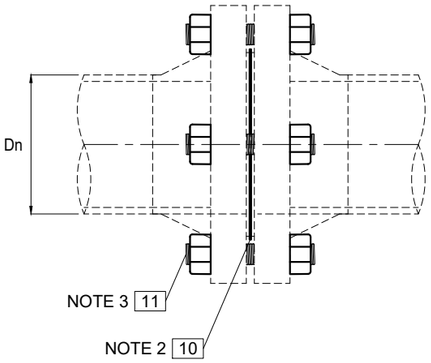
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-150RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=60 MM	4
TP-STD-150RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=85 MM	4
TP-STD-150RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-150RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-150RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-150RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=120 MM	12
TP-STD-150RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=125 MM	12
TP-STD-150RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=135 MM	12
TP-STD-150RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=140 MM	16
TP-STD-150RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=150 MM	16
TP-STD-150RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=160 MM	20
TP-STD-150RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=175 MM	20



TP-STD-150RF-BLF/Dn
BLIND FLANGE



TP-STD-150RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

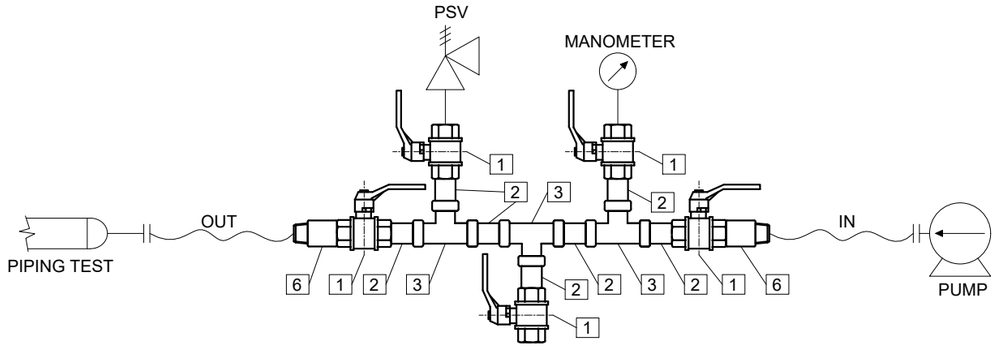
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-150RF
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_150RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

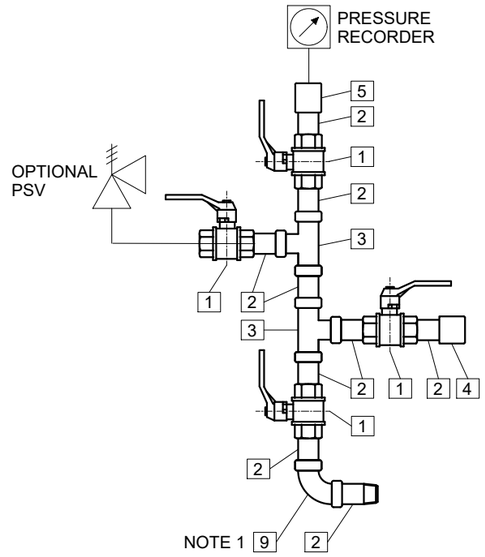
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
116	VL-220	220	3	01HSS	N	3,05	10S	Partially	3"-VL-220-01HSS-N	123A90-DDL-PR-PID-80029	3,50	43	43-00	TP-022	Water	5.25	Hydrogen	Stainless Steel	TL	I	6A	RAL 9002
123	WW-259	259	1	01CS	E	4,55	80	Yes	1"-WW-259-01CS-E	123A90-DDL-PR-PID-80029	3,50	43	43-00	TP-022	Water	5.25	Water Supply	Carbon Steel	INF	Art. 4, par. 3	1D	N/A

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

REV. **05**

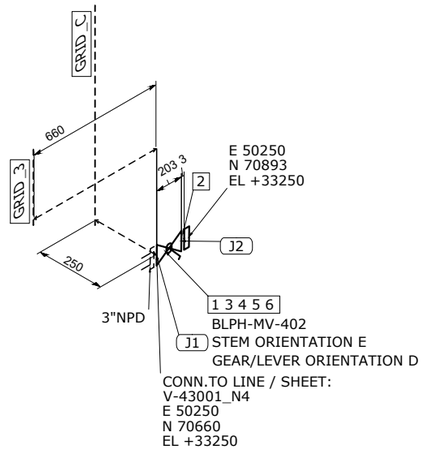
TITLE

SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
146	123A90-FDL-PP-DI-00116-01	**116**	01	SHOP DRAWING ISOMETRIC - LINE NR 3"-VL-220-01HSS-N	27/08/2024													**00**	**03**		**TP-022**
147	123A90-FDL-PP-DI-00116-02	**116**	02	SHOP DRAWING ISOMETRIC - LINE NR 3"-VL-220-01HSS-N	27/08/2024													**00**	**03**		**TP-022**
148	123A90-FDL-PP-DI-00116-03	**116**	03	SHOP DRAWING ISOMETRIC - LINE NR 3"-VL-220-01HSS-N	27/08/2024													**00**	**03**		**TP-022**
149	123A90-FDL-PP-DI-00116-04	**116**	04	SHOP DRAWING ISOMETRIC - LINE NR 3"-VL-220-01HSS-N	27/08/2024													**00**	**03**		**TP-022**
157	123A90-FDL-PP-DI-00123-01	**123**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-WW-259-01CS-E	27/08/2024													**00**	**03**		**TP-022**

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	3	VBD0NN16460300	Ball Valve Split Body RB API 6D FLG 150LB RF BC01C01RFH	1	23.3
2	3	FLB0SS00030300	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F316/316L	1	4.6
3	3	SPIKNN00570300	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.2
4	3	GSW0GK11140300	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.2
5	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
6	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	30.3
OVERALL WEIGHT [kg]	30.3

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	30.3

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 3"-VL-220-01HSS-N

SK.116

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00116 | SHEET / OF: 1/4 | REV.: 00

43-00-TP-022

MASTER

LINE DATA

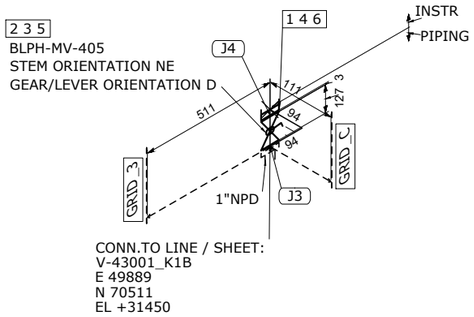
NDT INSPECTION CATEGORY	1		PED CATEGORY	I			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	N/A			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X1/2	FLR0SS0034010H	Flange Reducing ASME B16.5 THRD-F NPT 150LB RF FRG ASTM A182 Gr.F316/316L	1	0.9
2	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	5.8
3	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	7.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 3"-VL-220-01HSS-N

SK.116

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00116 | SHEET / OF: 2/4 | REV.: 00

43-00-TP-022

MASTER

LINE DATA

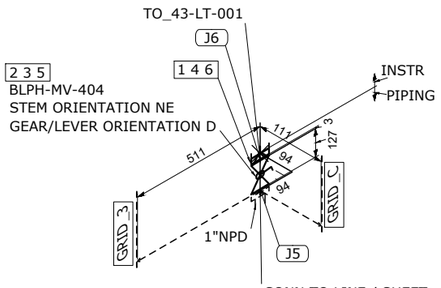
NDT INSPECTION CATEGORY	1		PED CATEGORY	I			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	N/A			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X1/2	FLR0SS0034010H	Flange Reducing ASME B16.5 THRD-F NPT 150LB RF FRG ASTM A182 Gr.F316/316L	1	0.9
2	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	5.8
3	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	7.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

43-00-TP-022

MASTER

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 3"-VL-220-01HSS-N
SK.116

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00116 | SHEET / OF: 3/4 | REV.: 00

LINE DATA

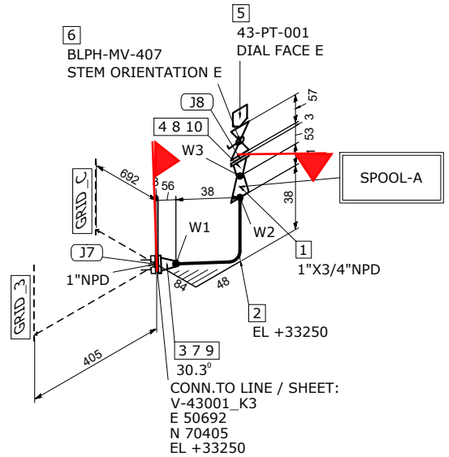
NDT INSPECTION CATEGORY	1		PED CATEGORY	I			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
2	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	1	0.1
3	1	FLW0SS00930100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.4
4	3/4	FLW0SS00923Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F316/316L	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1/2		Pressure Transmitter	1	0.0
6	3/4X1/2	VLBNNN00023Q0H	Monoflange Block & Bleed Valve API 6D FLG x THRD-F NPT 150LB RF MS01C02YH	1	4.3
7	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
8	3/4	GSW0GK11093Q00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
10	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	2.5
ERECTION WEIGHT [kg]	5.5
OVERALL WEIGHT [kg]	8.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2.75	2.6
MONT	0	5.5

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

43-00-TP-022

MASTER

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 3"-VL-220-01HSS-N

SK.116

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00116			SHEET / OF	4/4
						REV.	00

LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	I				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002		FLUID PHASE	Liquid				
INSULATION	TYPE N	THICKNESS [mm]		DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A			TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

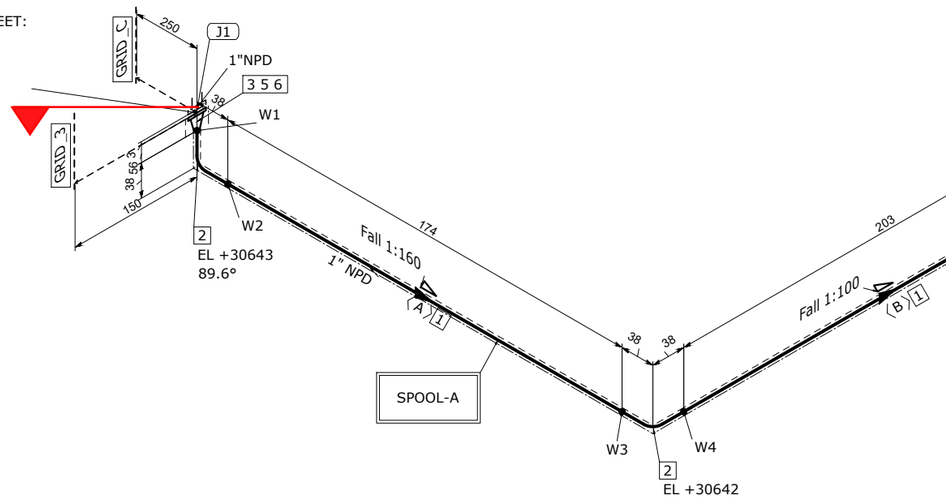
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

N

CONN.TO LINE / SHEET:
V-43001_N3
E 50250
N 70150
EL +30740



CONT. ON LINE / SHEET:
SK.030
1"-WW-071-01CS-H
E 50500
N 70656
EL +30637

BLPH-MV-409
LC
STEM ORIENTATION E
GEAR/LEVER ORIENTATION S

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	0.4M	1.2
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	2	0.4
3	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	2	2.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1	VLBLNN01280100	Block & Bleed Valve API 6D FLG 150LB RF BS01B01RFS	1	12.5
5	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	3	0.2
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	1.4

FABRICATION WEIGHT [kg]	4.4
ERECTION WEIGHT [kg]	14.1
OVERALL WEIGHT [kg]	18.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	174	BEVEL	BEVEL
B	1	203	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	5	4.4
MONT	0	14.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

43-00-TP-022

MASTER

LINE DATA								
NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 1D	BASE RAL N/A		FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]		DESIGN	PRESS. 3.5 [barg]	TEMP. -46 / 100 [°C]		
HEAT TRACING	Yes			TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-259-01CS-E

SK.123

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3

DRAWING NO.: 123A90-FDL-PP-DI-00123

SHEET / OF: 1/1

REV.: 00

6. EXTRACT OF SUPPORT LIST & DETAILS

NOT APPLICABLE

7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	114	**To**	114
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	Accepted				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
2/114/1/_		**01**	**25-09-2024**	**15**	**AZ53**			**PIPE**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**A**
01CS	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				26-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
3/114/1/_		**01**	**23-09-2024**	**13**	**AZ53**			**FWN**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**24-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				24-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
4/114/1/_		**01**	**24-09-2024**	**14**	**AZ53**			**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				26-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
5/114/1/_		**01**	**24-09-2024**	**14**	**AZ53**			**PIPE**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				26-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
6/114/1/_		**01**	**25-09-2024**	**15**	**AZ53**			**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				26-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
7/114/1/_		**01**	**23-09-2024**	**13**	**AZ53**			**PIPE**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**24-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				24-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
8/114/1/_		**01**	**20-12-2024**	**102**	**AX84**			**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**M**	**C.S.**	**A1A**	**GTAW**	**BW**	**23-12-2024**	
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				20-12-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	001089	4	Acceptable				23-12-2024				
9/114/1/_		**01**	**24-09-2024**	**14**	**AZ53**			**PIPE**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				26-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
10/114/1/_		**01**	**23-09-2024**	**13**	**AZ53**			**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				24-09-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	000090	4	Acceptable				26-09-2024				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	N. Rep	Dimension	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
10/114/1/_		**01**	**23-09-2024**	**13**	**AZ53**			**ELB**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**C**
11/114/1/_		**01**	**23-09-2024**	**13**	**AZ53**			**PIPE**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**24-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
12/114/1/_		**01**	**23-12-2024**	**102**	**AX84**			**ELB**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**M**	**C.S.**	**A1A**	**GTAW**	**BW**	**23-12-2024**	
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK			Acceptable					23-12-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
13/114/1/_		**01**	**26-09-2024**	**17**	**AZ53**			**PIPE**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**28-09-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					28-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
14/114/1/_		**01**	**23-09-2024**	**13**	**AZ53**			**ELB**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**24-09-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								

Totals per DWG	**114**	**Prefabrication**	**1,10 m**	**11 Nr. Welds**	**11,00 inch**
		Erection	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**1,30 m**	**13 Nr. Welds**	**13,00 inch**
		Accepted	**1,30 m**	**13 Nr. Welds**	**13,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**1,10 m**	**11 Nr. Welds**	**11,00 inch**
		Erection	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**1,30 m**	**13 Nr. Welds**	**13,00 inch**
		Accepted	**1,30 m**	**13 Nr. Welds**	**13,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**1,10 m**	**11 Nr. Welds**	**11,00 inch**
		Erection	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**1,30 m**	**13 Nr. Welds**	**13,00 inch**
		Accepted	**1,30 m**	**13 Nr. Welds**	**13,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND / ROSETTI MARINO	Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
	SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
	Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
	Commessa/Job	**123A90 - Piping**			
	Disciplina/Discipline	**PIPING**			
	TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 02/01/2025
	RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
114	00	1	A	01CS	3	1	Flange WN ›1" Thk.4.55mm 150LB RF ASTM/ASME A/SA350 Gr.LF2	23/70335	1724000839	01220	2024-C_MFF-01243	W2	
114	00	1	A	01CS	1A	0,1	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		
114	00	1	B	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W3-W4	
114	00	1	B	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W5-W6	
114	00	1	B	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W7	
114	00	1	B	01CS	3	1	Flange WN ›1" Thk.4.55mm 150LB RF ASTM/ASME A/SA350 Gr.LF2	23/70335	1724000839	01220	2024-C_MFF-01243		
114	00	1	B	01CS	1B	0,495	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		
114	00	1	B	01CS	1C	0,424	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		
114	00	1	C	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W9-W10	
114	00	1	C	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W11	
114	00	1	C	01CS	1D	1,625	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		
114	00	1	C	01CS	1E	0,499	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		
114	00	1	D	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W13-W14	
114	00	1	D	01CS	4	1	Flange WN For Jackscrews ›1" Thk.4,55mm 150LB RF ASTM/ASME A/SA350 Gr.LF2	23/70335	1724000839	01260	2024-C_MMF-01566	W14	
114	00	1	D	01CS	1F	0,153	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	123	**To**	123
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/123/1/_		**01**	**26-09-2024**	**17**	**AZ53**			**FWN**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**28-09-2024**	**A**
01CS	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
2/123/1/_		**01**	**26-09-2024**	**17**	**AZ53**			**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**28-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
3/123/1/_		**01**	**26-09-2024**	**17**	**AZ53**			**PIPE**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**28-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
4/123/1/_		**01**	**27-09-2024**	**19**	**AZ53**			**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**30-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				30-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
5/123/1/_		**01**	**26-09-2024**	**17**	**AZ53**			**PIPE**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**28-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								

Totals per DWG	**123**	**Prefabrication**	**0,50 m**	**5 Nr. Welds**	**5,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,50 m**	**5 Nr. Welds**	**5,00 inch**
		Accepted	**0,50 m**	**5 Nr. Welds**	**5,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,50 m**	**5 Nr. Welds**	**5,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,50 m**	**5 Nr. Welds**	**5,00 inch**
		Accepted	**0,50 m**	**5 Nr. Welds**	**5,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,50 m**	**5 Nr. Welds**	**5,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,50 m**	**5 Nr. Welds**	**5,00 inch**
		Accepted	**0,50 m**	**5 Nr. Welds**	**5,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name:	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**	Antonio Galesi		
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date:
RosettiDoc.Num.	**123A90MTR001**			02/01/2025

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
123	00	1	A	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W1-W2	
123	00	1	A	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W3-W4	
123	00	1	A	01CS	3	1	Flange WN ›1" Thk.4.55mm 150LB RF ASTM/ASME A/SA350 Gr.LF2	23/70335	1724000839	01220	2024-C_MFF-01243	W1	
123	00	1	A	01CS	3	1	Flange WN ›1" Thk.4.55mm 150LB RF ASTM/ASME A/SA350 Gr.LF2	23/70335	1724000839	01220	2024-C_MFF-01243	W5	
123	00	1	A	01CS	1A	0,174	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		
123	00	1	A	01CS	1B	0,203	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	43-00-TP-022	: Test Pack 43-00-TP-022			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10003405		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air, ensuring all drains/vents (when present) were open to facilitate the removal of moisture. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, inlet and outlet points were closed with covers.
3	Temporary means :	Blind flanges and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA
5	Valve body cavity, branches, etc.. Have been drained form residual water	
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Restricting access to the area.
11	REMARKS:	None.

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-02	2025-01-03	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-02T06:22:56.735Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-01-03T17:15:32.967Z	

ITEM	Tag	43-00-TP-024	: Test Pack 43-00-TP-024			Dwg	123A90-DDL-PR-PID-80011
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003413		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	PL
4	Check that pipework at pump and vessel nozzles are free from spring.	OK
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	PL
6	Check bolt tightening and flange management (excluded battery limit joints).	PL
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	PL
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	OK
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	OK
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-22	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-22T09:55:29.286Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-29T06:12:07.447Z	

ITEM	Tag	43-00-TP-024	: Test Pack 43-00-TP-024			Dwg	123A90-DDL-PR-PID-80011
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003414		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	OK
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	NA
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	PL
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	OK
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	PL
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-06	2025-02-25	
Signature	Digitaly signed by Emanuele Delfino 2025-02-06T15:29:19.243Z	Digitaly signed by Lorenzo Novaga 2025-02-25T08:26:16.583Z	

ITEM	Tag	43-00-TP-024	: Test Pack 43-00-TP-024			Dwg	123A90-DDL-PR-PID-80011
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003415		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02 Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	OK
3	Check that the fluid direction is correct.	OK
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	PL
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 1. Checked the painting report made by Vendor and signed by RM Coating Dpt.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (ROSETTI MARINO)	
Name	Alex Sanna	Lorenzo Novaga	
Date	2025-02-11	2025-03-24	
Signature	PROVERLIS Digitaly signed by Alex Sanna 2025-02-11T07:36:23.924Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-03-24T15:37:18.429Z	

ITEM	Tag	43-00-TP-024	: Test Pack 43-00-TP-024		Dwg	123A90-DDL-PR-PID-80011	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10003416	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX03	Cleaning

CLEANING MEDIUM

Air	Water	Steam	Oil	Other	Mechanical
☐	●	☐	☐	☐	☐

Component	NA					
Chemical treatment	No	NA	Filtration	No	Screen size	NA

EQUIPMENTS

Equipment **removed**	Yes	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	25/01/2025	Start time	10.10	End time	10.30
Flow rate	NA	Duration	20 min	Medium T°	NA

Operation Description

Connected the water source to the lowest point of the piping system.
Maintained a high flow rate to help dislodging and carry away debrises.
Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.

Safety Precautions

Restricting access to the area.

Result and comments

Water has been found clear of solid debris. All contaminants have been expelled.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-06	2025-02-07	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-06T15:29:30.908Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-07T16:42:16.732Z	

ITEM	Tag	43-00-TP-024	: Test Pack 43-00-TP-024		Dwg	123A90-DDL-PR-PID-80011	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10003417	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX05	Pressure Test

TEST DATA

Reference procedure	123A90-PML-QHSE-PRO-00092				
Design pressure	3.5 barg	Max test pressure	5.25 barg	Min hold period	30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium	WATER

TEST RESULTS

Test date	See attachment	Start time	See attachment	End time	See attachment
Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min See attachment	Max See attachment		Variation	See attachment
Line has been depressurised to	NA			At maximum of bar/min	See attachment
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes
If required produce Red Line Mark Up for "AS BUILT".					

Comments:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-06	2025-02-07	
Signature	Digitaly signed by Emanuele Delfino 2025-02-06T15:29:41.819Z	Digitaly signed by Massimo Bruschi 2025-02-07T16:42:49.984Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP024

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FON32E
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:C5:19:D5)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	01:59:32
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	10:35:29 am

Logger protocol

Protocollo di acquisizione elenco dati

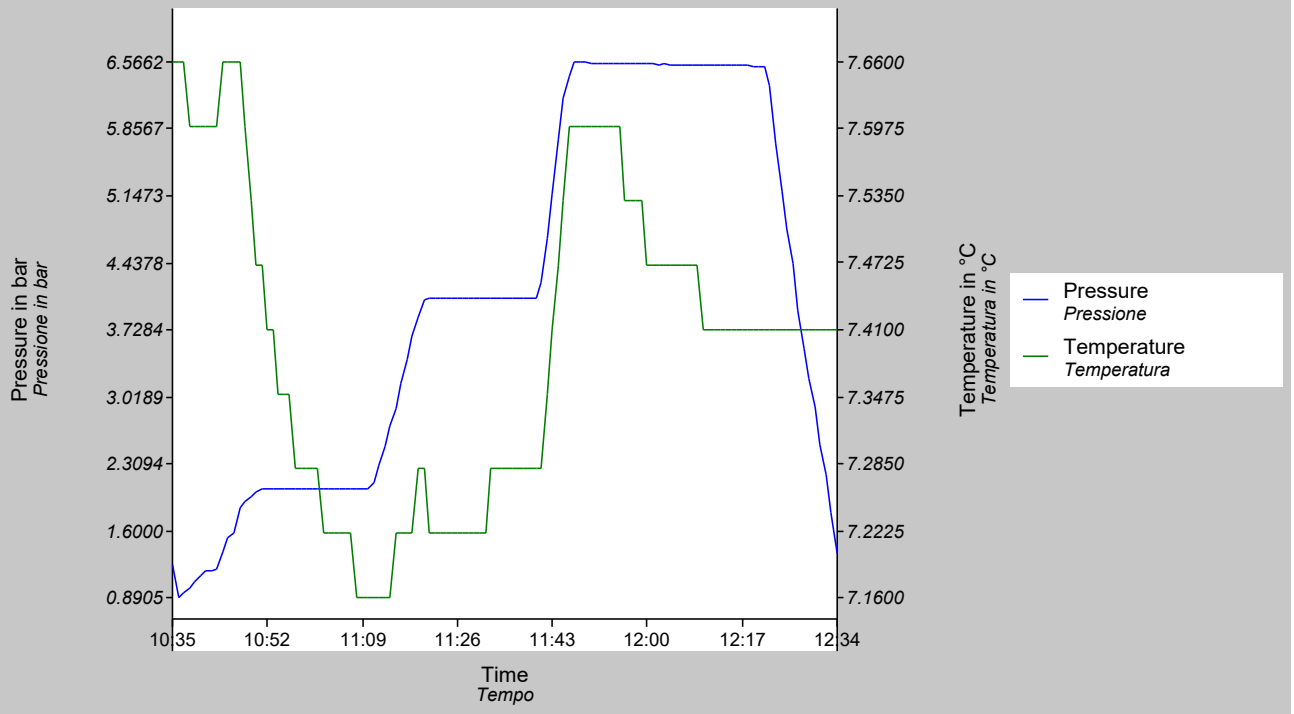
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP024

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/25/2025 10:35:29.000	1.2403	7.6600
01/25/2025 10:36:29.000	0.8905	7.6600
01/25/2025 10:37:29.000	0.9351	7.6600
01/25/2025 10:38:29.000	0.9905	7.6000
01/25/2025 10:39:29.000	1.0618	7.6000
01/25/2025 10:40:29.000	1.1300	7.6000
01/25/2025 10:41:29.000	1.1764	7.6000
01/25/2025 10:42:29.000	1.1769	7.6000
01/25/2025 10:43:29.000	1.1990	7.6000
01/25/2025 10:44:29.000	1.3775	7.6600
01/25/2025 10:45:29.000	1.5304	7.6600
01/25/2025 10:46:29.000	1.5685	7.6600
01/25/2025 10:47:29.000	1.8358	7.6600
01/25/2025 10:48:29.000	1.9122	7.6000
01/25/2025 10:49:29.000	1.9546	7.5300
01/25/2025 10:50:29.000	2.0125	7.4700
01/25/2025 10:51:29.000	2.0431	7.4700

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP024

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/25/2025 10:52:29.000	2.0457	7.4100
01/25/2025 10:53:29.000	2.0451	7.4100
01/25/2025 10:54:29.000	2.0406	7.3500
01/25/2025 10:55:29.000	2.0435	7.3500
01/25/2025 10:56:29.000	2.0435	7.3500
01/25/2025 10:57:29.000	2.0451	7.2800
01/25/2025 10:58:29.000	2.0433	7.2800
01/25/2025 10:59:29.000	2.0443	7.2800
01/25/2025 11:00:29.000	2.0433	7.2800
01/25/2025 11:01:29.000	2.0445	7.2800
01/25/2025 11:02:29.000	2.0471	7.2200
01/25/2025 11:03:29.000	2.0455	7.2200
01/25/2025 11:04:29.000	2.0449	7.2200
01/25/2025 11:05:29.000	2.0470	7.2200
01/25/2025 11:06:29.000	2.0476	7.2200
01/25/2025 11:07:29.000	2.0462	7.2200
01/25/2025 11:08:29.000	2.0483	7.1600
01/25/2025 11:09:29.000	2.0456	7.1600
01/25/2025 11:10:29.000	2.0459	7.1600
01/25/2025 11:11:29.000	2.1093	7.1600
01/25/2025 11:12:29.000	2.2935	7.1600
01/25/2025 11:13:29.000	2.5009	7.1600
01/25/2025 11:14:29.000	2.7050	7.1600
01/25/2025 11:15:29.000	2.8924	7.2200
01/25/2025 11:16:29.000	3.1611	7.2200
01/25/2025 11:17:29.000	3.4194	7.2200
01/25/2025 11:18:29.000	3.6564	7.2200
01/25/2025 11:19:29.000	3.8577	7.2800
01/25/2025 11:20:29.000	4.0459	7.2800
01/25/2025 11:21:29.000	4.0647	7.2200
01/25/2025 11:22:29.000	4.0637	7.2200
01/25/2025 11:23:29.000	4.0630	7.2200
01/25/2025 11:24:29.000	4.0649	7.2200
01/25/2025 11:25:29.000	4.0646	7.2200
01/25/2025 11:26:29.000	4.0618	7.2200
01/25/2025 11:27:29.000	4.0642	7.2200
01/25/2025 11:28:29.000	4.0649	7.2200
01/25/2025 11:29:29.000	4.0635	7.2200
01/25/2025 11:30:29.000	4.0638	7.2200
01/25/2025 11:31:29.000	4.0622	7.2200
01/25/2025 11:32:29.000	4.0622	7.2800
01/25/2025 11:33:29.000	4.0612	7.2800
01/25/2025 11:34:29.000	4.0597	7.2800
01/25/2025 11:35:29.000	4.0601	7.2800
01/25/2025 11:36:29.000	4.0596	7.2800
01/25/2025 11:37:29.000	4.0594	7.2800
01/25/2025 11:38:29.000	4.0622	7.2800
01/25/2025 11:39:29.000	4.0569	7.2800
01/25/2025 11:40:29.000	4.0617	7.2800

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP024

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/25/2025 11:41:29.000	4.2288	7.2800
01/25/2025 11:42:29.000	4.6938	7.3500
01/25/2025 11:43:29.000	5.1641	7.4100
01/25/2025 11:44:29.000	5.7443	7.4700
01/25/2025 11:45:29.000	6.1762	7.5300
01/25/2025 11:46:29.000	6.4109	7.6000
01/25/2025 11:47:29.000	6.5662	7.6000
01/25/2025 11:48:29.000	6.5631	7.6000
01/25/2025 11:49:29.000	6.5619	7.6000
01/25/2025 11:50:29.000	6.5547	7.6000
01/25/2025 11:51:29.000	6.5539	7.6000
01/25/2025 11:52:29.000	6.5507	7.6000
01/25/2025 11:53:29.000	6.5506	7.6000
01/25/2025 11:54:29.000	6.5506	7.6000
01/25/2025 11:55:29.000	6.5473	7.6000
01/25/2025 11:56:29.000	6.5491	7.5300
01/25/2025 11:57:29.000	6.5464	7.5300
01/25/2025 11:58:29.000	6.5448	7.5300
01/25/2025 11:59:29.000	6.5454	7.5300
01/25/2025 12:00:29.000	6.5419	7.4700
01/25/2025 12:01:29.000	6.5439	7.4700
01/25/2025 12:02:29.000	6.5411	7.4700
01/25/2025 12:03:29.000	6.5419	7.4700
01/25/2025 12:04:29.000	6.5392	7.4700
01/25/2025 12:05:29.000	6.5368	7.4700
01/25/2025 12:06:29.000	6.5399	7.4700
01/25/2025 12:07:29.000	6.5352	7.4700
01/25/2025 12:08:29.000	6.5343	7.4700
01/25/2025 12:09:29.000	6.5326	7.4700
01/25/2025 12:10:29.000	6.5315	7.4100
01/25/2025 12:11:29.000	6.5317	7.4100
01/25/2025 12:12:29.000	6.5327	7.4100
01/25/2025 12:13:29.000	6.5304	7.4100
01/25/2025 12:14:29.000	6.5303	7.4100
01/25/2025 12:15:29.000	6.5278	7.4100
01/25/2025 12:16:29.000	6.5268	7.4100
01/25/2025 12:17:29.000	6.5249	7.4100
01/25/2025 12:18:29.000	6.5270	7.4100
01/25/2025 12:19:29.000	6.5239	7.4100
01/25/2025 12:20:29.000	6.5231	7.4100
01/25/2025 12:21:29.000	6.5209	7.4100
01/25/2025 12:22:29.000	6.3156	7.4100
01/25/2025 12:23:29.000	5.6952	7.4100
01/25/2025 12:24:29.000	5.1966	7.4100
01/25/2025 12:25:29.000	4.7901	7.4100
01/25/2025 12:26:29.000	4.4243	7.4100
01/25/2025 12:27:29.000	3.9275	7.4100
01/25/2025 12:28:29.000	3.5298	7.4100
01/25/2025 12:29:29.000	3.2123	7.4100

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP024

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/25/2025 12:30:29.000	2.9063	7.4100
01/25/2025 12:31:29.000	2.5020	7.4100
01/25/2025 12:32:29.000	2.1894	7.4100
01/25/2025 12:33:29.000	1.7894	7.4100
01/25/2025 12:34:29.000	1.3632	7.4100

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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24

Certificate of Calibration

- data di emissione date of issue	2024-12-10
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A037FON32E
- data di ricev. oggetto *date of receipt of item*	2024-11-29
- data delle misure *date of measurements*	2024-12-10
- registro di laboratorio *laboratory reference*	0580-SM-24

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura k corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore k vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico *Electrical pressure gauge*	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A037FON32E
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione *Reference standard (RS) Dead-weight tester*	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1007,5 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	100,0	100,0	100,0
199,82	200,0	200,0	200,0
299,73	299,9	300,0	299,9
399,63	399,8	399,9	399,8
499,53	499,6	499,7	499,7
599,44	599,5	599,6	599,5
699,34	699,3	699,4	699,3
799,24	799,2	799,3	799,2
899,14	899,1	899,1	899,1
999,04	999,0	999,0	999,0

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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

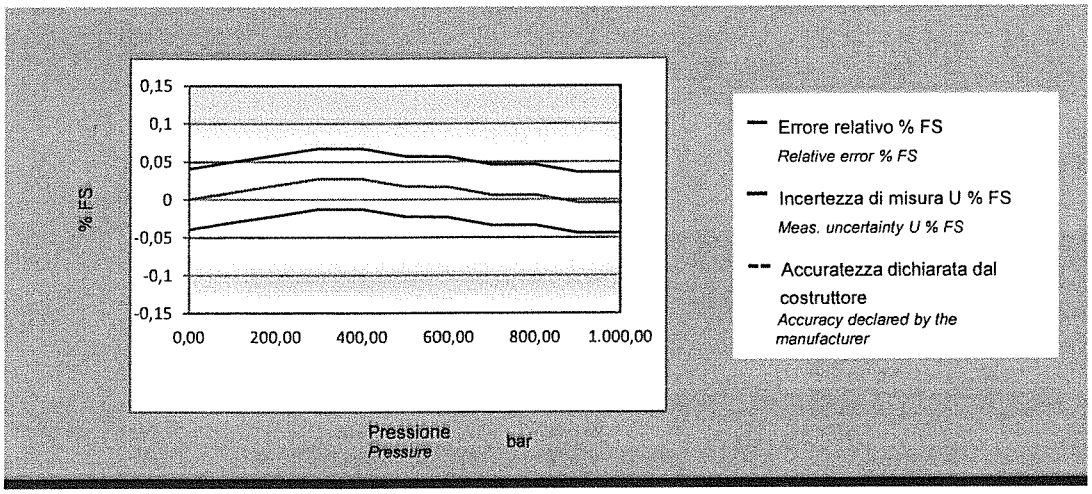
LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	100,0	0,1	0,0	0,0	0,40
199,82	200,0	0,2	0,0	0,0	0,40
299,73	300,0	0,3	0,0	0,1	0,40
399,63	399,9	0,3	0,0	0,1	0,40
499,53	499,7	0,2	0,1	0,1	0,40
599,44	599,6	0,2	0,0	0,1	0,40
699,34	699,4	0,1	0,0	0,1	0,40
799,24	799,3	0,1	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,0	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,7 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Base Load Power Hub (BLPH)

TEST PACK

N°43-00-TP-024
SUB-SYSTEM N° 43-00

System	43
Sub-System	43-00
Test Pressure	5.25 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

List of Contents

1. COLOURED MARKED P&IDs
2. PIPING TEST 3D CIRCUIT
3. MATERIAL LIST FOR TEST
4. EXTRACT OF LINE LIST
5. ISOMETRIC RED-MARKED DRAWINGS & EXTRACT OF ISO LIST
6. EXTRACT OF SUPPORT LIST AND DETAILS
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
   - 8.1 CLX02A - Pipework Before test
   - 8.2 CLX02B - Pipework After Test
   - 8.3 CXX01 - Thermal insulation – NOT APPLICABLE
   - 8.4 CXX02 – Painting Line
   - 8.5 TMX03 – Cleaning
   - 8.6 TMX05 – Pressure test
   - 8.7 TMX25 – Gross Air Leak Test
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 - Drying

1. COLOURED MARKED P&IDs

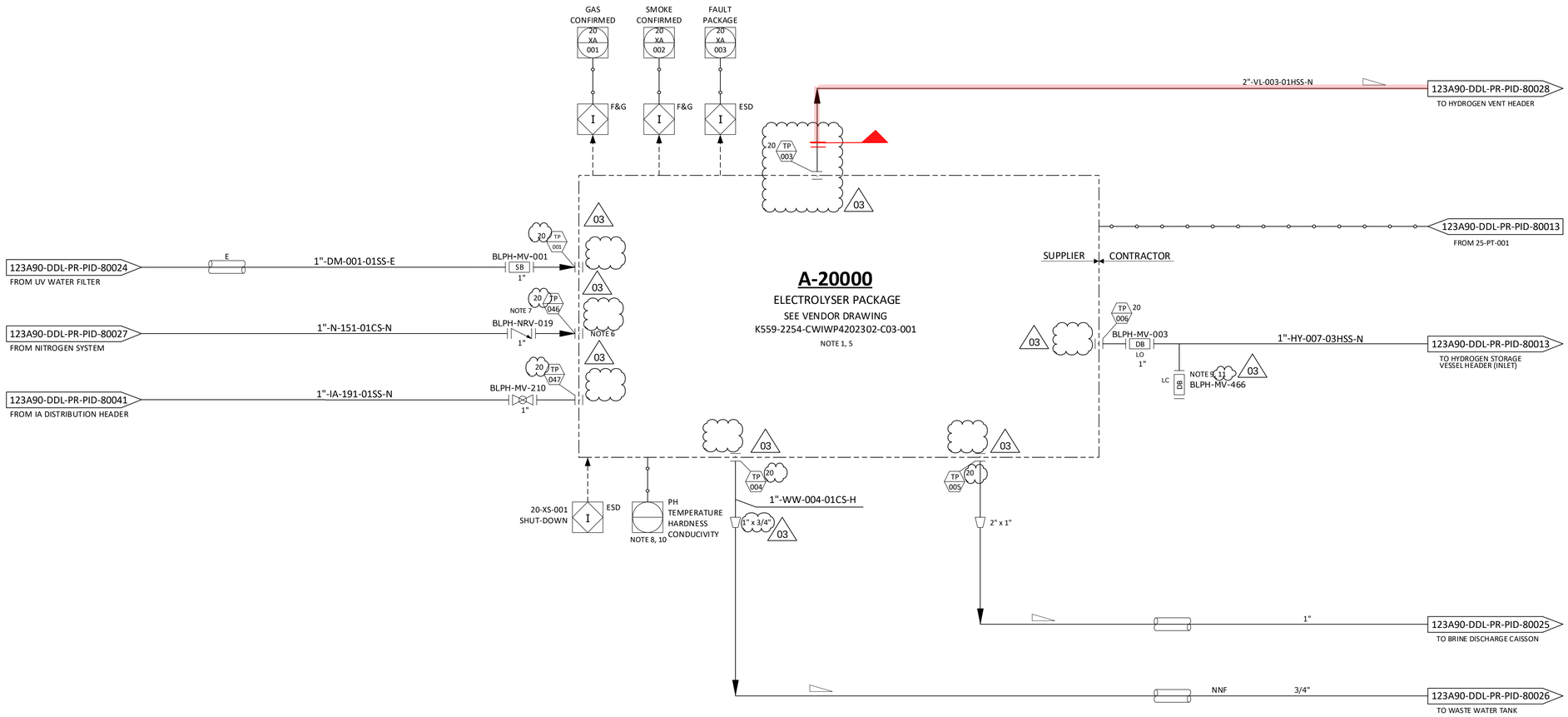
DRAWING NO. DRAWING_NO.

REV. REV

A-20000
ELECTROLYSER PACKAGE

DUTY: 2.5MW
DESIGN PRESSURE: 40 barg
DESIGN TEMPERATURE: 80 °C
H2 GENERATING CAPACITY: 500 Nm³/h

43-00-TP-024
5.25 barg



NOTES

1. PACKAGE SUPPLIED WITH POWER FROM THE BLPH ELECTRICAL SYSTEM.
2. DELETED.
3. DELETED.
4. DELETED.
5. ELECTROLYSER PACKAGE INCLUDES AN OXYGEN VENT LINE WHICH IS IN THE SCOPE OF SUPPLY OF THE ELECTROLYSER PACKAGE UP TO THE ATMOSPHERE. NO PHYSICAL INTERFACE IS PRESENT BETWEEN ELECTROLYSER PACKAGE AND CONTRACTOR ON THIS LINE.
6. AN ISOLATION VALVE DOWNSTREAM THE CHECK VALVE NRV-019 IS PROVIDED WITHIN THE PACKAGE A-20000.
7. CHECK VALVE NRV-019 TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE ELECTROLYSER PACKAGE A-20000.
8. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
9. NITROGEN PURGING CONNECTION TO BE LOCATED AS CLOSE AS POSSIBLE TO MANUAL VALVE BLPH-MV-003.
10. PH, TEMPERATURE, HARDNESS AND CONDUCTIVITY SHALL BE SENT FROM CONTROL SYSTEM TO ELECTROLISER UCP IN ADDITION TO THE OTHER SOFTWARE SIGNALS. 03
11. MANUAL VALVE BLPH-MV-466 TO BE CONNECTED WITH MANUAL VALVE BLPH-MV-275 (INSTALLED ON NITROGEN GENERATION PACKAGE EXIT LINE) BY MEAN ON A FLEXIBLE HOSE DURING COMMISSIONING PHASE FOR PURGING OPERATION.

HOLDS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
ELECTROLYSER PACKAGE

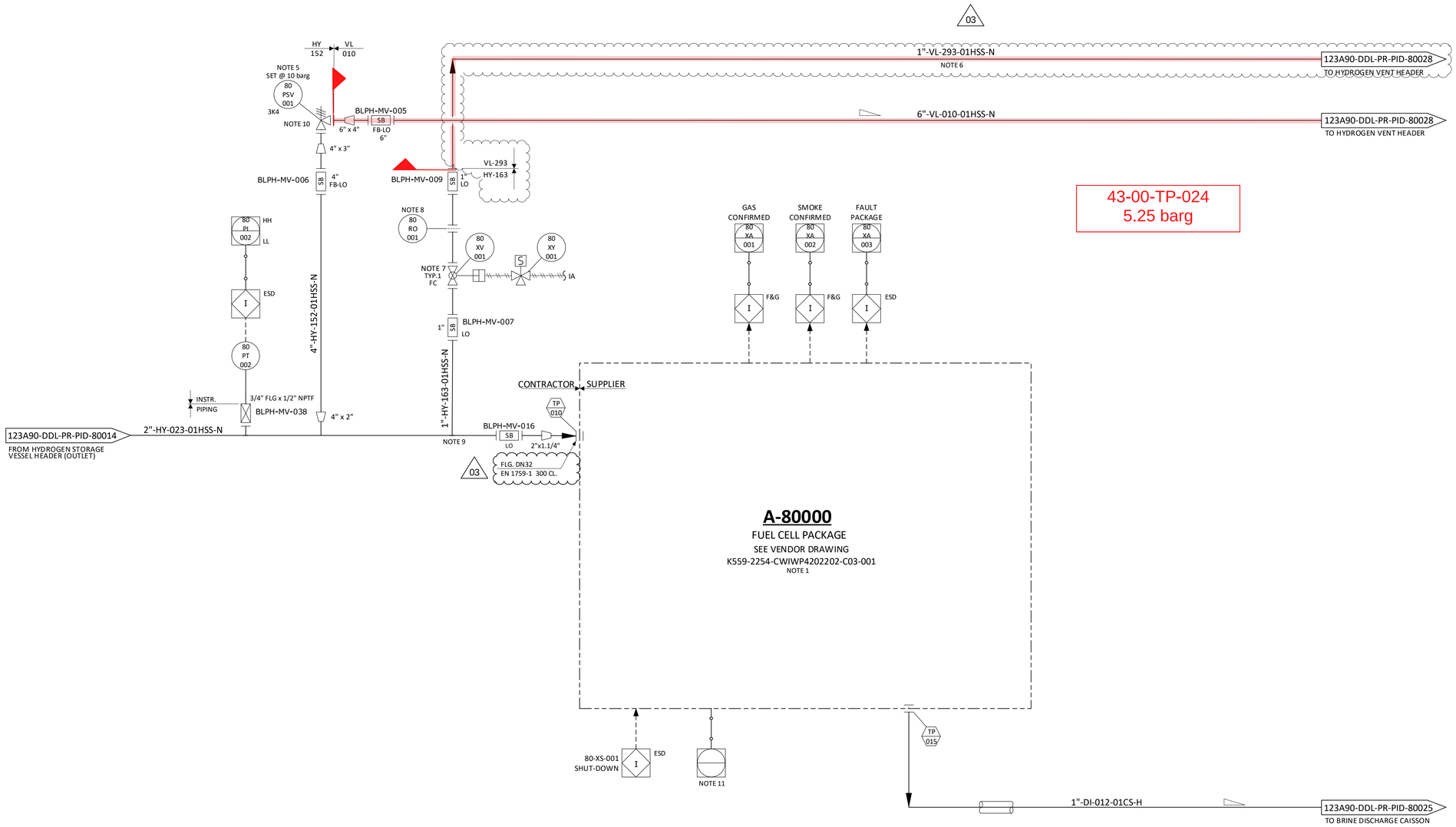
CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80011	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV



43-00-TP-024
5.25 barg

NOTES

1. THE VENDOR PACKAGE WILL CONTAIN AIR INTAKE AND EXHAUST, SUITABLY SAFEGUARDED AND SEPARATED.
2. DELETED.
3. DELETED.
4. DELETED
5. ONE UNINSTALLED SPARE PSV SHALL BE AVAILABLE.
6. LINE REQUIRED FOR PURGING OF PIPING WORK.
7. TIGHT SHUT-OFF VALVE.
8. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
9. LINE 1"-HY-163-01HSS-N WILL BE LOCATED AS CLOSE TO THE PACKAGE AS POSSIBLE TO ENSURE COMPLETE PURGING OF THE LINE.
10. 80-PSV-001 SIZED FOR CV FAILURE OF UPSTREAM CONTROL VALVE 25-PV-055A/B.
11. SERIAL COMMUNICATION WITH CONTROL SYSTEM.

HOLDS

1. DELETED.
2. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
FUEL CELL PACKAGE

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO.	SHEET	REV.
	123A90-DDL-PR-PID-80012	001	03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

43-00-TP-024
5.25 barg

123A90-DDL-PR-PID-80011
FROM ELECTROLYSER PACKAGE

1"-HY-007-03HSS-N

FC
TYP.2

25 SDV 001

ESD

IA

02

25 SDV 001

INSTR. PIPING

BLPH-MV-013
3/4" FLG x 1/2" NPTF

25 PT 002

ESD

25 PI 002

HH

BLPH-MV-014
3/4" FLG x 1/2" NPTF

PIPING INSTR.

25 PT 001

25 PI 001

H

123A90-DDL-PR-PID-80011
TO ELECTROLYSER PACKAGE

01HSS VL-014
03HSS HY-143

1" DB BLPH-MV-212
FB-LO

NOTE 3
25 RO 024

25 XV 024

25 XY 024

IA

TYP.1
FB-FC

NOTE 1

1" DB BLPH-MV-010
FB-LO

1"-HY-143-03HSS-N

NOTE 4

N-SSHS03-007-H-1"

1"-VL-014-01HSS-N
123A90-DDL-PR-PID-80028
TO HYDROGEN VENT HEADER

1"-HY-015-03HSS-N
123A90-DDL-PR-PID-80015
TO HYDROGEN STORAGE VESSEL A

1"-HY-016-03HSS-N
123A90-DDL-PR-PID-80016
TO HYDROGEN STORAGE VESSEL B

1"-HY-017-03HSS-N
123A90-DDL-PR-PID-80017
TO HYDROGEN STORAGE VESSEL C

1"-HY-020-03HSS-N
123A90-DDL-PR-PID-80020
TO HYDROGEN STORAGE VESSEL F

02

1"-HY-019-03HSS-N
123A90-DDL-PR-PID-80019
TO HYDROGEN STORAGE VESSEL E

1"-HY-018-03HSS-N
123A90-DDL-PR-PID-80018
TO HYDROGEN STORAGE VESSEL D

02

NOTES

1. TIGHT SHUT OFF XV.
2. DELETED. 02
3. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
4. PIPING CONNECTION TO 25-XV-003 SHALL BE AS CLOSE TO THE MANIFOLD AS POSSIBLE, TO ENSURE COMPLETE PURGING OF FEED LINE.

HOLDS

1. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSELS HEADER (INLET)

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80013	SHEET 001	REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

43-00-TP-024
5.25 barg

123A90-DDL-PR-PID-80017
FROM HYDROGEN STORAGE VESSEL C
1"-HY-133-03HSS-N

123A90-DDL-PR-PID-80016
FROM HYDROGEN STORAGE VESSEL B
1"-HY-132-03HSS-N

123A90-DDL-PR-PID-80015
FROM HYDROGEN STORAGE VESSEL A
1"-HY-026-03HSS-N

123A90-DDL-PR-PID-80020
FROM HYDROGEN STORAGE VESSEL F
1"-HY-136-03HSS-N

123A90-DDL-PR-PID-80019
FROM HYDROGEN STORAGE VESSEL E
1"-HY-135-03HSS-N

123A90-DDL-PR-PID-80018
FROM HYDROGEN STORAGE VESSEL D
1"-HY-134-03HSS-N

1-1/2"-HY-148-03HSS-N

2"-VL-022-01HSS-N
123A90-DDL-PR-PID-80028
TO HYDROGEN VENT HEADER

01HSS
03HSS
VL-022
HY-144
2" DB BLPH-MV-019 FB-LO

NOTE 4
25 RO 022
2" x 1"
25 BDV 022
TYP 4 FB-FO
I ESD
25 BDY 022
IA

1" DB BLPH-MV-018 FB-LO
1"-HY-144-03HSS-N

I ESD
25 SDY 023
IA
25 SDV 023
FC TYP 2 NOTE 6

1-1/2"-HY-148-03HSS-N

25 PV 055A
03HSS 01HSS
3/4"
BLPH-MV-024
FC TYP 6 1.1/2" NOTE 5, 1
2"x1.1/2"

25 PIC 055A H L
25 XC 055 NOTE 3 03
25 PT 055A
INSTR. PIPING
BLPH-MV-025 3/4" FLG x 1/2" NPTF
2"-HY-023-01HSS-N
123A90-DDL-PR-PID-80012
TO FUEL CELL PACKAGE

25 PIC 055B H L
25 PT 055B
INSTR. PIPING
BLPH-MV-213 3/4" FLG x 1/2" NPTF
3/4"
BLPH-MV-028
2"x1.1/2" 03
25 PV 055B
03HSS 01HSS
FC TYP 6 NOTE 5, 1
03
DB BLPH-MV-468 1.1/2" NOTE 8

NOTES

1. TIGHT SHUT-OFF VALVE.
2. DELETED.
3. CONTROL VALVES 25-PV-055A/B WORK IN SPLIT RANGE:
   - FOR LOW OPERATING CV (UP TO 0.31) VALVE "B" IS USED
   - FOR HIGH OPERATING CV (FROM 0.31) VALVE "A" IS USED
4. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
5. SOFTWARE INTERLOCK PREVENTS OPENING OF THE CONTROL VALVES 25-PV-055A/B IN CASE FUEL CELL PACKAGE (A-80000) IS NOT READY TO START. 03
6. SDV VALVE 25-SDV-023 TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE CONTROL VALVES 25-PV-055A/B. 03
7. DELETED. 03
8. TO BE USED DURING COMMISSIONING PHASE.

HOLDS

1. DELETED.
2. DELETED. 03

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSELS HEADER (OUTLET)

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
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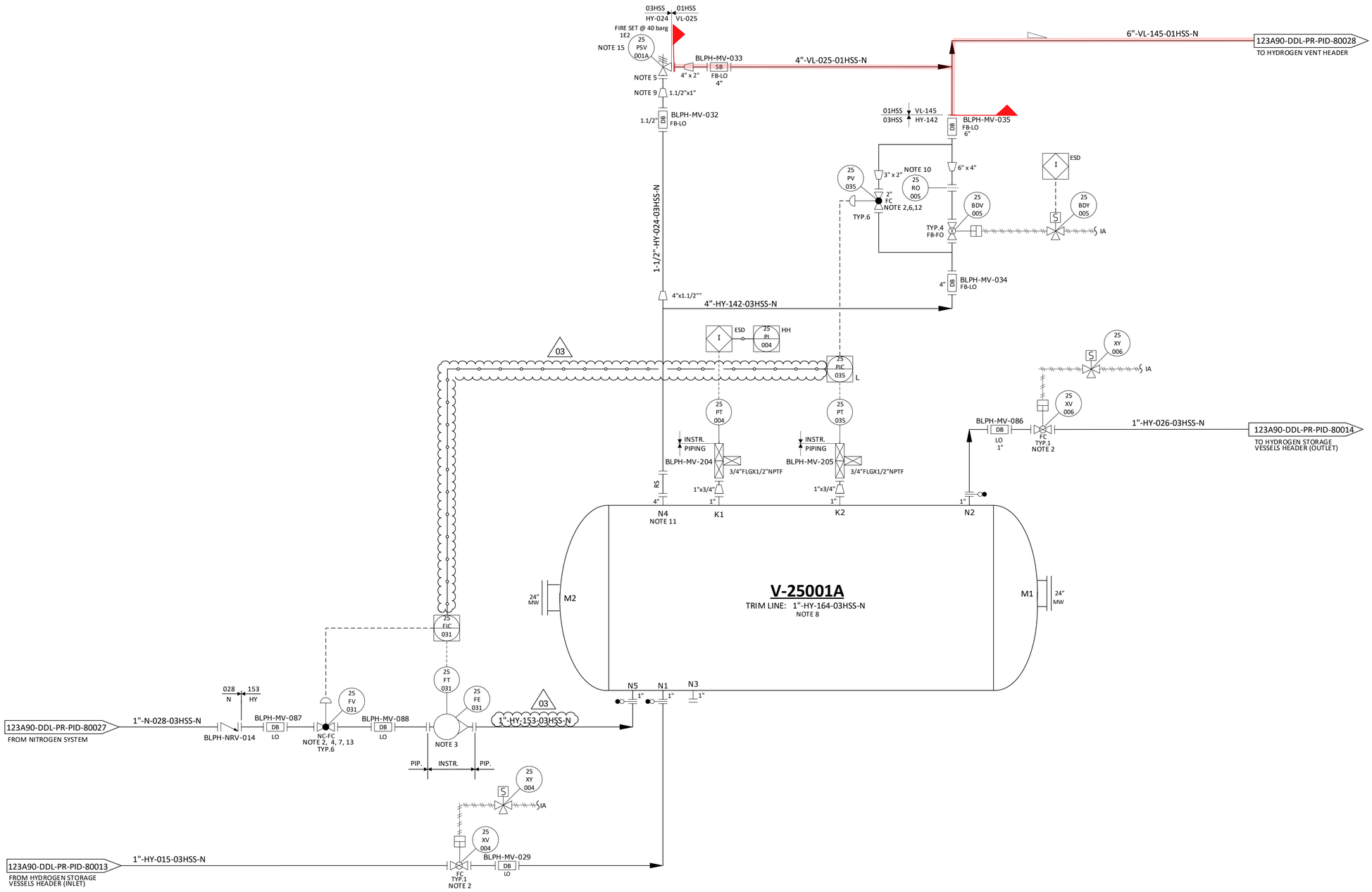
REV.

V-25001 A

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg /AMB

43-00-TP-024
5.25 barg



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-031) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT "DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-035 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-035 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-031 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-035 HAS FAILED TO CLOSE.
15. 25-PSV-001A SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL A

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
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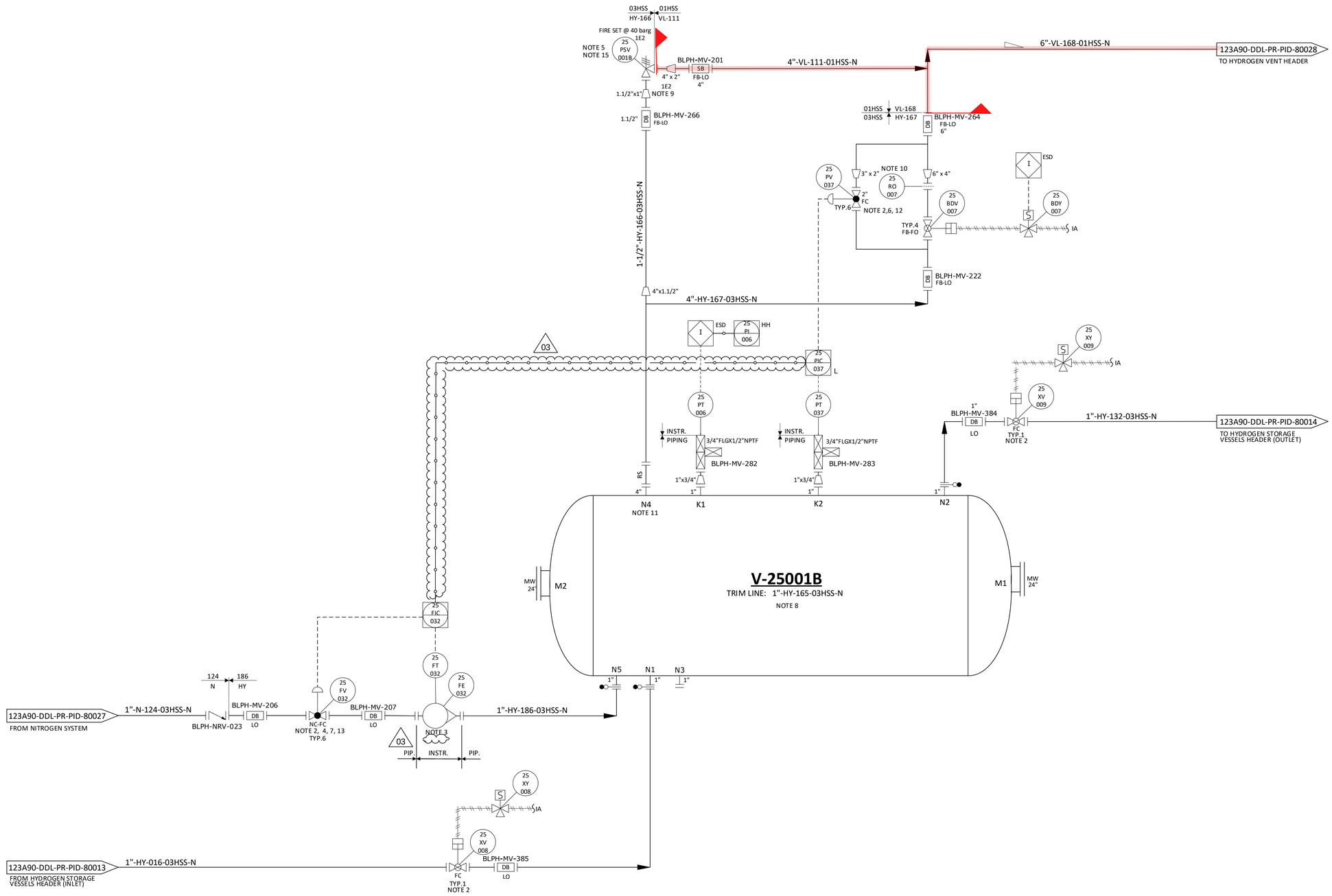
REV. REV

V-25001 B

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB

43-00-TP-024
5.25 barg



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-032) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. (03)
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT "DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-037 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC."PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-037 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. (03)
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-032 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-037 HAS FAILED TO CLOSE.
15. 25-PSV-001B SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL B

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80016	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

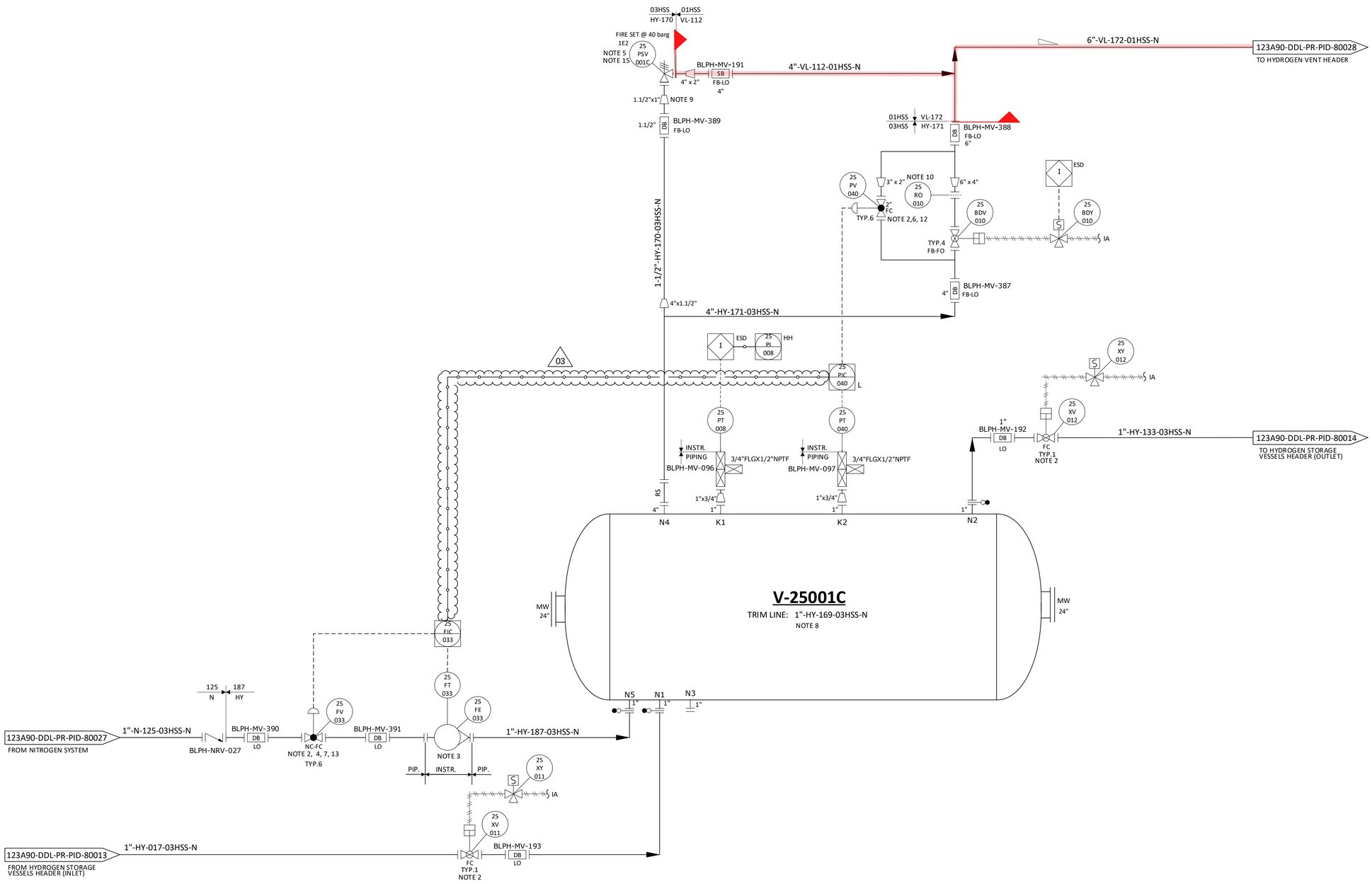
REV. REV

V-25001_C

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB

43-00-TP-024
5.25 barg



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-033) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-040 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-040 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-033 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-040 HAS FAILED TO CLOSE.
15. 25-PS-V001C SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL C

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80017	SHEET 001	REV. 03

File Name = FILE_NAME

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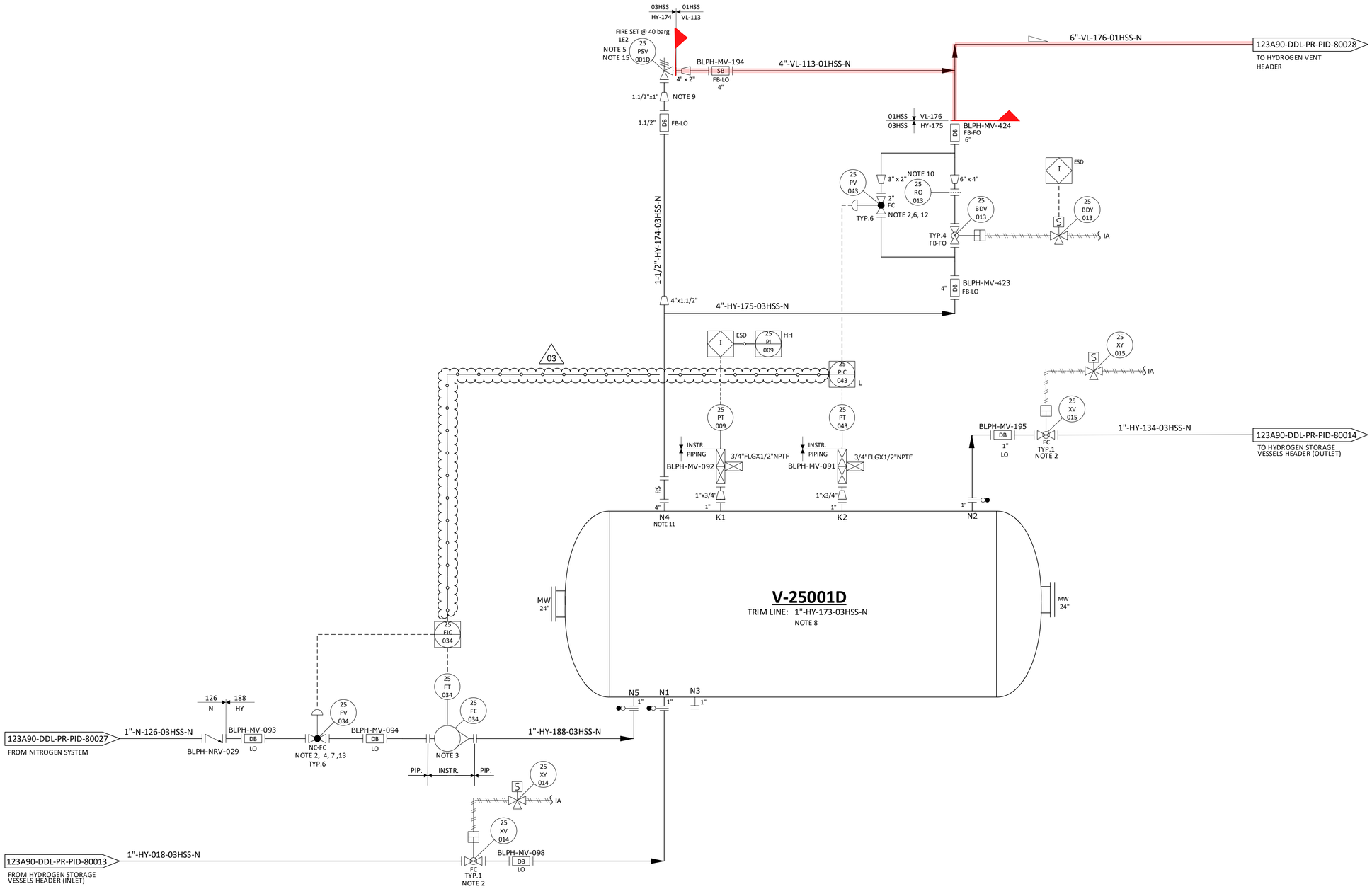
REV. REV

V-25001_D

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB

43-00-TP-024
5.25 barg



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-034) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-043 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-043 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-034 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-043 HAS FAILED TO CLOSE.
15. 25-PSV-001D SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL D

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80018	SHEET 001	REV. 03

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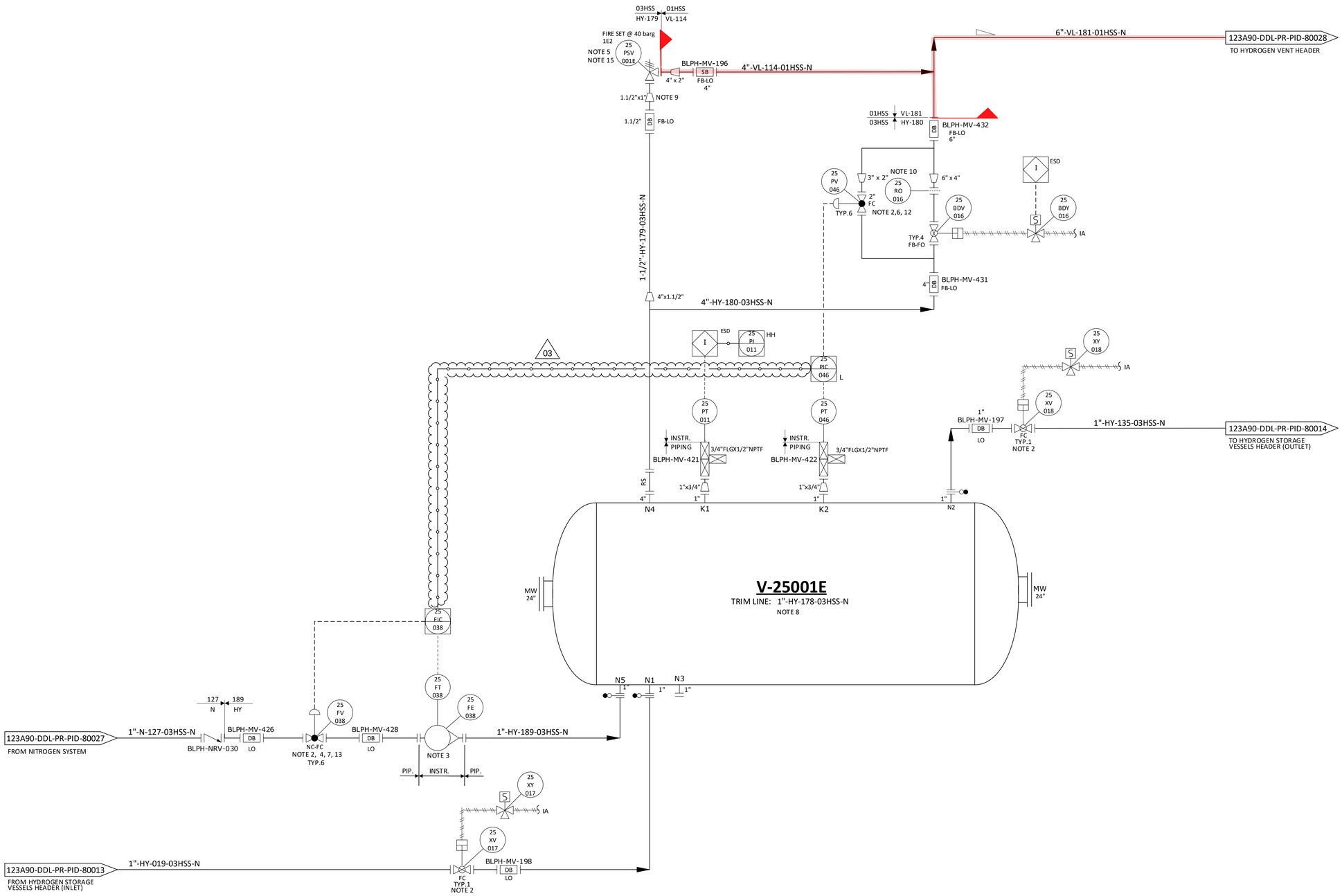
REV. REV

V-25001 E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB

43-00-TP-024
5.25 barg



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name = FILE_NAME

DRAWING NO. DRAWING_NO.

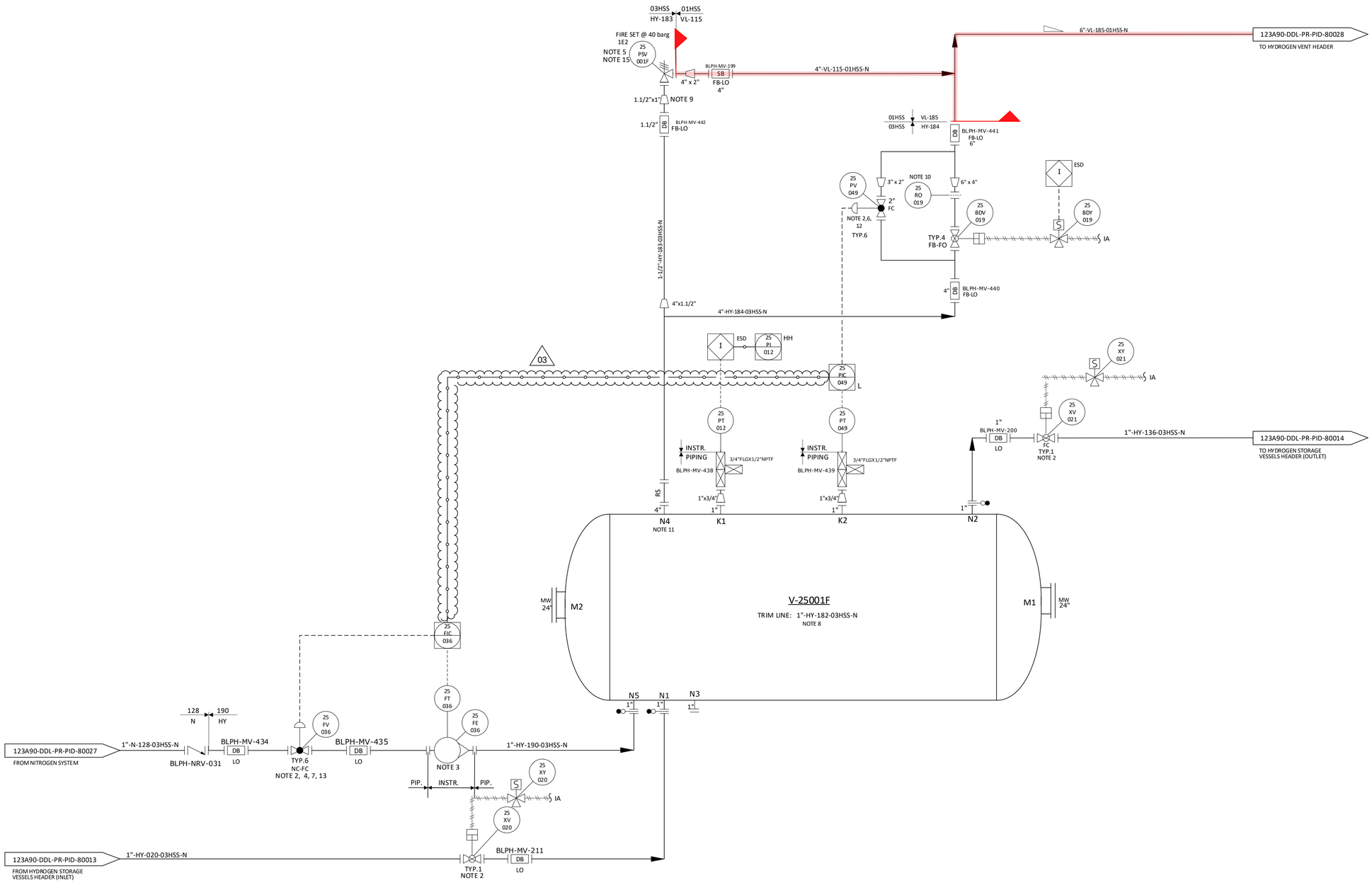
REV. REV

V-25001_F

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB

43-00-TP-024
5.25 barg



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-036) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-049 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-049 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25FV036 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-049 HAS FAILED TO CLOSE.
15. 25-PSV-001F SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR HAZOP (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL F

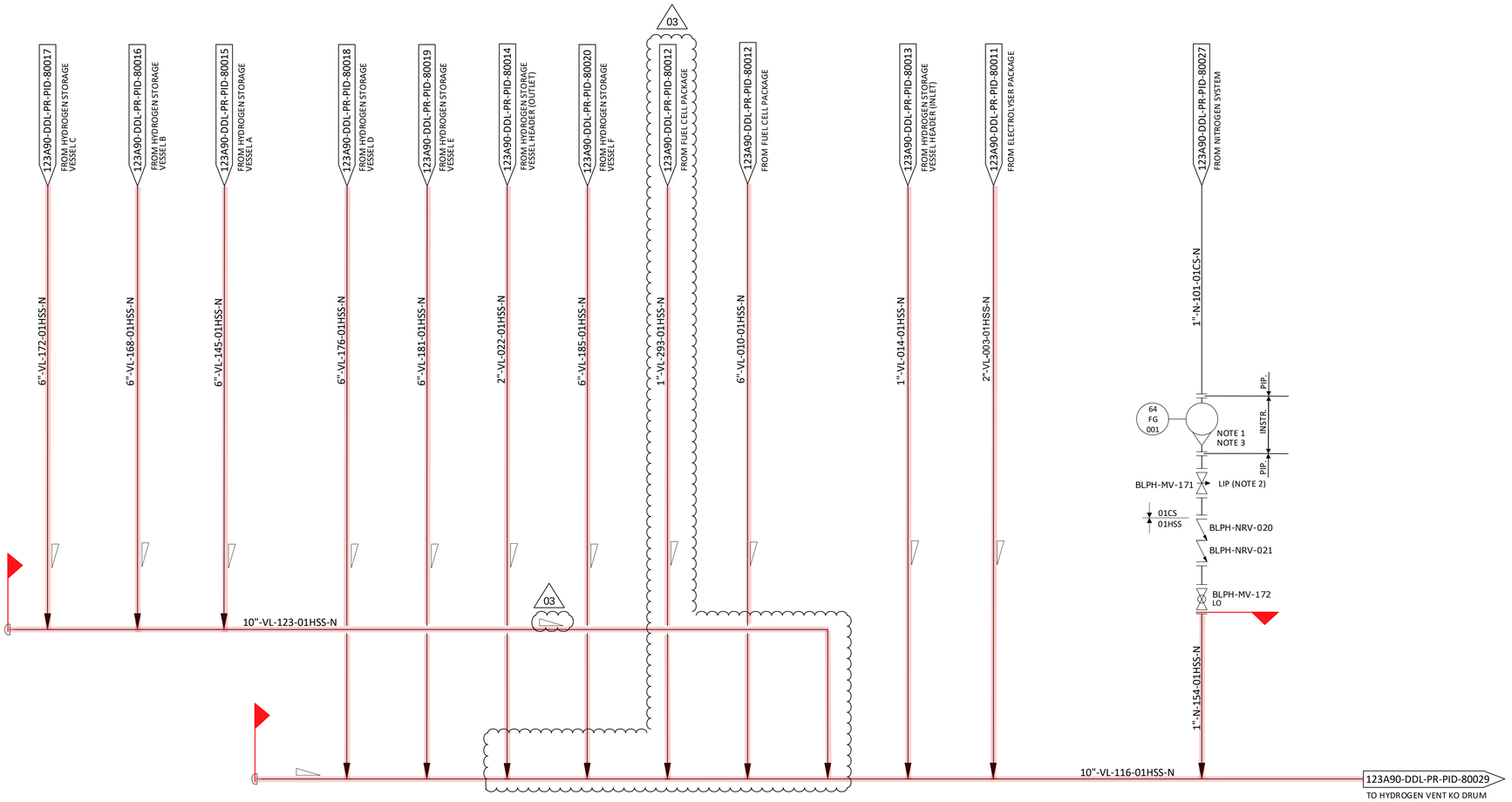
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DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO.	SHEET	REV.
	123A90-DDL-PR-PID-80020	001	03

File Name = FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV



43-00-TP-024
5.25 barg

NOTES

1. FLOW METER 64-FG-001 SHALL BE READABLE FROM MANUAL VALVE MV-171.
2. VALVE BLPH-MV-171 TO BE LOCKED IN PLACE.
3. VERTICAL INSTALLATION.

HOLDS

1. DELETED.
2. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT HEADER

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80028		SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

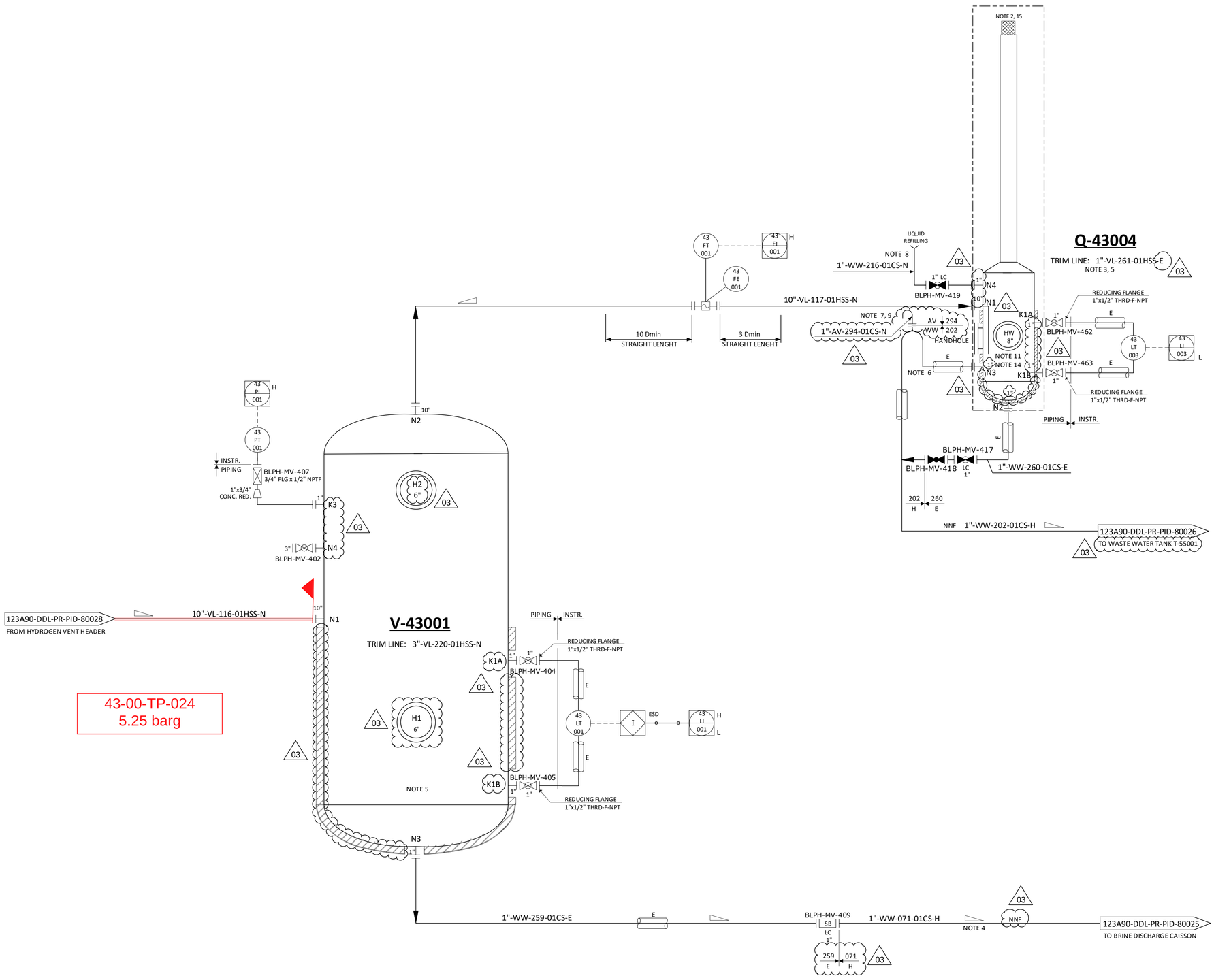
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

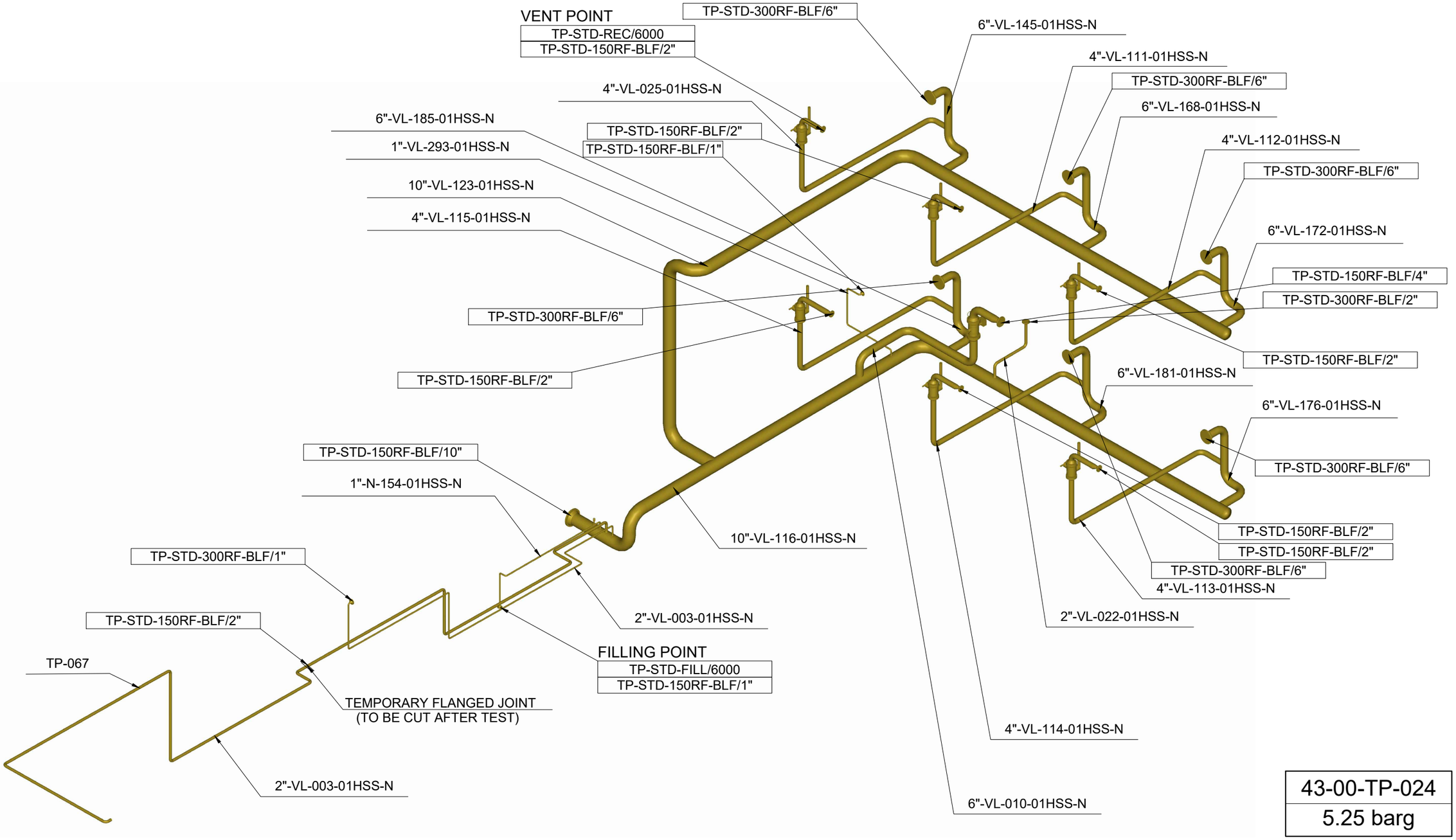
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



43-00-TP-024

5.25 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND | ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
43-00-TP-024

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

CROSSWIND

ROSETTI MARINO

CONTRACTOR: Rosetti Marino SpA		JOB :	123A90
PROJECT: Base Load Power Hub (BLPH)		DATE :	20/09/2024
TITLE: MATERIAL LIST FOR HYDROSTATIC TEST		REV. :	00

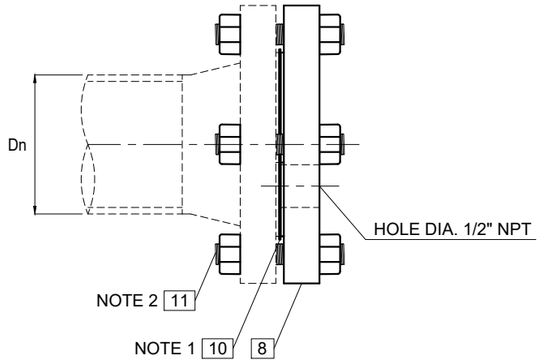
TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-024	TP-STD-150RF-BLF/1"	FLBHCS0022010H	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1	2	2	
TP-024	TP-STD-150RF-BLF/1"	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ø1" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	2	2	
TP-024	TP-STD-150RF-BLF/1"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	2	8	
TP-024	TP-STD-150RF-BLF/2"	FLBHCS0007020H	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1	7	7	
TP-024	TP-STD-150RF-BLF/2"	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ø2" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	7	7	
TP-024	TP-STD-150RF-BLF/2"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	7	28	
TP-024	TP-STD-150RF-BLF/4"	FLBHCS0138040H	Flange Blind c/w NPT Hole ø4"x1/2" 150LB RF ASTM/ASME A/SA105	1	1	1	
TP-024	TP-STD-150RF-BLF/4"	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ø4" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	1	1	
TP-024	TP-STD-150RF-BLF/4"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1	8	
TP-024	TP-STD-150RF-BLF/10"	FLBHCS0185100H	Flange Blind c/w NPT Hole ø10"x1/2" 150LB RF ASTM/ASME A/SA105	1	1	1	
TP-024	TP-STD-150RF-BLF/10"	GSW0GK11181000	Gasket Spiral Wound Thk. 3.2 mm ø10" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	1	1	
TP-024	TP-STD-150RF-BLF/10"	SB20BO19840500	Stud Bolt + 2 Heavy Nuts 7/8" L=135MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	1	12	
TP-024	TP-STD-300RF-BLF/1"	FLBHCS0018010H	Flange Blind c/w NPT Hole ø1"x1/2" 300LB RF ASTM/ASME A/SA105	1	1	1	
TP-024	TP-STD-300RF-BLF/1"	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ø1" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	1	1	
TP-024	TP-STD-300RF-BLF/1"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1	4	
TP-024	TP-STD-300RF-BLF/2"	FLBHCS0010020H	Flange Blind c/w NPT Hole ø2"x1/2" 300LB RF ASTM/ASME A/SA105	1	1	1	
TP-024	TP-STD-300RF-BLF/2"	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ø2" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	1	1	
TP-024	TP-STD-300RF-BLF/2"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1	8	
TP-024	TP-STD-300RF-BLF/6"	FLBHCS0141060H	Flange Blind c/w NPT Hole ø6"x1/2" 300LB RF ASTM/ASME A/SA105	1	6	6	
TP-024	TP-STD-300RF-BLF/6"	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ø6" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	6	6	
TP-024	TP-STD-300RF-BLF/6"	SB20BO19820400	Stud Bolt + 2 Heavy Nuts 3/4" L=130MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	6	72	

STD NAME	RATING	DESCRIPTION
TP-STD-150RF	150 RF	STANDARD FOR BLIND POINT

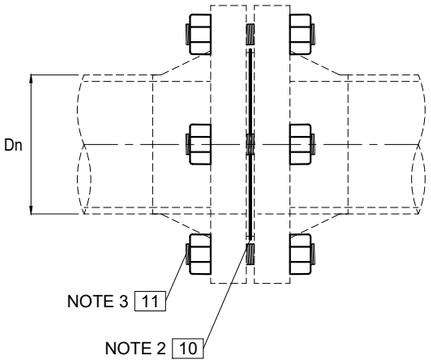
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-150RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=60 MM	4
TP-STD-150RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=85 MM	4
TP-STD-150RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-150RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-150RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-150RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=120 MM	12
TP-STD-150RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=125 MM	12
TP-STD-150RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=135 MM	12
TP-STD-150RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=140 MM	16
TP-STD-150RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=150 MM	16
TP-STD-150RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=160 MM	20
TP-STD-150RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=175 MM	20



TP-STD-150RF-BLF/Dn
BLIND FLANGE



TP-STD-150RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

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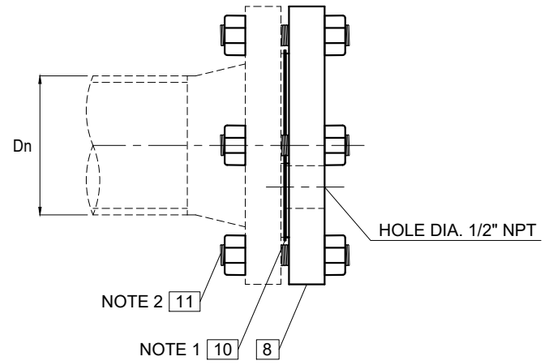
PIPING TEST STANDARD DRAWING
TP-STD-150RF
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_150RF	00	1 OF 1

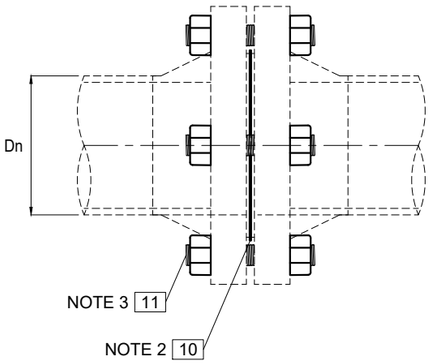
TP-STD-300RF | 300 RF | STANDARD FOR BLIND POINT

TP-STD-300RF-BLF/Dn
TP-STD-300RF-GSK/Dn

MATERIAL LIST			
STD	**POS.**	**DESCRIPTION**	**Q.TY**
TP-STD-300RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-300RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=75 MM	4
TP-STD-300RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=80 MM	4
TP-STD-300RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-300RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=95 MM	4
TP-STD-300RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-300RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-300RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-300RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=115 MM	8
TP-STD-300RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=125 MM	12
TP-STD-300RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=145 MM	12
TP-STD-300RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=160 MM	16
TP-STD-300RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=175 MM	16
TP-STD-300RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=180 MM	20
TP-STD-300RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=195 MM	20
TP-STD-300RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=200 MM	24
TP-STD-300RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=210 MM	24
TP-STD-300RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/2" L=235 MM	24



TP-STD-300RF-BLF/Dn
BLIND FLANGE



TP-STD-300RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

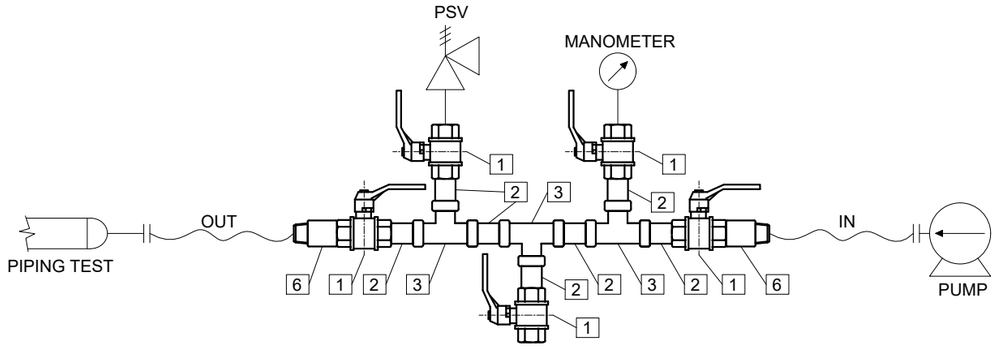
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

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PIPING TEST STANDARD DRAWING
TP-STD-300RF
TP-STD-300RF-BLF/Dn
TP-STD-300RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_300RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

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PIPING TEST STANDARD DRAWING

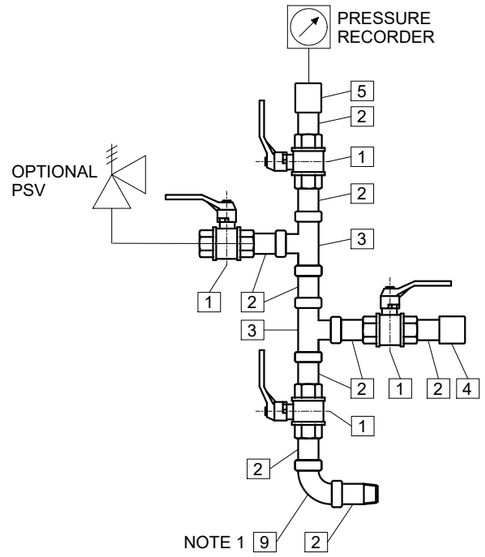
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

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PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
2	VL-003	003	2	01HSS	N	2,77	10S	N/A	2"-VL-003-01HSS-N	123A90-DDL-PR-PID-80011	3,50	43	43-00	TP-024/TP-067	Water	5.25	LP Vent	Stainless Steel	SUP	I	6A	RAL 9002
8	VL-014	014	1	01HSS	N	3,38	40S	N/A	1"-VL-014-01HSS-N	123A90-DDL-PR-PID-80013	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	INF	Art. 4, par. 3	6A	RAL 9002
15	VL-022	022	2	01HSS	N	2,77	10S	N/A	2"-VL-022-01HSS-N	123A90-DDL-PR-PID-80014	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	I	6A	RAL 9002
6	VL-010	010	6	01HSS	N	3,4	10S	N/A	6"-VL-010-01HSS-N	123A90-DDL-PR-PID-80012	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
18	VL-025	025	4	01HSS	N	3,05	10S	N/A	4"-VL-025-01HSS-N	123A90-DDL-PR-PID-80015	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
37	VL-111	111	4	01HSS	N	3,05	10S	N/A	4"-VL-111-01HSS-N	123A90-DDL-PR-PID-80016	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
38	VL-112	112	4	01HSS	N	3,05	10S	N/A	4"-VL-112-01HSS-N	123A90-DDL-PR-PID-80017	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
39	VL-113	113	4	01HSS	N	3,05	10S	N/A	4"-VL-113-01HSS-N	123A90-DDL-PR-PID-80018	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
40	VL-114	114	4	01HSS	N	3,05	10S	N/A	4"-VL-114-01HSS-N	123A90-DDL-PR-PID-80019	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
41	VL-115	115	4	01HSS	N	3,05	10S	N/A	4"-VL-115-01HSS-N	123A90-DDL-PR-PID-80020	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
42	VL-116	116	10	01HSS	N	4,19	10S	N/A	10"-VL-116-01HSS-N	123A90-DDL-PR-PID-80028	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
44	VL-123	123	10	01HSS	N	4,19	10S	N/A	10"-VL-123-01HSS-N	123A90-DDL-PR-PID-80028	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
73	VL-168	168	6	01HSS	N	3,4	10S	N/A	6"-VL-168-01HSS-N	123A90-DDL-PR-PID-80016	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
77	VL-172	172	6	01HSS	N	3,4	10S	N/A	6"-VL-172-01HSS-N	123A90-DDL-PR-PID-80017	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
81	VL-176	176	6	01HSS	N	3,4	10S	N/A	6"-VL-176-01HSS-N	123A90-DDL-PR-PID-80018	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
58	VL-145	145	6	01HSS	N	3,4	10S	N/A	6"-VL-145-01HSS-N	123A90-DDL-PR-PID-80015	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	I	6A	RAL 9002
85	VL-181	181	6	01HSS	N	3,4	10S	N/A	6"-VL-181-01HSS-N	123A90-DDL-PR-PID-80019	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
89	VL-185	185	6	01HSS	N	3,4	10S	N/A	6"-VL-185-01HSS-N	123A90-DDL-PR-PID-80020	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002
65	N-154	154	1	01HSS	N	3,38	40S	N/A	1"-N-154-01HSS-N	123A90-DDL-PR-PID-80028	3,50	43 / 64	43-00 / 64-10	TP-024/TP-047	Water	5.25	Nitrogen Gas	Stainless Steel	INF	Art. 4, par. 3	6A	RAL 9002
157	VL-293	293	1	01HSS	N	3,38	40S	N/A	1"-VL-293-01HSS-N	123A90-DDL-PR-PID-80012	3,50	43	43-00	TP-024	Water	5.25	LP Vent	Stainless Steel	INF	Art. 4, par. 3	6A	RAL 9002

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB: **123A90**

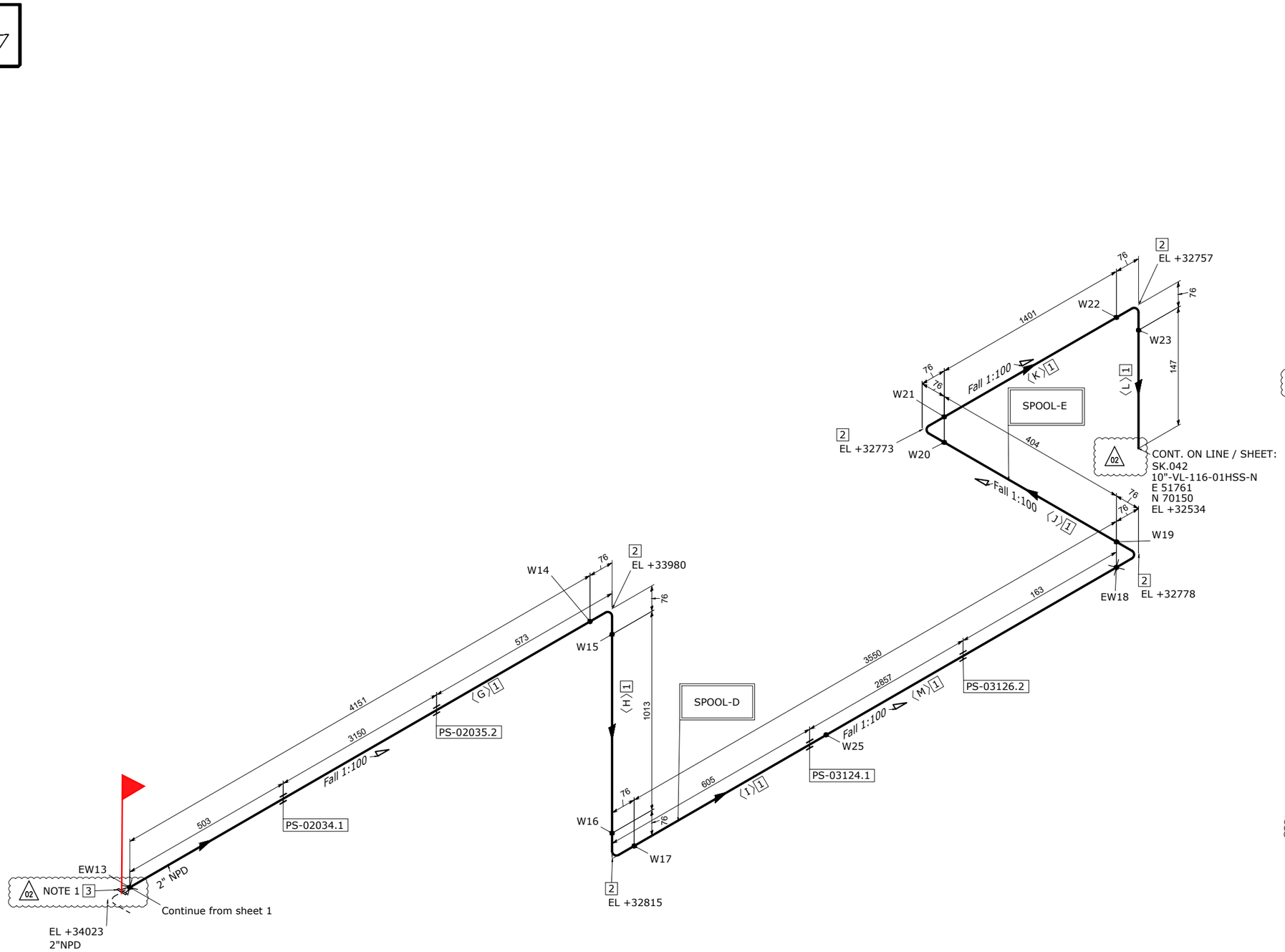
DOCUMENT NR: **123A90-FDL-ST-LIS-00001** REV.: **08**

TITLE

SHOP DRAWING ISOMETRIC LIST

DATE: **04/12/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
3	123A90-FDL-PP-DI-00002-02	**002**	02	SHOP DRAWING ISOMETRIC - LINE NR 2"-VL-003-01HSS-N	03/09/2024	03/10/2024	04/12/2024											**02**	**08**		**TP-024**
10	123A90-FDL-PP-DI-00006-01	**006**	01	SHOP DRAWING ISOMETRIC - LINE NR 6"-VL-010-01HSS-N	20/08/2024	03/09/2024												**01**	**04**		**TP-024**
12	123A90-FDL-PP-DI-00008-01	**008**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-VL-014-01HSS-N	20/08/2024													**00**	**02**		**TP-024**
19	123A90-FDL-PP-DI-00015-01	**015**	01	SHOP DRAWING ISOMETRIC - LINE NR 2"-VL-022-01HSS-N	20/08/2024													**00**	**02**		**TP-024**
23	123A90-FDL-PP-DI-00018-01	**018**	01	SHOP DRAWING ISOMETRIC - LINE NR 4"-VL-025-01HSS-N	20/08/2024	03/09/2024												**01**	**04**		**TP-024**
57	123A90-FDL-PP-DI-00037-01	**037**	01	SHOP DRAWING ISOMETRIC - LINE NR 4"-VL-111-01HSS-N	20/08/2024	03/09/2024												**01**	**04**		**TP-024**
58	123A90-FDL-PP-DI-00038-01	**038**	01	SHOP DRAWING ISOMETRIC - LINE NR 4"-VL-112-01HSS-N	20/08/2024	03/09/2024												**01**	**04**		**TP-024**
59	123A90-FDL-PP-DI-00039-01	**039**	01	SHOP DRAWING ISOMETRIC - LINE NR 4"-VL-113-01HSS-N	20/08/2024	03/09/2024												**01**	**04**		**TP-024**
60	123A90-FDL-PP-DI-00040-01	**040**	01	SHOP DRAWING ISOMETRIC - LINE NR 4"-VL-114-01HSS-N	20/08/2024	03/09/2024												**01**	**04**		**TP-024**
61	123A90-FDL-PP-DI-00041-01	**041**	01	SHOP DRAWING ISOMETRIC - LINE NR 4"-VL-115-01HSS-N	20/08/2024	03/09/2024												**01**	**04**		**TP-024**
62	123A90-FDL-PP-DI-00042-01	**042**	01	SHOP DRAWING ISOMETRIC - LINE NR 10"-VL-116-01HSS-N	20/08/2024	03/09/2024												**01**	**04**		**TP-024**
63	123A90-FDL-PP-DI-00042-02	**042**	02	SHOP DRAWING ISOMETRIC - LINE NR 10"-VL-116-01HSS-N	20/08/2024	03/09/2024	14/10/2024											**02**	**07**		**TP-024**
65	123A90-FDL-PP-DI-00044-01	**044**	01	SHOP DRAWING ISOMETRIC - LINE NR 10"-VL-123-01HSS-N	20/08/2024	03/09/2024												**01**	**04**		**TP-024**
79	123A90-FDL-PP-DI-00058-01	**058**	01	SHOP DRAWING ISOMETRIC - LINE NR 6"-VL-145-01HSS-N	20/08/2024													**00**	**02**		**TP-024**
89	123A90-FDL-PP-DI-00065-01	**065**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-N-154-01HSS-N	20/08/2024													**00**	**02**		**TP-024/TP-047**
100	123A90-FDL-PP-DI-00073-01	**073**	01	SHOP DRAWING ISOMETRIC - LINE NR 6"-VL-168-01HSS-N	20/08/2024													**00**	**02**		**TP-024**
105	123A90-FDL-PP-DI-00077-01	**077**	01	SHOP DRAWING ISOMETRIC - LINE NR 6"-VL-172-01HSS-N	20/08/2024													**00**	**02**		**TP-024**
110	123A90-FDL-PP-DI-00081-01	**081**	01	SHOP DRAWING ISOMETRIC - LINE NR 6"-VL-176-01HSS-N	20/08/2024													**00**	**02**		**TP-024**
115	123A90-FDL-PP-DI-00085-01	**085**	01	SHOP DRAWING ISOMETRIC - LINE NR 6"-VL-181-01HSS-N	20/08/2024													**00**	**02**		**TP-024**
120	123A90-FDL-PP-DI-00089-01	**089**	01	SHOP DRAWING ISOMETRIC - LINE NR 6"-VL-185-01HSS-N	20/08/2024													**00**	**02**		**TP-024**
194	123A90-FDL-PP-DI-00157-01	**157**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-VL-293-01HSS-N	20/08/2024													**00**	**02**		**TP-024**



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	10.7M	42.6
2	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	5	2.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
02 3	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

FABRICATION WEIGHT [kg]	45.0
ERECTION WEIGHT [kg]	02 2.7
OVERALL WEIGHT [kg]	47.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
EW13	2	BW
W14	2	BW
W15	2	BW
W16	2	BW
W17	2	BW
EW18	2	BW
W19	2	BW
W20	2	BW
W21	2	BW
W22	2	BW
W23	2	BW
02 W25	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
G	2	4151	BEVEL	BEVEL
H	2	1013	BEVEL	BEVEL
I	2	1775	BEVEL	BEVEL
J	2	404	BEVEL	BEVEL
K	2	1401	BEVEL	BEVEL
L	2	147	BEVEL	BEVEL
M	2	1775	BEVEL	BEVEL

SUPPORT LIST

PS-02034.1
PS-02035.2
PS-03124.1
PS-03126.2

SPOOL	WELD [inches]	WEIGHT [kg]
D	10	35.7
E	10	9.2
	01	
MONT	4	2.7

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04-12-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-10-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	03-09-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 2"-VL-003-01HSS-N
SK.002

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-10-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00002 | SHEET / OF: 2/2 | REV.: 02

43-00-TP-024

MASTER

LINE DATA

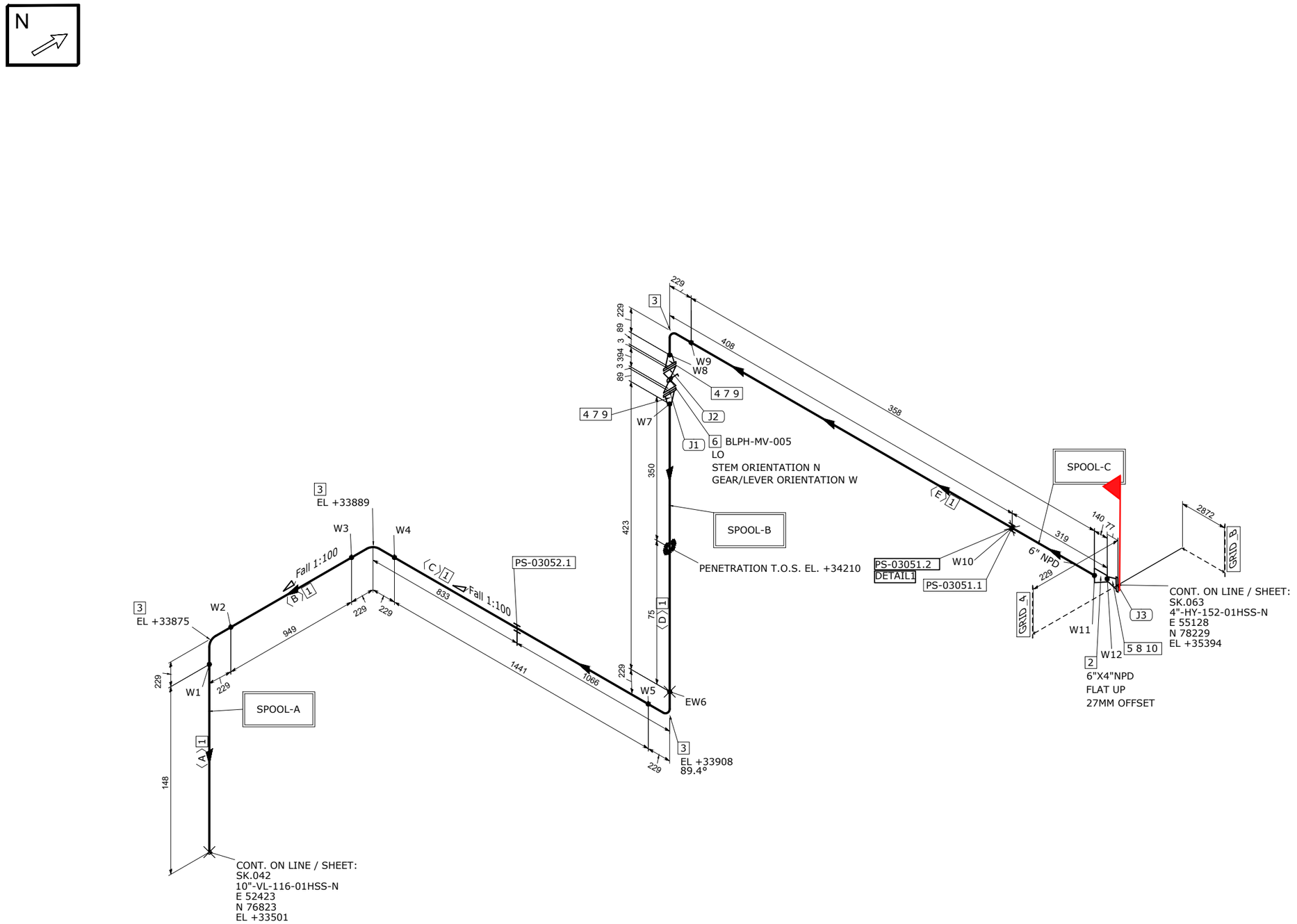
NDT INSPECTION CATEGORY	1		PED CATEGORY	I			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

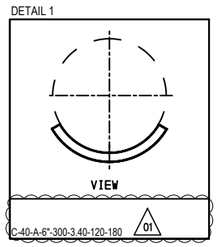
P&ID	123A90-DDL-PR-PID-80011
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1) TEMPORARY FLANGE FOR HYDROTEST, TO BE CUT AFTER TEST 02



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	6	PIPESS00570600	Pipe ASME B36.19M PE 3,4 SML ASTM A312 Gr.TP316/316L	3.3M	46.7
2	6X4	REE0SS02460604	Reducer Eccentric ASME B16.9 BW 3,4x3,05 WRS ASTM A403 Gr.WP316/316L	1	1.9
3	6	E90RSS01030600	90 Deg Elbow Long Radius ASME B16.9 BW 3,4 WRS ASTM A403 Gr.WP316/316L	4	19.8
4	6	FLW0SS02980600	Flange WN ASME B16.5 150LB RF 3,4 FRG ASTM A182 Gr.F316/316L	2	22.3
5	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	6.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	6	VLBLNN01460600	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	180.0
7	6	GSW0GK11160600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.6
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.2
9	3/4	SB20BO01890400	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	6.7
10	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	2.0

FABRICATION WEIGHT [kg]	97.6
ERECTION WEIGHT [kg]	189.5
OVERALL WEIGHT [kg]	287.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	6	BW
W2	6	BW
W3	6	BW
W4	6	BW
W5	6	BW
EW6	6	BW
W7	6	BW
W8	6	BW
W9	6	BW
W10		FW
W11	6	BW
W12	4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	6	148	BEVEL	BEVEL
B	6	949	BEVEL	BEVEL
C	6	1441	BEVEL	BEVEL
D	6	423	BEVEL	BEVEL
E	6	358	BEVEL	BEVEL

SUPPORT LIST

PS-03051.2
PS-03051.1
PS-03052.1

SPOOL	WELD [inches]	WEIGHT [kg]
C	22	29.9
B	6	17.1
A	30	50.5
MONT	6	189.5

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

43-00-TP-024

MASTER

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

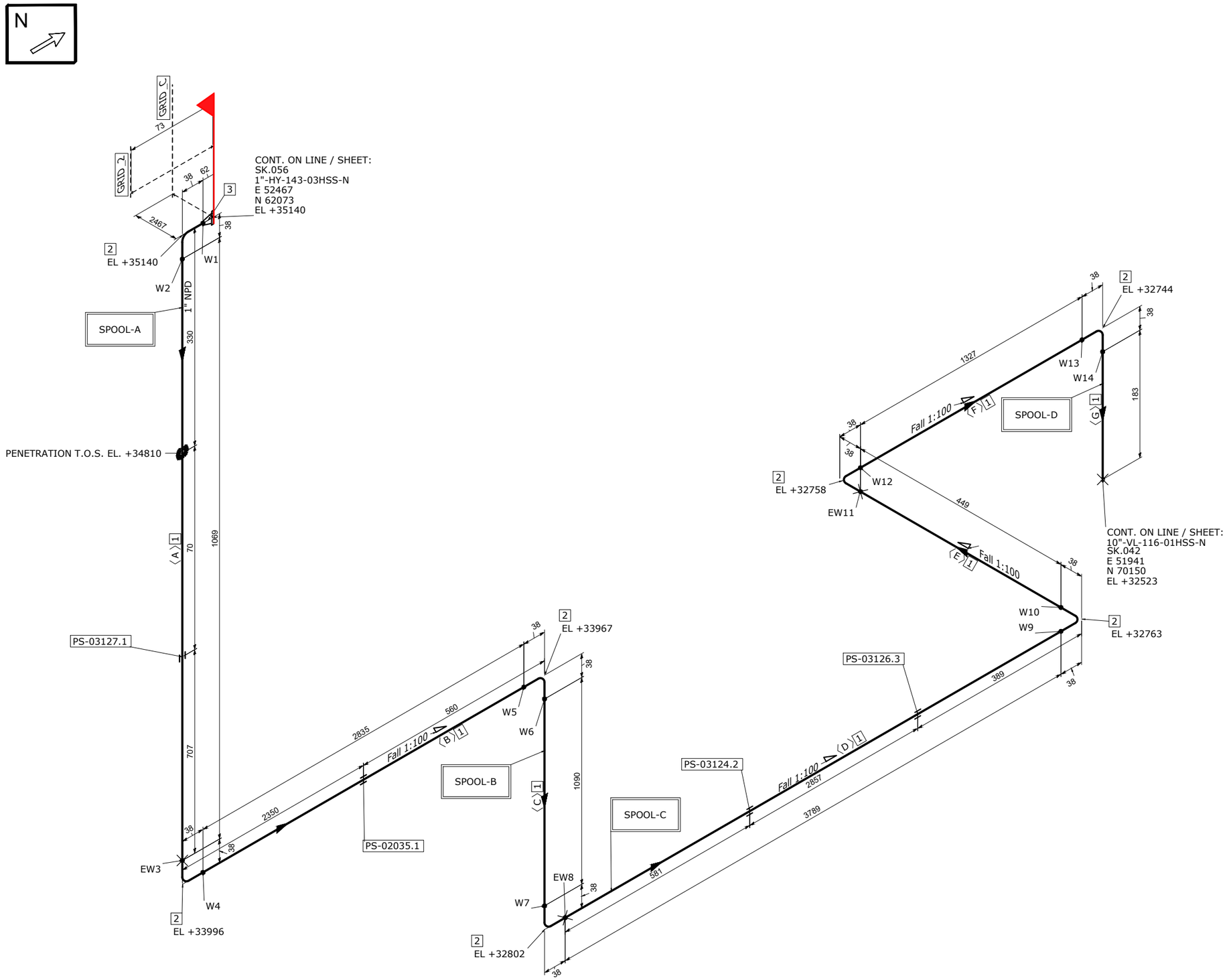
P&ID	123A90-DDL-PR-PID-80012
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 6"-VL-010-01HSS-N

SK.006

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	N/A
DRAWN	STAFF SRL	CHECKED RT	APPROVED LM	DATE 03-09-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00006		SHEET / OF 1/1	REV. 01



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	10.7M	27.3
2	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	7	1.0
3	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

FABRICATION WEIGHT [kg]	30.1
ERECTION WEIGHT [kg]	0.0
OVERALL WEIGHT [kg]	30.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
EW3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
EW8	1	BW
W9	1	BW
W10	1	BW
EW11	1	BW
W12	1	BW
W13	1	BW
W14	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	1069	BEVEL	BEVEL
B	1	2835	BEVEL	BEVEL
C	1	1090	BEVEL	BEVEL
D	1	3789	BEVEL	BEVEL
E	1	450	BEVEL	BEVEL
F	1	1327	BEVEL	BEVEL
G	1	183	BEVEL	BEVEL

SUPPORT LIST

PS-03127.1
PS-02035.1
PS-03124.2
PS-03126.3

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.7
B	4	10.4
C	2	10.9
D	3	4.1
MONT	3	0.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-VL-014-01HSS-N
SK.008

43-00-TP-024

MASTER

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 20-08-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00008 | SHEET / OF: 1/1 | REV.: 00

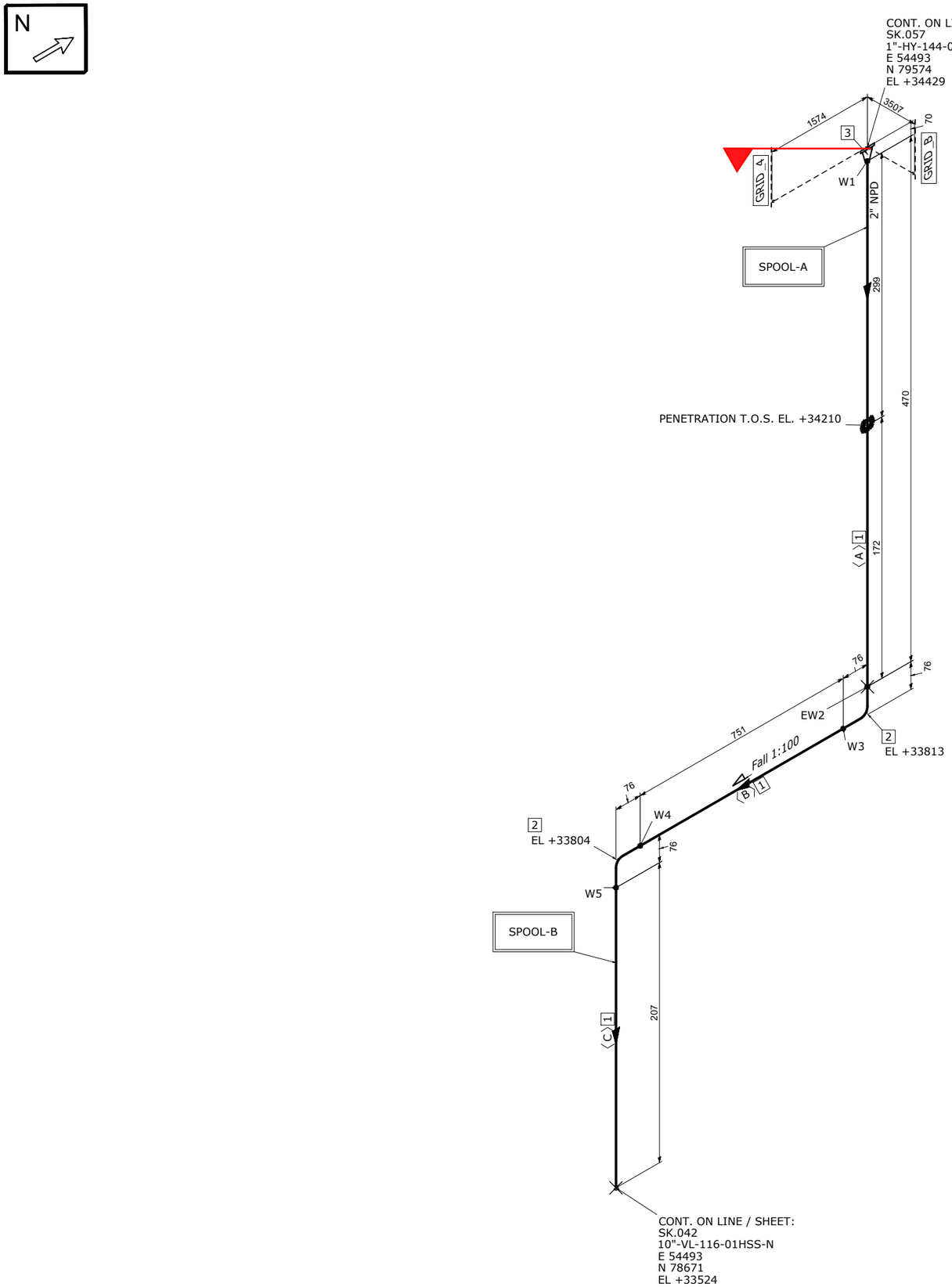
LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5	[barg]	TEMP. -29 / 100	[°C]	
HEAT TRACING	N/A		TEST	PRESS. 5.25	[barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80013
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.4M	5.7
2	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
3	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	4.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

FABRICATION WEIGHT [kg]	10.8
ERECTION WEIGHT [kg]	0.0
OVERALL WEIGHT [kg]	10.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
EW2	2	BW
W3	2	BW
W4	2	BW
W5	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	2	470	BEVEL	BEVEL
B	2	751	BEVEL	BEVEL
C	2	207	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	6.0
B	6	4.8
MONT	2	0.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 2"-VL-022-01HSS-N

SK.015

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 20-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00015 | SHEET / OF: 1/1 | REV.: 00

43-00-TP-024

MASTER

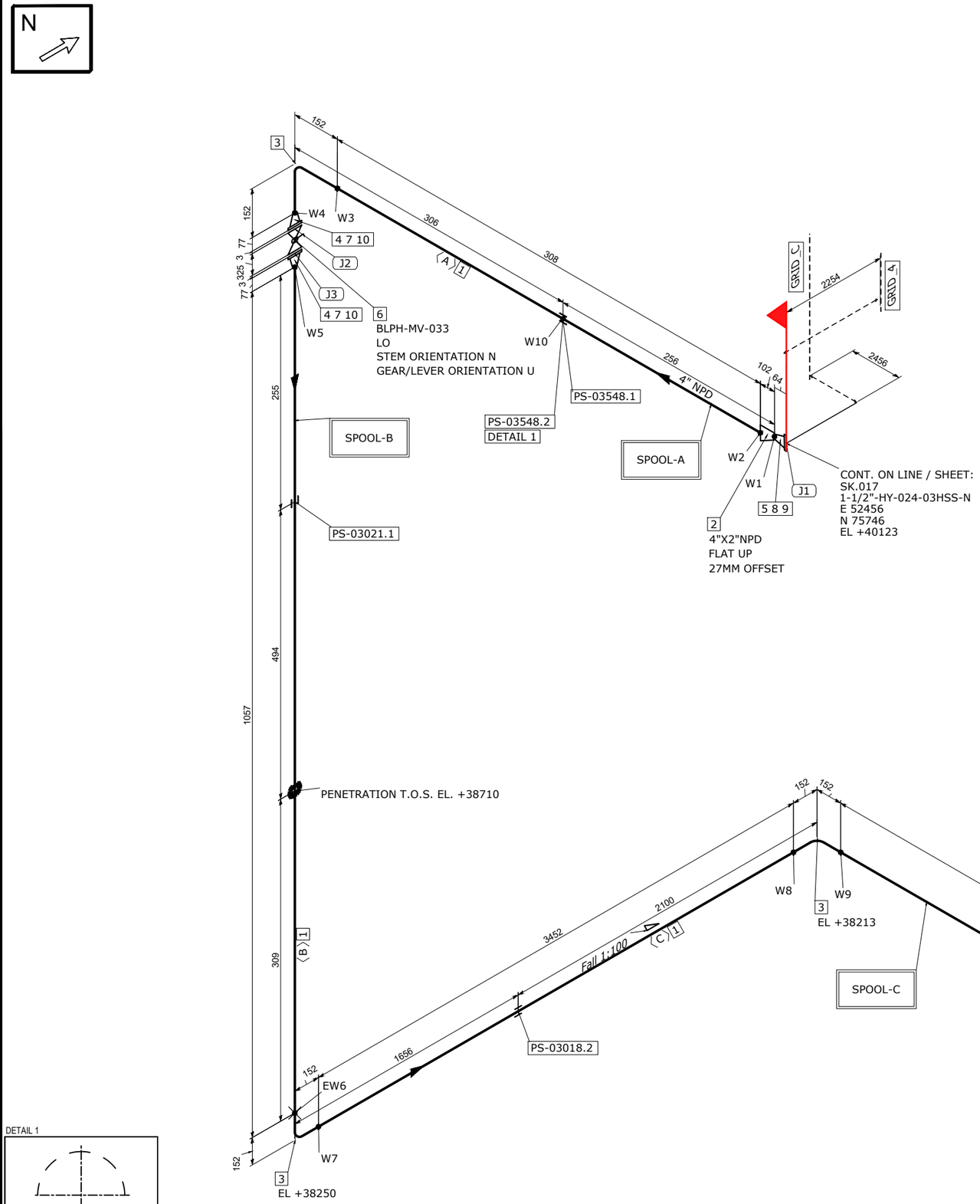
LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	I			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB.	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80014
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.0M	42.7
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
7	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
8	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	66.0
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	151.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	308	BEVEL	BEVEL
B	4	1057	BEVEL	BEVEL
C	4	3452	BEVEL	BEVEL
D	4	205	BEVEL	BEVEL

SUPPORT LIST

PS-03548.1
PS-03548.2
PS-03021.1
PS-03018.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	15.1
B	4	15.9
C	12	35.1
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-025-01HSS-N

SK.018

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00018 | SHEET / OF: 1/1 | REV.: 01

43-00-TP-024

MASTER

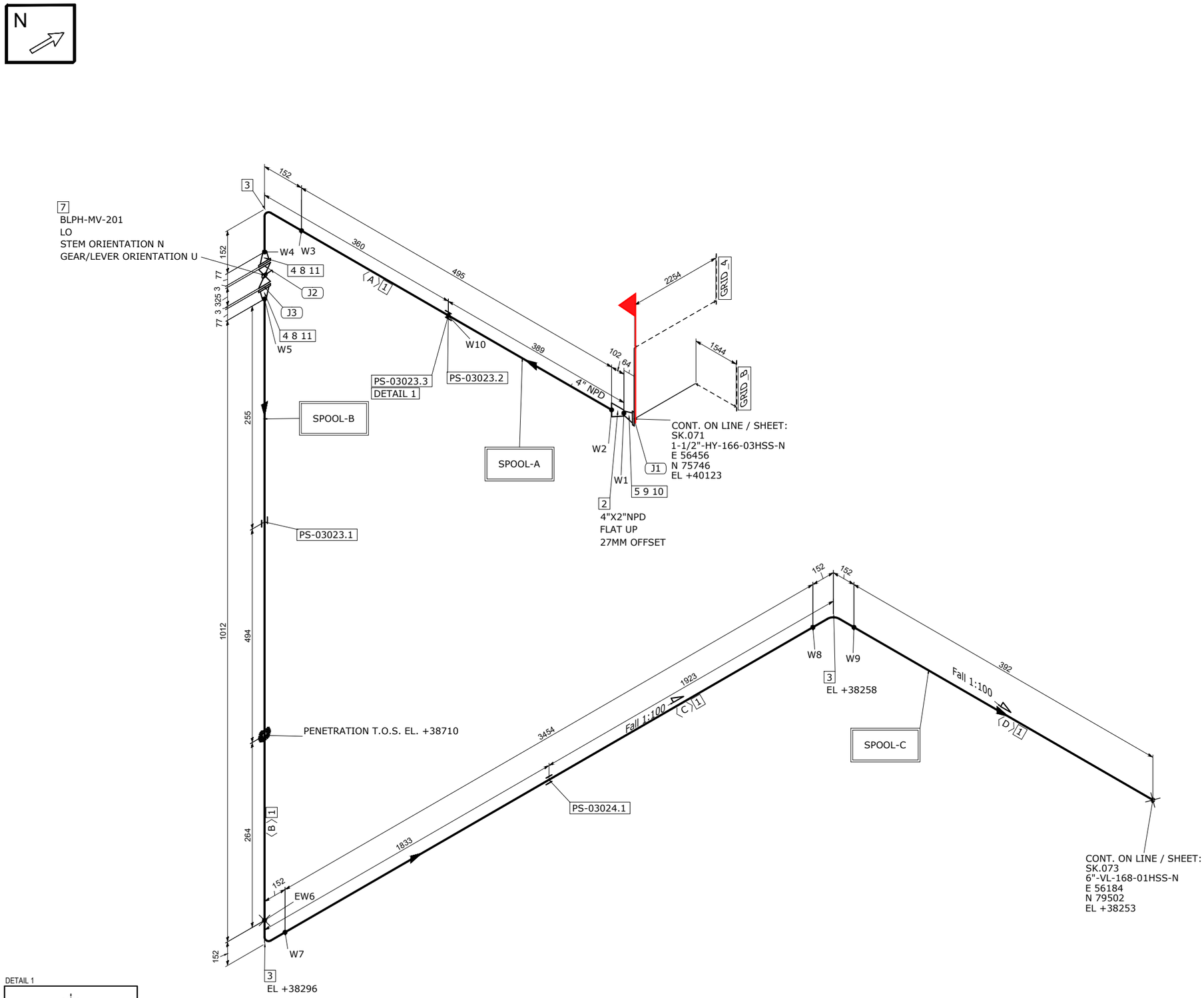
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NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

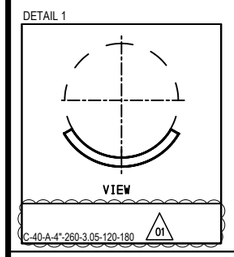
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80015
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.4M	45.4
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.7
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	154.3

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	1012	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03023.2
PS-03023.3
PS-03023.1
PS-03024.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.5
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-111-01HSS-N

SK.037

43-00-TP-024

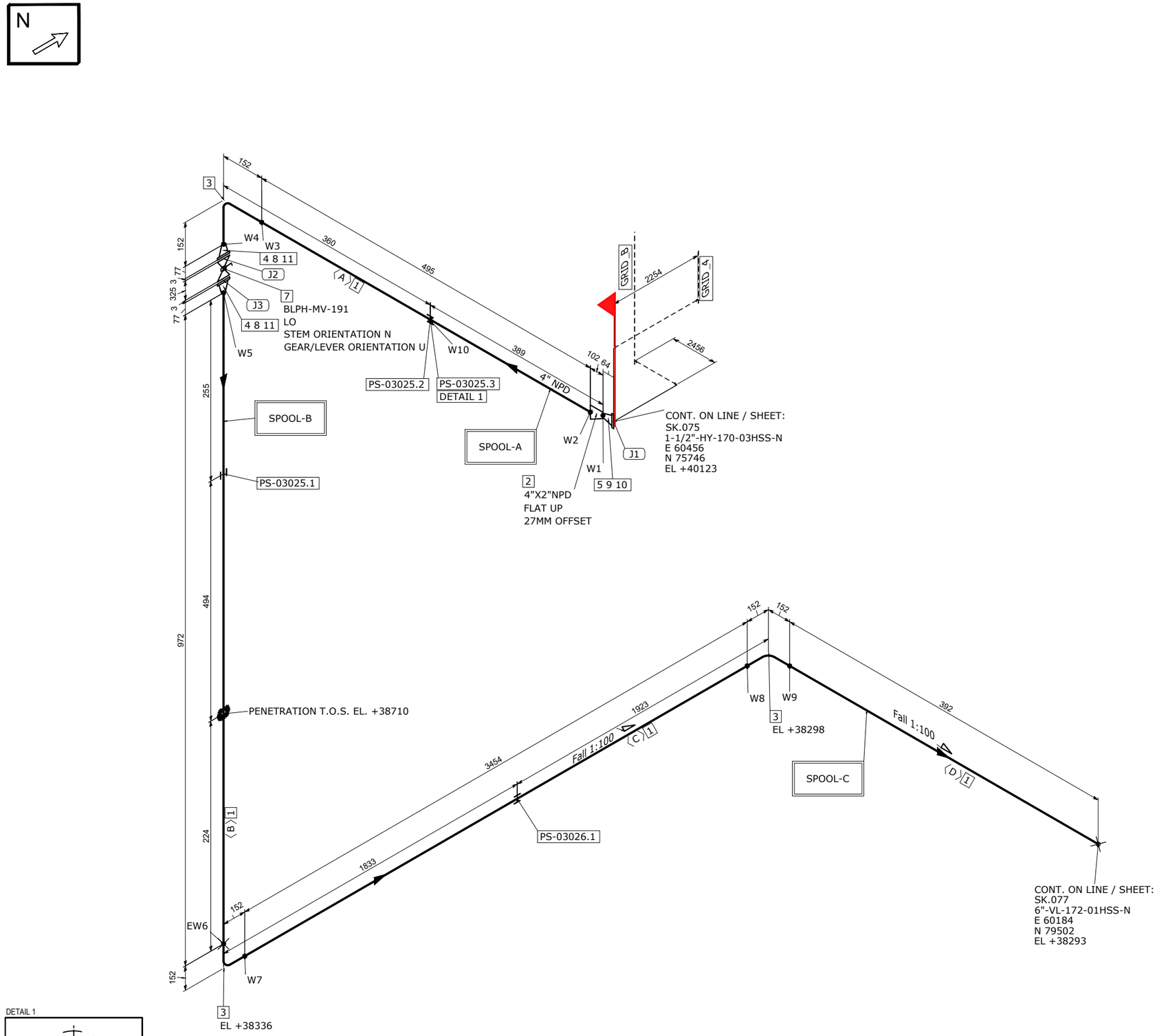
MASTER

LINE DATA								
NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB.	MEDIUM Water		

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80016
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	03-09-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00037
SHEET / OF	1/1
REV.	01



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.3M	45.1
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.3
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	153.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	972	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03025.2
PS-03025.3
PS-03025.1
PS-03026.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.2
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-112-01HSS-N

SK.038

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM

DATE: 03-09-2024

FORMAT: A3

DRAWING NO.: 123A90-FDL-PP-DI-00038

SHEET / OF: 1/1

REV.: 01

43-00-TP-024

MASTER

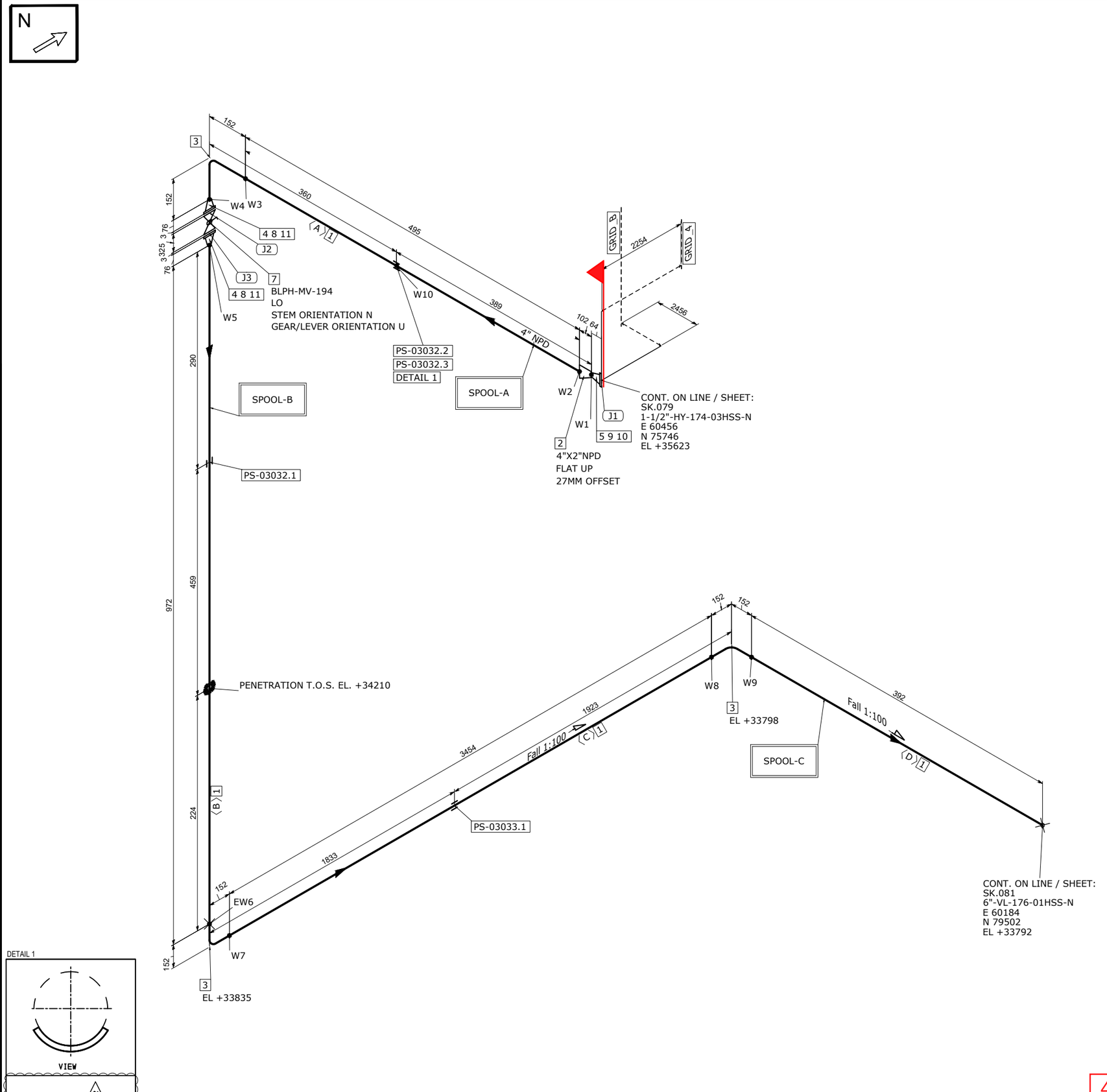
LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002		FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]		DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A			TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80017
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.3M	45.1
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.3
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	153.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	972	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03032.2
PS-03032.3
PS-03032.1
PS-03033.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.2
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-113-01HSS-N

SK.039

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 03-09-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00039	SHEET / OF 1/1	REV. 01

43-00-TP-024

MASTER

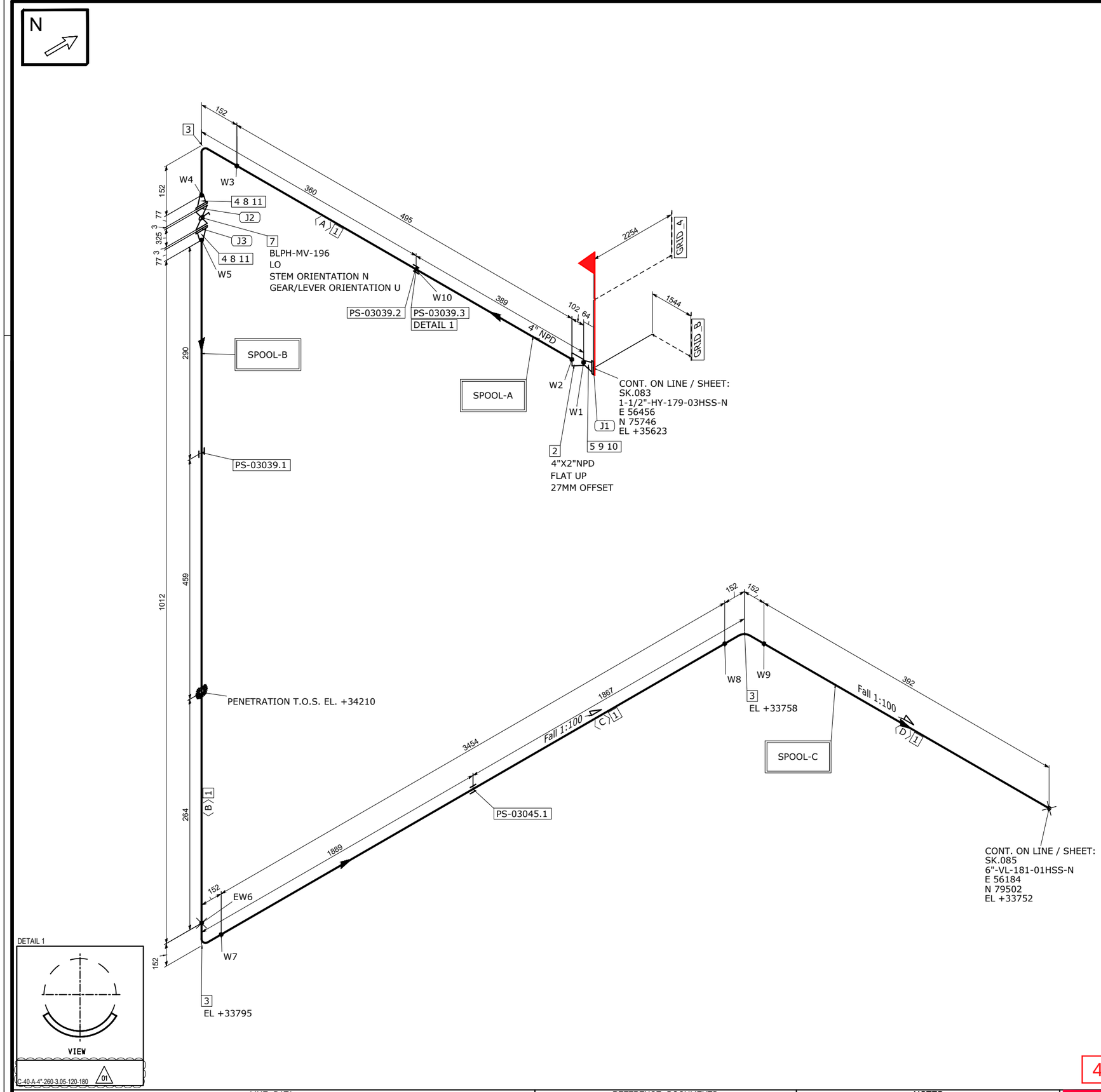
LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80018
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.4M	45.5
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.8
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	154.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	1012	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03039.2
PS-03039.3
PS-03039.1
PS-03045.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.5
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-114-01HSS-N

SK.040

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00040 | SHEET / OF: 1/1 | REV.: 01

43-00-TP-024

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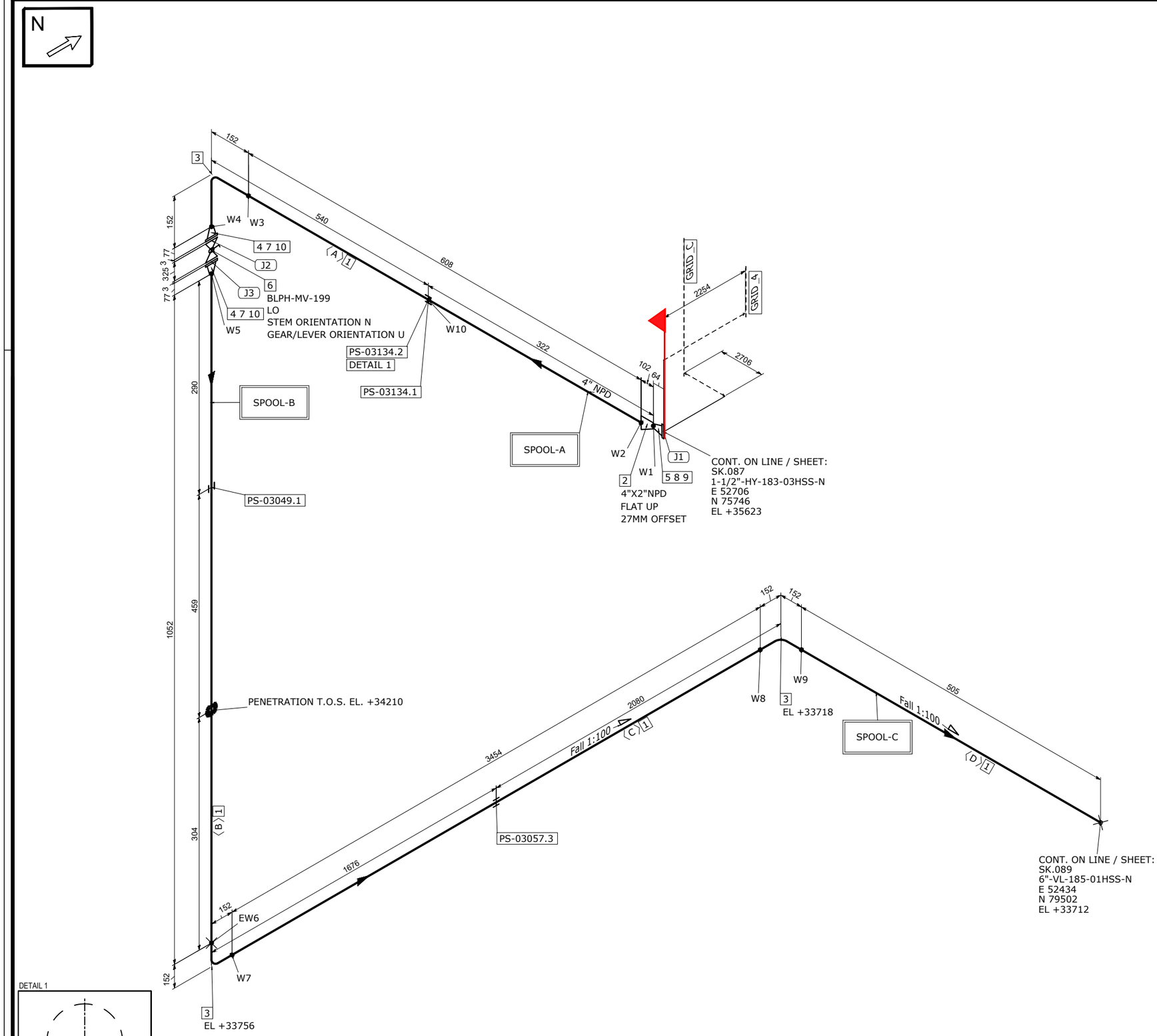
LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.6M	47.7
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
7	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
8	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	71.0
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	156.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	608	BEVEL	BEVEL
B	4	1052	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	505	BEVEL	BEVEL

SUPPORT LIST

PS-03134.1
PS-03134.2
PS-03049.1
PS-03057.3

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	17.7
B	4	15.8
C	12	37.6
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

43-00-TP-024

MASTER

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-115-01HSS-N

SK.041

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00041 | SHEET / OF: 1/1 | REV.: 01

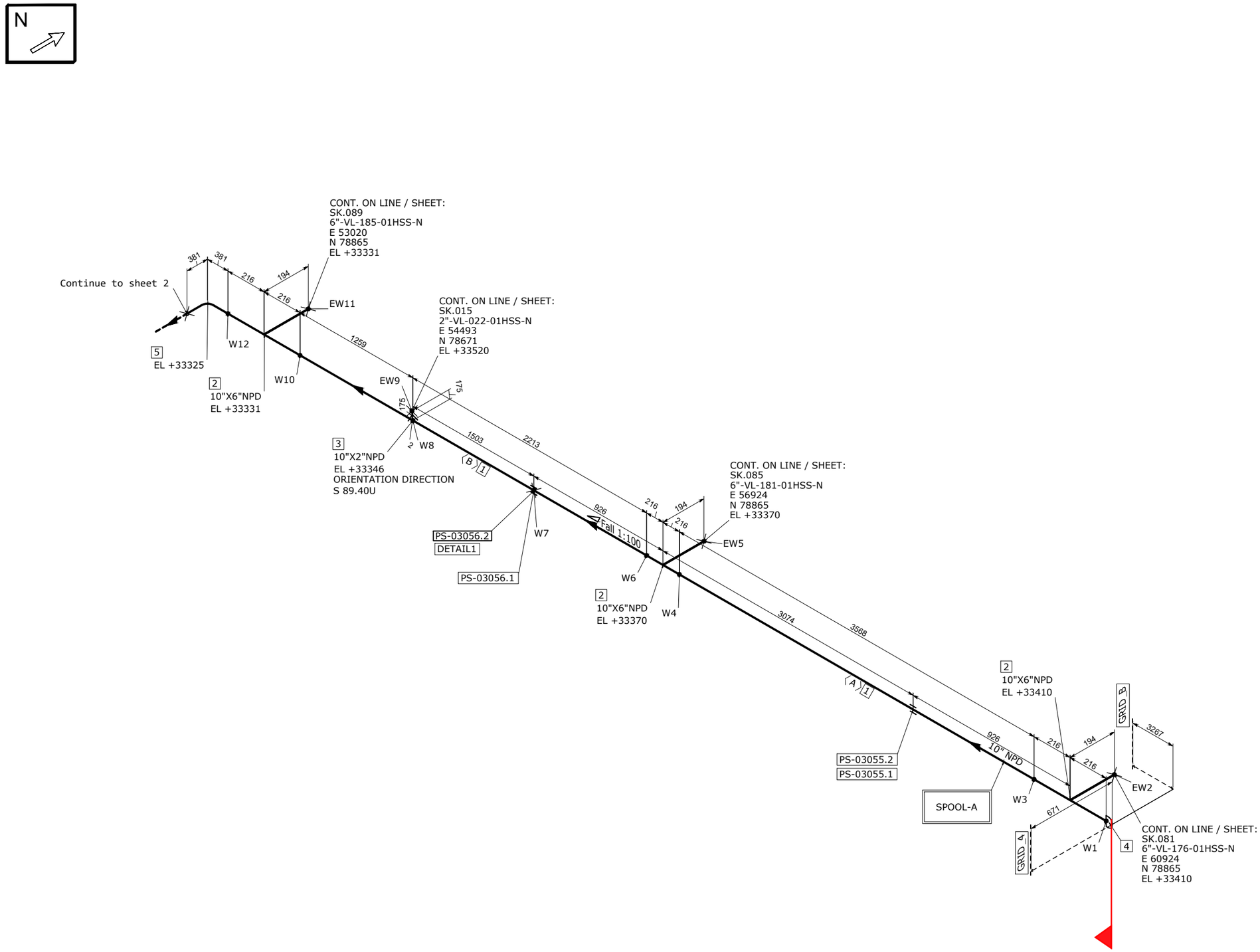
LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

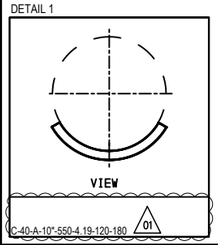
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80020
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	10	PIPESS01701000	Pipe ASME B36.19M PE 4,19 SML ASTM A312 Gr.TP316/316L	7.0M	198.5
2	10X6	TER0SS03441006	Tee Reducing ASME B16.9 BW 4,19x3,4 WRS ASTM A403 Gr.WP316/316L	3	56.4
3	10X2	OWELSS01971002	Weldolet MSS SP-97 BW 4,19x2,77 FRG ASTM A182 Gr.F316/316L	1	0.8
4	10	CAP0SS00961000	Cap ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	1	4.6
5	10	E90RSS01151000	90 Deg Elbow Long Radius ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	1	17.0

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

FABRICATION WEIGHT [kg]	277.3
ERECTION WEIGHT [kg]	0.0
OVERALL WEIGHT [kg]	277.3

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	10	BW
EW2	6	BW
W3	10	BW
W4	10	BW
EW5	6	BW
W6	10	BW
W7		FW
W8	2	LET
EW9	2	BW
W10	10	BW
EW11	6	BW
W12	10	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	10	3568	BEVEL	BEVEL
B	10	3473	BEVEL	BEVEL

SUPPORT LIST

PS-03055.2
PS-03055.1
PS-03056.1
PS-03056.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	62	277.3
MONT	20	0.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 10"-VL-116-01HSS-N

SK.042

LINE DATA							
NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

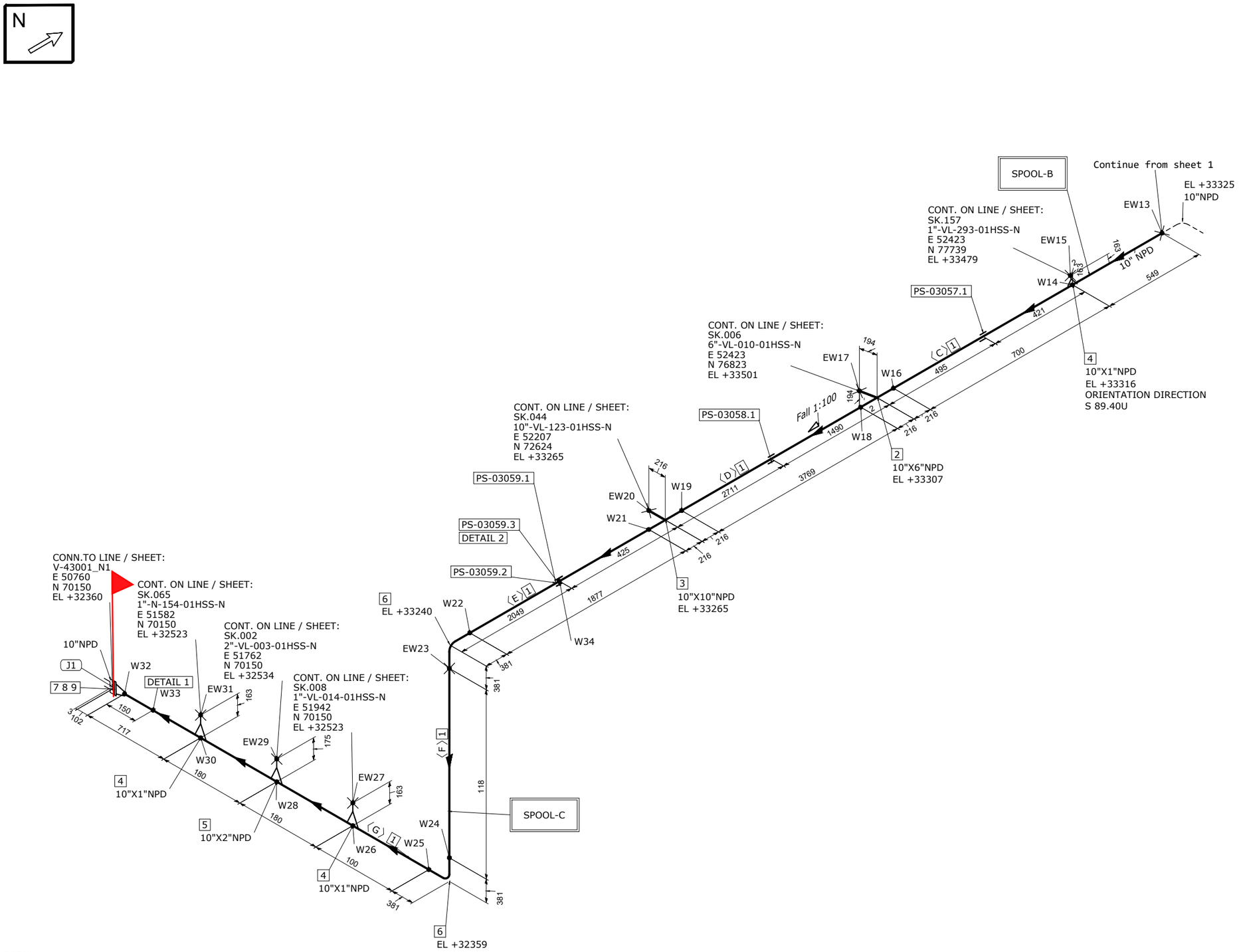
REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80028
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

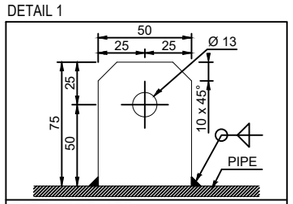
43-00-TP-024

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	03-09-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00042
SHEET / OF	1/2
REV.	01

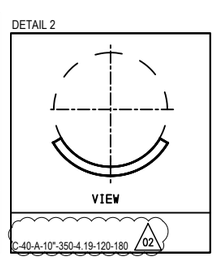


DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

DETAIL 2



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	10	PIPESS01701000	Pipe ASME B36.19M PE 4,19 SML ASTM A312 Gr.TP316/316L	8.2M	231.2
2	10X6	TER0SS03441006	Tee Reducing ASME B16.9 BW 4,19x3,4 WRS ASTM A403 Gr.WP316/316L	1	18.8
3	10X10	TEE0SS00941000	Tee ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	1	18.8
4	10X1	OWELSS02441001	Weldolet MSS SP-97 BW 4,19x3,38 FRG ASTM A182 Gr.F316/316L	3	0.9
5	10X2	OWELSS01971002	Weldolet MSS SP-97 BW 4,19x2,77 FRG ASTM A182 Gr.F316/316L	1	0.8
6	10	E90RSS01151000	90 Deg Elbow Long Radius ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	2	33.9
7	10	FLW0SS03491000	Flange WN ASME B16.5 150LB RF 4,19 FRG ASTM A182 Gr.F316/316L	1	24.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
8	10	SPIKNN00611000	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.6
9	7/8	SB20BO19840500	135 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	8.4

FABRICATION WEIGHT [kg]	328.8
ERECTION WEIGHT [kg]	9.0
OVERALL WEIGHT [kg]	337.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
EW13	10	BW
W14	1	LET
EW15	1	BW
W16	10	BW
EW17	6	BW
W18	10	BW
W19	10	BW
EW20	10	BW
W21	10	BW
W22	10	BW
EW23	10	BW
W24	10	BW
W25	10	BW
W26	1	LET
EW27	1	BW
W28	2	LET
EW29	2	BW
W30	1	LET
EW31	1	BW
W32	10	BW
W33		FW
W34		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
C	10	1249	BEVEL	BEVEL
D	10	3769	BEVEL	BEVEL
E	10	1877	BEVEL	BEVEL
F	10	118	BEVEL	BEVEL
G	10	1177	BEVEL	BEVEL

SUPPORT LIST

PS-03057.1
PS-03058.1
PS-03059.1
PS-03059.2
PS-03059.3

SPOOL	WELD [inches]	WEIGHT [kg]
B	51	249.4
C	34	79.4
MONT	41	9.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	14-10-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 10"-VL-116-01HSS-N

SK.042

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	14-10-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00042	SHEET / OF	2/2
REV.	02				

43-00-TP-024

MASTER

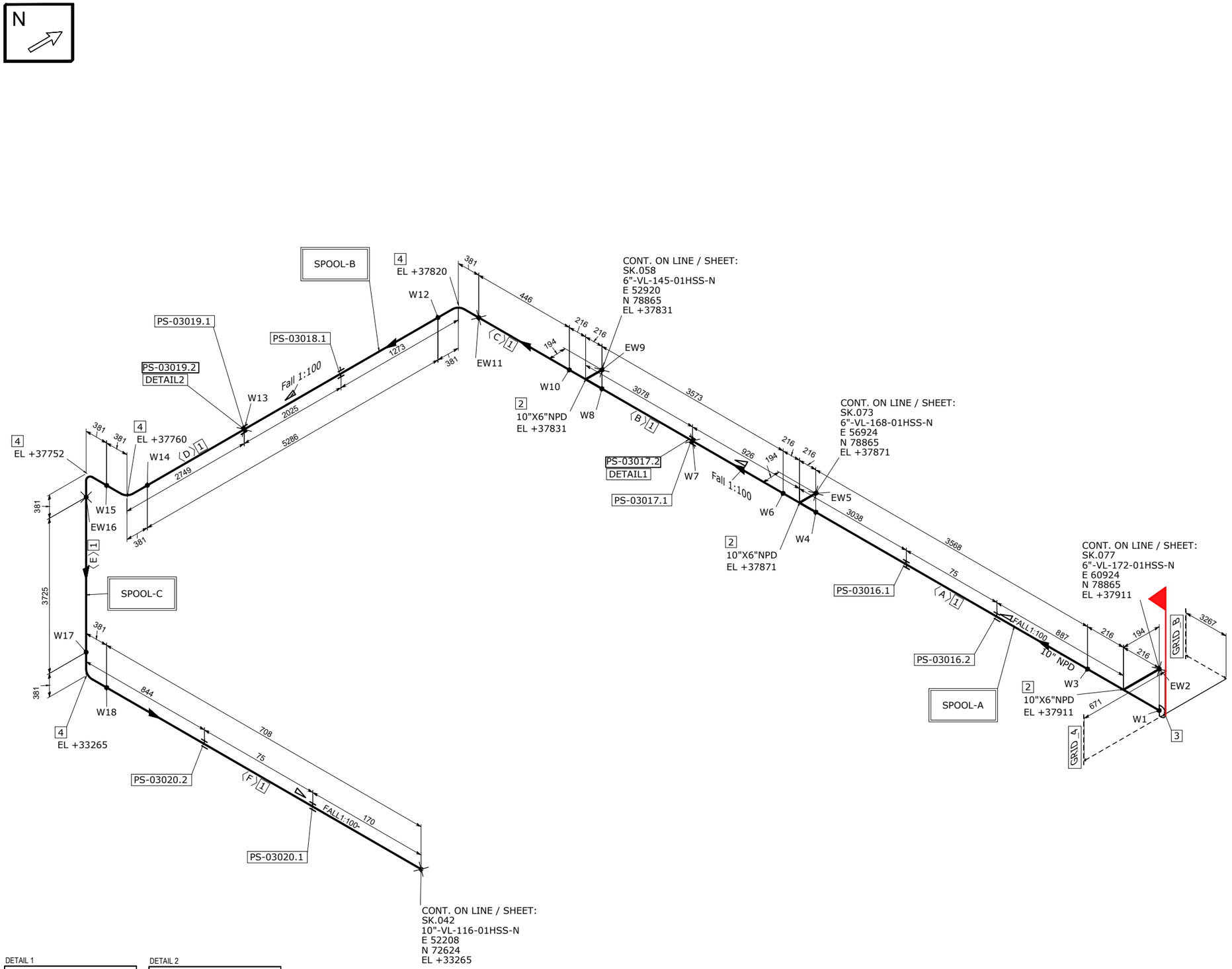
LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

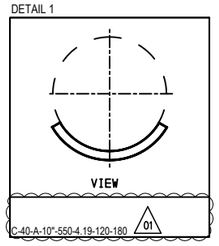
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80028
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

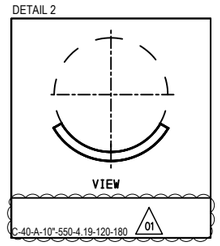
NOTES



DETAIL 1



DETAIL 2



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	10	PIPESS01701000	Pipe ASME B36.19M PE 4,19 SML ASTM A312 Gr.TP316/316L	17.3M	488.1
2	10X6	TER0SS03441006	Tee Reducing ASME B16.9 BW 4,19x3,4 WRS ASTM A403 Gr.WP316/316L	3	56.4
3	10	CAP0SS00961000	Cap ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	1	4.6
4	10	E90RSS01151000	90 Deg Elbow Long Radius ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	4	67.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

FABRICATION WEIGHT [kg]	617.0
ERECTION WEIGHT [kg]	0.0
OVERALL WEIGHT [kg]	617.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	10	BW
EW2	6	BW
W3	10	BW
W4	10	BW
EW5	6	BW
W6	10	BW
W7		FW
W8	10	BW
EW9	6	BW
W10	10	BW
EW11	10	BW
W12	10	BW
W13		FW
W14	10	BW
W15	10	BW
EW16	10	BW
W17	10	BW
W18	10	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	10	3568	BEVEL	BEVEL
B	10	3573	BEVEL	BEVEL
C	10	446	BEVEL	BEVEL
D	10	5286	BEVEL	BEVEL
E	10	3725	BEVEL	BEVEL
F	10	708	BEVEL	BEVEL

SUPPORT LIST

PS-03016.2
PS-03016.1
PS-03017.2
PS-03017.1
PS-03018.1
PS-03019.2
PS-03019.1
PS-03020.2
PS-03020.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	60	274.9
B	30	200.0
C	20	142.1
MONT	38	0.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 10"-VL-123-01HSS-N

SK.044

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00044 | SHEET / OF: 1/1 | REV.: 01

43-00-TP-024

MASTER

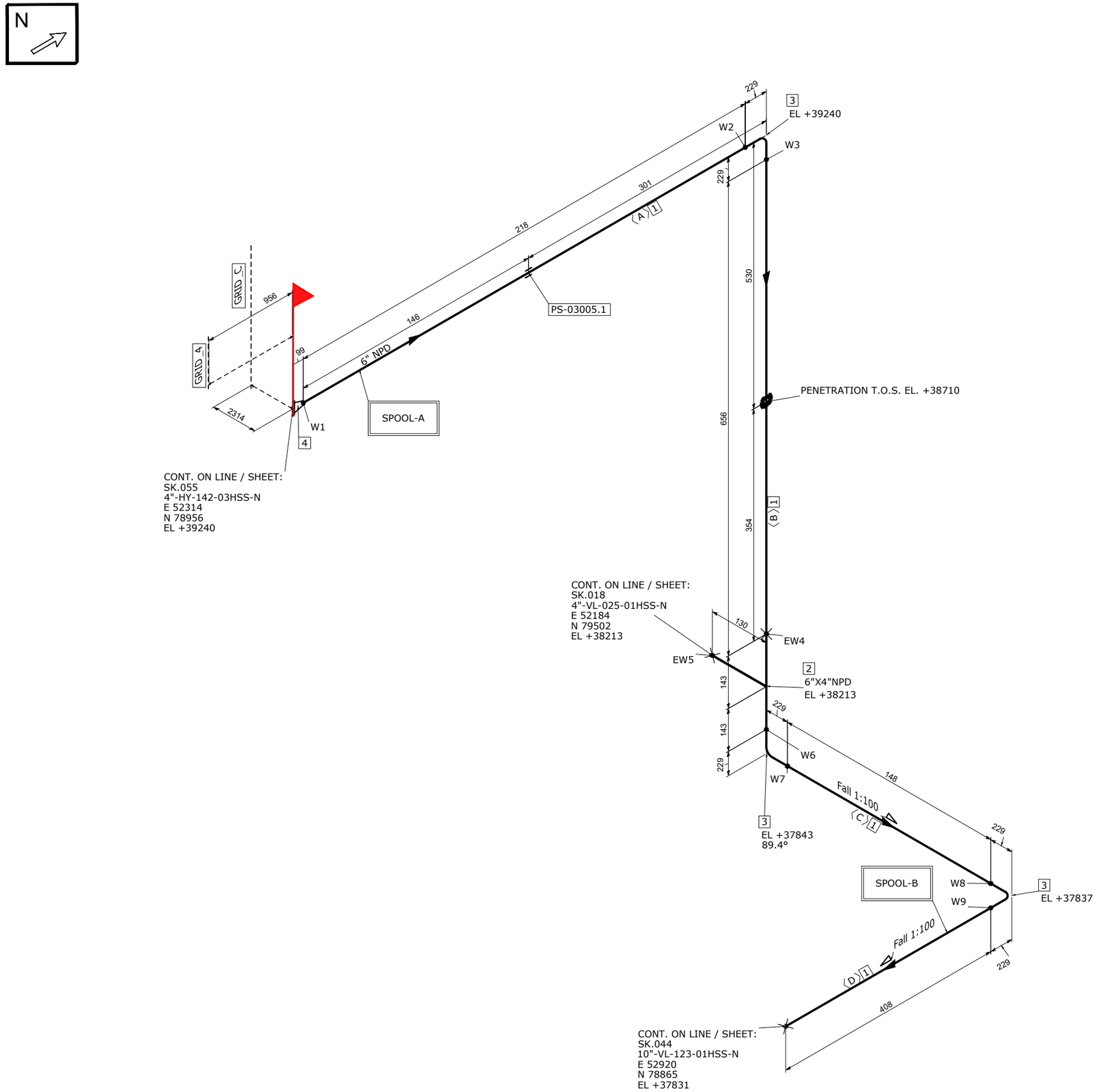
LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5	[barg]	TEMP. -29 / 100	[°C]	
HEAT TRACING	N/A		TEST	PRESS. 5.25	[barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80028
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	6	PIPESS00570600	Pipe ASME B36.19M PE 3,4 SML ASTM A312 Gr.TP316/316L	1.4M	20.1
2	6X4	TER0SS00170604	Tee Reducing ASME B16.9 BW 3,4x3,05 WRS ASTM A403 Gr.WP316/316L	1	7.8
3	6	E90RSS01030600	90 Deg Elbow Long Radius ASME B16.9 BW 3,4 WRS ASTM A403 Gr.WP316/316L	3	14.8
4	6	FLW0SS00530600	Flange WN ASME B16.5 300LB RF 3,4 FRG ASTM A182 Gr.F316/316L	1	19.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

FABRICATION WEIGHT [kg]	62.0
ERECTION WEIGHT [kg]	0.0
OVERALL WEIGHT [kg]	62.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	6	BW
W2	6	BW
W3	6	BW
EW4	6	BW
EW5	4	BW
W6	6	BW
W7	6	BW
W8	6	BW
W9	6	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	6	219	BEVEL	BEVEL
B	6	656	BEVEL	BEVEL
C	6	148	BEVEL	BEVEL
D	6	408	BEVEL	BEVEL

SUPPORT LIST

PS-03005.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	18	36.5
B	24	25.5
MONT	10	0.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 6"-VL-145-01HSS-N

SK.058

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 20-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00058 | SHEET / OF: 1/1 | REV.: 00

43-00-TP-024

MASTER

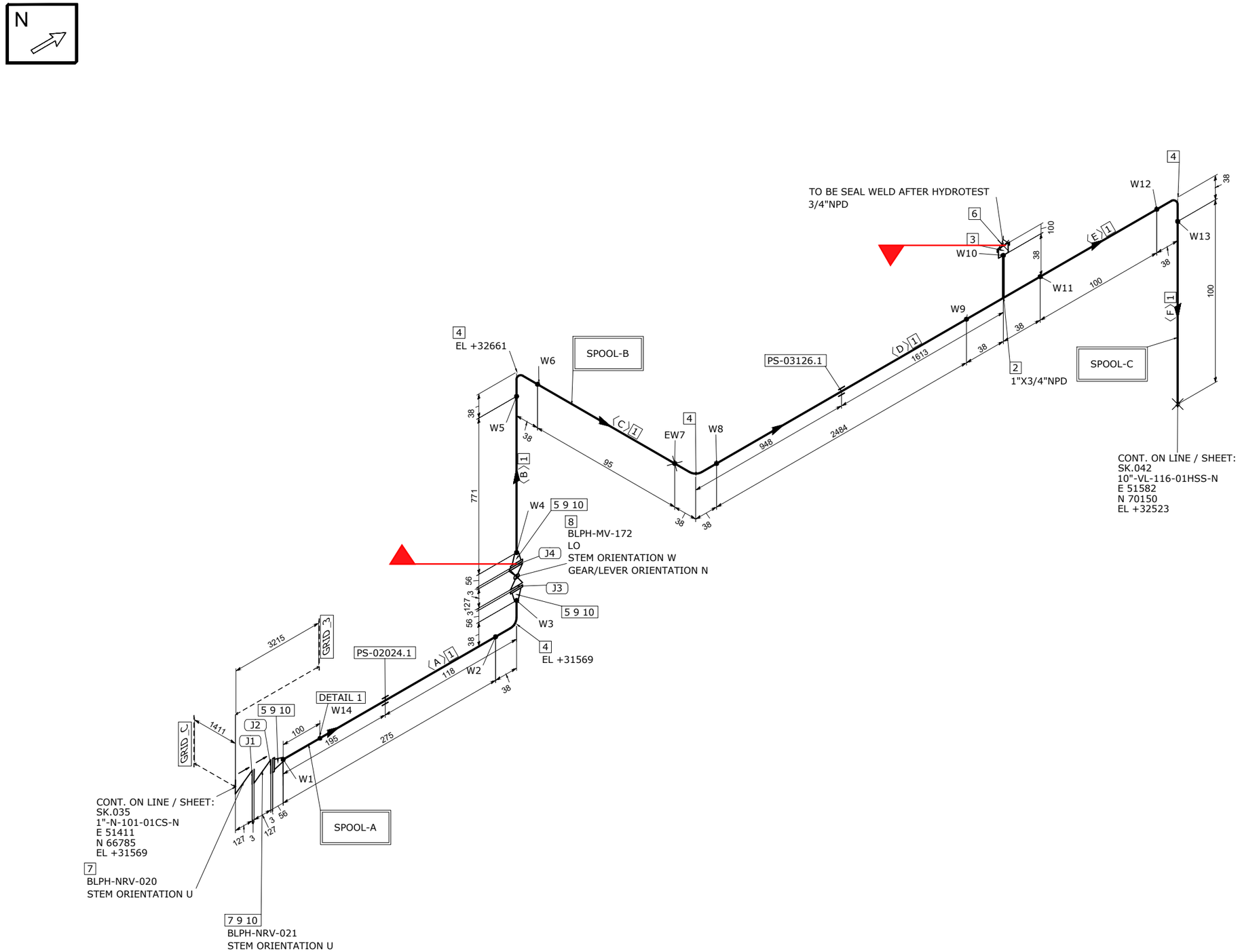
LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	I			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB.	MEDIUM Water	

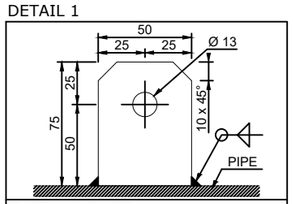
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80015
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	3.8M	9.7
2	1X3/4	TER0SS0171013Q	Tee Reducing ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	3/4	N100SS02653Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A312 Gr.TP316/316L	1	0.2
4	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	4	0.6
5	1	FLW0SS00930100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F316/316L	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	3/4	CAPFSS00023Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F316/316L	1	0.2
7	1	VDRNNN02460100	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01C02RFH	2	0.0
8	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	6.0
9	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	4	0.2
10	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	1.9

FABRICATION WEIGHT [kg]	15.1
ERECTION WEIGHT [kg]	8.3
OVERALL WEIGHT [kg]	23.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
EW7	1	BW
W8	1	BW
W9	1	BW
W10	3/4	BW
W11	1	BW
W12	1	BW
W13	1	BW
W14		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	275	BEVEL	BEVEL
B	1	771	BEVEL	BEVEL
C	1	95	BEVEL	BEVEL
D	1	2484	BEVEL	BEVEL
E	1	100	BEVEL	BEVEL
F	1	100	BEVEL	BEVEL

SUPPORT LIST

PS-02024.1
PS-03126.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	3	3.7
B	3	3.8
C	5.75	7.6
MONT	1	8.3

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-N-154-01HSS-N

SK.065

LINE DATA							
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

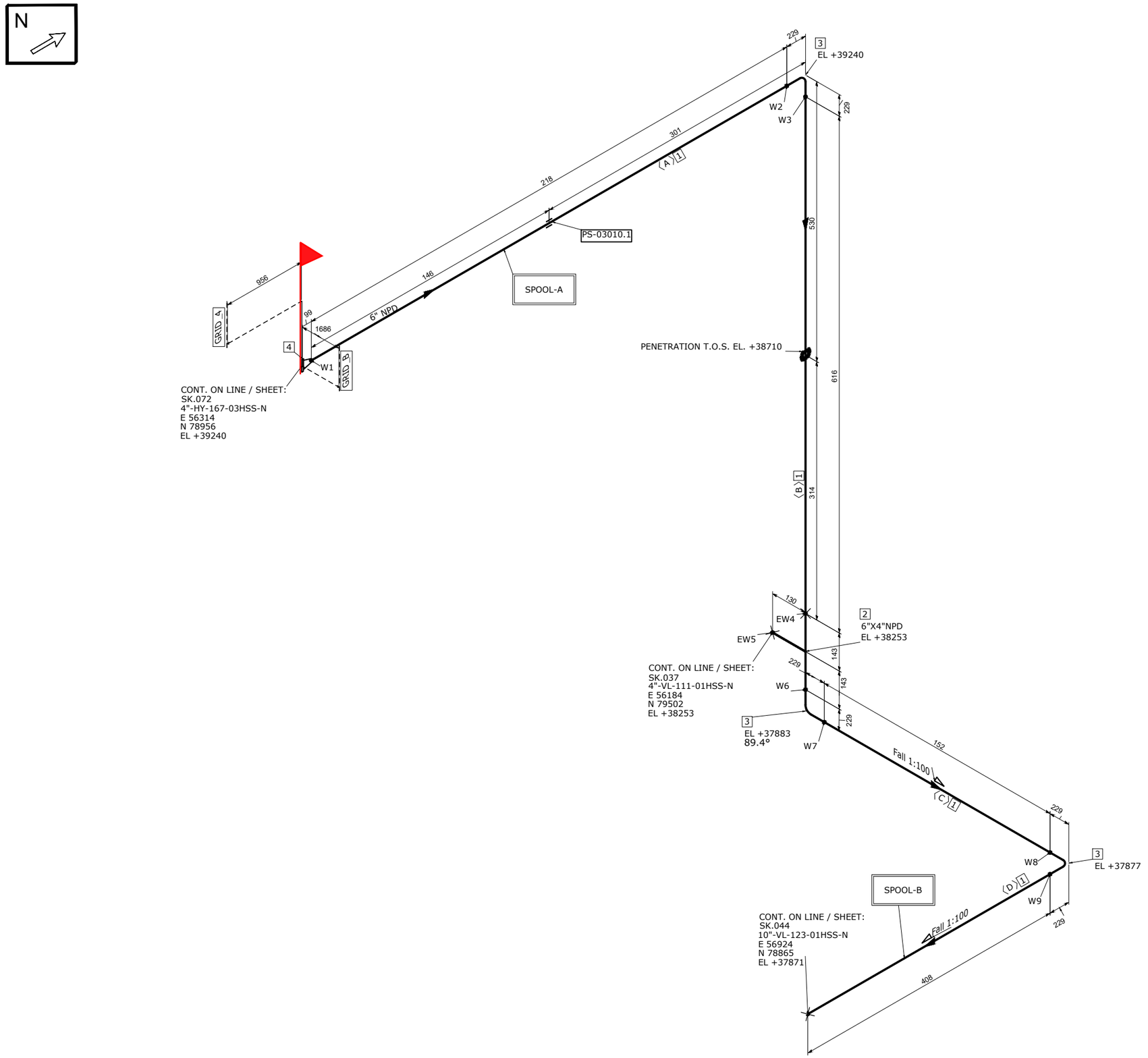
REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80028
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

43-00-TP-024

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	20-08-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00065
SHEET / OF	1/1
REV.	00



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	6	PIPESS00570600	Pipe ASME B36.19M PE 3,4 SML ASTM A312 Gr.TP316/316L	1.4M	19.6
2	6X4	TER0SS00170604	Tee Reducing ASME B16.9 BW 3,4x3,05 WRS ASTM A403 Gr.WP316/316L	1	7.8
3	6	E90RSS01030600	90 Deg Elbow Long Radius ASME B16.9 BW 3,4 WRS ASTM A403 Gr.WP316/316L	3	14.8
4	6	FLW0SS00530600	Flange WN ASME B16.5 300LB RF 3,4 FRG ASTM A182 Gr.F316/316L	1	19.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

FABRICATION WEIGHT [kg]	61.5
ERECTION WEIGHT [kg]	0.0
OVERALL WEIGHT [kg]	61.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	6	BW
W2	6	BW
W3	6	BW
EW4	6	BW
EW5	4	BW
W6	6	BW
W7	6	BW
W8	6	BW
W9	6	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	6	219	BEVEL	BEVEL
B	6	616	BEVEL	BEVEL
C	6	152	BEVEL	BEVEL
D	6	408	BEVEL	BEVEL

SUPPORT LIST

PS-03010.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	18	35.9
B	24	25.5
MONT	10	0.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 6"-VL-168-01HSS-N

SK.073

43-00-TP-024

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	20-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00073			SHEET / OF	1/1
						REV.	00

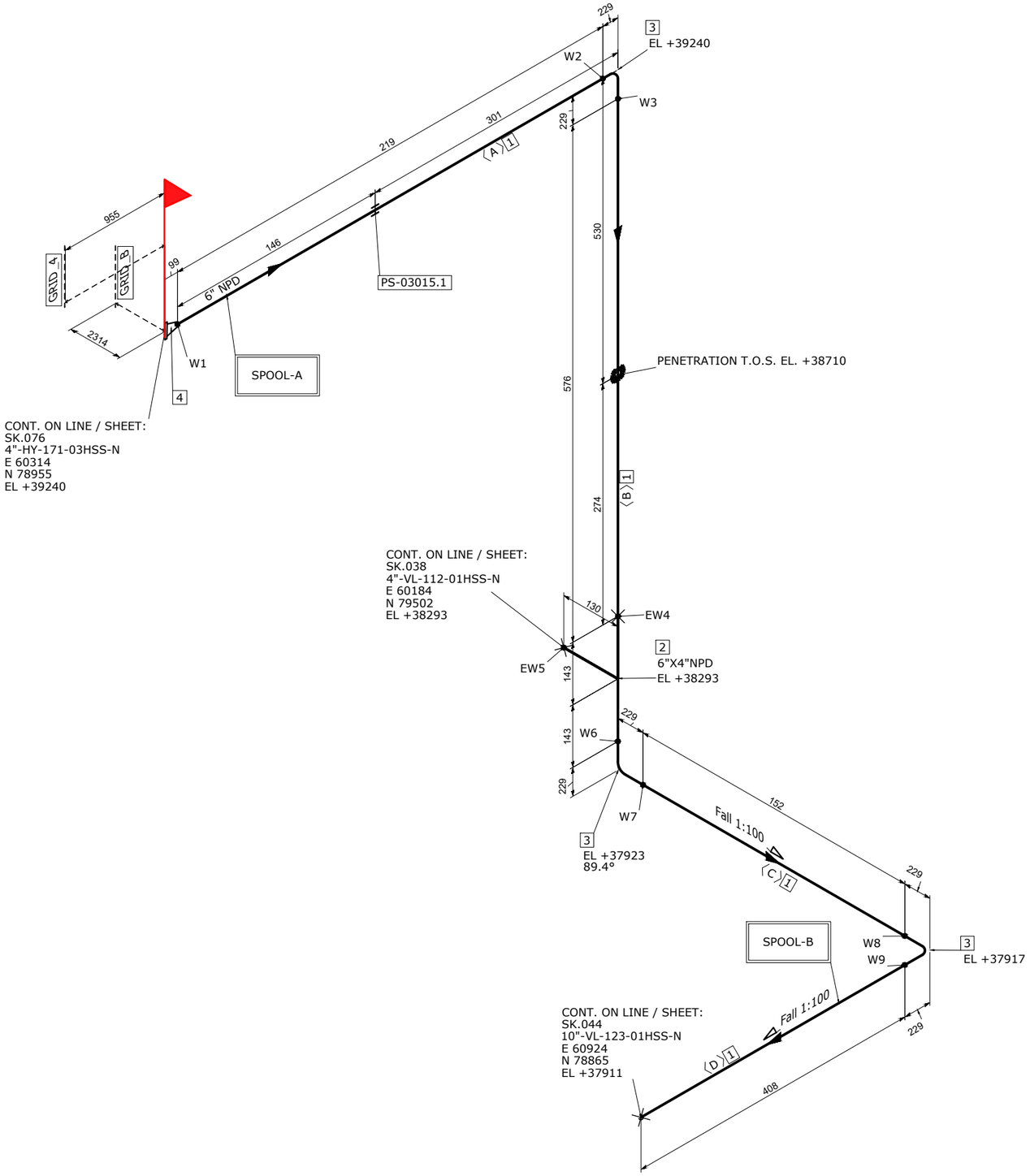
LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II					
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas					
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5	[barg]	TEMP. -29 / 100	[°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25	[barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80016
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	6	PIPESS00570600	Pipe ASME B36.19M PE 3,4 SML ASTM A312 Gr.TP316/316L	1.4M	19.1
2	6X4	TER0SS00170604	Tee Reducing ASME B16.9 BW 3,4x3,05 WRS ASTM A403 Gr.WP316/316L	1	7.8
3	6	E90RSS01030600	90 Deg Elbow Long Radius ASME B16.9 BW 3,4 WRS ASTM A403 Gr.WP316/316L	3	14.8
4	6	FLW0SS00530600	Flange WN ASME B16.5 300LB RF 3,4 FRG ASTM A182 Gr.F316/316L	1	19.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

FABRICATION WEIGHT [kg]	61.0
ERECTION WEIGHT [kg]	0.0
OVERALL WEIGHT [kg]	61.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	6	BW
W2	6	BW
W3	6	BW
EW4	6	BW
EW5	4	BW
W6	6	BW
W7	6	BW
W8	6	BW
W9	6	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	6	219	BEVEL	BEVEL
B	6	576	BEVEL	BEVEL
C	6	152	BEVEL	BEVEL
D	6	408	BEVEL	BEVEL

SUPPORT LIST

PS-03015.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	18	35.4
B	24	25.5
MONT	10	0.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 6"-VL-172-01HSS-N

SK.077

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 20-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00077 | SHEET / OF: 1/1 | REV.: 00

43-00-TP-024

MASTER

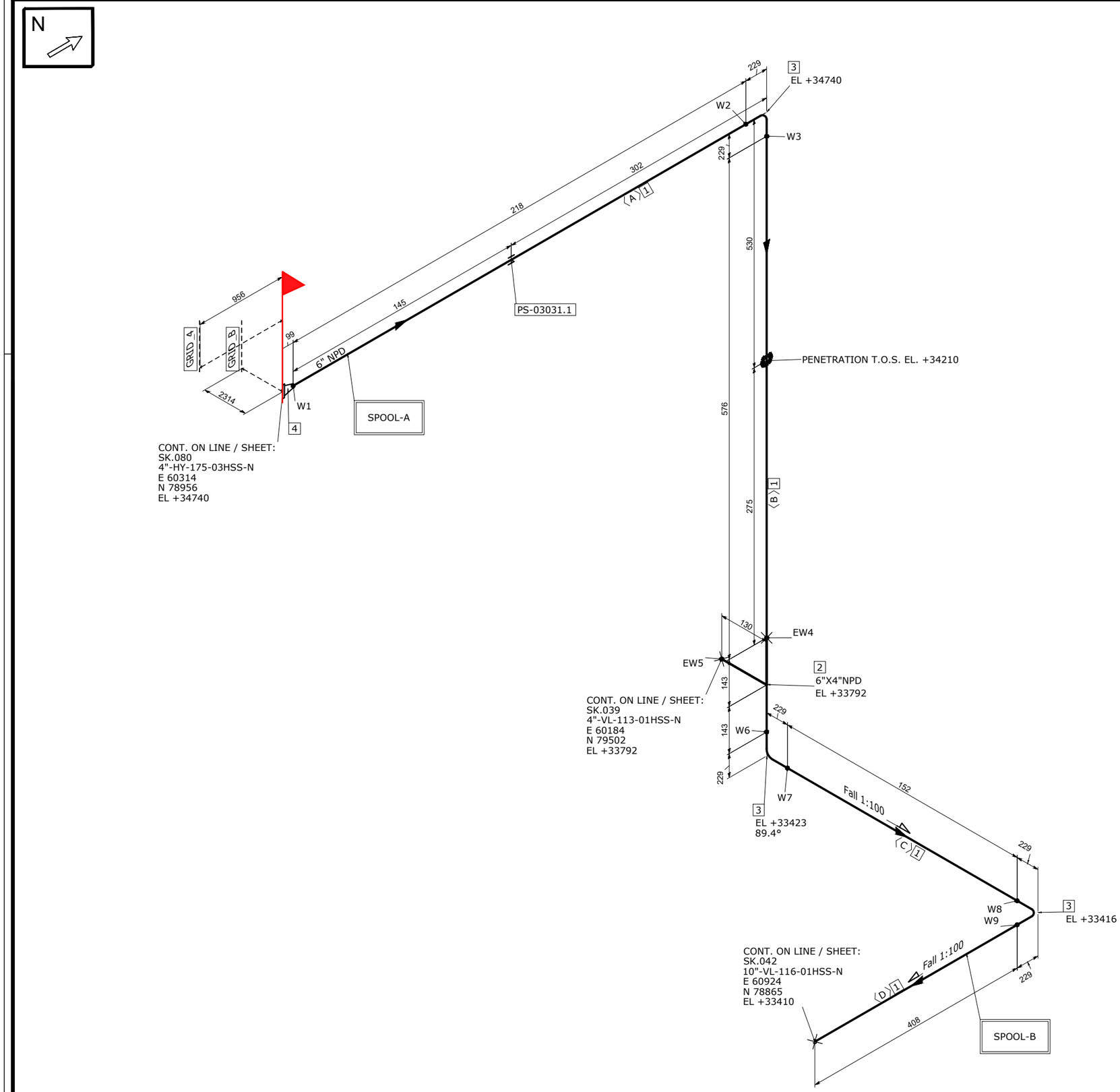
LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002		FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]		DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	NA			TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80017
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	6	PIPESS00570600	Pipe ASME B36.19M PE 3,4 SML ASTM A312 Gr.TP316/316L	1.4M	19.0
2	6X4	TER0SS00170604	Tee Reducing ASME B16.9 BW 3,4x3,05 WRS ASTM A403 Gr.WP316/316L	1	7.8
3	6	E90RSS01030600	90 Deg Elbow Long Radius ASME B16.9 BW 3,4 WRS ASTM A403 Gr.WP316/316L	3	14.8
4	6	FLW0SS00530600	Flange WN ASME B16.5 300LB RF 3,4 FRG ASTM A182 Gr.F316/316L	1	19.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

FABRICATION WEIGHT [kg]	60.9
ERECTION WEIGHT [kg]	0.0
OVERALL WEIGHT [kg]	60.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	6	BW
W2	6	BW
W3	6	BW
EW4	6	BW
EW5	4	BW
W6	6	BW
W7	6	BW
W8	6	BW
W9	6	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	6	218	BEVEL	BEVEL
B	6	576	BEVEL	BEVEL
C	6	152	BEVEL	BEVEL
D	6	408	BEVEL	BEVEL

SUPPORT LIST

PS-03031.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	18	35.4
B	24	25.5
MONT	10	0.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 6"-VL-176-01HSS-N

SK.081

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 20-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00081 | SHEET / OF: 1/1 | REV.: 00

43-00-TP-024

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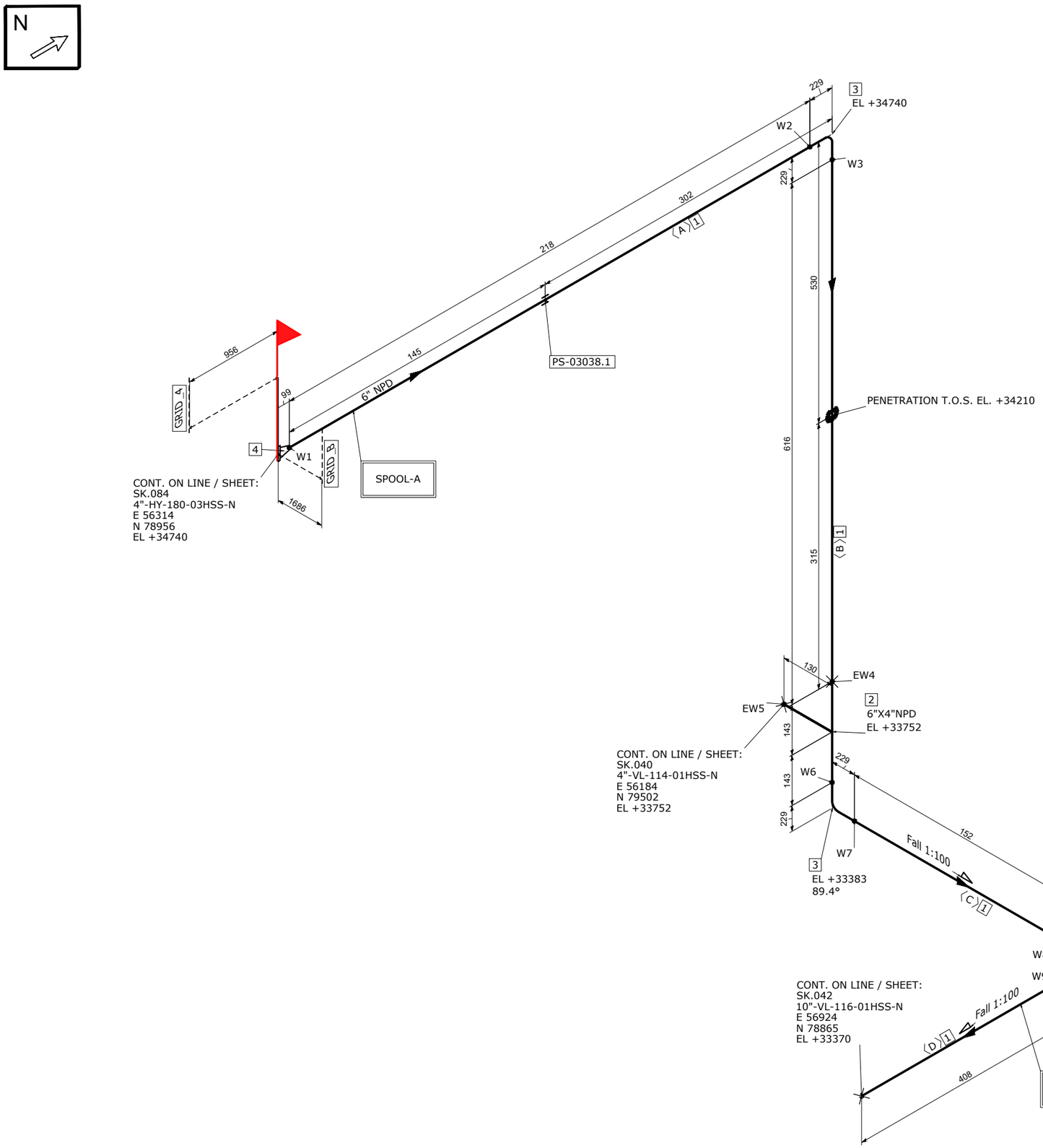
LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II					
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	GAS					
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5	[barg]	TEMP. -29 / 100	[°C]		
HEAT TRACING	NA		TEST	PRESS. 5.25	[barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80018
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	6	PIPESS00570600	Pipe ASME B36.19M PE 3,4 SML ASTM A312 Gr.TP316/316L	1.4M	19.6
2	6X4	TER0SS00170604	Tee Reducing ASME B16.9 BW 3,4x3,05 WRS ASTM A403 Gr.WP316/316L	1	7.8
3	6	E90RSS01030600	90 Deg Elbow Long Radius ASME B16.9 BW 3,4 WRS ASTM A403 Gr.WP316/316L	3	14.8
4	6	FLW0SS00530600	Flange WN ASME B16.5 300LB RF 3,4 FRG ASTM	1	19.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

FABRICATION WEIGHT [kg]	61.5
ERECTION WEIGHT [kg]	0.0
OVERALL WEIGHT [kg]	61.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	6	BW
W2	6	BW
W3	6	BW
EW4	6	BW
EW5	4	BW
W6	6	BW
W7	6	BW
W8	6	BW
W9	6	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	6	219	BEVEL	BEVEL
B	6	616	BEVEL	BEVEL
C	6	152	BEVEL	BEVEL
D	6	408	BEVEL	BEVEL

SUPPORT LIST

PS-03038.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	18	35.9
B	24	25.5
MONT	10	0.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 6"-VL-181-01HSS-N

SK.085

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 20-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00085 | SHEET / OF: 1/1 | REV.: 00

43-00-TP-024

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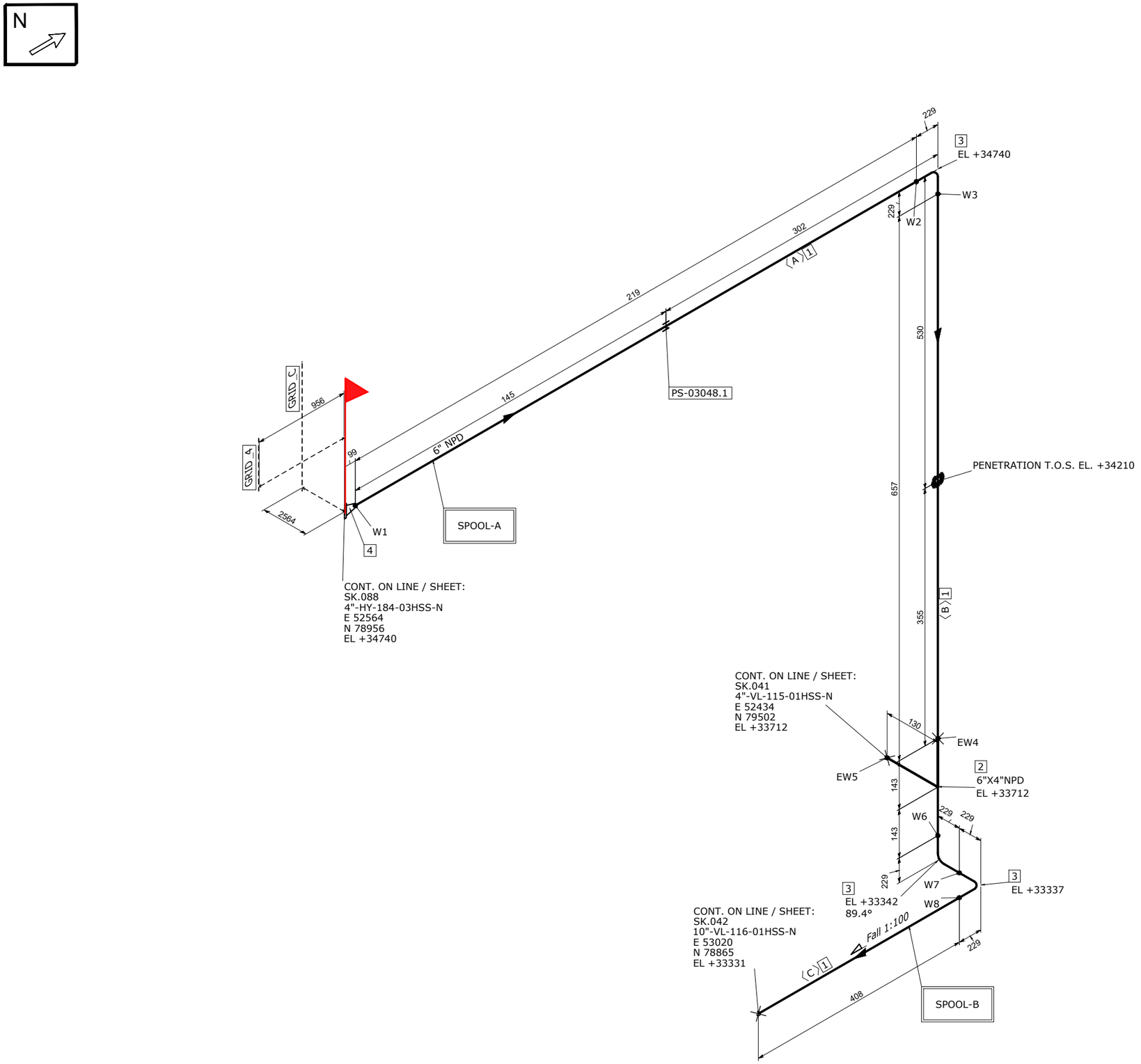
LINE DATA

NDT INSPECTION CATEGORY	1	PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	6	PIPESS00570600	Pipe ASME B36.19M PE 3,4 SML ASTM A312 Gr.TP316/316L	1.3M	18.0
2	6X4	TER0SS00170604	Tee Reducing ASME B16.9 BW 3,4x3,05 WRS ASTM A403 Gr.WP316/316L	1	7.8
3	6	E90RSS01030600	90 Deg Elbow Long Radius ASME B16.9 BW 3,4 WRS ASTM A403 Gr.WP316/316L	3	14.8
4	6	FLW0SS00530600	Flange WN ASME B16.5 300LB RF 3,4 FRG ASTM A182 Gr.F316/316L	1	19.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

FABRICATION WEIGHT [kg]	59.9
ERECTION WEIGHT [kg]	0.0
OVERALL WEIGHT [kg]	59.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	6	BW
W2	6	BW
W3	6	BW
EW4	6	BW
EW5	4	BW
W6	6	BW
W7	6	BW
W8	6	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	6	219	BEVEL	BEVEL
B	6	657	BEVEL	BEVEL
C	6	408	BEVEL	BEVEL

SUPPORT LIST

PS-03048.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	18	36.5
B	18	23.4
MONT	10	0.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 6"-VL-185-01HSS-N

SK.089

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	20-08-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00089
SHEET / OF	1/1
REV.	00

43-00-TP-024

MASTER

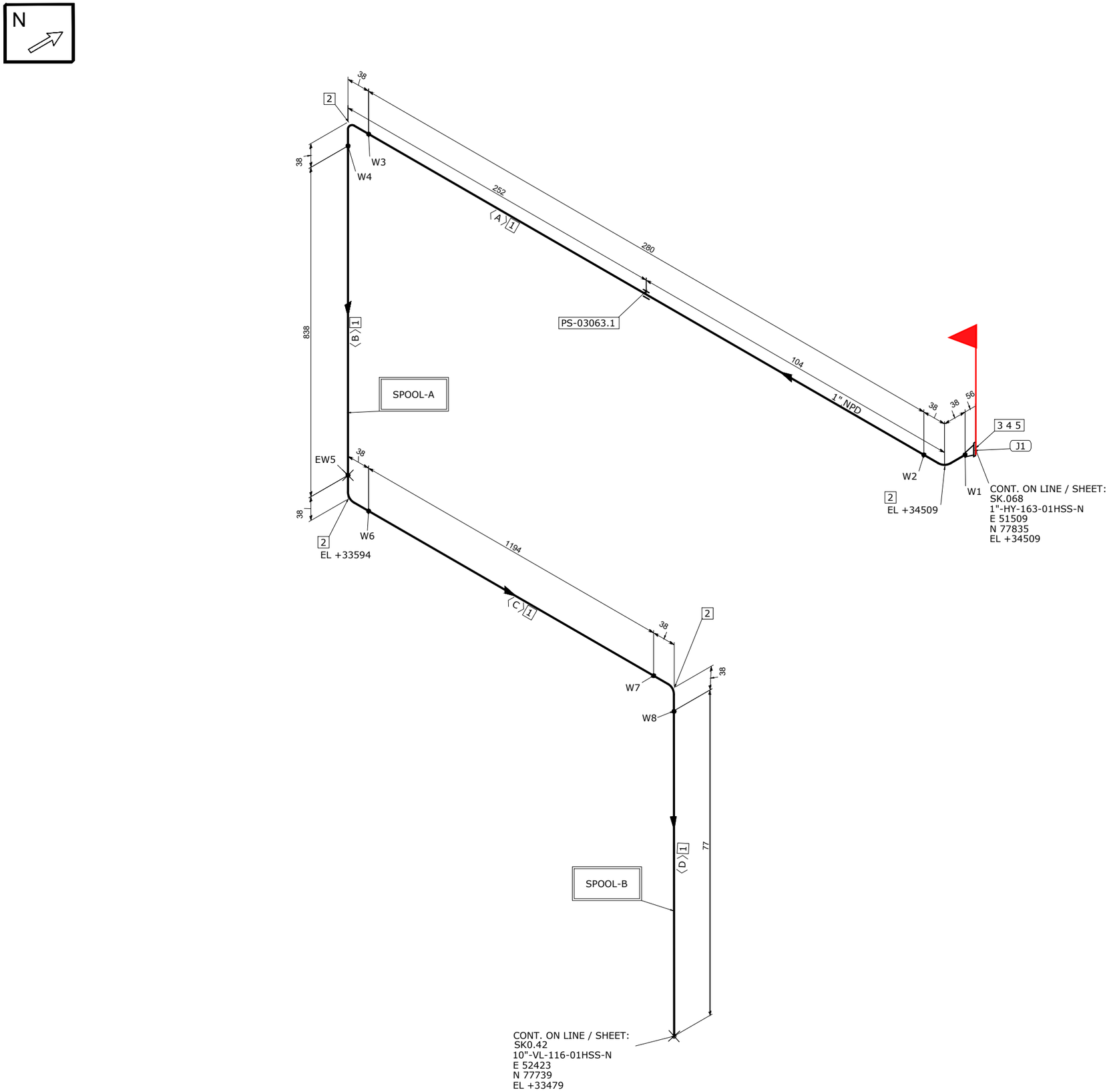
LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80020
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	2.4M	6.1
2	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	4	0.6
3	1	FLW0SS00930100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	8.1
ERECTION WEIGHT [kg]	0.6
OVERALL WEIGHT [kg]	8.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
EW5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	280	BEVEL	BEVEL
B	1	839	BEVEL	BEVEL
C	1	1194	BEVEL	BEVEL
D	1	77	BEVEL	BEVEL

SUPPORT LIST

PS-03063.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4	4.6
B	3	3.5
MONT	1	0.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-VL-293-01HSS-N

SK.157

43-00-TP-024

MASTER

LINE DATA									
NDT INSPECTION CATEGORY	1			PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002		FLUID PHASE	Gas				
INSULATION	TYPE N	THICKNESS [mm]		DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A			TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80012
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

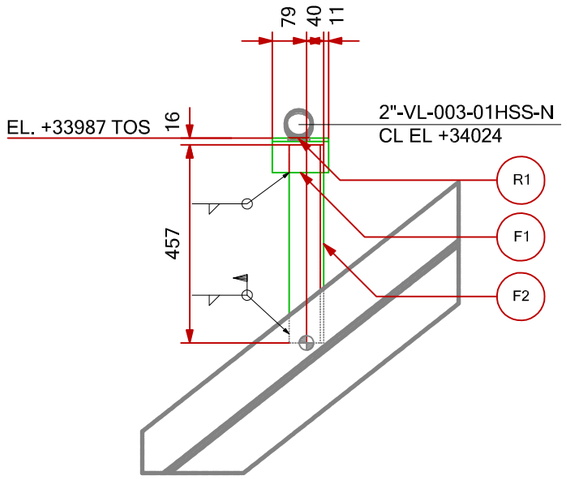
NOTES

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 20-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00157	SHEET / OF 1/1	REV. 00

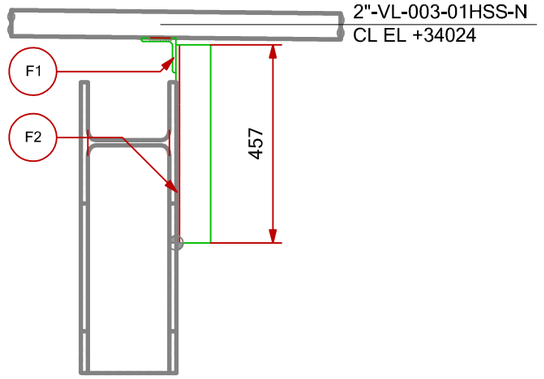
6. EXTRACT OF SUPPORT LIST & DETAILS

SUPPORT LIST

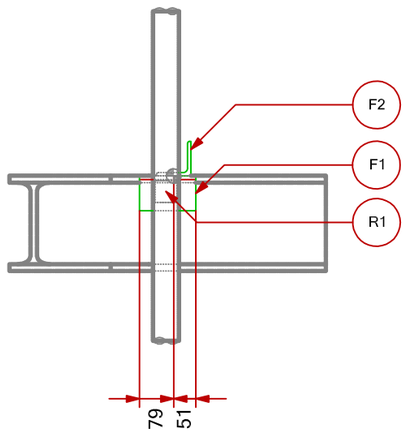
SUPPORT	SUFFIX	SERVICE	DECK IDENTIFICATION	SUB ASSEMBLY	LINE	SUPPORTS STANDARD	NDT CATEGORY	QUANTITY	TOT. WEIGTH (KG)	PAINTING SURFACE (SQM)	REV	DATE	STATUS	NOTES	Test Pack N°
PS-03034	B1	PIP	UPPER DECK		2"-VL-003-01HSS-N	C-16 - 50 - 50 - 5		1	0,028	0,000	01	04/11/2024	AFC		TP-024
PS-03035	B1	PIP	UPPER DECK		1"-VL-014-01HSS-N	C-16 - 50 - 50 - 5		1	0,028	0,000	01	04/11/2024	AFC		TP-024
PS-03035	B2	PIP	UPPER DECK		2"-VL-003-01HSS-N	C-16 - 50 - 40 - 5		1	0,022	0,000	01	04/11/2024	AFC		TP-024
PS-03005	B1	PIP	PAU		6"-VL-145-01HSS-N	S-211 - 6"		1	1,835	0,000	01	04/11/2024	AFC		TP-024
PS-03010	B1	PIP	PAU		6"-VL-168-01HSS-N	S-211 - 6"		1	1,835	0,000	01	04/11/2024	AFC		TP-024
PS-03015	B1	PIP	PAU		6"-VL-172-01HSS-N	S-211 - 6"		1	1,835	0,000	01	04/11/2024	AFC		TP-024
PS-03016	B1	PIP	PAU		10"-VL-123-01HSS-N	S-211 - 10"		1	2,350	0,000	01	04/11/2024	AFC		TP-024
PS-03016	B2	PIP	PAU		10"-VL-123-01HSS-N	S-211 - 10"		1	2,350	0,000	01	04/11/2024	AFC		TP-024
PS-03017	B1	PIP	PAU		10"-VL-123-01HSS-N	S-205 - C - 10"		1	6,080	0,181	01	04/11/2024	AFC		TP-024
PS-03017	B2	PIP	PAU		10"-VL-123-01HSS-N	C-40 - A - 10" - 550 - *** - 120 - 180		1	4,815	0,293	01	04/11/2024	AFC		TP-024
PS-03018	B1	PIP	PAU		10"-VL-123-01HSS-N	C-16 - 100 - 100 - 5		1	0,110	0,000	01	04/11/2024	AFC		TP-024
PS-03018	B2	PIP	PAU		4"-VL-025-01HSS-N	S-211 - 4"		1	0,956	0,000	01	04/11/2024	AFC		TP-024
PS-03019	B1	PIP	PAU		10"-VL-123-01HSS-N	S-205 - C - 10"		1	6,080	0,181	01	04/11/2024	AFC		TP-024
PS-03019	B2	PIP	PAU		10"-VL-123-01HSS-N	C-40 - A - 10" - 550 - *** - 120 - 180		1	4,815	0,293	01	04/11/2024	AFC		TP-024
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PS-03020	B2	PIP	PAU		10"-VL-123-01HSS-N	S-211 - 10"		1	2,350	0,000	01	04/11/2024	AFC		TP-024
PS-03021	B1	PIP	PAU		4"-VL-025-01HSS-N	S-211 - 4"		1	0,956	0,000	01	04/11/2024	AFC		TP-024
PS-03022	B1	PIP	PAU		4"-VL-111-01HSS-N	S-211 - 4"		1	0,956	0,000	01	04/11/2024	AFC		TP-024
PS-03022	B2	PIP	PAU		4"-VL-111-01HSS-N	S-205 - A - 4"		1	0,393	0,010	01	04/11/2024	AFC		TP-024
PS-03023	B3	PIP	PAU		4"-VL-111-01HSS-N	C-40 - A - 4" - 260 - *** - 120 - 180		1	0,660	0,056	01	04/11/2024	AFC		TP-024
PS-03024	B1	PIP	PAU		4"-VL-111-01HSS-N	S-211 - 4"		1	0,956	0,000	01	04/11/2024	AFC		TP-024
PS-03025	B1	PIP	PAU		4"-VL-112-01HSS-N	S-211 - 4"		1	0,956	0,000	01	04/11/2024	AFC		TP-024
PS-03025	B2	PIP	PAU		4"-VL-112-01HSS-N	S-205 - A - 4"		1	0,393	0,010	01	04/11/2024	AFC		TP-024
PS-03025	B3	PIP	PAU		4"-VL-112-01HSS-N	C-40 - A - 4" - 260 - *** - 120 - 180		1	0,660	0,056	01	04/11/2024	AFC		TP-024
PS-03026	B1	PIP	PAU		4"-VL-112-01HSS-N	S-211 - 4"		1	0,956	0,000	01	04/11/2024	AFC		TP-024
PS-03031	B1	PIP	PAU		6"-VL-176-01HSS-N	S-211 - 6"		1	1,835	0,000	01	04/11/2024	AFC		TP-024
PS-03032	B1	PIP	PAU		4"-VL-113-01HSS-N	S-211 - 4"		1	0,956	0,000	01	04/11/2024	AFC		TP-024
PS-03032	B2	PIP	PAU		4"-VL-113-01HSS-N	S-205 - A - 4"		1	0,393	0,010	01	04/11/2024	AFC		TP-024
PS-03032	B3	PIP	PAU		4"-VL-113-01HSS-N	C-40 - A - 4" - 260 - *** - 120 - 180		1	0,660	0,056	01	04/11/2024	AFC		TP-024
PS-03033	B1	PIP	PAU		4"-VL-113-01HSS-N	S-211 - 4"		1	0,956	0,000	01	04/11/2024	AFC		TP-024
PS-03038	B1	PIP	PAU		6"-VL-181-01HSS-N	S-211 - 6"		1	1,835	0,000	01	04/11/2024	AFC		TP-024
PS-03039	B1	PIP	PAU		4"-VL-114-01HSS-N	S-211 - 4"		1	0,956	0,000	01	04/11/2024	AFC		TP-024
PS-03039	B2	PIP	PAU		4"-VL-114-01HSS-N	S-205 - A - 4"		1	0,393	0,010	01	04/11/2024	AFC		TP-024
PS-03039	B3	PIP	PAU		4"-VL-114-01HSS-N	C-40 - A - 4" - 260 - *** - 120 - 180		1	0,660	0,056	01	04/11/2024	AFC		TP-024
PS-03045	B1	PIP	PAU		4"-VL-114-01HSS-N	S-211 - 4"		1	0,956	0,000	01	04/11/2024	AFC		TP-024
PS-03048	B1	PIP	PAU		6"-VL-185-01HSS-N	S-211 - 6"		1	1,835	0,000	01	04/11/2024	AFC		TP-024
PS-03049	B1	PIP	PAU		4"-VL-115-01HSS-N	S-211 - 4"		1	0,956	0,000	01	04/11/2024	AFC		TP-024
PS-03051	B1	PIP	PAU		6"-VL-010-01HSS-N	S-205 - C - 6"		1	3,340	0,112	01	04/11/2024	AFC		TP-024
PS-03051	B2	PIP	PAU		6"-VL-010-01HSS-N	C-40 - A - 6" - 300 - *** - 120 - 180		1	1,286	0,096	01	04/11/2024	AFC		TP-024
PS-03051	B1	PIP	PAU		6"-VL-010-01HSS-N	S-211 - 6"		1	1,835	0,000	01	04/11/2024	AFC		TP-024
PS-03051	B2	PIP	PAU		6"-VL-010-01HSS-N	S-211 - 6"		1	1,835	0,000	01	04/11/2024	AFC		TP-024
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PS-03057	B1	PIP	PAU		10"-VL-116-01HSS-N	C-16 - 80 - 80 - 5		1	0,070	0,000	01	04/11/2024	AFC		TP-024
PS-03057	B3	PIP	PAU		4"-VL-115-01HSS-N	S-211 - 4"		1	0,956	0,000	01	04/11/2024	AFC		TP-024
PS-03058	B1	PIP	PAU		10"-VL-116-01HSS-N	S-211 - 10"		1	2,350	0,000	01	04/11/2024	AFC		TP-024
PS-03059	B1	PIP	PAU		10"-VL-116-01HSS-N	S-25 - 10" - 100 - 300		1	11,764	0,296	01	04/11/2024	AFC		TP-024
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PS-03124	B1	PIP	PAU		2"-VL-003-01HSS-N	C-16 - 50 - 50 - 5		1	0,028	0,000	01	04/11/2024	AFC		TP-024
PS-03124	B2	PIP	PAU		1"-VL-014-01HSS-N	C-16 - 50 - 50 - 5		1	0,028	0,000	01	04/11/2024	AFC		TP-024
PS-03126	B1	PIP	PAU		1"-N-154-01HSS-N	S-211 - 1"		1	0,286	0,000	01	04/11/2024	AFC		TP-024
PS-03126	B2	PIP	PAU		2"-VL-003-01HSS-N	C-16 - 50 - 50 - 5		1	0,028	0,000	01	04/11/2024	AFC		TP-024
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PS-03134	B1	PIP	PAU		4"-VL-115-01HSS-N	S-205 - A - 4"		1	0,393	0,010	01	04/11/2024	AFC		TP-024
PS-03134	B2	PIP	PAU		4"-VL-115-01HSS-N	C-40 - A - 4" - 260 - *** - 120 - 180		1	0,672	0,056	01	04/11/2024	AFC		TP-024
PS-03548	B1	PIP	PAU		4"-VL-025-01HSS-N	S-205 - A - 4"		1	0,393	0,010	01	04/11/2024	AFC		TP-024
PS-03548	B2	PIP	PAU		4"-VL-025-01HSS-N	C-40 - A - 4" - 250 - *** - 120 - 180		1	0,646	0,054	01	04/11/2024	AFC		TP-024



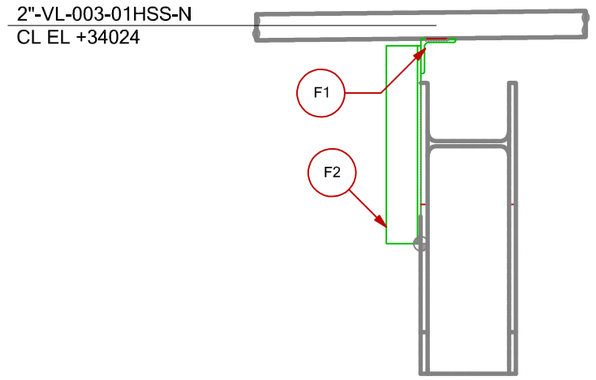
VIEW LOOKING NORTH



VIEW LOOKING WEST



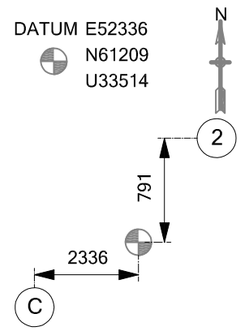
PLAN VIEW

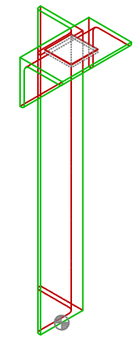


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-16-50-50-5	-	-	1	-	0.03	-
F1	BEAM	L80x80x8	Carbon Steel	130	1	9.63	1.25	0.043
F2	BEAM	L80x80x8	Carbon Steel	457	1	9.63	4.40	0.145
						TOTAL	5.7	0.19





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

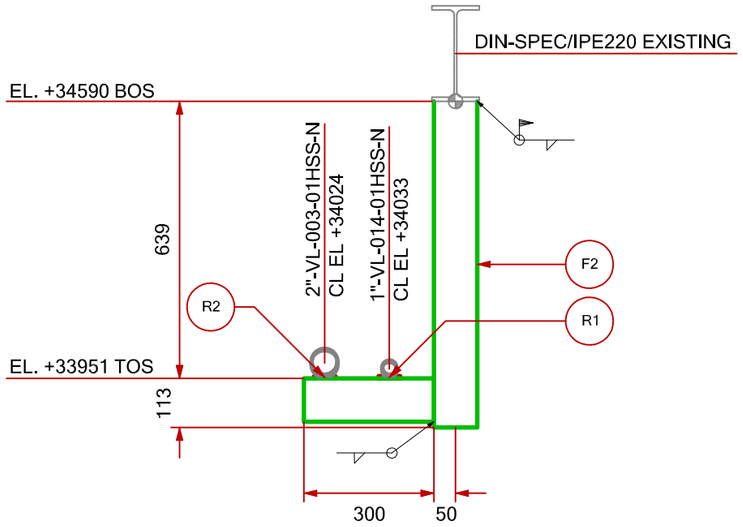
ROSETTI MARINO

TITLE :

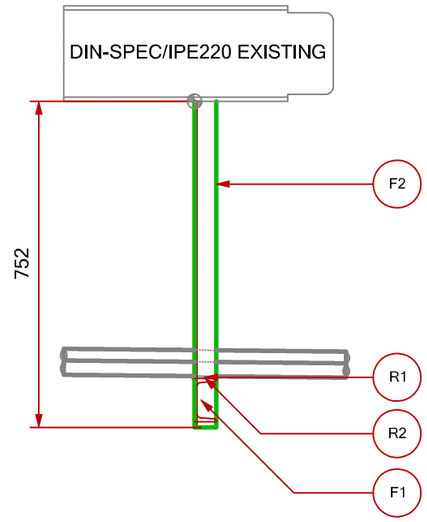
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-02034

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

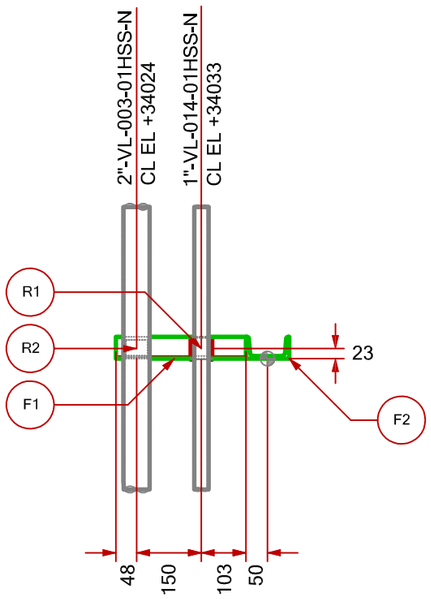
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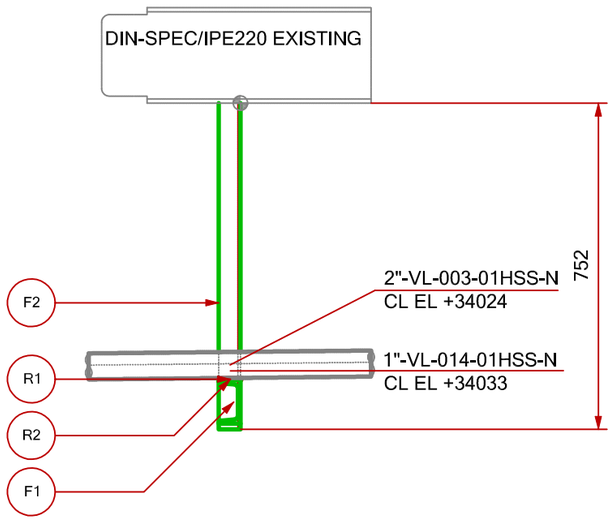
VIEW LOOKING NORTH



VIEW LOOKING WEST



PLAN VIEW

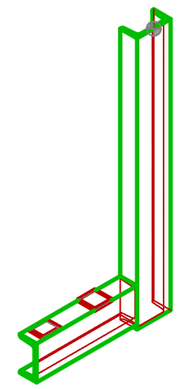


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-16-50-50-5	-	-	1	-	0.03	-
R2	STD	C-16-50-40-5	-	-	1	-	0.02	-
F1	BEAM	UPN100	Carbon Steel	300	1	10.57	3.17	0.114
F2	BEAM	UPN100	Carbon Steel	752	1	10.57	7.95	0.282
						TOTAL	11.2	0.40





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

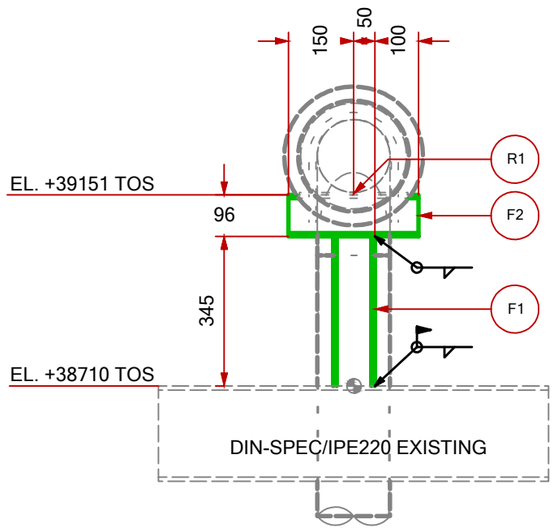
ROSETTI MARINO

TITLE :

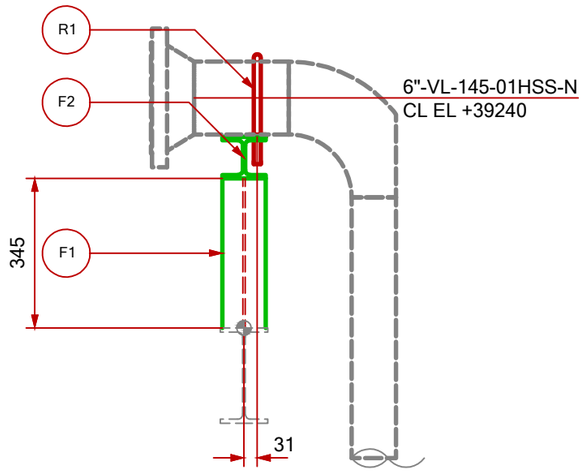
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-02035

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1 / REV. 00

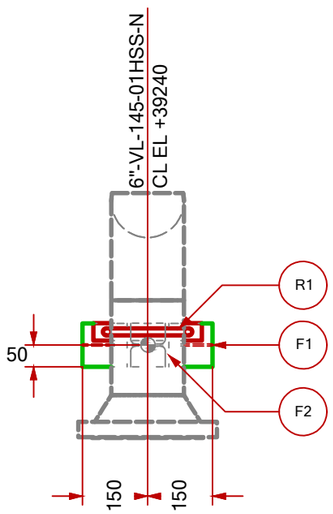
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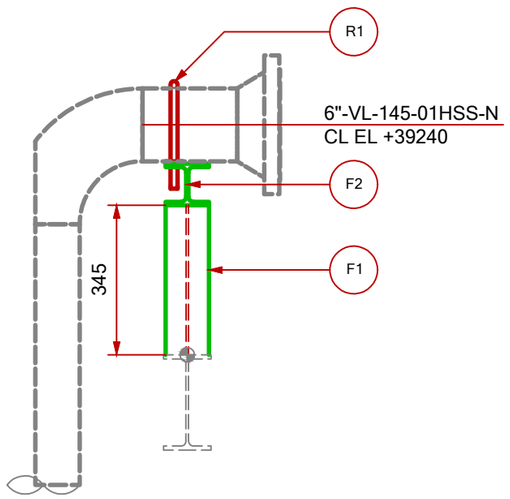
VIEW LOOKING NORTH



VIEW LOOKING WEST



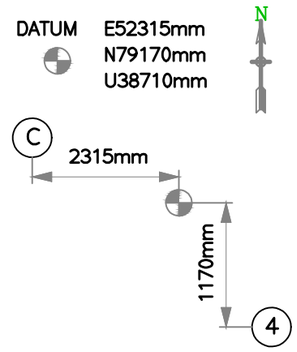
PLAN VIEW

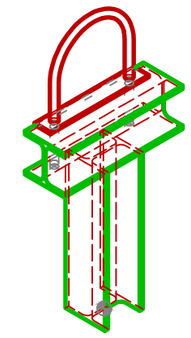


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-6"	-	-	1	-	1.84	-
F1	BEAM	HEA100	Carbon Steel	345	1	16.76	5.78	0.198
F2	BEAM	HEA100	Carbon Steel	300	1	16.76	5.03	0.173
						TOTAL	12.7	0.37





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

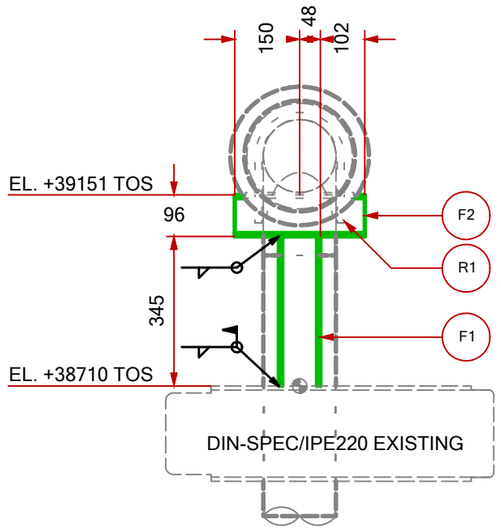
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

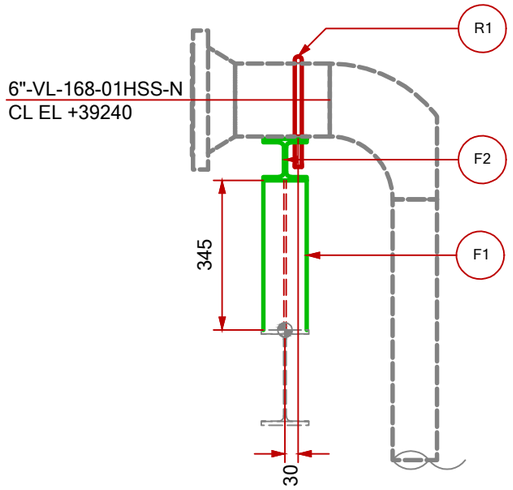
PS-03005

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

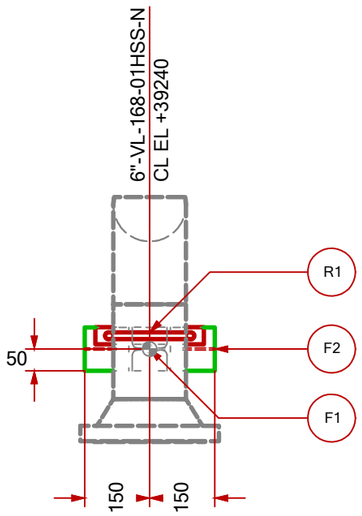
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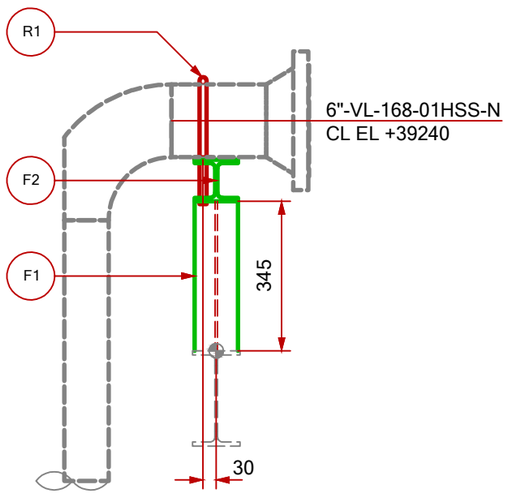
VIEW LOOKING NORTH



VIEW LOOKING WEST



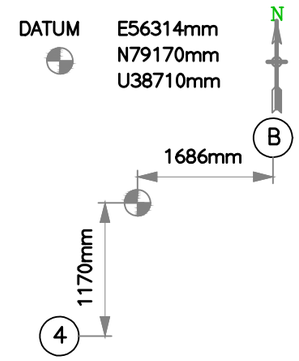
PLAN VIEW

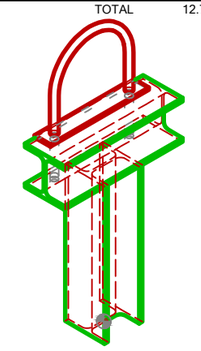


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-6"	-	-	1	-	1.84	-
F1	BEAM	HEA100	Carbon Steel	345	1	16.76	5.78	0.198
F2	BEAM	HEA100	Carbon Steel	300	1	16.76	5.03	0.173
						TOTAL	12.7	0.37





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

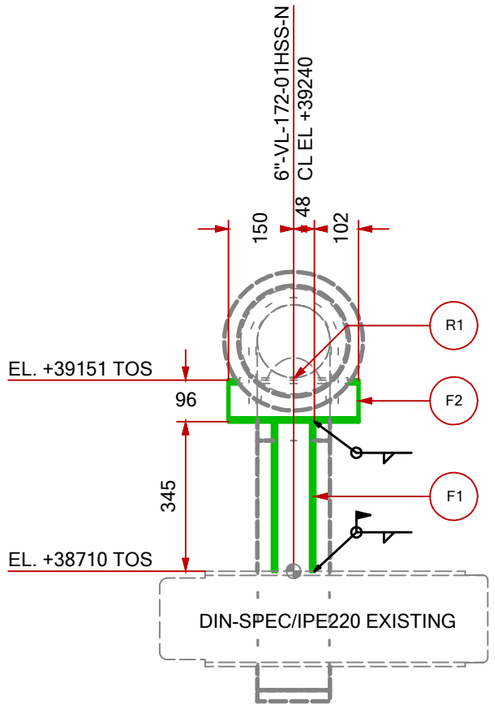
ROSETTI MARINO

TITLE :

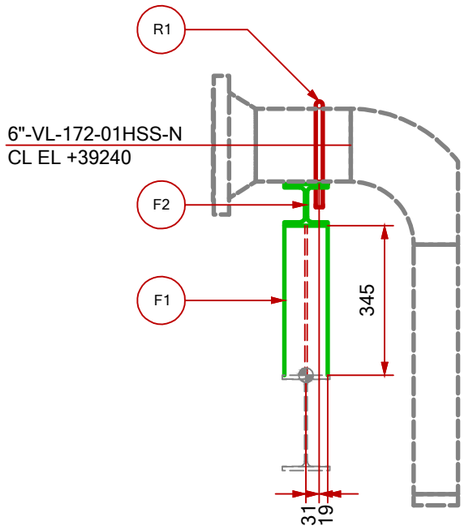
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03010

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

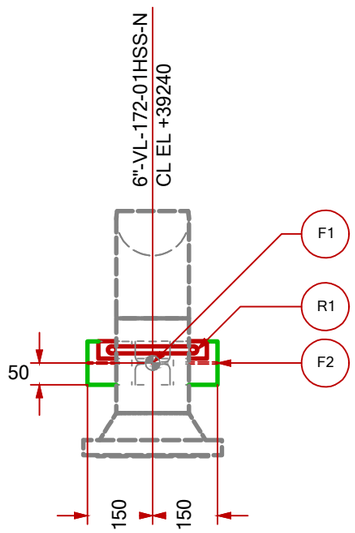
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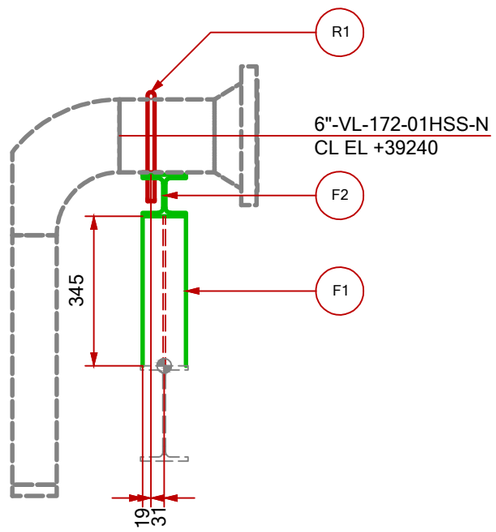
VIEW LOOKING NORTH



VIEW LOOKING WEST



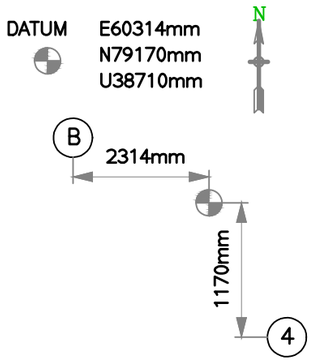
PLAN VIEW

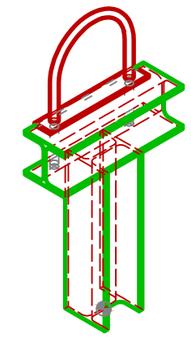


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-6"	-	-	1	-	1.84	-
F1	BEAM	HEA100	Carbon Steel	345	1	16.76	5.78	0.198
F2	BEAM	HEA100	Carbon Steel	300	1	16.76	5.03	0.173
						TOTAL	12.7	0.37





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

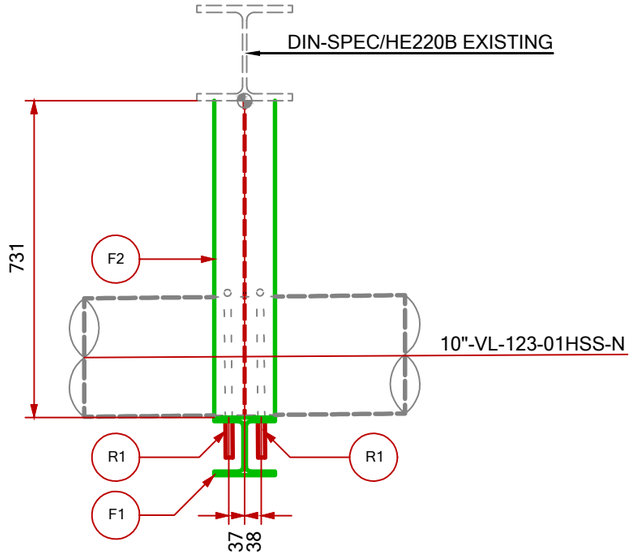
ROSETTI MARINO

TITLE :

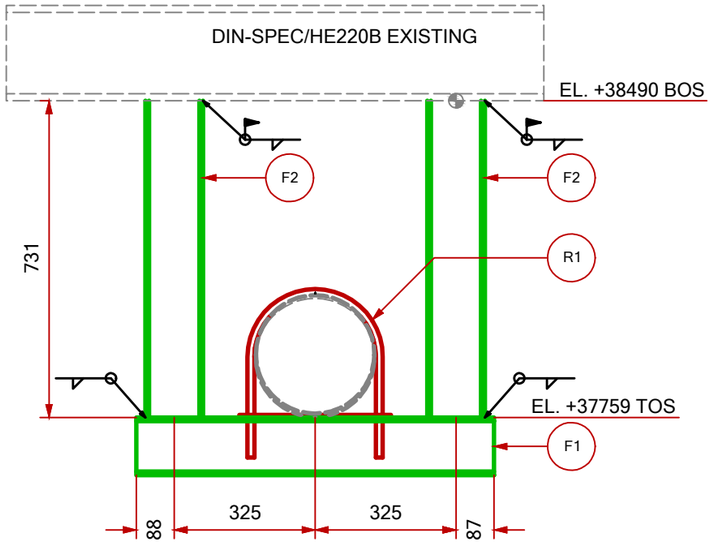
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03015

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

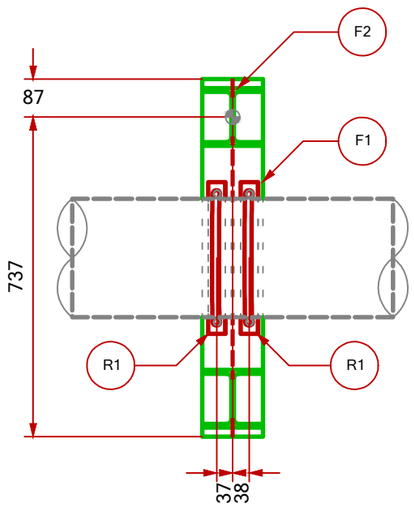
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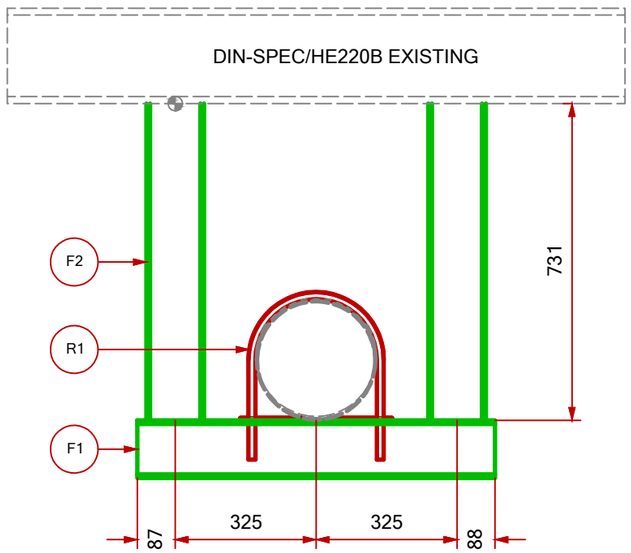
VIEW LOOKING NORTH



VIEW LOOKING WEST



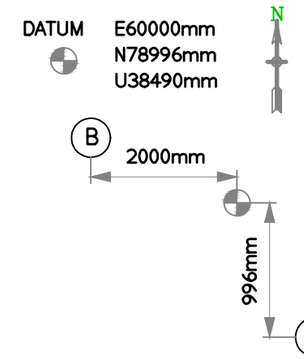
PLAN VIEW

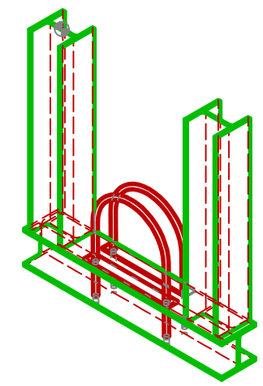


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-10"	-	-	2	-	2.35	-
F1	BEAM	HEA140	Carbon Steel	825	1	24.75	20.42	0.661
F2	BEAM	HEA140	Carbon Steel	731	2	24.75	36.18	1.172
						TOTAL	61.3	1.83





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

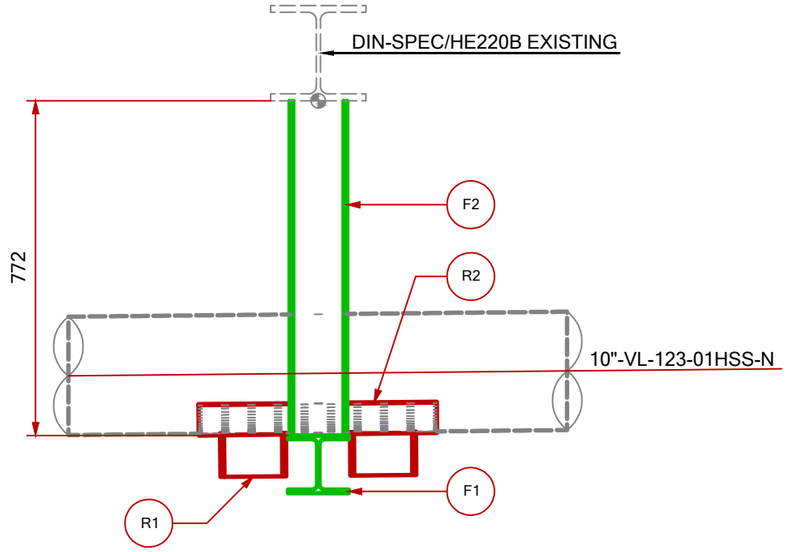
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

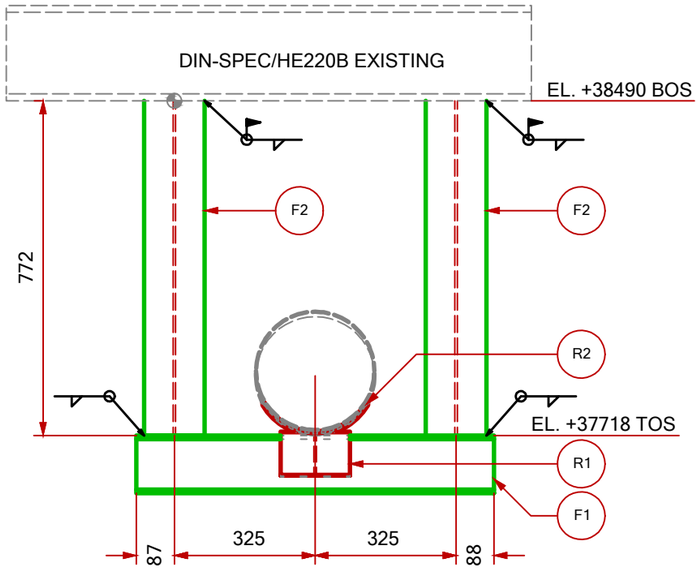
PS-03016

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

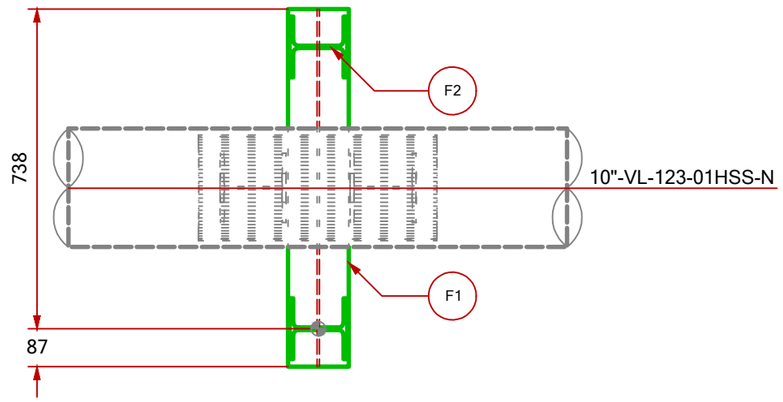
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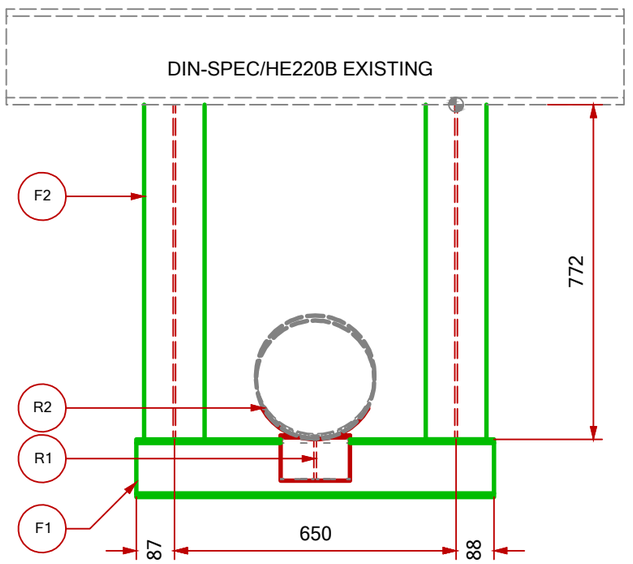
VIEW LOOKING NORTH



VIEW LOOKING WEST



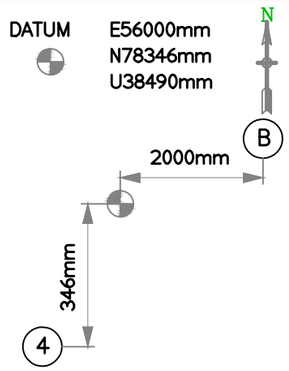
PLAN VIEW

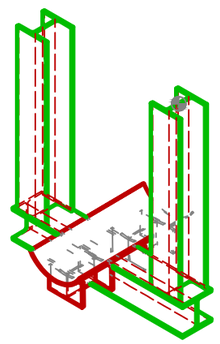


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-205-C-10"	-	-	1	-	6.08	0.181
R2	STD	C-40-A-10"-550-4.19-120-90	A312 TP316L SMLS	-	1	-	4.82	0.293
F1	BEAM	HEA140	Carbon Steel	825	1	24.75	20.42	0.661
F2	BEAM	HEA140	Carbon Steel	772	2	24.75	38.22	1.238
						TOTAL	69.5	2.37





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

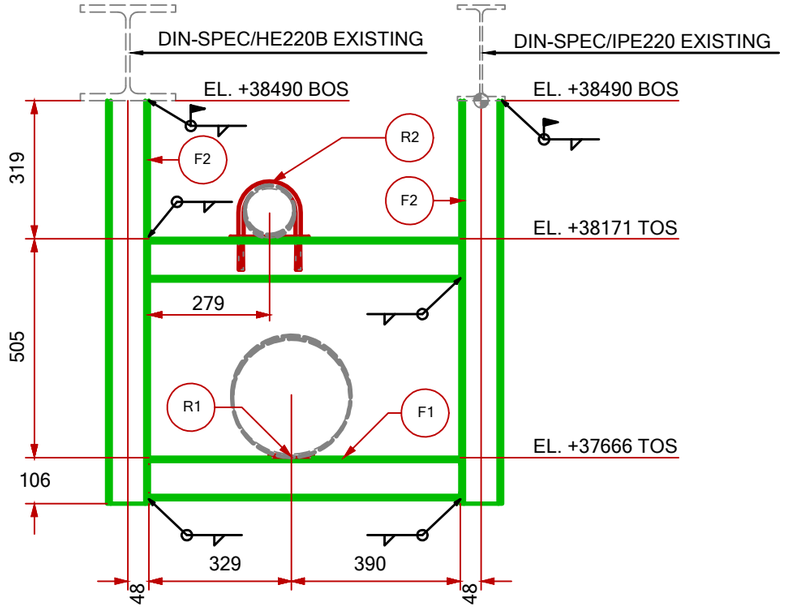
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

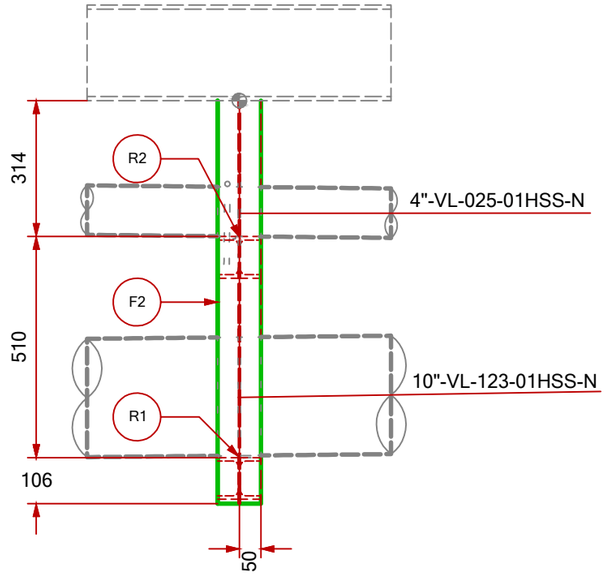
PS-03017

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

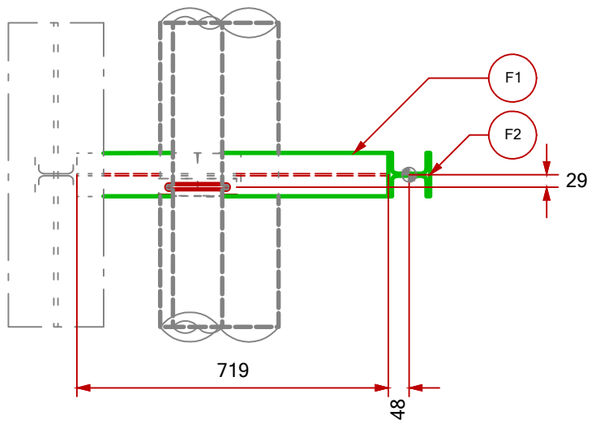
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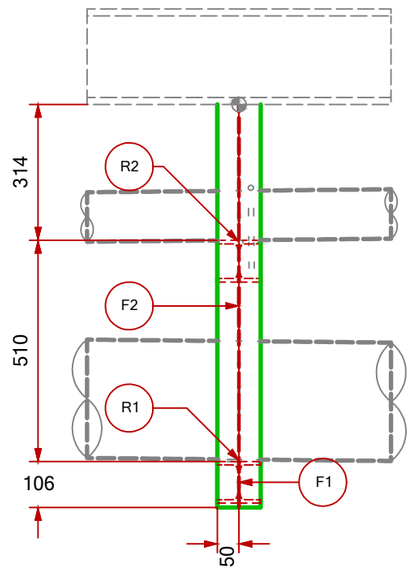
VIEW LOOKING NORTH



VIEW LOOKING WEST



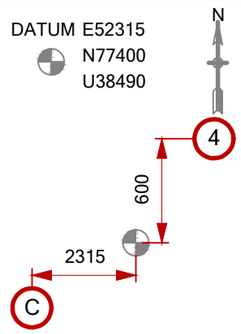
PLAN VIEW

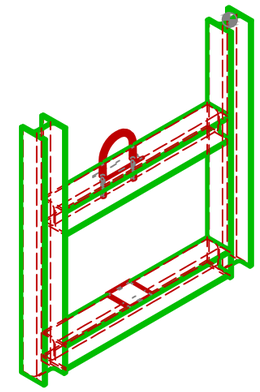


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-16-100-100-5	-	-	1	-	0.11	-
R2	STD	S-211-4"	-	-	1	-	0.96	-
F1	BEAM	HEA100	Carbon Steel	719	2	16.76	24.10	0.816
F2	BEAM	HEA100	Carbon Steel	930	2	16.76	31.16	1.052
						TOTAL	56.3	1.87





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

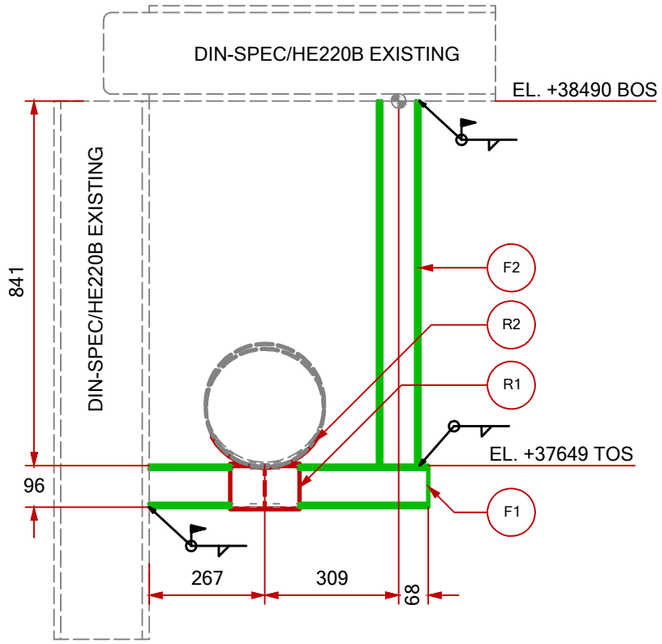
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

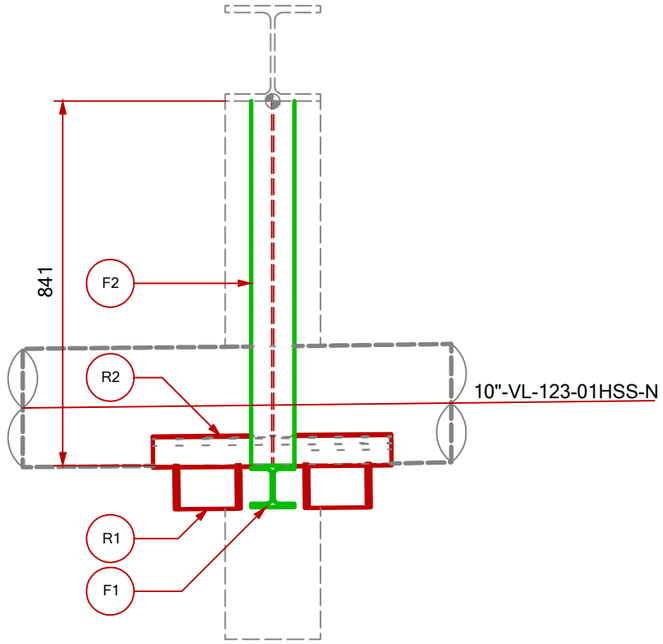
PS-03018

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1 : 10
DRAWN	CHECKED	APPROVED		DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1	REV. 00

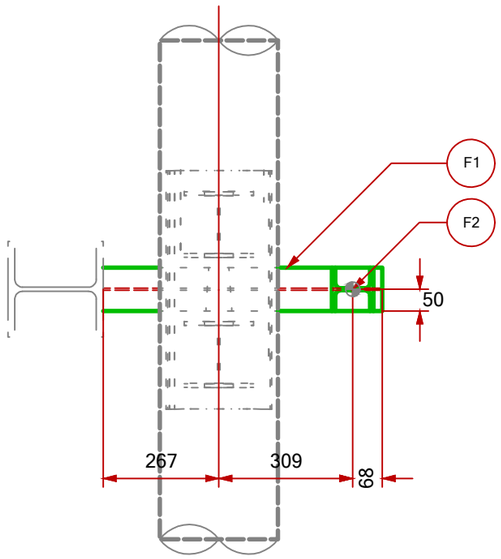
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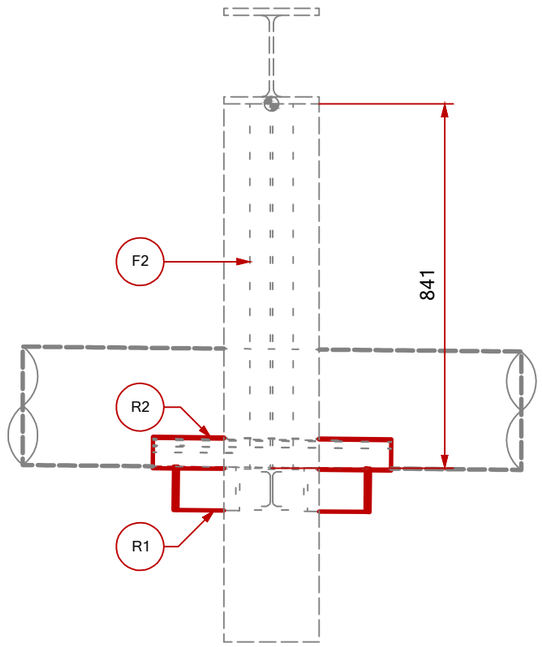
VIEW LOOKING NORTH



VIEW LOOKING WEST



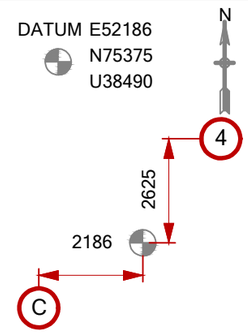
PLAN VIEW

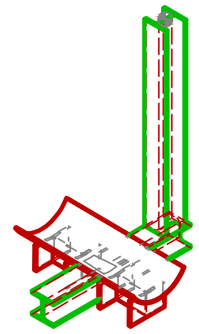


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-205-C-10"	-	-	1	-	6.08	0.181
R2	STD	C-40-A-10"-550-4.19-120-90	A312 TP316L SMLS	-	1	-	4.82	0.293
F1	BEAM	HEA100	Carbon Steel	644	1	16.76	10.79	0.365
F2	BEAM	HEA100	Carbon Steel	841	1	16.76	14.09	0.476
						TOTAL	35.8	1.32





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

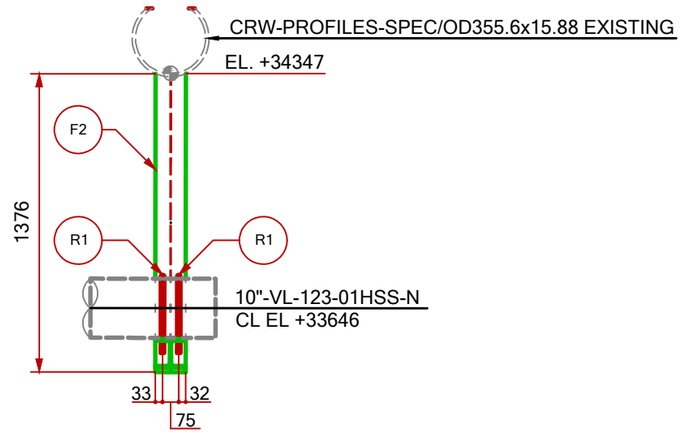
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

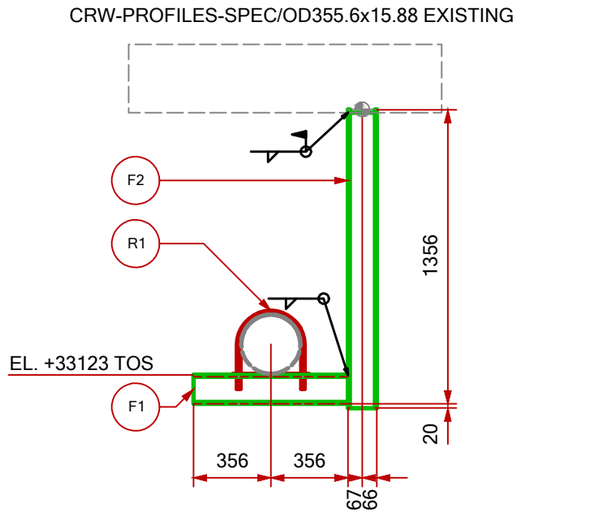
PS-03019

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

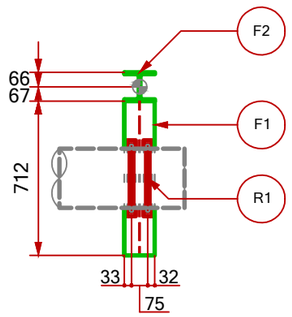
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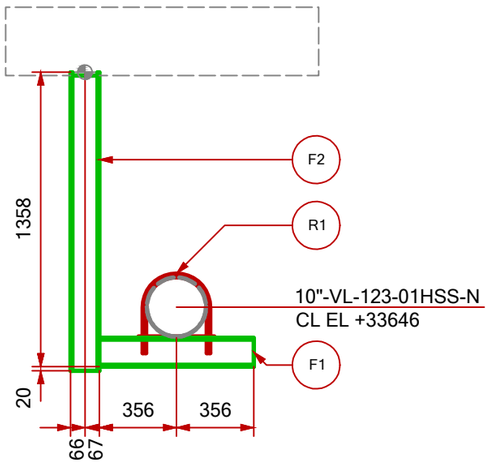
VIEW LOOKING NORTH



VIEW LOOKING WEST



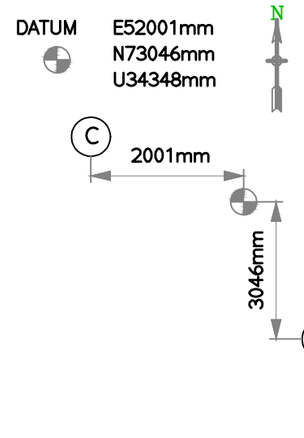
PLAN VIEW

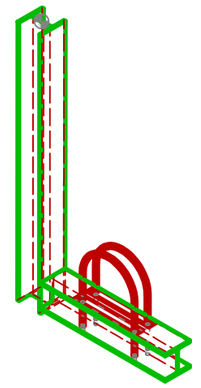


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-10"	-	-	2	-	2.35	-
F1	BEAM	HEA140	EN 10025 S355J2	712	1	24.75	17.62	0.572
F2	BEAM	HEA140	EN 10025 S355J2	1376	1	24.75	34.11	1.100
						TOTAL	56.4	1.67





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

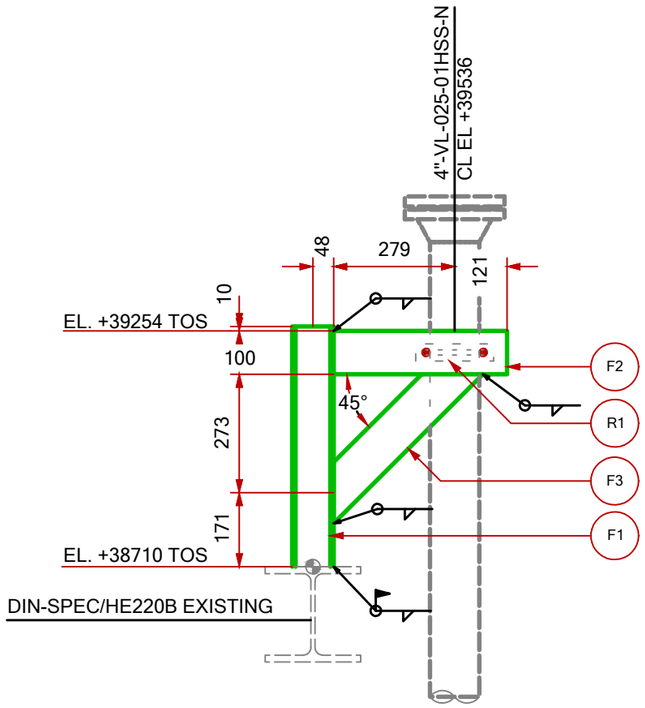
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

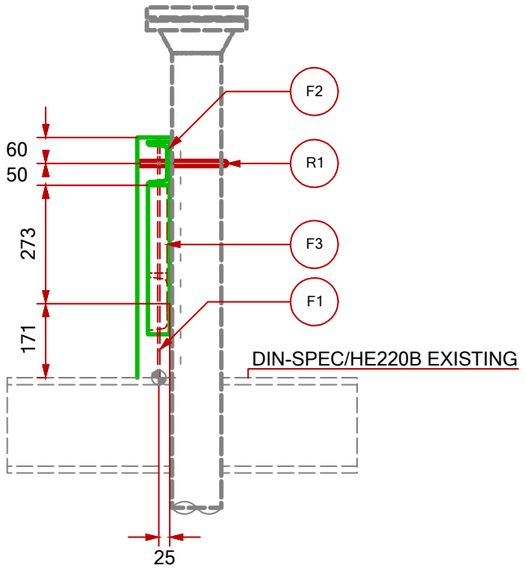
PS-03020

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 20
DRAWN	CHECKED	APPROVED	DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1 / REV. 00

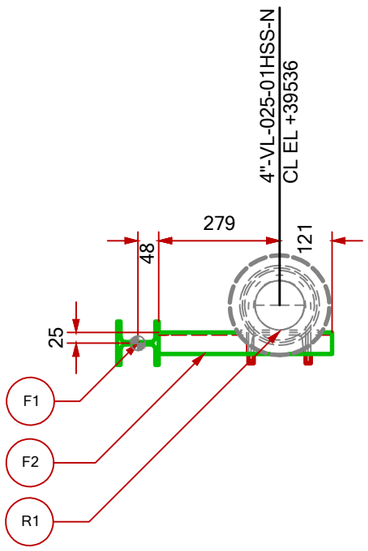
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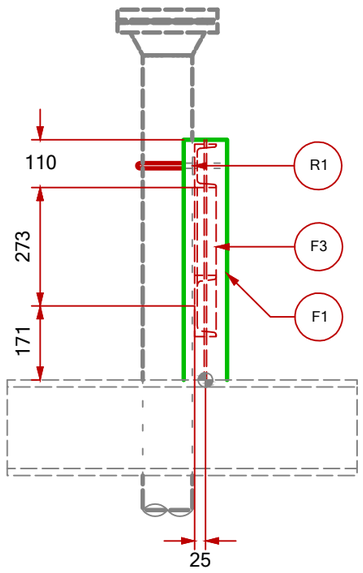
VIEW LOOKING NORTH



VIEW LOOKING WEST



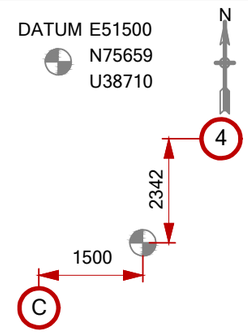
PLAN VIEW

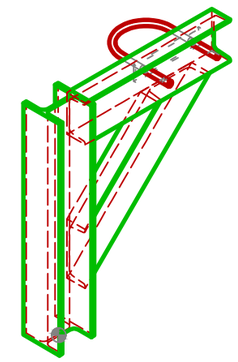


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-4"	-	-	1	-	0.96	-
F1	BEAM	HEA100	Carbon Steel	554	1	16.76	9.29	0.315
F2	BEAM	UPN100	Carbon Steel	400	1	10.57	4.23	0.151
F3	BEAM	UPN100	Carbon Steel	487	1	8.40	4.09	0.148
						TOTAL	18.6	0.61





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

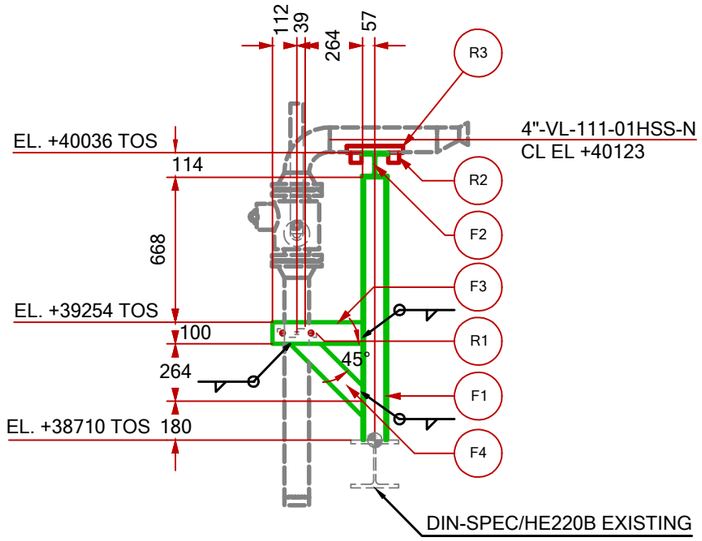
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

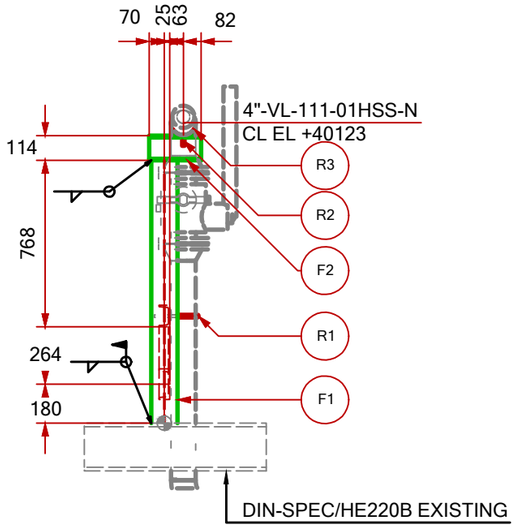
PS-03021

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

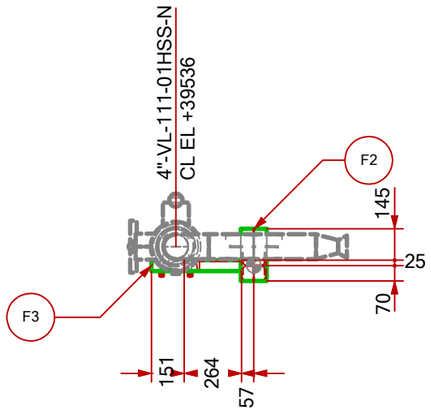
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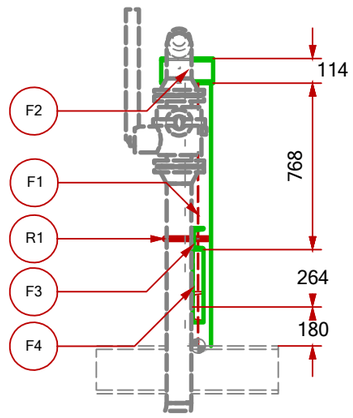
VIEW LOOKING NORTH



VIEW LOOKING WEST



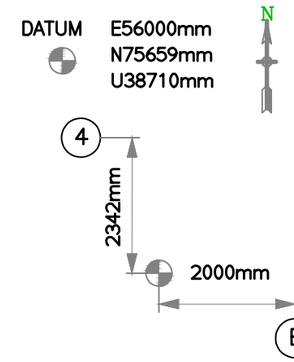
PLAN VIEW

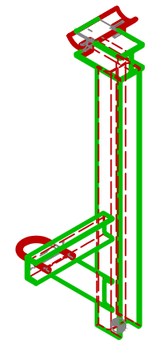


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-4"	-	-	1	-	0.96	-
R2	STD	S-205-A-4"	-	-	1	-	0.39	0.010
R3	STD	C-40-A-4"-260-3.00-120-90	A312 TP316L SMLS	-	1	-	0.66	0.056
F1	BEAM	HEA120	Carbon Steel	1212	1	19.98	24.22	0.826
F2	BEAM	HEA120	Carbon Steel	240	1	19.98	4.80	0.168
F3	BEAM	UPN100	Carbon Steel	415	1	10.57	4.39	0.157
F4	BEAM	UPN100	Carbon Steel	474	1	8.34	3.95	0.143
						TOTAL	39.4	1.36





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

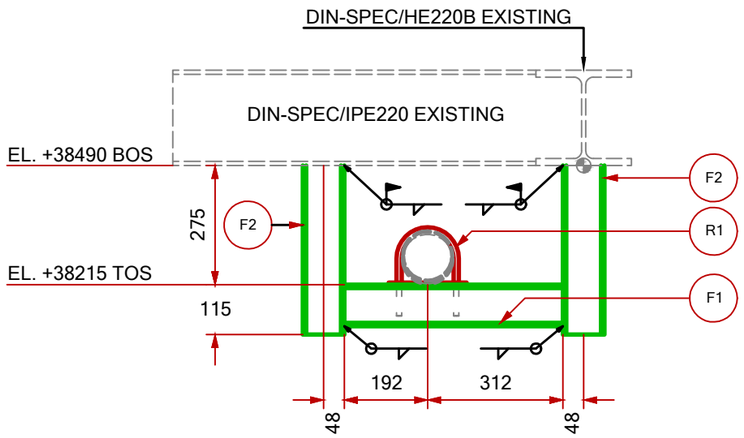
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

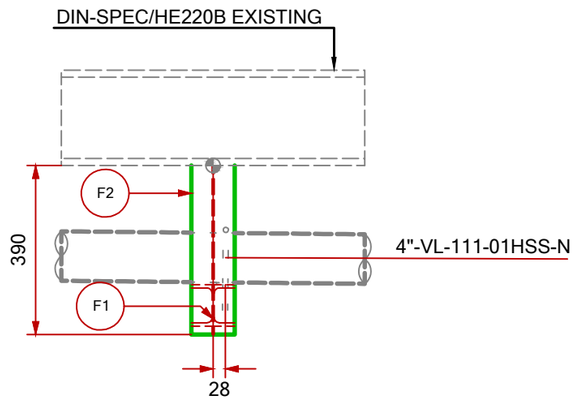
PS-03023

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 20
DRAWN	CHECKED	APPROVED	DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1 / REV. 00

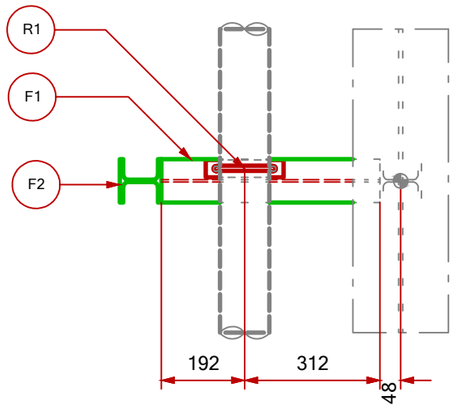
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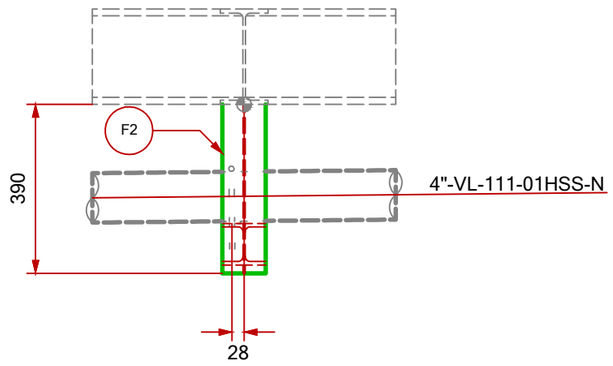
VIEW LOOKING NORTH



VIEW LOOKING WEST



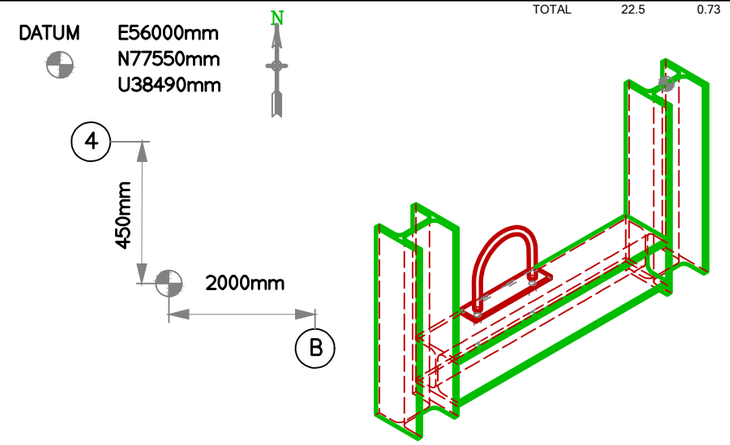
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-4"	-	-	1	-	0.96	-
F1	BEAM	HEA100	Carbon Steel	504	1	16.76	8.45	0.287
F2	BEAM	HEA100	Carbon Steel	390	2	16.76	13.08	0.446
						TOTAL	22.5	0.73



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

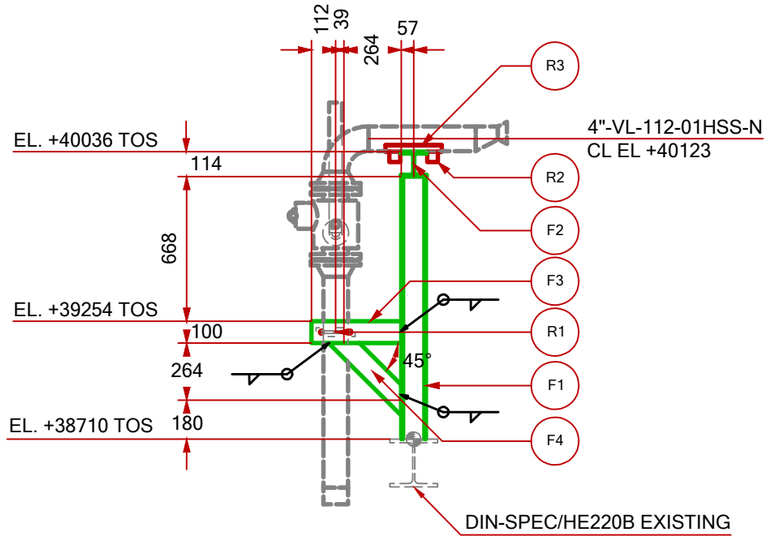
ROSETTI MARINO

TITLE :

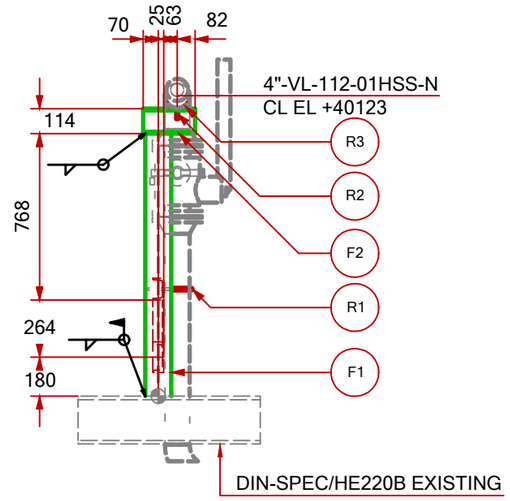
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03024

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

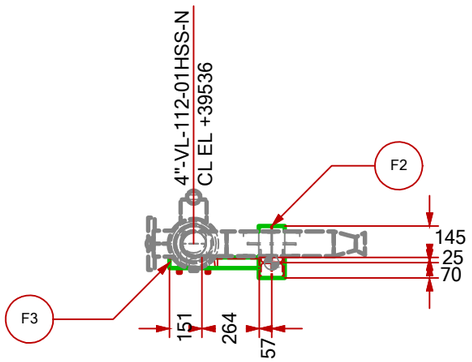
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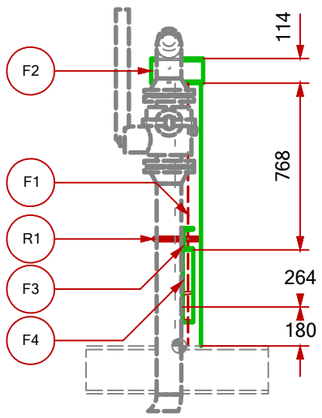
VIEW LOOKING NORTH



VIEW LOOKING WEST



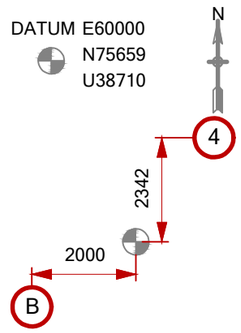
PLAN VIEW

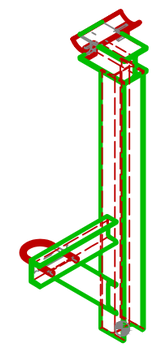


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-4"	-	-	1	-	0.96	-
R2	STD	S-205-A-4"	-	-	1	-	0.39	0.010
R3	STD	C-40-A-4"-260-3.00-120-90	A312 TP316L SMLS	-	1	-	0.66	0.056
F1	BEAM	HEA120	Carbon Steel	1212	1	19.98	24.22	0.826
F2	BEAM	HEA120	Carbon Steel	240	1	19.98	4.80	0.168
F3	BEAM	UPN100	Carbon Steel	415	1	10.57	4.39	0.157
F4	BEAM	UPN100	Carbon Steel	474	1	8.34	3.95	0.143
						TOTAL	39.4	1.36





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

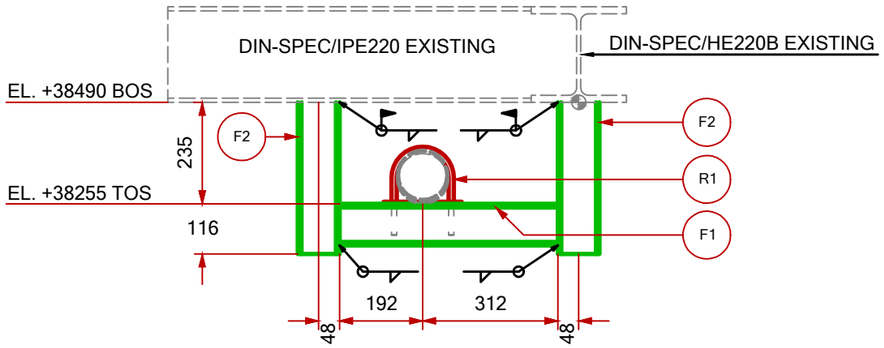
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

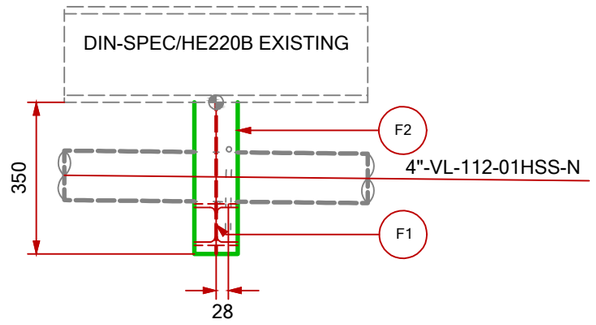
PS-03025

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 20
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

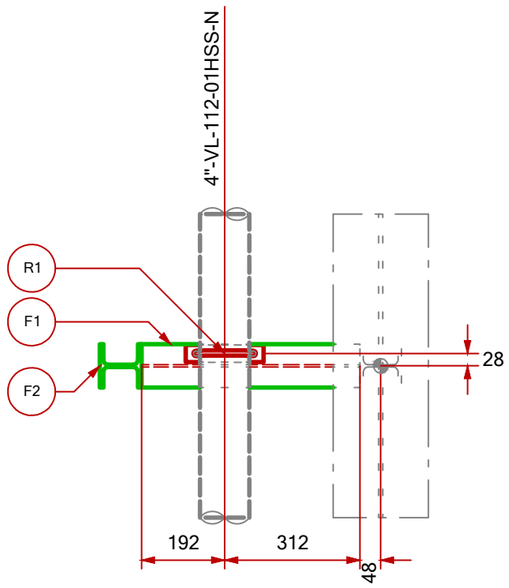
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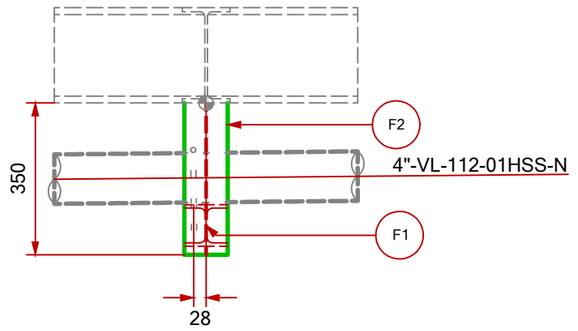
VIEW LOOKING NORTH



VIEW LOOKING WEST



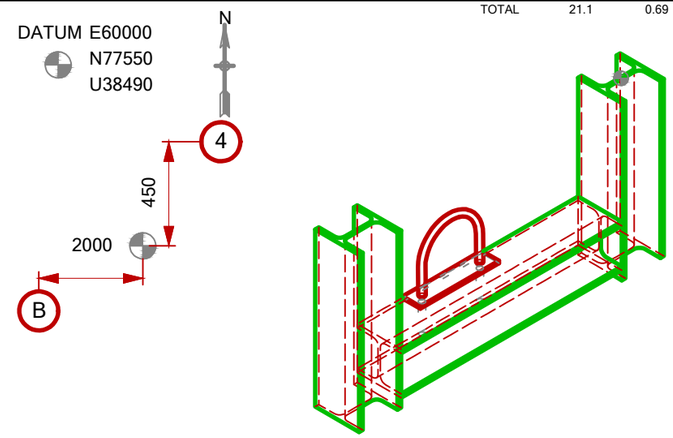
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-4"	-	-	1	-	0.96	-
F1	BEAM	HEA100	Carbon Steel	504	1	16.76	8.45	0.287
F2	BEAM	HEA100	Carbon Steel	350	2	16.76	11.74	0.402
						TOTAL	21.1	0.69



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

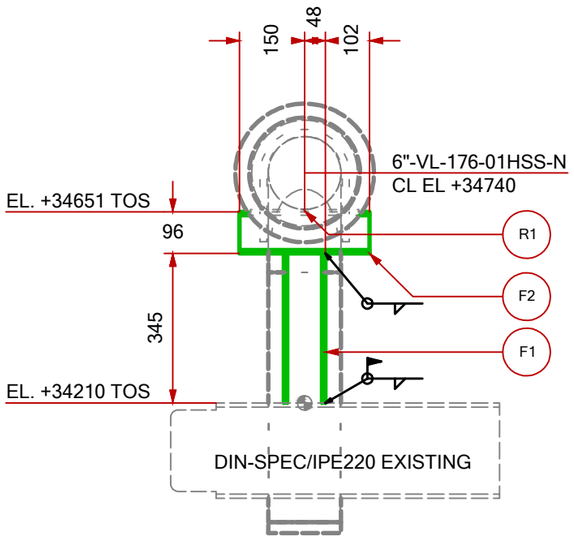
ROSETTI MARINO

TITLE :

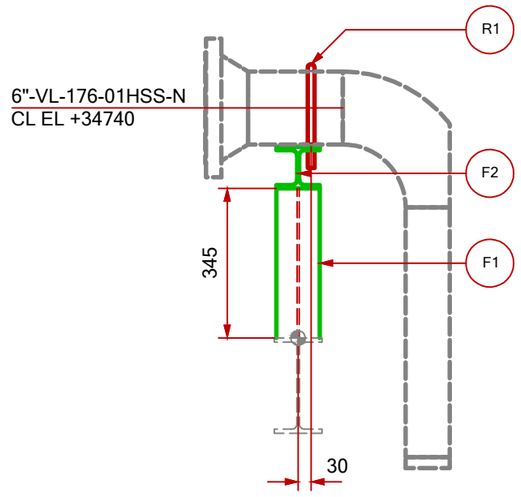
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03026

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1 : 10
DRAWN	CHECKED	APPROVED		DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1	REV. 00

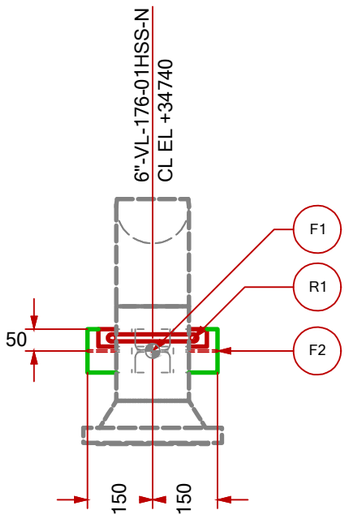
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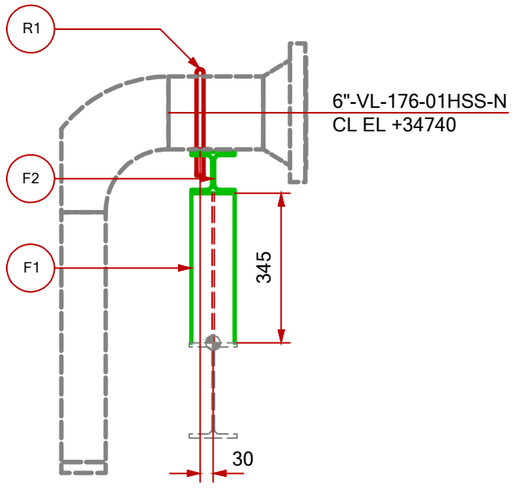
VIEW LOOKING NORTH



VIEW LOOKING WEST



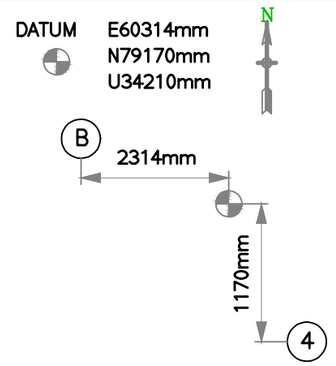
PLAN VIEW

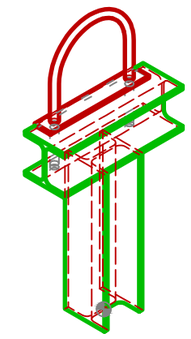


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-6"	-	-	1	-	1.77	-
F1	BEAM	HEA100	Carbon Steel	345	1	16.76	5.78	0.198
F2	BEAM	HEA100	Carbon Steel	300	1	16.76	5.03	0.173
						TOTAL	12.6	0.37





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

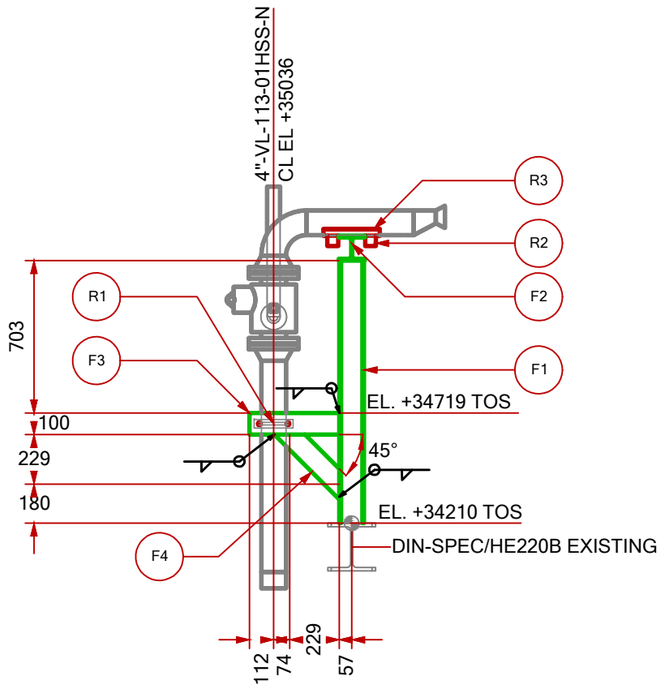
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

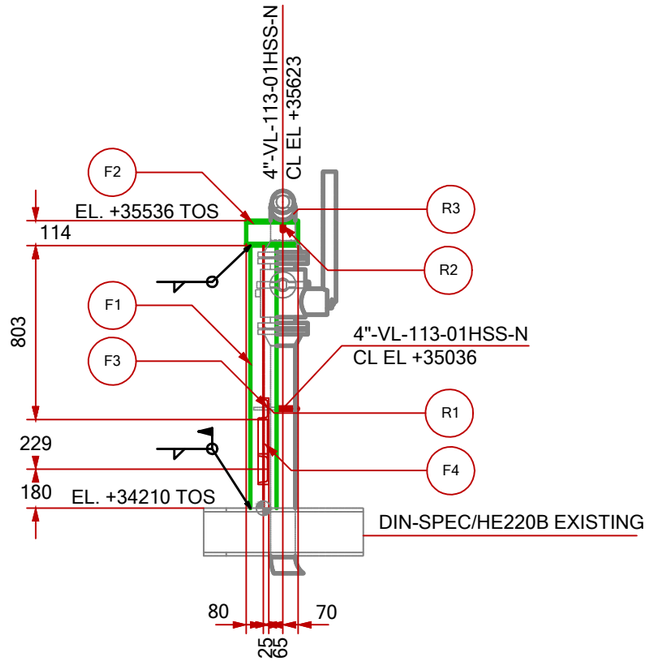
PS-03031

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

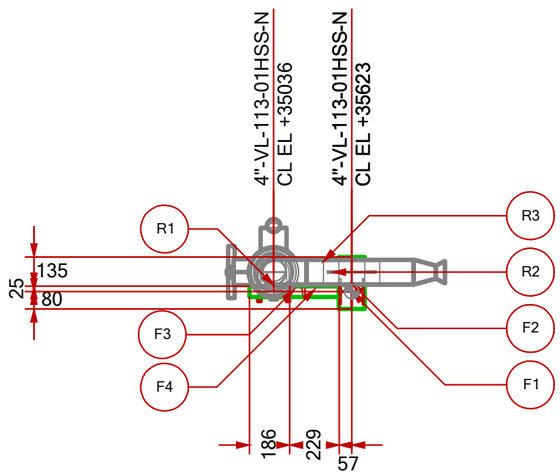
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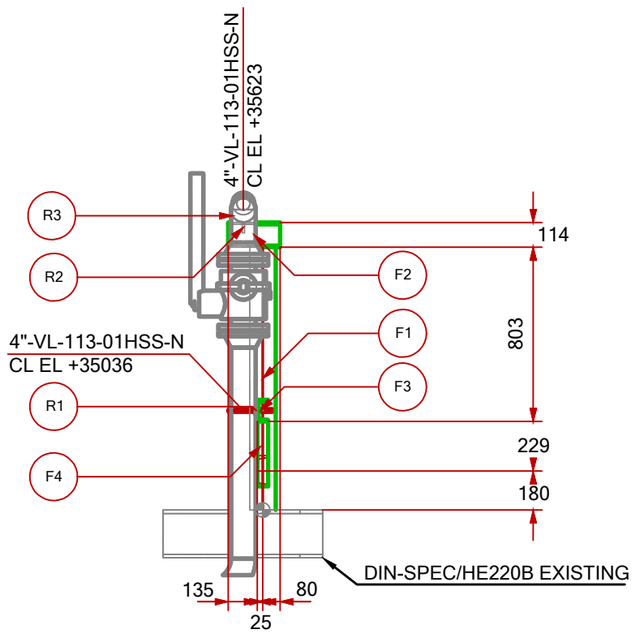
VIEW LOOKING NORTH



VIEW LOOKING WEST



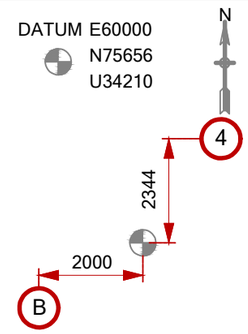
PLAN VIEW

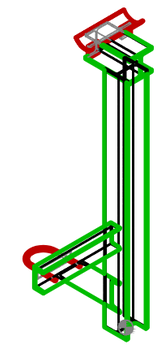


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-4"	-	-	1	-	0.96	-
R2	STD	S-205-A-4"	-	-	1	-	0.39	0.010
R3	STD	C-40-A-4"-260-3.00-120-90	A312 TP316L SMLS	-	1	-	0.66	0.056
F1	BEAM	HEA120	Carbon Steel	1212	1	19.98	24.21	0.826
F2	BEAM	HEA120	Carbon Steel	240	1	19.98	4.80	0.168
F3	BEAM	UPN100	Carbon Steel	415	1	10.57	4.39	0.157
F4	BEAM	UPN100	Carbon Steel	424	1	8.08	3.42	0.124
						TOTAL	38.8	1.34





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

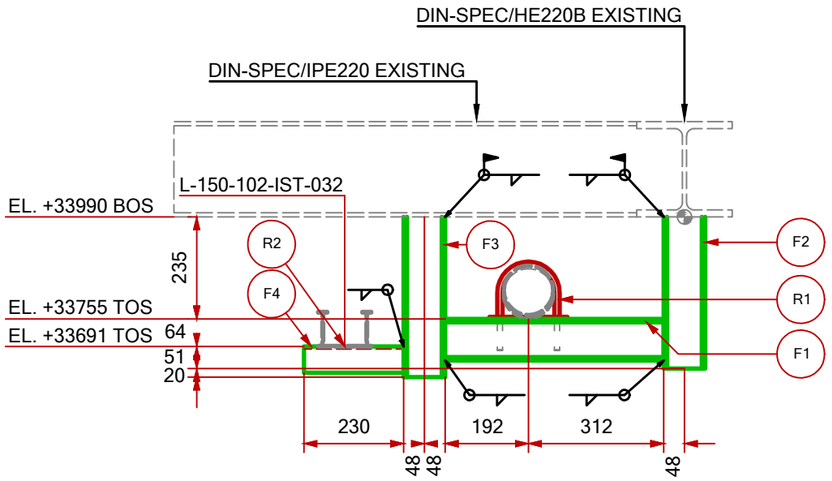
ROSETTI MARINO

TITLE :

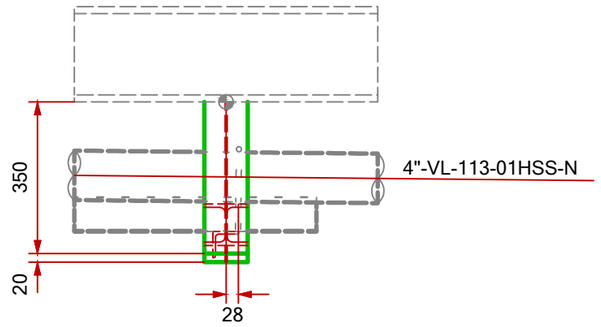
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03032

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 20
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

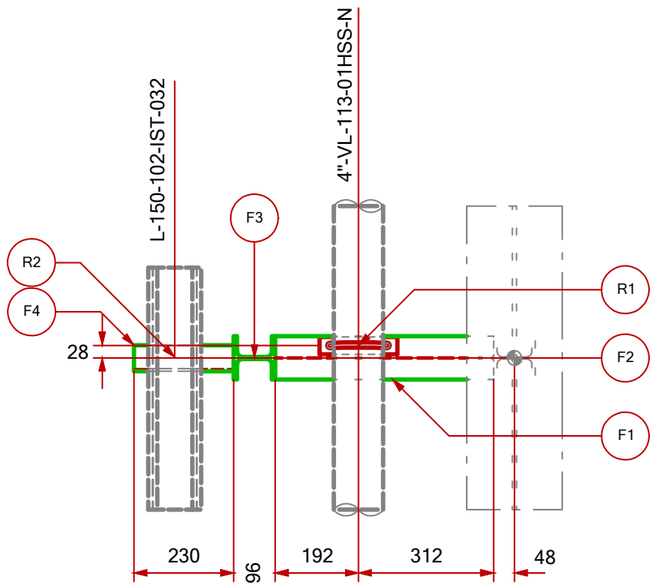
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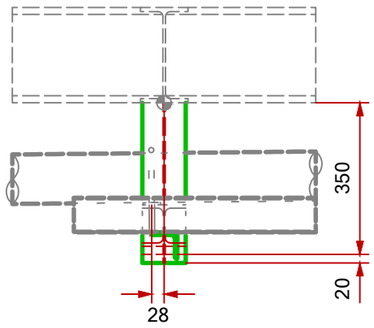
VIEW LOOKING NORTH



VIEW LOOKING WEST



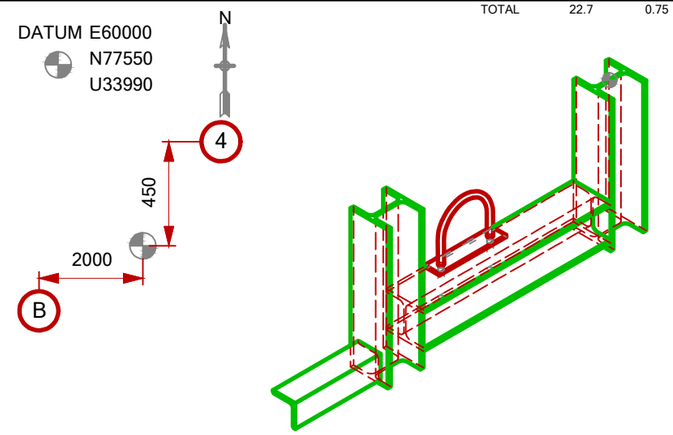
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-4"	-	-	1	-	0.96	-
R2	STD	RACK SUPPORT	-	-	1	-	0.00	-
F1	BEAM	HEA100	Carbon Steel	504	1	16.76	8.45	0.287
F2	BEAM	HEA100	Carbon Steel	350	1	16.76	5.86	0.200
F3	BEAM	HEA100	Carbon Steel	370	1	16.76	6.19	0.212
F4	BEAM	L60x60x6	Carbon Steel	230	1	5.42	1.25	0.055
						TOTAL	22.7	0.75



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

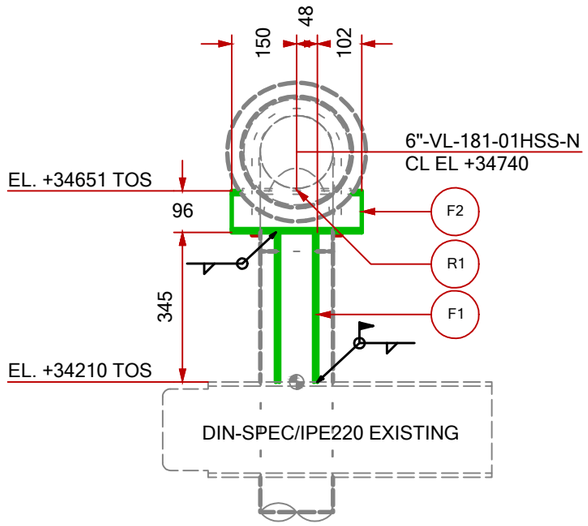
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

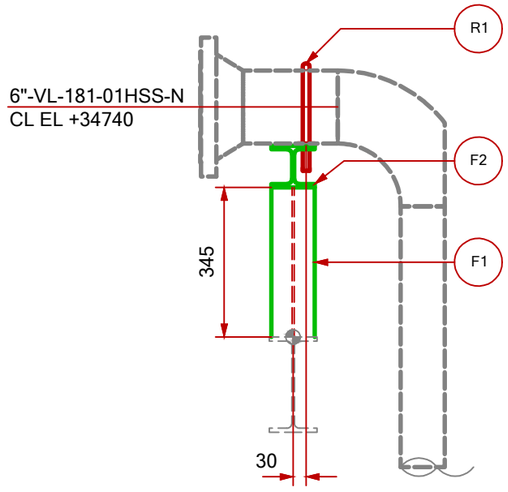
PS-03033

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1 : 10
DRAWN	CHECKED	APPROVED		DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1	REV. 00

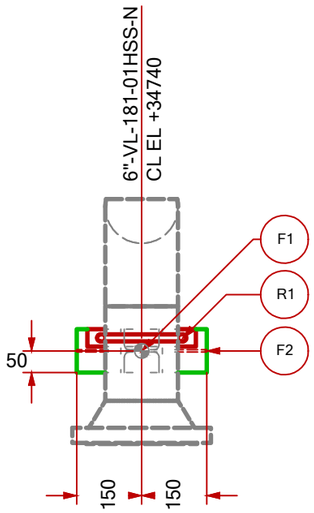
File Name :



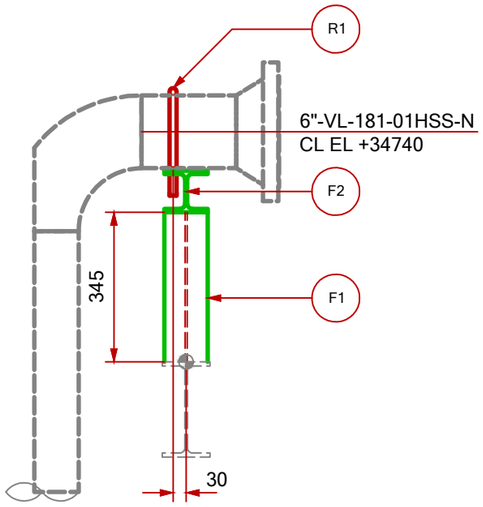
VIEW LOOKING NORTH



VIEW LOOKING WEST



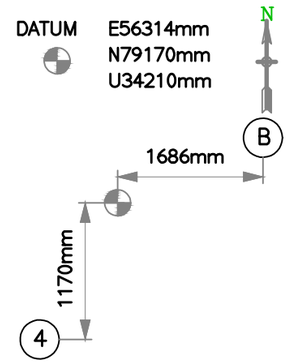
PLAN VIEW

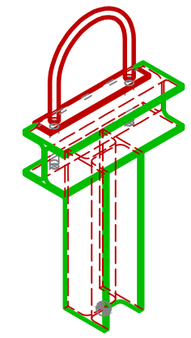


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-6"	-	-	1	-	1.77	-
F1	BEAM	HEA100	Carbon Steel	345	1	16.76	5.78	0.198
F2	BEAM	HEA100	Carbon Steel	300	1	16.76	5.03	0.173
						TOTAL	12.6	0.37





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

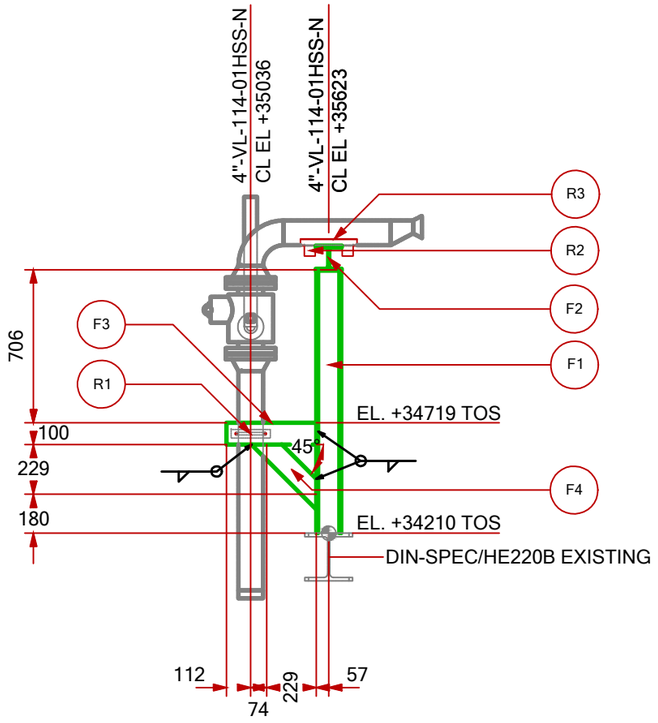
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

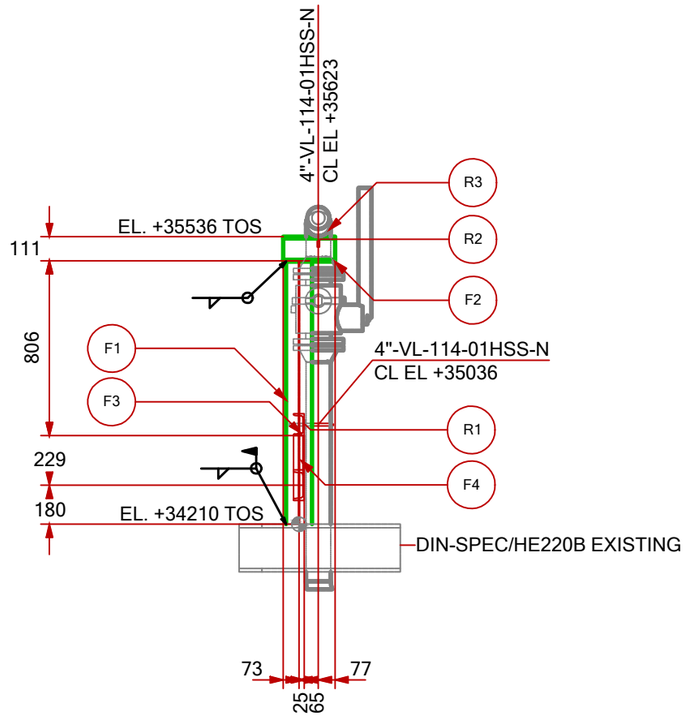
PS-03038

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1 : 10
DRAWN	CHECKED	APPROVED		DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1	REV. 00

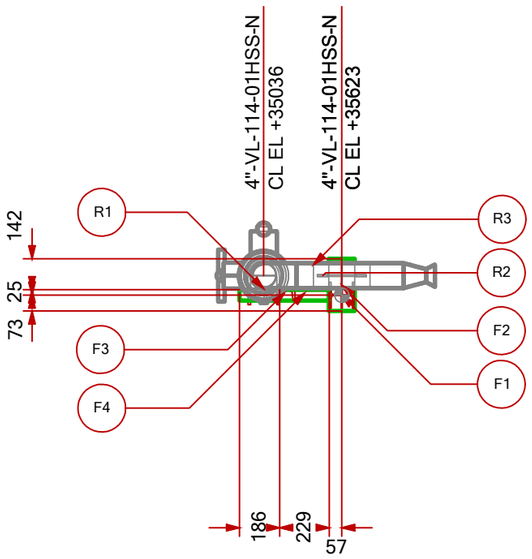
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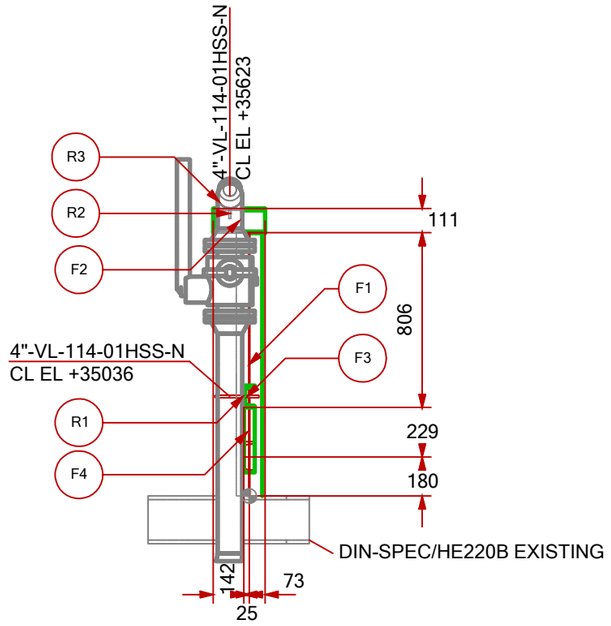
VIEW LOOKING NORTH



VIEW LOOKING WEST



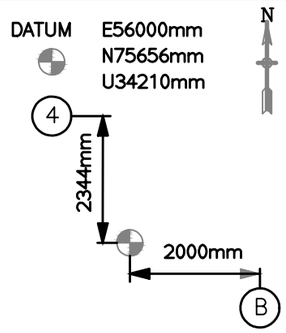
PLAN VIEW

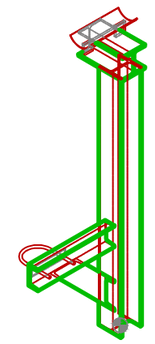


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-4"	-	-	1	-	0.96	-
R2	STD	S-205-A-4"	-	-	1	-	0.39	0.010
R3	STD	C-40-A-4"-260-3.00-120-90	A312 TP316L SMLS	-	1	-	0.66	0.056
F1	BEAM	HEA120	Carbon Steel	1215	1	19.98	24.27	0.828
F2	BEAM	HEA120	Carbon Steel	240	1	19.98	4.80	0.168
F3	BEAM	UPN100	Carbon Steel	415	1	10.57	4.39	0.157
F4	BEAM	UPN100	Carbon Steel	424	1	8.08	3.43	0.124
						TOTAL	38.9	1.34





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

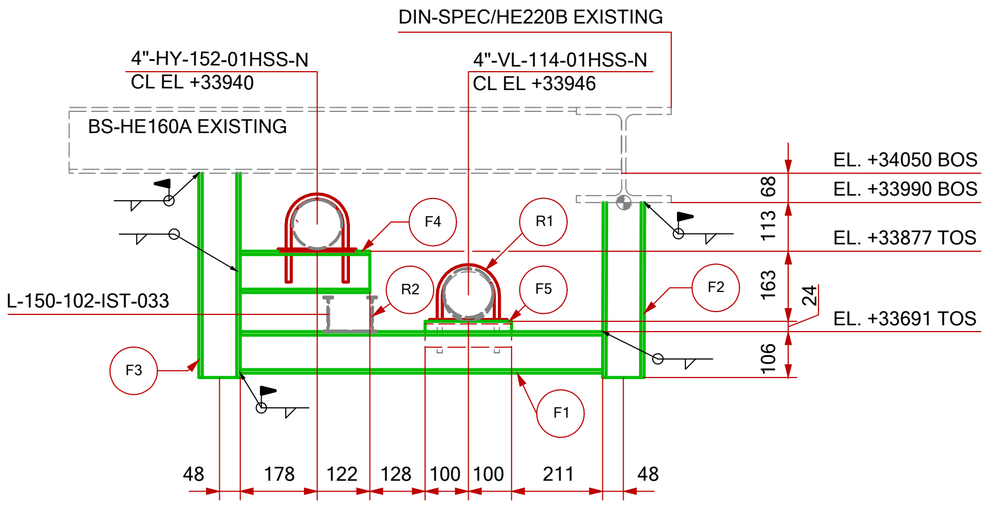
ROSETTI MARINO

TITLE :

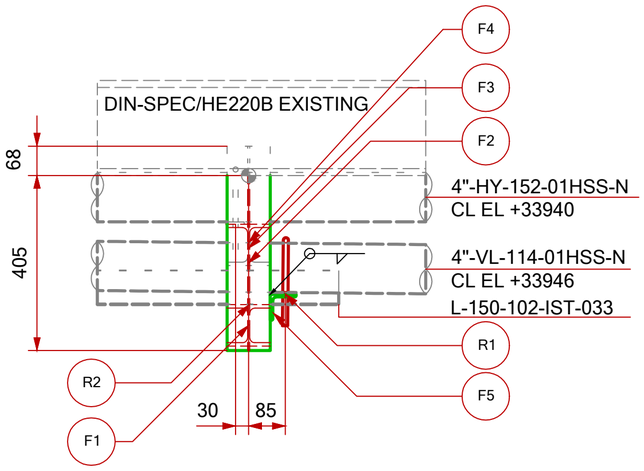
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03039

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1 : 20
DRAWN	CHECKED / APPROVED	DATE	19/08/24
DRAWING NO.	123A90-DDL-PP-DD-72000	SHEET	1 of 1
		REV.	00

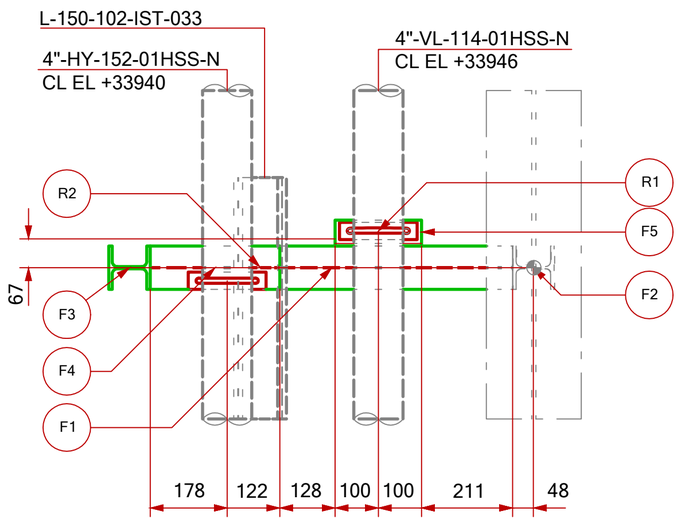
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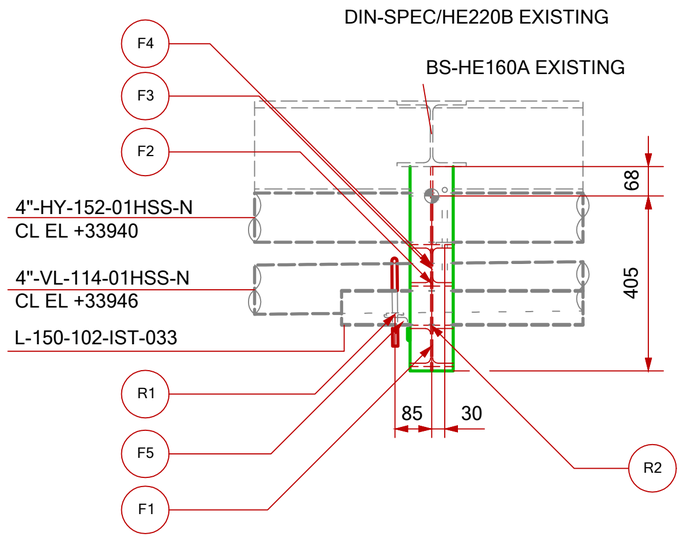
VIEW LOOKING NORTH



VIEW LOOKING WEST



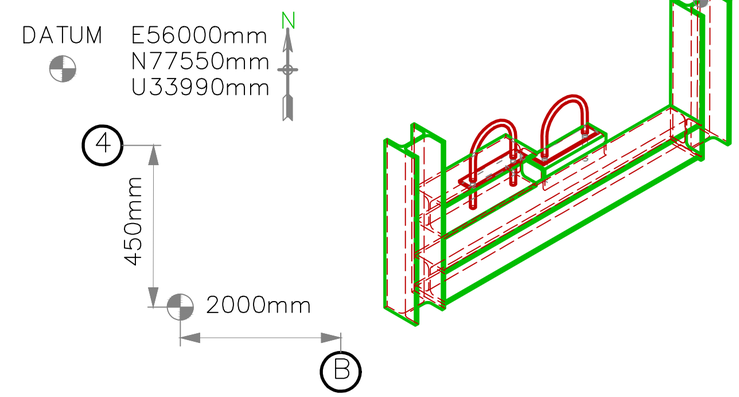
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-4"	-	-	2	-	0.96	-
R2	STD	RACK SUPPORT	-	-	1	-	0.00	-
F1	BEAM	HEA100	Carbon Steel	839	1	16.76	14.09	0.476
F2	BEAM	HEA100	Carbon Steel	405	1	16.75	6.79	0.232
F3	BEAM	HEA100	Carbon Steel	473	1	16.76	7.93	0.270
F4	BEAM	HEA100	Carbon Steel	300	1	16.76	5.03	0.173
F5	BEAM	L60x60x6	Carbon Steel	200	1	5.42	1.08	0.048
						TOTAL	36.8	1.20



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

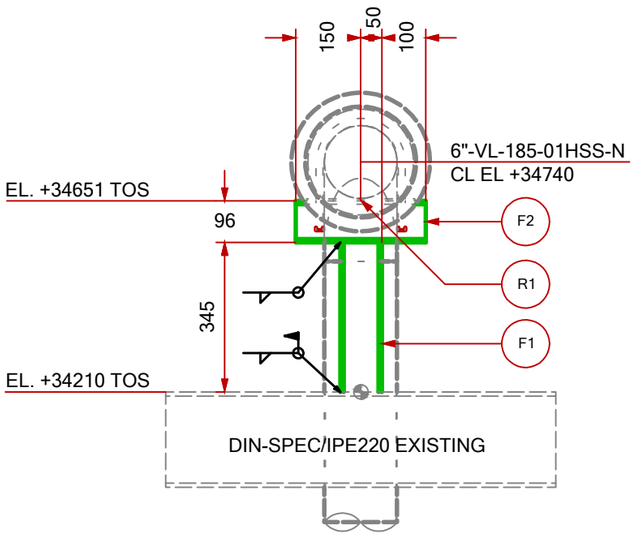
ROSETTI MARINO

TITLE :

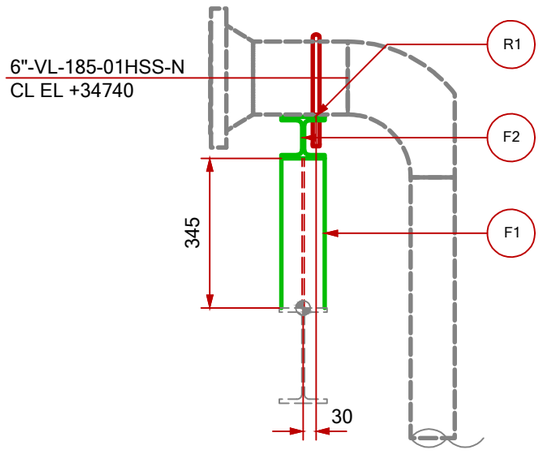
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03045

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1 : 10
DRAWN	CHECKED	APPROVED		DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1	REV. 00

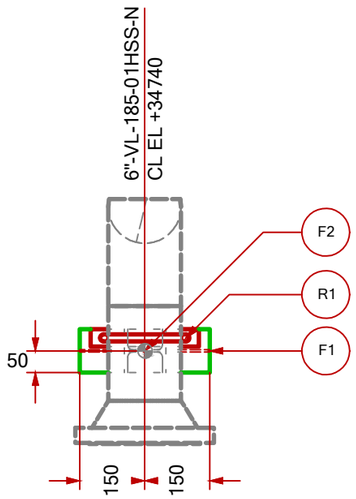
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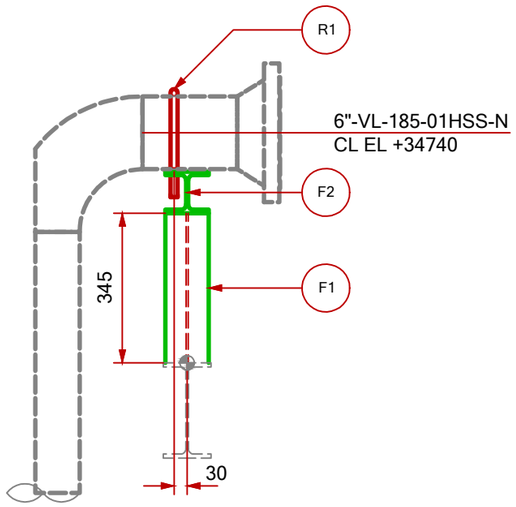
VIEW LOOKING NORTH



VIEW LOOKING WEST



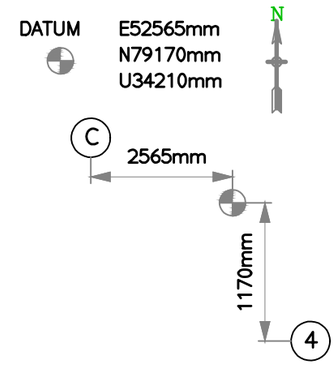
PLAN VIEW

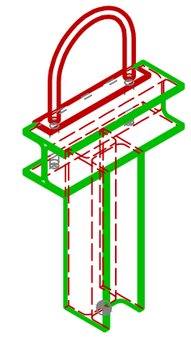


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-6"	-	-	1	-	1.83	-
F1	BEAM	HEA100	Carbon Steel	345	1	16.76	5.78	0.198
F2	BEAM	HEA100	Carbon Steel	300	1	16.76	5.03	0.173
						TOTAL	12.6	0.37





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

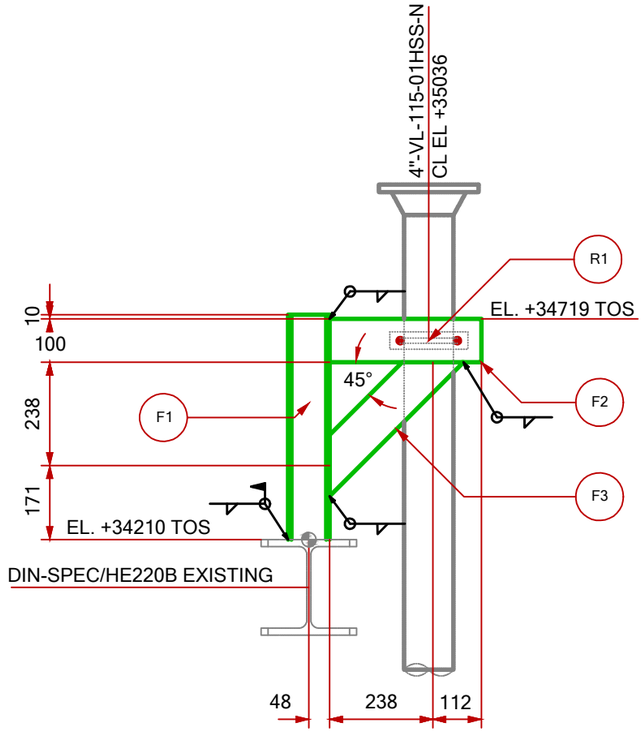
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

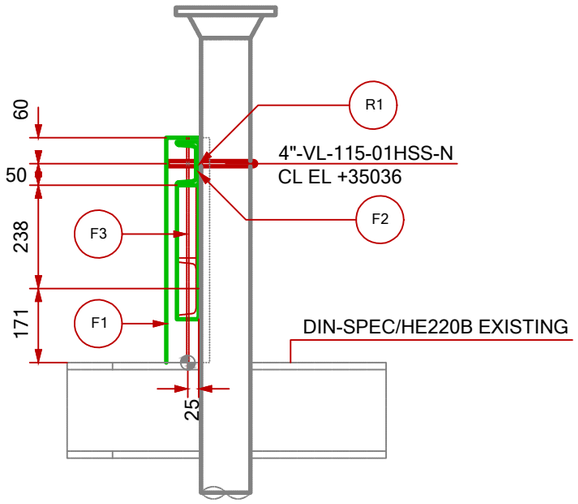
PS-03048

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	1 : 10
DRAWN	CHECKED	APPROVED		DATE	19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1	REV. 00

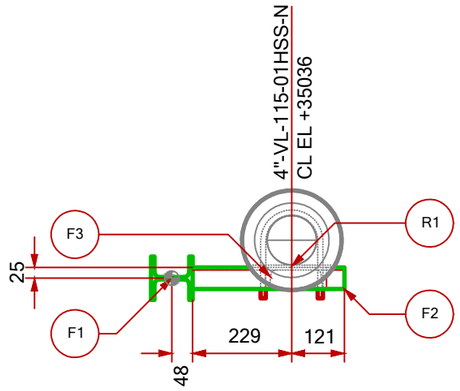
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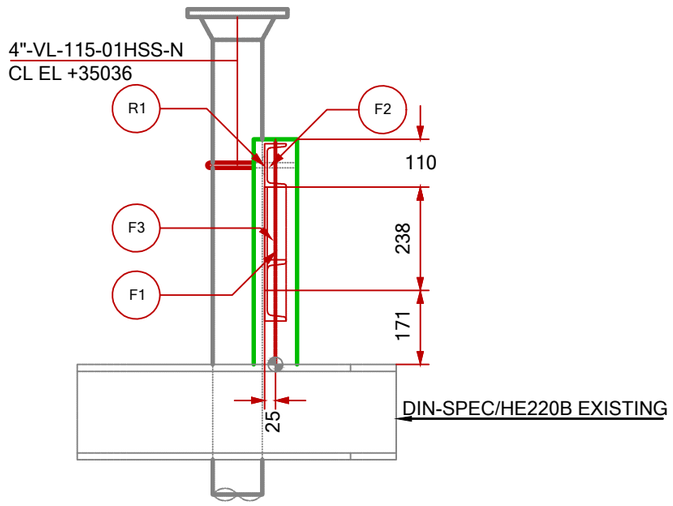
VIEW LOOKING NORTH



VIEW LOOKING WEST



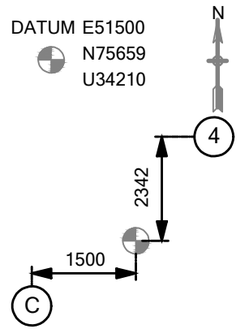
PLAN VIEW

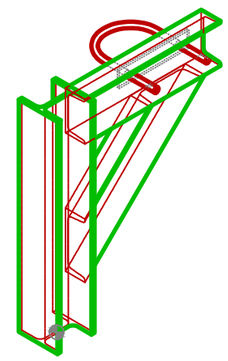


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-4"	-	-	1	-	0.96	-
F1	BEAM	HEA100	Carbon Steel	519	1	16.76	8.70	0.295
F2	BEAM	UPN100	Carbon Steel	350	1	10.57	3.70	0.133
F3	BEAM	UPN100	Carbon Steel	437	1	8.15	3.56	0.129
						TOTAL	16.9	0.56





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

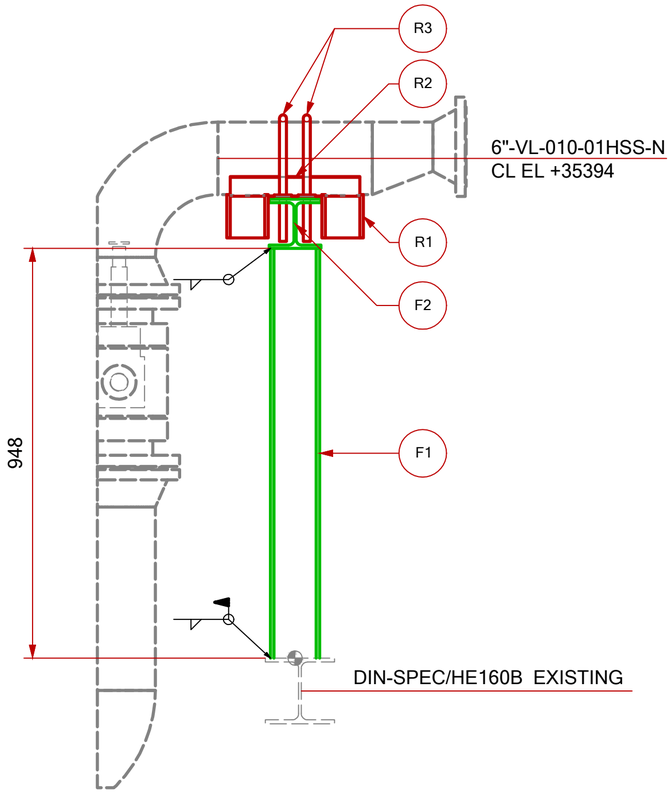
ROSETTI MARINO

TITLE :

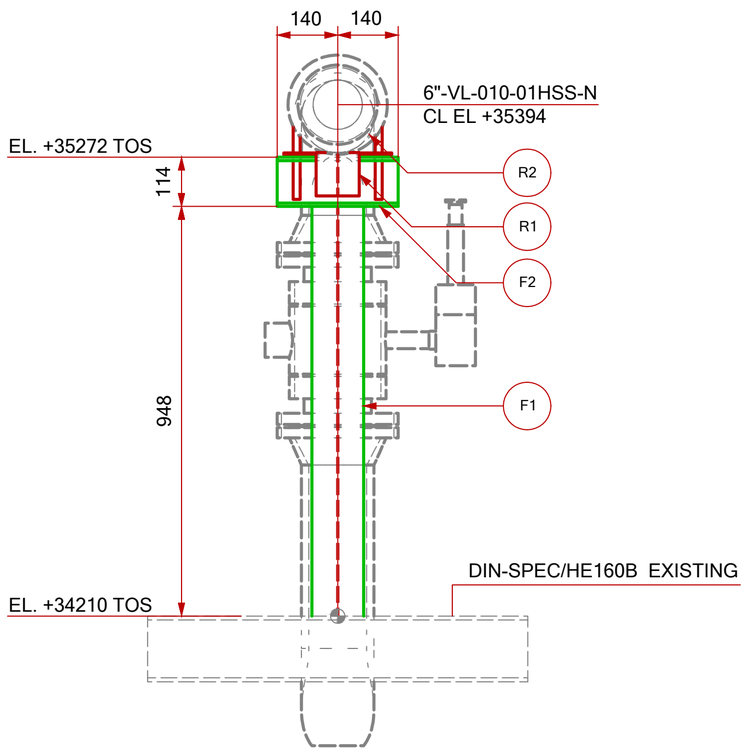
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03049

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

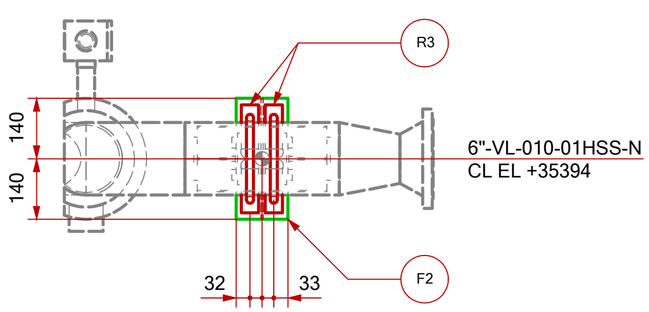
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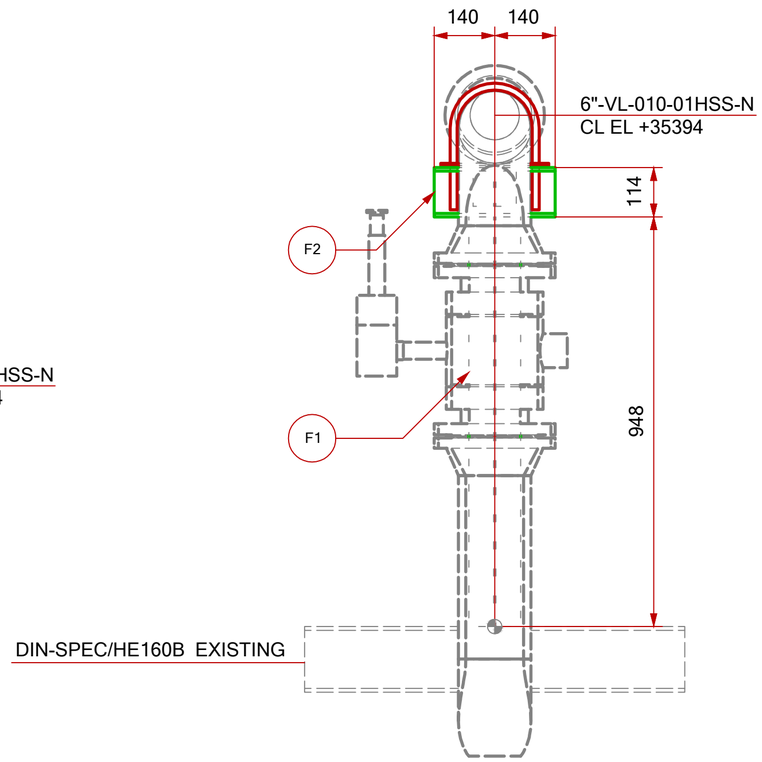
VIEW LOOKING NORTH



VIEW LOOKING WEST



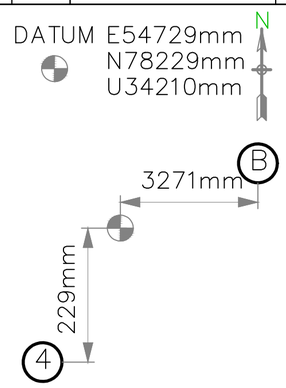
PLAN VIEW

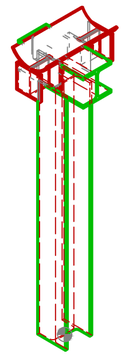


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-205-C-6"	-	-	1	-	3.34	0.112
R2	STD	C-40-A-6"-300-3.40-120-90	A312 TP316L SMLS	-	1	-	1.29	0.096
R3	STD	S-211-6"	-	-	2	-	1.83	-
F1	BEAM	HEA120	Carbon Steel	948	1	19.98	18.95	0.647
F2	BEAM	HEA120	Carbon Steel	280	1	19.98	5.59	0.195
						TOTAL	32.9	1.05





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

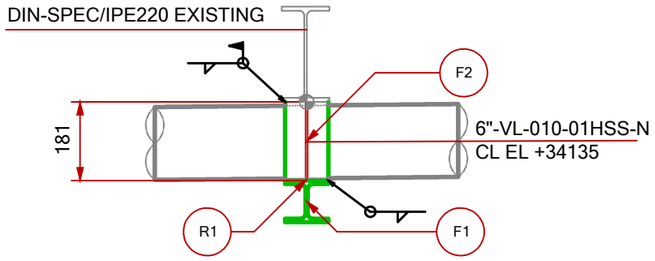
ROSETTI MARINO

TITLE :

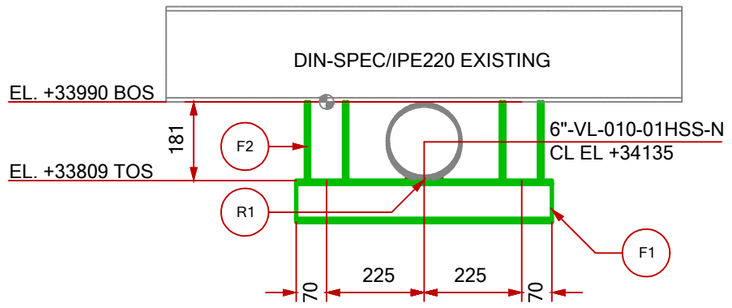
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03051

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1 / REV. 00

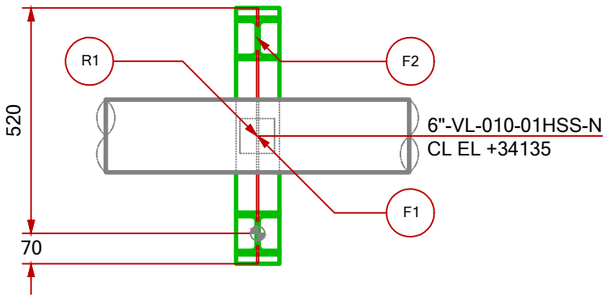
File Name :



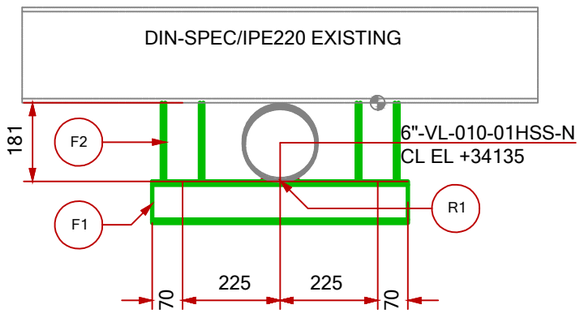
VIEW LOOKING NORTH



VIEW LOOKING WEST



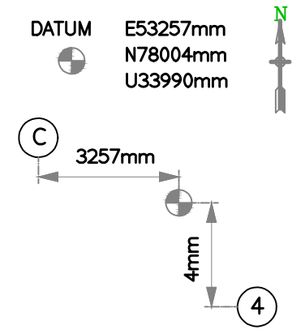
PLAN VIEW

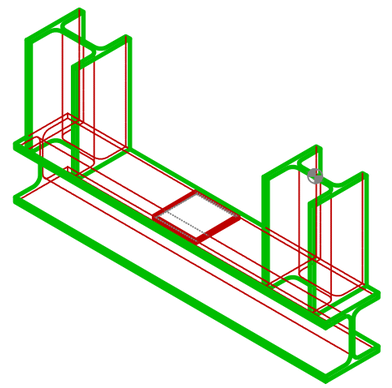


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-16-80-80-5	-	-	1	-	0.07	-
F1	BEAM	HEA100	Carbon Steel	590	1	16.76	9.89	0.335
F2	BEAM	HEA100	Carbon Steel	181	2	16.76	6.08	0.212
						TOTAL	16.0	0.55





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

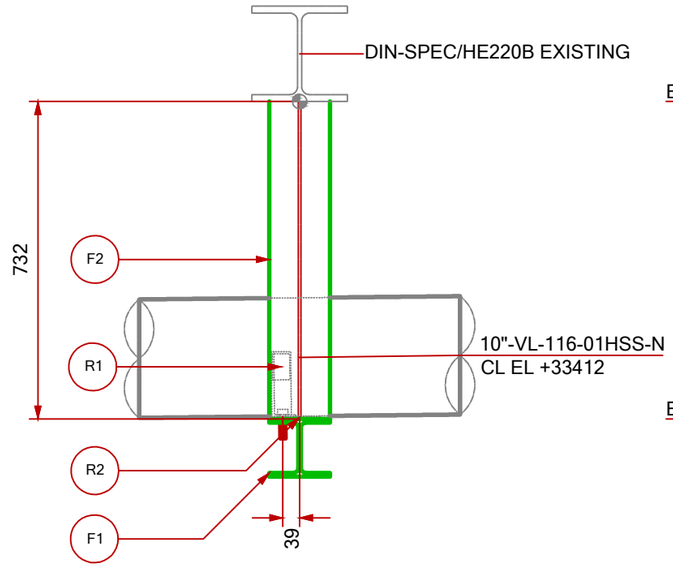
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

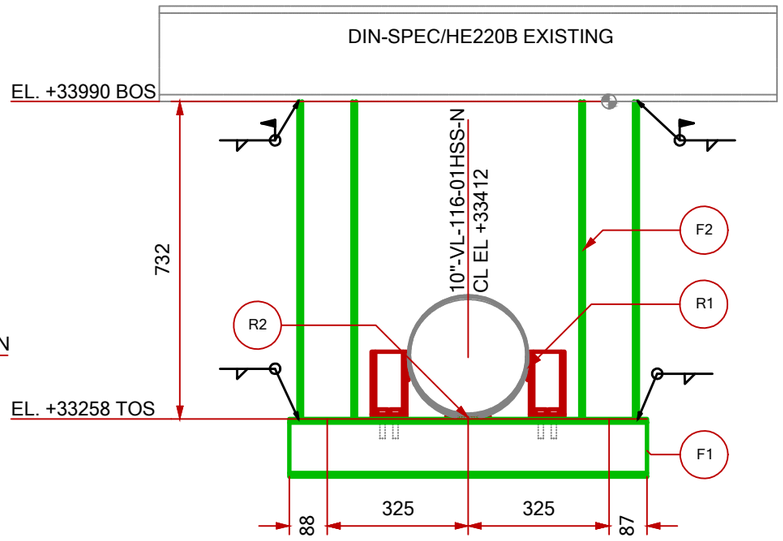
PS-03052

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	1:10
DRAWN	CHECKED	APPROVED		DATE	19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1	REV. 00

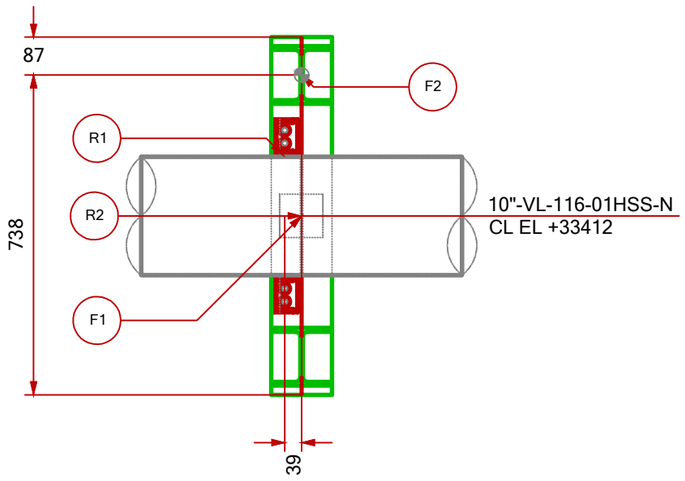
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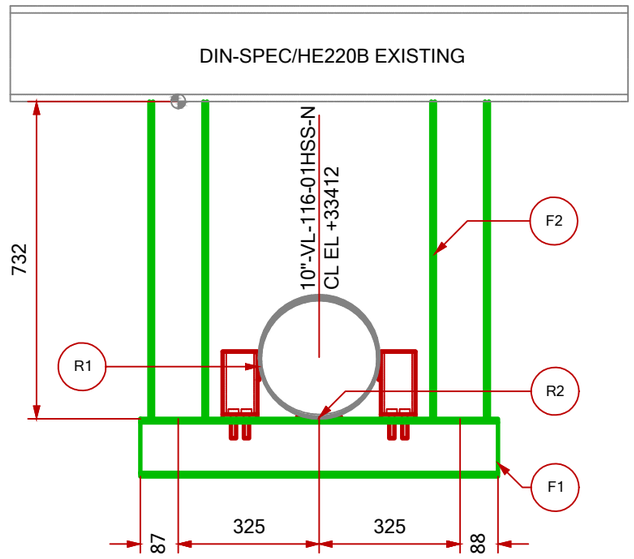
VIEW LOOKING NORTH



VIEW LOOKING WEST



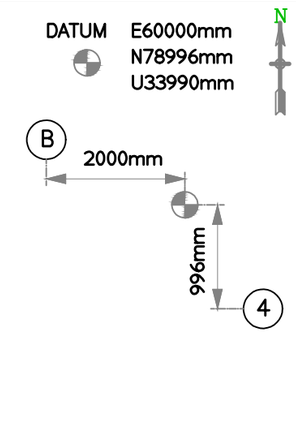
PLAN VIEW

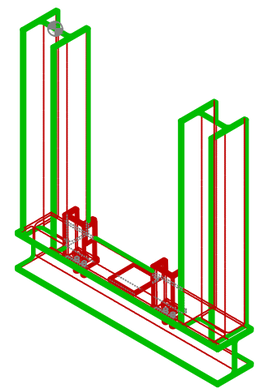


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-208-A-10"-275-155	-	-	1	-	4.10	0.080
R2	STD	C-16-100-100-5	-	-	1	-	0.11	-
F1	BEAM	HEA140	Carbon Steel	825	1	24.75	20.42	0.661
F2	BEAM	HEA140	Carbon Steel	732	2	24.75	36.24	1.174
						TOTAL	60.9	1.92





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

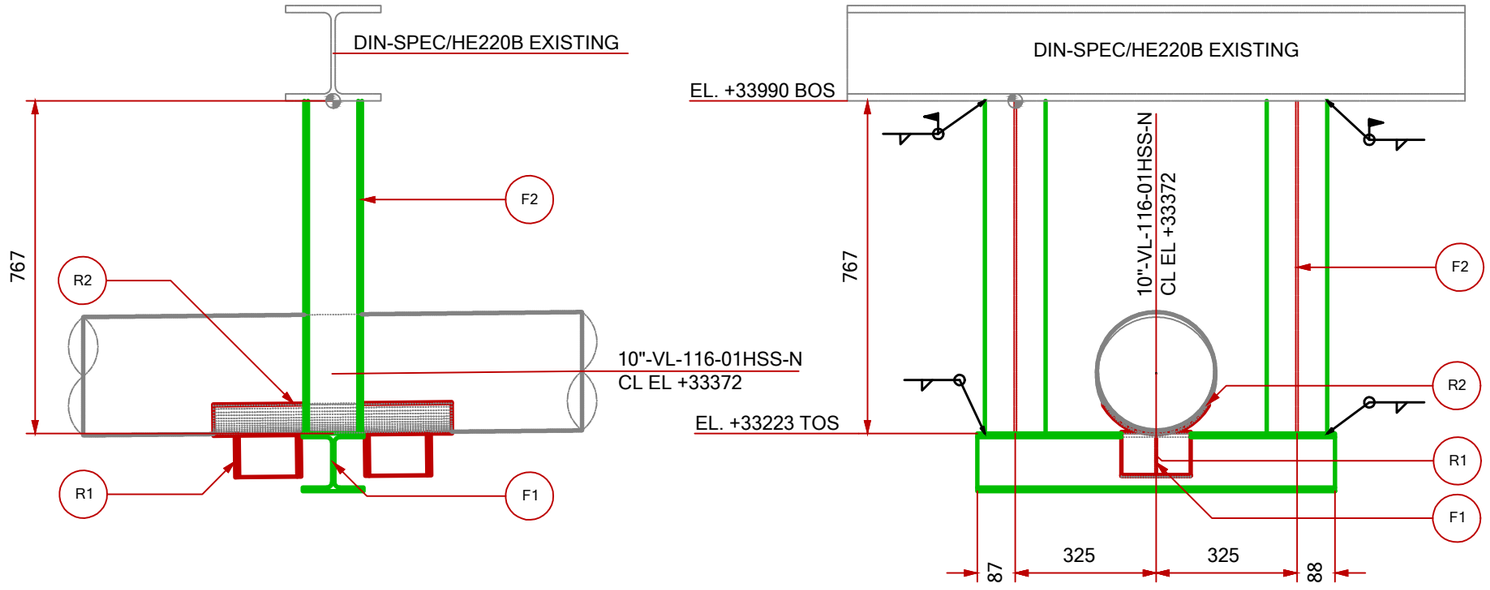
ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03055

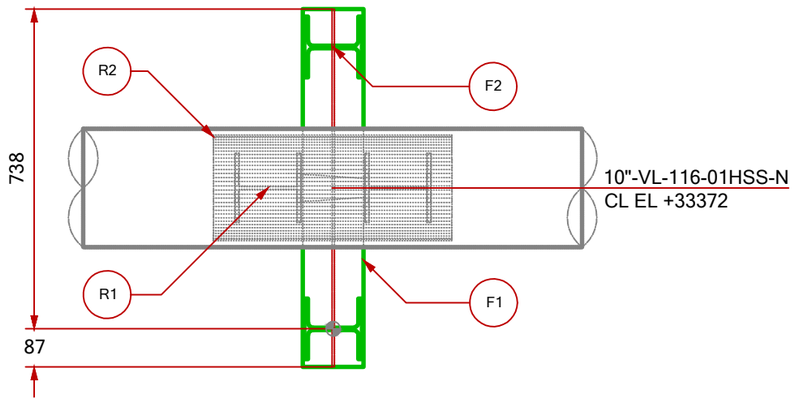
CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1 : 10
DRAWN	CHECKED	APPROVED		DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1	REV. 00

File Name:

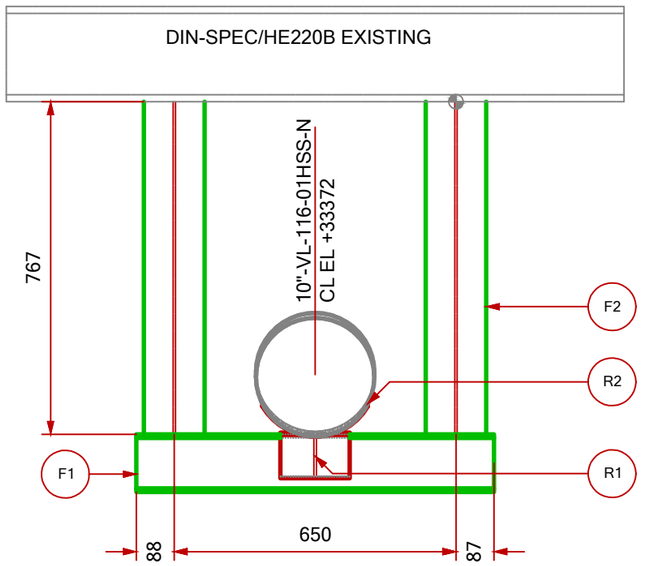


VIEW LOOKING NORTH

VIEW LOOKING WEST



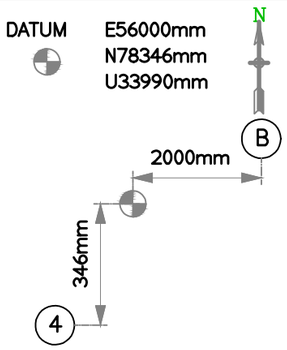
PLAN VIEW

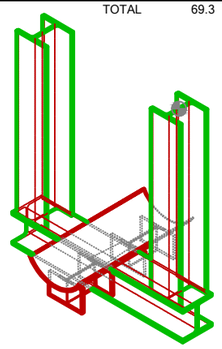


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-205-C-10"	-	-	1	-	6.08	0.181
R2	STD	C-40-A-10"-550-4.19-120-90	A312 TP316L SMLS	-	1	-	4.82	0.293
F1	BEAM	HEA140	Carbon Steel	825	1	24.75	20.42	0.661
F2	BEAM	HEA140	Carbon Steel	767	2	24.75	37.98	1.230
						TOTAL	69.3	2.37





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

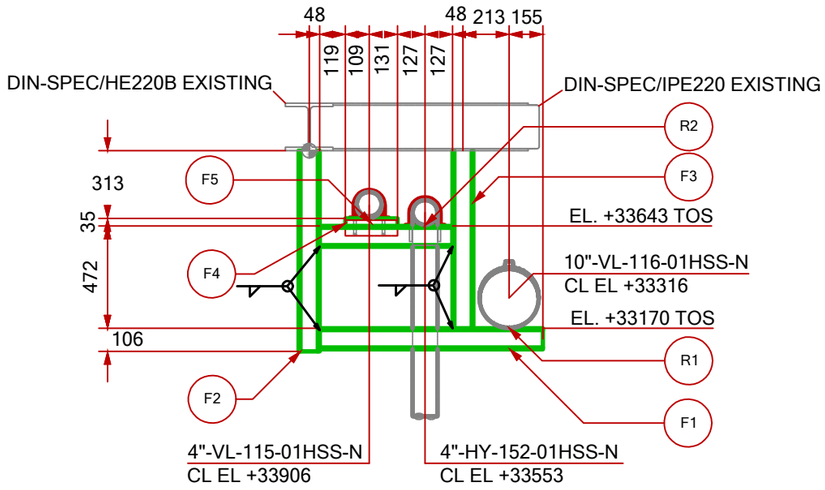
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

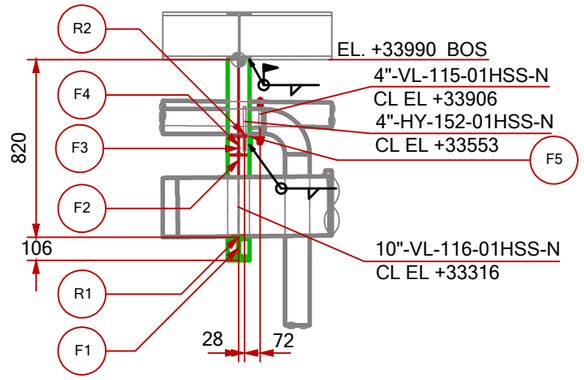
PS-03056

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

File Name :



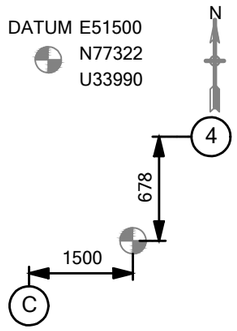
VIEW LOOKING NORTH

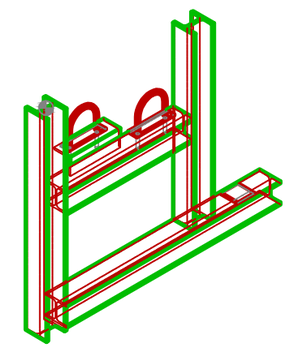


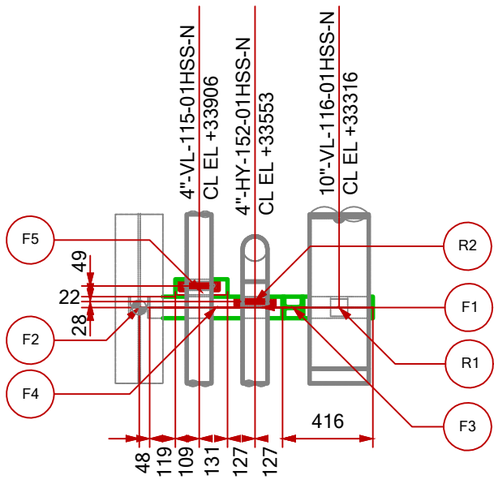
VIEW LOOKING WEST

SUPPORT MATERIAL LIST

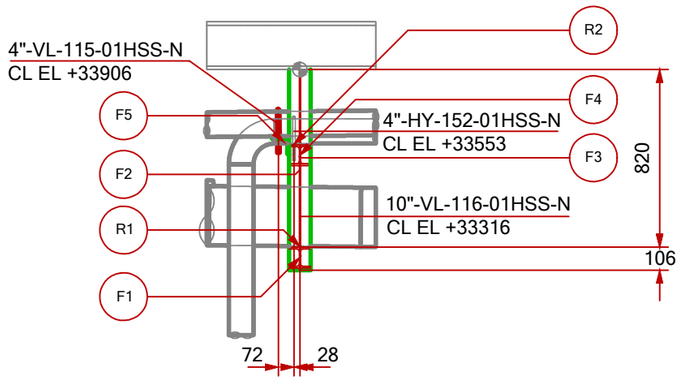
POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-16-80-80-5	-	-	1	-	0.07	-
R2	STD	S-211-4"	-	-	2	-	0.96	-
F1	BEAM	HEA100	Carbon Steel	1030	1	16.76	17.26	0.582
F2	BEAM	HEA100	Carbon Steel	926	1	16.76	15.51	0.523
F3	BEAM	HEA100	Carbon Steel	820	1	16.76	13.74	0.464
F4	BEAM	HEA100	Carbon Steel	614	1	16.76	10.29	0.349
F5	BEAM	L80x8	Carbon Steel	240	1	9.63	2.31	0.077
						TOTAL	61.1	2.00







PLAN VIEW



VIEW LOOKING EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

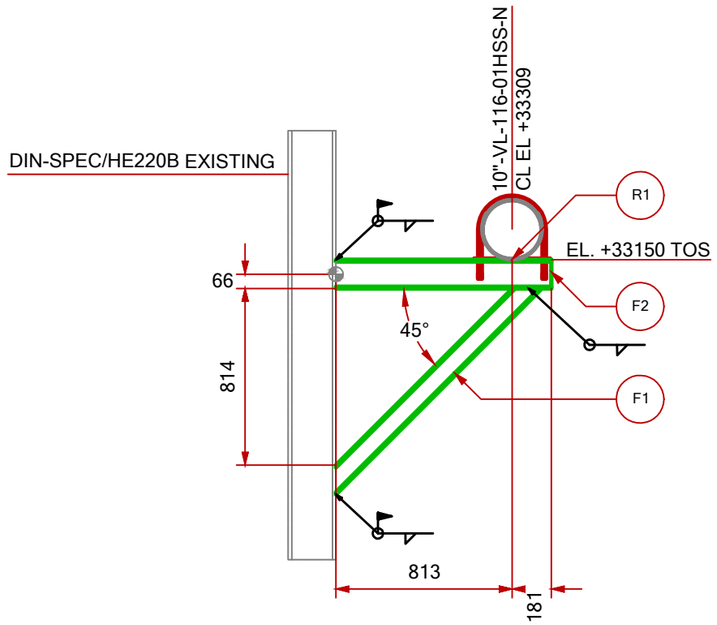
ROSETTI MARINO

TITLE :

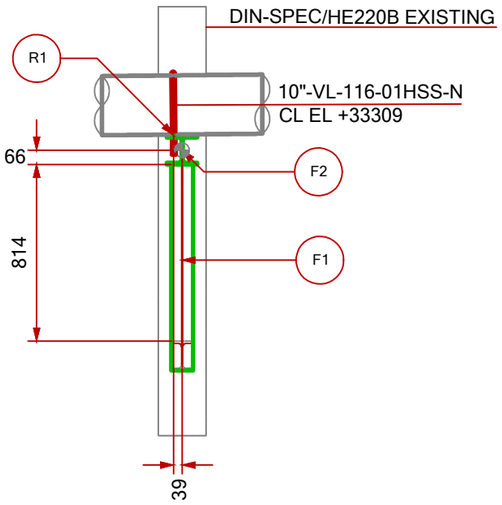
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03057

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 20
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

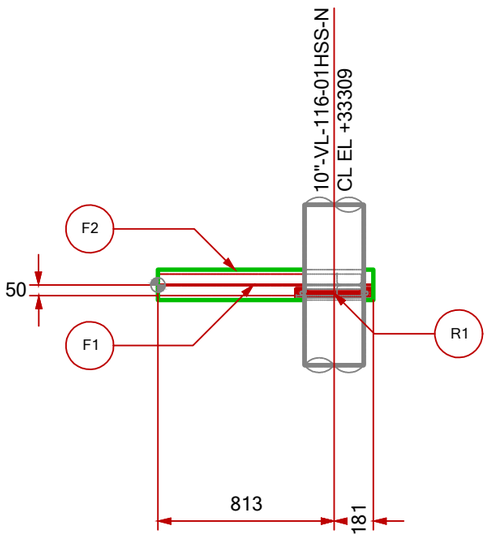
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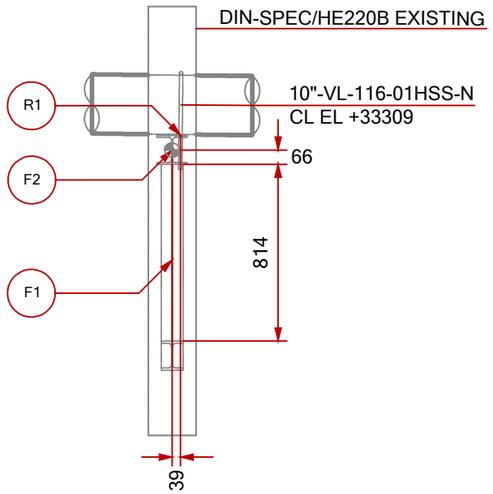
VIEW LOOKING NORTH



VIEW LOOKING WEST



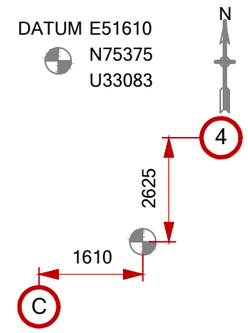
PLAN VIEW

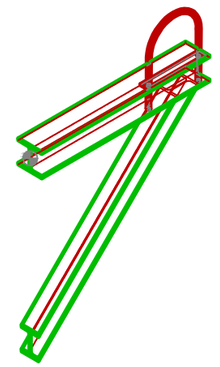


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-10"	-	-	1	-	2.35	-
F1	BEAM	HEA100	EN 10025 S355J2	1344	1	15.56	20.91	0.706
F2	BEAM	HEA140	EN 10025 S355J2	994	1	24.75	24.60	0.795
						TOTAL	47.9	1.50





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

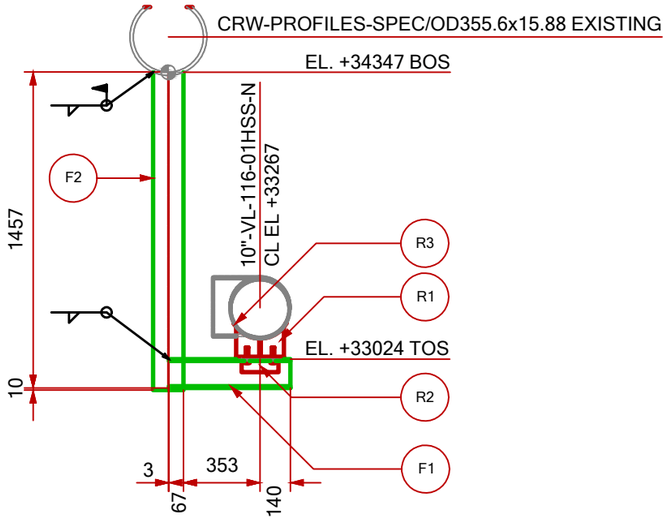
ROSETTI MARINO

TITLE :

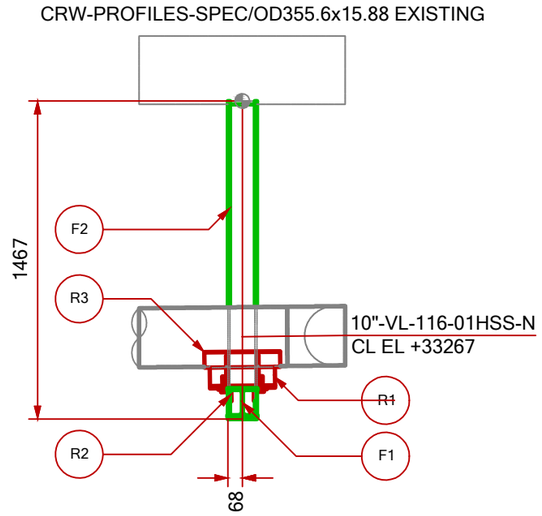
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03058

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 20
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

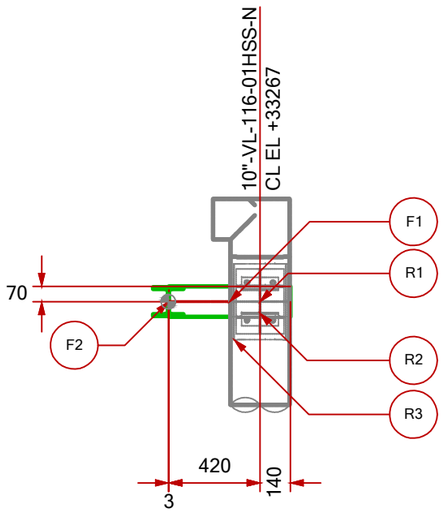
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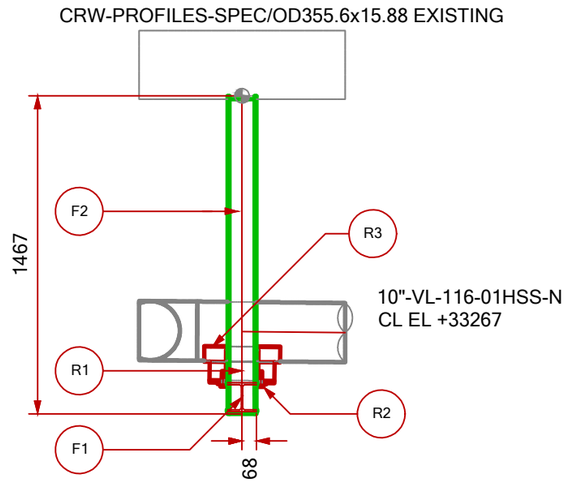
VIEW LOOKING NORTH



VIEW LOOKING WEST



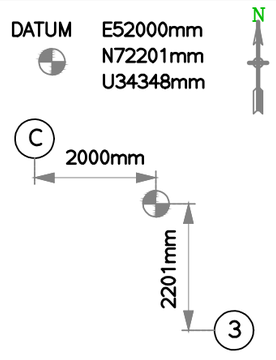
PLAN VIEW

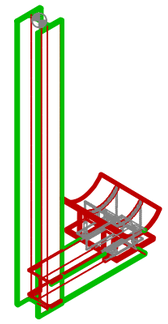


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-25-10"-100-300	-	-	1	-	11.76	0.296
R2	STD	C-37-1-C-2	-	-	1	-	2.52	0.079
R3	STD	C-40-A-10"-350-4.19-120-90	A312 TP316L SMLS	-	1	-	3.06	0.186
F1	BEAM	HEA140	Carbon Steel	560	1	24.75	13.86	0.451
F2	BEAM	HEA140	Carbon Steel	1467	1	24.75	36.32	1.171
						TOTAL	67.5	2.18





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

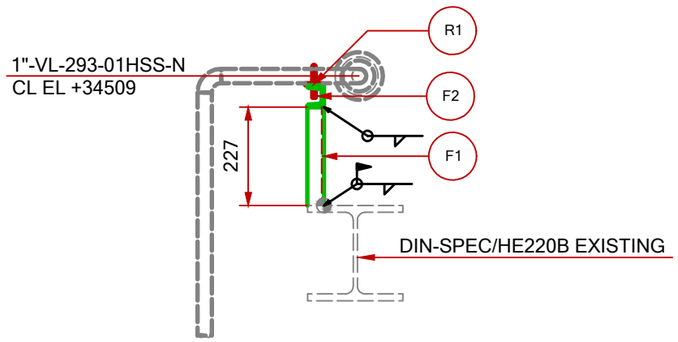
ROSETTI MARINO

TITLE :

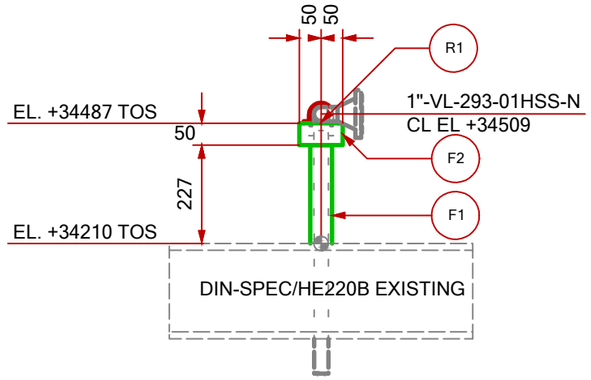
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03059

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 20
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

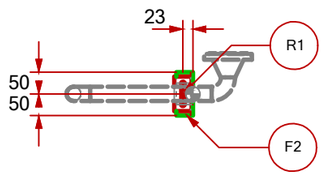
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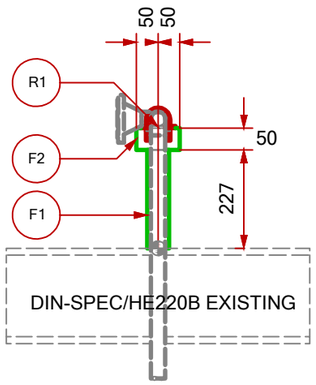
VIEW LOOKING NORTH



VIEW LOOKING WEST



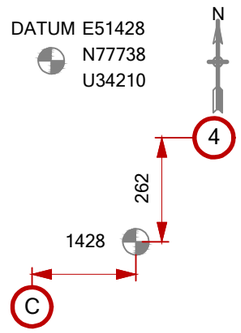
PLAN VIEW

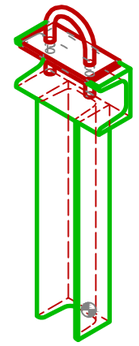


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-1"	-	-	1	-	0.29	-
F1	BEAM	UPN50	Carbon Steel	227	1	5.61	1.27	0.053
F2	BEAM	UPN50	Carbon Steel	100	1	5.61	0.56	0.024
						TOTAL	2.1	0.08





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

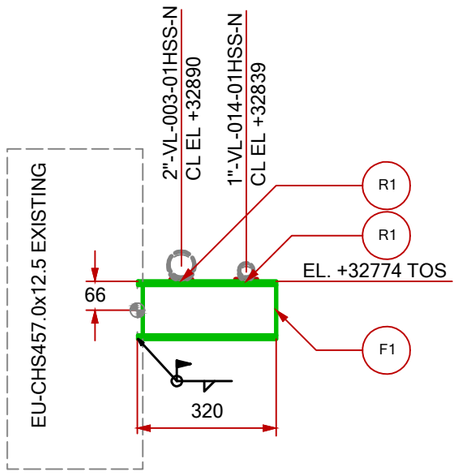
BASE LOAD POWER HUB (BLPH)
Support Drawings

PS-03063

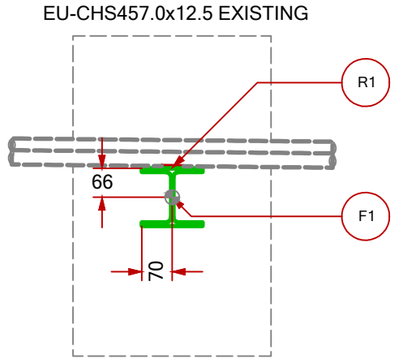
CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24

DRAWING NO.	SHEET	REV.
123A90-DDL-PP-DD-72000	1 of 1	00

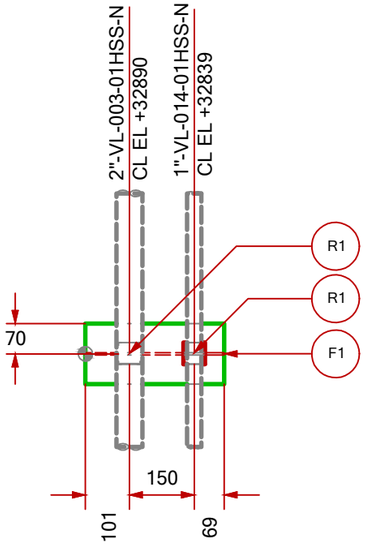
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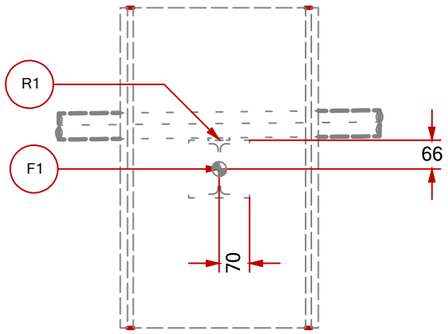
VIEW LOOKING NORTH



VIEW LOOKING WEST



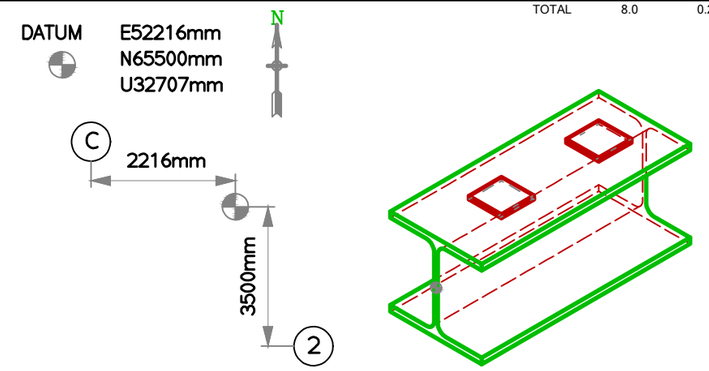
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-16-50-50-5	-	-	2	-	0.03	-
F1	BEAM	HEA140	Carbon Steel	320	1	24.75	7.92	0.260
						TOTAL	8.0	0.26



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

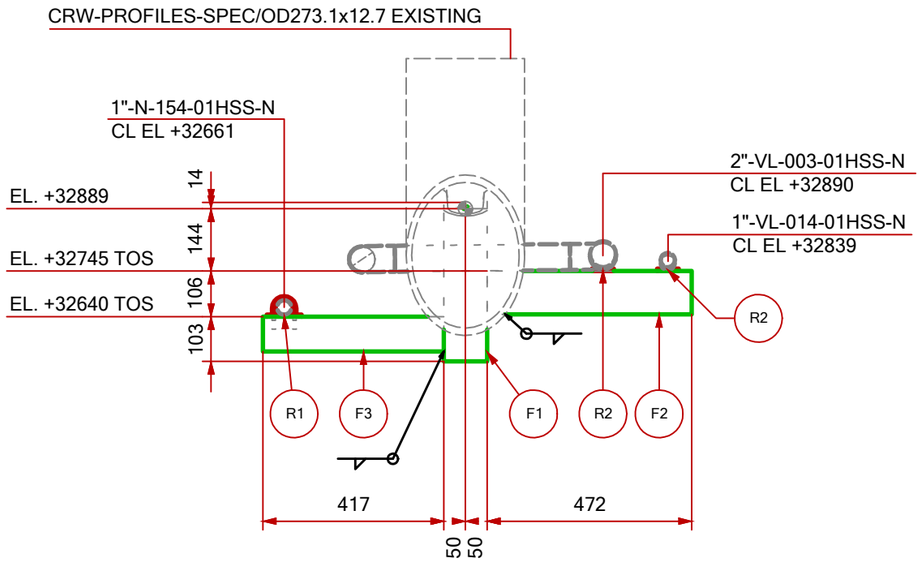
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

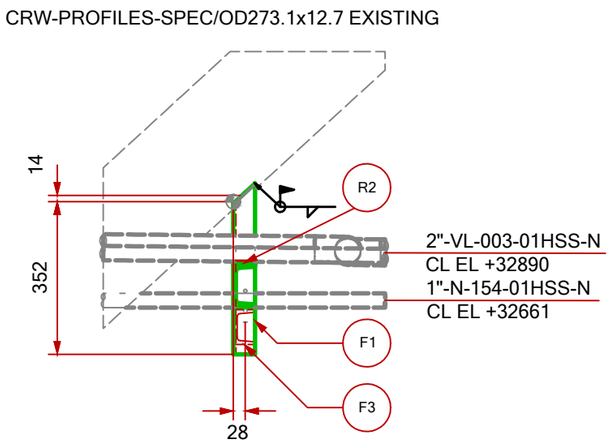
PS-03124

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

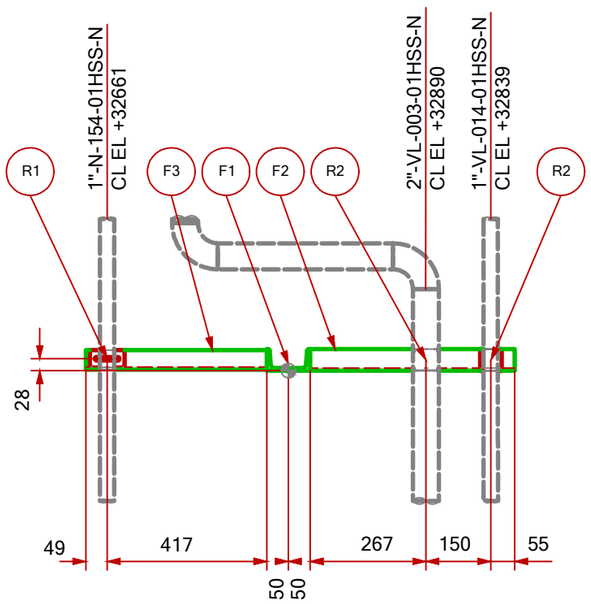
File Name :



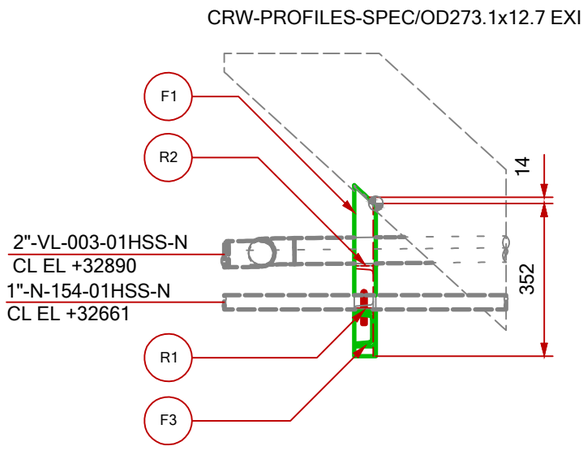
VIEW LOOKING NORTH



VIEW LOOKING WEST



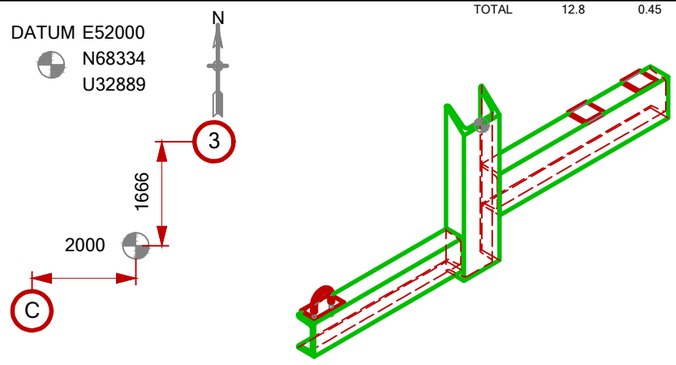
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-1"	-	-	1	-	0.29	-
R2	STD	C-16-50-50-5	-	-	2	-	0.03	-
F1	BEAM	UPN100	Carbon Steel	398	1	9.73	3.88	0.140
F2	BEAM	UPN100	Carbon Steel	472	1	10.57	4.99	0.178
F3	BEAM	UPN80	Carbon Steel	417	1	8.66	3.61	0.133
						TOTAL	12.8	0.45



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

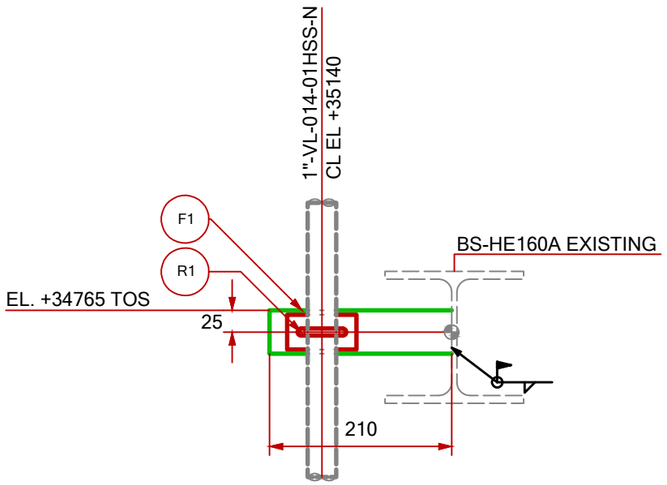
ROSETTI MARINO

TITLE :

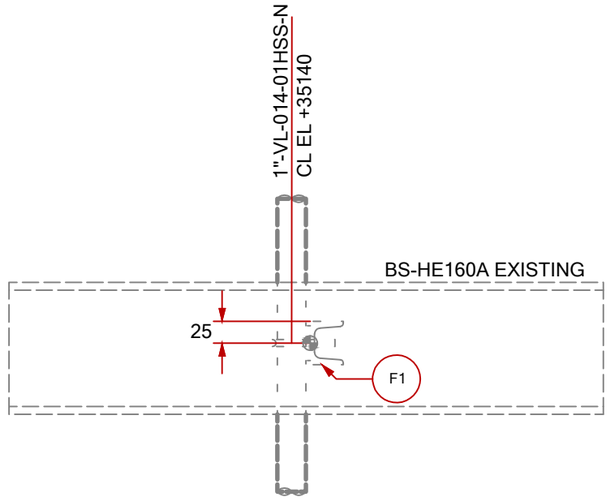
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03126

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	1 : 10
DRAWN	CHECKED	APPROVED	DATE	19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1	REV. 00

File Name :



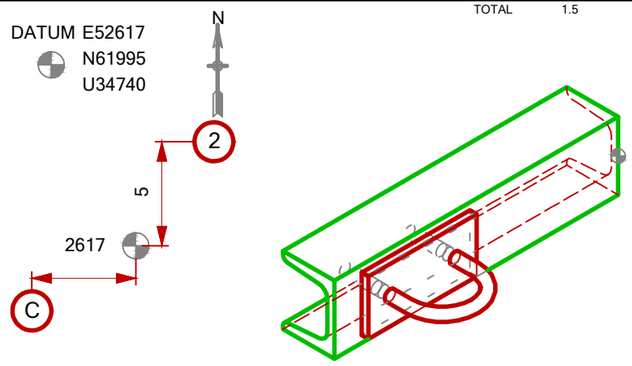
VIEW LOOKING NORTH

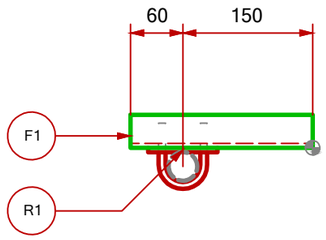


VIEW LOOKING WEST

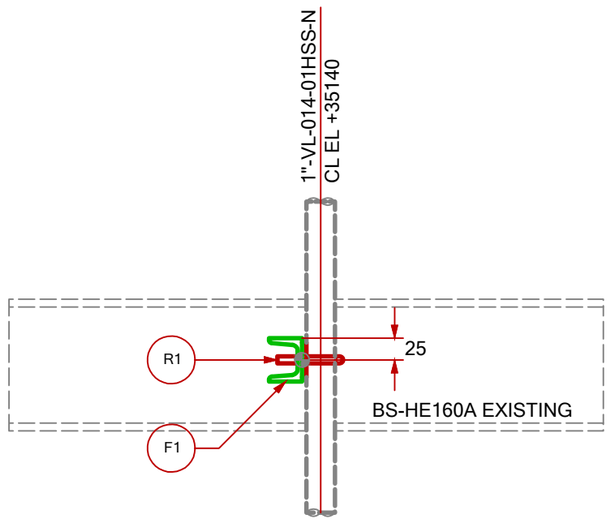
SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-1"	-	-	1	-	0.29	-
F1	BEAM	UPN50	Carbon Steel	210	1	5.61	1.18	0.050
						TOTAL	1.5	0.05





PLAN VIEW



VIEW LOOKING EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

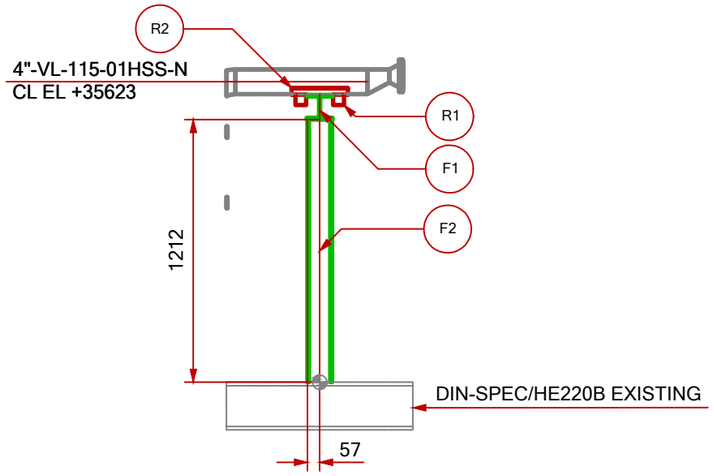
ROSETTI MARINO

TITLE :

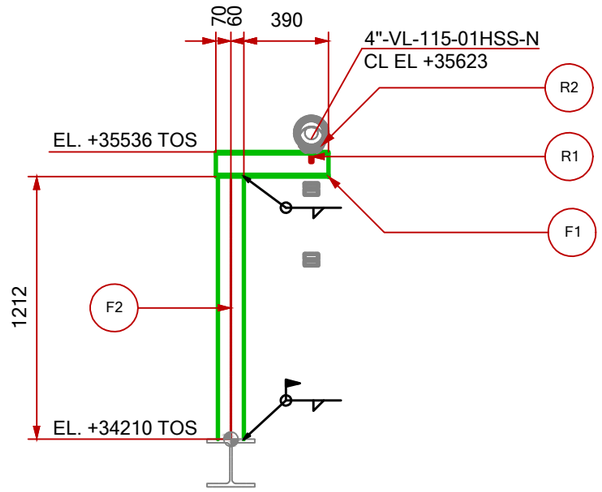
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03127

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 5
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

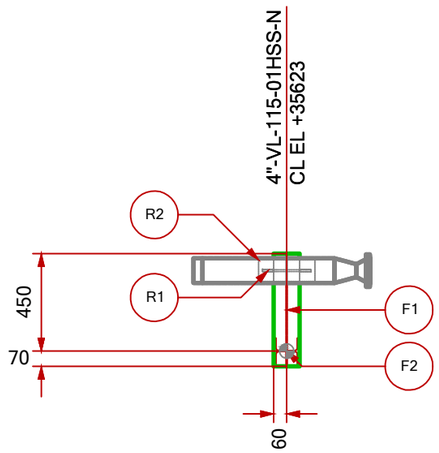
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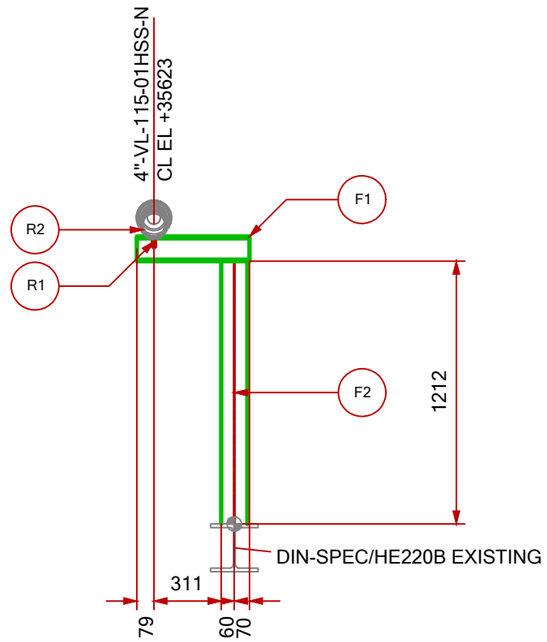
VIEW LOOKING NORTH



VIEW LOOKING WEST



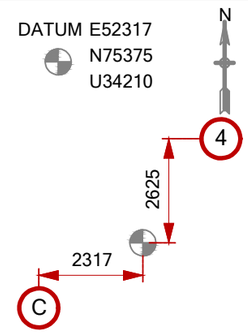
PLAN VIEW

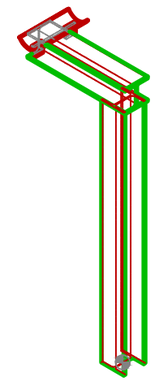


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-205-A-4"	-	-	1	-	0.39	0.010
R2	STD	C-40-A-4"-260-3.05-120-90	A312 TP316L SMLS	-	1	-	0.67	0.056
F1	BEAM	HEA120	Carbon Steel	520	1	19.98	10.39	0.357
F2	BEAM	HEA120	Carbon Steel	1212	1	19.98	24.22	0.826
						TOTAL	35.7	1.25





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

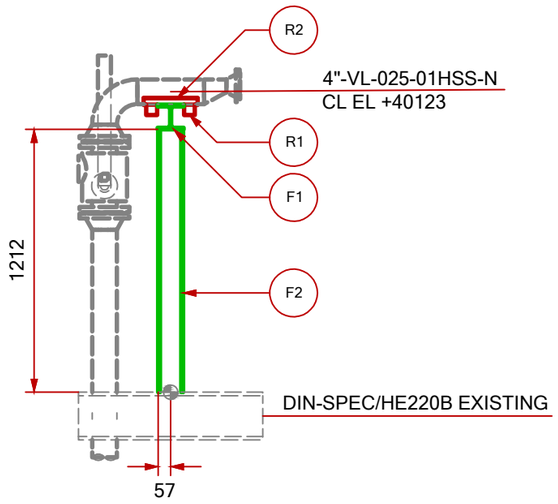
ROSETTI MARINO

TITLE :

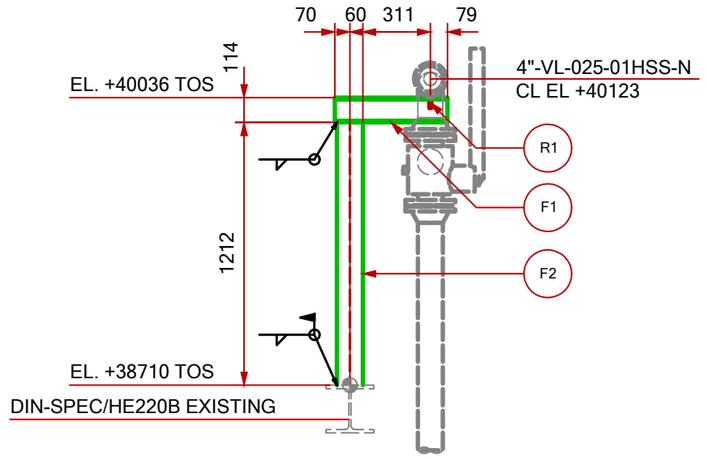
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03134

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 20
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

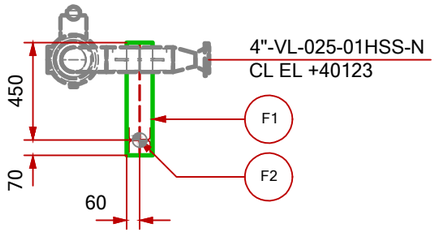
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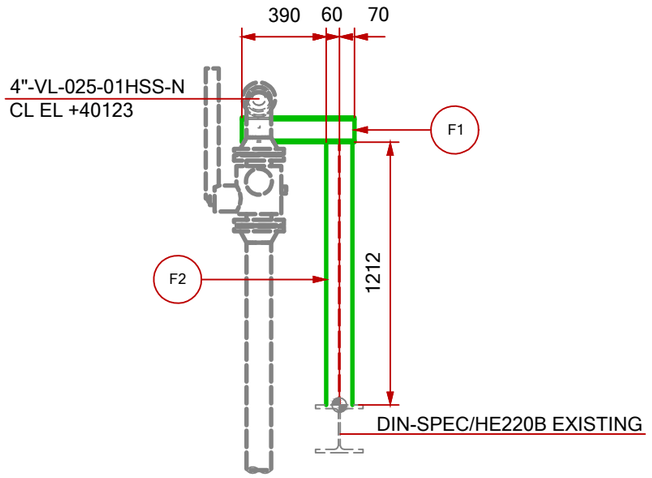
VIEW LOOKING NORTH



VIEW LOOKING WEST



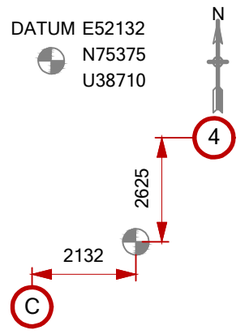
PLAN VIEW

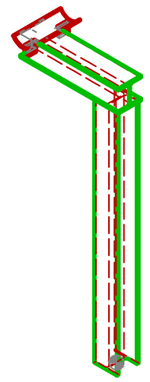


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-205-A-4"	-	-	1	-	0.39	0.010
R2	STD	C-40-A-4"-250-3.05-120-90	A312 TP316L SMLS	-	1	-	0.65	0.054
F1	BEAM	HEA120	Carbon Steel	520	1	19.98	10.39	0.357
F2	BEAM	HEA120	Carbon Steel	1212	1	19.98	24.22	0.826
						TOTAL	35.6	1.25





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03548

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1 : 20
DRAWN	CHECKED	APPROVED		DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1	REV. 00

File Name :

ROSETTI MARINO

STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

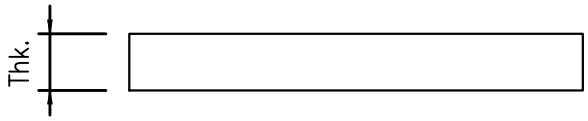
Revision: 0

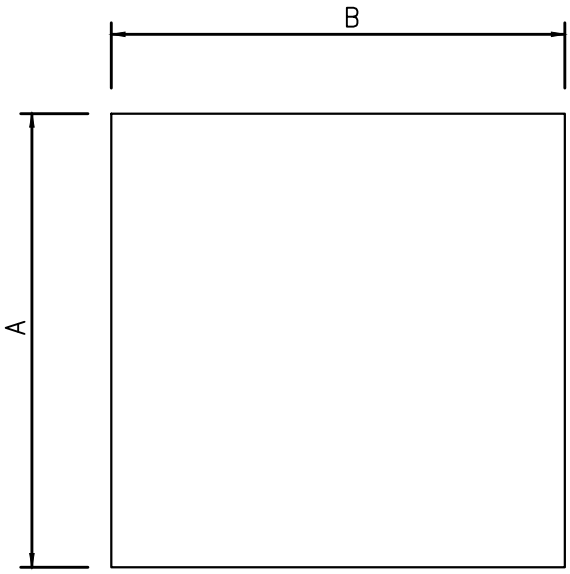
Date: –

PIATTO DI ISOLAMENTO IN PTFE Sp=VARIABILE
PTFE ISOLATING PAD Thk=VARIABLE

C–16

Example of designation : STD – A – B – Thk.
(C–16 – 70 – 100 – 5)





NOTES:
1– MATERIAL: PTFE
2– STRENGHT FOR COMPRESSION (1% DI DEFORMATION) = 5 N/mm² x Thk. (mm)
3– THE PTFE PAD SHALL BE COVERED ALSO AFTER THE POSSIBLE DISPLACEMENTS OF THE PIPING LINE

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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ROSETTI MARINO

STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

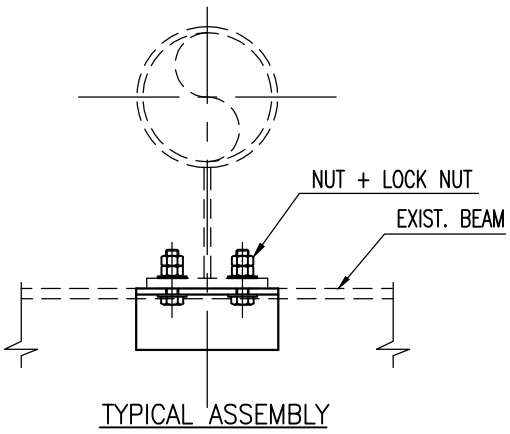
Revision: 0

Date: –

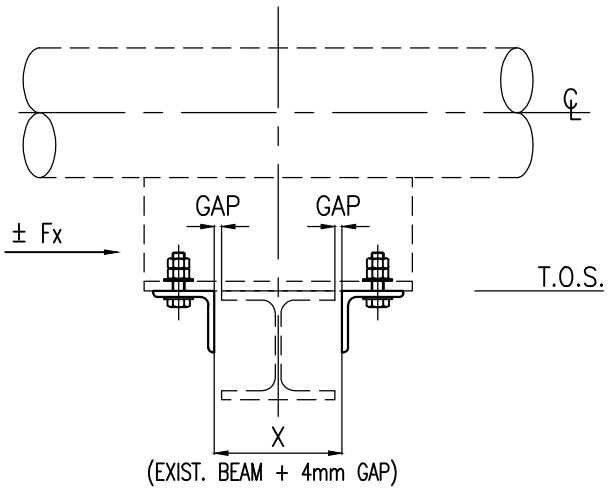
STOP ASSIALE BULLONATO
BOLTED AXIAL STOP

C–37

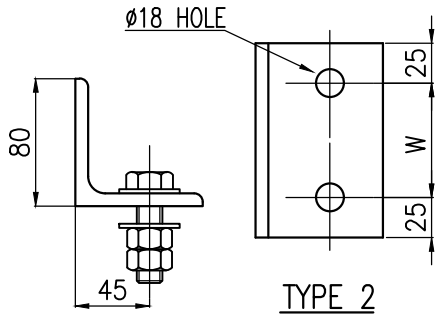
Example of designation : STD – TYPE – SIZE – GAP
(C–37 – 1 – B – 2)



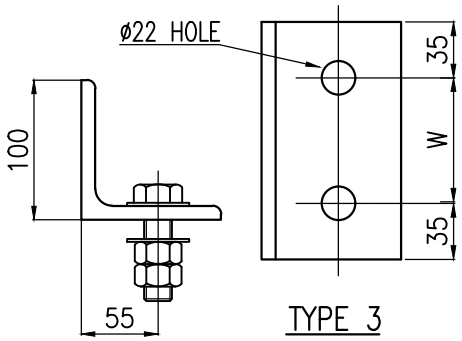
TYPICAL ASSEMBLY



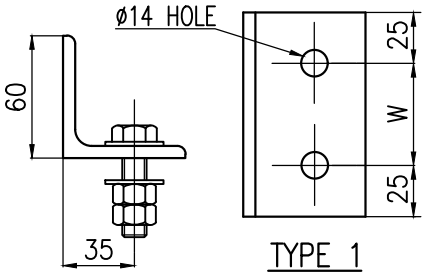
(EXIST. BEAM + 4mm GAP)



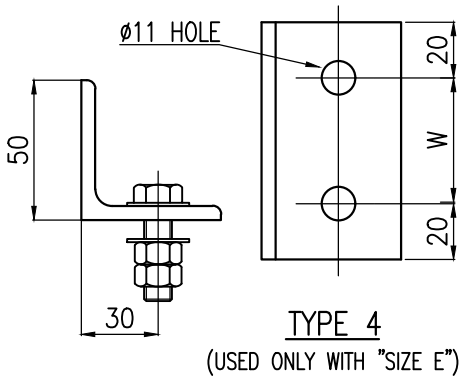
TYPE 2



TYPE 3



TYPE 1



TYPE 4
(USED ONLY WITH "SIZE E")

SIZE	EXIST. SHOE	W mm
A	IPE 220	62
B	IPE 270	80
C	HEA 220	120
D	HEA 300	200
E	IPE 140	40

TYPE	PROFILE	BOLTING (DIN933)	MAXIMUM LOAD Fx (KN)	WEIGHT (INCL BOLTS)
1	L60x60x6	M12x60	20	.....
2	L80x80x8	M16x70	36	.....
3	L100x100x10	M20x75	56	.....
4	L50x50x5	M10x60	...	.....

NOTES:
1– PROFILE MATERIAL : CARBON STEEL
2– BOLTS (UNI 5739 CI 8.8), NUTS (UNI 5588 CI 8.8), LOCK NUT (UNI 7474 CI.10) & WASHERS (UNI 6592) SHALL BE H.D.G.
3– SAFE LOADS ARE BASED ON BOLT SHEAR LOADS ONLY.
4– AXIAL STOPS ARE TO BE SITE LOCATED AND DRILLED UNLESS OTHERWISE ON.
5– VARIABLE WEIGHT ADDICTED TO THE "TYPE" SELECTED AND THE "W" DIMENSION INDICATED.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

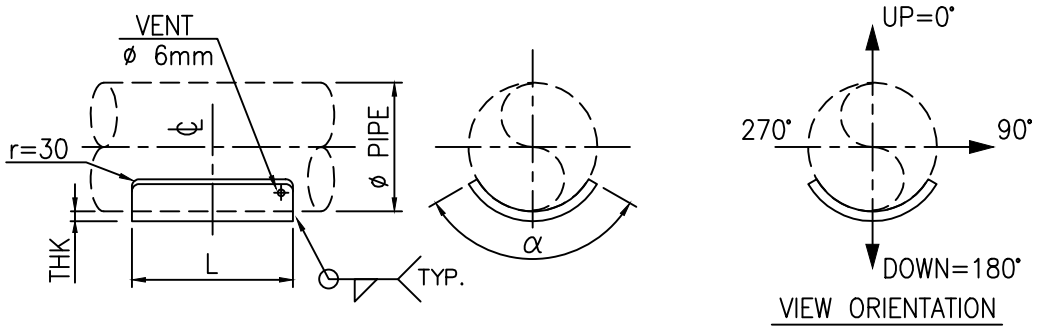
Document Number: STD-PP-DD-0001

Revision: 0

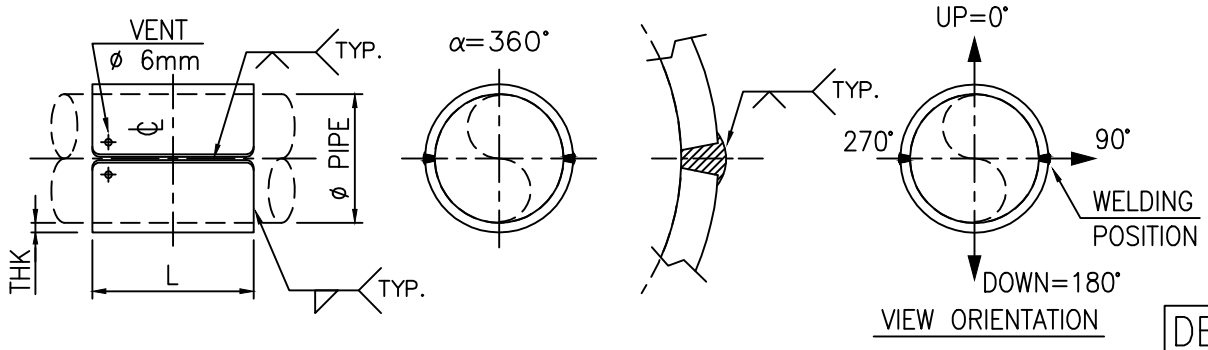
Date: -

PIASTRA DI RINFORZO RICAVATA DA TUBO
REINFORCING PAD OBTAINED FROM MAIN PIPE

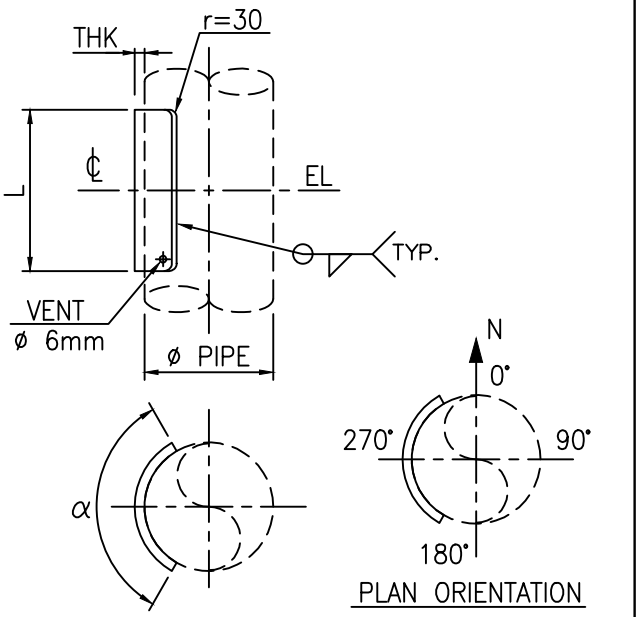
C-40



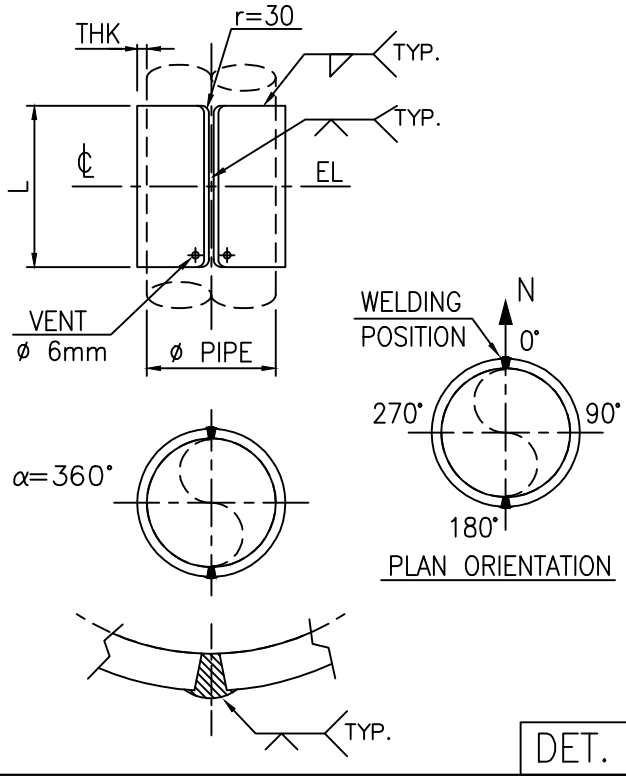
DET. A



DET. B



DET. C



DET. D

Example of designation : STD - DET - øPIPE - L - THK - α - ORIENTATION
(C-40 - C - 10" - 400 - 10 - 90 - 180)

NOTES:

1- REINFORCING PAD SHALL BE OBTAINED FROM THE PIPE WITH THE SAME MATERIAL AND THIKNESS OF THE MAIN PIPE.
2- FOR LINES WITH THK. >12,7mm SHALL BE USE THK. PAD = 12,7mm OR CHANGE STD IN TO C-42 (FROM PLATE)
3- REINFORCEMENT PAD SHALL BE WELDED BY PIPE FABRICATOR.
4- AFTER THE WELDING OF REINFORCED PADS, THE VENT HOLE SHALL BE SEALED.
5- VARIABLE WEIGHT.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
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STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

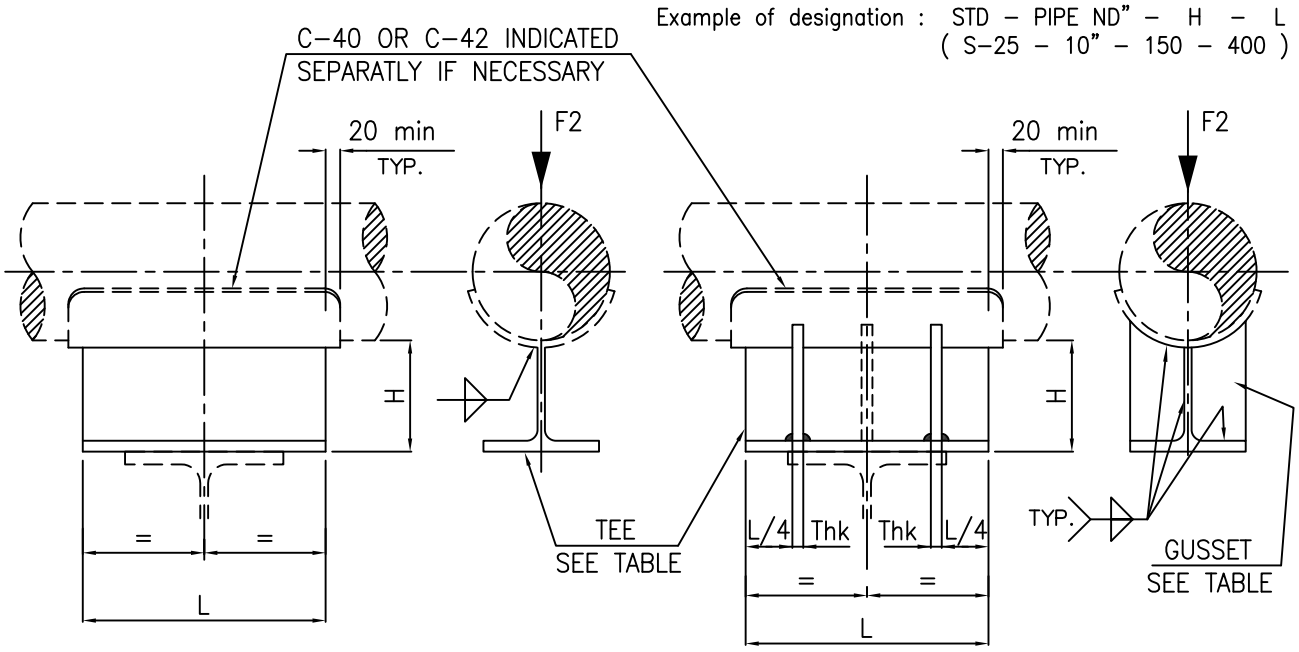
Revision: 0

Date: –

SCARPETTA SALDATA AD ALTEZZA E LUNGHEZZA VARIABILI PER TUBAZIONI C.S.–S.S. E ALLOY
WELDED SHOE WITH VARIABLE HEIGHT & LENGTH FOR C.S. – S.S. AND ALLOY PIPES

S–25

Example of designation : STD – PIPE ND" – H – L
(S–25 – 10" – 150 – 400)



PIPES ½" TO 4"

PIPES 6" TO 24"

PIPE		TEE CUT FROM	GUSSET Thk.	"H" MAX	MAX LOAD (KN)
ND"	ND				F2
½"	15	IPE 140	–	120	2
3/4"	20	IPE 140	–		
1"	25	IPE 140	–		
1½"	40	IPE 140	–		
2"	50	IPE 220	–	190	4.5
3"	80	IPE 220	–		
4"	100	IPE 220	–		
6"	150	IPE 270	10	240	28.5
8"	200	IPE 270	10		
10"	250	HE220A	10	180	58
12"	300	HE220A	10		
14"	350	HE220A	10		
16"	400	HE220A	10		
18"	450	HE300A	10	230	77.5
20"	500	HE300A	10		
24"	600	HE300A	10		

ALLOWABLE RANGE FOR SHOE LENGTH		
ø PIPE	MIN. "L" mm	MAX. "L" mm
½" ÷ 6"	200	600
8" ÷ 24"	250	800

NOTES:
1– MATERIAL TO BE CARBON STEEL
2– ALL FILLET WELDING MUST HAVE THE EQUAL TO 0.8 OF THE MINIMUM THICKNESS TO BE WELDED EXCEPT WHERE OTHERWISE INDICATED.
3– FOR SHOES LENGHT HIGHER THAN 600 ADDITIONAL GUSSETS REQUIRED.
4– VARIABLE WEIGHT ADDICTED TO THE "PIPE ND" SELECTED AND THE "L" , "H" DIMENSIONS INDICATED.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	-	ISSUED FOR REVIEW	SLO	GMA	MCO

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STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

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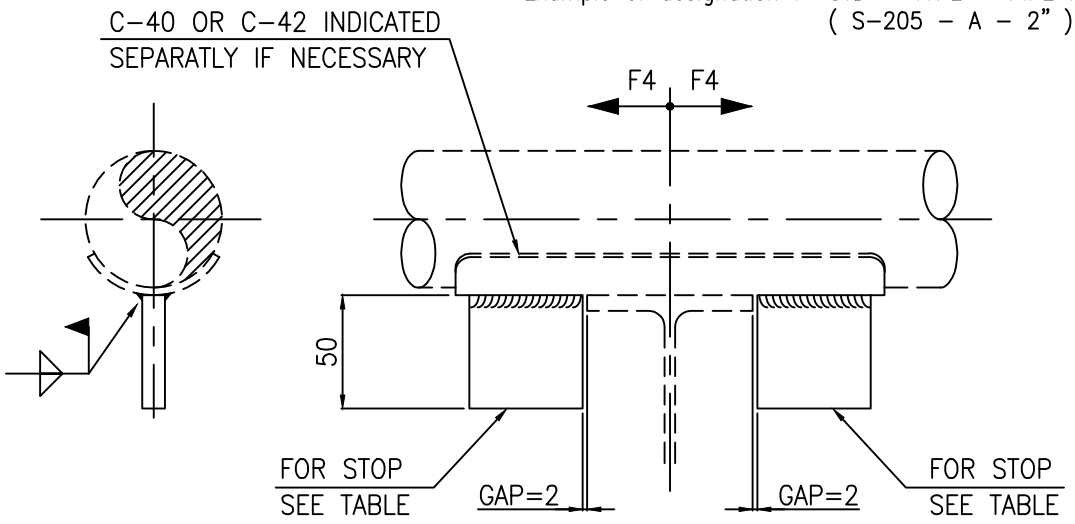
Revision: 0

Date: –

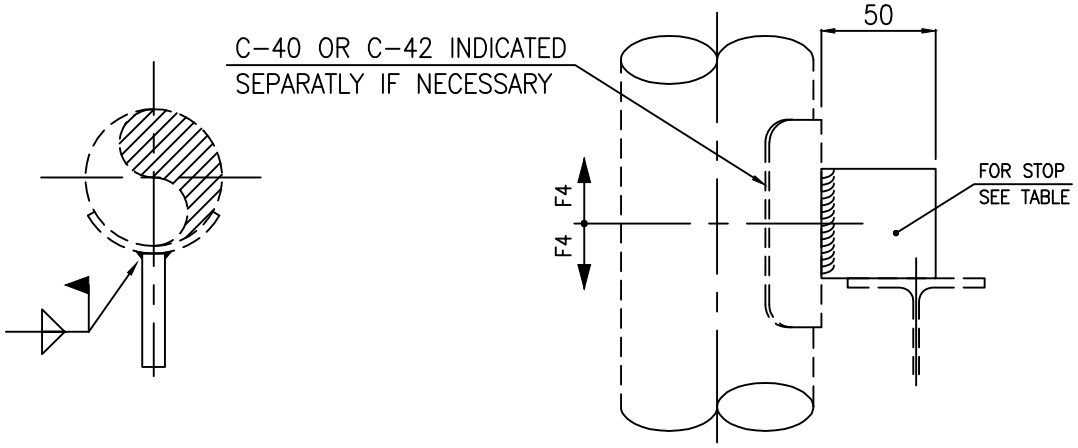
STOP PER TUBAZIONI ½"÷ 4" C.S. – S.S. – ALLOY NON ISOLATE
STOP FOR UNINSULATED C.S. – S.S. – ALLOY ½"÷ 4" PIPES

S–205 sh.1

Example of designation : STD – TYPE – PIPE ND"
(S–205 – A – 2")



TYPE "A"
(N°2 PLATES)



TYPE "B"
(N°1 PLATE)

PIPE		PLATE	MAX LOAD (kN)
ND"	ND		F4
½"	15	50x50x10	15
3/4"	20	50x50x10	
1"	25	50x50x10	
1½"	40	50x50x10	
2"	50	50x50x10	
3"	80	50x50x10	
4"	100	50x50x10	

NOTES:
1– MATERIAL: WITH REINFORCING PLATE (C–40, C–42) SHALL BE CARBON STEEL
WITHOUT REINFORCING PLATE SHALL BE THE SAME MATERIAL OF MAIN PIPE.
2– ALL FILLET WELDING MUST HAVE THE EQUAL TO 0.8 OF THE MINIMUM THICKNESS TO BE WELDED EXCEPT WHERE OTHERWISE INDICATED.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

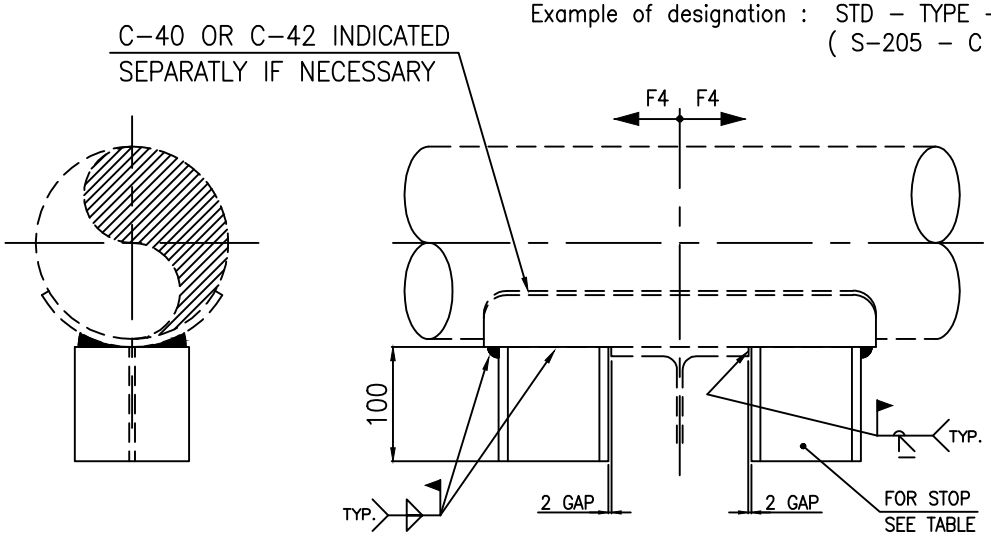
Revision: 0

Date: –

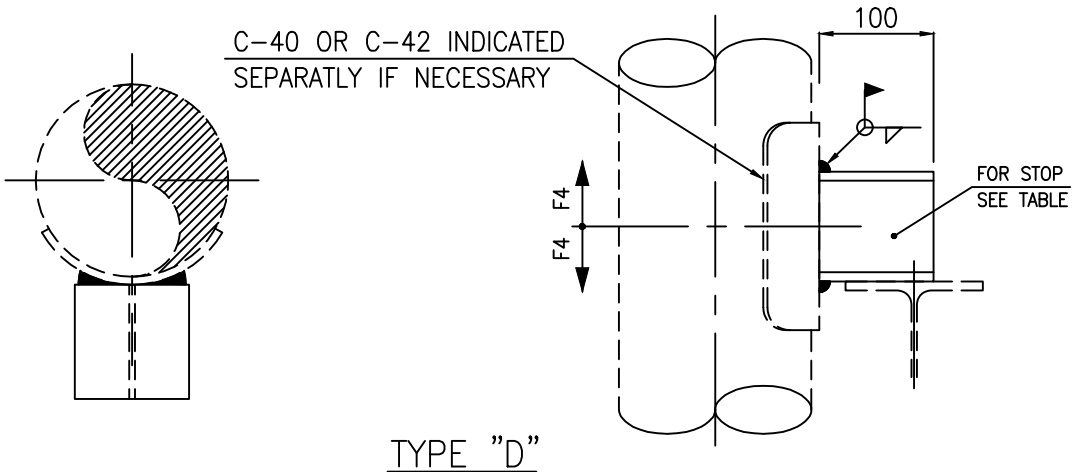
STOP PER TUBAZIONI 6"÷ 24" C.S. – S.S. – INCONEL NON ISOLATE
STOP FOR UNINSULATED C.S. – S.S. – INCONEL 6"÷ 24" PIPES

S–205 sh.2

Example of designation : STD – TYPE – PIPE ND"
(S–205 – C – 10")



TYPE "C"
(N°2 PROFILES)



TYPE "D"
(N°1 PROFILE)

PIPE		STOP PROFILE	MAX LOAD (kN)
ND"	ND		F4
6"	150	HE100A	50
8"	200	HE100A	
10"	250	HE160A	60
12"	300	HE160A	
14"	350	HE160A	
16"	400	HE160A	
18"	450	HE200A	80
20"	500	HE200A	
24"	600	HE200A	

NOTES:

1– MATERIAL: CARBON STEEL

2– ALL FILLET WELDING MUST HAVE THE EQUAL TO 0.8 OF THE MINIMUM THICKNESS TO BE WELDED EXCEPT WHERE OTHERWISE INDICATED.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
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STANDARD SPECIFICATION
PIPE SUPPORT DETAIL
STANDARD

Document Number: STD–PP–DD–0001

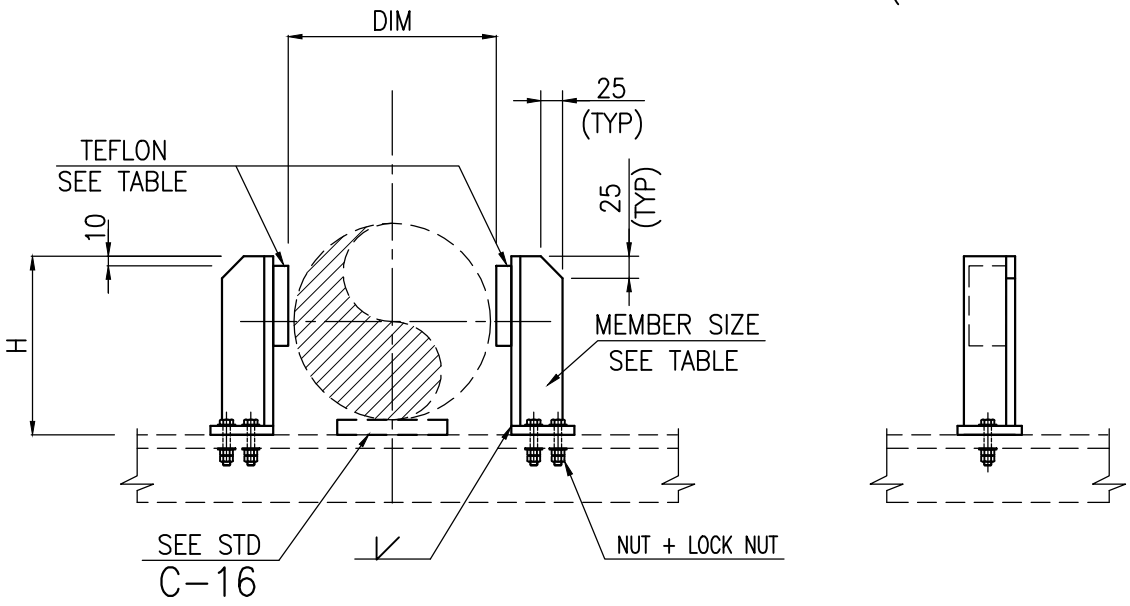
Revision: 0

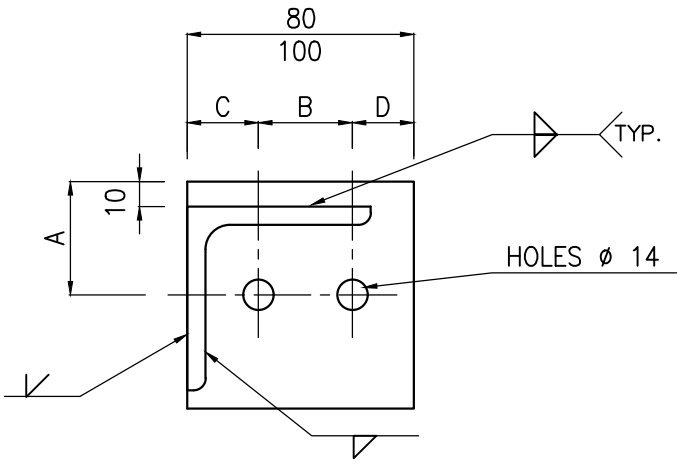
Date: –

GUIDA IMBULLONATA PER TUBAZIONI IN C.S. – S.S. – Cu/Ni – ALLOY NON ISOLATE
BOLTED GUIDE FOR UNINSULATED C.S. – S.S. – Cu/Ni – ALLOY PIPES

S–208

Example of designation : STD – DIM – TYPE – H
(S–204 – 200 – A – 150)





DIM	TYPE	H MAX.	TEFLON SIZE (2 PIECES)	MEMBER SIZE	PLATE	A mm	B mm	C mm	D mm	E mm	BOLTING (UNI 5739)	MAX LOAD (kN)	TOTAL WEIGHT (Kg)
VAR	X	150	50x50x5	L60x60x6	80x80x10	40	33	25	22	5	M12x55 LG	10	2,60
VAR	Y	200	70x70x5	L80x80x8	100x100x10	50	45	30	25	10	M12x55 LG	12	7,09

AVAILABLE MATERIAL SHORT CODE	MAXIMUM ALLOWABLE OPERAT. TEMP.	MAXIMUM ALLOWABLE DESIGN TEMP.	MIN. ALLOWABLE DESIGN TEMP.
CS	120°C	150°C	–20°C

NOTES:

1– ALL FILLET WELDING MUST HAVE THE EQUAL TO 0,8 OF THE MINIMUM THICKINESS TO BE WELDED EXCEPT WHERE OTHETWISE INDICATED.
2– BOLT HOLES IN GUIDE PLATE TO BE DRILLED IN PREFABRICATION.
3– GUIDES TO BE SITE LOCATED, BOLT HOLES IN PIPE SUPPORT FRAME DRILLED TO SUIT GUIDE PLATES.
4– BOLTS (UNI 5739 CI 8.8), NUTS (UNI 5588 CI 8.8), LOCK NUT (UNI 7474 CI.10) & WASHERS (UNI 6592) SHALL BE H.D.G.
5– MATERIAL CARBON STEEL.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
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STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

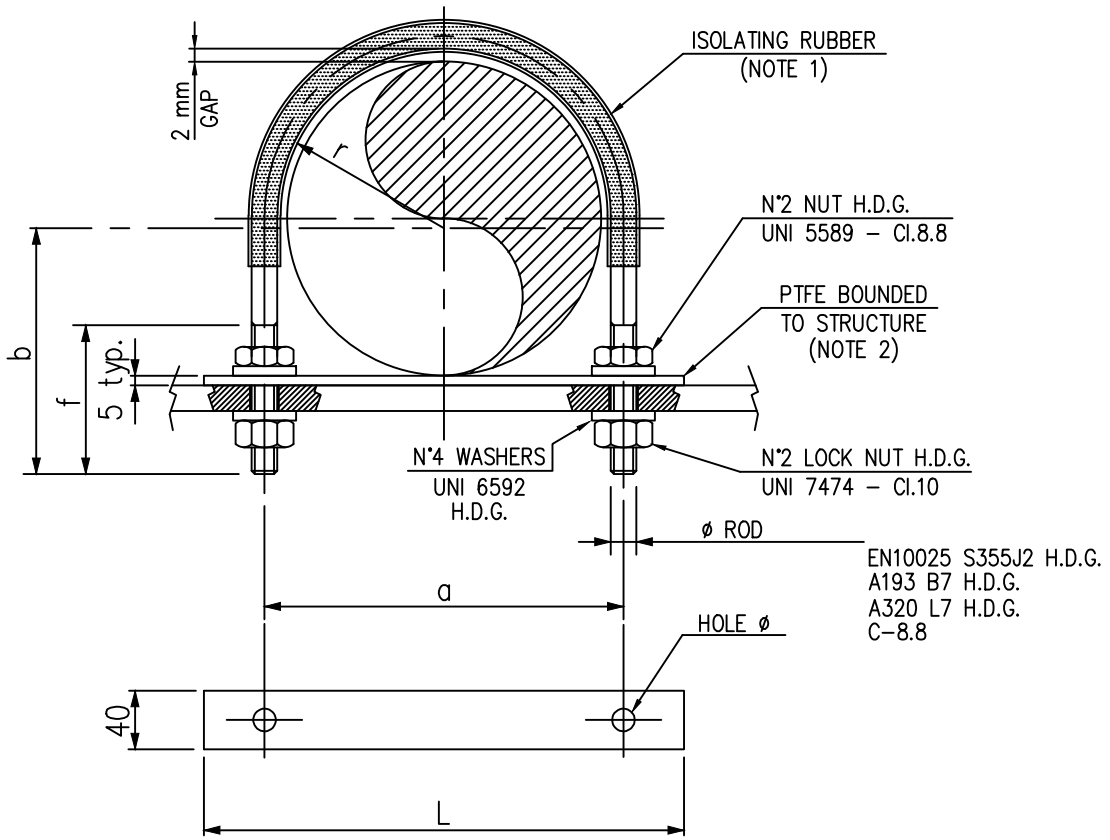
Revision: 0

Date: –

CAVALLOTTI GALVANIZZATI DI GUIDA PER TUBAZIONI IN C.S S.S. E ALLOY
GALVANIZED U–BOLTS GUIDE FOR C.S. S.S. AND ALLOY PIPES (NON GRIP)

S–211

Example of designation : STD – PIPE ND"
(S–211 – 10")



SIZE ND	ROD DIA	r	a	b	f	L	HOLE ø	DEV	DEV. RUBBER	WEIGHT Kg
½"	M8	14	36	55	52	65	10	167	62	0.16
3/4"	M8	17	42	55	52	70	10	176	75	0.16
1"	M8	20	48	60	55	80	10	196	90	0.18
1½"	M10	27	64	70	65	100	12	240	120	0.32
2"	M10	33	76	80	70	110	12	280	150	0.35
3"	M12	48	108	100	80	150	14	370	210	0.60
4"	M12	60	132	110	80	180	14	430	260	0.67
6"	M16	87	190	150	100	250	18	600	380	1.39
8"	M16	113	242	170	100	300	18	720	500	1.60
10"	M16	140	296	200	100	350	18	865	650	1.86
12"	M20	165	350	240	120	420	22	1030	750	3.31
14"	M20	181	382	260	120	450	22	1120	840	3.55
16"	M24	207	438	290	130	520	26	1270	1000	5.76
18"	M24	232	488	320	130	570	26	1410	1100	6.28
20"	M30	257	544	360	160	640	32	1570	1200	11.02
24"	M30	308	646	410	160	750	32	1830	1450	12.52

NOTES:

1) HEAT SHRINK TUBE TYPE FLAME RETARDANT, WITH RATIO 2:1
2) MULTIPLE SHEETS OF PTFE CAN BE ADDED IN ORDER TO ENSURE THE CORRECT ELEVATION AND SLOPE OF THE LINES.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
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7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	2	**To**	2
Sheet		**From**	2	**To**	2
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
13/2/2/_		**01**	**19-12-2024**	**98-122**	**AX84**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**09-01-2025**	
					AX 453	**After Cutting**													
01HSS	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					20-12-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	001086	3	Acceptable					23-12-2024				
Cut 08-01-2025 Prod sh.122 AX 453		VIS	C 1 DTA	After Cutting	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable	C1A		GTAW		08-01-2025				
		RT	C 1 DTA	After Cutting	IDL-QCI-RT 0036 00	PR	100 %	001135	3	Acceptable					09-01-2025				
14/2/2/_		**01**	**02-10-2024**	**26**	**AZ35**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-10-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000303	3	Acceptable					11-10-2024				
15/2/2/_		**01**	**01-10-2024**	**25**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**11-10-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000301	3	Acceptable					11-10-2024				
16/2/2/_		**01**	**01-10-2024**	**25**	**AZ35**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**11-10-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000302	3	Acceptable					11-10-2024				
17/2/2/_		**01**	**04-10-2024**	**29**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**11-10-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					07-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000304	3	Acceptable					11-10-2024				
18/2/2/_		**01**	**18-12-2024**	**97**	**AX84**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**23-12-2024**	
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					19-12-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	001087	3	Acceptable					23-12-2024				
19/2/2/_		**01**	**01-10-2024**	**25**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**07-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000257	3	Acceptable					07-10-2024				
20/2/2/_		**01**	**01-10-2024**	**25**	**AZ35**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**07-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000258	3	Acceptable					07-10-2024				
21/2/2/_		**01**	**02-10-2024**	**26**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**E**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons.	Accept. Date	Spool
21/2/2/_		**01**	**02-10-2024**	**26**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				03-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000249	3	Acceptable				07-10-2024				
22/2/2/_		**01**	**02-10-2024**	**26**	**AZ35**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				03-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000250	3	Acceptable				07-10-2024				
23/2/2/_		**01**	**01-10-2024**	**25**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**07-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				03-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000259	3	Acceptable				07-10-2024				
25/2/2/_		**01**	**04-10-2024**	**30**	**AZ35**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**11-10-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				07-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000305	3	Acceptable				11-10-2024				

Totals per DWG	**2**	**Prefabrication**	**1,90 m**	**10 Nr. Welds**	**20,00 inch**
		Erection	**0,38 m**	**2 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**2,28 m**	**12 Nr. Welds**	**24,00 inch**
		Accepted	**2,28 m**	**12 Nr. Welds**	**24,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**1,90 m**	**10 Nr. Welds**	**20,00 inch**
		Erection	**0,38 m**	**2 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**2,28 m**	**12 Nr. Welds**	**24,00 inch**
		Accepted	**2,28 m**	**12 Nr. Welds**	**24,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**1,90 m**	**10 Nr. Welds**	**20,00 inch**
		Erection	**0,38 m**	**2 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**2,28 m**	**12 Nr. Welds**	**24,00 inch**
		Accepted	**2,28 m**	**12 Nr. Welds**	**24,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND / ROSETTI MARINO	Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
	SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
	Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
	Commessa/Job	**123A90 - Piping**			
	Disciplina/Discipline	**PIPING**			
	TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
	RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
2	02	2	D	01HSS	2	1	90 Deg Elbow Long Radius BW >2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724000839	00260	24-01-0126	W14-W15	
2	02	2	D	01HSS	2	1	90 Deg Elbow Long Radius BW >2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724000839	00260	24-01-0126	W16-W17	
2	02	2	D	01HSS	1G	4,151	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
2	02	2	D	01HSS	1H	1,013	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
2	02	2	D	01HSS	1I	1,775	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
2	02	2	D	01HSS	1M	1,775	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
2	02	2	E	01HSS	2	1	90 Deg Elbow Long Radius BW >2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724000839	00260	24-01-0126	W19	
2	02	2	E	01HSS	2	1	90 Deg Elbow Long Radius BW >2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724000839	00260	24-01-0126	W20-W21	
2	02	2	E	01HSS	2	1	90 Deg Elbow Long Radius BW >2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724000839	00260	24-01-0126	W22-W23	
2	02	2	E	01HSS	1J	0,404	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
2	02	2	E	01HSS	1K	1,401	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
2	02	2	E	01HSS	1L	0,147	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	6	**To**	6
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
1/6/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000128	3	Acceptable					04-10-2024			
2/6/1/_		**01**	**01-10-2024**	**25**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000129	3	Acceptable					04-10-2024			
3/6/1/_		**01**	**01-10-2024**	**25**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000130	3	Acceptable					04-10-2024			
4/6/1/_		**01**	**02-10-2024**	**27**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000132	3	Acceptable					04-10-2024			
5/6/1/_		**01**	**01-10-2024**	**25**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000131	3	Acceptable					04-10-2024			
6/6/1/_		**01**	**04-01-2025**	**116**	**AX 453**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**08-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					07-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001129	3	Acceptable					08-01-2025			
7/6/1/_		**01**	**02-10-2024**	**27**	**AZ35**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000133	3	Acceptable					04-10-2024			
8/6/1/_		**01**	**01-10-2024**	**25**	**AZ39**			**FWN**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000223	3	Acceptable					05-10-2024			
9/6/1/_		**01**	**01-10-2024**	**25**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000224	3	Acceptable					05-10-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
9/6/1/_		**01**	**01-10-2024**	**25**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**C**
10/6/1/_		**01**	**01-10-2024**	**25**	**AZ39**			**PAD**	**168,00 mm**	**3,40 mm**	**FILL**	**0,528 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**09-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		LP	FIN	Weld Completion		IDL-QCI-LP 0002 01	BV	100 %	000006		Acceptable					09-10-2024			
11/6/1/_		**01**	**01-10-2024**	**25**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000225	3	Acceptable					05-10-2024			
12/6/1/_		**01**	**01-10-2024**	**25**	**AZ39**			**RED**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000176	3	Acceptable					06-10-2024			

Totals per DWG	**6**	**Prefabrication**	**5,66 m**	**11 Nr. Welds**	**58,00 inch**
		Erection	**0,53 m**	**1 Nr. Welds**	**6,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**6,19 m**	**12 Nr. Welds**	**64,00 inch**
		Accepted	**6,19 m**	**12 Nr. Welds**	**64,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**5,66 m**	**11 Nr. Welds**	**58,00 inch**
		Erection	**0,53 m**	**1 Nr. Welds**	**6,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**6,19 m**	**12 Nr. Welds**	**64,00 inch**
		Accepted	**6,19 m**	**12 Nr. Welds**	**64,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**5,66 m**	**11 Nr. Welds**	**58,00 inch**
		Erection	**0,53 m**	**1 Nr. Welds**	**6,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**6,19 m**	**12 Nr. Welds**	**64,00 inch**
		Accepted	**6,19 m**	**12 Nr. Welds**	**64,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
6	01	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W1-W2	
6	01	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W3-W4	
6	01	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W5	
6	01	1	A	01HSS	1A	0,148	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
6	01	1	A	01HSS	1B	0,945	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
6	01	1	A	01HSS	1C	1,441	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
6	01	1	B	01HSS	4	1	Flange WN ›6" Thk.3.4mm 150LB RF ASTM A182 Gr.F316/316L	DK782	1724000839	01000	1000028548/57 REV.1	W7	
6	01	1	B	01HSS	1D	0,423	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
6	01	1	C	01HSS	2	1	Reducer Eccentric BW ›6"x4" Thk.3.4mmx3.05mm ASTM A403 Gr.WP316/316L	HTA077-04-103ER	1724000839	00430	PSA3-FT-47152	W11-W12	
6	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W8-W9	
6	01	1	C	01HSS	4	1	Flange WN ›6" Thk.3.4mm 150LB RF ASTM A182 Gr.F316/316L	DK782	1724000839	01000	1000028548/57 REV.1	W8	
6	01	1	C	01HSS	5	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W12	
6	01	1	C	01HSS	1E	0,358	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
6	01	1	C	01HSS	STD C-40	1	PAD - STD C-40	NJ112	1724000839	00090	416	W10	

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	8	**To**	8
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
1/8/1/_		**00A**	**18-09-2024**	**16-20**	**AZ35**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**20-12-2024**	**A**
					AX84	**After Cutting**													
01HSS	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				20-09-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000080	4		Acceptable				26-09-2024				
Cut 19-12-2024 Prod sh.20 AX84		VIS	C 1 DTA	After Cutting	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK			Acceptable C1A		GTAW		20-12-2024				
		RT	C 1 DTA	After Cutting	IDL-QCI-RT 0036 00	AA	100 %	001081	4		Acceptable				19-12-2024				
2/8/1/_		**00A**	**03-10-2024**	**27**	**AZ35**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**07-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				04-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000236	4		Acceptable				07-10-2024				
3/8/1/_		**00A**	**17-12-2024**	**98**	**AX84**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**19-12-2024**	
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK			Acceptable				17-12-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	001083	4		Acceptable				19-12-2024				
4/8/1/_		**00A**	**02-10-2024**	**26-21**	**AZ35**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**20-12-2024**	**B**
					AX84	**After Cutting**													
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				03-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000288	4		Acceptable				10-10-2024				
Cut 19-12-2024 Prod sh.21 AX84		VIS	C 1 DTA	After Cutting	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK			Acceptable C1A		GTAW		20-12-2024				
		RT	C 1 DTA	After Cutting	IDL-QCI-RT 0036 00	AA	100 %	001080	4		Acceptable				19-12-2024				
5/8/1/_		**00A**	**02-10-2024**	**26**	**AZ35**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**10-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				04-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000289	4		Acceptable				10-10-2024				
6/8/1/_		**00A**	**02-10-2024**	**26**	**AZ35**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**10-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				04-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000290	4		Acceptable				10-10-2024				
7/8/1/_		**00A**	**02-10-2024**	**26**	**AZ35**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**10-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				03-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000291	4		Acceptable				10-10-2024				
8/8/1/_		**00A**	**16-12-2024**	**96**	**AX84**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**18-12-2024**	
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK			Acceptable				18-12-2024				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
8/8/1/_		**00A**	**16-12-2024**	**96**	**AX84**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**18-12-2024**	
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001079	4	Acceptable				18-12-2024				
9/8/1/_		**00A**	**02-10-2024**	**26**	**AZ35**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				03-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000231	4	Acceptable				07-10-2024				
10/8/1/_		**00A**	**02-10-2024**	**26**	**AZ35**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				03-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000232	4	Acceptable				07-10-2024				
11/8/1/_		**00A**	**05-12-2024**	**66**	**AX416**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**D1A**	**GTAW**	**BW**	**12-12-2024**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				06-12-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001057	4	Acceptable				12-12-2024				
12/8/1/_		**00A**	**02-10-2024**	**26**	**AZ35**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				03-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000233	4	Acceptable				07-10-2024				
13/8/1/_		**00A**	**02-10-2024**	**26**	**AZ35**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				03-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000234	4	Acceptable				07-10-2024				
14/8/1/_		**00A**	**02-10-2024**	**26**	**AZ35**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				03-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000235	4	Acceptable				07-10-2024				
15/8/1/_		**00A**	**21-12-2024**	**101**	**AX416**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**23-12-2024**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				21-12-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001085	4	Acceptable				23-12-2024				
16/8/1/_		**00A**	**17-12-2024**	**99**	**AX84**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**19-12-2024**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				17-12-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001082	4	Acceptable				19-12-2024				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Conn	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.	Defect length	CND date	NOTE			
16/8/1/_		**00A**	**17-12-2024**	**99**	**AX84**		**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**19-12-2024**	

Totals per DWG	**8**	**Prefabrication**	**1,10 m**	**11 Nr. Welds**	**11,00 inch**
		Erection	**0,50 m**	**5 Nr. Welds**	**5,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**1,60 m**	**16 Nr. Welds**	**16,00 inch**
		Accepted	**1,60 m**	**16 Nr. Welds**	**16,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**1,10 m**	**11 Nr. Welds**	**11,00 inch**
		Erection	**0,50 m**	**5 Nr. Welds**	**5,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**1,60 m**	**16 Nr. Welds**	**16,00 inch**
		Accepted	**1,60 m**	**16 Nr. Welds**	**16,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**1,10 m**	**11 Nr. Welds**	**11,00 inch**
		Erection	**0,50 m**	**5 Nr. Welds**	**5,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**1,60 m**	**16 Nr. Welds**	**16,00 inch**
		Accepted	**1,60 m**	**16 Nr. Welds**	**16,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**		
Commessa/Job	**123A90 - Piping**		
Disciplina/Discipline	**PIPING**		
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:	
RosettiDoc.Num.	**123A90MTR001**		

Approvato da/Approved by	
Nome/Name:	
Data/Date:	24/01/2025

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
8	00A	1	A	01HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W1-W2	
8	00A	1	A	01HSS	3	1	Flange WN ›1" Thk.3.38mm 300LB RF ASTM A182 Gr.F316/316L	DJ346	1724000839	01010	12/230039622/57/REV-00	W1	
8	00A	1	A	01HSS	1A	1,069	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
8	00A	1	A	01HSS	1I	0,2	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223	EW16	
8	00A	1	B	01HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W4	
8	00A	1	B	01HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W5-W6	
8	00A	1	B	01HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W7	
8	00A	1	B	01HSS	1B	2,835	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
8	00A	1	B	01HSS	1C	1,09	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
8	00A	1	B	01HSS	1H	0,2	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223	EW15	
8	00A	1	C	01HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W9-W10	
8	00A	1	C	01HSS	1D	3,789	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
8	00A	1	C	01HSS	1E	0,45	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
8	00A	1	D	01HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W12	
8	00A	1	D	01HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W13-W14	
8	00A	1	D	01HSS	1F	1,327	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
8	00A	1	D	01HSS	1G	0,183	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	15	**To**	15
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/15/1/_		**00**	**18-09-2024**	**16**	**AZ35**			**FWN**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**26-09-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				20-09-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000096	3	Acceptable				26-09-2024				
2/15/1/_		**00**	**06-01-2025**	**118**	**AX 453**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**08-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				08-01-2025				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001131	3	Acceptable				08-01-2025				
3/15/1/_		**00**	**18-09-2024**	**16**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				20-09-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000097	3	Acceptable				26-09-2024				
4/15/1/_		**00**	**03-10-2024**	**27**	**AZ35**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**07-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000248	3	Acceptable				07-10-2024				
5/15/1/_		**00**	**18-09-2024**	**16**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				20-09-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000098	3	Acceptable				26-09-2024				

Totals per DWG	**15**	**Prefabrication**	**0,76 m**	**4 Nr. Welds**	**8,00 inch**
		Erection	**0,19 m**	**1 Nr. Welds**	**2,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,95 m**	**5 Nr. Welds**	**10,00 inch**
		Accepted	**0,95 m**	**5 Nr. Welds**	**10,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,76 m**	**4 Nr. Welds**	**8,00 inch**
		Erection	**0,19 m**	**1 Nr. Welds**	**2,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,95 m**	**5 Nr. Welds**	**10,00 inch**
		Accepted	**0,95 m**	**5 Nr. Welds**	**10,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,76 m**	**4 Nr. Welds**	**8,00 inch**
		Erection	**0,19 m**	**1 Nr. Welds**	**2,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,95 m**	**5 Nr. Welds**	**10,00 inch**
		Accepted	**0,95 m**	**5 Nr. Welds**	**10,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
15	00	1	A	01HSS	3	1	Flange WN ›2" Thk.2.77mm 300LB RF ASTM A182 Gr.F316/316L	DL010	1724001267	00120	100028548/53 REV.1	W1	
15	00	1	A	01HSS	1A	0,47	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
15	00	1	B	01HSS	2	1	90 Deg Elbow Long Radius BW ›2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724001267	00070	24-01-0126	W3	
15	00	1	B	01HSS	2	1	90 Deg Elbow Long Radius BW ›2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724001267	00070	24-01-0126	W4-W5	
15	00	1	B	01HSS	1B	0,751	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
15	00	1	B	01HSS	1C	0,207	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	18	**To**	18
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
1/18/1/_		**01**	**30-09-2024**	**21**	**AZ52**			**FWN**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				02-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000175	3	Acceptable				06-10-2024				
2/18/1/_		**01**	**30-09-2024**	**21**	**AZ52**			**RED**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				02-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000177	3	Acceptable				06-10-2024				
3/18/1/_		**01**	**30-09-2024**	**21**	**AZ52**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				02-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000178	3	Acceptable				06-10-2024				
4/18/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				30-09-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000179	3	Acceptable				06-10-2024				
5/18/1/_		**01**	**02-10-2024**	**27**	**AZ35**			**FWN**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000134	3	Acceptable				04-10-2024				
6/18/1/_		**01**	**16-01-2025**	**139**	**AX410**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**17-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				17-01-2025				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001174	3	Acceptable				17-01-2025				
7/18/1/_		**01**	**02-10-2024**	**27**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000135	3	Acceptable				04-10-2024				
8/18/1/_		**01**	**02-10-2024**	**27**	**AZ39**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000136	3	Acceptable				04-10-2024				
9/18/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				30-09-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000120	3	Acceptable				04-10-2024				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
9/18/1/_		**01**	**27-09-2024**	**21**	**AZ39**		**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
10/18/1/_		**01**	**01-10-2024**	**22**	**AZ52**		**PAD**	**114,30 mm**	**3,05 mm**	**FILL**	**0,359 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**09-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		LP	FIN	Weld Completion	IDL-QCI-LP 0002 01	BV	100 %	000003		Acceptable					09-10-2024			

Totals per DWG	**18**	**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**		
Commessa/Job	**123A90 - Piping**		
Disciplina/Discipline	**PIPING**		
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:	
RosettiDoc.Num.	**123A90MTR001**		

Approvato da/Approved by	
Nome/Name:	
Data/Date:	24/01/2025

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
18	01	1	A	01HSS	2	1	Reducer Eccentric BW ›4"x2" Thk.3.05mmx2.77mm ASTM A403 Gr.WP316/316L	MR230757	1724000839	00440	MCP2401-00015-17	W1-W2	
18	01	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W3-W4	
18	01	1	A	01HSS	4	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W4	
18	01	1	A	01HSS	5	1	Flange WN ›2" Thk.2.77mm 150LB RF ASTM A182 Gr.F316/316L	DJ836	1724000839	00910	1000028548/52 REV.1	W1	
18	01	1	A	01HSS	1A	0,308	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
18	01	1	A	01HSS	STD C-40	1	PAD - STD C-40	NJ113	1724000839	00080	462	W10	
18	01	1	B	01HSS	4	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W5	
18	01	1	B	01HSS	1B	1,057	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
18	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W7	
18	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W8-W9	
18	01	1	C	01HSS	1C	3,452	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
18	01	1	C	01HSS	1D	0,205	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	37	**To**	37
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material	WPS / Defect length	Techn. Weld. / CND date	Type Conn / NOTE	Accept. Date	Spool
1/37/1/_		**01**	**01-10-2024**	**22**	**AZ52**			**FWN**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000246	3	Acceptable					07-10-2024			
2/37/1/_		**01**	**01-10-2024**	**22**	**AZ52**			**RED**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000118	3	Acceptable					04-10-2024			
3/37/1/_		**01**	**01-10-2024**	**22**	**AZ52**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000119	3	Acceptable					04-10-2024			
4/37/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000122	3	Acceptable					04-10-2024			
5/37/1/_		**01**	**02-10-2024**	**27**	**AZ35**			**FWN**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000137	3	Acceptable					04-10-2024			
6/37/1/_		**01**	**16-01-2025**	**139**	**AX410**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**17-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					17-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001172	3	Acceptable					17-01-2025			
7/37/1/_		**01**	**02-10-2024**	**28**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					07-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000138	3	Acceptable					04-10-2024			
8/37/1/_		**01**	**02-10-2024**	**28-36**	**AZ39**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**14-10-2024**	**C**
					AZ35	**Repair done**													
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					07-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000139	3	Repair				0,012 m	04-10-2024			
Repair 09-10-2024 Prod sh.36 AZ35		VIS	R 1 DRI	After Repair		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable C1B		GTAW+SMAW			10-10-2024			
		RT	R 1 DRI	After Repair		IDL-QCI-RT 0036 00	PR	100 %	000342	3	Acceptable					14-10-2024			
9/37/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
9/37/1/_		**01**	**27-09-2024**	**21**	**AZ39**		**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				30-09-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000121	3	Acceptable				04-10-2024				
10/37/1/_		**01**	**01-10-2024**	**22**	**AZ52**		**PAD**	**114,00 mm**	**3,05 mm**	**FILL**	**0,359 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**09-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				02-10-2024				
		LP	FIN	Weld Completion	IDL-QCI-LP 0002 01	BV	100 %	000004		Acceptable				09-10-2024				

Totals per DWG	**37**	**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,01 m**	**1 Nr. Welds**	**4,00 inch**
Totals by Discipline		**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,01 m**	**1 Nr. Welds**	**4,00 inch**
Totals by Project		**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,01 m**	**1 Nr. Welds**	**4,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**		
Commessa/Job	**123A90 - Piping**		
Disciplina/Discipline	**PIPING**		
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:	
RosettiDoc.Num.	**123A90MTR001**		

Approvato da/Approved by	
Nome/Name:	
Data/Date:	24/01/2025

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
37	01	1	A	01HSS	2	1	Reducer Eccentric BW ›4"x2" Thk.3.05mmx2.77mm ASTM A403 Gr.WP316/316L	MR230757	1724000839	00440	MCP2401-00015-17	W1-W2	
37	01	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W3-W4	
37	01	1	A	01HSS	4	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W4	
37	01	1	A	01HSS	5	1	Flange WN ›2" Thk.2.77mm 150LB RF ASTM A182 Gr.F316/316L	DJ836	1724000839	00910	1000028548/52 REV.1	W1	
37	01	1	A	01HSS	1A	0,495	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
37	01	1	A	01HSS	STD C-40	1	PAD - STD C-40	NJ113	1724000839	00080	462	W10	
37	01	1	B	01HSS	4	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W5	
37	01	1	B	01HSS	1B	1,012	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
37	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W7	
37	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W8-W9	
37	01	1	C	01HSS	1C	3,454	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
37	01	1	C	01HSS	1D	0,392	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	38	**To**	38
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
1/38/1/_		**01**	**01-10-2024**	**22**	**AZ52**			**FWN**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000247	3	Acceptable					07-10-2024			
2/38/1/_		**01**	**01-10-2024**	**22**	**AZ52**			**RED**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000182	3	Acceptable					06-10-2024			
3/38/1/_		**01**	**01-10-2024**	**22**	**AZ52**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000181	3	Acceptable					06-10-2024			
4/38/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000180	3	Acceptable					06-10-2024			
5/38/1/_		**01**	**02-10-2024**	**27**	**AZ35**			**FWN**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000140	3	Acceptable					04-10-2024			
6/38/1/_		**01**	**16-01-2025**	**140**	**AX410**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**18-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					17-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001175	3	Acceptable					18-01-2025			
7/38/1/_		**01**	**02-10-2024**	**27**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000141	3	Acceptable					04-10-2024			
8/38/1/_		**01**	**02-10-2024**	**27**	**AZ39**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000142	3	Acceptable					04-10-2024			
9/38/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000125	3	Acceptable					04-10-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
9/38/1/_		**01**	**27-09-2024**	**21**	**AZ39**		**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
10/38/1/_		**01**	**01-10-2024**	**22**	**AZ52**		**PAD**	**114,30 mm**	**3,05 mm**	**FILL**	**0,359 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**09-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		LP	FIN	Weld Completion	IDL-QCI-LP 0002 01	BV	100 %	000005		Acceptable					09-10-2024			

Totals per DWG	**38**	**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**		
Commessa/Job	**123A90 - Piping**		
Disciplina/Discipline	**PIPING**		
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:	
RosettiDoc.Num.	**123A90MTR001**		

Approvato da/Approved by	
Nome/Name:	
Data/Date:	24/01/2025

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
38	01	1	A	01HSS	2	1	Reducer Eccentric BW ›4"x2" Thk.3.05mmx2.77mm ASTM A403 Gr.WP316/316L	MR230757	1724000839	00440	MCP2401-00015-17	W1-W2	
38	01	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W3-W4	
38	01	1	A	01HSS	4	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W4	
38	01	1	A	01HSS	5	1	Flange WN ›2" Thk.2.77mm 150LB RF ASTM A182 Gr.F316/316L	DJ836	1724000839	00910	1000028548/52 REV.1	W1	
38	01	1	A	01HSS	1A	0,495	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
38	01	1	A	01HSS	STD C-40	1	PAD - STD C-40	NJ113	1724000839	00080	462	W10	
38	01	1	B	01HSS	4	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W5	
38	01	1	B	01HSS	1B	0,972	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
38	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W7	
38	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W8-W9	
38	01	1	C	01HSS	1C	3,454	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
38	01	1	C	01HSS	1D	0,392	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	39	**To**	39
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
1/39/1/_		**01**	**30-09-2024**	**21**	**AZ52**			**FWN**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000173	3	Acceptable					06-10-2024			
2/39/1/_		**01**	**30-09-2024**	**21**	**AZ52**			**RED**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000184	3	Acceptable					06-10-2024			
3/39/1/_		**01**	**30-09-2024**	**21**	**AZ52**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000185	3	Acceptable					06-10-2024			
4/39/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000183	3	Acceptable					06-10-2024			
5/39/1/_		**01**	**02-10-2024**	**27**	**AZ35**			**FWN**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000143	3	Acceptable					04-10-2024			
6/39/1/_		**01**	**13-01-2025**	**133**	**AX 453**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**14-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					13-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001150	3	Acceptable					14-01-2025			
7/39/1/_		**01**	**02-10-2024**	**27**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000144	3	Acceptable					04-10-2024			
8/39/1/_		**01**	**02-10-2024**	**27**	**AZ39**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000145	3	Acceptable					04-10-2024			
9/39/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000126	3	Acceptable					04-10-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
9/39/1/_		**01**	**27-09-2024**	**21**	**AZ39**		**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
10/39/1/_		**01**	**30-09-2024**	**21**	**AZ52**		**PAD**	**114,30 mm**	**3,05 mm**	**FILL**	**0,359 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**09-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		LP	FIN	Weld Completion	IDL-QCI-LP 0002 01	BV	100 %	000001		Acceptable					09-10-2024			

Totals per DWG	**39**	**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
39	01	1	A	01HSS	2	1	Reducer Eccentric BW ›4"x2" Thk.3.05mmx2.77mm ASTM A403 Gr.WP316/316L	YX1906-526	1724000839	00440	10303342	W1-W2	
39	01	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W3-W4	
39	01	1	A	01HSS	4	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W4	
39	01	1	A	01HSS	5	1	Flange WN ›2" Thk.2.77mm 150LB RF ASTM A182 Gr.F316/316L	DJ836	1724000839	00910	1000028548/52 REV.1	W1	
39	01	1	A	01HSS	1A	0,495	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
39	01	1	A	01HSS	STD C-40	1	PAD - STD C-40	NJ113	1724000839	00080	462	W10	
39	01	1	B	01HSS	4	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W5	
39	01	1	B	01HSS	1B	0,972	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
39	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W7	
39	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W8-W9	
39	01	1	C	01HSS	1C	3,454	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
39	01	1	C	01HSS	1D	0,392	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	40	**To**	40
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/40/1/_		**01**	**30-09-2024**	**21**	**AZ53**			**FWN**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**04-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000115	3	Acceptable					04-10-2024			
2/40/1/_		**01**	**30-09-2024**	**21**	**AZ53**			**RED**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**04-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000116	3	Acceptable					04-10-2024			
3/40/1/_		**01**	**30-09-2024**	**21**	**AZ53**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**04-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000117	3	Acceptable					04-10-2024			
4/40/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000124	3	Acceptable					04-10-2024			
5/40/1/_		**01**	**02-10-2024**	**27**	**AZ35**			**FWN**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000146	3	Acceptable					04-10-2024			
6/40/1/_		**01**	**16-01-2025**	**139**	**AX 453**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**18-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					17-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001176	3	Acceptable					18-01-2025			
7/40/1/_		**01**	**02-10-2024**	**27**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000147	3	Acceptable					04-10-2024			
8/40/1/_		**01**	**02-10-2024**	**27**	**AZ39**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000148	3	Acceptable					04-10-2024			
9/40/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000123	3	Acceptable					04-10-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Conn	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
9/40/1/_		**01**	**27-09-2024**	**21**	**AZ39**		**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
10/40/1/_		**01**	**08-10-2024**	**34**	**AZ35**		**PAD**	**114,00 mm**	**3,05 mm**	**FILL**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**F**	**21-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					09-10-2024			
		LP	FIN	Weld Completion	IDL-QCI-LP 0002 01	BV	100 %	000019		Acceptable					21-10-2024			

Totals per DWG	**40**	**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
40	01	1	A	01HSS	2	1	Reducer Eccentric BW ›4"x2" Thk.3.05mmx2.77mm ASTM A403 Gr.WP316/316L	MR230757	1724000839	00440	MCP2401-00015-17	W1-W2	
40	01	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W3-W4	
40	01	1	A	01HSS	4	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W4	
40	01	1	B	01HSS	4	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W5	
40	01	1	A	01HSS	1A	0,495	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
40	01	1	A	01HSS	STD C-40	1	PAD - STD C-40	NJ113	1724000839	00080	462	W10	
40	01	1	A	01HSS	5	1	Flange WN ›2" Thk.2.77mm 150LB RF ASTM A182 Gr.F316/316L	DJ836	1724000839	00910	1000028548/52 REV.1	W1	
40	01	1	B	01HSS	1B	1,012	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
40	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W7	
40	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W8-W9	
40	01	1	C	01HSS	1C	3,454	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
40	01	1	C	01HSS	1D	0,392	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	41	**To**	41
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
1/41/1/_		**01**	**30-09-2024**	**21**	**AZ53**			**FWN**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**06-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000174	3	Acceptable					06-10-2024			
2/41/1/_		**01**	**30-09-2024**	**21**	**AZ53**			**RED**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000186	3	Acceptable					06-10-2024			
3/41/1/_		**01**	**30-09-2024**	**21**	**AZ53**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000187	3	Acceptable					06-10-2024			
4/41/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000188	3	Acceptable					06-10-2024			
5/41/1/_		**01**	**02-10-2024**	**27**	**AZ35**			**FWN**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000149	3	Acceptable					04-10-2024			
6/41/1/_		**01**	**19-01-2025**	**149**	**AX410**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**22-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK		Acceptable					20-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001186	3	Repeat					20-01-2025			
		RT	DRF	After Film Repeat		IDL-QCI-RT 0036 00	AA	100 %	001190	3	Repeat					21-01-2025			
		RT	DRF	After Film Repeat		IDL-QCI-RT 0036 00	AA	100 %	001192	3	Acceptable					22-01-2025			
7/41/1/_		**01**	**02-10-2024**	**27**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000150	3	Acceptable					04-10-2024			
8/41/1/_		**01**	**02-10-2024**	**27**	**AZ39**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000151	3	Acceptable					04-10-2024			
9/41/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons.	Accept. Date	Spool
9/41/1/_		**01**	**27-09-2024**	**21**	**AZ39**		**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**04-10-2024**	**C**
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000127	3	Acceptable				04-10-2024				
10/41/1/_		**01**	**30-09-2024**	**21**	**AZ53**		**PAD**	**114,30 mm**	**3,05 mm**	**FILL**	**0,359 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**09-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				02-10-2024				
		LP	FIN	Weld Completion	IDL-QCI-LP 0002 01	BV	100 %	000002		Acceptable				09-10-2024				

Totals per DWG	**41**	**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**3,07 m**	**9 Nr. Welds**	**30,00 inch**
		Erection	**0,36 m**	**1 Nr. Welds**	**4,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Accepted	**3,43 m**	**10 Nr. Welds**	**34,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND / ROSETTI MARINO	Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
	SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
	Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
	Commessa/Job	**123A90 - Piping**			
	Disciplina/Discipline	**PIPING**			
	TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
	RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
41	01	1	A	01HSS	2	1	Reducer Eccentric BW ›4"x2" Thk.3.05mmx2.77mm ASTM A403 Gr.WP316/316L	MR230757	1724000839	00440	MCP2401-00015-17	W1-W2	
41	01	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W3-W4	
41	01	1	A	01HSS	4	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W4	
41	01	1	A	01HSS	5	1	Flange WN ›2" Thk.2.77mm 150LB RF ASTM A182 Gr.F316/316L	DJ836	1724000839	00910	1000028548/52 REV.1	W1	
41	01	1	A	01HSS	1A	0,608	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
41	01	1	A	01HSS	STD C-40	1	PAD - STD C-40	NJ113	1724000839	00080	462	W10	
41	01	1	B	01HSS	4	1	Flange WN ›4" Thk.3.05mm 150LB RF ASTM A182 Gr.F316/316L	CH-20600	1724000839	00940	1779F/23-24-58	W5	
41	01	1	B	01HSS	1B	1,052	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
41	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W7	
41	01	1	C	01HSS	3	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W8-W9	
41	01	1	C	01HSS	1C	3,454	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
41	01	1	C	01HSS	1D	0,505	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	42	**To**	42
Sheet		**From**	1	**To**	2
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/42/1/_		**01**	**04-10-2024**	**29**	**AZ39**			**CAP**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				07-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000584	3	Acceptable				23-10-2024				
2/42/1/_		**01**	**08-01-2025**	**125**	**AX 453**			**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**09-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				09-01-2025				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001144	3	Acceptable				09-01-2025				
3/42/1/_		**01**	**10-09-2024**	**6**	**AZ39**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**26-09-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				11-09-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000099	3	Acceptable				26-09-2024				
4/42/1/_		**01**	**04-10-2024**	**29**	**AZ39**			**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				07-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000585	3	Acceptable				23-10-2024				
5/42/1/_		**01**	**13-01-2025**	**135**	**AX 453**			**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**14-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				13-01-2025				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001153	3	Acceptable				14-01-2025				
6/42/1/_		**01**	**08-10-2024**	**32**	**AZ39**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				09-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000586	3	Acceptable				23-10-2024				
7/42/1/_		**01**	**02-09-2024**	**1**	**AZ39**			**PAD**	**273,00 mm**	**4,19 mm**	**FILL**	**0,857 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**12-09-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-09-2024				
		LP	FIN	Weld Completion		IDL-QCI-LP 0002 01	ROM	100 %	000042		Acceptable				12-09-2024				
8/42/1/_		**01**	**04-09-2024**	**2**	**AZ39**			**PIPE**	**2,00 in**	**2,77 mm**	**1/2V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**LET**	**12-09-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				06-09-2024				
		LP	FIN	Weld Completion		IDL-QCI-LP 0002 01	ROM	100 %	000046		Acceptable				12-09-2024				
9/42/1/_		**01**	**06-01-2025**	**119**	**AX 453**			**WOL**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**08-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				06-01-2025				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001130	3	Acceptable				08-01-2025				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material	WPS / Defect length	Techn. Weld. / CND date	Type Cons / NOTE	Accept. Date	Spool
9/42/1/_		**01**	**06-01-2025**	**119**	**AX 453**			**WOL**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**08-01-2025**	
10/42/1/_		**01**	**02-09-2024**	**1-15**	**AZ39**	**Welding + Repair done**		**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**18-09-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-09-2024			
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000047	3	Repair				0,030 m	11-09-2024			
Repair 14-09-2024 Prod sh.15 AZ39		VIS	R 1 DRI	After Repair	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable	C1B	GTAW+SMAW			18-09-2024			
		RT	R 1 DRI	After Repair	IDL-QCI-RT 0036 00	AA	100 %	000065	3	Acceptable					18-09-2024			
11/42/1/_		**01**	**16-01-2025**	**145**	**AX84**			**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**18-01-2025**	
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					17-01-2025			
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	001179	3	Acceptable					18-01-2025			
12/42/1/_		**01**	**02-09-2024**	**1**	**AZ39**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-09-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-09-2024			
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000045	3	Acceptable					11-09-2024			
13/42/2/_		**02**	**15-01-2025**	**140**	**AX84**			**ELB**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**16-01-2025**	
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					15-01-2025			
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	001166	3	Acceptable					16-01-2025			
14/42/2/_		**02**	**09-10-2024**	**39**	**AZ39**			**WOL**	**1,00 in**	**3,38 mm**	**1/2V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**LET**	**21-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					11-10-2024			
		LP	FIN	Weld Completion	IDL-QCI-LP 0002 01	BV	100 %	000011		Acceptable					21-10-2024			
15/42/2/_		**02**	**31-12-2024**	**114**	**AX 453**			**WOL**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**07-01-2025**	
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					03-01-2025			
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	001117	4	Repeat					03-01-2025			
		RT	DRF	After Film Repeat	IDL-QCI-RT 0036 00	AA	100 %	001120	1	Acceptable					07-01-2025			
16/42/2/_		**02**	**09-10-2024**	**39-11**	**AZ39**			**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**18-12-2024**	**B**
					AX416	**After Cutting**													
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					11-10-2024			
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000355	3	Acceptable					14-10-2024			
Cut 13-12-2024 Prod sh.11 AX416		VIS	C 1 DTA	After Cutting	123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK		Acceptable	C1A	GTAW			14-12-2024			
		RT	C 1 DTA	After Cutting	IDL-QCI-RT 0036 00	AA	100 %	001076	3	Acceptable					18-12-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
16/42/2/_		**02**	**09-10-2024**	**39-11**	**AZ39**		**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**18-12-2024**	**B**
					AX416 **After Cutting**													
17/42/2/_		**02**	**31-12-2024**	**112-117-121**	**AX416**		**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**08-01-2025**	
					AX 453 **Welding + Repair done**													
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103	LCOSCA	100 %	OK		Acceptable				03-01-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	001119	3	Repair			0,080 m	03-01-2025				
Repair 05-01-2025 Prod sh.117		VIS	R 1 DRI	After Repair	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable C1A		GTAW		05-01-2025				
		RT	R 1 DRI	After Repair	IDL-QCI-RT 0036 00	AA	100 %	001127	1	Repair			0,022 m	07-01-2025				
Repair 07-01-2025 Prod sh.121		VIS	R 2 DRI	After Repair	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable C1A		GTAW		07-01-2025				
		RT	R 2 DRI	After Repair	IDL-QCI-RT 0036 00	PR	100 %	001132	1	Acceptable				08-01-2025				
18/42/2/_		**02**	**09-10-2024**	**39-18**	**AZ39**		**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**18-12-2024**	**B**
					AX416 **After Cutting**													
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				11-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000356	3	Acceptable				14-10-2024				
Cut 17-12-2024 Prod sh.18 AX416		VIS	C 1 DTA	After Cutting	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable C1A		GTAW		18-12-2024				
		RT	C 1 DTA	After Cutting	IDL-QCI-RT 0036 00	AA	100 %	001077	3	Acceptable				18-12-2024				
19/42/2/_		**02**	**09-10-2024**	**39**	**AZ39**		**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**14-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				11-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000354	3	Acceptable				14-10-2024				
20/42/2/_		**02**	**27-12-2024**	**107**	**AX410**		**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**30-12-2024**	
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				28-12-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	001103	3	Acceptable				30-12-2024				
21/42/2/_		**02**	**05-09-2024**	**3**	**AZ39**		**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-09-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				06-09-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000044	3	Acceptable				11-09-2024				
22/42/2/_		**02**	**05-09-2024**	**3**	**AZ39**		**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-09-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				06-09-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000043	3	Acceptable				11-09-2024				
23/42/2/_		**02**	**16-12-2024**	**91**	**AX416**		**ELB**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**18-12-2024**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05

ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn.	Accept. Date	Spool
23/42/2/_		**02**	**16-12-2024**	**91**	**AX416**			**ELB**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**18-12-2024**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					17-12-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001078	3	Acceptable					18-12-2024			
24/42/2/_		**02**	**02-09-2024**	**1**	**AZ39**			**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-09-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000046	3	Acceptable					11-09-2024			
25/42/2/_		**02**	**09-10-2024**	**39**	**AZ39**			**ELB**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**17-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					11-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000473	3	Acceptable					17-10-2024			
26/42/2/_		**02**	**09-10-2024**	**39**	**AZ39**			**WOL**	**1,00 in**	**3,38 mm**	**1/2V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**LET**	**21-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					11-10-2024			
		LP	FIN	Weld Completion		IDL-QCI-LP 0002 01	BV	100 %	000012		Acceptable					21-10-2024			
27/42/2/_		**02**	**05-12-2024**	**66**	**AX416**			**WOL**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**D1A**	**GTAW**	**BW**	**11-12-2024**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					06-12-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001045	4	Acceptable					11-12-2024			
28/42/2/_		**02**	**09-10-2024**	**39**	**AZ39**			**WOL**	**2,00 in**	**2,77 mm**	**1/2V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**LET**	**21-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					11-10-2024			
		LP	FIN	Weld Completion		IDL-QCI-LP 0002 01	BV	100 %	000013		Acceptable					21-10-2024			
29/42/2/_		**02**	**05-12-2024**	**65**	**AX416**			**WOL**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**M**	**S.S.**	**D1A**	**GTAW**	**BW**	**11-12-2024**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					05-12-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001052	3	Acceptable					11-12-2024			
30/42/2/_		**02**	**09-10-2024**	**39**	**AZ39**			**WOL**	**1,00 in**	**3,38 mm**	**1/2V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**LET**	**21-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					11-10-2024			
		LP	FIN	Weld Completion		IDL-QCI-LP 0002 01	BV	100 %	000014		Acceptable					21-10-2024			
31/42/2/_		**02**	**06-12-2024**	**67**	**AX416**			**WOL**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**D1A**	**GTAW**	**BW**	**11-12-2024**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					06-12-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001046	4	Acceptable					11-12-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
31/42/2/_		**02**	**06-12-2024**	**67**	**AX416**			**WOL**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**D1A**	**GTAW**	**BW**	**11-12-2024**	
32/42/2/_		**02**	**09-10-2024**	**39**	**AZ39**			**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**17-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					11-10-2024			
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000472		3	Acceptable					17-10-2024			
33/42/2/_		**02**	**09-10-2024**	**39**	**AZ39**			**PL**	**50,00 mm**	**5,00 mm**	**FILL**	**0,050 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**21-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					11-10-2024			
		LP	FIN	Weld Completion	IDL-QCI-LP 0002 01	BV	100 %	000015			Acceptable					21-10-2024			
34/42/2/_		**02**	**09-10-2024**	**39**	**AZ39**			**PAD**	**273,00 mm**	**4,19 mm**	**FILL**	**0,857 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**21-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					11-10-2024			
		LP	FIN	Weld Completion	IDL-QCI-LP 0002 01	BV	100 %	000016			Acceptable					21-10-2024			

Totals per DWG	**42**	**Prefabrication**	**14,49 m**	**22 Nr. Welds**	**147,00 inch**
		Erection	**5,38 m**	**12 Nr. Welds**	**61,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**19,87 m**	**34 Nr. Welds**	**208,00 inch**
		Accepted	**19,87 m**	**34 Nr. Welds**	**208,00 inch**
		Repaired	**0,13 m**	**3 Nr. Welds**	**22,00 inch**
Totals by Discipline		**Prefabrication**	**14,49 m**	**22 Nr. Welds**	**147,00 inch**
		Erection	**5,38 m**	**12 Nr. Welds**	**61,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**19,87 m**	**34 Nr. Welds**	**208,00 inch**
		Accepted	**19,87 m**	**34 Nr. Welds**	**208,00 inch**
		Repaired	**0,13 m**	**3 Nr. Welds**	**22,00 inch**
Totals by Project		**Prefabrication**	**14,49 m**	**22 Nr. Welds**	**147,00 inch**
		Erection	**5,38 m**	**12 Nr. Welds**	**61,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**19,87 m**	**34 Nr. Welds**	**208,00 inch**
		Accepted	**19,87 m**	**34 Nr. Welds**	**208,00 inch**
		Repaired	**0,13 m**	**3 Nr. Welds**	**22,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
42	01	1	A	01HSS	2	1	Tee Reducing BW ›10"x6" Thk.4.19mmx3.4mm ASTM A403 Gr.WP316/316L	EF1761	1724000839	00600	JNDIA2023-GW1282-01	W1-W3	
42	01	1	A	01HSS	2	1	Tee Reducing BW ›10"x6" Thk.4.19mmx3.4mm ASTM A403 Gr.WP316/316L	EF1761	1724000839	00600	JNDIA2023-GW1282-01	W4-W6	
42	01	1	A	01HSS	2	1	Tee Reducing BW ›10"x6" Thk.4.19mmx3.4mm ASTM A403 Gr.WP316/316L	EF1761	1724000839	00600	JNDIA2023-GW1282-01	W10-W12	
42	01	1	A	01HSS	3	1	Weldolet BW ›10"x2" Thk.4.19mmx2.77mm ASTM A182 Gr.F316/316L	BAJV	1724000839	00130	TC-030146-23	W8	
42	01	1	A	01HSS	4	1	Cap BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	51856	1724000839	00180	51856	W1	
42	01	1	A	01HSS	5	1	90 Deg Elbow Long Radius BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	M230630	1724000839	00310	MCP2310-00002-18	W12	
42	01	1	A	01HSS	1A	3,568	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
42	01	1	A	01HSS	1B	3,473	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
42	01	1	A	01HSS	STD C-40	1	PAD - STD C-40	VCC062015	1724000839	00100	230320P007	W7	

CROSSWIND / ROSETTI MARINO	Cliente/Contractor	CROSSWIND	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
	SubContrattista/SubContractor	ROSETTIMARINO/GROUPOFCOMPANY	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
	Progetto/Project	Hollandse Kust Noord Wind Park Project			
	Commessa/Job	123A90 - Piping			
	Disciplina/Discipline	PIPING			
	TitoloDocumento/DocumentTitle	Material Traceability Report	StatoDocumento/Document Status:		Data/Date: 24/01/2025
	RosettiDoc.Num.	123A90MTR001			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
42	02	2	B	01HSS	2	1	Tee Reducing BW ›10"x6" Thk.4.19mmx3.4mm ASTM A403 Gr.WP316/316L	EF1761	1724000839	00600	JNDIA2023-GW1282-01	W16-W18	
42	02	2	B	01HSS	3	1	Tee BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	INA004-03-103T	1724000839	00500	PSA3-FT-42478	W19-W21	
42	02	2	B	01HSS	4	1	Weldolet BW ›10"x1" Thk.4.19mmx3.38mm ASTM A182 Gr.F316/316L	BAKV	1724000839	00150	TC-029860-23-0001	W14	
42	02	2	B	01HSS	6	1	90 Deg Elbow Long Radius BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	M230630	1724000839	00310	MCP2310-00002-18	W22	
42	02	2	B	01HSS	1C	1,249	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
42	02	2	B	01HSS	1D	3,769	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
42	02	2	B	01HSS	1E	1,877	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
42	02	2	B	01HSS	STD C-40	1	PAD - STD C-40	VCC062015	1724000839	00100	230320P007	W34	
42	02	2	C	01HSS	4	1	Weldolet BW ›10"x1" Thk.4.19mmx3.38mm ASTM A182 Gr.F316/316L	BAKV	1724000839	00150	TC-029860-23-0001	W26	
42	02	2	C	01HSS	4	1	Weldolet BW ›10"x1" Thk.4.19mmx3.38mm ASTM A182 Gr.F316/316L	BAKV	1724000839	00150	TC-029860-23-0001	W30	
42	02	2	C	01HSS	5	1	Weldolet BW ›10"x2" Thk.4.19mmx2.77mm ASTM A182 Gr.F316/316L	BAJV	1724000839	00130	TC-030146-23	W28	
42	02	2	C	01HSS	6	1	90 Deg Elbow Long Radius BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	M230630	1724000839	00310	MCP2310-00002-18	W24-W25	
42	02	2	C	01HSS	7	1	Flange WN ›10" Thk.4.19mm 150LB RF ASTM A182 Gr.F316/316L	DF309/1	1724000839	01060	23-04271	W32	
42	02	2	C	01HSS	1F	0,118	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
42	02	2	C	01HSS	1G	1,177	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
42	02	2	MONT	01HSS	8	1	Insulation Kit ›10" 150LB RF	0	#N/D	#N/D	#N/D		
42	02	2	MONT	01HSS	9	12	Stud Bolt + 2 Heavy Nuts 7/8" L=135MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	0	#N/D	#N/D	#N/D		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	44	**To**	44
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/44/1/_		**01**	**07-10-2024**	**31**	**AZ39**			**CAP**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**14-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				08-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000357	3	Acceptable				14-10-2024				
2/44/1/_		**01**	**11-01-2025**	**130**	**AX 453**			**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**13-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				11-01-2025				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001149	3	Acceptable				13-01-2025				
3/44/1/_		**01**	**07-10-2024**	**31**	**AZ39**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**14-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				08-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000358	3	Acceptable				14-10-2024				
4/44/1/_		**01**	**07-10-2024**	**31**	**AZ39**			**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**14-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				08-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000359	3	Acceptable				14-10-2024				
5/44/1/_		**01**	**12-01-2025**	**131**	**AX410**			**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**13-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				12-01-2025				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001148	3	Acceptable				13-01-2025				
6/44/1/_		**01**	**08-10-2024**	**32**	**AZ39**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**14-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				09-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000351	3	Acceptable				14-10-2024				
7/44/1/_		**01**	**08-10-2024**	**32**	**AZ39**			**PAD**	**273,00 mm**	**4,19 mm**	**FILL**	**0,857 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**10-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				09-10-2024				
		LP	FIN	Weld Completion		IDL-QCI-LP 0002 01	BV	100 %	000009		Acceptable				10-10-2024				
8/44/1/_		**01**	**07-10-2024**	**31**	**AZ39**			**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**14-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				08-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000352	3	Acceptable				14-10-2024				
9/44/1/_		**01**	**09-01-2025**	**127**	**AX84**			**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				10-01-2025				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001142	3	Acceptable				10-01-2025				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
9/44/1/_		**01**	**09-01-2025**	**127**	**AX84**			**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-01-2025**	
10/44/1/_		**01**	**07-10-2024**	**31**	**AZ39**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**14-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					08-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000353	3	Acceptable					14-10-2024			
11/44/1/_		**01**	**08-01-2025**	**125**	**AX84**			**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**09-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					09-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001145	3	Acceptable					09-01-2025			
12/44/1/_		**01**	**02-09-2024**	**1**	**AZ39**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-09-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000040	3	Acceptable					11-09-2024			
13/44/1/_		**01**	**02-09-2024**	**1**	**AZ39**			**PAD**	**273,00 mm**	**4,19 mm**	**FILL**	**0,857 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**12-09-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-09-2024			
		LP	FIN	Weld Completion		IDL-QCI-LP 0002 01	ROM	100 %	000045		Acceptable					12-09-2024			
14/44/1/_		**01**	**14-09-2024**	**10**	**AZ39**			**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**19-09-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					17-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000079	3	Acceptable					19-09-2024			
15/44/1/_		**01**	**04-09-2024**	**2**	**AZ39**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-09-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					06-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000037	3	Acceptable					11-09-2024			
16/44/1/_		**01**	**08-01-2025**	**123**	**AX 453**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**09-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					09-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001137	3	Acceptable					09-01-2025			
17/44/1/_		**01**	**14-09-2024**	**10**	**AZ39**			**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**19-09-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					17-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000078	3	Acceptable					19-09-2024			
18/44/1/_		**01**	**05-09-2024**	**4**	**AZ39**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**19-09-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					11-09-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Cons	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
18/44/1/_		**01**	**05-09-2024**	**4**	**AZ39**		**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**19-09-2024**	**C**
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000077	3	Acceptable					19-09-2024			

Totals per DWG	**44**	**Prefabrication**	**11,18 m**	**13 Nr. Welds**	**110,00 inch**
		Erection	**3,31 m**	**5 Nr. Welds**	**38,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**14,49 m**	**18 Nr. Welds**	**148,00 inch**
		Accepted	**14,49 m**	**18 Nr. Welds**	**148,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**11,18 m**	**13 Nr. Welds**	**110,00 inch**
		Erection	**3,31 m**	**5 Nr. Welds**	**38,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**14,49 m**	**18 Nr. Welds**	**148,00 inch**
		Accepted	**14,49 m**	**18 Nr. Welds**	**148,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**11,18 m**	**13 Nr. Welds**	**110,00 inch**
		Erection	**3,31 m**	**5 Nr. Welds**	**38,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**14,49 m**	**18 Nr. Welds**	**148,00 inch**
		Accepted	**14,49 m**	**18 Nr. Welds**	**148,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
44	01	1	A	01HSS	2	1	Tee Reducing BW ›10"x6" Thk.4.19mmx3.4mm ASTM A403 Gr.WP316/316L	MN078-1	1724000839	00600	PSA3-FT-48583	W1-W3	
44	01	1	A	01HSS	2	1	Tee Reducing BW ›10"x6" Thk.4.19mmx3.4mm ASTM A403 Gr.WP316/316L	N180725AV11	1724000839	00600	01 100 1733605	W4-W6	
44	01	1	A	01HSS	2	1	Tee Reducing BW ›10"x6" Thk.4.19mmx3.4mm ASTM A403 Gr.WP316/316L	N180725AV11	1724000839	00600	01 100 1733605	W8-W10	
44	01	1	A	01HSS	3	1	Cap BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	51856	1724000839	00180	51856	W1	
44	01	1	A	01HSS	1A	3,568	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
44	01	1	A	01HSS	1B	3,573	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
44	01	1	A	01HSS	STD C-40	1	PAD - STD C-40	VCC062015	1724000839	00100	230320P007	W7	
44	01	1	A	01HSS	1C	0,446	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
44	01	1	B	01HSS	4	1	90 Deg Elbow Long Radius BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	M230630	1724000839	00310	MCP2310-00002-18	W12	
44	01	1	B	01HSS	4	1	90 Deg Elbow Long Radius BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	M230630	1724000839	00310	MCP2310-00002-18	W14-W15	
44	01	1	B	01HSS	4	1	90 Deg Elbow Long Radius BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	M230630	1724000839	00310	MCP2310-00002-18	W15	
44	01	1	B	01HSS	1D	5,286	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	AUN070583	1724000839	00100	F240206006		
44	01	1	B	01HSS	STD C-40	1	PAD - STD C-40	AUN070583	1724000839	00100	F240206006	W13	
44	01	1	C	01HSS	4	1	90 Deg Elbow Long Radius BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	M230630	1724000839	00310	MCP2310-00002-18	W17-W18	
44	01	1	C	01HSS	1E	3,725	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
44	01	1	C	01HSS	1F	0,708	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	58	**To**	58
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
1/58/1/_		**00**	**30-09-2024**	**23**	**AZ39**			**FWN**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000195	3	Acceptable					06-10-2024			
2/58/1/_		**00**	**30-09-2024**	**23**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000196	3	Acceptable					06-10-2024			
3/58/1/_		**00**	**02-10-2024**	**26**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000197	3	Acceptable					06-10-2024			
4/58/1/_		**00**	**09-01-2025**	**127**	**AX84**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					10-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001141	3	Acceptable					10-01-2025			
5/58/1/_		**00**	**15-01-2025**	**138**	**AX410**			**TEE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**17-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					15-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001173	3	Acceptable					17-01-2025			
6/58/1/_		**00**	**30-09-2024**	**23**	**AZ39**			**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000226	3	Acceptable					05-10-2024			
7/58/1/_		**00**	**01-10-2024**	**25**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000227	3	Acceptable					05-10-2024			
8/58/1/_		**00**	**27-09-2024**	**21**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000228	3	Acceptable					05-10-2024			
9/58/1/_		**00**	**02-10-2024**	**26**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000221	3	Acceptable					05-10-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Conn	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
9/58/1/_		**00**	**02-10-2024**	**26**	**AZ39**		**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**

Totals per DWG	**58**	**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name:	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**	Antonio Galesi		
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date:
RosettiDoc.Num.	**123A90MTR001**			24/01/2025

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
58	00	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W2-W3	
58	00	1	A	01HSS	4	1	Flange WN ›6" Thk.3.4mm 300LB RF ASTM A182 Gr.F316/316L	CH-3217	1724000839	00930	EXP/0004-30/2016-17	W1	
58	00	1	A	01HSS	1A	0,219	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
58	00	1	A	01HSS	1B	0,656	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
58	00	1	B	01HSS	2	1	Tee Reducing BW ›6"x4" Thk.3.4mmx3.05mm ASTM A403 Gr.WP316/316L	LN011-1	1724000839	00540	PSA3-FT-47111	W6	
58	00	1	B	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W6-W7	
58	00	1	B	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W8-W9	
58	00	1	B	01HSS	1C	0,148	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
58	00	1	B	01HSS	1D	0,408	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	65	**To**	65
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
1/65/1/_		**00**	**10-09-2024**	**6**	**AZ39**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**11-09-2024**	**A**
01HSS	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					11-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
2/65/1/_		**00**	**12-09-2024**	**8**	**AZ35**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**18-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					13-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	000056	4	Acceptable					18-09-2024			
3/65/1/_		**00**	**11-09-2024**	**7**	**AZ35**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**13-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					13-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
4/65/1/_		**00**	**10-09-2024**	**6**	**AZ39**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**11-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					11-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
5/65/1/_		**00**	**11-09-2024**	**7**	**AZ35**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**13-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					13-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
6/65/1/_		**00**	**10-09-2024**	**6**	**AZ39**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**11-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					11-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
7/65/1/_		**00**	**06-12-2024**	**67**	**AX416**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**D1A**	**GTAW**	**BW**	**06-12-2024**	
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					06-12-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
8/65/1/_		**00**	**10-09-2024**	**6**	**AZ39**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**11-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					11-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
9/65/1/_		**00**	**11-09-2024**	**7**	**AZ35**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**13-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					13-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	N. Rep	Dimension	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
9/65/1/_		**00**	**11-09-2024**	**7**	**AZ35**			**PIPE**		**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**13-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					11-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
11/65/1/_		**00**	**11-09-2024**	**7**	**AZ35**			**TEE**		**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**18-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					13-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	000062		4	Acceptable					18-09-2024			
12/65/1/_		**00**	**10-09-2024**	**6**	**AZ39**			**PIPE**		**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**11-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					11-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
13/65/1/_		**00**	**10-09-2024**	**6**	**AZ39**			**ELB**		**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**11-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					11-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
14/65/1/_		**00**	**10-09-2024**	**6**	**AZ39**			**PL**		**50,00 mm**	**5,00 mm**	**FILL**	**0,050 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**11-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					11-09-2024			
		LP	FIN	Weld Completion				10 %				Acceptable								

Totals per DWG	**65**	**Prefabrication**	**1,23 m**	**13 Nr. Welds**	**11,75 inch**
		Erection	**0,10 m**	**1 Nr. Welds**	**1,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**1,33 m**	**14 Nr. Welds**	**12,75 inch**
		Accepted	**1,33 m**	**14 Nr. Welds**	**12,75 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**1,23 m**	**13 Nr. Welds**	**11,75 inch**
		Erection	**0,10 m**	**1 Nr. Welds**	**1,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**1,33 m**	**14 Nr. Welds**	**12,75 inch**
		Accepted	**1,33 m**	**14 Nr. Welds**	**12,75 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Cont.	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
14/65/1/_		**00**	**10-09-2024**	**6**	**AZ39**		**PL**	**50,00 mm**	**5,00 mm**	**FILL**	**0,050 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**11-09-2024**	**A**

Totals by Project			
Prefabrication	**1,23 m**	**13 Nr. Welds**	**11,75 inch**
Erection	**0,10 m**	**1 Nr. Welds**	**1,00 inch**
Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Performed	**1,33 m**	**14 Nr. Welds**	**12,75 inch**
Accepted	**1,33 m**	**14 Nr. Welds**	**12,75 inch**
Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND / ROSETTI MARINO	Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
	SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
	Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
	Commessa/Job	**123A90 - Piping**			
	Disciplina/Discipline	**PIPING**			
	TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
	RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
65	00	1	B	01HSS	4	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W5-W6	
65	00	1	B	01HSS	5	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F316/316L	CH-19714	1724000839	00960	1779F/23-24-45	W4	
65	00	1	B	01HSS	1B	0,771	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
65	00	1	B	01HSS	1C	0,095	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
65	00	1	C	01HSS	2	1	Tee Reducing BW ›1"x3/4" Thk.3.38mmx2.87mm ASTM A403 Gr.WP316/316L	1067621	1724000839	00560	1067621	W9-W10-W11	
65	00	1	C	01HSS	3	1	Nipple L=100mm TOE ›3/4" Thk.2,87mm ASTM A312 Gr.TP316/316L	SZ8	1724001267	00260	002978	W10	
65	00	1	C	01HSS	4	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W8	
65	00	1	C	01HSS	4	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W12-W13	
65	00	1	C	01HSS	1D	2,484	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
65	00	1	C	01HSS	1E	0,1	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
65	00	1	C	01HSS	1F	0,1	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	73	**To**	73
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
1/73/1/_		**00**	**27-09-2024**	**21**	**AZ39**			**FWN**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000198	3	Acceptable					06-10-2024			
2/73/1/_		**00**	**27-09-2024**	**21**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000199	3	Acceptable					06-10-2024			
3/73/1/_		**00**	**02-10-2024**	**26**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000200	3	Acceptable					06-10-2024			
4/73/1/_		**00**	**14-01-2025**	**135**	**AX410**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**15-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					15-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001156	3	Acceptable					15-01-2025			
5/73/1/_		**00**	**14-01-2025**	**138**	**AX410**			**TEE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**15-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					14-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001157	3	Acceptable					15-01-2025			
6/73/1/_		**00**	**28-09-2024**	**20**	**AZ39**			**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000210	3	Acceptable					05-10-2024			
7/73/1/_		**00**	**01-10-2024**	**25**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000211	3	Acceptable					05-10-2024			
8/73/1/_		**00**	**27-09-2024**	**22**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000212	3	Acceptable					05-10-2024			
9/73/1/_		**00**	**02-10-2024**	**26**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000215	3	Acceptable					05-10-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number	Rev.	Prod. Date	Prod. Sheet	Welders	Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Conn	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase	Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.	Defect length	CND date	NOTE		
9/73/1/_		**00**	**02-10-2024**	**26**	**AZ39**	**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**

Totals per DWG	**73**	**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
73	00	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W2-W3	
73	00	1	A	01HSS	4	1	Flange WN ›6" Thk.3.4mm 300LB RF ASTM A182 Gr.F316/316L	CH-3217	1724000839	00930	EXP/0004-30/2016-17	W1	
73	00	1	A	01HSS	1A	0,219	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
73	00	1	A	01HSS	1B	0,616	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
73	00	1	B	01HSS	2	1	Tee Reducing BW ›6"x4" Thk.3.4mmx3.05mm ASTM A403 Gr.WP316/316L	LN011-1	1724000839	00540	PSA3-FT-47111	W6	
73	00	1	B	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W6-W7	
73	00	1	B	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W8-W9	
73	00	1	B	01HSS	1C	0,152	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
73	00	1	B	01HSS	1D	0,408	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	77	**To**	77
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material	WPS / Defect length	Techn. Weld. / CND date	Type Conn / NOTE	Accept. Date	Spool
1/77/1/_		**00**	**30-09-2024**	**23**	**AZ39**			**FWN**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000201	3	Acceptable					06-10-2024			
2/77/1/_		**00**	**30-09-2024**	**23**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000202	3	Acceptable					06-10-2024			
3/77/1/_		**00**	**03-10-2024**	**28**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					07-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000329	3	Repeat					12-10-2024			
		RT	DRF	After Film Repeat		IDL-QCI-RT 0036 00	AA	100 %	000576	3	Acceptable					23-10-2024			
4/77/1/_		**00**	**12-01-2025**	**132**	**AX410**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**14-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					12-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001147	3	Repeat					13-01-2025			
		RT	DRF	After Film Repeat		IDL-QCI-RT 0036 00	AA	100 %	001151	3	Acceptable					14-01-2025			
5/77/1/_		**00**	**13-01-2025**	**134**	**AX410**			**TEE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**14-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					13-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001152	3	Acceptable					14-01-2025			
6/77/1/_		**00**	**28-09-2024**	**20-33**	**AZ39**	**Welding + Repair done**		**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**17-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000229	3	Repair				0,012 m	05-10-2024			
Repair 08-10-2024 Prod sh.33 AZ39		VIS	R 1	DRI	After Repair	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable C1B		GTAW+SMAW			09-10-2024			
		RT	R 1	DRI	After Repair	IDL-QCI-RT 0036 00	AA	100 %	000471	3	Acceptable					17-10-2024			
7/77/1/_		**00**	**01-10-2024**	**25**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000213	3	Acceptable					05-10-2024			
8/77/1/_		**00**	**27-09-2024**	**21**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000216	3	Acceptable					05-10-2024			
9/77/1/_		**00**	**02-10-2024**	**26**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Cons	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
9/77/1/_		**00**	**02-10-2024**	**26**	**AZ39**		**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**		**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000214	3	Acceptable					05-10-2024			

Totals per DWG	**77**	**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,01 m**	**1 Nr. Welds**	**6,00 inch**
Totals by Discipline		**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,01 m**	**1 Nr. Welds**	**6,00 inch**
Totals by Project		**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,01 m**	**1 Nr. Welds**	**6,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
77	00	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W2-W3	
77	00	1	A	01HSS	4	1	Flange WN ›6" Thk.3.4mm 300LB RF ASTM A182 Gr.F316/316L	CH-3217	1724000839	00930	EXP/0004-30/2016-17	W1	
77	00	1	A	01HSS	1A	0,219	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
77	00	1	A	01HSS	1B	0,576	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
77	00	1	B	01HSS	2	1	Tee Reducing BW ›6"x4" Thk.3.4mmx3.05mm ASTM A403 Gr.WP316/316L	LN011-1	1724000839	00540	PSA3-FT-47111	W6	
77	00	1	B	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W6-W7	
77	00	1	B	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W8-W9	
77	00	1	B	01HSS	1C	0,152	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
77	00	1	B	01HSS	1D	0,408	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	81	**To**	81
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/81/1/_		**01**	**30-09-2024**	**23**	**AZ39**			**FWN**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000203	3	Acceptable					06-10-2024			
2/81/1/_		**01**	**30-09-2024**	**23**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000260	3	Acceptable					07-10-2024			
3/81/1/_		**01**	**02-10-2024**	**26**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000204	3	Acceptable					06-10-2024			
4/81/1/_		**01**	**09-01-2025**	**128**	**AX 453**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					10-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001140	3	Acceptable					10-01-2025			
5/81/1/_		**01**	**12-01-2025**	**131**	**AX 453**			**TEE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**13-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					12-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001146	3	Acceptable					13-01-2025			
6/81/1/_		**01**	**28-09-2024**	**20**	**AZ39**			**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000218	3	Acceptable					05-10-2024			
7/81/1/_		**01**	**01-10-2024**	**25**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000220	3	Acceptable					05-10-2024			
8/81/1/_		**01**	**27-09-2024**	**21**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000217	3	Acceptable					05-10-2024			
9/81/1/_		**01**	**02-10-2024**	**26**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000219	3	Acceptable					05-10-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Conn	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
9/81/1/_		**01**	**02-10-2024**	**26**	**AZ39**		**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**

Totals per DWG	**81**	**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
81	00	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W2-W3	
81	00	1	A	01HSS	4	1	Flange WN ›6" Thk.3.4mm 300LB RF ASTM A182 Gr.F316/316L	CH-3217	1724000839	00930	EXP/0004-30/2016-17	W1	
81	00	1	A	01HSS	1A	0,218	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
81	00	1	A	01HSS	1B	0,576	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
81	00	1	B	01HSS	2	1	Tee Reducing BW ›6"x4" Thk.3.4mmx3.05mm ASTM A403 Gr.WP316/316L	LN011-1	1724000839	00540	PSA3-FT-47111	W6	
81	00	1	B	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W6-W7	
81	00	1	B	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W8-W9	
81	00	1	B	01HSS	1C	0,152	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
81	00	1	B	01HSS	1D	0,408	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	85	**To**	85
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/85/1/_		**00**	**27-09-2024**	**21**	**AZ39**			**FWN**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000205	3	Acceptable					06-10-2024			
2/85/1/_		**00**	**27-09-2024**	**21**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					30-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000206	3	Acceptable					06-10-2024			
3/85/1/_		**00**	**02-10-2024**	**26**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000207	3	Acceptable					06-10-2024			
4/85/1/_		**00**	**14-01-2025**	**137**	**AX 453**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**15-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					14-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001158	3	Acceptable					15-01-2025			
5/85/1/_		**00**	**14-01-2025**	**138**	**AX84**			**TEE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**16-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					14-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001163	3	Acceptable					16-01-2025			
6/85/1/_		**00**	**03-10-2024**	**28**	**AZ39**			**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					07-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000330	3	Repeat					12-10-2024			
		RT	DRF	After Film Repeat		IDL-QCI-RT 0036 00	AA	100 %	000577	3	Acceptable					23-10-2024			
7/85/1/_		**00**	**03-10-2024**	**27**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000209	3	Acceptable					05-10-2024			
8/85/1/_		**00**	**30-09-2024**	**23**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000208	3	Acceptable					05-10-2024			
9/85/1/_		**00**	**30-09-2024**	**23**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000194	3	Acceptable					06-10-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Conn	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
9/85/1/_		**00**	**30-09-2024**	**23**	**AZ39**		**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**B**

Totals per DWG	**85**	**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**3,71 m**	**7 Nr. Welds**	**42,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Accepted	**4,60 m**	**9 Nr. Welds**	**52,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
85	00	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W2-W3	
85	00	1	A	01HSS	4	1	Flange WN ›6" Thk.3.4mm 300LB RF ASTM A182 Gr.F316/316L	CH-3217	1724000839	00930	EXP/0004-30/2016-17	W1	
85	00	1	A	01HSS	1A	0,219	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
85	00	1	A	01HSS	1B	0,616	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
85	00	1	B	01HSS	2	1	Tee Reducing BW ›6"x4" Thk.3.4mmx3.05mm ASTM A403 Gr.WP316/316L	LN011-1	1724000839	00540	PSA3-FT-47111	W6	
85	00	1	B	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W6-W7	
85	00	1	B	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W8-W9	
85	00	1	B	01HSS	1C	0,152	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
85	00	1	B	01HSS	1D	0,408	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	89	**To**	89
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/89/1/_		**00**	**30-09-2024**	**23**	**AZ39**			**FWN**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000189	3	Acceptable					06-10-2024			
2/89/1/_		**00**	**30-09-2024**	**23**	**AZ39**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000190	3	Acceptable					06-10-2024			
3/89/1/_		**00**	**02-10-2024**	**26**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000191	3	Acceptable					06-10-2024			
4/89/1/_		**00**	**18-01-2025**	**147**	**AX84**			**PIPE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**20-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					18-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001184	3	Acceptable					20-01-2025			
5/89/1/_		**00**	**18-01-2025**	**150**	**AX84**			**TEE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**20-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK		Acceptable					20-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001185	3	Acceptable					20-01-2025			
6/89/1/_		**00**	**30-09-2024**	**23**	**AZ39**			**TEE**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000192	3	Acceptable					06-10-2024			
7/89/1/_		**00**	**30-09-2024**	**23**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					02-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000222	3	Acceptable					05-10-2024			
8/89/1/_		**00**	**03-10-2024**	**27**	**AZ39**			**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					04-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000193	3	Acceptable					06-10-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Conn	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
8/89/1/_		**00**	**03-10-2024**	**27**	**AZ39**		**ELB**	**6,00 in**	**3,40 mm**	**V**	**0,528 m**	**P**	**S.S.**		**C1B**	**GTAW+SMAW**	**BW**	**06-10-2024**	**B**

Totals per DWG	**89**	**Prefabrication**	**3,18 m**	**6 Nr. Welds**	**36,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,07 m**	**8 Nr. Welds**	**46,00 inch**
		Accepted	**4,07 m**	**8 Nr. Welds**	**46,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**3,18 m**	**6 Nr. Welds**	**36,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,07 m**	**8 Nr. Welds**	**46,00 inch**
		Accepted	**4,07 m**	**8 Nr. Welds**	**46,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**3,18 m**	**6 Nr. Welds**	**36,00 inch**
		Erection	**0,89 m**	**2 Nr. Welds**	**10,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,07 m**	**8 Nr. Welds**	**46,00 inch**
		Accepted	**4,07 m**	**8 Nr. Welds**	**46,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND	Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
	SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
	Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
	Commessa/Job	**123A90 - Piping**			
ROSETTI MARINO	Disciplina/Discipline	**PIPING**			
	TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
	RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
89	00	1	A	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W2-W3	
89	00	1	A	01HSS	4	1	Flange WN ›6" Thk.3.4mm 300LB RF ASTM A182 Gr.F316/316L	CH-3217	1724000839	00930	EXP/0004-30/2016-17	W1	
89	00	1	A	01HSS	1A	0,219	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
89	00	1	A	01HSS	1B	0,657	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		
89	00	1	B	01HSS	2	1	Tee Reducing BW ›6"x4" Thk.3.4mmx3.05mm ASTM A403 Gr.WP316/316L	LN011-1	1724000839	00540	PSA3-FT-47111	W6	
89	00	1	B	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W6-W7	
89	00	1	B	01HSS	3	1	90 Deg Elbow Long Radius BW ›6" Thk.3.4mm ASTM A403 Gr.WP316/316L	GTA070-01-103LR	1724000839	00300	PSA3-FT-47143	W7-W8	
89	00	1	B	01HSS	1C	0,408	Pipe 168.3mm(6") thk.3.4mm ASTM A312 Gr.TP316/316L	NJ112	1724000839	00090	416		

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	157	**To**	157
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/157/1/_		**00**	**02-10-2024**	**26**	**AZ35**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**24-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000590	4	Acceptable					24-10-2024			
2/157/1/_		**00**	**02-10-2024**	**26**	**AZ35**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000555	4	Acceptable					23-10-2024			
3/157/1/_		**00**	**02-10-2024**	**26**	**AZ35**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000556	4	Acceptable					23-10-2024			
4/157/1/_		**00**	**02-10-2024**	**26**	**AZ35**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000557	4	Acceptable					23-10-2024			
5/157/1/_		**00**	**31-12-2024**	**114**	**AX 453**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**07-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					03-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001118	4	Repeat					03-01-2025			
		RT	DRF	After Film Repeat		IDL-QCI-RT 0036 00	AA	100 %	001121	2	Acceptable					07-01-2025			
6/157/1/_		**00**	**02-10-2024**	**26**	**AZ35**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000230	4	Acceptable					07-10-2024			
7/157/1/_		**00**	**02-10-2024**	**26**	**AZ35**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**22-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000507	4	Acceptable					22-10-2024			
8/157/1/_		**00**	**02-10-2024**	**26**	**AZ35**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**22-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000508	4	Acceptable					22-10-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Conn	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
8/157/1/_		**00**	**02-10-2024**	**26**	**AZ35**		**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**		**C1B**	**GTAW+SMAW**	**BW**	**22-10-2024**	**B**

Totals per DWG	**157**	**Prefabrication**	**0,70 m**	**7 Nr. Welds**	**7,00 inch**
		Erection	**0,10 m**	**1 Nr. Welds**	**1,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,80 m**	**8 Nr. Welds**	**8,00 inch**
		Accepted	**0,80 m**	**8 Nr. Welds**	**8,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,70 m**	**7 Nr. Welds**	**7,00 inch**
		Erection	**0,10 m**	**1 Nr. Welds**	**1,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,80 m**	**8 Nr. Welds**	**8,00 inch**
		Accepted	**0,80 m**	**8 Nr. Welds**	**8,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,70 m**	**7 Nr. Welds**	**7,00 inch**
		Erection	**0,10 m**	**1 Nr. Welds**	**1,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,80 m**	**8 Nr. Welds**	**8,00 inch**
		Accepted	**0,80 m**	**8 Nr. Welds**	**8,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND / ROSETTI MARINO	Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
	SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
	Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
	Commessa/Job	**123A90 - Piping**			
	Disciplina/Discipline	**PIPING**			
	TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 24/01/2025
	RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
157	00	1	A	01HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W1-W2	
157	00	1	A	01HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W3-W4	
157	00	1	A	01HSS	3	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F316/316L	CH-19714	1724000839	00960	1779F/23-24-45	W1	
157	00	1	A	01HSS	1A	0,28	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
157	00	1	A	01HSS	1B	0,839	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
157	00	1	B	01HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W6	
157	00	1	B	01HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W7-W8	
157	00	1	B	01HSS	1C	1,194	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
157	00	1	B	01HSS	1D	0,077	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation – NOT APPLICABLE

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	43-00-TP-024	: Test Pack 43-00-TP-024			Dwg	123A90-DDL-PR-PID-80011
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003420		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air, ensuring all drains/vents (when present) were open to facilitate the removal of moisture. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, inlet and outlet points were closed with covers.
3	Temporary means :	Blind flanges and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA
5	Valve body cavity, branches, etc.. Have been drained form residual water	●
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Restricting access to the area.
11	REMARKS:	Blowing Activities were carried out.

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-06	2025-02-07	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-06T15:29:53.834Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-07T16:44:55.923Z	

ITEM	Tag	43-00-TP-044	: Test Pack 43-00-TP-044			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003569		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	PL
4	Check that pipework at pump and vessel nozzles are free from spring.	PL
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	PL
6	Check bolt tightening and flange management (excluded battery limit joints).	PL
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	OK
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	OK
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	OK
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Visual check of the TP performed on spools not assembled in erection.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-15	2025-01-16	
Signature	Digitaly signed by Emanuele Delfino 2025-01-15T15:15:05.088Z	Digitaly signed by Kangi Albonetti 2025-01-16T14:38:24.361Z	

ITEM	Tag	43-00-TP-044	: Test Pack 43-00-TP-044			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003570		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	OK
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	NA
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	NA
8	After the (re) installation of a valve check that it operates freely.	NA
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	NA
10	Check all locking device.	NA
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	PL
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-07	2025-02-25	
Signature	Digitaly signed by Emanuele Delfino 2025-02-07T13:17:20.268Z	Digitaly signed by Lorenzo Novaga 2025-02-25T15:47:52.201Z	

ITEM	Tag	43-00-TP-044	: Test Pack 43-00-TP-044			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003571		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02 Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	OK
3	Check that the fluid direction is correct.	OK
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	PL
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 1. Checked the painting report made by Vendor and signed by RM Coating Dpt.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (ROSETTI MARINO)	
Name	Alex Sanna	Lorenzo Novaga	
Date	2025-02-11	2025-03-24	
Signature	PROVERLIS Digitaly signed by Alex Sanna 2025-02-11T15:54:47.258Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-03-24T15:35:11.486Z	

ROSETTI MARINO — CROSSWIND

ITEM	Tag	43-00-TP-044	: Test Pack 43-00-TP-044			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003572		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX03 — Cleaning

CLEANING MEDIUM

Air	Water	Steam	Oil	Other	Mechanical
☐	●	☐	☐	☐	☐

Component: NA

Chemical treatment: No — NA

Filtration: No

Screen size: NA

EQUIPMENTS

Equipment **removed**	Yes	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	14/02/2025	Start time	13:03	End time	13:38
Flow rate	NA	Duration	5 min	Medium T°	NA

Operation Description: Connected the water source to the lowest point of the piping system.
Maintained a high flow rate to help dislodging and carry away debrises.
Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.

Safety Precautions: Restricting access to the area.

Result and comments: Water has been found clear of solid debris. All contaminants have been expelled.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-15	2025-02-19	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-15T08:41:57.437Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-19T15:41:08.872Z	

ITEM	Tag	43-00-TP-044	: Test Pack 43-00-TP-044		Dwg	123A90-DDL-PR-PID-80029	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10003573	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX05	Pressure Test

TEST DATA

Reference procedure: 123A90-PML-QHSE-PRO-00092

Design pressure: 3.5 barg | Max test pressure: 5.25 barg | Min hold period: 30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium: WATER

TEST RESULTS

Test date: See attachment | Start time: See attachment | End time: See attachment

Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min: See attachment	Max: See attachment		Variation: See attachment	
Line has been depressurised to	NA			At maximum of bar/min: See attachment	
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes

If required produce Red Line Mark Up for "AS BUILT".

Comments:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-15	2025-02-19	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-15T08:42:12.781Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-19T15:41:38.737Z	

Logger protocol
Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP-044_3

Instrument
Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FON32E
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:C5:19:D5)

Measurement conditions
Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	01:52:51
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	01:38:51 pm

Logger protocol

Protocollo di acquisizione elenco dati

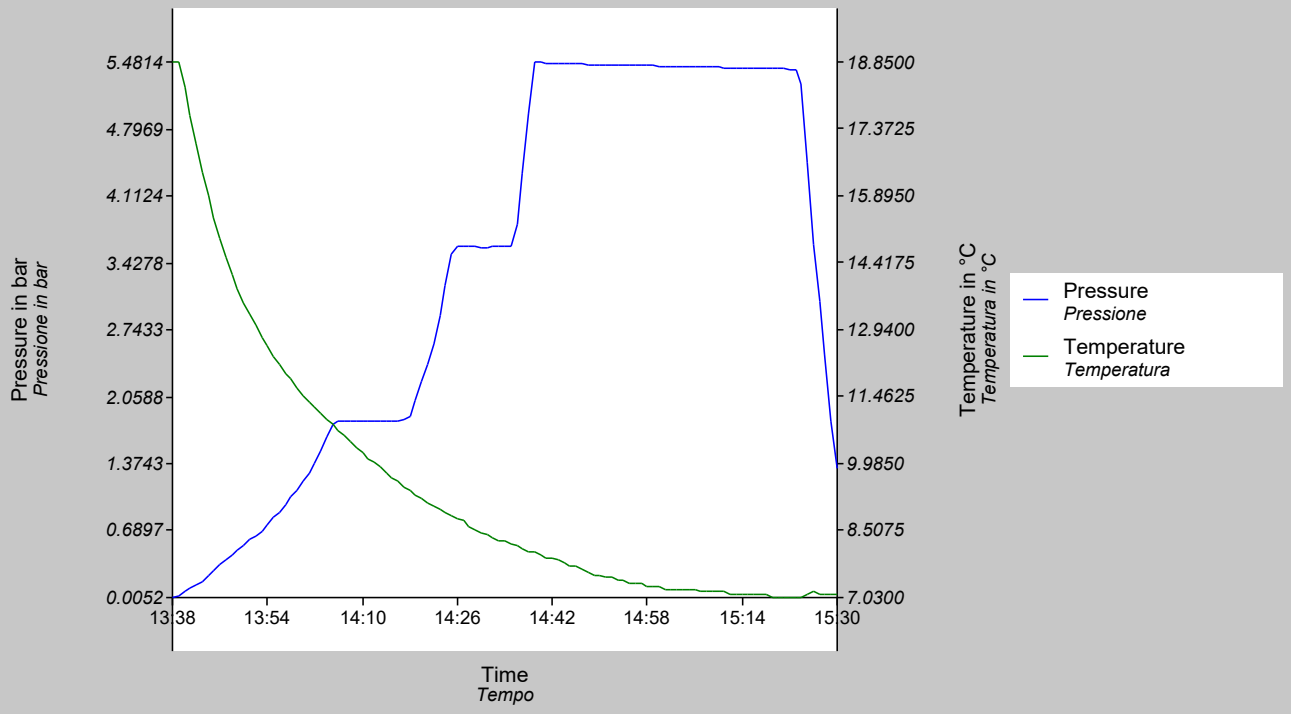
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP-044_3

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/14/2025 13:38:51.000	0.0052	18.8500
02/14/2025 13:39:51.000	0.0256	18.8500
02/14/2025 13:40:51.000	0.0689	18.2800
02/14/2025 13:41:51.000	0.0957	17.6600
02/14/2025 13:42:51.000	0.1268	17.0300
02/14/2025 13:43:51.000	0.1671	16.4100
02/14/2025 13:44:51.000	0.2264	15.9100
02/14/2025 13:45:51.000	0.2840	15.4100
02/14/2025 13:46:51.000	0.3356	14.9700
02/14/2025 13:47:51.000	0.3891	14.5300
02/14/2025 13:48:51.000	0.4463	14.1600
02/14/2025 13:49:51.000	0.4922	13.8500
02/14/2025 13:50:51.000	0.5403	13.5300
02/14/2025 13:51:51.000	0.6037	13.2800
02/14/2025 13:52:51.000	0.6378	13.0300
02/14/2025 13:53:51.000	0.6861	12.7800
02/14/2025 13:54:51.000	0.7456	12.6000

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP-044_3

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/14/2025 13:55:51.000	0.8187	12.3500
02/14/2025 13:56:51.000	0.8739	12.1600
02/14/2025 13:57:51.000	0.9538	11.9700
02/14/2025 13:58:51.000	1.0311	11.8500
02/14/2025 13:59:51.000	1.0995	11.6600
02/14/2025 14:00:51.000	1.1998	11.4700
02/14/2025 14:01:51.000	1.2810	11.3500
02/14/2025 14:02:51.000	1.3814	11.2200
02/14/2025 14:03:51.000	1.5048	11.1000
02/14/2025 14:04:51.000	1.6434	10.9700
02/14/2025 14:05:51.000	1.7825	10.8500
02/14/2025 14:06:51.000	1.8084	10.7200
02/14/2025 14:07:51.000	1.8055	10.6000
02/14/2025 14:08:51.000	1.8072	10.4700
02/14/2025 14:09:51.000	1.8071	10.3500
02/14/2025 14:10:51.000	1.8103	10.2200
02/14/2025 14:11:51.000	1.8148	10.1000
02/14/2025 14:12:51.000	1.8147	10.0300
02/14/2025 14:13:51.000	1.8154	9.9100
02/14/2025 14:14:51.000	1.8120	9.7800
02/14/2025 14:15:51.000	1.8149	9.6600
02/14/2025 14:16:51.000	1.8142	9.6000
02/14/2025 14:17:51.000	1.8187	9.4700
02/14/2025 14:18:51.000	1.8523	9.4100
02/14/2025 14:19:51.000	2.0206	9.2800
02/14/2025 14:20:51.000	2.2062	9.2200
02/14/2025 14:21:51.000	2.3926	9.1000
02/14/2025 14:22:51.000	2.5934	9.0300
02/14/2025 14:23:51.000	2.8837	8.9700
02/14/2025 14:24:51.000	3.1907	8.9100
02/14/2025 14:25:51.000	3.5231	8.8500
02/14/2025 14:26:51.000	3.5999	8.7800
02/14/2025 14:27:51.000	3.5917	8.7200
02/14/2025 14:28:51.000	3.5911	8.6000
02/14/2025 14:29:51.000	3.5903	8.5300
02/14/2025 14:30:51.000	3.5863	8.4700
02/14/2025 14:31:51.000	3.5876	8.4100
02/14/2025 14:32:51.000	3.5898	8.3500
02/14/2025 14:33:51.000	3.5889	8.2800
02/14/2025 14:34:51.000	3.5902	8.2800
02/14/2025 14:35:51.000	3.5901	8.2200
02/14/2025 14:36:51.000	3.8187	8.1600
02/14/2025 14:37:51.000	4.3389	8.1000
02/14/2025 14:38:51.000	4.9539	8.0300
02/14/2025 14:39:51.000	5.4814	8.0300
02/14/2025 14:40:51.000	5.4765	7.9700
02/14/2025 14:41:51.000	5.4720	7.9100
02/14/2025 14:42:51.000	5.4670	7.9100
02/14/2025 14:43:51.000	5.4632	7.8500

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP-044_3

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/14/2025 14:44:51.000	5.4587	7.7800
02/14/2025 14:45:51.000	5.4615	7.7200
02/14/2025 14:46:51.000	5.4591	7.7200
02/14/2025 14:47:51.000	5.4581	7.6600
02/14/2025 14:48:51.000	5.4547	7.6000
02/14/2025 14:49:51.000	5.4549	7.5300
02/14/2025 14:50:51.000	5.4538	7.5300
02/14/2025 14:51:51.000	5.4492	7.4700
02/14/2025 14:52:51.000	5.4499	7.4700
02/14/2025 14:53:51.000	5.4483	7.4100
02/14/2025 14:54:51.000	5.4496	7.4100
02/14/2025 14:55:51.000	5.4461	7.3500
02/14/2025 14:56:51.000	5.4460	7.3500
02/14/2025 14:57:51.000	5.4435	7.3500
02/14/2025 14:58:51.000	5.4449	7.2800
02/14/2025 14:59:51.000	5.4434	7.2800
02/14/2025 15:00:51.000	5.4400	7.2800
02/14/2025 15:01:51.000	5.4392	7.2200
02/14/2025 15:02:51.000	5.4385	7.2200
02/14/2025 15:03:51.000	5.4336	7.2200
02/14/2025 15:04:51.000	5.4360	7.2200
02/14/2025 15:05:51.000	5.4353	7.2200
02/14/2025 15:06:51.000	5.4336	7.2200
02/14/2025 15:07:51.000	5.4336	7.1600
02/14/2025 15:08:51.000	5.4335	7.1600
02/14/2025 15:09:51.000	5.4277	7.1600
02/14/2025 15:10:51.000	5.4261	7.1600
02/14/2025 15:11:51.000	5.4241	7.1600
02/14/2025 15:12:51.000	5.4233	7.1000
02/14/2025 15:13:51.000	5.4232	7.1000
02/14/2025 15:14:51.000	5.4184	7.1000
02/14/2025 15:15:51.000	5.4151	7.1000
02/14/2025 15:16:51.000	5.4199	7.1000
02/14/2025 15:17:51.000	5.4137	7.1000
02/14/2025 15:18:51.000	5.4122	7.1000
02/14/2025 15:19:51.000	5.4128	7.0300
02/14/2025 15:20:51.000	5.4098	7.0300
02/14/2025 15:21:51.000	5.4103	7.0300
02/14/2025 15:22:51.000	5.4085	7.0300
02/14/2025 15:23:51.000	5.4048	7.0300
02/14/2025 15:24:51.000	5.2535	7.0300
02/14/2025 15:25:51.000	4.4460	7.1000
02/14/2025 15:26:51.000	3.6185	7.1600
02/14/2025 15:27:51.000	3.0325	7.1000
02/14/2025 15:28:51.000	2.4924	7.1000
02/14/2025 15:29:51.000	1.8014	7.1000
02/14/2025 15:30:51.000	1.3244	7.1000

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24

Certificate of Calibration

- data di emissione date of issue	2024-12-10
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A037FON32E
- data di ricev. oggetto *date of receipt of item*	2024-11-29
- data delle misure *date of measurements*	2024-12-10
- registro di laboratorio *laboratory reference*	0580-SM-24

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura k corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore k vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico *Electrical pressure gauge*	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A037FON32E
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione *Reference standard (RS) Dead-weight tester*	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
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Laboratorio Accreditato di Taratura
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LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1007,5 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	100,0	100,0	100,0
199,82	200,0	200,0	200,0
299,73	299,9	300,0	299,9
399,63	399,8	399,9	399,8
499,53	499,6	499,7	499,7
599,44	599,5	599,6	599,5
699,34	699,3	699,4	699,3
799,24	799,2	799,3	799,2
899,14	899,1	899,1	899,1
999,04	999,0	999,0	999,0

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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

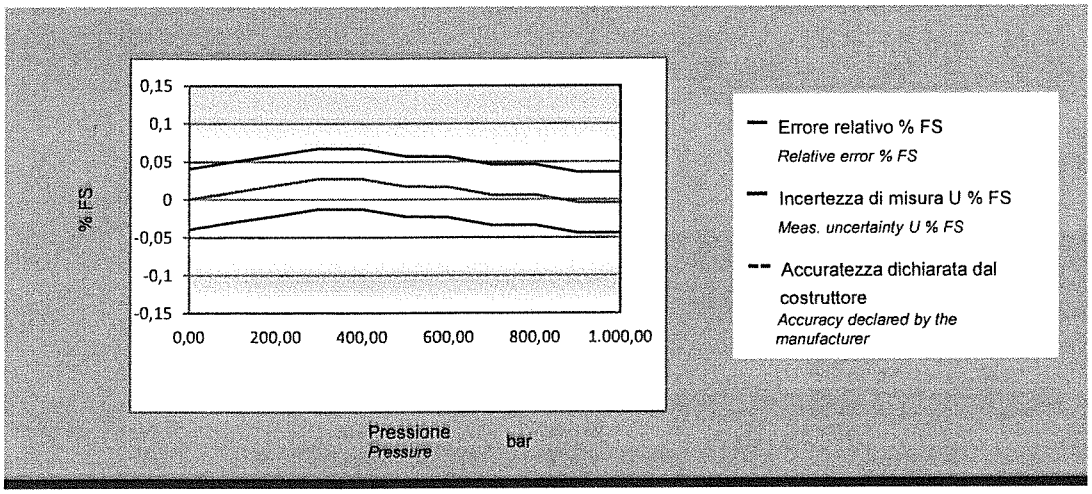
LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	100,0	0,1	0,0	0,0	0,40
199,82	200,0	0,2	0,0	0,0	0,40
299,73	300,0	0,3	0,0	0,1	0,40
399,63	399,9	0,3	0,0	0,1	0,40
499,53	499,7	0,2	0,1	0,1	0,40
599,44	599,6	0,2	0,0	0,1	0,40
699,34	699,4	0,1	0,0	0,1	0,40
799,24	799,3	0,1	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,0	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,7 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Base Load Power Hub (BLPH)

TEST PACK

N°43-00-TP-044
SUB-SYSTEM N° 43-00

System	43
Sub-System	43-00
Test Pressure	5.25 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

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2. PIPING TEST 3D CIRCUIT
3. MATERIAL LIST FOR TEST
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5. ISOMETRIC RED-MARKED DRAWINGS & EXTRACT OF ISO LIST
6. EXTRACT OF SUPPORT LIST AND DETAILS
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
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   - 8.3 CXX01 - Thermal insulation – NOT APPLICABLE
   - 8.4 CXX02 – Painting Line
   - 8.5 TMX03 – Cleaning
   - 8.6 TMX05 – Pressure test
   - 8.7 TMX25 – Gross Air Leak Test
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 - Drying

1. COLOURED MARKED P&IDs

DRAWING NO. DRAWING_NO.

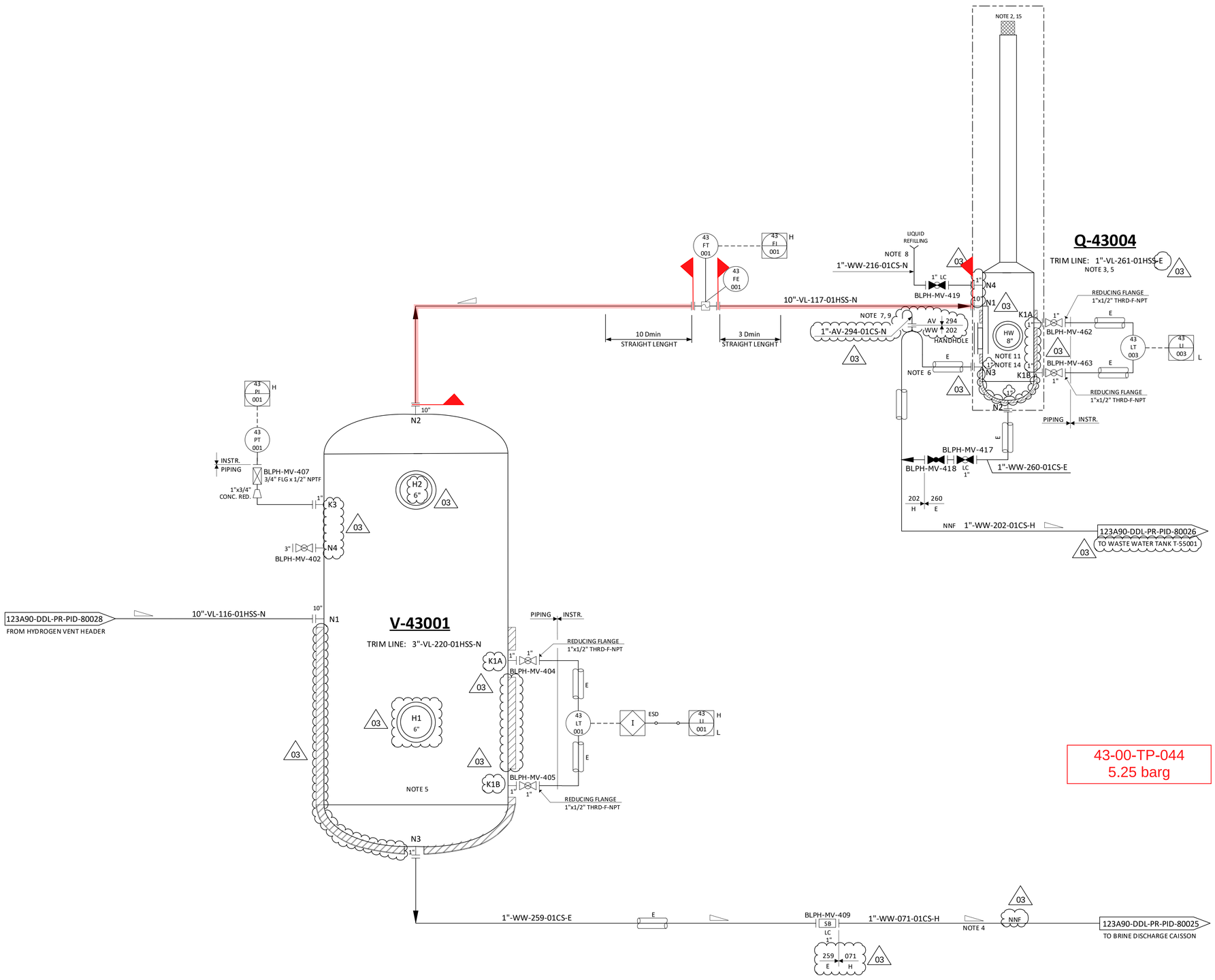
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



43-00-TP-044
5.25 barg

NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. 03
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

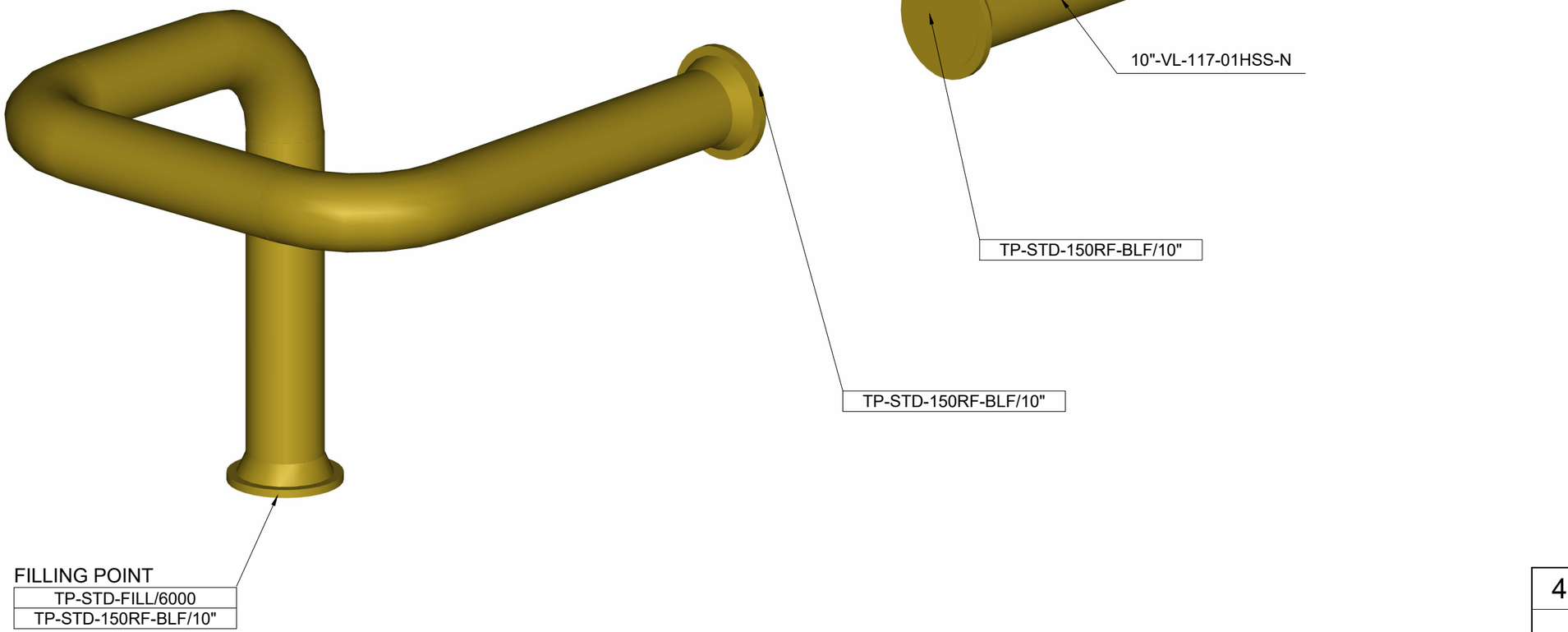
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



43-00-TP-044

5.25 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
43-00-TP-044

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

CROSSWIND / ROSETTI MARINO	CONTRACTOR: Rosetti Marino SpA	JOB :	123A90
	PROJECT: Base Load Power Hub (BLPH)	DATE :	20/09/2024
	TITLE: MATERIAL LIST FOR HYDROSTATIC TEST	REV. :	00

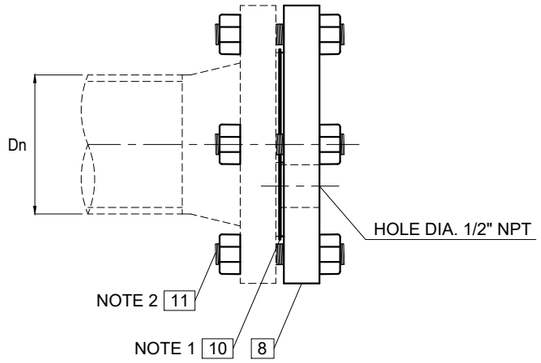
TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-044	TP-STD-150RF-BLF/10"	FLBHCS0185100H	Flange Blind c/w NPT Hole ø10"x1/2" 150LB RF ASTM/ASME A/SA105	1	4	4	
TP-044	TP-STD-150RF-BLF/10"	GSW0GK11181000	Gasket Spiral Wound Thk. 3.2 mm ø10" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	4	4	
TP-044	TP-STD-150RF-BLF/10"	SB20BO19840500	Stud Bolt + 2 Heavy Nuts 7/8" L=135MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	4	48	

STD NAME	RATING	DESCRIPTION
TP-STD-150RF	150 RF	STANDARD FOR BLIND POINT

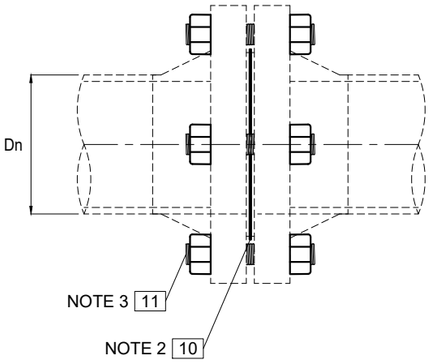
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-150RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=60 MM	4
TP-STD-150RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=85 MM	4
TP-STD-150RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-150RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-150RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-150RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=120 MM	12
TP-STD-150RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=125 MM	12
TP-STD-150RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=135 MM	12
TP-STD-150RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=140 MM	16
TP-STD-150RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=150 MM	16
TP-STD-150RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=160 MM	20
TP-STD-150RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=175 MM	20



TP-STD-150RF-BLF/Dn
BLIND FLANGE



TP-STD-150RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

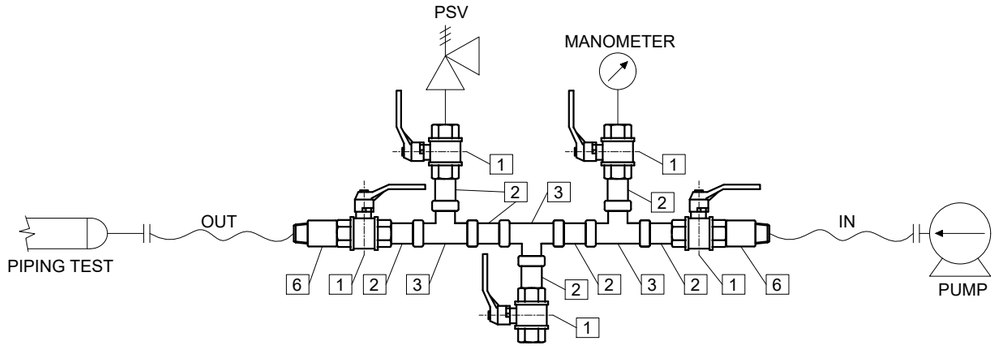
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-150RF
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_150RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

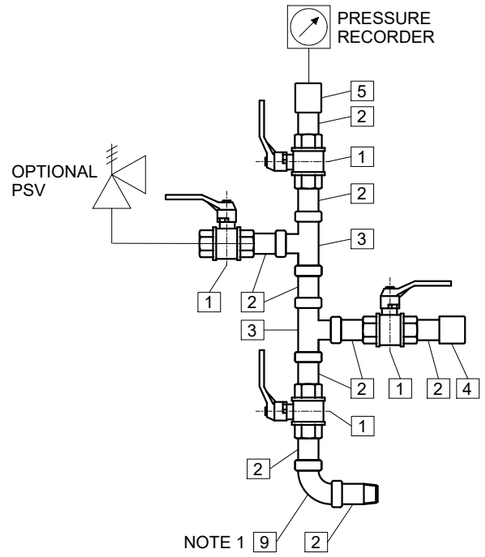
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
43	VL-117	117	10	01HSS	N	4,19	10S	N/A	10"-VL-117-01HSS-N	123A90-DDL-PR-PID-80029	3,50	43	43-00	TP-044	Water	5.25	LP Vent	Stainless Steel	SUP	II	6A	RAL 9002

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

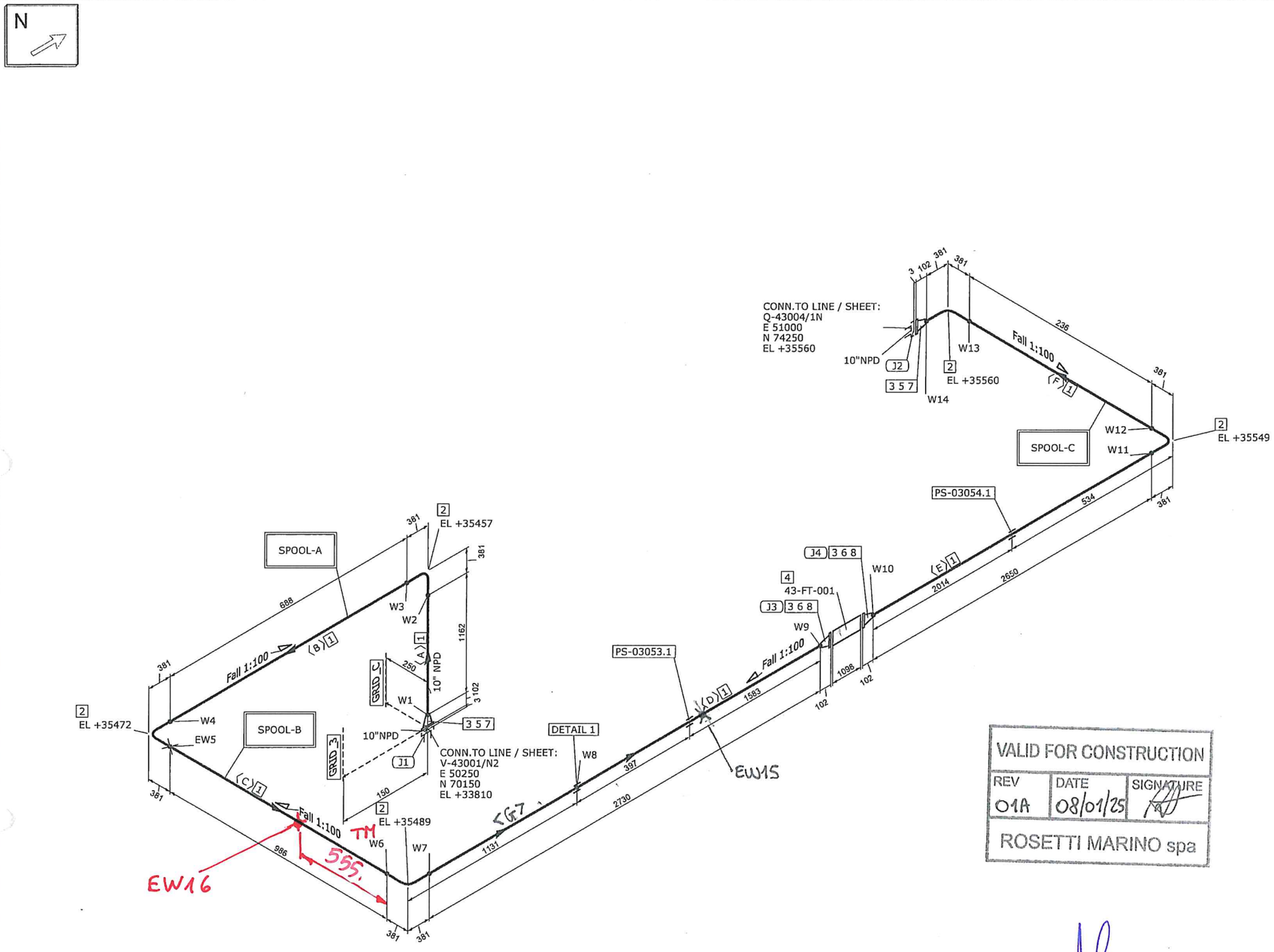
REV. **06**

TITLE

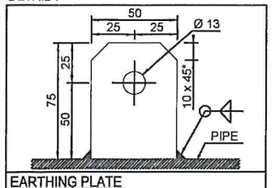
SHOP DRAWING ISOMETRIC LIST

DATE **03/10/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
64	123A90-FDL-PP-DI-00043-01	**043**	01	SHOP DRAWING ISOMETRIC - LINE NR 10"-VL-117-01HSS-N	20/08/2024	03/10/2024												**01**	**06**		**TP-044**



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

VALID FOR CONSTRUCTION

REV	DATE	SIGNATURE
01A	08/01/25	

ROSETTI MARINO spa

Quality Control Dept.
Alberto Cavazzi
Rosetti Marino SpA
03/02/25

INSERITO SPEZZONE DI TUBO L= 555 CAUSA ERRORE PREFABR.

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	10	PIPESS01701000	Pipe ASME B36.19M PE 4,19 SML ASTM A312 Gr.TP316/316L	8.5M	238.3
2	10	E90RSS01151000	90 Deg Elbow Long Radius ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	5	84.9
3	10	FLW0SS03491000	Flange WN ASME B16.5 150LB RF 4,19 FRG ASTM A182 Gr.F316/316L	4	97.5

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	10		Flow Meter 150#RF	1	98.0
5	10	SPIKNN00611000	Insulation Kit Ends as per ASME B16.5 150LB RF	2	1.1
6	10	GSW0GK11181000	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	1.1
7	7/8	SB20BO19840500	135 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24	16.8
8	7/8	SB20BO22250500	120 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24	15.6

FABRICATION WEIGHT [kg]	420.7
ERECTION WEIGHT [kg]	132.6
OVERALL WEIGHT [kg]	553.3

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	10	BW
W2	10	BW
W3	10	BW
W4	10	BW
EW5	10	BW
W6	10	BW
W7	10	BW
W8		FW
W9	10	BW
W10	10	BW
W11	10	BW
W12	10	BW
W13	10	BW
W14	10	BW
EW15	10	BW
EW16	10	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	10	1162	BEVEL	BEVEL
B	10	688	BEVEL	BEVEL
C	10	986	BEVEL	BEVEL
D	10	1000 ~~2730~~	BEVEL	BEVEL
E	10	2650	BEVEL	BEVEL
F	10	236	BEVEL	BEVEL
Gr.	10	1730	Bev.	Bev.

SUPPORT LIST

PS-03053.1
PS-03054.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	40	110.7
B	30	146.1
C	50	163.8
MONT	20 ~~10~~	01 132.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-10-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 10"-VL-117-01HSS-N

SK.043

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-10-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00043 | SHEET / OF: 1/1 | REV.: 01

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB.	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-60029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

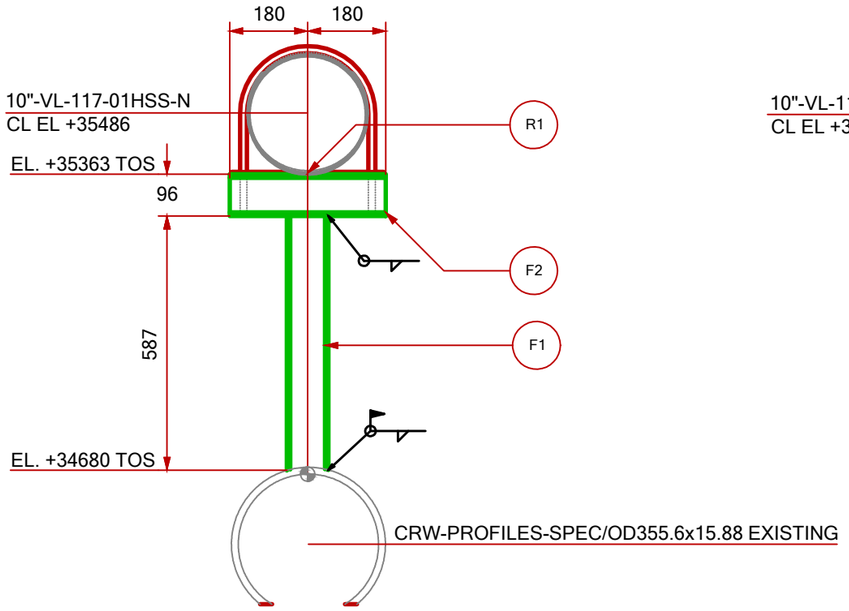
NOTES

MASTER

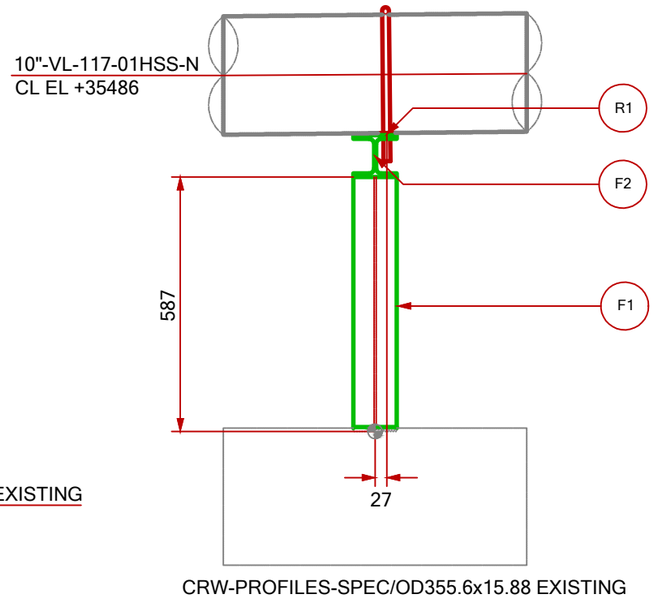
6. EXTRACT OF SUPPORT LIST & DETAILS

SUPPORT LIST

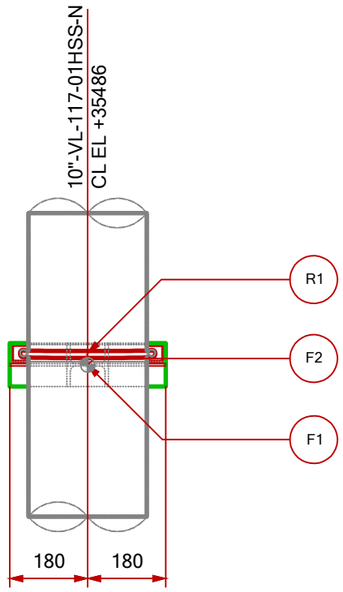
SUPPORT	SUFFIX	SERVICE	DECK IDENTIFICATION	SUB ASSEMBLY	LINE	SUPPORTS STANDARD	NDT CATEGORY	QUANTITY	TOT. WEIGTH (KG)	PAINTING SURFACE (SQM)	REV	DATE	STATUS	NOTES	Test Pack N°
PS-03053	B1	PIP	PAU		10"-VL-117-01HSS-N	S-211 - 10"		1	2,350	0,000	00	19/08/2024	IFR		TP-044
PS-03054	B1	PIP	PAU		10"-VL-117-01HSS-N	C-16 - 100 - 100 - 5		1	0,110	0,000	00	19/08/2024	IFR		TP-044



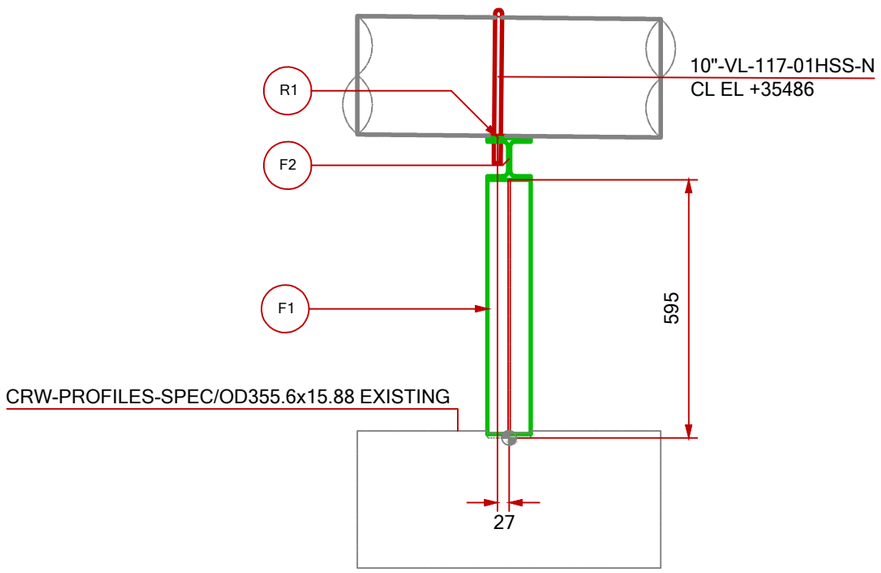
VIEW LOOKING NORTH



VIEW LOOKING WEST



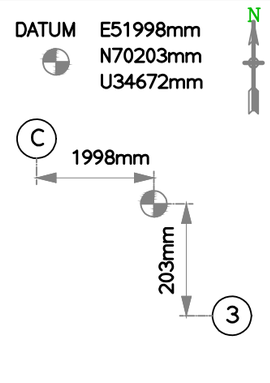
PLAN VIEW

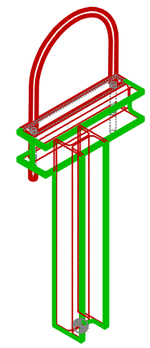


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-10"	-	-	1	-	2.35	-
F1	BEAM	HEA100	Carbon Steel	587	1	16.76	9.98	0.338
F2	BEAM	HEA100	Carbon Steel	360	1	16.76	6.03	0.206
						TOTAL	18.4	0.54





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

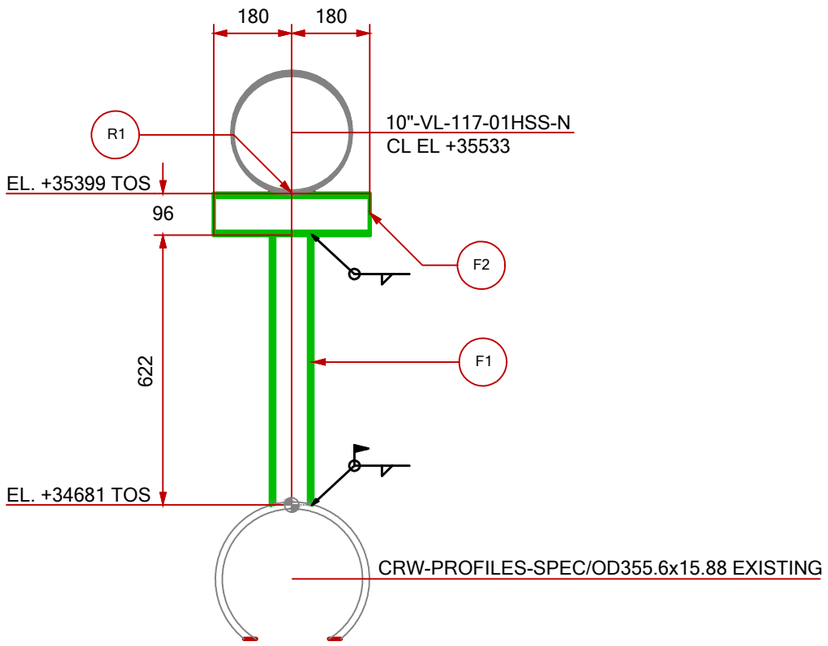
ROSETTI MARINO

TITLE :

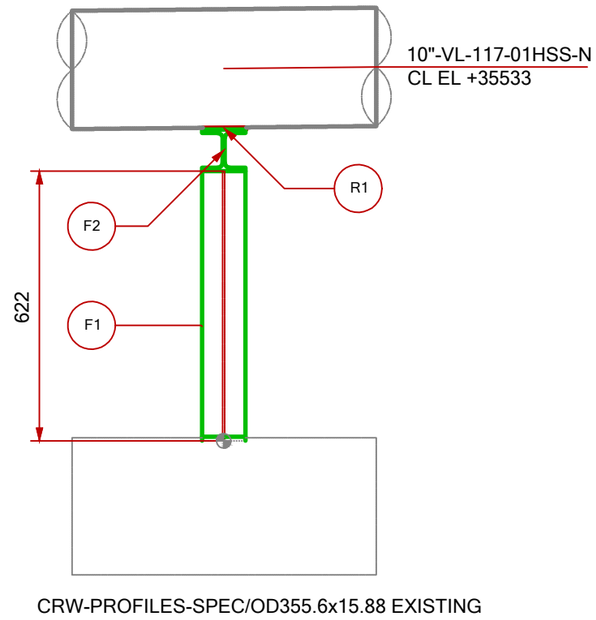
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03053

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

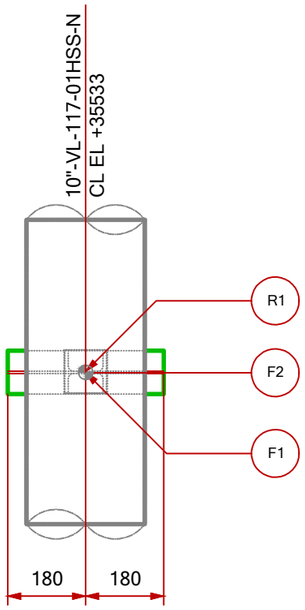
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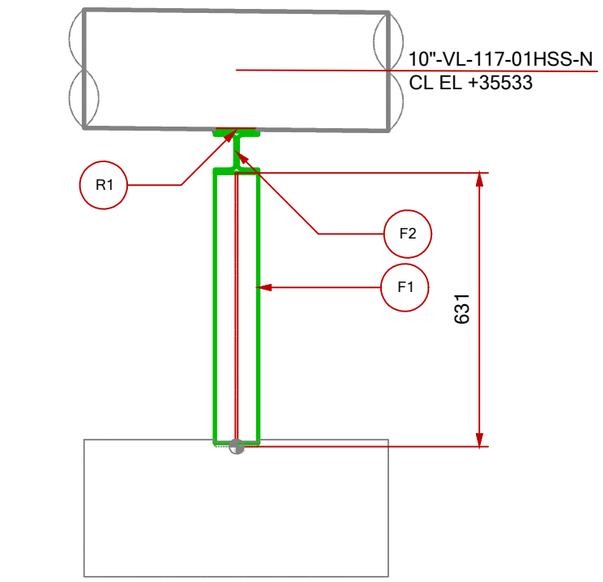
VIEW LOOKING NORTH



VIEW LOOKING WEST



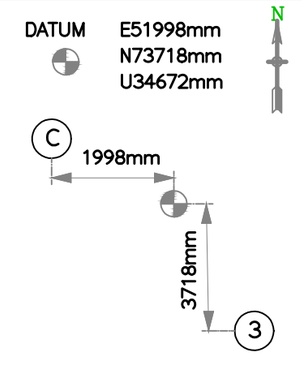
PLAN VIEW

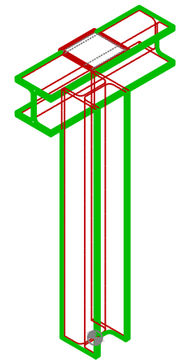


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-16-100-100-5	-	-	1	-	0.11	-
F1	BEAM	HEA100	Carbon Steel	631	1	16.76	10.58	0.358
F2	BEAM	HEA100	Carbon Steel	360	1	16.76	6.03	0.206
						TOTAL	16.7	0.56





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03054

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

File Name :

ROSETTI MARINO

STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

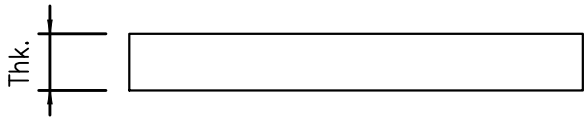
Revision: 0

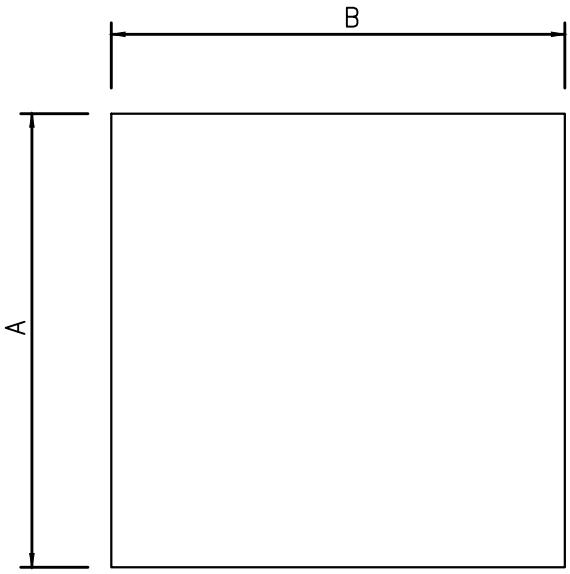
Date: –

PIATTO DI ISOLAMENTO IN PTFE Sp=VARIABILE
PTFE ISOLATING PAD Thk=VARIABLE

C–16

Example of designation : STD – A – B – Thk.
(C–16 – 70 – 100 – 5)





NOTES:
1– MATERIAL: PTFE
2– STRENGHT FOR COMPRESSION (1% DI DEFORMATION) = 5 N/mm² x Thk. (mm)
3– THE PTFE PAD SHALL BE COVERED ALSO AFTER THE POSSIBLE DISPLACEMENTS OF THE PIPING LINE

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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ROSETTI MARINO

STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

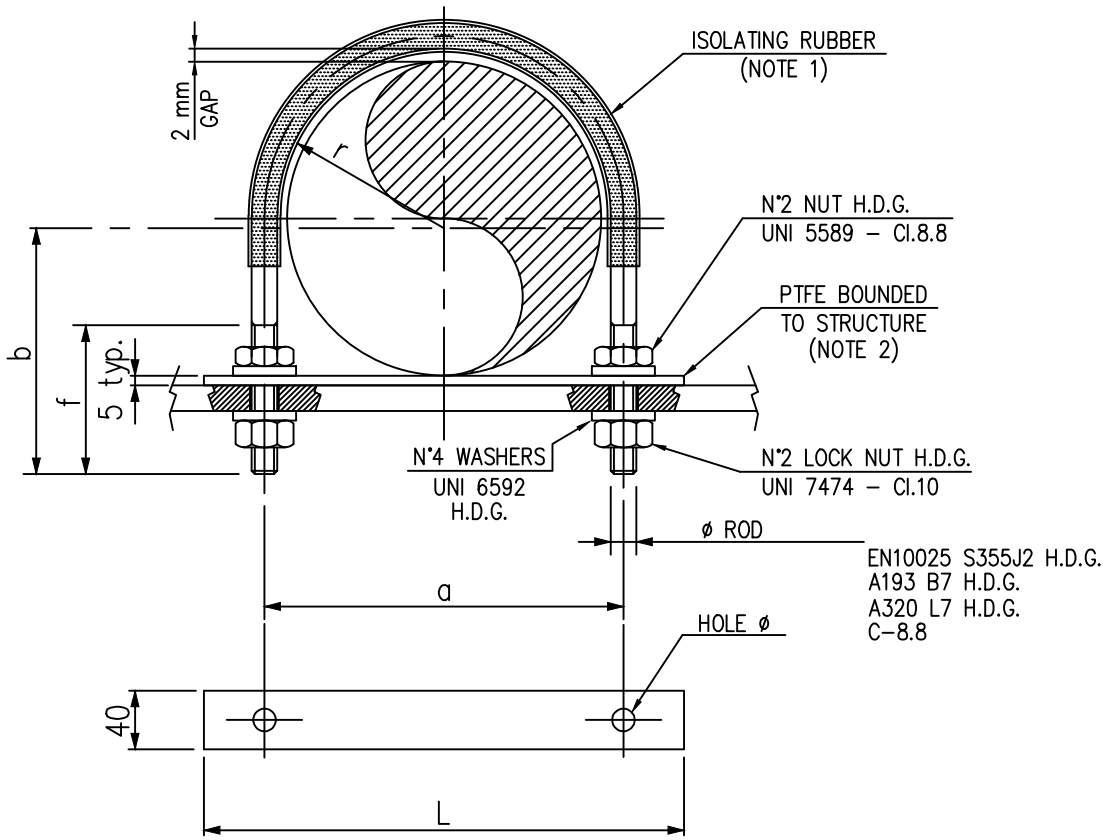
Revision: 0

Date: –

CAVALLOTTI GALVANIZZATI DI GUIDA PER TUBAZIONI IN C.S S.S. E ALLOY
GALVANIZED U–BOLTS GUIDE FOR C.S. S.S. AND ALLOY PIPES (NON GRIP)

S–211

Example of designation : STD – PIPE ND"
(S–211 – 10")



SIZE ND	ROD DIA	r	a	b	f	L	HOLE ø	DEV	DEV. RUBBER	WEIGHT Kg
½"	M8	14	36	55	52	65	10	167	62	0.16
3/4"	M8	17	42	55	52	70	10	176	75	0.16
1"	M8	20	48	60	55	80	10	196	90	0.18
1½"	M10	27	64	70	65	100	12	240	120	0.32
2"	M10	33	76	80	70	110	12	280	150	0.35
3"	M12	48	108	100	80	150	14	370	210	0.60
4"	M12	60	132	110	80	180	14	430	260	0.67
6"	M16	87	190	150	100	250	18	600	380	1.39
8"	M16	113	242	170	100	300	18	720	500	1.60
10"	M16	140	296	200	100	350	18	865	650	1.86
12"	M20	165	350	240	120	420	22	1030	750	3.31
14"	M20	181	382	260	120	450	22	1120	840	3.55
16"	M24	207	438	290	130	520	26	1270	1000	5.76
18"	M24	232	488	320	130	570	26	1410	1100	6.28
20"	M30	257	544	360	160	640	32	1570	1200	11.02
24"	M30	308	646	410	160	750	32	1830	1450	12.52

NOTES:

1) HEAT SHRINK TUBE TYPE FLAME RETARDANT, WITH RATIO 2:1
2) MULTIPLE SHEETS OF PTFE CAN BE ADDED IN ORDER TO ENSURE THE CORRECT ELEVATION AND SLOPE OF THE LINES.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	43	**To**	43
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
1/43/1/_		**02**	**02-09-2024**	**1**	**AZ39**			**FWN**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-09-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-09-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000041	3	Acceptable				11-09-2024				
2/43/1/_		**02**	**09-10-2024**	**39**	**AZ39**			**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				11-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000587	3	Acceptable				23-10-2024				
3/43/1/_		**02**	**04-10-2024**	**29**	**AZ39**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				07-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000325	3	Repeat				11-10-2024				
		RT	DRF	After Film Repeat		IDL-QCI-RT 0036 00	AA	100 %	000588	3	Acceptable				23-10-2024				
4/43/1/_		**02**	**04-10-2024**	**29**	**AZ39**			**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-10-2024**	**A**
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				07-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000322	3	Acceptable				11-10-2024				
5/43/1/_		**02**	**20-12-2024**	**100-115**	**AX84**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**07-01-2025**	
					AX 453	**Repair done**													
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				20-12-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001088	3	Repair			0,030 m	23-12-2024				
Repair 03-01-2025 Prod sh.115 AX 453		VIS	R 1 DRI	After Repair		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable C1A		GTAW		04-01-2025				
		RT	R 1 DRI	After Repair		IDL-QCI-RT 0036 00	AA	100 %	001124	1	Acceptable				07-01-2025				
6/43/1/_		**02**	**05-09-2024**	**4-35**	**AZ39**			**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**05-02-2025**	**B**
					AX 453	**After Cutting**													
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				11-09-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000075	3	Acceptable				19-09-2024				
Cut 04-02-2025 Prod sh.35 AX 453		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	PBRECIT	100 %	OK		Acceptable C1A		GTAW		06-02-2025				
		RT	C 1 DTA	After Cutting		IDL-QCI-RT 0036 00	AA	100 %	001201	3	Repeat				04-02-2025				
		RT	DRF	After Film Repeat		IDL-QCI-RT 0036 00	AA	100 %	001203	3	Acceptable				05-02-2025				
7/43/1/_		**02**	**14-09-2024**	**10-26**	**AZ39**			**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-01-2025**	**B**
					AX 453	**After Cutting**													
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				17-09-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000076	3	Acceptable				19-09-2024				
Cut 07-01-2025 Prod sh.26 AX 453		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable C1A		GTAW		07-01-2025				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
7/43/1/_		**02**	**14-09-2024**	**10-26**	**AZ39**		**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-01-2025**	**B**
					AX 453 After Cutting													
		RT	C 1 DTA	After Cutting	IDL-QCI-RT 0036 00	AA	100 %	001125	3	Acceptable				07-01-2025				
8/43/1/_		**02**	**02-09-2024**	**1-27**	**AZ39**		**PL**	**50,00 mm**	**5,00 mm**	**FILL**	**0,050 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**F**	**10-01-2025**	**B**
					AX 453 After Cutting													
01HSS	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-09-2024				
		LP	FIN	Weld Completion	IDL-QCI-LP 0002 01	ROM	100 %	000043		Acceptable				12-09-2024				
Cut 09-01-2025 Prod sh.27 AX 453		VIS	C 1 DTA	After Cutting	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable C1A		GTAW		09-01-2025				
		LP	C 1 DTA	After Cutting	IDL-QCI-LP 0002 01	ROM	100 %	000044		Acceptable				10-01-2025				
9/43/1/_		**02**	**02-09-2024**	**1-36**	**AZ39**		**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**13-02-2025**	**B**
					AX 453 After Cutting													
01HSS	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-09-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000042	3	Acceptable				11-09-2024				
Cut 12-02-2025 Prod sh.36 AX 453		VIS	C 1 DTA	After Cutting	123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK		Acceptable C1A		GTAW		13-02-2025				
		RT	C 1 DTA	After Cutting	IDL-QCI-RT 0036 00	PR	100 %	001208	3	Acceptable				13-02-2025				
10/43/1/_		**02**	**02-09-2024**	**1**	**AZ39**		**FWN**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-09-2024**	**C**
01HSS	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-09-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000038	3	Acceptable				11-09-2024				
11/43/1/_		**02**	**08-10-2024**	**32**	**AZ39**		**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-10-2024**	**C**
01HSS	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				09-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000323	3	Acceptable				11-10-2024				
12/43/1/_		**02**	**05-09-2024**	**4**	**AZ39**		**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**18-09-2024**	**C**
01HSS	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				11-09-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000064	3	Acceptable				18-09-2024				
13/43/1/_		**02**	**04-10-2024**	**29**	**AZ39**		**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-10-2024**	**C**
01HSS	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				07-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000324	3	Acceptable				11-10-2024				
14/43/1/_		**02**	**02-09-2024**	**1**	**AZ39**		**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-09-2024**	**C**
01HSS	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-09-2024				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
14/43/1/_		**02**	**02-09-2024**	**1**	**AZ39**		**TEE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**11-09-2024**	**C**
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000039	3	Acceptable				11-09-2024				
15/43/1/_		**02**	**06-01-2025**	**119**	**AX 453**		**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**08-01-2025**	
01HSS	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				08-01-2025				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	001133	3	Acceptable				08-01-2025				
		deleted for revision drawing																
16/43/1/_		**02**	**02-02-2025**	**35**	**AX 453**		**PIPE**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**04-02-2025**	**B**
01HSS	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	PBRECIT	100 %	OK		Acceptable				02-02-2025				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	001202	3	Acceptable				04-02-2025				

Totals per DWG	**43**	**Prefabrication**	**11,23 m**	**14 Nr. Welds**	**130,00 inch**
		Erection	**1,72 m**	**2 Nr. Welds**	**20,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**12,95 m**	**16 Nr. Welds**	**150,00 inch**
		Accepted	**12,95 m**	**16 Nr. Welds**	**150,00 inch**
		Repaired	**0,03 m**	**1 Nr. Welds**	**10,00 inch**
Totals by Discipline		**Prefabrication**	**11,23 m**	**14 Nr. Welds**	**130,00 inch**
		Erection	**1,72 m**	**2 Nr. Welds**	**20,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**12,95 m**	**16 Nr. Welds**	**150,00 inch**
		Accepted	**12,95 m**	**16 Nr. Welds**	**150,00 inch**
		Repaired	**0,03 m**	**1 Nr. Welds**	**10,00 inch**
Totals by Project		**Prefabrication**	**11,23 m**	**14 Nr. Welds**	**130,00 inch**
		Erection	**1,72 m**	**2 Nr. Welds**	**20,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**12,95 m**	**16 Nr. Welds**	**150,00 inch**
		Accepted	**12,95 m**	**16 Nr. Welds**	**150,00 inch**
		Repaired	**0,03 m**	**1 Nr. Welds**	**10,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name:	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**	Antonio Galesi		
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 19/02/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
43	02	1	A	01HSS	2	1	90 Deg Elbow Long Radius BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	M230630	1724000839	00310	MCP2310-00002-18	W2-W3	
43	02	1	A	01HSS	2	1	90 Deg Elbow Long Radius BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	M230630	1724000839	00310	MCP2310-00002-18	W4	
43	02	1	A	01HSS	3	1	Flange WN ›10" Thk.4.19mm 150LB RF ASTM A182 Gr.F316/316L	DF309/1	1724000839	01060	23-04271	W1	
43	02	1	A	01HSS	1A	1,162	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
43	02	1	A	01HSS	1B	0,688	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
43	02	1	B	01HSS	2	1	90 Deg Elbow Long Radius BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	M230630	1724000839	00310	MCP2310-00002-18	W6-W7	
43	02	1	B	01HSS	3	1	Flange WN ›10" Thk.4.19mm 150LB RF ASTM A182 Gr.F316/316L	DF309/1	1724000839	01060	23-04271	W9	
43	02	1	B	01HSS	1C	0,431	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
43	02	1	B	01HSS	1H	0,555	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
43	02	1	B	01HSS	1G	1,316	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
43	02	1	B	01HSS	MESSA A TERRA	1	MESSA A TERRA PL75 x 50 x 5 thk. FORO Ø13	43076	1724000275	00010	929116/002	W8	
43	02	1	C	01HSS	2	1	90 Deg Elbow Long Radius BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	M230630	1724000839	00310	MCP2310-00002-18	W11-W12	
43	02	1	C	01HSS	2	1	90 Deg Elbow Long Radius BW ›10" Thk.4.19mm ASTM A403 Gr.WP316/316L	M230630	1724000839	00310	MCP2310-00002-18	W13-W14	
43	02	1	C	01HSS	3	1	Flange WN ›10" Thk.4.19mm 150LB RF ASTM A182 Gr.F316/316L	DF309/1	1724000839	01060	23-04271	W10	
43	02	1	C	01HSS	3	1	Flange WN ›10" Thk.4.19mm 150LB RF ASTM A182 Gr.F316/316L	DF309/1	1724000839	01060	23-04271	W14	
43	02	1	C	01HSS	1E	2,65	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		
43	02	1	C	01HSS	1F	0,236	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation – NOT APPLICABLE

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	43-00-TP-044	: Test Pack 43-00-TP-044			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003576		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air, ensuring all drains/vents (when present) were open to facilitate the removal of moisture. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, inlet and outlet points were closed with covers.
3	Temporary means :	Blind flanges and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA
5	Valve body cavity, branches, etc.. Have been drained form residual water	●
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Restricting access to the area.
11	REMARKS:	None

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-15	2025-02-19	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-15T08:42:24.343Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-19T15:42:03.599Z	

ITEM	Tag	43-00-TP-050	: Test Pack 43-00-TP-050			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003604		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	NA
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	NA
4	Check that pipework at pump and vessel nozzles are free from spring.	NA
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	Note
6	Check bolt tightening and flange management (excluded battery limit joints).	Note
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	Note
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	NA
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	NA
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	NA
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: This TP is only visual and thre is no pipework only two loose Valves that have been checked for lack of damages and if they are conforming to datasheet.
Points 5-6-7 to be checked during flange management and after reinstatement.

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-24	2025-01-25	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-24T07:06:14.741Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-01-25T09:35:23.184Z	

Base Load Power Hub (BLPH)

TEST PACK

N°43-00-TP-050
SUB-SYSTEM N° 43-00

System	43
Sub-System	43-00
Test Pressure	N/A
Test Fluid	N/A
Test Duration	N/A

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

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1. COLOURED MARKED P&IDs
2. PIPING TEST 3D CIRCUIT
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4. EXTRACT OF LINE LIST
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6. EXTRACT OF SUPPORT LIST AND DETAILS – NOT APPLICABLE
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
   - 8.1 CLX02A - Pipework Before test
   - 8.2 CLX02B - Pipework After Test
   - 8.3 CXX01 - Thermal insulation
   - 8.4 CXX02 – Painting Line
   - 8.5 TMX03 – Cleaning – NOT APPLICABLE
   - 8.6 TMX05 – Pressure test – NOT APPLICABLE
   - 8.7 TMX25 – Gross Air Leak Test – NOT APPLICABLE
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 – Drying – NOT APPLICABLE

1. COLOURED MARKED P&IDs

DRAWING NO. DRAWING_NO.

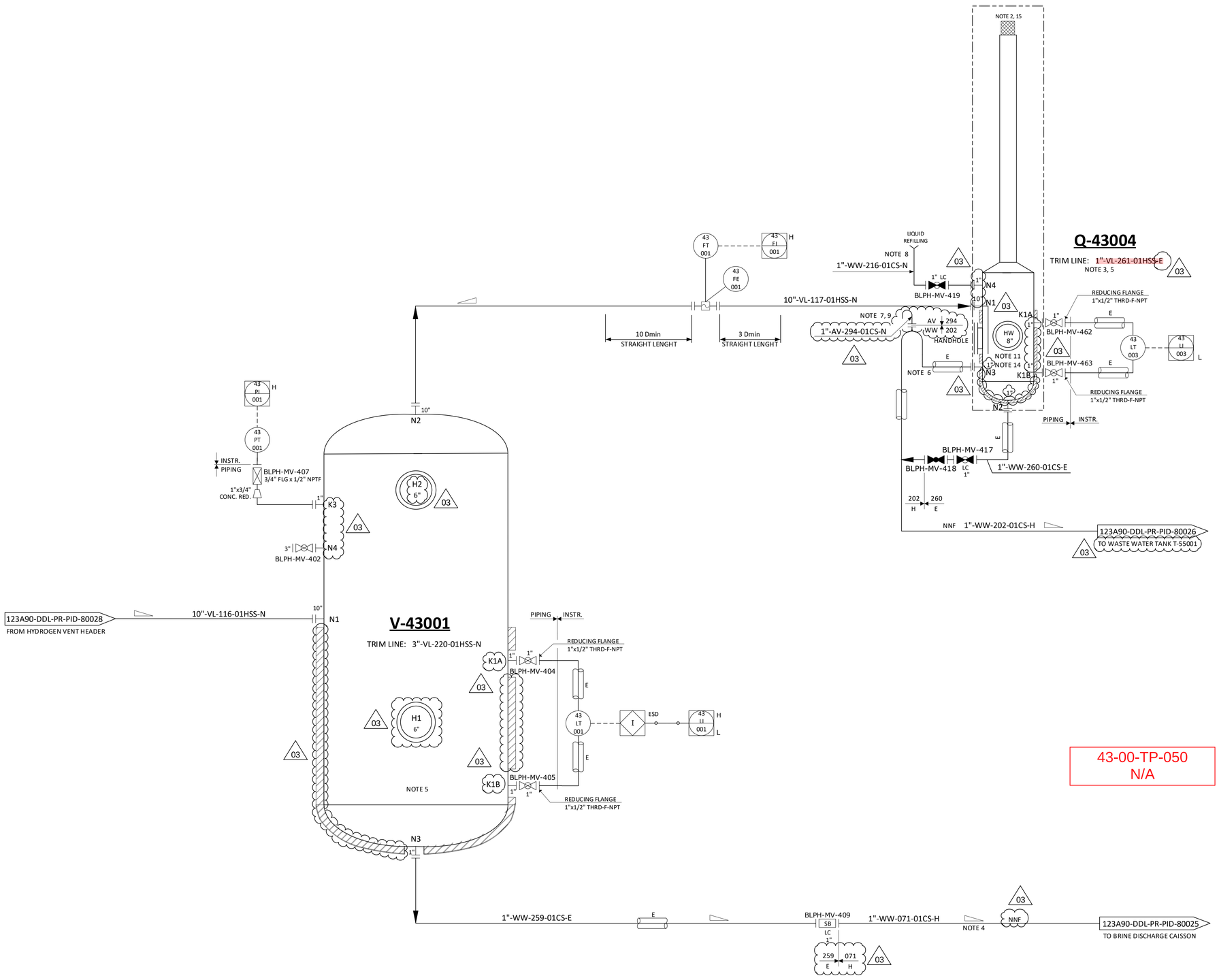
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

43-00-TP-050
N/A

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

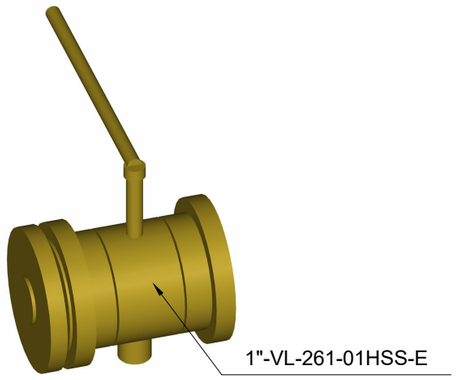
ROSETTI MARINO

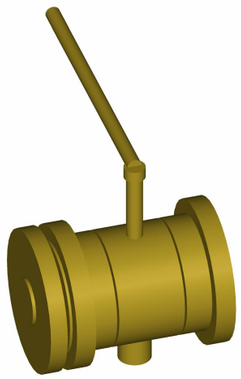
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029		SHEET 001 / REV. 03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT





43-00-TP-050

N/A

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
43-00-TP-050

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

NOT APPLICABLE

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
125	VL-261	261	1	01HSS	N/E	3,38	40S	Partially	1"-VL-261-01HSS-E	123A90-DDL-PR-PID-80029	3,50	43	43-00	TP-050	N/A	N/A	Hydrogen	Stainless Steel	TL	Art. 4, par. 3	6C	RAL 9002

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

REV. **05**

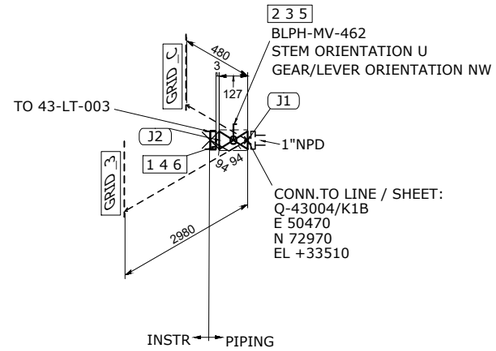
TITLE

SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
159	123A90-FDL-PP-DI-00125-01	**125**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-VL-261-01HSS-E	27/08/2024													**00**	**03**		**TP-050**
160	123A90-FDL-PP-DI-00125-02	**125**	02	SHOP DRAWING ISOMETRIC - LINE NR 1"-VL-261-01HSS-E	27/08/2024													**00**	**03**		**TP-050**

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X1/2	FLR0SS0034010H	Flange Reducing ASME B16.5 THRD-F NPT 150LB RF FRG ASTM A182 Gr.F316/316L	1	0.9
2	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	5.8
3	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	7.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

43-00-TP-050

MASTER

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-VL-261-01HSS-E

SK.125

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00125 | SHEET / OF: 1/2 | REV.: 00

LINE DATA

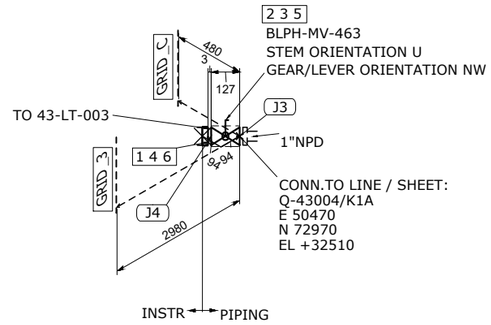
NDT INSPECTION CATEGORY	1			PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 6C	BASE RAL RAL-9002		FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]		DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes			TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X1/2	FLR0SS0034010H	Flange Reducing ASME B16.5 THRD-F NPT 150LB RF FRG ASTM A182 Gr.F316/316L	1	0.9
2	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	5.8
3	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	7.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

43-00-TP-050

MASTER

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-VL-261-01HSS-E

SK.125

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00125 | SHEET / OF: 2/2 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 6C	BASE RAL RAL-9002	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

6. EXTRACT OF SUPPORT LIST & DETAILS

NOT APPLICABLE

7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning – NOT APPLICABLE

8.6 TMX05 – Pressure test – NOT APPLICABLE

8.7 TMX25 – Gross Air Leak Test – NOT APPLICABLE

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 – Drying – NOT APPLICABLE

ITEM	Tag	43-00-TP-050	: Test Pack 43-00-TP-050			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003605		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	NA
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	NA
3	All plugs installed on vents and drains for test have been removed.	NA
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	NA
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	OK
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	Note
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	OK
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-31	2025-01-31	
Signature	Digitaly signed by Emanuele Delfino 2025-01-31T12:06:11.789Z	Digitaly signed by Kangi Albonetti 2025-01-31T17:51:23.210Z	

ITEM	Tag	43-00-TP-050	: Test Pack 43-00-TP-050			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003606		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX01 Thermal Insulation

1	Ensure CLX02B Pipework After Test (reinstatement) check completed.	OK
2	Ensure CXX02 "Painting Line" check (for the concerned insulated lines) completed.	OK
3	Ensure CPX22A "Heat tracing Before Insulation" check completed.	OK
4	Check that the insulation and cladding materials conform to the specifications.	PL
5	Check that the insulation is compatible with the Heat tracing system.	OK
6	Check that the surface condition prior to the application of the insulation	OK
7	Check the installation of wire mesh	OK
8	Check the overlap of the metal cladding.	NA
9	Check that each joint is sealed with a suitable sealant specified for water proofing.	PL
10	Check the staggering of the metal cladding joints and verify that they have been applied as per the specifications.	PL
11	Control that the locking devices boxes opretated satisfactorily.	PL
12	Check the blinds, the spectacles and the instruments are visible.	NA
13	Check the flange accessibility without damaging the insulation.	PL
14	Check that color coding/line marking/flow direction are correct	NA

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM_CONSTR (ROSETTI MARINO)	RM (ROSETTI MARINO)	
Name	Gianluca De Maglie	Lorenzo Novaga	
Date	2025-03-21	2025-03-25	
Signature	PROVERLIS Digitaly signed by Gianluca De Maglie 2025-03-21T15:21:10.122Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-03-25T12:52:47.193Z	

ITEM	Tag	43-00-TP-050	: Test Pack 43-00-TP-050			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003607		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02 Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	Note
3	Check that the fluid direction is correct.	Note
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	OK
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 1. Checked the painting report made by Vendor and signed by RM coating Dpt.
Points 2 and 3 to be checked during thermal insulation.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (Rosetti Marino)	
Name	Alex Sanna	Kangi Albonetti	
Date	2025-01-31	2025-01-31	
Signature	Digitaly signed by Alex Sanna 2025-01-31T13:59:04.939Z	Digitaly signed by Kangi Albonetti 2025-01-31T17:54:26.164Z	

ITEM	Tag	43-00-TP-058	: Test Pack 43-00-TP-058			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003661		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	Note
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	OK
4	Check that pipework at pump and vessel nozzles are free from spring.	NA
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	OK
6	Check bolt tightening and flange management (excluded battery limit joints).	OK
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	OK
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	NA
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	NA
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	NA
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Pending receipt of certificates from the quality department of Rosetti Marino.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-18	2025-02-20	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-18T12:48:37.412Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-02-20T14:44:42.353Z	

Base Load Power Hub (BLPH)

TEST PACK

N°43-00-TP-058
SUB-SYSTEM N° 43-00

System	43
Sub-System	43-00
Test Pressure	N/A
Test Fluid	N/A
Test Duration	N/A

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

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6. EXTRACT OF SUPPORT LIST AND DETAILS – NOT APPLICABLE
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
   - 8.1 CLX02A - Pipework Before test
   - 8.2 CLX02B - Pipework After Test
   - 8.3 CXX01 - Thermal insulation – NOT APPLICABLE
   - 8.4 CXX02 – Painting Line
   - 8.5 TMX03 – Cleaning – NOT APPLICABLE
   - 8.6 TMX05 – Pressure test – NOT APPLICABLE
   - 8.7 TMX25 – Gross Air Leak Test – NOT APPLICABLE
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 – Drying – NOT APPLICABLE

1. COLOURED MARKED P&IDs

DRAWING NO. DRAWING_NO.

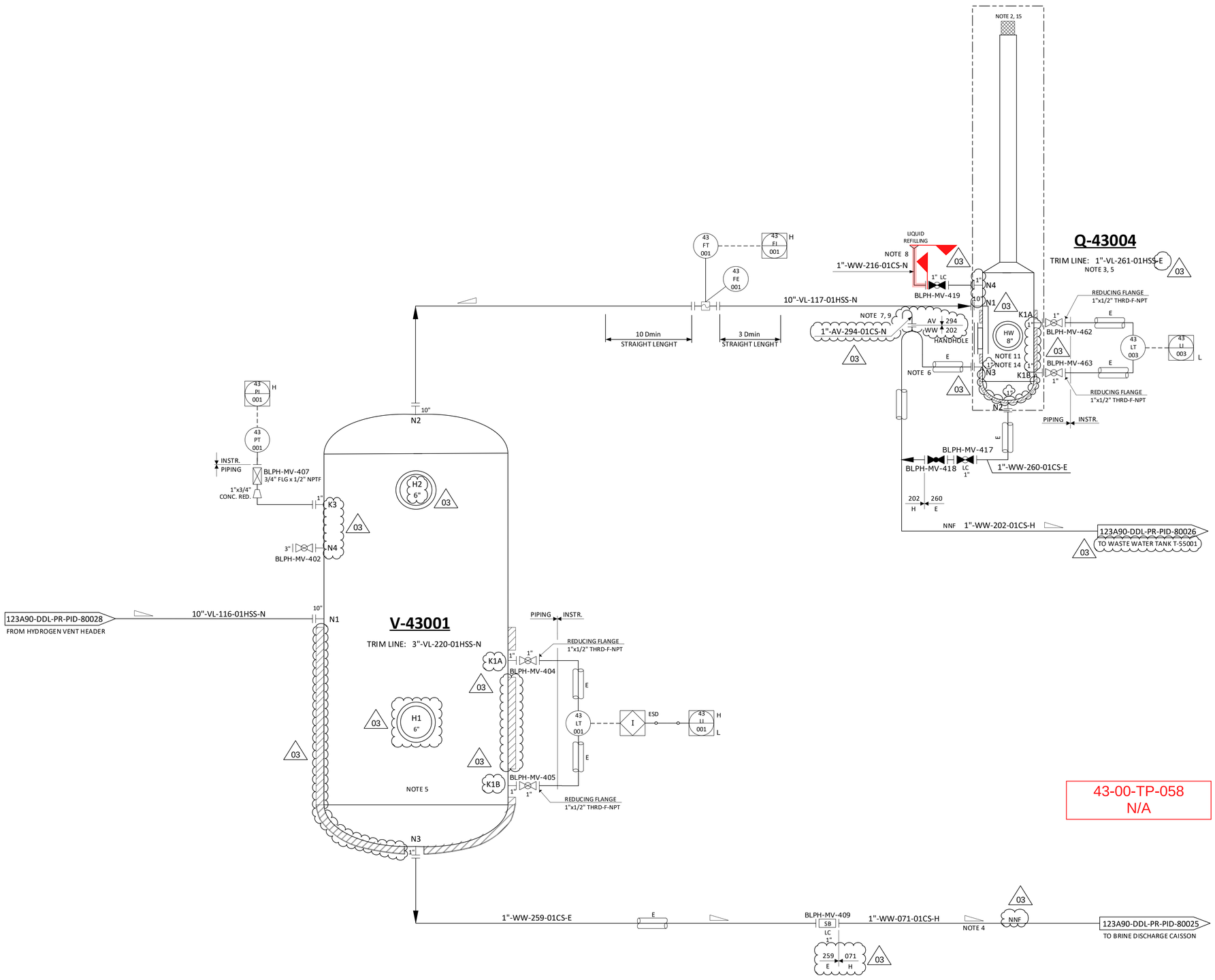
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

43-00-TP-058
N/A

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

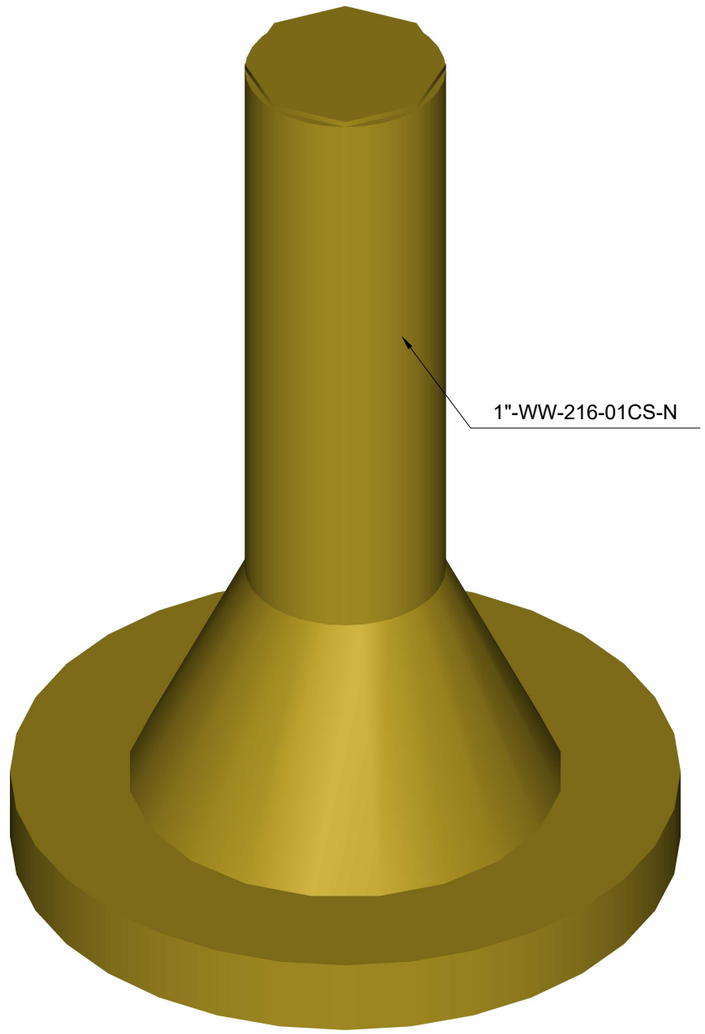
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029		SHEET 001 / REV. 03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



43-00-TP-058

N/A

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
43-00-TP-058

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

NOT APPLICABLE

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
114	WW-216	216	1	01CS	N	4,55	80	N/A	1"-WW-216-01CS-N	123A90-DDL-PR-PID-80029	3,50	43	43-00	TP-058/TP-064	Water	5.25/N/A	Waste Water	Carbon Steel	INF	Art. 4, par. 3	1	RAL 9002

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

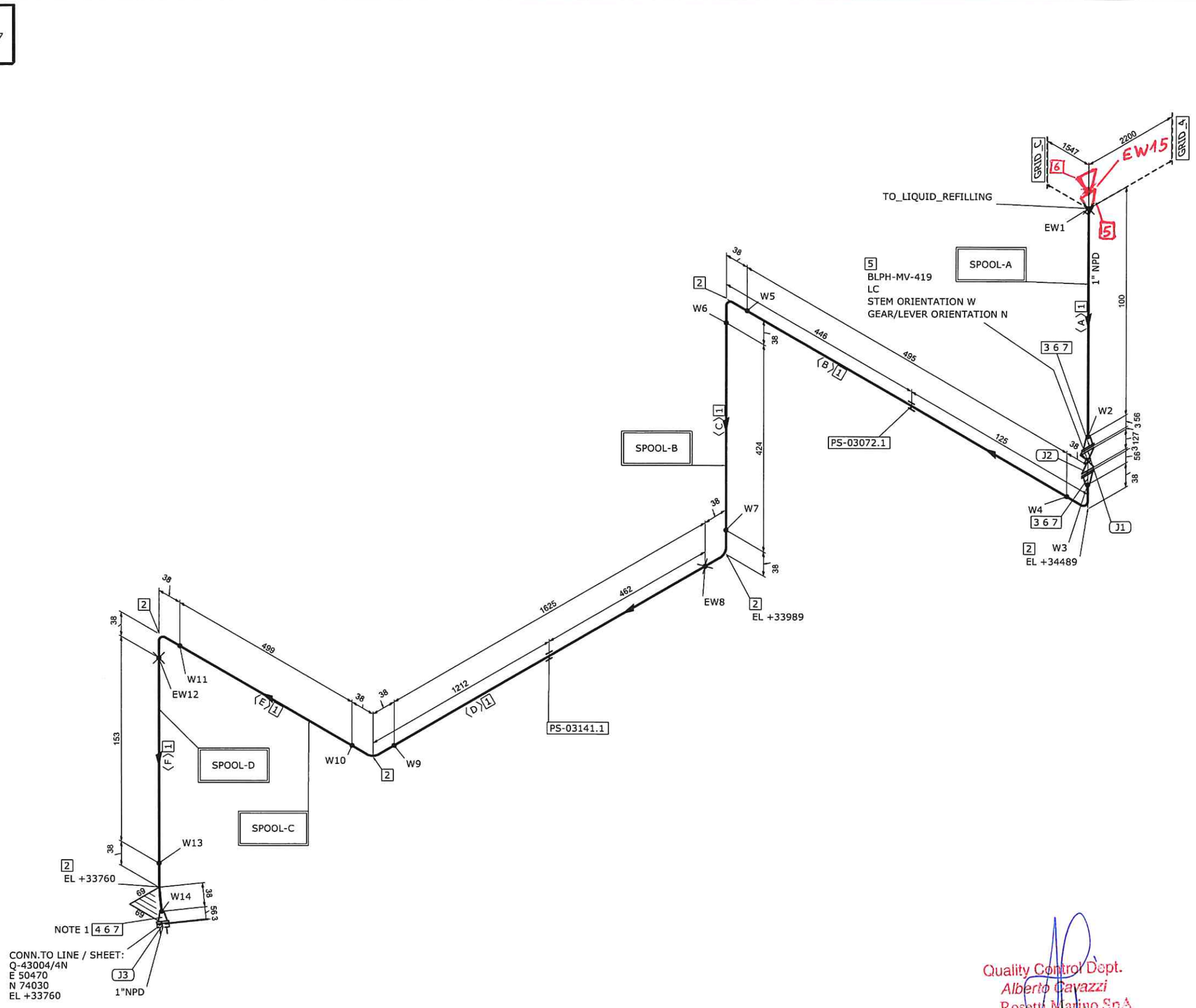
REV. **05**

TITLE

SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
145	123A90-FDL-PP-DI-00114-01	**114**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-WW-216-01CS-N	27/08/2024													**00**	**03**		**TP-058/TP-064**



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	3.3M	10.7
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	6	1.1
3	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	2	2.8
4	1	FLWDCS02740100	Flange WN For Jackscrews ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	1	1.4
5	1x2		REDUCER CONC.		
6	2x4		REDUCER CONC.		

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	VBC0NN24710100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01B01RF	1	8.0
6	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	3	0.2
7	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	1.4

FABRICATION WEIGHT [kg]	16.0
ERECTION WEIGHT [kg]	9.6
OVERALL WEIGHT [kg]	25.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
EW1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
EW8	1	BW
W9	1	BW
W10	1	BW
W11	1	BW
EW12	1	BW
W13	1	BW
W14	1	BW
EW15	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL
B	1	495	BEVEL	BEVEL
C	1	424	BEVEL	BEVEL
D	1	1625	BEVEL	BEVEL
E	1	499	BEVEL	BEVEL
F	1	153	BEVEL	BEVEL

SUPPORT LIST

PS-03072.1
PS-03141.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	1	1.7
B	5	4.9
C	3	7.2
D	2	2.1
MONT	3	9.6

Quality Control Dept.
Alberto Cavazzi
Rosetti Marino SpA
06/02/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-216-01CS-N

SK.114

LINE DATA							
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 1	BASE RAL RAL-9002	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -46 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB.	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION NE\SW

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT
APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00114
SHEET / OF	1/1	REV.	00

6. EXTRACT OF SUPPORT LIST & DETAILS

NOT APPLICABLE

7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	114	**To**	114
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	N. Rep	Dimension	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/114/1/_		**00**	**08-02-2025**	**157**	**AX 453**			**ELB**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**M**	**C.S.**	**A1A**	**GTAW**	**BW**	**13-02-2025**	
01CS	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK			Acceptable					13-02-2025			
		RT	FIN	Weld Completion				10 %				Acceptable								
2/114/1/_		**00**	**25-09-2024**	**15**	**AZ53**			**PIPE**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**A**
01CS	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
3/114/1/_		**00**	**23-09-2024**	**13**	**AZ53**			**FWN**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**24-09-2024**	**B**
01CS	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
4/114/1/_		**00**	**24-09-2024**	**14**	**AZ53**			**ELB**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**B**
01CS	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
5/114/1/_		**00**	**24-09-2024**	**14**	**AZ53**			**PIPE**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**B**
01CS	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
6/114/1/_		**00**	**25-09-2024**	**15**	**AZ53**			**ELB**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**B**
01CS	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
7/114/1/_		**00**	**23-09-2024**	**13**	**AZ53**			**PIPE**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**24-09-2024**	**B**
01CS	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
8/114/1/_		**00**	**20-12-2024**	**102**	**AX84**			**ELB**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**M**	**C.S.**	**A1A**	**GTAW**	**BW**	**23-12-2024**	
01CS	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK			Acceptable					20-12-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	001089		4	Acceptable					23-12-2024			
9/114/1/_		**00**	**24-09-2024**	**14**	**AZ53**			**PIPE**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**C**
01CS	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn.	Accept. Date	Spool
9/114/1/_		**00**	**24-09-2024**	**14**	**AZ53**			**PIPE**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**C**
10/114/1/_		**00**	**23-09-2024**	**13**	**AZ53**			**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**C**
01CS	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	10 %	000090	4	Acceptable					26-09-2024			
11/114/1/_		**00**	**23-09-2024**	**13**	**AZ53**			**PIPE**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**24-09-2024**	**C**
01CS	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion			10 %			Acceptable								
12/114/1/_		**00**	**23-12-2024**	**102**	**AX84**			**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**M**	**C.S.**	**A1A**	**GTAW**	**BW**	**07-01-2025**	
01CS	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					23-12-2024			
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	10 %	001126	4	Acceptable					07-01-2025			
13/114/1/_		**00**	**26-09-2024**	**17**	**AZ53**			**PIPE**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**28-09-2024**	**D**
01CS	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					28-09-2024			
		RT	FIN	Weld Completion			10 %			Acceptable								
14/114/1/_		**00**	**23-09-2024**	**13**	**AZ53**			**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**24-09-2024**	**D**
01CS	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion			10 %			Acceptable								
15/114/1/_		**00**	**08-02-2025**	**157**	**AX 453**			**RED**	**2,00 in**	**5,54 mm**	**V**	**0,189 m**	**M**	**C.S.**	**A1A**	**GTAW**	**BW**	**13-02-2025**	
01CS	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK		Acceptable					13-02-2025			
		RT	FIN	Weld Completion			10 %			Acceptable								

Totals per DWG	**114**	**Prefabrication**	**1,10 m**	**11 Nr. Welds**	**11,00 inch**
		Erection	**0,49 m**	**4 Nr. Welds**	**5,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**1,59 m**	**15 Nr. Welds**	**16,00 inch**
		Accepted	**1,59 m**	**15 Nr. Welds**	**16,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Totals by Discipline	**Prefabrication**	**1,10 m**	**11 Nr. Welds**	**11,00 inch**
	Erection	**0,49 m**	**4 Nr. Welds**	**5,00 inch**
	Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
	Performed	**1,59 m**	**15 Nr. Welds**	**16,00 inch**
	Accepted	**1,59 m**	**15 Nr. Welds**	**16,00 inch**
	Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05

ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Conn	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
15/114/1/_		**00**	**08-02-2025**	**157**	**AX 453**		**RED**	**2,00 in**	**5,54 mm**	**V**	**0,189 m**	**M**	**C.S.**	**A1A**	**GTAW**	**BW**	**13-02-2025**	

Totals by Project			
Prefabrication	**1,10 m**	**11 Nr. Welds**	**11,00 inch**
Erection	**0,49 m**	**4 Nr. Welds**	**5,00 inch**
Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Performed	**1,59 m**	**15 Nr. Welds**	**16,00 inch**
Accepted	**1,59 m**	**15 Nr. Welds**	**16,00 inch**
Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND / ROSETTI MARINO	Cliente/Contractor: **CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by	
	SubContrattista/SubContractor: **ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:	
	Progetto/Project: **Hollandse Kust Noord Wind Park Project**				
	Commessa/Job: **123A90 - Piping**				
	Disciplina/Discipline: **PIPING**				
	TitoloDocumento/DocumentTitle: **Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 14/02/2025	
	RosettiDoc.Num.: **123A90MTR001**				

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
114	00	1	A	01CS	3	1	Flange WN ›1" Thk.4.55mm 150LB RF ASTM/ASME A/SA350 Gr.LF2	23/70335	1724000839	01220	2024-C_MFF-01243	W2	
114	00	1	A	01CS	1A	0,1	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		
114	00	1	MONT	01CS	8	1	Reducer Concentric BW ›2"x1" Thk.5.54mmx4.55mm ASTM/ASME A/SA420 Gr.WPL6	0	1725000262	00010	#N/D	EW1-EW15	ATTESA RICEZ.CERTIFICATO
114	00	1	MONT	01CS	9	1	Reducer Concentric ASME B16.9 BW 6,02x5,54 WRS ASTM/ASME A/SA420 Gr.WPL6	0	1725000262	00020	#N/D	EW15	ATTESA RICEZ.CERTIFICATO

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation – NOT APPLICABLE

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning – NOT APPLICABLE

8.6 TMX05 – Pressure test – NOT APPLICABLE

8.7 TMX25 – Gross Air Leak Test – NOT APPLICABLE

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 – Drying – NOT APPLICABLE

ITEM	Tag	43-00-TP-058	: Test Pack 43-00-TP-058			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003662		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	NA
4	Check that all removed devices and valves have been re-installed.	NA
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	NA
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	OK
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	OK
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-11	2025-02-20	
Signature	Digitaly signed by Emanuele Delfino 2025-02-11T10:33:02.677Z	Digitaly signed by Lorenzo Novaga 2025-02-20T14:46:37.902Z	

ITEM	Tag	43-00-TP-058	: Test Pack 43-00-TP-058			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003663		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02 Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	PL
3	Check that the fluid direction is correct.	PL
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	PL
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 1. Checked the painting report made by Vendor and signed by RM coating Dpt.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (ROSETTI MARINO)	
Name	Alex Sanna	Francesco Lionetti	
Date	2025-02-07	2025-02-20	
Signature	Digitaly signed by Alex Sanna 2025-02-07T14:35:45.397Z	Digitaly signed by Francesco Lionetti 2025-02-20T15:05:41.812Z	

ITEM	Tag	43-00-TP-064	: Test Pack 43-00-TP-064			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003697		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	PL
4	Check that pipework at pump and vessel nozzles are free from spring.	Note
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	Note
6	Check bolt tightening and flange management (excluded battery limit joints).	NA
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	NA
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	NA
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	NA
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Visual check of the TP performed on spools not assembled in erection.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-28	2025-01-30	
Signature	Digitaly signed by Emanuele Delfino 2025-01-28T05:42:44.775Z	Digitaly signed by Kangi Albonetti 2025-01-30T13:50:17.596Z	

ITEM	Tag	43-00-TP-064	: Test Pack 43-00-TP-064			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003698		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	OK
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	OK
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	PL
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	OK
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-11	2025-02-22	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-11T10:33:15.833Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-02-22T10:14:48.237Z	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	43-00-TP-064	: Test Pack 43-00-TP-064			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003699		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02 Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	PL
3	Check that the fluid direction is correct.	PL
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	OK
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 1. Checked the painting report made by Vendor and signed by RM coating Dpt.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (ROSETTI MARINO)	
Name	Alex Sanna	Francesco Lionetti	
Date	2025-02-11	2025-02-22	
Signature	PROVERLIS Digitaly signed by Alex Sanna 2025-02-11T15:56:20.221Z	PROVERLIS Digitaly signed by Francesco Lionetti 2025-02-22T09:54:14.668Z	

ROSETTI MARINO — CROSSWIND

ITEM	Tag	43-00-TP-064	: Test Pack 43-00-TP-064		Dwg	123A90-DDL-PR-PID-80029	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10003700	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX03	Cleaning

CLEANING MEDIUM

Air		Water	●	Steam		Oil		Other		Mechanical	

Component	NA					
Chemical treatment	No	NA	Filtration	No	Screen size	NA

EQUIPMENTS

Equipment **removed**	Yes	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	06/02/2025	Start time	10:55	End time	11:00
Flow rate	NA	Duration	5 minutes	Medium T°	NA

Operation Description

Connected the water source to the lowest point of the piping system.
Maintained a high flow rate to help dislodging and carry away debrises.
Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.

Safety Precautions

Restricting access to the area.

Result and comments

Water has been found clear of solid debris. All contaminants have been expelled.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-07	2025-02-07	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-07T13:21:46.490Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-07T16:45:15.527Z	

ROSETTI MARINO — CROSSWIND

ITEM	Tag	43-00-TP-064	: Test Pack 43-00-TP-064		Dwg	123A90-DDL-PR-PID-80029	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10003701	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX05	Pressure Test

TEST DATA

Reference procedure	123A90-PML-QHSE-PRO-00092				
Design pressure	3.5 barg	Max test pressure	5.25 barg	Min hold period	30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium	WATER

TEST RESULTS

Test date	See attachment	Start time	See attachment	End time	See attachment
Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min See attachment	Max See attachment		Variation	See attachment
Line has been depressurised to	NA			At maximum of bar/min	See attachment
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes
If required produce Red Line Mark Up for "AS BUILT".					

Comments:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-07	2025-02-07	
Signature	Digitaly signed by Emanuele Delfino 2025-02-07T13:21:59.020Z	Digitaly signed by Massimo Bruschi 2025-02-07T16:46:25.718Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP-064

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILNH2N
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:E0:AF)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	01:00:53
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	11:03:01 am

Logger protocol

Protocollo di acquisizione elenco dati

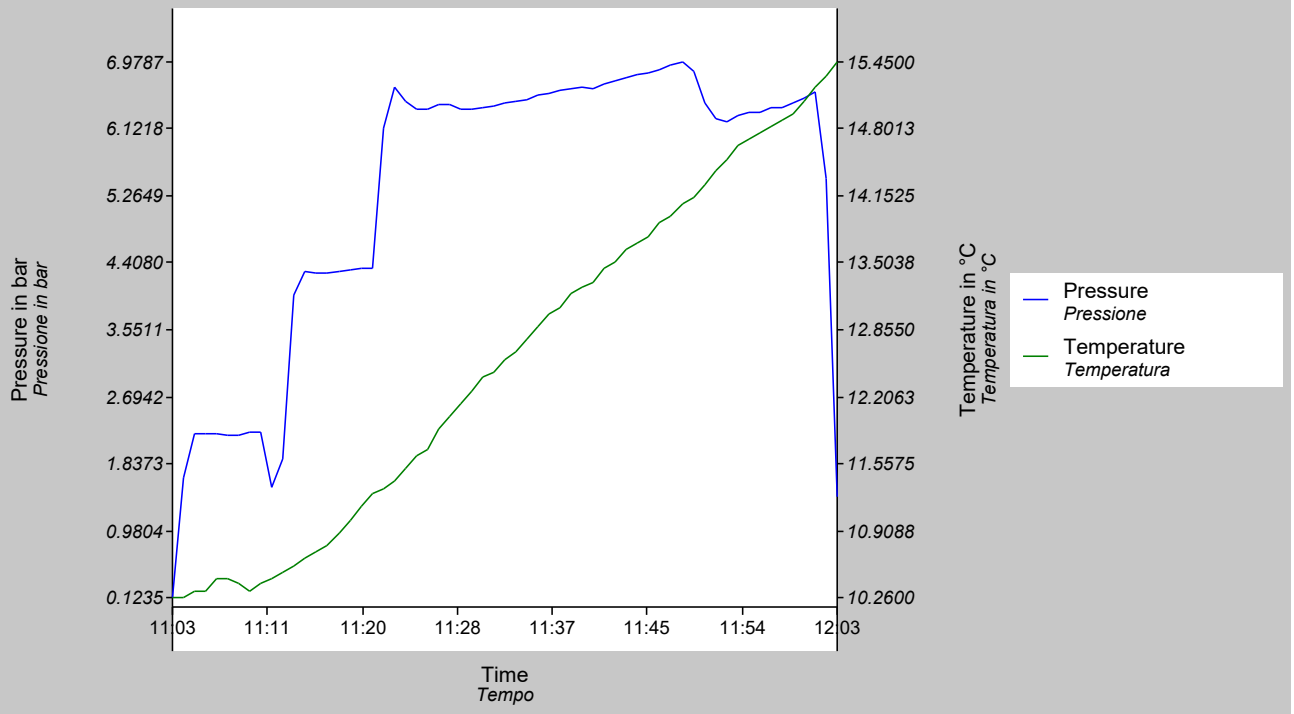
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP-064

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/06/2025 11:03:01.000	0.1235	10.2600
02/06/2025 11:04:01.000	1.6614	10.2600
02/06/2025 11:05:01.000	2.2250	10.3200
02/06/2025 11:06:01.000	2.2166	10.3200
02/06/2025 11:07:01.000	2.2221	10.4500
02/06/2025 11:08:01.000	2.1927	10.4500
02/06/2025 11:09:01.000	2.1934	10.3900
02/06/2025 11:10:01.000	2.2363	10.3200
02/06/2025 11:11:01.000	2.2495	10.3900
02/06/2025 11:12:01.000	1.5279	10.4500
02/06/2025 11:13:01.000	1.9054	10.5100
02/06/2025 11:14:01.000	3.9854	10.5700
02/06/2025 11:15:01.000	4.2940	10.6400
02/06/2025 11:16:01.000	4.2775	10.7000
02/06/2025 11:17:01.000	4.2843	10.7600
02/06/2025 11:18:01.000	4.2929	10.8900
02/06/2025 11:19:01.000	4.3075	11.0100

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP-064

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/06/2025 11:20:01.000	4.3321	11.1400
02/06/2025 11:21:01.000	4.3376	11.2600
02/06/2025 11:22:01.000	6.1326	11.3200
02/06/2025 11:23:01.000	6.6516	11.3900
02/06/2025 11:24:01.000	6.4832	11.5100
02/06/2025 11:25:01.000	6.3672	11.6400
02/06/2025 11:26:01.000	6.3745	11.7000
02/06/2025 11:27:01.000	6.4283	11.8900
02/06/2025 11:28:01.000	6.4352	12.0100
02/06/2025 11:29:01.000	6.3689	12.1400
02/06/2025 11:30:01.000	6.3641	12.2600
02/06/2025 11:31:01.000	6.3860	12.3900
02/06/2025 11:32:01.000	6.4083	12.4500
02/06/2025 11:33:01.000	6.4478	12.5700
02/06/2025 11:34:01.000	6.4771	12.6400
02/06/2025 11:35:01.000	6.5010	12.7600
02/06/2025 11:36:01.000	6.5601	12.8900
02/06/2025 11:37:01.000	6.5786	13.0100
02/06/2025 11:38:01.000	6.6113	13.0700
02/06/2025 11:39:01.000	6.6451	13.2000
02/06/2025 11:40:01.000	6.6506	13.2600
02/06/2025 11:41:01.000	6.6420	13.3200
02/06/2025 11:42:01.000	6.7025	13.4500
02/06/2025 11:43:01.000	6.7377	13.5100
02/06/2025 11:44:01.000	6.7816	13.6400
02/06/2025 11:45:01.000	6.8141	13.7000
02/06/2025 11:46:01.000	6.8320	13.7600
02/06/2025 11:47:01.000	6.8831	13.8900
02/06/2025 11:48:01.000	6.9348	13.9500
02/06/2025 11:49:01.000	6.9787	14.0700
02/06/2025 11:50:01.000	6.8640	14.1400
02/06/2025 11:51:01.000	6.4516	14.2600
02/06/2025 11:52:01.000	6.2518	14.3900
02/06/2025 11:53:01.000	6.2065	14.5100
02/06/2025 11:54:01.000	6.2892	14.6400
02/06/2025 11:55:01.000	6.3279	14.7000
02/06/2025 11:56:01.000	6.3393	14.7600
02/06/2025 11:57:01.000	6.3877	14.8200
02/06/2025 11:58:01.000	6.3993	14.8900
02/06/2025 11:59:01.000	6.4467	14.9500
02/06/2025 12:00:01.000	6.5176	15.0700
02/06/2025 12:01:01.000	6.6009	15.2000
02/06/2025 12:02:01.000	5.4938	15.3200
02/06/2025 12:03:01.000	1.4050	15.4500

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I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0514-SM-24

Certificate of Calibration

- data di emissione date of issue	2024-10-31
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILNH2N
- data di ricev. oggetto *date of receipt of item*	2024-10-24
- data delle misure *date of measurements*	2024-10-31
- registro di laboratorio *laboratory reference*	0514-SM-24

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico *Electrical pressure gauge*	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILNH2N
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione *Reference standard (RS) Dead-weight tester*	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato	Sebacate
Pressure medium	*Sebacate*
Livello di riferimento	Superficie di tenuta DUT
Refence height (for reference value)	*Sealing face DUT*
Posizione di montaggio	verticale
Position during calibration	*vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1016,6 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	100,0	99,9
199,82	199,9	199,9	199,9
299,72	299,8	299,9	299,8
399,63	399,7	399,8	399,7
499,53	499,6	499,6	499,6
599,43	599,5	599,5	599,5
699,33	699,3	699,4	699,4
799,24	799,2	799,2	799,2
899,13	899,1	899,1	899,1
999,03	999,0	999,0	999,0

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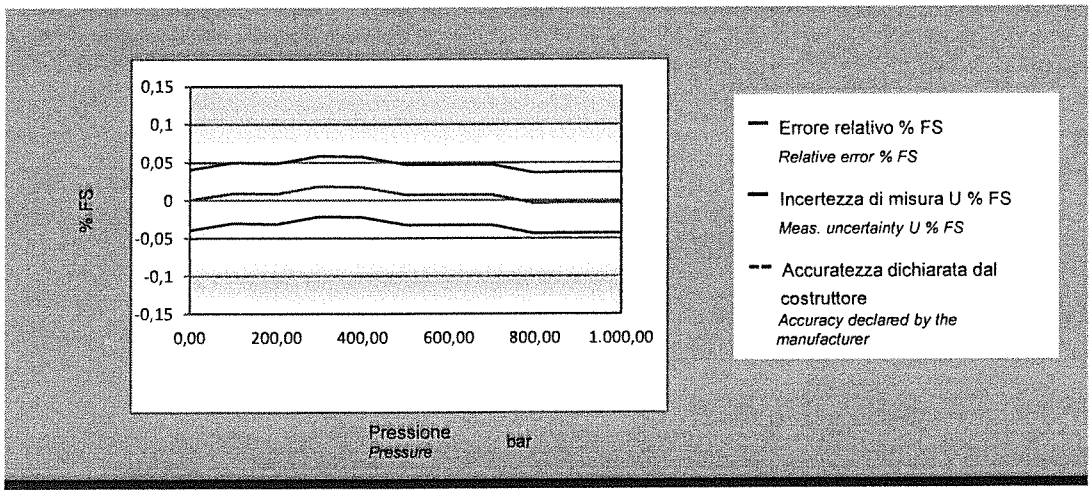
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Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	100,0	0,1	0,0	0,1	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,72	299,9	0,2	0,0	0,1	0,40
399,63	399,8	0,2	0,0	0,1	0,40
499,53	499,6	0,1	0,0	0,0	0,40
599,43	599,5	0,1	0,0	0,0	0,40
699,33	699,4	0,1	0,1	0,1	0,40
799,24	799,2	0,0	0,0	0,0	0,40
899,13	899,1	0,0	0,0	0,0	0,40
999,03	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,6 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Base Load Power Hub (BLPH)

TEST PACK

N°43-00-TP-064
SUB-SYSTEM N° 43-00

System	43
Sub-System	43-00
Test Pressure	5.25 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

List of Contents

1. COLOURED MARKED P&IDs
2. PIPING TEST 3D CIRCUIT
3. MATERIAL LIST FOR TEST
4. EXTRACT OF LINE LIST
5. ISOMETRIC RED-MARKED DRAWINGS & EXTRACT OF ISO LIST
6. EXTRACT OF SUPPORT LIST AND DETAILS
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
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   - 8.2 CLX02B - Pipework After Test
   - 8.3 CXX01 - Thermal insulation – NOT APPLICABLE
   - 8.4 CXX02 – Painting Line
   - 8.5 TMX03 – Cleaning
   - 8.6 TMX05 – Pressure test
   - 8.7 TMX25 – Gross Air Leak Test – NOT APPLICABLE
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 - Drying

1. COLOURED MARKED P&IDs

DRAWING NO. DRAWING_NO.

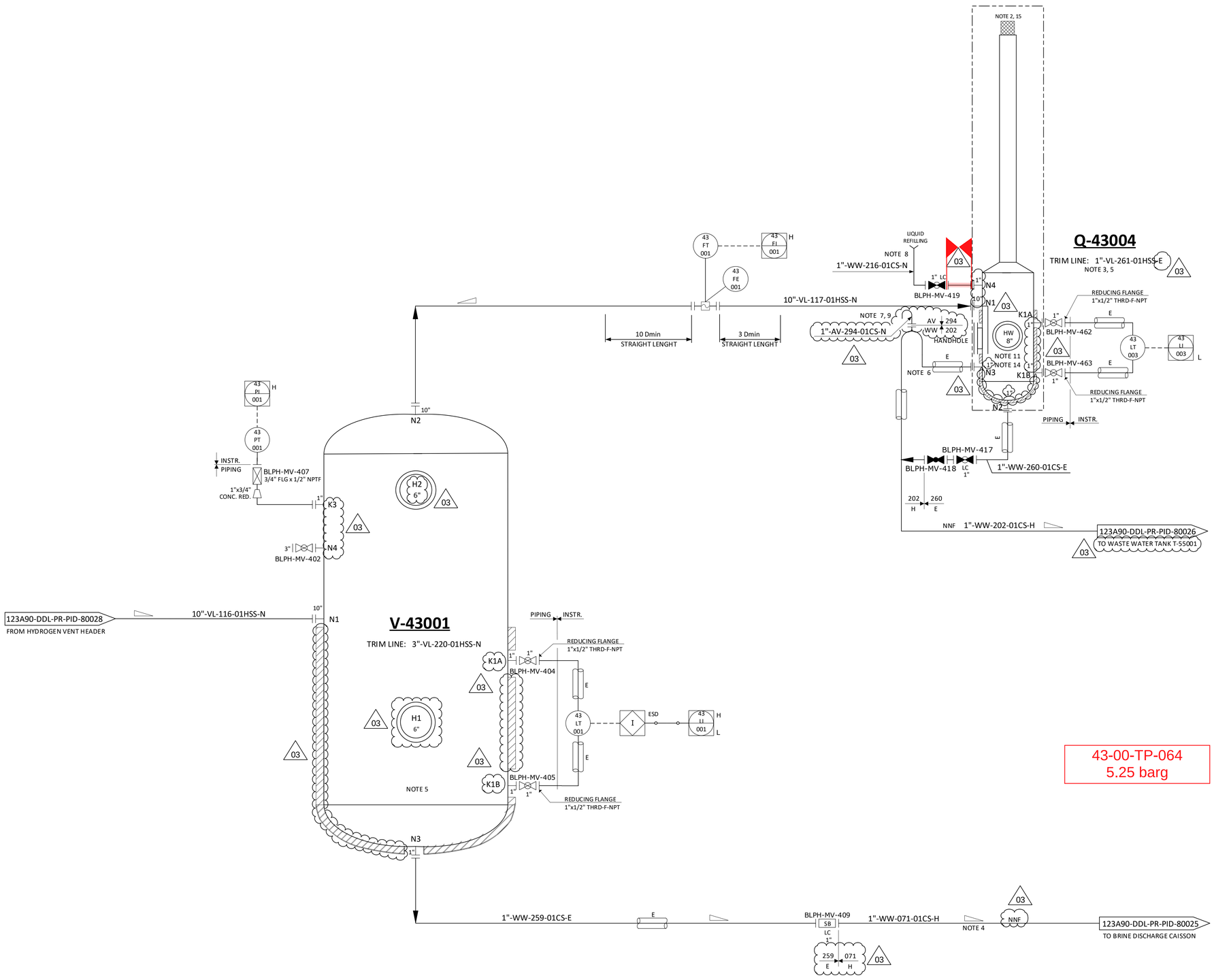
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



43-00-TP-064
5.25 barg

NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

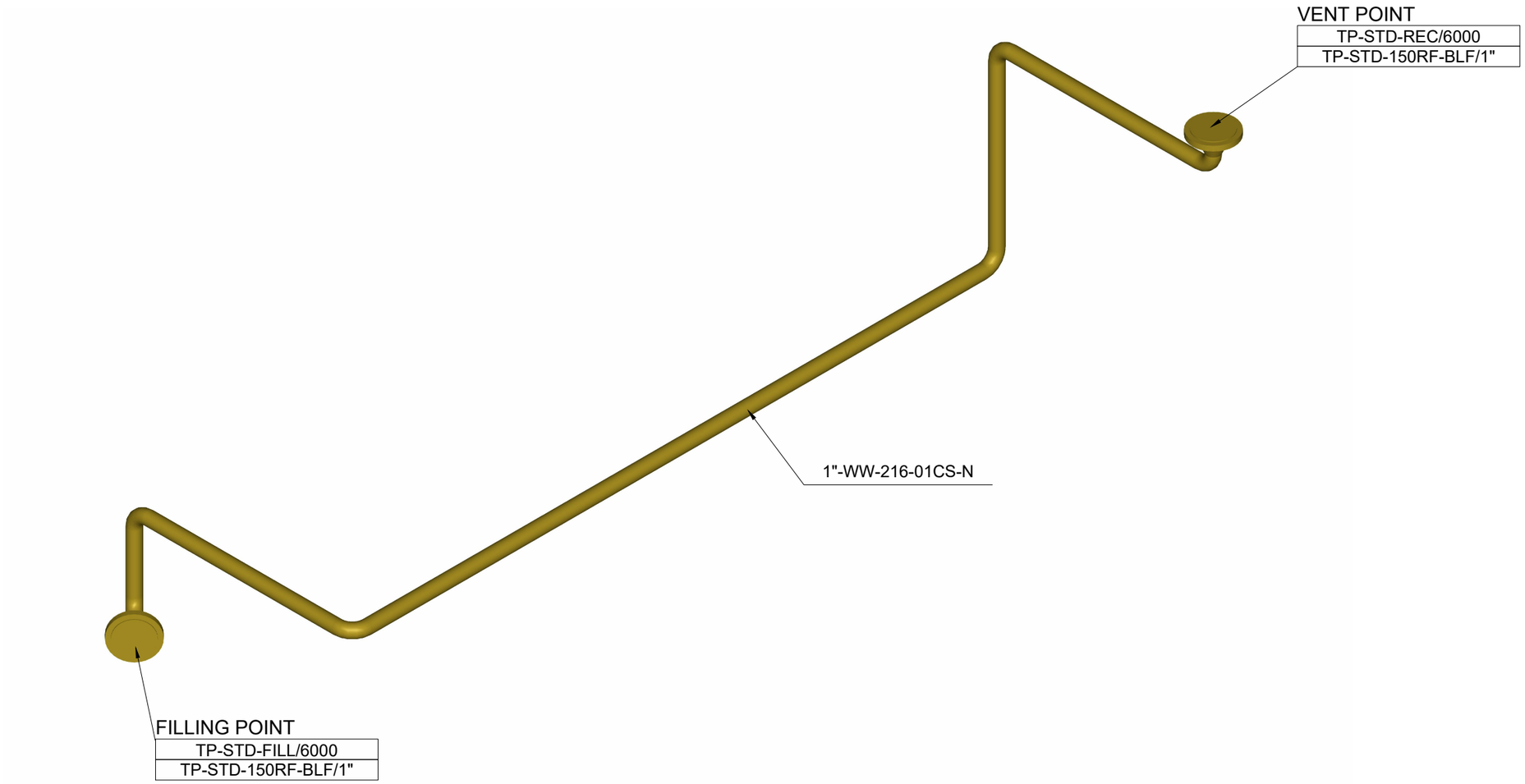
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



43-00-TP-064

5.25 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
43-00-TP-064

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

CROSSWIND / ROSETTI MARINO	CONTRACTOR: Rosetti Marino SpA	JOB :	123A90
	PROJECT: Base Load Power Hub (BLPH)	DATE :	20/09/2024
	TITLE: MATERIAL LIST FOR HYDROSTATIC TEST	REV. :	00

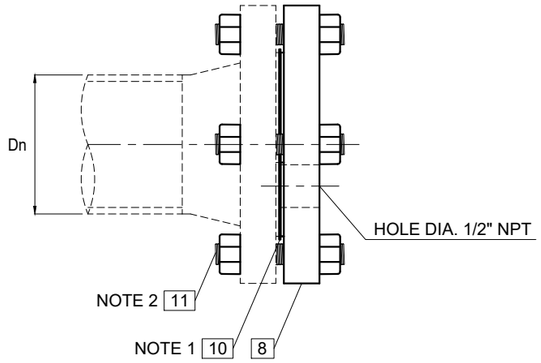
TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-064	TP-STD-150RF-BLF/1"	FLBHCS0022010H	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1	2	2	
TP-064	TP-STD-150RF-BLF/1"	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ø1" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	2	2	
TP-064	TP-STD-150RF-BLF/1"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	2	8	

STD NAME	RATING	DESCRIPTION
TP-STD-150RF	150 RF	STANDARD FOR BLIND POINT

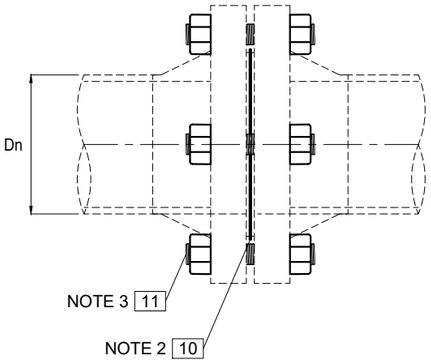
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-150RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=60 MM	4
TP-STD-150RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=85 MM	4
TP-STD-150RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-150RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-150RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-150RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=120 MM	12
TP-STD-150RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=125 MM	12
TP-STD-150RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=135 MM	12
TP-STD-150RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=140 MM	16
TP-STD-150RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=150 MM	16
TP-STD-150RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=160 MM	20
TP-STD-150RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=175 MM	20



TP-STD-150RF-BLF/Dn
BLIND FLANGE



TP-STD-150RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

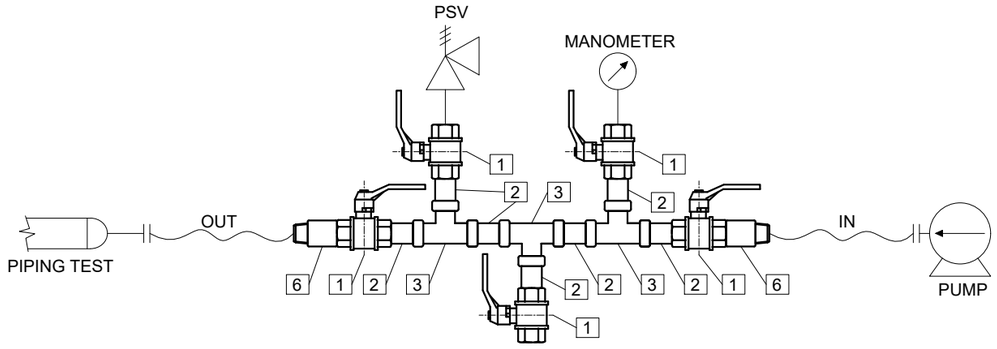
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

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PIPING TEST STANDARD DRAWING
TP-STD-150RF
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_150RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

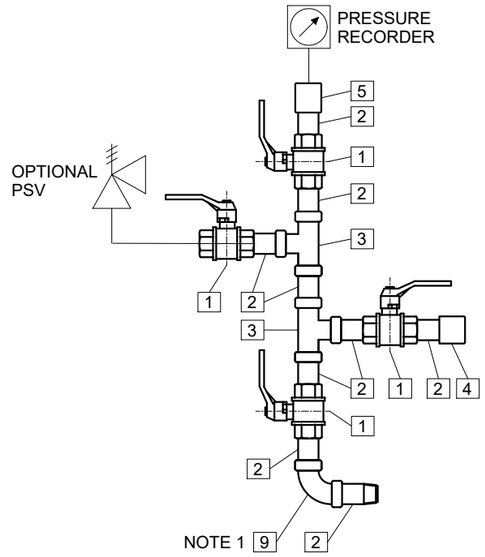
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
114	WW-216	216	1	01CS	N	4,55	80	N/A	1"-WW-216-01CS-N	123A90-DDL-PR-PID-80029	3,50	43	43-00	TP-058/TP-064	Water	5.25/N/A	Waste Water	Carbon Steel	INF	Art. 4, par. 3	1	RAL 9002

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

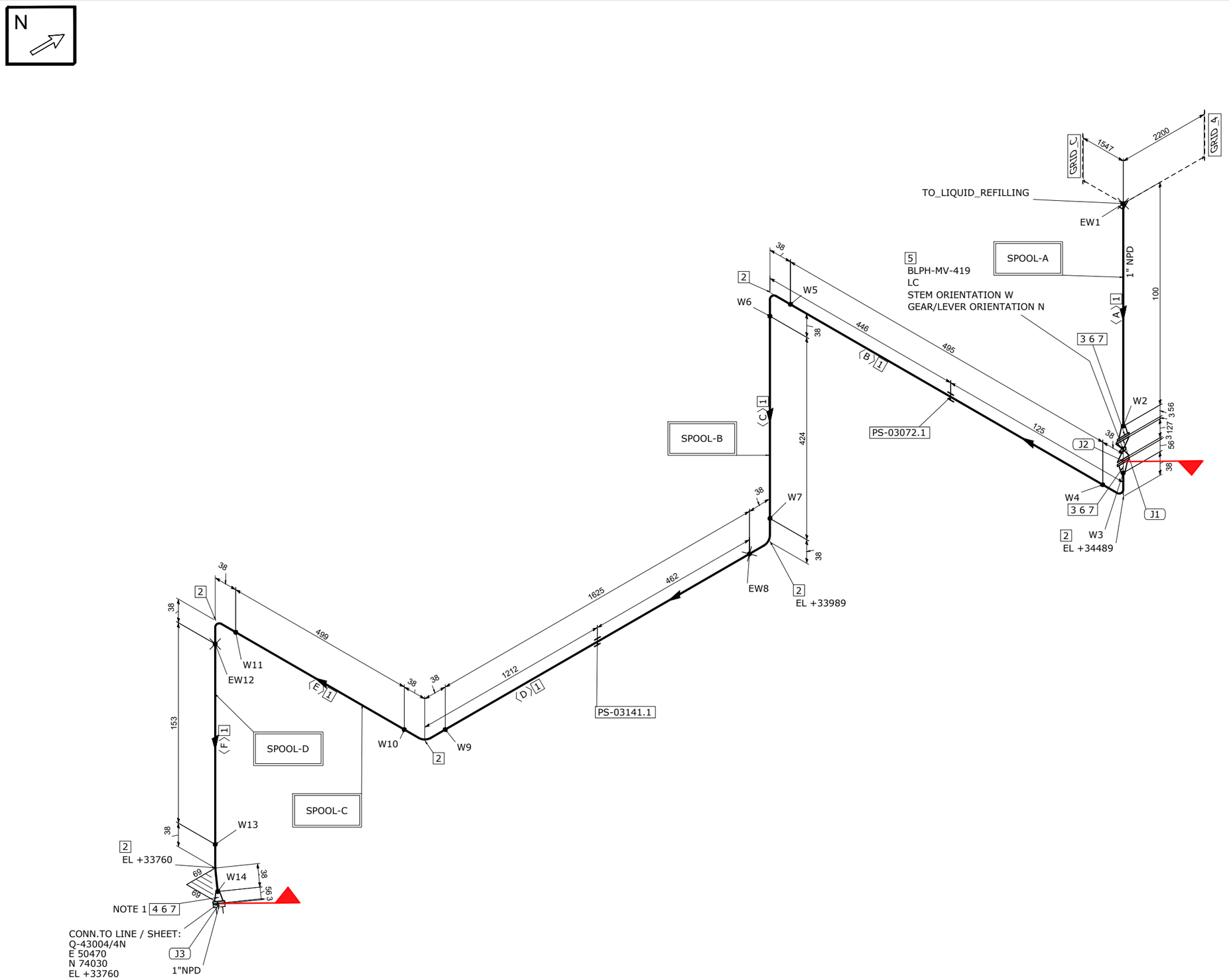
REV. **05**

TITLE

SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
145	123A90-FDL-PP-DI-00114-01	**114**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-WW-216-01CS-N	27/08/2024													**00**	**03**		**TP-058/TP-064**



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	3.3M	10.7
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	6	1.1
3	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	2	2.8
4	1	FLWDCS02740100	Flange WN For Jackscrews ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	VBC0NN24710100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01B01RF	1	8.0
6	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	3	0.2
7	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	1.4

FABRICATION WEIGHT [kg]	16.0
ERECTION WEIGHT [kg]	9.6
OVERALL WEIGHT [kg]	25.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
EW1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
EW8	1	BW
W9	1	BW
W10	1	BW
W11	1	BW
EW12	1	BW
W13	1	BW
W14	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL
B	1	495	BEVEL	BEVEL
C	1	424	BEVEL	BEVEL
D	1	1625	BEVEL	BEVEL
E	1	499	BEVEL	BEVEL
F	1	153	BEVEL	BEVEL

SUPPORT LIST

PS-03072.1
PS-03141.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	1	1.7
B	5	4.9
C	3	7.2
D	2	2.1
MONT	3	9.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

43-00-TP-064

MASTER

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-216-01CS-N
SK.114

CONTRACT NO / TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00114 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM 1	BASE RAL RAL-9002	FLUID PHASE	Liquid				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -46 / 100 [°C]			
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

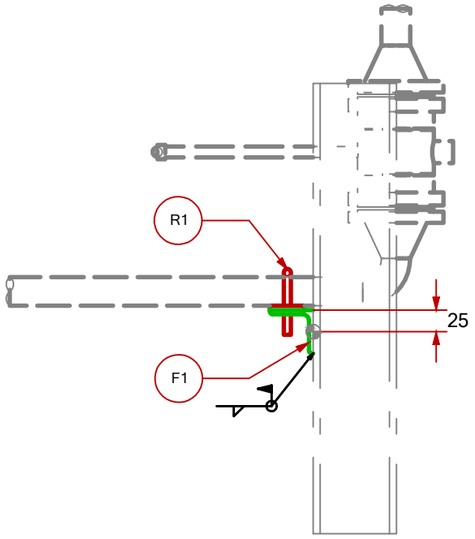
NOTES

1.JACKSCREWS POSITION NE\SW

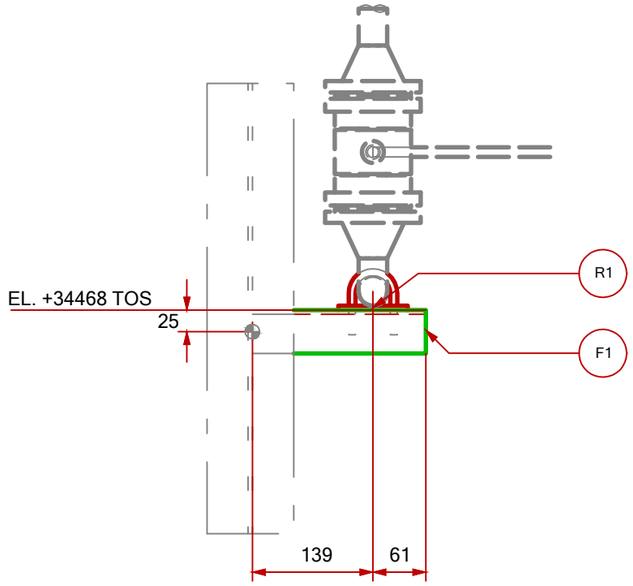
6. EXTRACT OF SUPPORT LIST & DETAILS

SUPPORT LIST

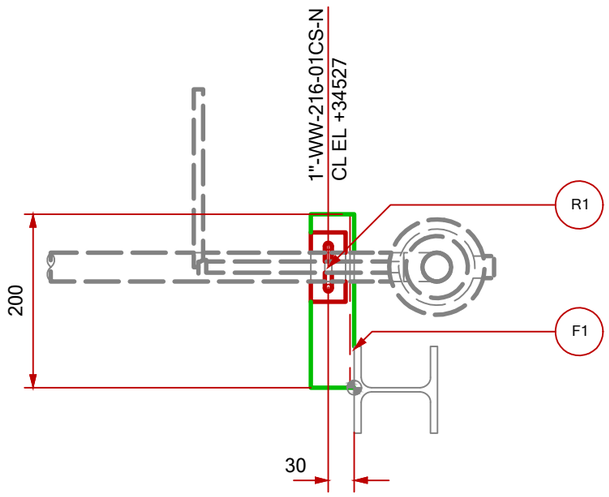
SUPPORT	SUFFIX	SERVICE	DECK IDENTIFICATION	SUB ASSEMBLY	LINE	SUPPORTS STANDARD	NDT CATEGORY	QUANTITY	TOT. WEIGTH (KG)	PAINTING SURFACE (SQM)	REV	DATE	STATUS	NOTES	Test Pack N°
PS-03072	B1	PIP	PAU		1"-WW-216-01CS-N	S-211 - 1"		1	0,286	0,000	00	19/08/2024	IFR		TP-064
PS-03141	B1	PIP	PAU		1"-WW-216-01CS-N	S-211 - 1"		1	0,286	0,000	00	19/08/2024	IFR		TP-064



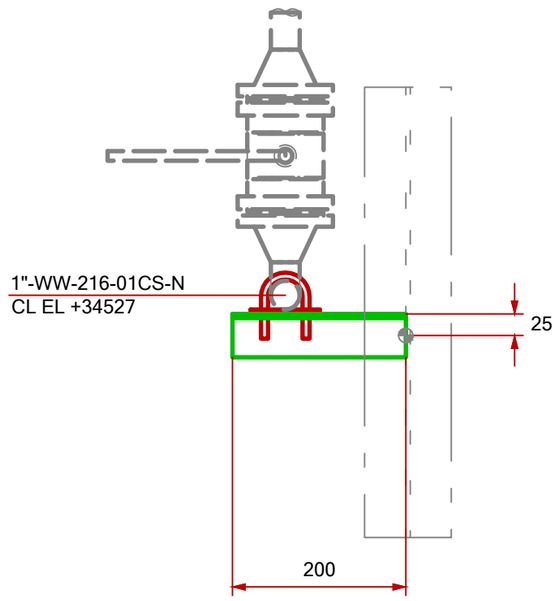
VIEW LOOKING NORTH



VIEW LOOKING WEST



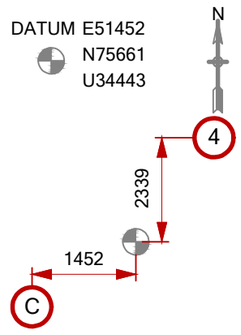
PLAN VIEW

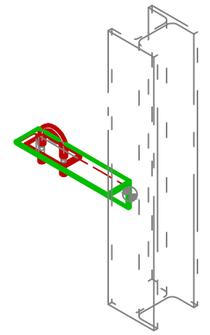


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-1"	-	-	1	-	0.29	-
F1	BEAM	L50x50x5	Carbon Steel	200	1	3.78	0.76	0.040
						TOTAL	1.0	0.04





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

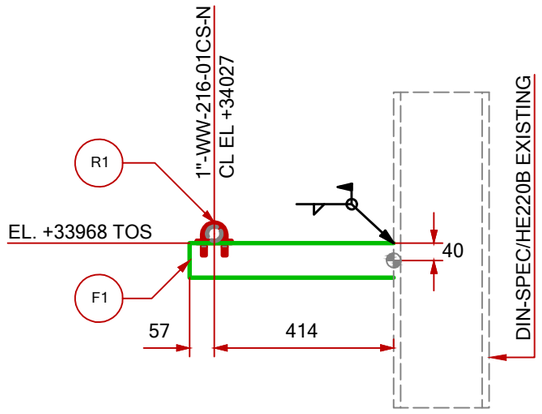
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

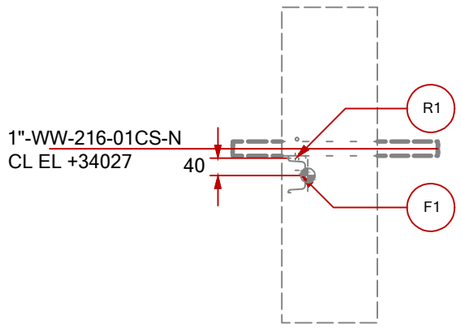
PS-03072

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 5
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

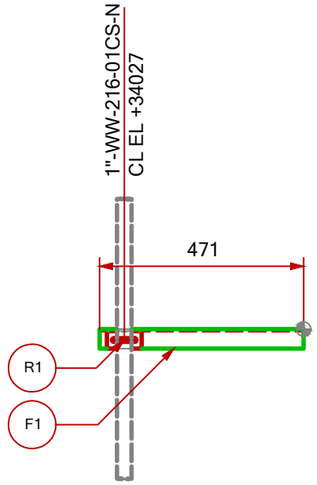
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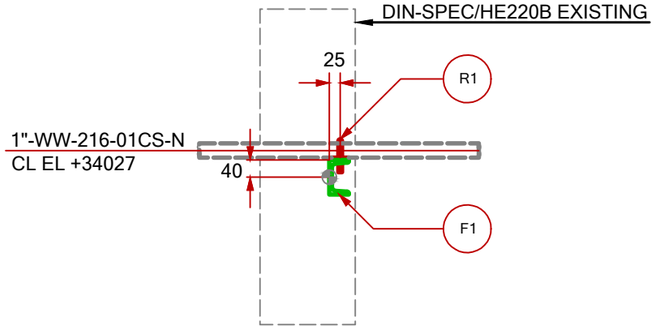
VIEW LOOKING NORTH



VIEW LOOKING WEST



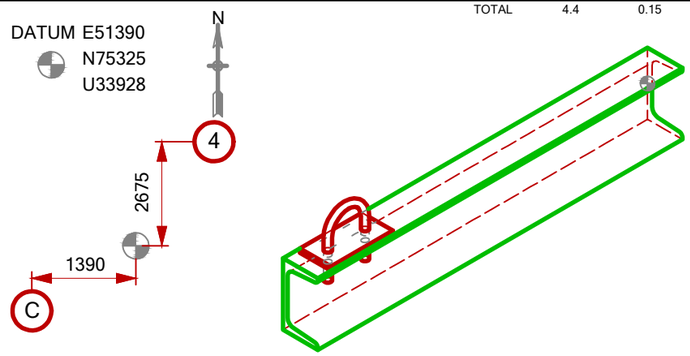
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-1"	-	-	1	-	0.29	-
F1	BEAM	UPN80	Carbon Steel	471	1	8.66	4.08	0.150
						TOTAL	4.4	0.15



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03141

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1 : 10
DRAWN	CHECKED / APPROVED	DATE	19/08/24
DRAWING NO.	123A90-DDL-PP-DD-72000	SHEET	1 of 1
		REV.	00

File Name :

ROSETTI MARINO

STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

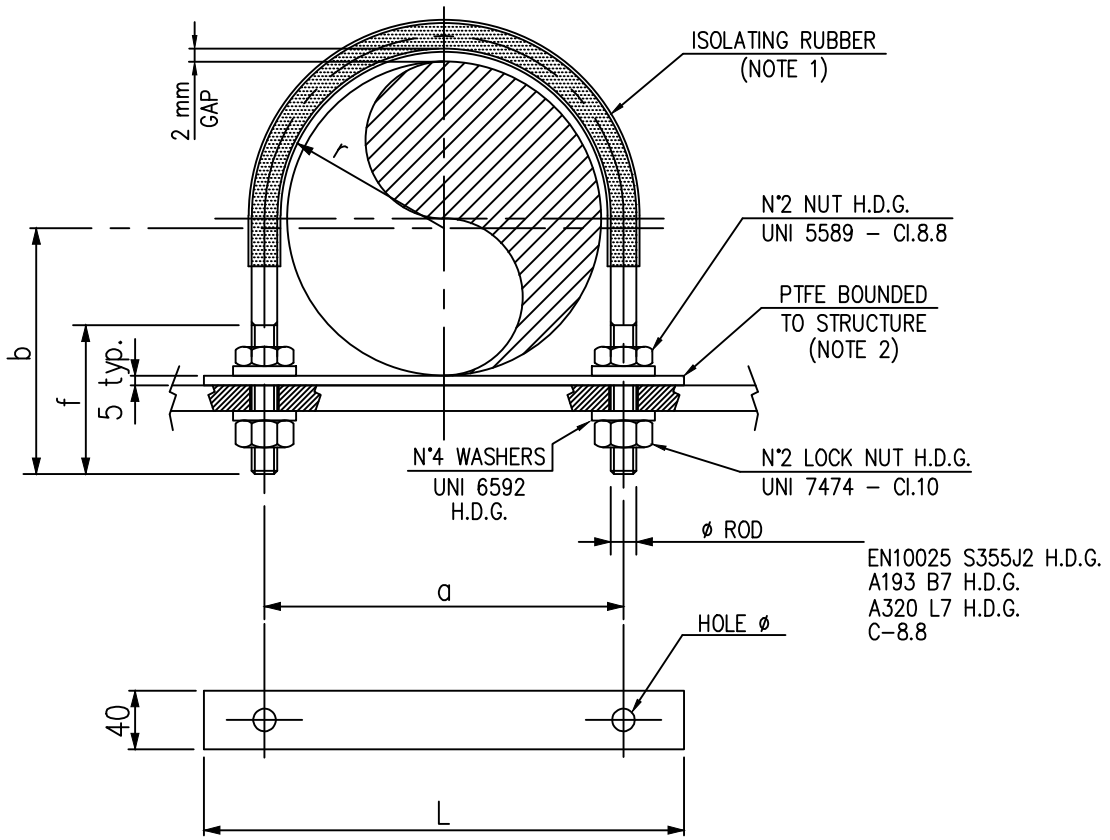
Revision: 0

Date: –

CAVALLOTTI GALVANIZZATI DI GUIDA PER TUBAZIONI IN C.S S.S. E ALLOY
GALVANIZED U–BOLTS GUIDE FOR C.S. S.S. AND ALLOY PIPES (NON GRIP)

S–211

Example of designation : STD – PIPE ND"
(S–211 – 10")



SIZE ND	ROD DIA	r	a	b	f	L	HOLE ø	DEV	DEV. RUBBER	WEIGHT Kg
½"	M8	14	36	55	52	65	10	167	62	0.16
3/4"	M8	17	42	55	52	70	10	176	75	0.16
1"	M8	20	48	60	55	80	10	196	90	0.18
1½"	M10	27	64	70	65	100	12	240	120	0.32
2"	M10	33	76	80	70	110	12	280	150	0.35
3"	M12	48	108	100	80	150	14	370	210	0.60
4"	M12	60	132	110	80	180	14	430	260	0.67
6"	M16	87	190	150	100	250	18	600	380	1.39
8"	M16	113	242	170	100	300	18	720	500	1.60
10"	M16	140	296	200	100	350	18	865	650	1.86
12"	M20	165	350	240	120	420	22	1030	750	3.31
14"	M20	181	382	260	120	450	22	1120	840	3.55
16"	M24	207	438	290	130	520	26	1270	1000	5.76
18"	M24	232	488	320	130	570	26	1410	1100	6.28
20"	M30	257	544	360	160	640	32	1570	1200	11.02
24"	M30	308	646	410	160	750	32	1830	1450	12.52

NOTES:

1) HEAT SHRINK TUBE TYPE FLAME RETARDANT, WITH RATIO 2:1
2) MULTIPLE SHEETS OF PTFE CAN BE ADDED IN ORDER TO ENSURE THE CORRECT ELEVATION AND SLOPE OF THE LINES.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

Documento di proprietà aziendale.La Società tutelerà i propri diritti a termine di legge.This document is Company property. The Company lawfulliy reserves all rights.

7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	114	**To**	114
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	N. Rep	Dimension / Films n.	Thickness	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld.	Type Conn / NOTE	Accept. Date	Spool
1/114/1/_		**01**						**ELB**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**M**	**C.S.**			**BW**		
01CS	2	VIS	FTP	FIT-UP and on weld				100 %												
		RT	FIN	Weld Completion				10 %												
2/114/1/_		**01**	**25-09-2024**	**15**	**AZ53**			**PIPE**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable							26-09-2024	
		RT	FIN	Weld Completion				10 %				Acceptable								
3/114/1/_		**01**	**23-09-2024**	**13**	**AZ53**			**FWN**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**24-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable							24-09-2024	
		RT	FIN	Weld Completion				10 %				Acceptable								
4/114/1/_		**01**	**24-09-2024**	**14**	**AZ53**			**ELB**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable							26-09-2024	
		RT	FIN	Weld Completion				10 %				Acceptable								
5/114/1/_		**01**	**24-09-2024**	**14**	**AZ53**			**PIPE**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable							26-09-2024	
		RT	FIN	Weld Completion				10 %				Acceptable								
6/114/1/_		**01**	**25-09-2024**	**15**	**AZ53**			**ELB**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable							26-09-2024	
		RT	FIN	Weld Completion				10 %				Acceptable								
7/114/1/_		**01**	**23-09-2024**	**13**	**AZ53**			**PIPE**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**24-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable							24-09-2024	
		RT	FIN	Weld Completion				10 %				Acceptable								
8/114/1/_		**01**	**20-12-2024**	**102**	**AX84**			**ELB**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**M**	**C.S.**	**A1A**	**GTAW**	**BW**	**23-12-2024**	
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK			Acceptable							20-12-2024	
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	001089	4		Acceptable							23-12-2024	
9/114/1/_		**01**	**24-09-2024**	**14**	**AZ53**			**PIPE**		**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable							26-09-2024	
		RT	FIN	Weld Completion				10 %				Acceptable								

NOT INVOLVED IN HYDROTEST

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
9/114/1/_		**01**	**24-09-2024**	**14**	**AZ53**			**PIPE**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	000090	4	Acceptable					26-09-2024			
10/114/1/_		**01**	**23-09-2024**	**13**	**AZ53**			**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**26-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	000090	4	Acceptable					26-09-2024			
11/114/1/_		**01**	**23-09-2024**	**13**	**AZ53**			**PIPE**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**24-09-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
12/114/1/_		**01**	**23-12-2024**	**102**	**AX84**			**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**M**	**C.S.**	**A1A**	**GTAW**	**BW**	**07-01-2025**	
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					23-12-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	001126	4	Acceptable					07-01-2025			
13/114/1/_		**01**	**26-09-2024**	**17**	**AZ53**			**PIPE**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**28-09-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					28-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
14/114/1/_		**01**	**23-09-2024**	**13**	**AZ53**			**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**	**A1A**	**GTAW**	**BW**	**24-09-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								

Totals per DWG	**114**	**Prefabrication**	**1,10 m**	**11 Nr. Welds**	**11,00 inch**
		Erection	**0,30 m**	**3 Nr. Welds**	**3,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**1,30 m**	**13 Nr. Welds**	**13,00 inch**
		Accepted	**1,30 m**	**13 Nr. Welds**	**13,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**1,10 m**	**11 Nr. Welds**	**11,00 inch**
		Erection	**0,30 m**	**3 Nr. Welds**	**3,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**1,30 m**	**13 Nr. Welds**	**13,00 inch**
		Accepted	**1,30 m**	**13 Nr. Welds**	**13,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05

ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Cons	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
14/114/1/_		**01**	**23-09-2024**	**13**	**AZ53**		**ELB**	**1,00 in**	**4,55 mm**	**V**	**0,104 m**	**P**	**C.S.**		**A1A**	**GTAW**	**BW**	**24-09-2024**	**D**

Totals by Project			
Prefabrication	**1,10 m**	**11 Nr. Welds**	**11,00 inch**
Erection	**0,30 m**	**3 Nr. Welds**	**3,00 inch**
Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Performed	**1,30 m**	**13 Nr. Welds**	**13,00 inch**
Accepted	**1,30 m**	**13 Nr. Welds**	**13,00 inch**
Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**		
Commessa/Job	**123A90 - Piping**		
Disciplina/Discipline	**PIPING**		
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:	
RosettiDoc.Num.	**123A90MTR001**		

Approvato da/Approved by	
Nome/Name:	
Data/Date:	28/01/2025

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
114	00	1	A	01CS	3	1	Flange WN ›1" Thk.4.55mm 150LB RF ASTM/ASME A/SA350 Gr.LF2	23/70335	1724000839	01220	2024-C_MFF-01243	W2	
114	00	1	A	01CS	1A	0,1	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		
114	00	1	B	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W3-W4	
114	00	1	B	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W5-W6	
114	00	1	B	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W7	
114	00	1	B	01CS	3	1	Flange WN ›1" Thk.4.55mm 150LB RF ASTM/ASME A/SA350 Gr.LF2	23/70335	1724000839	01220	2024-C_MFF-01243		
114	00	1	B	01CS	1B	0,495	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		
114	00	1	B	01CS	1C	0,424	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		
114	00	1	C	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W9-W10	
114	00	1	C	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W11	
114	00	1	C	01CS	1D	1,625	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		
114	00	1	C	01CS	1E	0,499	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		
114	00	1	D	01CS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.4,55mm ASTM/ASME A/SA420 Gr.WPL6	402212	1724000839	00690	4527-P4	W13-W14	
114	00	1	D	01CS	4	1	Flange WN For Jackscrews ›1" Thk.4,55mm 150LB RF ASTM/ASME A/SA350 Gr.LF2	23/70335	1724000839	01260	2024-C_MMF-01566	W14	
114	00	1	D	01CS	1F	0,153	Pipe 33,4mm(1") thk.4.55mm ASTM/ASME A/SA333 Gr.6	1234196	1724000838	00050	24A2938		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation – NOT APPLICABLE

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test – NOT APPLICABLE

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	43-00-TP-064	: Test Pack 43-00-TP-064			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003703		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air, ensuring all drains/vents (when present) were open to facilitate the removal of moisture. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, inlet and outlet points were closed with covers.
3	Temporary means :	Blind flanges and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA
5	Valve body cavity, branches, etc.. Have been drained form residual water	●
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Restricting access to the area.
11	REMARKS:	none.

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-07	2025-02-07	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-07T13:22:13.817Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-07T16:46:37.441Z	

ITEM	Tag	43-00-TP-065	: Test Pack 43-00-TP-065			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003704		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	PL
4	Check that pipework at pump and vessel nozzles are free from spring.	OK
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	Note
6	Check bolt tightening and flange management (excluded battery limit joints).	Note
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	Note
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	OK
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	OK
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Points 5 and 6 have not been checked due being temporary joints. To be checked in the After test phase after flange management.
Inspection point n.7 impossible to check due the fact that the valve BLPH-MV-417 will be installed only after pressure test (differently from the TP documentation).

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-18	2025-01-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-18T08:25:15.728Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-01-21T12:46:11.725Z	

ITEM	Tag	43-00-TP-065	: Test Pack 43-00-TP-065			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003705		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	NA
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	NA
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	OK
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	Note
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	OK
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Clamp shoe is not centered on the structural support.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-28	2025-01-29	
Signature	Digitaly signed by Emanuele Delfino 2025-01-28T14:50:15.373Z	Digitaly signed by Kangi Albonetti 2025-01-29T11:24:01.797Z	

ITEM	Tag	43-00-TP-065	: Test Pack 43-00-TP-065			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003706		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02 Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	Note
3	Check that the fluid direction is correct.	Note
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	OK
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 1. Checked the painting report made by Vendor and signed by RM coating Dpt.
Points 2 and 3 to be checked during thermal insulation.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (Rosetti Marino)	
Name	Alex Sanna	Kangi Albonetti	
Date	2025-01-30	2025-01-30	
Signature	PROVERLIS Digitaly signed by Alex Sanna 2025-01-30T12:47:53.543Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-01-30T13:49:17.834Z	

ITEM	Tag	43-00-TP-065	: Test Pack 43-00-TP-065		Dwg	123A90-DDL-PR-PID-80029	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10003707	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX03	Cleaning

CLEANING MEDIUM

Air		Water	●	Steam		Oil		Other		Mechanical	

Component	NA					
Chemical treatment	No	NA	Filtration	No	Screen size	NA

EQUIPMENTS

Equipment **removed**	Yes	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	18/01/2025	Start time	12:30	End time	12:45
Flow rate	NA	Duration	15 min	Medium T°	NA

Operation Description

Connected the water source to the lowest point of the piping system.
Maintained a high flow rate to help dislodging and carry away debrises.
Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.

Safety Precautions

Restricting access to the area.

Result and comments

Water has been found clear of solid debris. All contaminants have been expelled.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-18	2025-01-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-18T08:25:26.706Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-01-21T14:34:18.171Z	

ITEM	Tag	43-00-TP-065	: Test Pack 43-00-TP-065		Dwg	123A90-DDL-PR-PID-80029	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10003708	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX05	Pressure Test

TEST DATA

Reference procedure	123A90-PML-QHSE-PRO-00092				
Design pressure	3.5 barg	Max test pressure	5.25 barg	Min hold period	30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium	WATER

TEST RESULTS

Test date	See attachment	Start time	See attachment	End time	See attachment
Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min See attachment	Max See attachment		Variation	See attachment
Line has been depressurised to	NA			At maximum of bar/min	See attachment
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes
If required produce Red Line Mark Up for "AS BUILT".					

Comments: The pressure graph shows a lowering of 0,3 Barg in 30 minutes with a related lowering of 1,5°C in the same time. After that, for additional 15 minutes Pressure and Temperature stabilized. No leaks have been found. Accepted.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-18	2025-01-21	
Signature	Digitaly signed by Emanuele Delfino 2025-01-18T08:25:37.499Z	Digitaly signed by Kangi Albonetti 2025-01-21T14:40:29.487Z	

Logger protocol
Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-55-00-TP026/43-00-TP065

Instrument
Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FON32E
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:C5:19:D5)

Measurement conditions
Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	01:04:33
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	12:51:33 pm

Logger protocol

Protocollo di acquisizione elenco dati

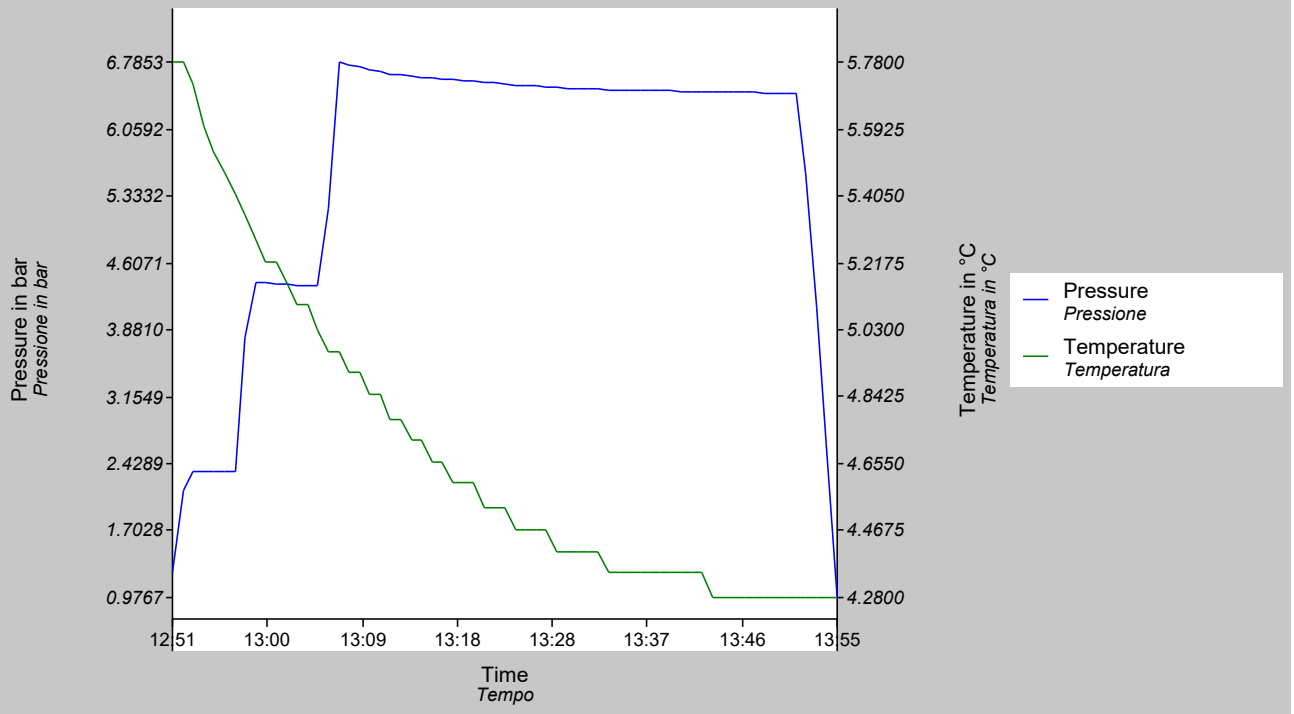
ROSETTI MARINO
Group of Companies

Log no. 123A90-55-00-TP026/43-00-TP065
N. elenco dati

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/18/2025 12:51:33.000	1.2517	5.7800
01/18/2025 12:52:33.000	2.1424	5.7800
01/18/2025 12:53:33.000	2.3510	5.7200
01/18/2025 12:54:33.000	2.3499	5.6000
01/18/2025 12:55:33.000	2.3462	5.5300
01/18/2025 12:56:33.000	2.3457	5.4700
01/18/2025 12:57:33.000	2.3464	5.4100
01/18/2025 12:58:33.000	3.7963	5.3500
01/18/2025 12:59:33.000	4.3985	5.2800
01/18/2025 13:00:33.000	4.3887	5.2200
01/18/2025 13:01:33.000	4.3785	5.2200
01/18/2025 13:02:33.000	4.3684	5.1600
01/18/2025 13:03:33.000	4.3594	5.1000
01/18/2025 13:04:33.000	4.3571	5.1000
01/18/2025 13:05:33.000	4.3537	5.0300
01/18/2025 13:06:33.000	5.1980	4.9700
01/18/2025 13:07:33.000	6.7853	4.9700

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-55-00-TP026/43-00-TP065
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/18/2025 13:08:33.000	6.7541	4.9100
01/18/2025 13:09:33.000	6.7287	4.9100
01/18/2025 13:10:33.000	6.7027	4.8500
01/18/2025 13:11:33.000	6.6794	4.8500
01/18/2025 13:12:33.000	6.6560	4.7800
01/18/2025 13:13:33.000	6.6403	4.7800
01/18/2025 13:14:33.000	6.6283	4.7200
01/18/2025 13:15:33.000	6.6177	4.7200
01/18/2025 13:16:33.000	6.6090	4.6600
01/18/2025 13:17:33.000	6.5992	4.6600
01/18/2025 13:18:33.000	6.5940	4.6000
01/18/2025 13:19:33.000	6.5825	4.6000
01/18/2025 13:20:33.000	6.5731	4.6000
01/18/2025 13:21:33.000	6.5644	4.5300
01/18/2025 13:22:33.000	6.5559	4.5300
01/18/2025 13:23:33.000	6.5474	4.5300
01/18/2025 13:24:33.000	6.5375	4.4700
01/18/2025 13:25:33.000	6.5282	4.4700
01/18/2025 13:26:33.000	6.5213	4.4700
01/18/2025 13:27:33.000	6.5115	4.4700
01/18/2025 13:28:33.000	6.5041	4.4100
01/18/2025 13:29:33.000	6.4979	4.4100
01/18/2025 13:30:33.000	6.4959	4.4100
01/18/2025 13:31:33.000	6.4922	4.4100
01/18/2025 13:32:33.000	6.4881	4.4100
01/18/2025 13:33:33.000	6.4858	4.3500
01/18/2025 13:34:33.000	6.4842	4.3500
01/18/2025 13:35:33.000	6.4768	4.3500
01/18/2025 13:36:33.000	6.4775	4.3500
01/18/2025 13:37:33.000	6.4749	4.3500
01/18/2025 13:38:33.000	6.4731	4.3500
01/18/2025 13:39:33.000	6.4699	4.3500
01/18/2025 13:40:33.000	6.4632	4.3500
01/18/2025 13:41:33.000	6.4617	4.3500
01/18/2025 13:42:33.000	6.4586	4.3500
01/18/2025 13:43:33.000	6.4605	4.2800
01/18/2025 13:44:33.000	6.4580	4.2800
01/18/2025 13:45:33.000	6.4567	4.2800
01/18/2025 13:46:33.000	6.4562	4.2800
01/18/2025 13:47:33.000	6.4539	4.2800
01/18/2025 13:48:33.000	6.4514	4.2800
01/18/2025 13:49:33.000	6.4463	4.2800
01/18/2025 13:50:33.000	6.4450	4.2800
01/18/2025 13:51:33.000	6.4423	4.2800
01/18/2025 13:52:33.000	5.5675	4.2800
01/18/2025 13:53:33.000	4.1124	4.2800
01/18/2025 13:54:33.000	2.6588	4.2800
01/18/2025 13:55:33.000	0.9767	4.2800

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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24

Certificate of Calibration

- data di emissione date of issue	2024-12-10
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A037FON32E
- data di ricev. oggetto *date of receipt of item*	2024-11-29
- data delle misure *date of measurements*	2024-12-10
- registro di laboratorio *laboratory reference*	0580-SM-24

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura k corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore k vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

WIKA Italia S.r.l. & C. s.a.s.
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LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico *Electrical pressure gauge*	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A037FON32E
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione *Reference standard (RS) Dead-weight tester*	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1007,5 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	100,0	100,0	100,0
199,82	200,0	200,0	200,0
299,73	299,9	300,0	299,9
399,63	399,8	399,9	399,8
499,53	499,6	499,7	499,7
599,44	599,5	599,6	599,5
699,34	699,3	699,4	699,3
799,24	799,2	799,3	799,2
899,14	899,1	899,1	899,1
999,04	999,0	999,0	999,0

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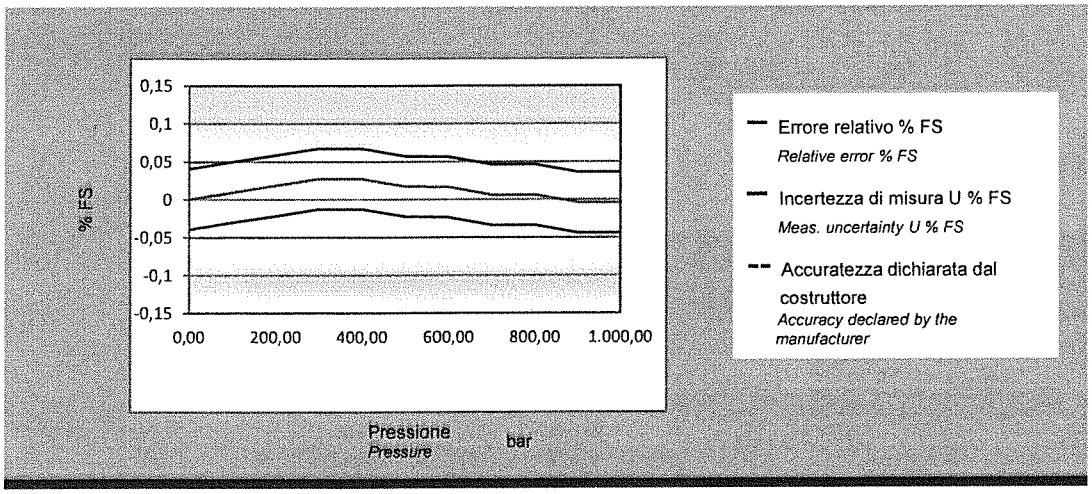
LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	100,0	0,1	0,0	0,0	0,40
199,82	200,0	0,2	0,0	0,0	0,40
299,73	300,0	0,3	0,0	0,1	0,40
399,63	399,9	0,3	0,0	0,1	0,40
499,53	499,7	0,2	0,1	0,1	0,40
599,44	599,6	0,2	0,0	0,1	0,40
699,34	699,4	0,1	0,0	0,1	0,40
799,24	799,3	0,1	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,0	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,7 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Base Load Power Hub (BLPH)

TEST PACK

N°43-00-TP-065
SUB-SYSTEM N° 43-00

System	43
Sub-System	43-00
Test Pressure	5.25 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

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   - 8.9 TPLX05 - Drying

1. COLOURED MARKED P&IDs

DRAWING NO. DRAWING_NO.

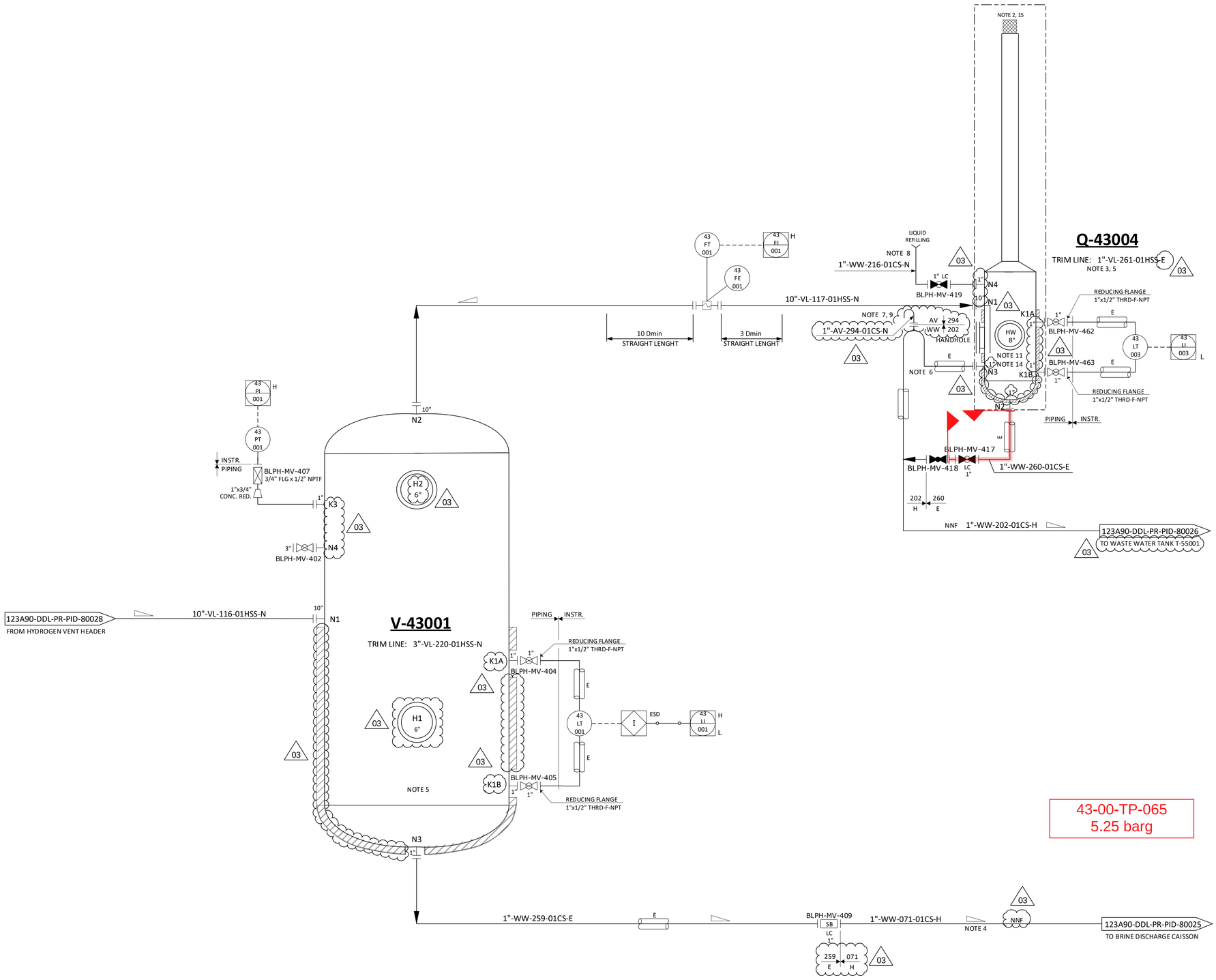
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



43-00-TP-065
5.25 barg

NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

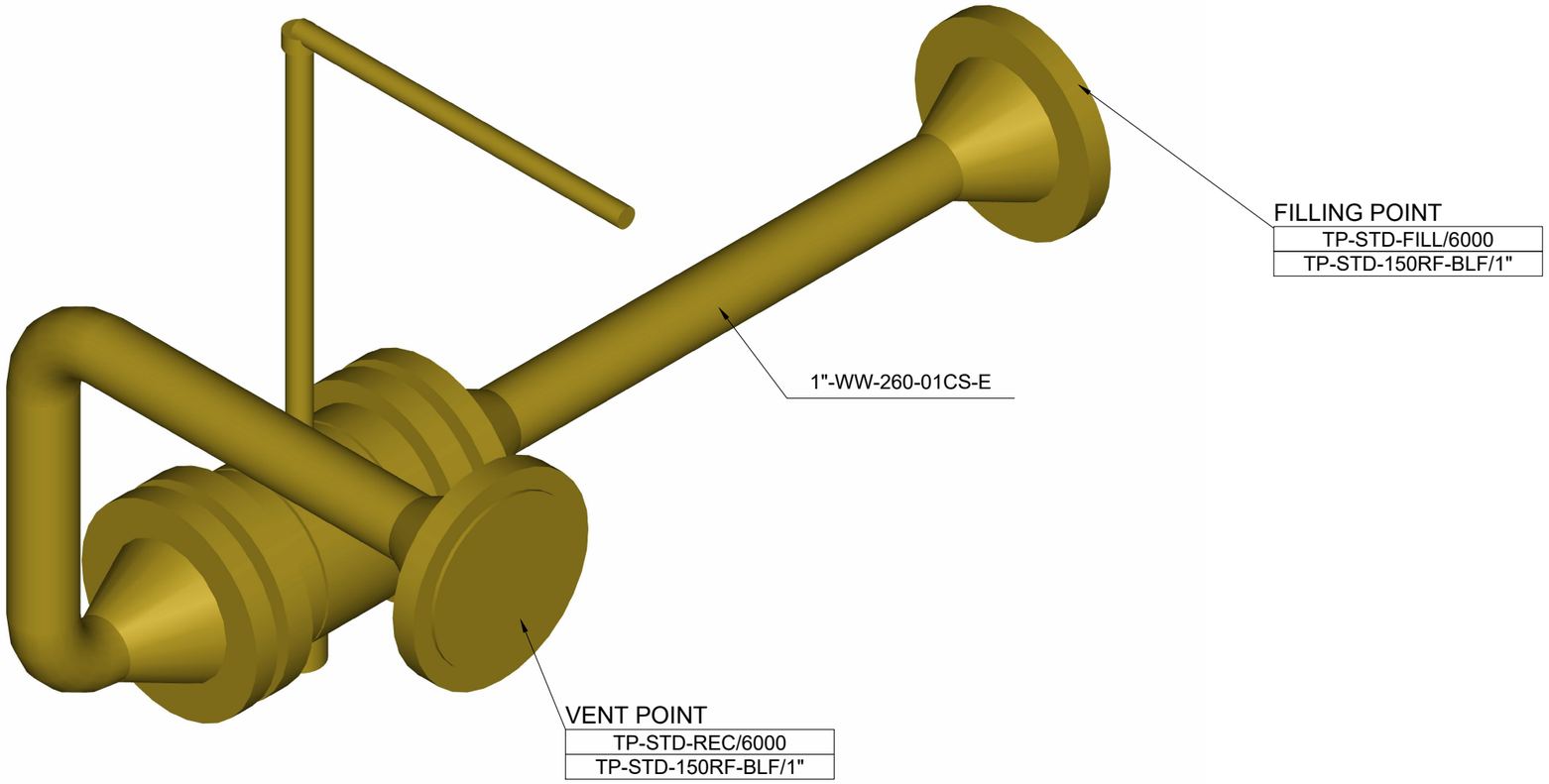
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO.	SHEET	REV.
	123A90-DDL-PR-PID-80029	001	03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



43-00-TP-065
5.25 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
43-00-TP-065

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

CROSSWIND / ROSETTI MARINO	CONTRACTOR: Rosetti Marino SpA	JOB :	123A90
	PROJECT: Base Load Power Hub (BLPH)	DATE :	20/09/2024
	TITLE: MATERIAL LIST FOR HYDROSTATIC TEST	REV. :	00

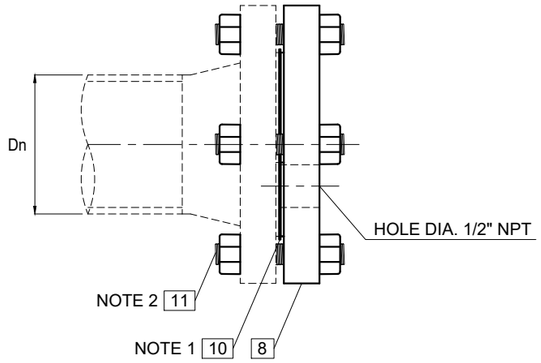
TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-065	TP-STD-150RF-BLF/1"	FLBHCS0022010H	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1	2	2	
TP-065	TP-STD-150RF-BLF/1"	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ø1" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	2	2	
TP-065	TP-STD-150RF-BLF/1"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	2	8	

STD NAME	RATING	DESCRIPTION
TP-STD-150RF	150 RF	STANDARD FOR BLIND POINT

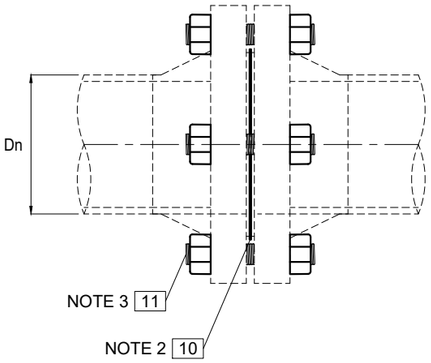
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-150RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=60 MM	4
TP-STD-150RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=85 MM	4
TP-STD-150RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-150RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-150RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-150RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=120 MM	12
TP-STD-150RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=125 MM	12
TP-STD-150RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=135 MM	12
TP-STD-150RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=140 MM	16
TP-STD-150RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=150 MM	16
TP-STD-150RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=160 MM	20
TP-STD-150RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=175 MM	20



TP-STD-150RF-BLF/Dn
BLIND FLANGE



TP-STD-150RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

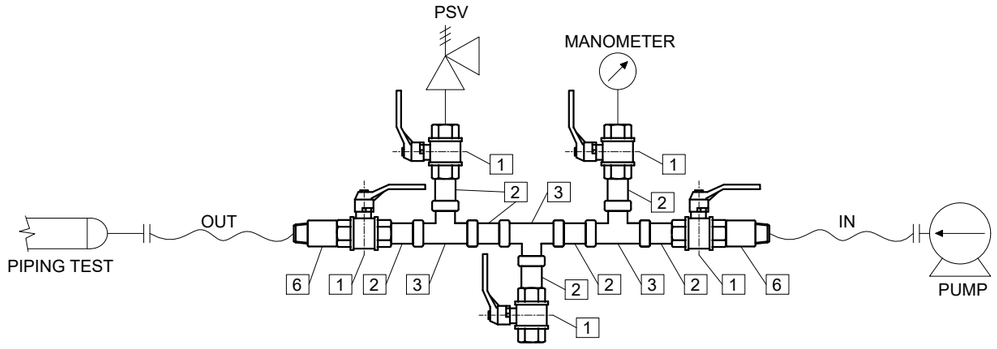
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-150RF
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_150RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

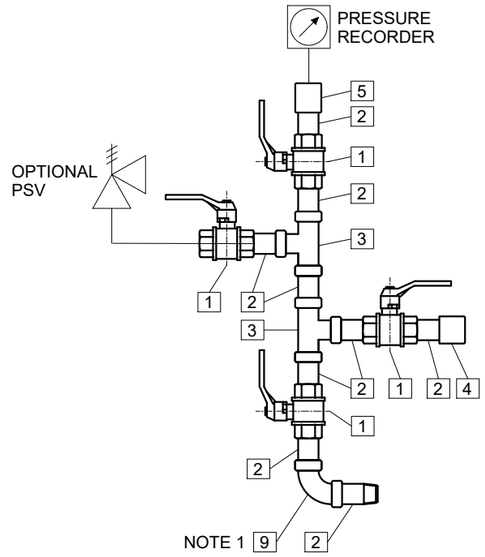
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
124	WW-260	260	1	01CS	E	4,55	80	Yes	1"-WW-260-01CS-E	123A90-DDL-PR-PID-80029	3,50	43	43-00	TP-065	Water	5.25	Water Supply	Carbon Steel	INF	Art. 4, par. 3	1D	N/A

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

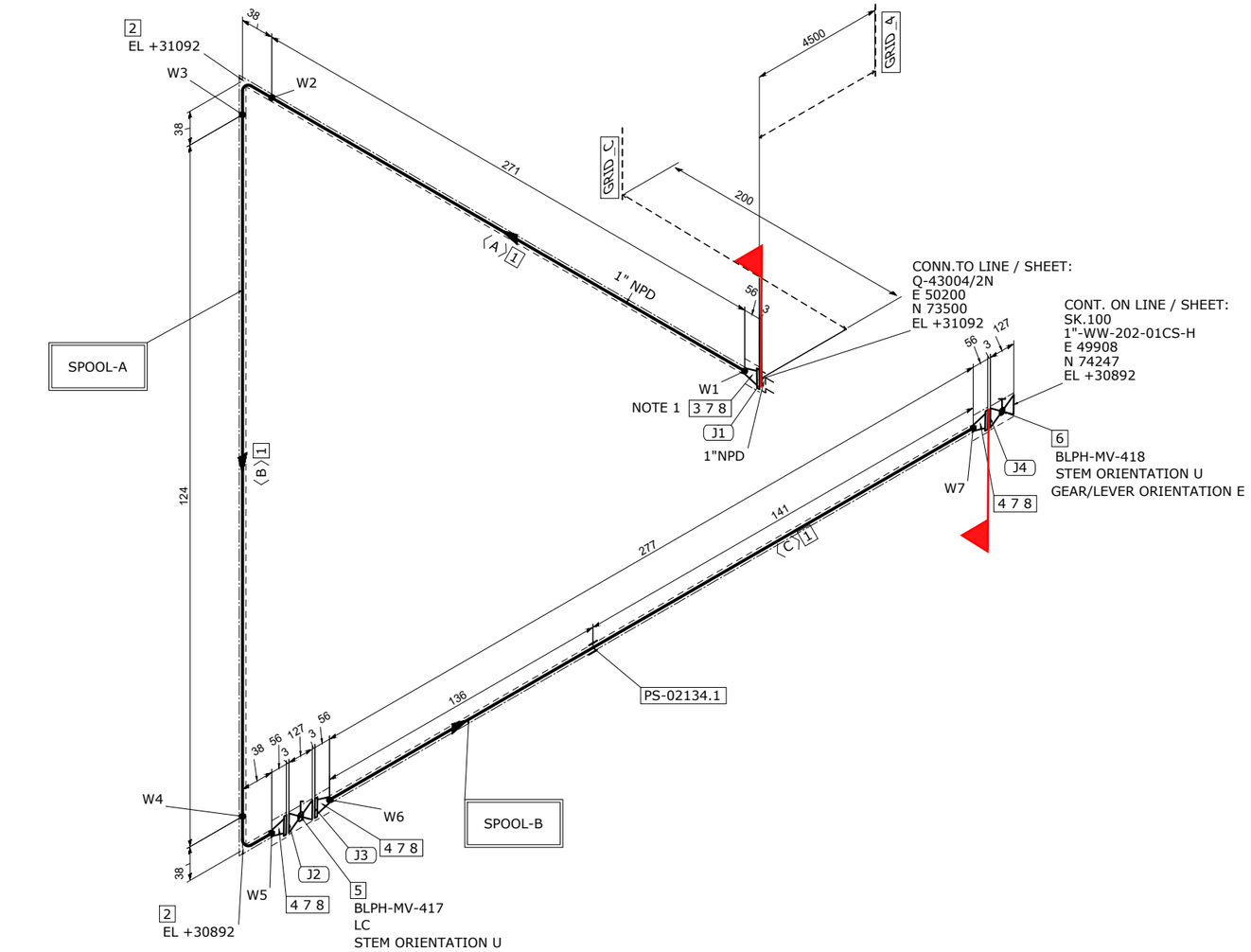
REV. **05**

TITLE

SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
158	123A90-FDL-PP-DI-00124-01	**124**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-WW-260-01CS-E	27/08/2024													**00**	**03**		**TP-065**



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	0.6M	1.9
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	2	0.4
3	1	FLWDCS02740100	Flange WN For Jackscrews ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	1	1.4
4	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	3	4.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	VBC0NN24710100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01B01RF	1	8.0
6	1	VDA0NN16000100	Globe Valve EN ISO 15761 FLG 150LB RF HS01B02RF	1	9.0
7	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	4	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	1.9

FABRICATION WEIGHT [kg]	7.9
ERECTION WEIGHT [kg]	19.1
OVERALL WEIGHT [kg]	27.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	271	BEVEL	BEVEL
B	1	124	BEVEL	BEVEL
C	1	277	BEVEL	BEVEL

SUPPORT LIST

PS-02134.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	5	4.2
B	2	3.7
MONT	0	19.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-260-01CS-E
SK.124

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00124 | SHEET / OF: 1/1 | REV.: 00

43-00-TP-065

MASTER

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM 1D	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -46 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

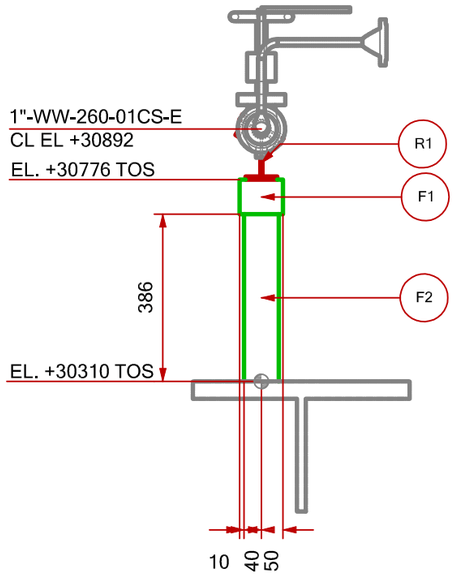
NOTES

1.JACKSCREWS POSITION N/S

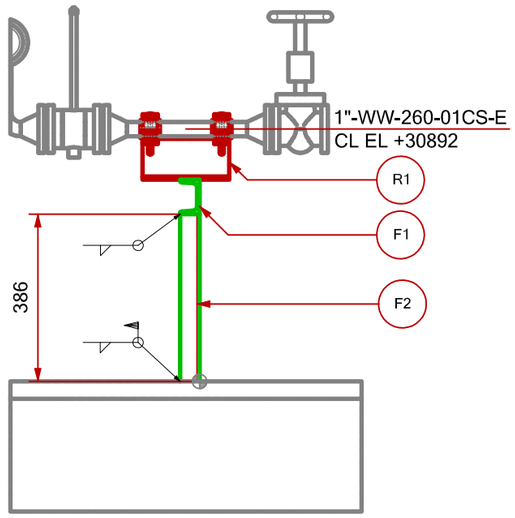
6. EXTRACT OF SUPPORT LIST & DETAILS

SUPPORT LIST

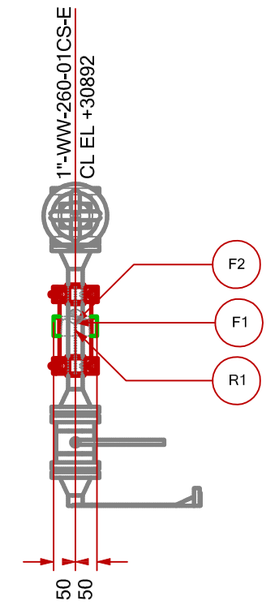
SUPPORT	SUFFIX	SERVICE	DECK IDENTIFICATION	SUB ASSEMBLY	LINE	SUPPORTS STANDARD	NDT CATEGORY	QUANTITY	TOT. WEIGTH (KG)	PAINTING SURFACE (SQM)	REV	DATE	STATUS	NOTES	Test Pack N°
PS-02134	B1	PIP	UPPER DECK		1"-WW-260-01CS-E	S-64 - 1" - 100 - 200		1	3,805	0,102	00	19/08/2024	IFR		TP-065



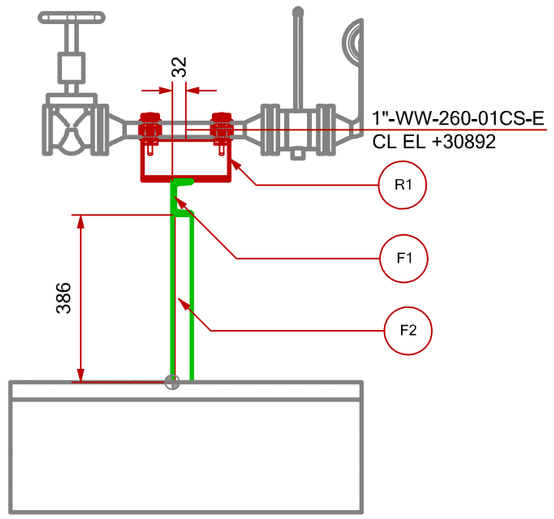
VIEW LOOKING NORTH



VIEW LOOKING WEST



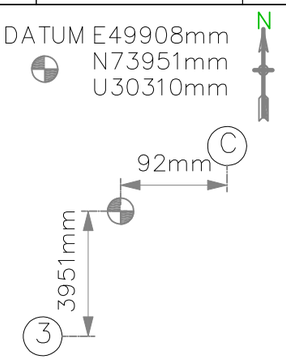
PLAN VIEW

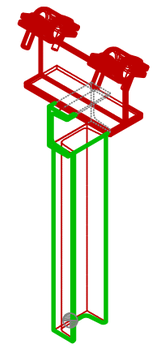


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-64-1"-100-200	-	-	1	-	3.81	0.102
F1	BEAM	UPN80	Carbon Steel	100	1	8.66	0.87	0.034
F2	BEAM	UPN80	Carbon Steel	386	1	8.66	3.34	0.123
						TOTAL	8.0	0.26





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

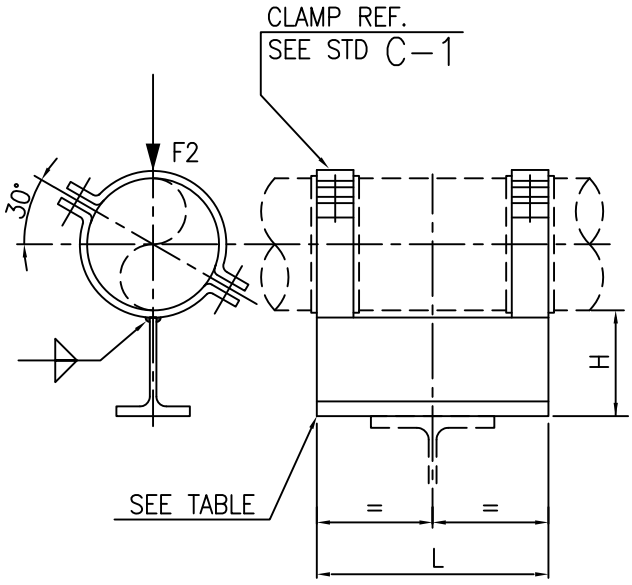
PS-02134

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

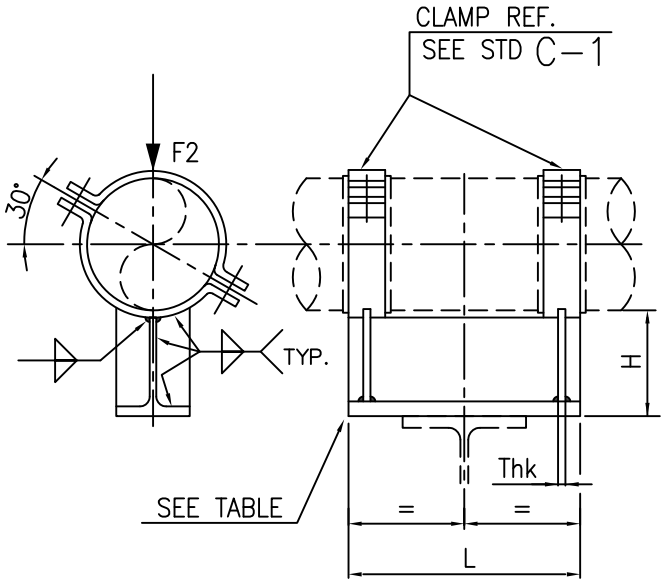
File Name :

	ROSETTI MARINO	Document Number: STD–PP–DD–0001
	STANDARD SPECIFICATION PIPE SUPPORT DETAIL STANDARD	Revision: 0 Date: –
SCARPETTA CLAMPATA PER TUBAZIONI C.S.–S.S. E ALLOY CLAMPED SHOE FOR C.S. – S.S. AND ALLOY PIPES		S–64

Example of designation : STD – PIPE ND" – H – L
(S–64 – 4" – 150 – 400)



PIPES ½" TO 4"



PIPES 6" TO 24"

PIPE		TEE CUT FROM	GUSSET Thk	"H" MAX	MAX LOAD (KN)
ND"	ND				F2
½"	15	IPE 140	–	120	2
3/4"	20	IPE 140	–		
1"	25	IPE 140	–		
1½"	40	IPE 140	–		
2"	50	IPE 220	–	190	4.5
3"	80	IPE 220	–		
4"	100	IPE 220	–		
6"	150	IPE 270	10	240	7.9
8"	200	IPE 270	10		
10"	250	HE220A	10	180	47
12"	300	HE220A	10		
14"	350	HE220A	10		
16"	400	HE220A	10		
18"	450	HE300A	15	230	64
20"	500	HE300A	15		
24"	600	HE300A	15		

ALLOWABLE RANGE FOR SHOE LENGTH		
ø PIPE	MIN. "L" mm	MAX. "L" mm
½" ÷ 6"	200	600
8" ÷ 24"	250	600

NOTES:

1– MATERIAL TO BE CARBON STEEL
2– ALL FILLET WELDING MUST HAVE THE EQUAL TO 0.8 OF THE MINIMUM THICKNESS TO BE WELDED EXCEPT WHERE OTHERWISE INDICATED.
3– VARIABLE WEIGHT ADDICTED TO THE "PIPE ND" SELECTED AND THE "L", "H" DIMENSIONS INDICATED.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test – NOT APPLICABLE

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	43-00-TP-065	: Test Pack 43-00-TP-065			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10003710		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

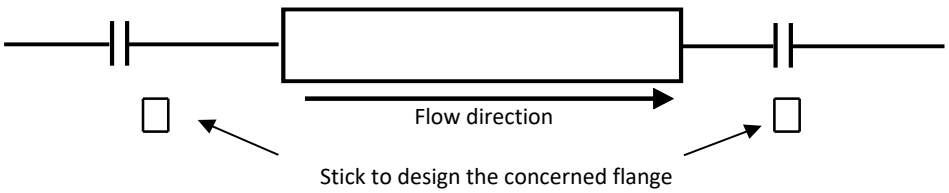
1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air, ensuring all drains/vents (when present) were open to facilitate the removal of moisture. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, inlet and outlet points were closed with covers.
3	Temporary means :	Blind flanges and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA
5	Valve body cavity, branches, etc.. Have been drained form residual water	●
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Restricting access to the area.
11	REMARKS:	None.

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-01-18	2025-01-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-18T08:25:48.948Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-01-21T14:41:46.477Z	

ITEM	Tag	006-1-J1	: Joint 006-1-J1			Dwg	123A90-FDL-PP-DI-00006-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004075	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type 150LB

Flange Size 6"

Gasket Type Gasket Spiral Wound Thk. 3.2 mm

Bolt tensioning/Torquing value 211.1

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench V030390 / RD00261

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	63	212	63	127	211.1
2	63	212	63	127	211.1
3	63	212	63	127	211.1
4	63	212	63	127	211.1
5	63	212	63	127	211.1
6	63	212	63	127	211.1
7	63	212	63	127	211.1
8	63	212	63	127	211.1
9			63	127	211.1
10			63	127	211.1
11			63	127	211.1
12			63	127	211.1
13			63	127	211.1
14			63	127	211.1
15			63	127	211.1
16			63	127	211.1
17			63	127	211.1
18			63	127	211.1
19			63	127	211.1
20			63	127	211.1

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

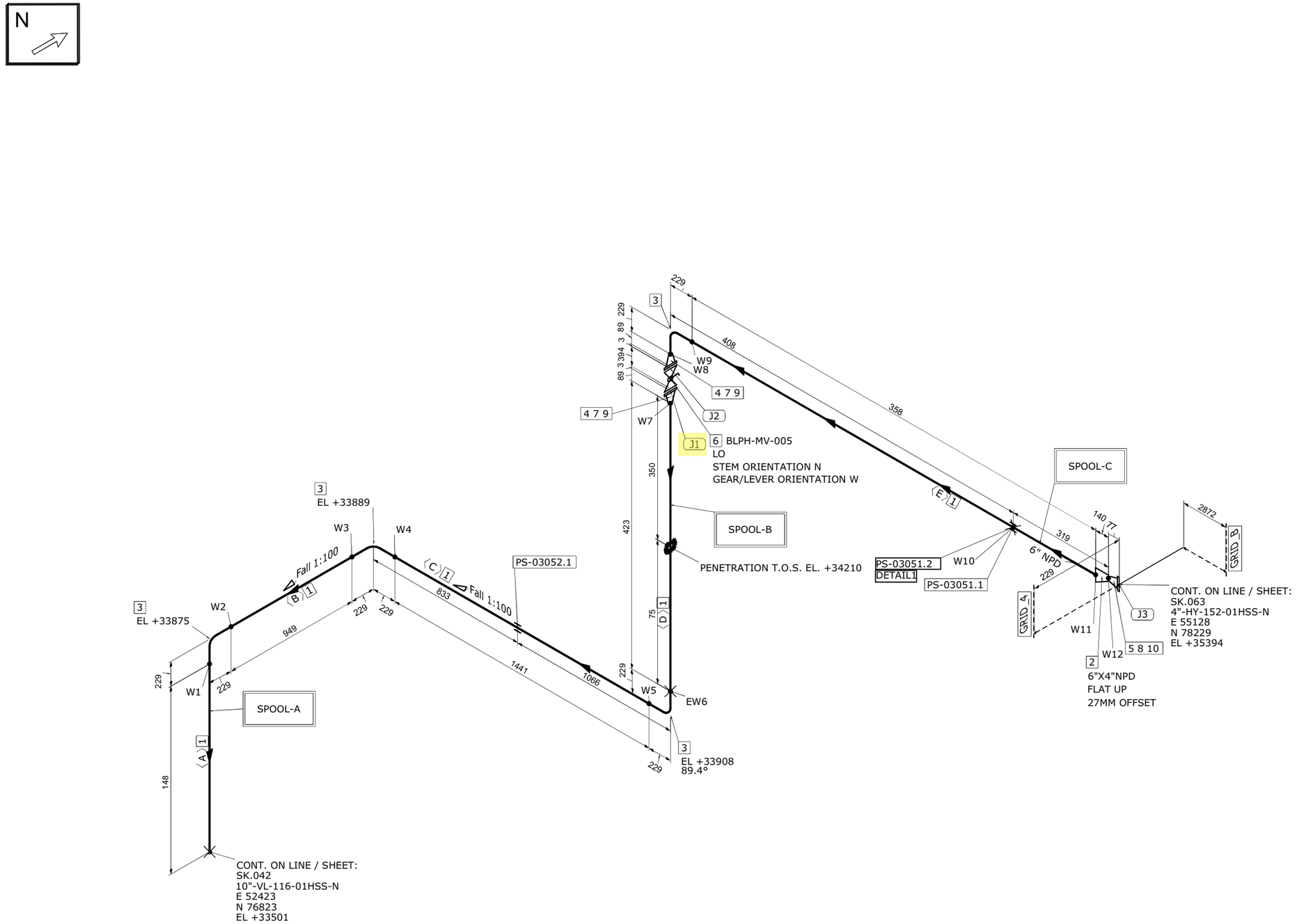
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

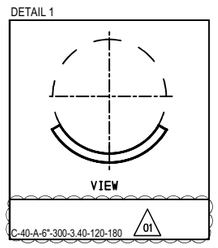
4 **Alignment:** Check alignment according to code. Yes

Comments:

	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:47:08.882Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-14T07:36:11.315Z	



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	6	PIPESS00570600	Pipe ASME B36.19M PE 3,4 SML ASTM A312 Gr.TP316/316L	3.3M	46.7
2	6X4	REE0SS02460604	Reducer Eccentric ASME B16.9 BW 3,4x3,05 WRS ASTM A403 Gr.WP316/316L	1	1.9
3	6	E90RSS01030600	90 Deg Elbow Long Radius ASME B16.9 BW 3,4 WRS ASTM A403 Gr.WP316/316L	4	19.8
4	6	FLW0SS02980600	Flange WN ASME B16.5 150LB RF 3,4 FRG ASTM A182 Gr.F316/316L	2	22.3
5	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	6.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	6	VLBLNN01460600	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	180.0
7	6	GSW0GK11160600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.6
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.2
9	3/4	SB20BO01890400	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	6.7
10	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	2.0

FABRICATION WEIGHT [kg]	97.6
ERECTION WEIGHT [kg]	189.5
OVERALL WEIGHT [kg]	287.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	6	BW
W2	6	BW
W3	6	BW
W4	6	BW
W5	6	BW
EW6	6	BW
W7	6	BW
W8	6	BW
W9	6	BW
W10		FW
W11	6	BW
W12	4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	6	148	BEVEL	BEVEL
B	6	949	BEVEL	BEVEL
C	6	1441	BEVEL	BEVEL
D	6	423	BEVEL	BEVEL
E	6	358	BEVEL	BEVEL

SUPPORT LIST

PS-03051.2
PS-03051.1
PS-03052.1

SPOOL	WELD [inches]	WEIGHT [kg]
C	22	29.9
B	6	17.1
A	30	50.5
MONT	6	189.5

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 6"-VL-010-01HSS-N

SK.006

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	03-09-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00006	SHEET / OF	1/1
REV.	01				

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80012
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

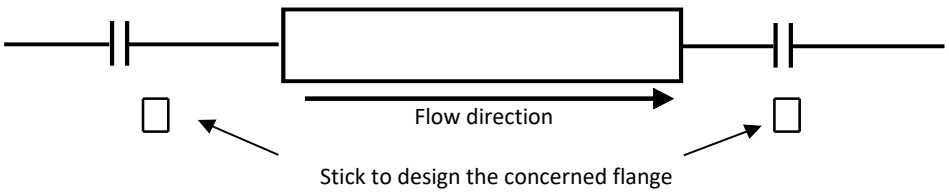
MASTER


TAG
006-1-J1
FLANGE TIGHTENED
ID STAMP RFT3/RFT9
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
006-1-J1
FLANGE ASSEMBLED
ID STAMP RFT3/RFT9
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
006-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	006-1-J2	: Joint 006-1-J2			Dwg	123A90-FDL-PP-DI-00006-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004076		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type 150LB

Flange Size 6"

Gasket Type Gasket Spiral Wound Thk. 3.2 mm

Bolt tensioning/Torquing value 211.1

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench V030390 / RD00261

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	63	212	63	127	211.1
2	63	212	63	127	211.1
3	63	212	63	127	211.1
4	63	212	63	127	211.1
5	63	212	63	127	211.1
6	63	212	63	127	211.1
7	63	212	63	127	211.1
8	63	212	63	127	211.1
9			63	127	211.1
10			63	127	211.1
11			63	127	211.1
12			63	127	211.1
13			63	127	211.1
14			63	127	211.1
15			63	127	211.1
16			63	127	211.1
17			63	127	211.1
18			63	127	211.1
19			63	127	211.1
20			63	127	211.1

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

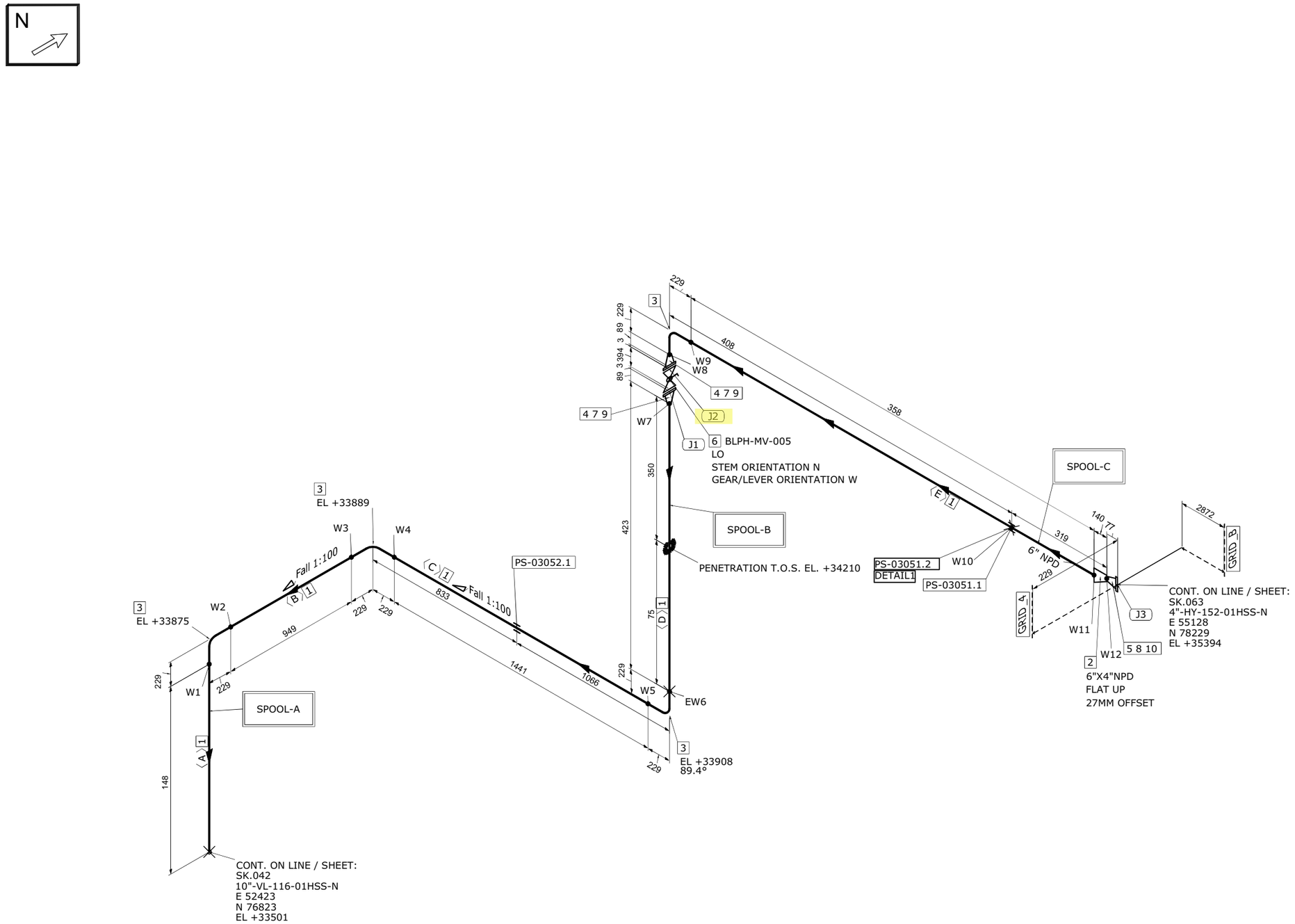
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

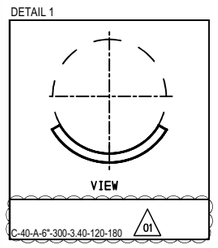
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:47:20.725Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-14T07:35:53.682Z	



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	6	PIPESS00570600	Pipe ASME B36.19M PE 3,4 SML ASTM A312 Gr.TP316/316L	3.3M	46.7
2	6X4	REE0SS02460604	Reducer Eccentric ASME B16.9 BW 3,4x3,05 WRS ASTM A403 Gr.WP316/316L	1	1.9
3	6	E90RSS01030600	90 Deg Elbow Long Radius ASME B16.9 BW 3,4 WRS ASTM A403 Gr.WP316/316L	4	19.8
4	6	FLW0SS02980600	Flange WN ASME B16.5 150LB RF 3,4 FRG ASTM A182 Gr.F316/316L	2	22.3
5	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	6.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	6	VLBLNN01460600	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	180.0
7	6	GSW0GK11160600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.6
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.2
9	3/4	SB20BO01890400	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	6.7
10	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	2.0

FABRICATION WEIGHT [kg]	97.6
ERECTION WEIGHT [kg]	189.5
OVERALL WEIGHT [kg]	287.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	6	BW
W2	6	BW
W3	6	BW
W4	6	BW
W5	6	BW
EW6	6	BW
W7	6	BW
W8	6	BW
W9	6	BW
W10		FW
W11	6	BW
W12	4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	6	148	BEVEL	BEVEL
B	6	949	BEVEL	BEVEL
C	6	1441	BEVEL	BEVEL
D	6	423	BEVEL	BEVEL
E	6	358	BEVEL	BEVEL

SUPPORT LIST

PS-03051.2
PS-03051.1
PS-03052.1

SPOOL	WELD [inches]	WEIGHT [kg]
C	22	29.9
B	6	17.1
A	30	50.5
MONT	6	189.5

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 6"-VL-010-01HSS-N

SK.006

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	03-09-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00006	SHEET / OF	1/1
REV.	01				

LINE DATA

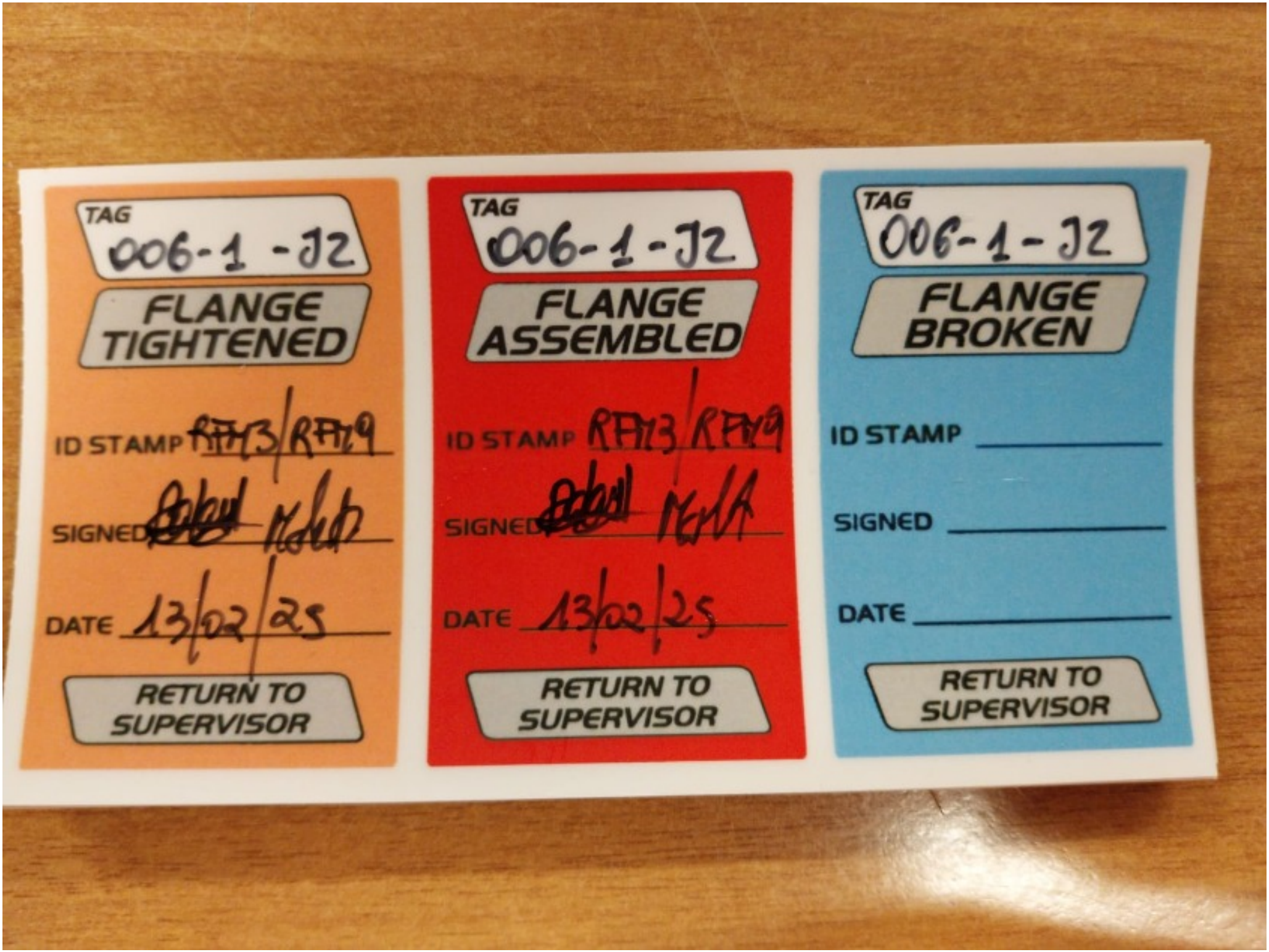
NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80012
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

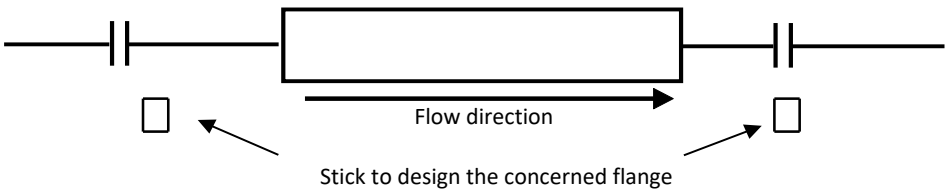
MASTER


TAG
006-1-J2
FLANGE TIGHTENED
ID STAMP RFH3/RFH9
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
006-1-J2
FLANGE ASSEMBLED
ID STAMP RFH3/RFH9
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
006-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	006-1-J3	: Joint 006-1-J3			Dwg	123A90-FDL-PP-DI-00006-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004077		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type 150LB

Flange Size 4"

Gasket Type Gasket Spiral Wound Thk. 3.2 mm

Bolt tensioning/Torquing value 211.1

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench V030390 / RD00261

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	63	212	63	127	211.1
2	63	212	63	127	211.1
3	63	212	63	127	211.1
4	63	212	63	127	211.1
5	63	212	63	127	211.1
6	63	212	63	127	211.1
7	63	212	63	127	211.1
8	63	212	63	127	211.1
9			63	127	211.1
10			63	127	211.1
11			63	127	211.1
12			63	127	211.1
13			63	127	211.1
14			63	127	211.1
15			63	127	211.1
16			63	127	211.1
17			63	127	211.1
18			63	127	211.1
19			63	127	211.1
20			63	127	211.1

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

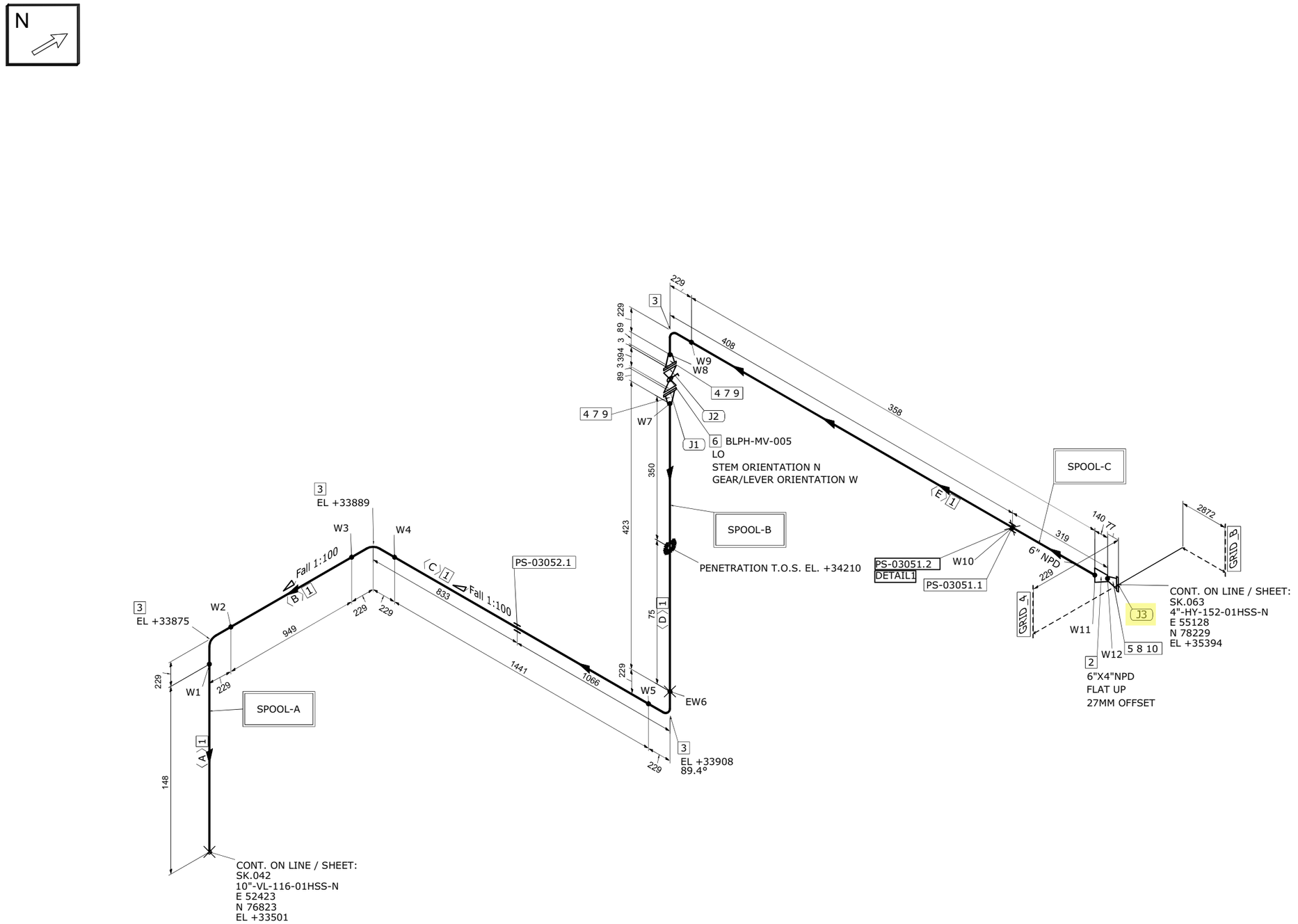
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

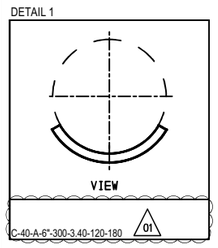
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:47:31.908Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-14T07:35:37.114Z	



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	6	PIPESS00570600	Pipe ASME B36.19M PE 3,4 SML ASTM A312 Gr.TP316/316L	3.3M	46.7
2	6X4	REE0SS02460604	Reducer Eccentric ASME B16.9 BW 3,4x3,05 WRS ASTM A403 Gr.WP316/316L	1	1.9
3	6	E90RSS01030600	90 Deg Elbow Long Radius ASME B16.9 BW 3,4 WRS ASTM A403 Gr.WP316/316L	4	19.8
4	6	FLW0SS02980600	Flange WN ASME B16.5 150LB RF 3,4 FRG ASTM A182 Gr.F316/316L	2	22.3
5	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	6.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	6	VLBLNN01460600	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	180.0
7	6	GSW0GK11160600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.6
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.2
9	3/4	SB20BO01890400	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	6.7
10	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	2.0

FABRICATION WEIGHT [kg]	97.6
ERECTION WEIGHT [kg]	189.5
OVERALL WEIGHT [kg]	287.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	6	BW
W2	6	BW
W3	6	BW
W4	6	BW
W5	6	BW
EW6	6	BW
W7	6	BW
W8	6	BW
W9	6	BW
W10		FW
W11	6	BW
W12	4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	6	148	BEVEL	BEVEL
B	6	949	BEVEL	BEVEL
C	6	1441	BEVEL	BEVEL
D	6	423	BEVEL	BEVEL
E	6	358	BEVEL	BEVEL

SUPPORT LIST

PS-03051.2
PS-03051.1
PS-03052.1

SPOOL	WELD [inches]	WEIGHT [kg]
C	22	29.9
B	6	17.1
A	30	50.5
MONT	6	189.5

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 6"-VL-010-01HSS-N

SK.006

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	03-09-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00006			SHEET / OF	1/1
						REV.	01

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II	
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas	
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB MEDIUM Water

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80012
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

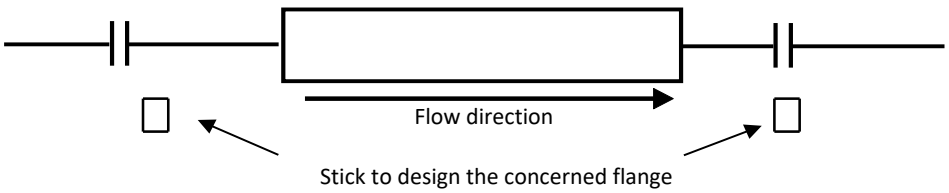
MASTER


TAG
006-1-J3
FLANGE TIGHTENED
ID STAMP RFH3/RFH9
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
006-1-J3
FLANGE ASSEMBLED
ID STAMP RFH3/RFH9
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
006-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	018-1-J1	: Joint 018-1-J1			Dwg	123A90-FDL-PP-DI-00018-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004078		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type 150LB

Flange Size 2"

Gasket Type Gasket Spiral Wound Thk. 3.2 mm

Bolt tensioning/Torquing value 122.2

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench T064079 / RD00261

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5			37	73	122.2
6			37	73	122.2
7			37	73	122.2
8			37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

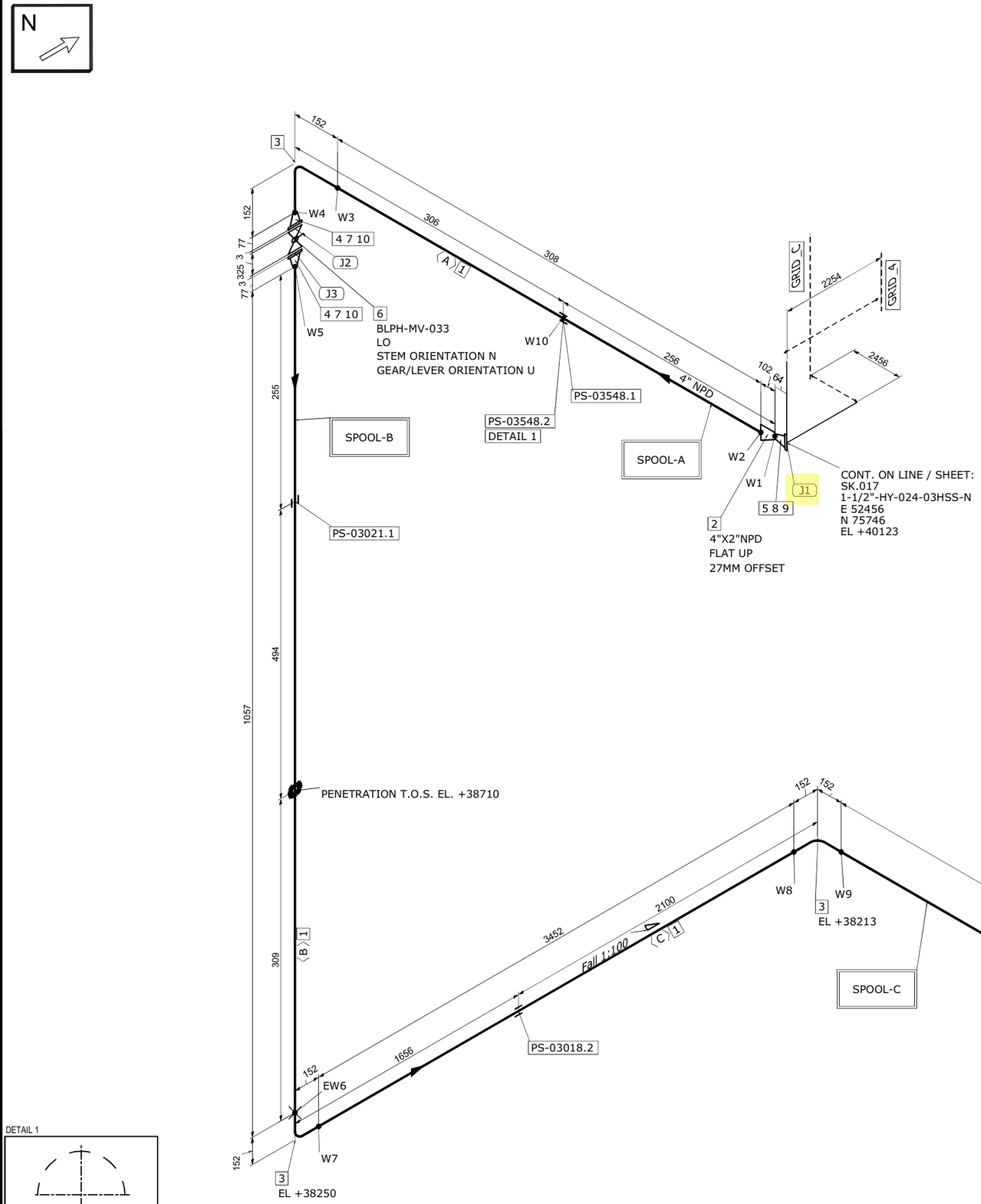
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

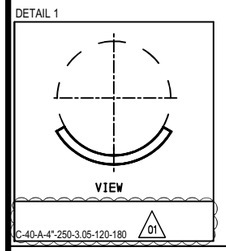
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-10	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:47:48.763Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-10T07:17:48.990Z	



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.0M	42.7
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
7	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
8	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	66.0
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	151.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	308	BEVEL	BEVEL
B	4	1057	BEVEL	BEVEL
C	4	3452	BEVEL	BEVEL
D	4	205	BEVEL	BEVEL

SUPPORT LIST

PS-03548.1
PS-03548.2
PS-03021.1
PS-03018.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	15.1
B	4	15.9
C	12	35.1
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-025-01HSS-N

SK.018

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	03-09-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00018	SHEET / OF	1/1
REV.	01				

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80015
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

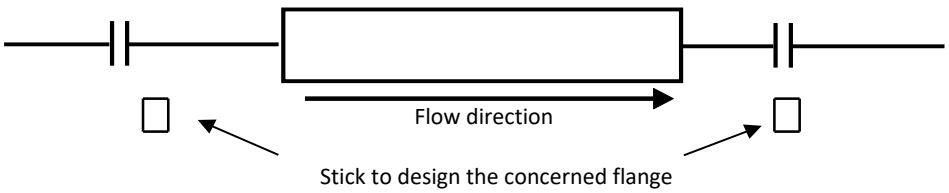
MASTER


TAG
018-1-J1
FLANGE TIGHTENED
ID STAMP RT13/RT19
SIGNED
DATE 08/02/25
RETURN TO SUPERVISOR
TAG
018-1-J1
FLANGE ASSEMBLED
ID STAMP RT13/RT19
SIGNED
DATE 03/02/25
RETURN TO SUPERVISOR
TAG
018-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	018-1-J2	: Joint 018-1-J2			Dwg	123A90-FDL-PP-DI-00018-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004079	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type 150LB

Flange Size 4"

Gasket Type Gasket Spiral Wound Thk. 3.2 mm

Bolt tensioning/Torquing value 122.2

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench T064079 / RD00261

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5	37	123	37	73	122.2
6	37	123	37	73	122.2
7	37	123	37	73	122.2
8	37	123	37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

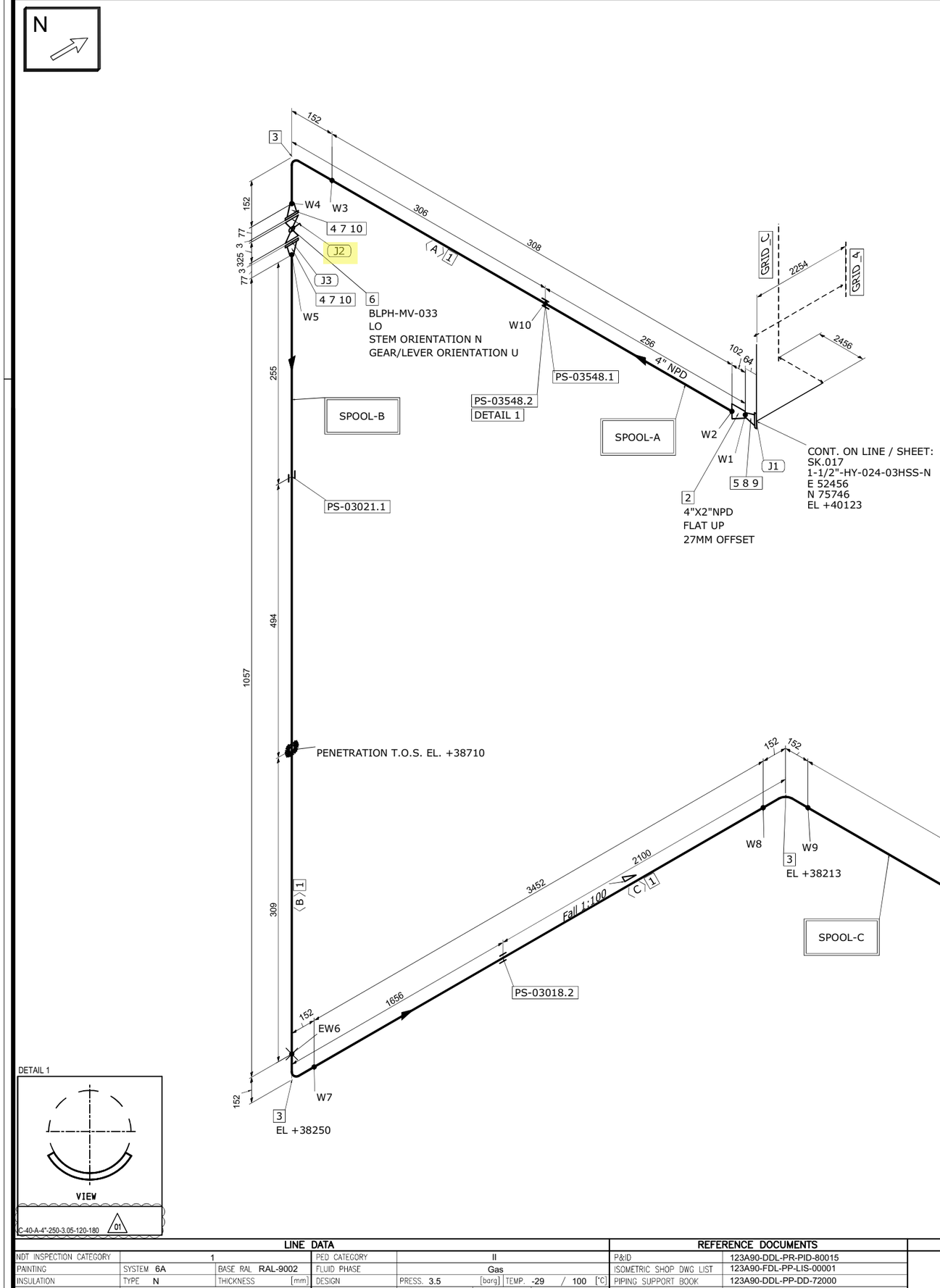
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-10	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:47:54.947Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-10T07:17:41.445Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.0M	42.7
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
7	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
8	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	66.0
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	151.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	308	BEVEL	BEVEL
B	4	1057	BEVEL	BEVEL
C	4	3452	BEVEL	BEVEL
D	4	205	BEVEL	BEVEL

SUPPORT LIST

PS-03548.1
PS-03548.2
PS-03021.1
PS-03018.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	15.1
B	4	15.9
C	12	35.1
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-025-01HSS-N

SK.018

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 03-09-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00018	SHEET / OF 1/1	REV. 01

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80015
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

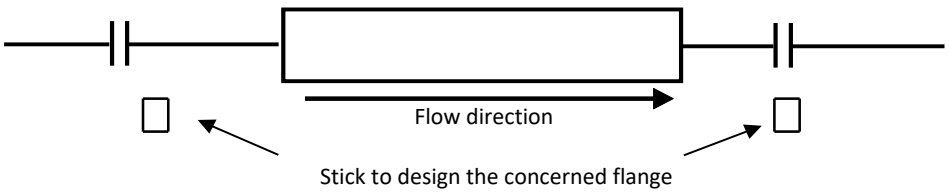

TAG
018-1-J2
FLANGE TIGHTENED
ID STAMP RTH3/RTH9
SIGNED
DATE 08/02/25
RETURN TO SUPERVISOR
TAG
018-1-J2
FLANGE ASSEMBLED
ID STAMP RTH3/RTH9
SIGNED
DATE 08/02/25
RETURN TO SUPERVISOR
TAG
018-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	018-1-J3	: Joint 018-1-J3			Dwg	123A90-FDL-PP-DI-00018-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004080	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench T064079 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5	37	123	37	73	122.2
6	37	123	37	73	122.2
7	37	123	37	73	122.2
8	37	123	37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

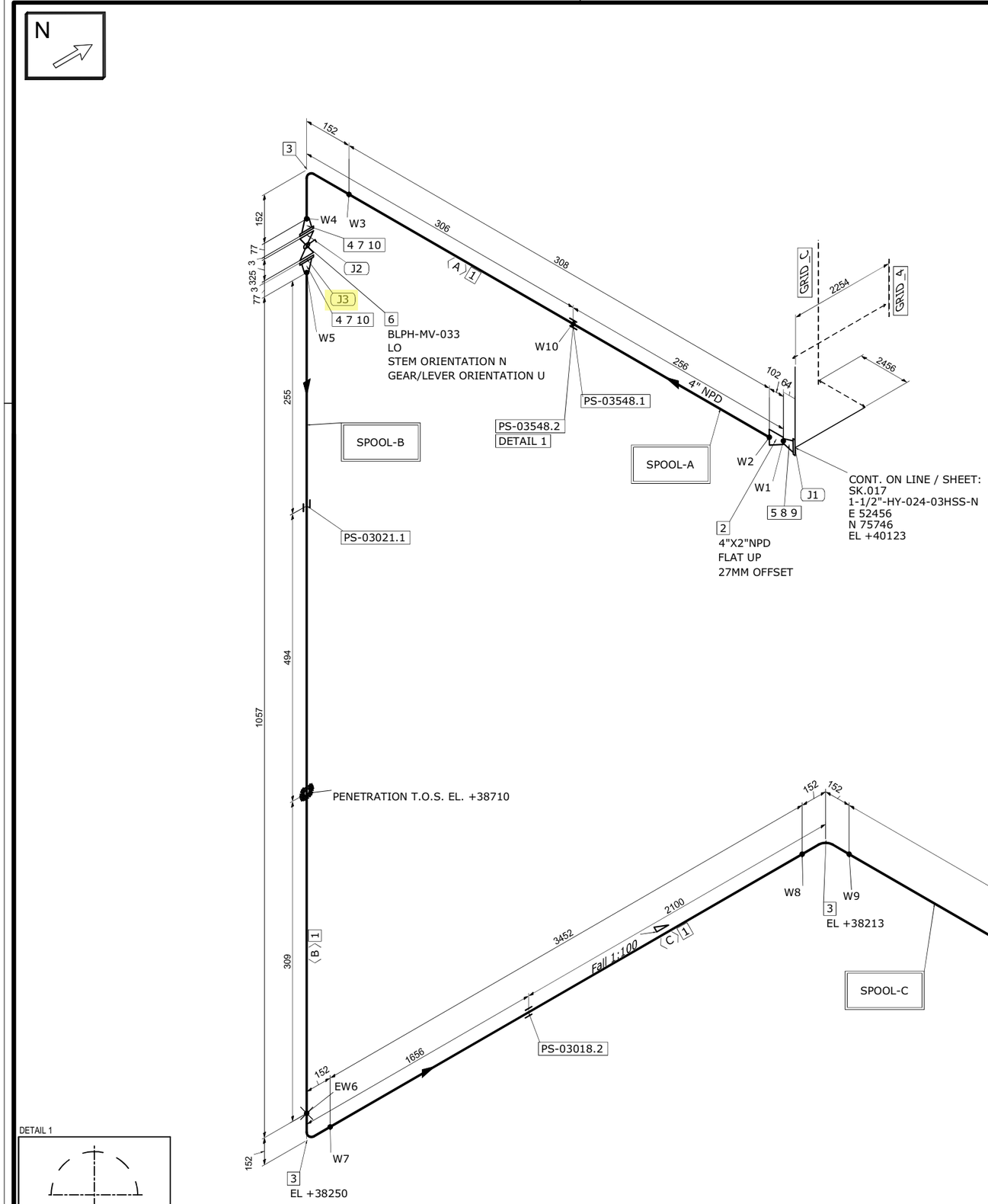
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-10	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:48:08.234Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-10T07:17:33.679Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.0M	42.7
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
7	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
8	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	66.0
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	151.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	308	BEVEL	BEVEL
B	4	1057	BEVEL	BEVEL
C	4	3452	BEVEL	BEVEL
D	4	205	BEVEL	BEVEL

SUPPORT LIST

PS-03548.1
PS-03548.2
PS-03021.1
PS-03018.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	15.1
B	4	15.9
C	12	35.1
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-025-01HSS-N

SK.018

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	03-09-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00018	SHEET / OF	1/1
REV.	01				

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80015
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

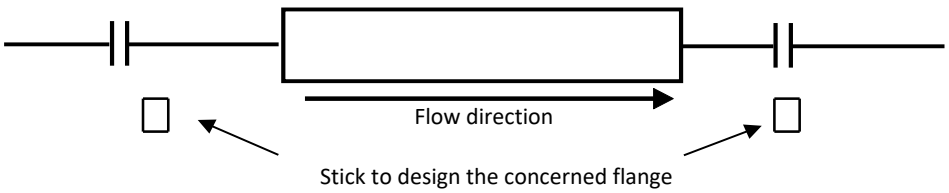
MASTER


TAG
018-1-J3
FLANGE TIGHTENED
ID STAMP RFH3/RFH9
SIGNED
DATE 08/02/25
RETURN TO SUPERVISOR
TAG
018-1-J3
FLANGE ASSEMBLED
ID STAMP RFH3/RFH9
SIGNED
DATE 08/02/25
RETURN TO SUPERVISOR
TAG
018-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	037-1-J1	: Joint 037-1-J1			Dwg	123A90-FDL-PP-DI-00037-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004088		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5			37	73	122.2
6			37	73	122.2
7			37	73	122.2
8			37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
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15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

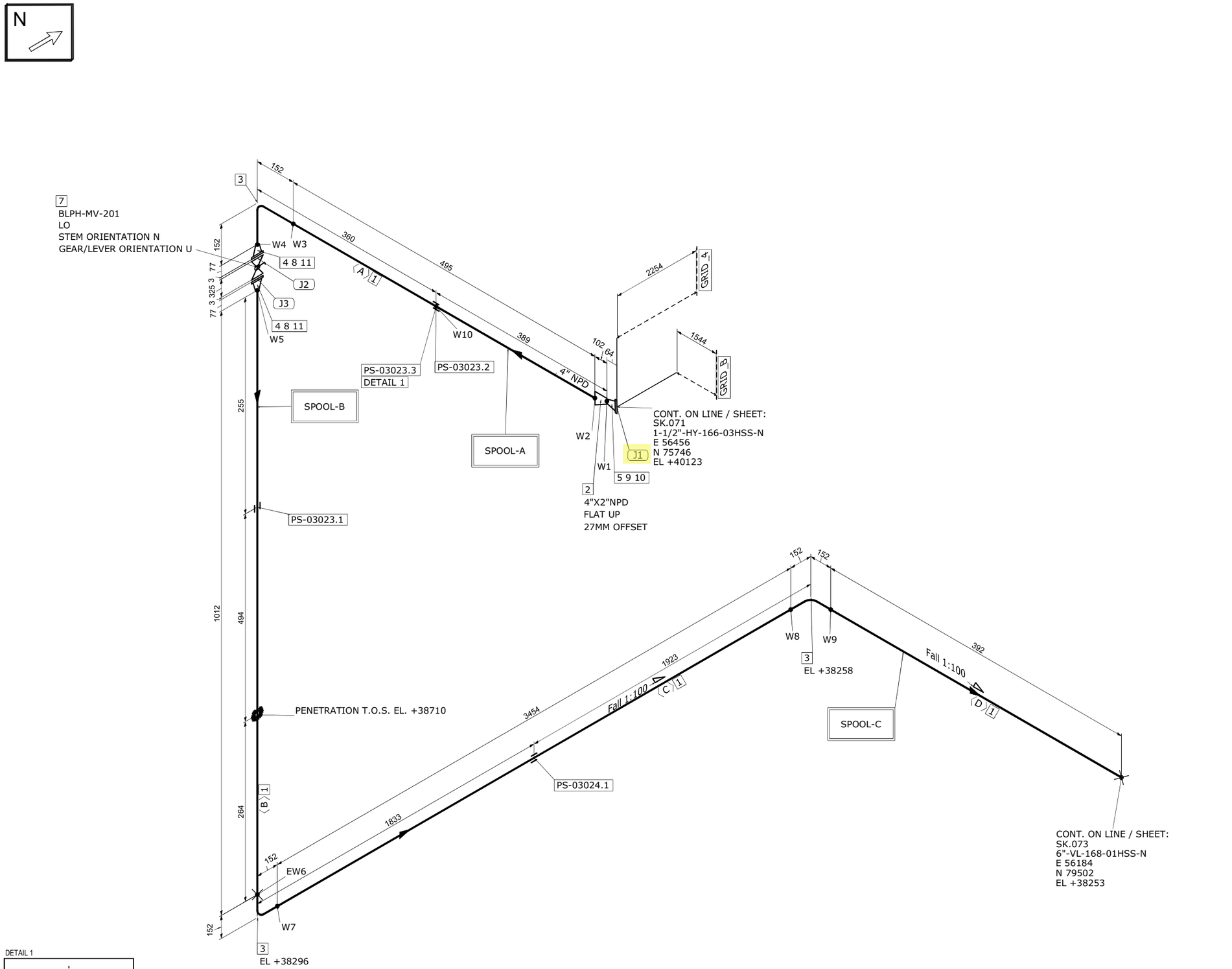
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

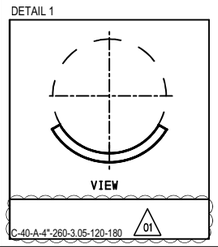
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-07	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:48:21.027Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-07T16:38:17.039Z	



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.4M	45.4
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.7
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	154.3

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	1012	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03023.2
PS-03023.3
PS-03023.1
PS-03024.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.5
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-111-01HSS-N

SK.037

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM
DATE: 03-09-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00037
SHEET / OF: 1/1
REV.: 01

LINE DATA

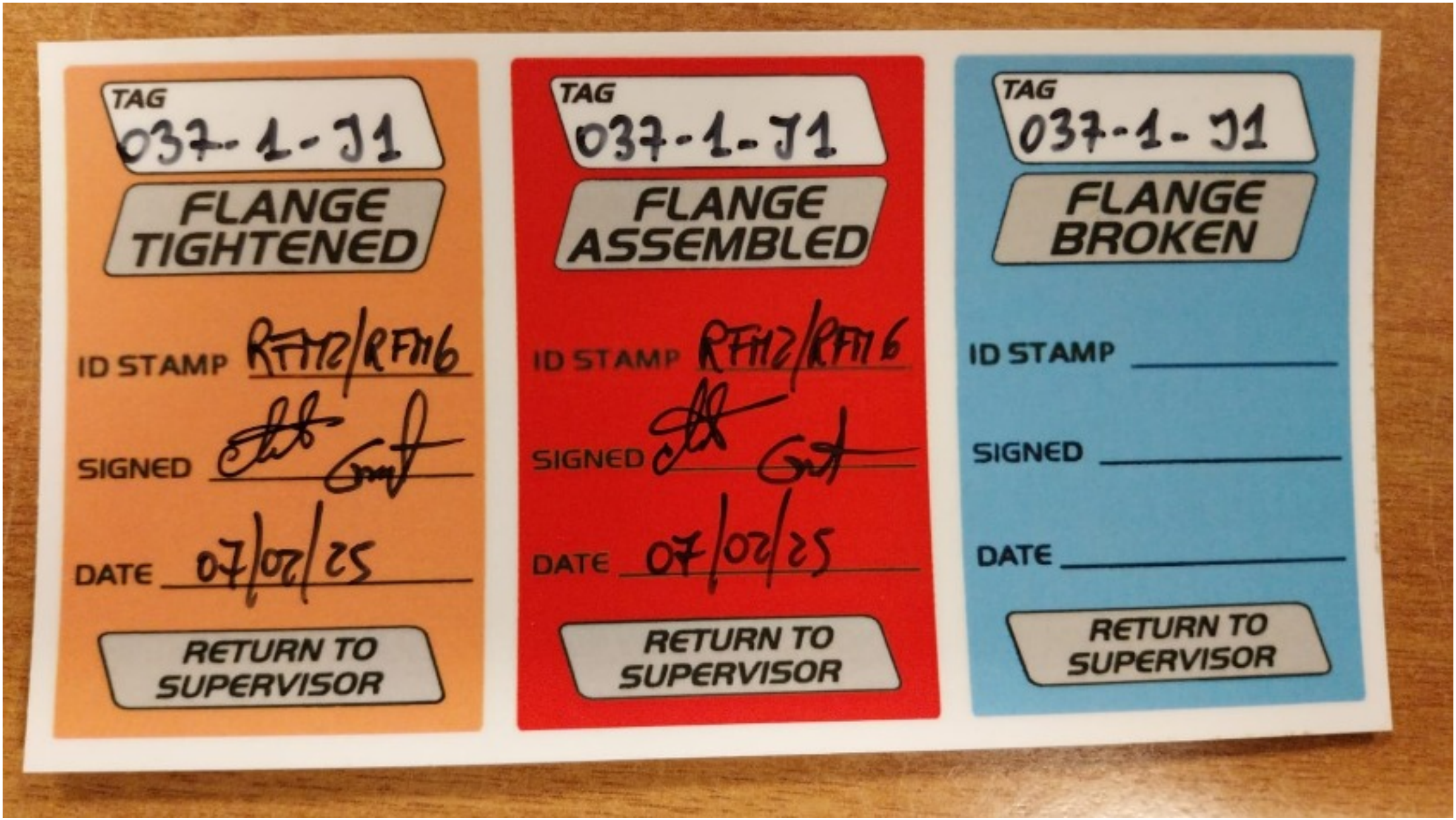
NDT INSPECTION CATEGORY	1	PED CATEGORY	II
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE: Gas
INSULATION	TYPE N	THICKNESS [mm]	DESIGN: PRESS. 3.5 [barg] TEMP. -29 / 100 [°C]
HEAT TRACING	N/A		TEST: PRESS. 5.25 [barg] TEMP. AMB MEDIUM Water

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80016
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

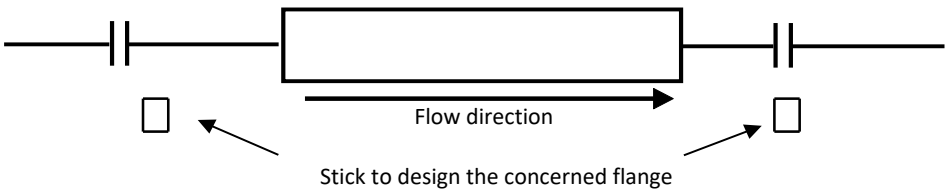
MASTER


TAG
037-1-J1
FLANGE TIGHTENED
ID STAMP RFH12/RFH16
SIGNED
DATE 07/02/25
RETURN TO SUPERVISOR
TAG
037-1-J1
FLANGE ASSEMBLED
ID STAMP RFH12/RFH16
SIGNED
DATE 07/02/25
RETURN TO SUPERVISOR
TAG
037-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	037-1-J2	: Joint 037-1-J2			Dwg	123A90-FDL-PP-DI-00037-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004089		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5	37	123	37	73	122.2
6	37	123	37	73	122.2
7	37	123	37	73	122.2
8	37	123	37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

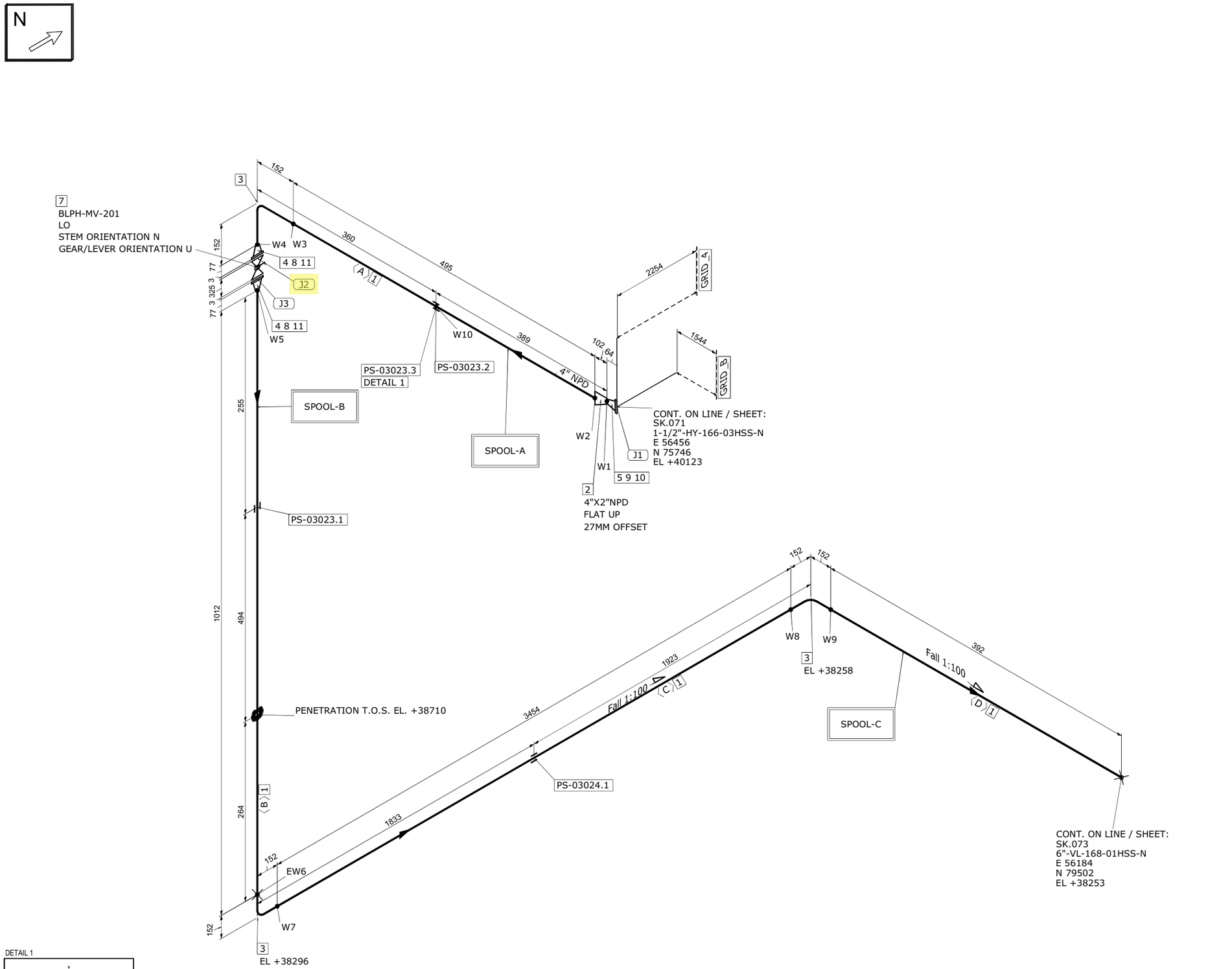
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

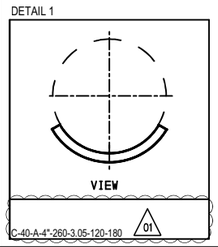
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-07	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:48:34.810Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-07T16:38:06.111Z	



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.4M	45.4
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.7
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	154.3

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	1012	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03023.2
PS-03023.3
PS-03023.1
PS-03024.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.5
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-111-01HSS-N

SK.037

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80016
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

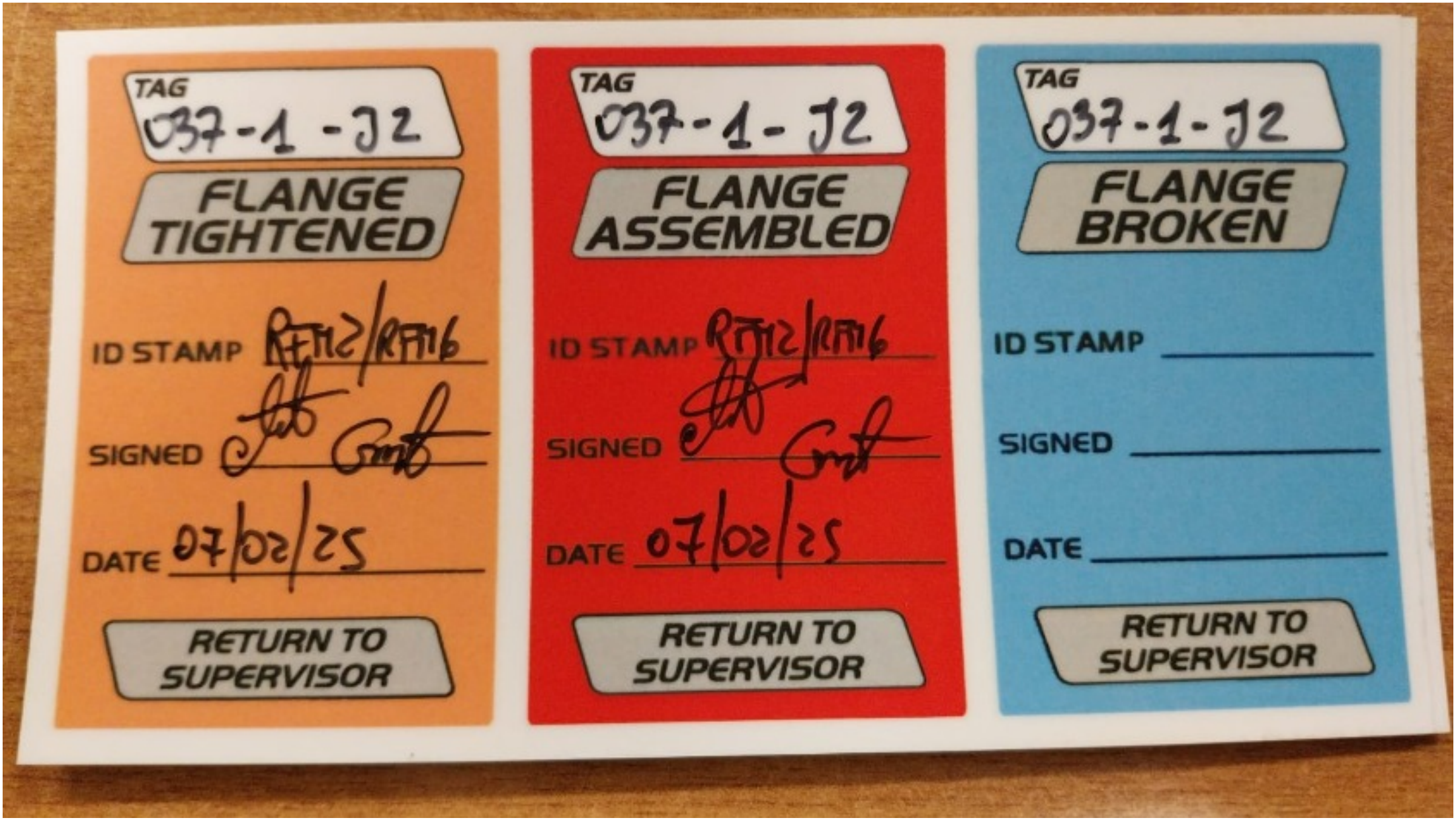
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FORMAT: A3

DRAWING NO.: 123A90-FDL-PP-DI-00037

SHEET / OF: 1/1

REV.: 01

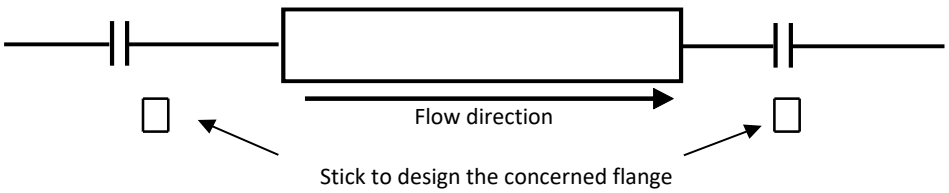

TAG
037-1-J2
FLANGE TIGHTENED
ID STAMP RFT12/RFT16
SIGNED
DATE 07/02/25
RETURN TO SUPERVISOR
TAG
037-1-J2
FLANGE ASSEMBLED
ID STAMP RFT12/RFT16
SIGNED
DATE 07/02/25
RETURN TO SUPERVISOR
TAG
037-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ROSETTI MARINO — CROSSWIND

ITEM	Tag	037-1-J3	: Joint 037-1-J3			Dwg	123A90-FDL-PP-DI-00037-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004090	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 — Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Stick to design the concerned flange

Flange Type	150LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5	37	123	37	73	122.2
6	37	123	37	73	122.2
7	37	123	37	73	122.2
8	37	123	37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

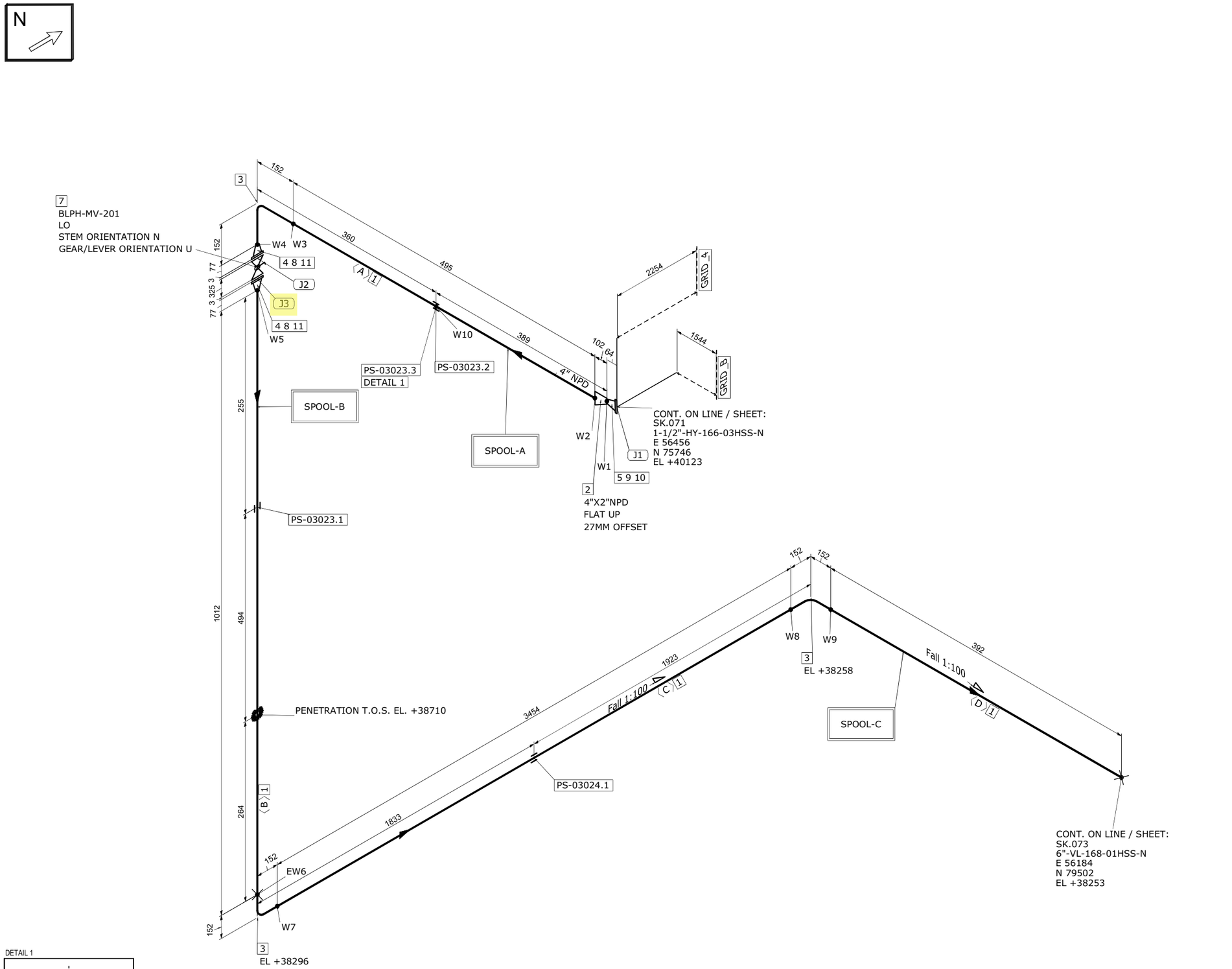
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

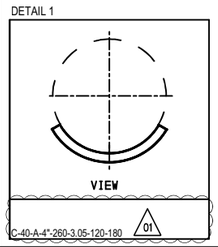
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-07	
Signature	Digitaly signed by Emanuele Delfino 2025-01-25T05:48:48.491Z	Digitaly signed by Massimo Bruschi 2025-02-07T16:37:51.525Z	



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.4M	45.4
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.7
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	154.3

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	1012	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03023.2
PS-03023.3
PS-03023.1
PS-03024.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.5
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-111-01HSS-N

SK.037

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM
DATE: 03-09-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00037
SHEET / OF: 1/1
REV.: 01

LINE DATA

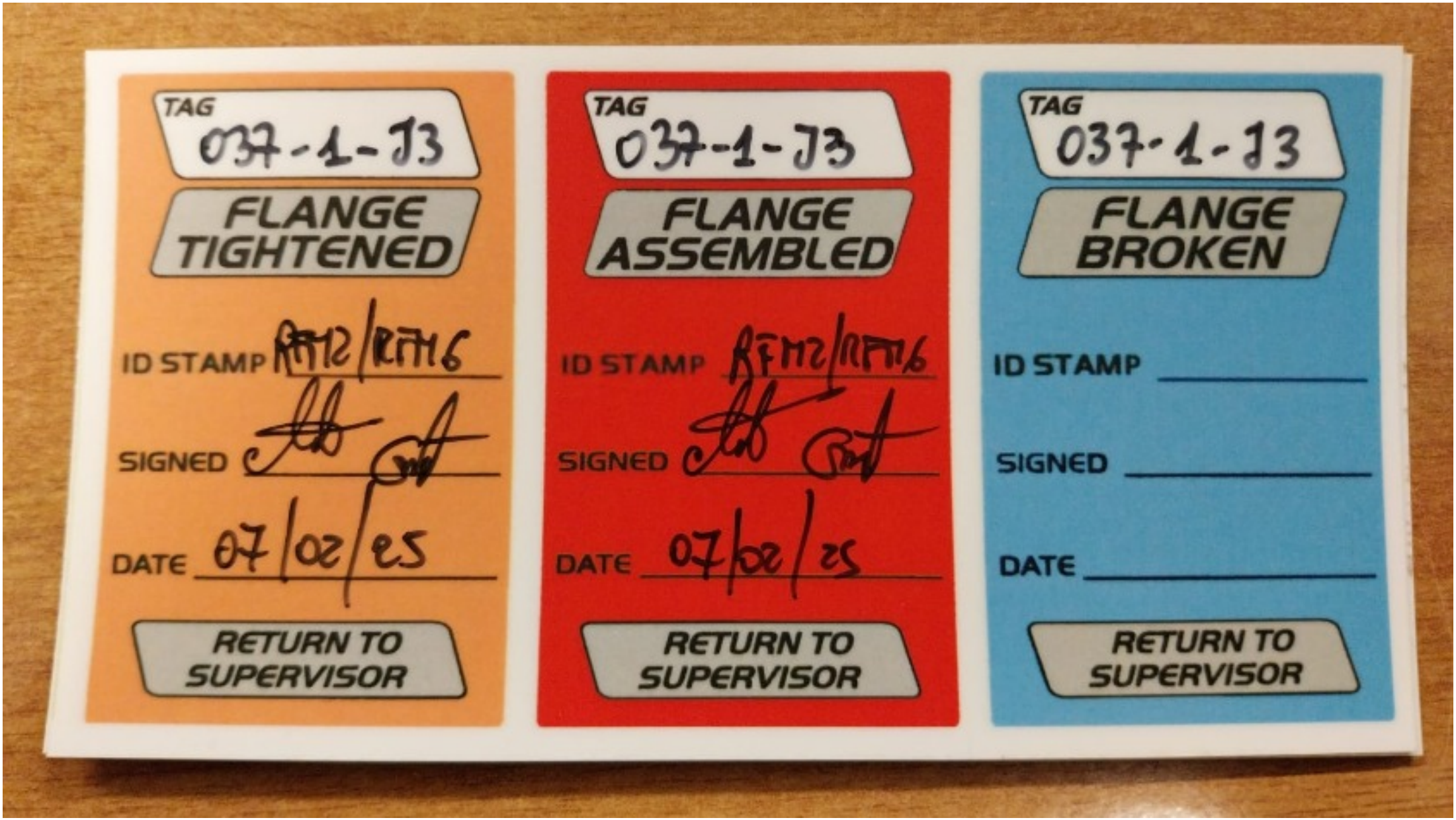
NDT INSPECTION CATEGORY	1	PED CATEGORY	II
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE: Gas
INSULATION	TYPE N	THICKNESS [mm]	DESIGN: PRESS. 3.5 [barg] TEMP. -29 / 100 [°C]
HEAT TRACING	N/A		TEST: PRESS. 5.25 [barg] TEMP. AMB MEDIUM Water

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80016
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

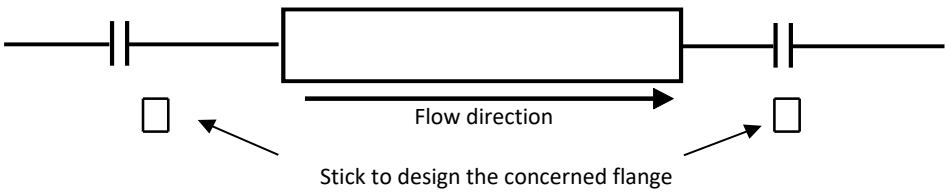
MASTER


TAG
037-1-J3
FLANGE TIGHTENED
ID STAMP RFH2/RFH6
SIGNED
DATE 07/02/25
RETURN TO SUPERVISOR
TAG
037-1-J3
FLANGE ASSEMBLED
ID STAMP RFH2/RFH6
SIGNED
DATE 07/02/25
RETURN TO SUPERVISOR
TAG
037-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	038-1-J1	: Joint 038-1-J1			Dwg	123A90-FDL-PP-DI-00038-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004091		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type 150LB

Flange Size 2"

Gasket Type Gasket Spiral Wound Thk. 3.2 mm

Bolt tensioning/Torquing value 122.2

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench T064079 / RD00261

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5			37	73	122.2
6			37	73	122.2
7			37	73	122.2
8			37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

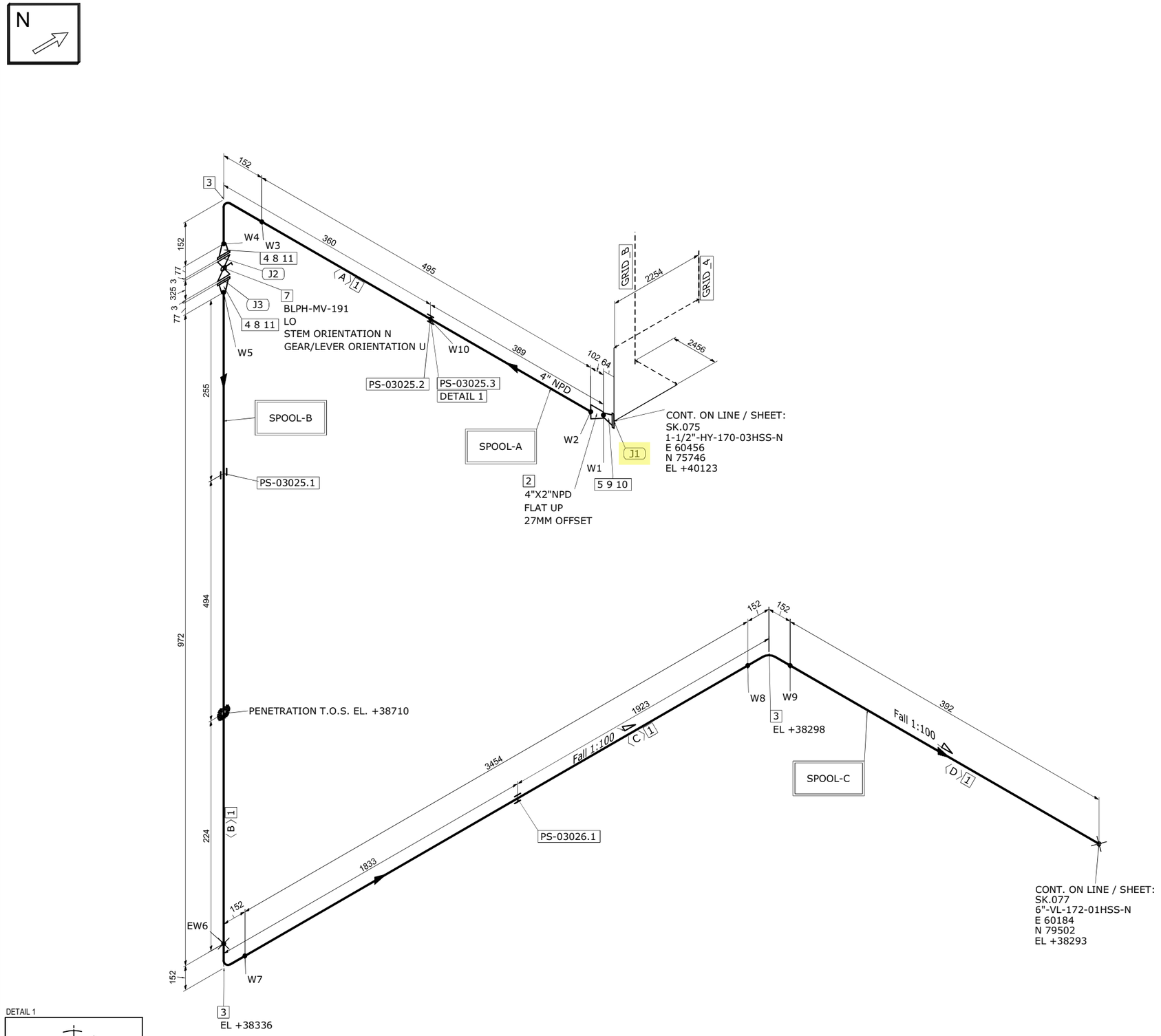
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-10	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:49:03.259Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-10T07:17:19.421Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.3M	45.1
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.3
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	153.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	972	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03025.2
PS-03025.3
PS-03025.1
PS-03026.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.2
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-112-01HSS-N

SK.038

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00038 | SHEET / OF: 1/1 | REV.: 01

LINE DATA

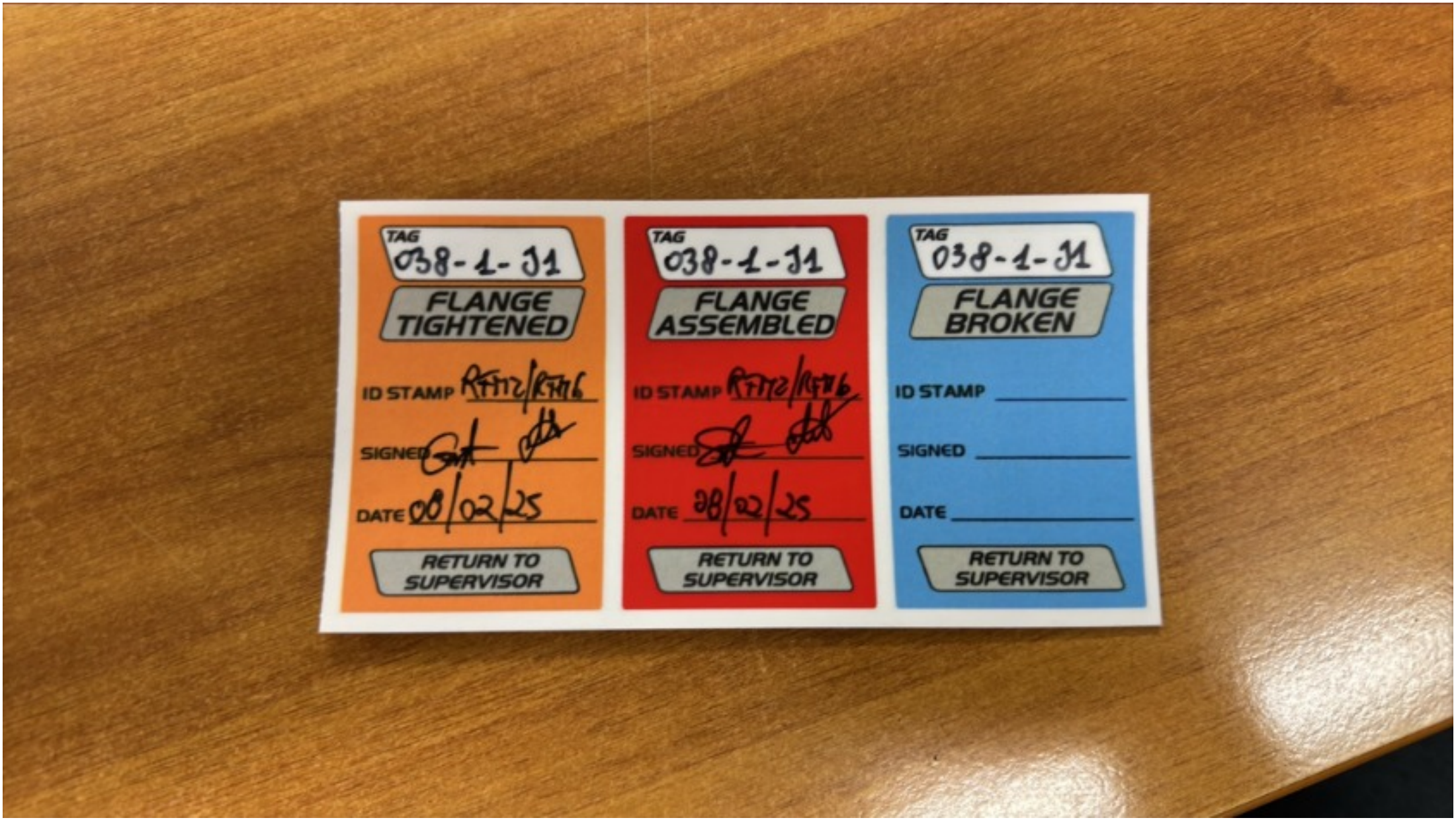
NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80017
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

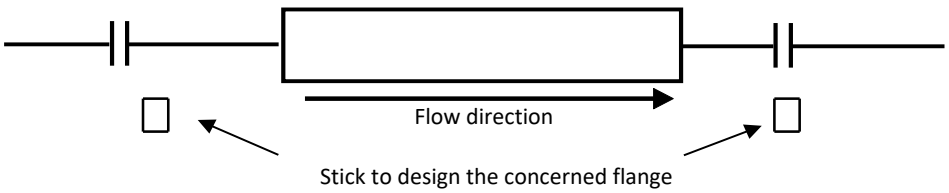
MASTER


TAG
038-1-J1
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 08/02/25
RETURN TO SUPERVISOR
TAG
038-1-J1
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 08/02/25
RETURN TO SUPERVISOR
TAG
038-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	038-1-J2	: Joint 038-1-J2			Dwg	123A90-FDL-PP-DI-00038-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004092		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench T064079 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5	37	123	37	73	122.2
6	37	123	37	73	122.2
7	37	123	37	73	122.2
8	37	123	37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

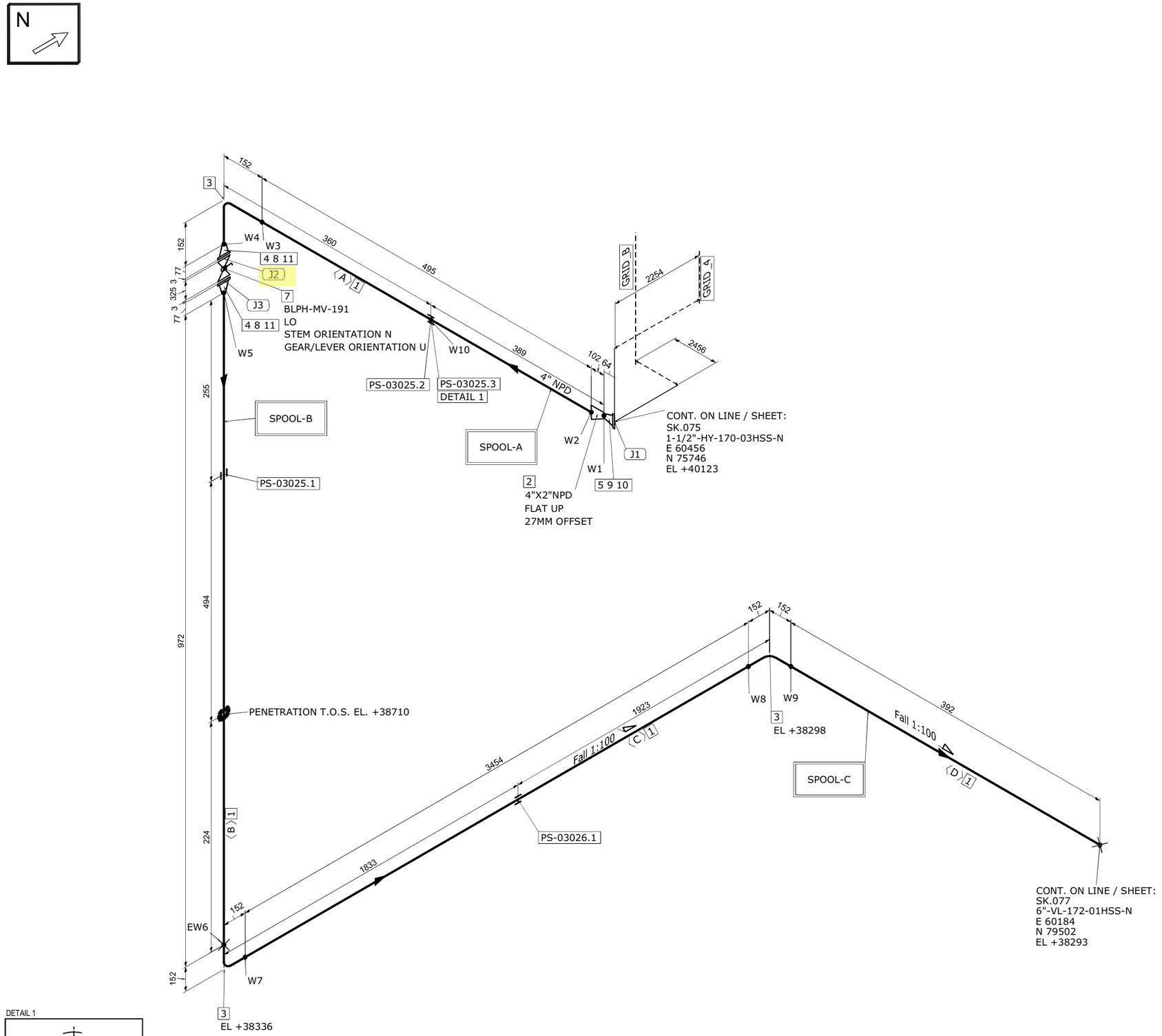
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

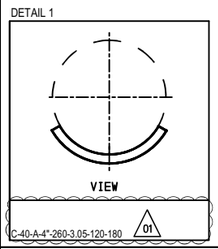
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-10	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:49:15.556Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-10T07:17:10.272Z	



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.3M	45.1
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.3
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	153.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	972	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03025.2
PS-03025.3
PS-03025.1
PS-03026.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.2
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-112-01HSS-N

SK.038

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	03-09-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00038	SHEET / OF	1/1
				REV.	01

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80017
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

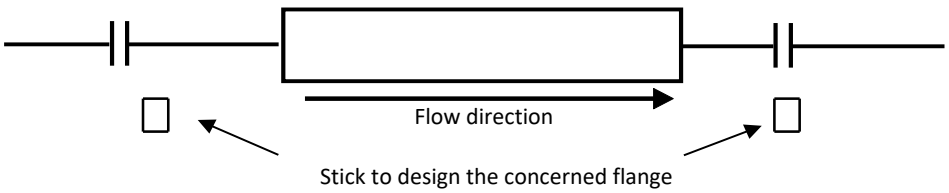
MASTER


TAG
038-1-J2
FLANGE TIGHTENED
ID STAMP RTH2/RTH6
SIGNED
DATE 08/02/25
RETURN TO SUPERVISOR
TAG
038-1-J2
FLANGE ASSEMBLED
ID STAMP RTH2/RTH6
SIGNED
DATE 08/02/25
RETURN TO SUPERVISOR
TAG
038-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	038-1-J3	: Joint 038-1-J3			Dwg	123A90-FDL-PP-DI-00038-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004093		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench T064079 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5	37	123	37	73	122.2
6	37	123	37	73	122.2
7	37	123	37	73	122.2
8	37	123	37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

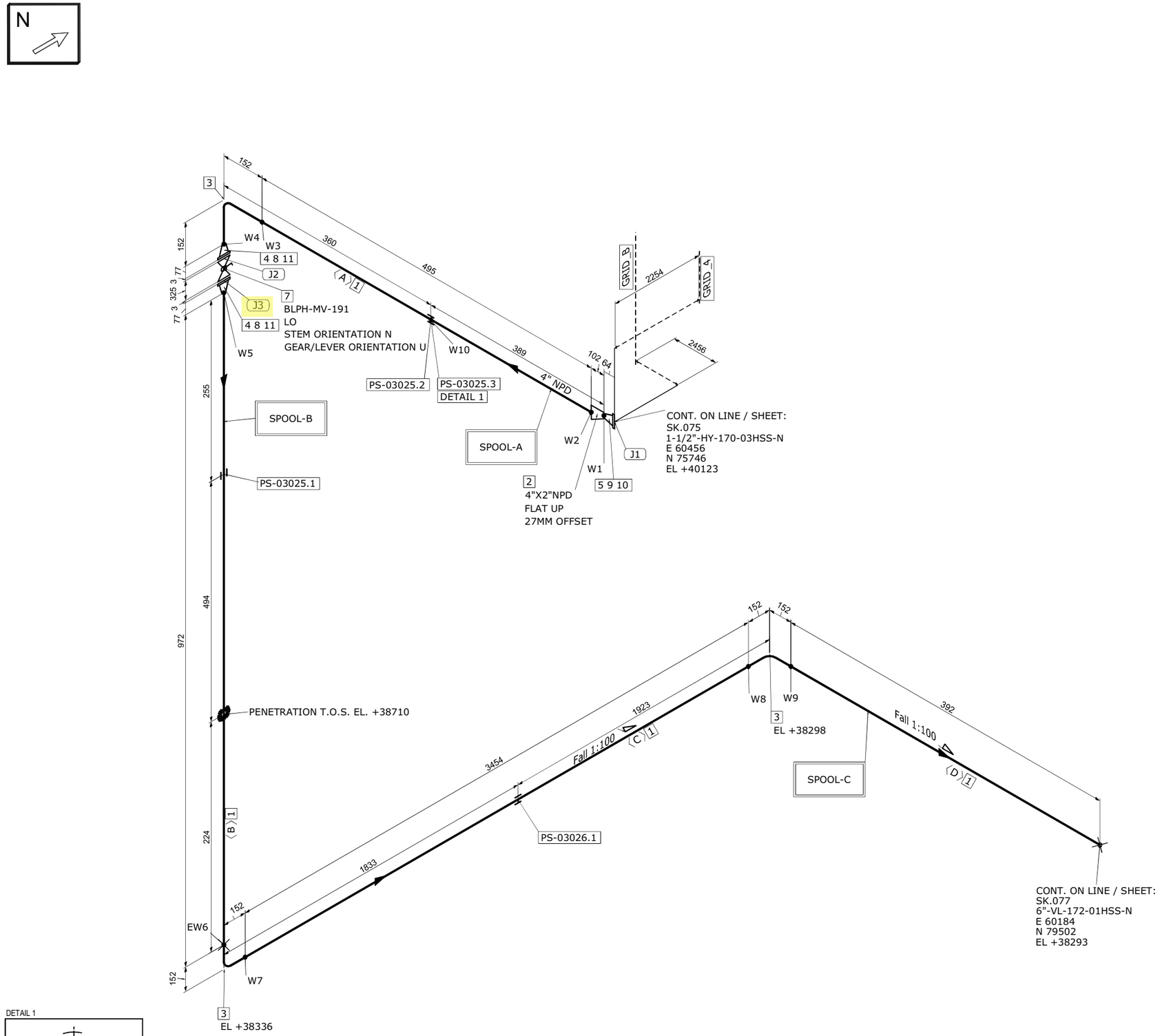
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

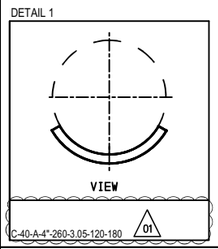
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-10	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:49:27.675Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-10T07:15:24.424Z	



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.3M	45.1
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.3
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	153.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	972	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03025.2
PS-03025.3
PS-03025.1
PS-03026.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.2
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-112-01HSS-N

SK.038

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	03-09-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00038	SHEET / OF	1/1
				REV.	01

LINE DATA

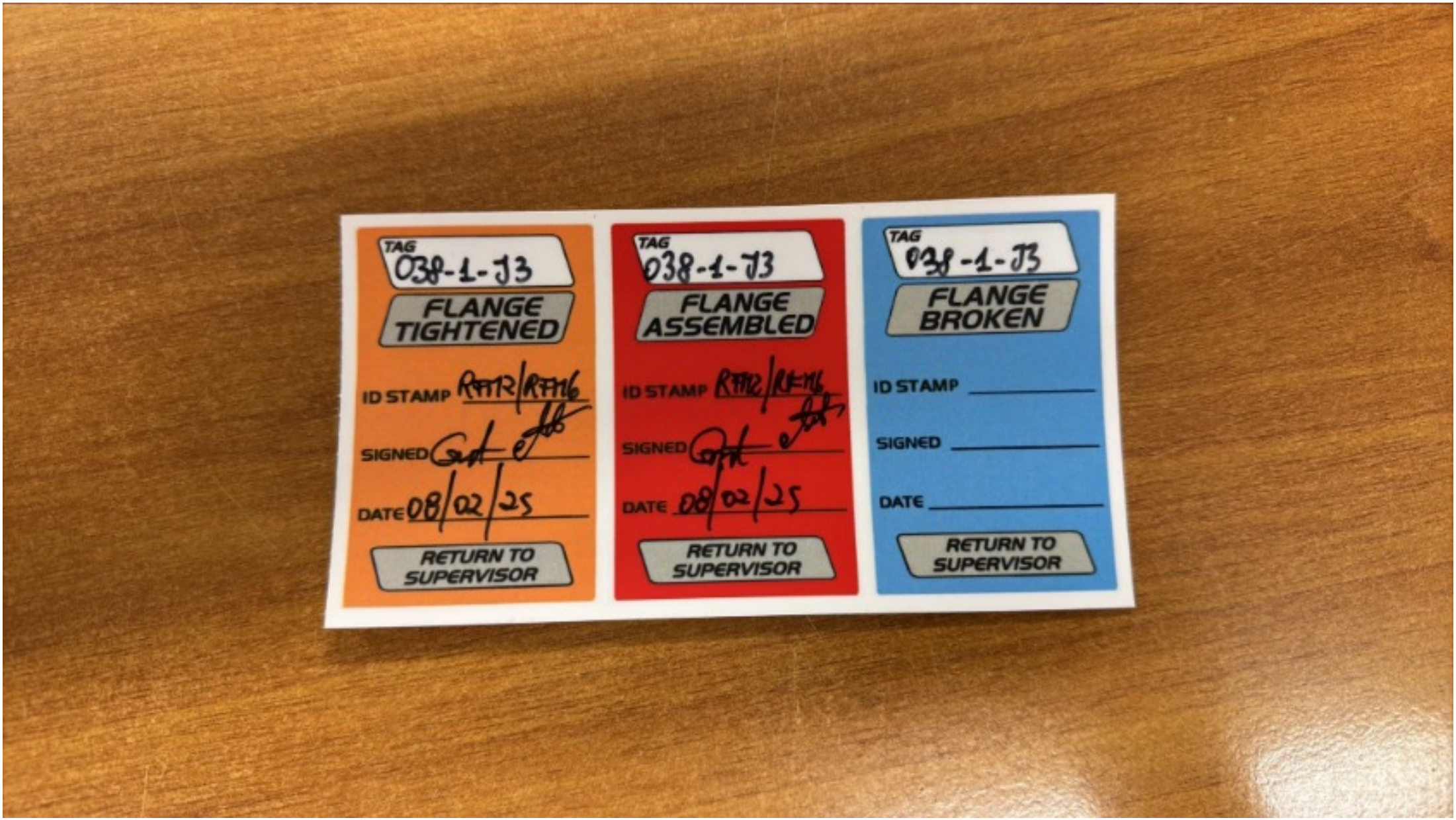
NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80017
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

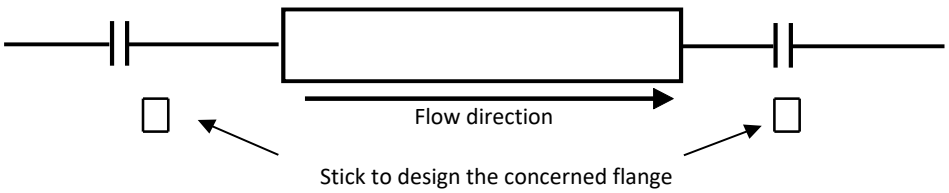
MASTER


TAG
038-1-J3
FLANGE TIGHTENED
ID STAMP RHR/RHG
SIGNED
DATE 08/02/25
RETURN TO SUPERVISOR
TAG
038-1-J3
FLANGE ASSEMBLED
ID STAMP RHR/RHG
SIGNED
DATE 08/02/25
RETURN TO SUPERVISOR
TAG
038-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	039-1-J1	: Joint 039-1-J1			Dwg	123A90-FDL-PP-DI-00039-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004094		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5			37	73	122.2
6			37	73	122.2
7			37	73	122.2
8			37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

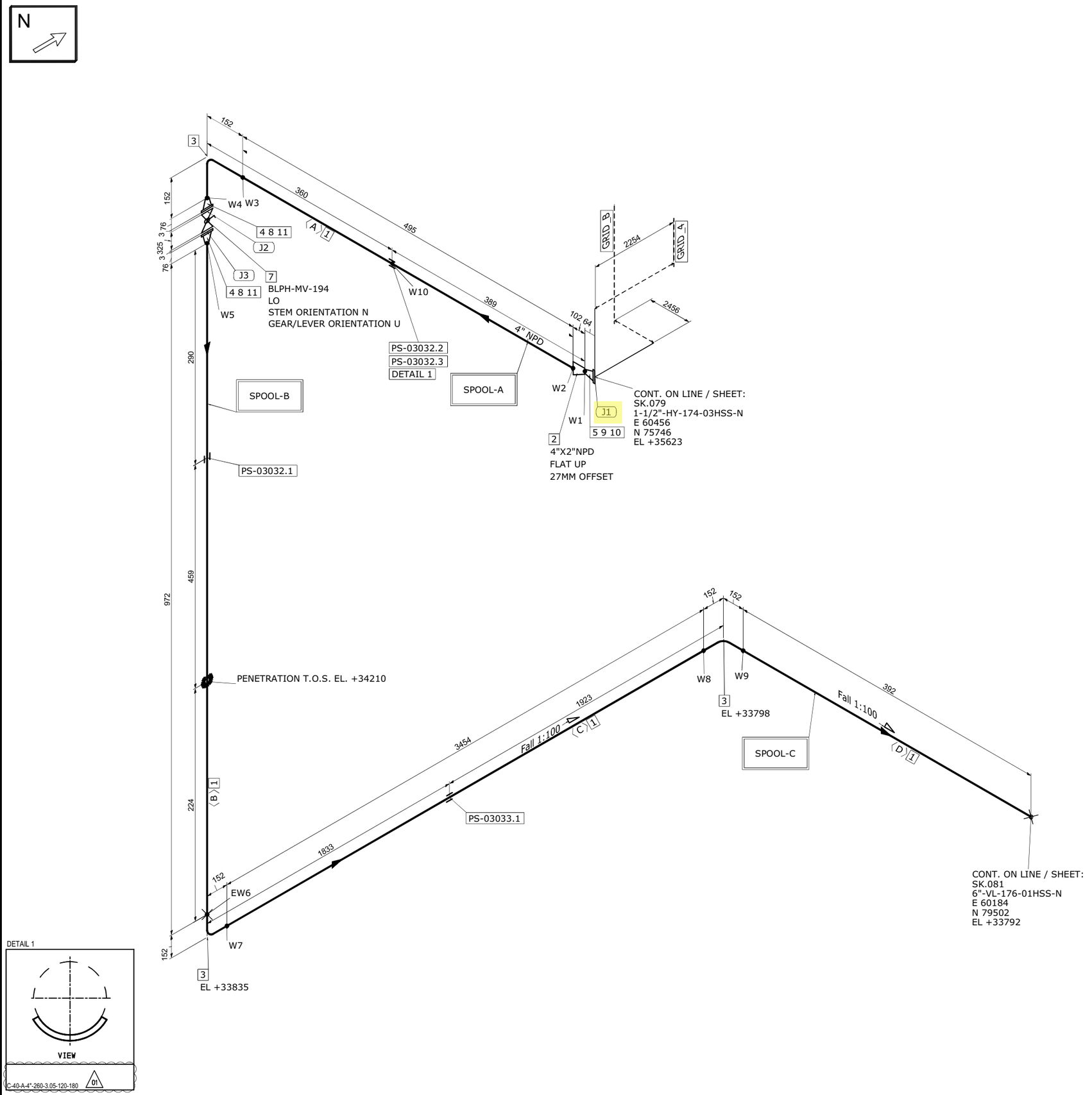
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-17	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:49:42.545Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-17T16:16:54.824Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.3M	45.1
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.3
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	153.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	972	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03032.2
PS-03032.3
PS-03032.1
PS-03033.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.2
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-113-01HSS-N

SK.039

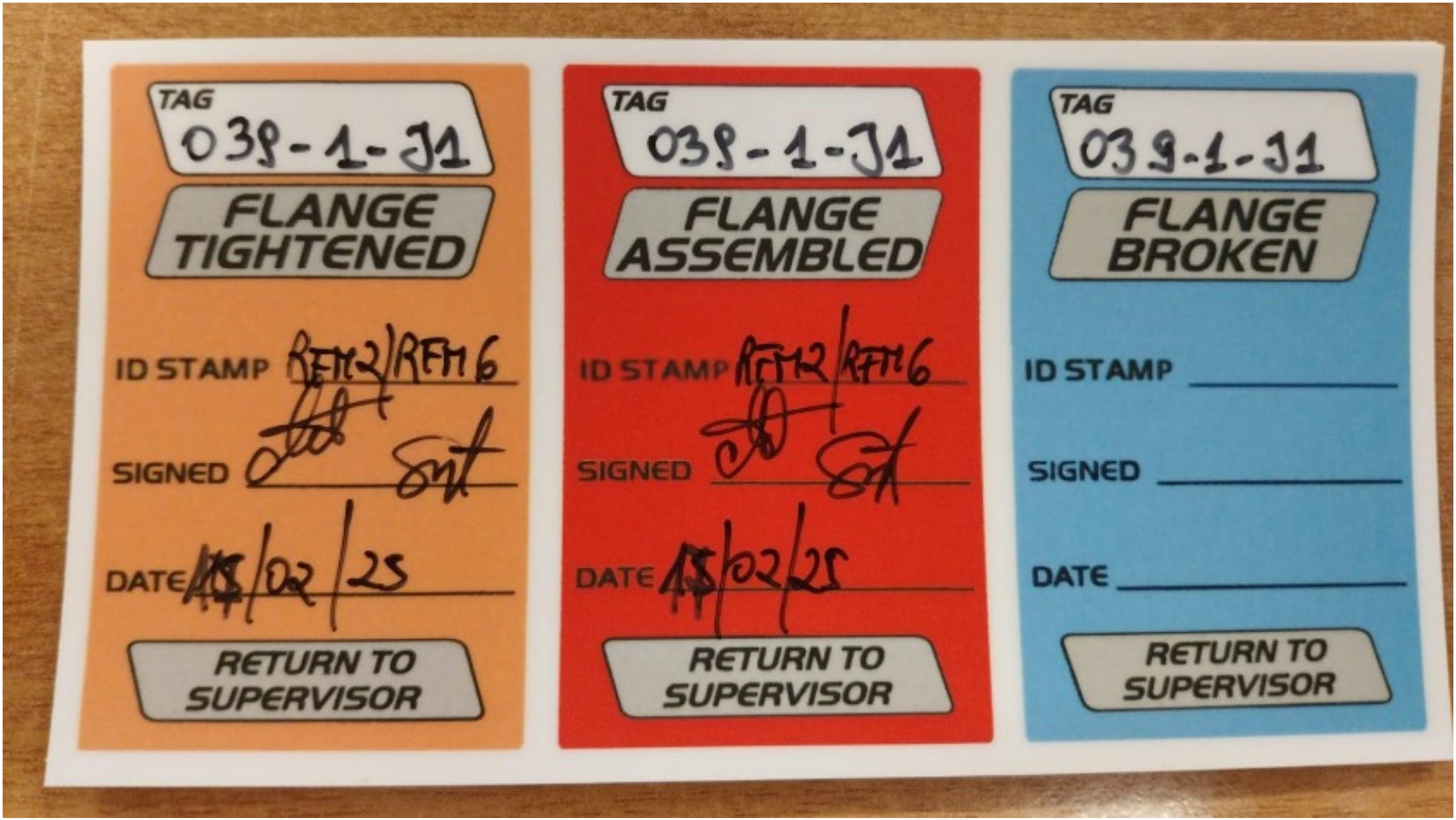
LINE DATA								
NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB.	MEDIUM Water		

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80018
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE	03-09-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00039		SHEET / OF	1/1
			REV.	01

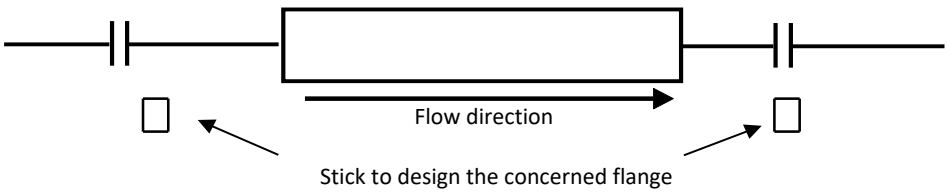

TAG
038-1-J1
FLANGE TIGHTENED
ID STAMP RFM2/RFM6
SIGNED
DATE 15/02/25
RETURN TO SUPERVISOR
TAG
038-1-J1
FLANGE ASSEMBLED
ID STAMP RFM2/RFM6
SIGNED
DATE 15/02/25
RETURN TO SUPERVISOR
TAG
039-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	039-1-J2	: Joint 039-1-J2			Dwg	123A90-FDL-PP-DI-00039-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004095	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27

Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5	37	123	37	73	122.2
6	37	123	37	73	122.2
7	37	123	37	73	122.2
8	37	123	37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

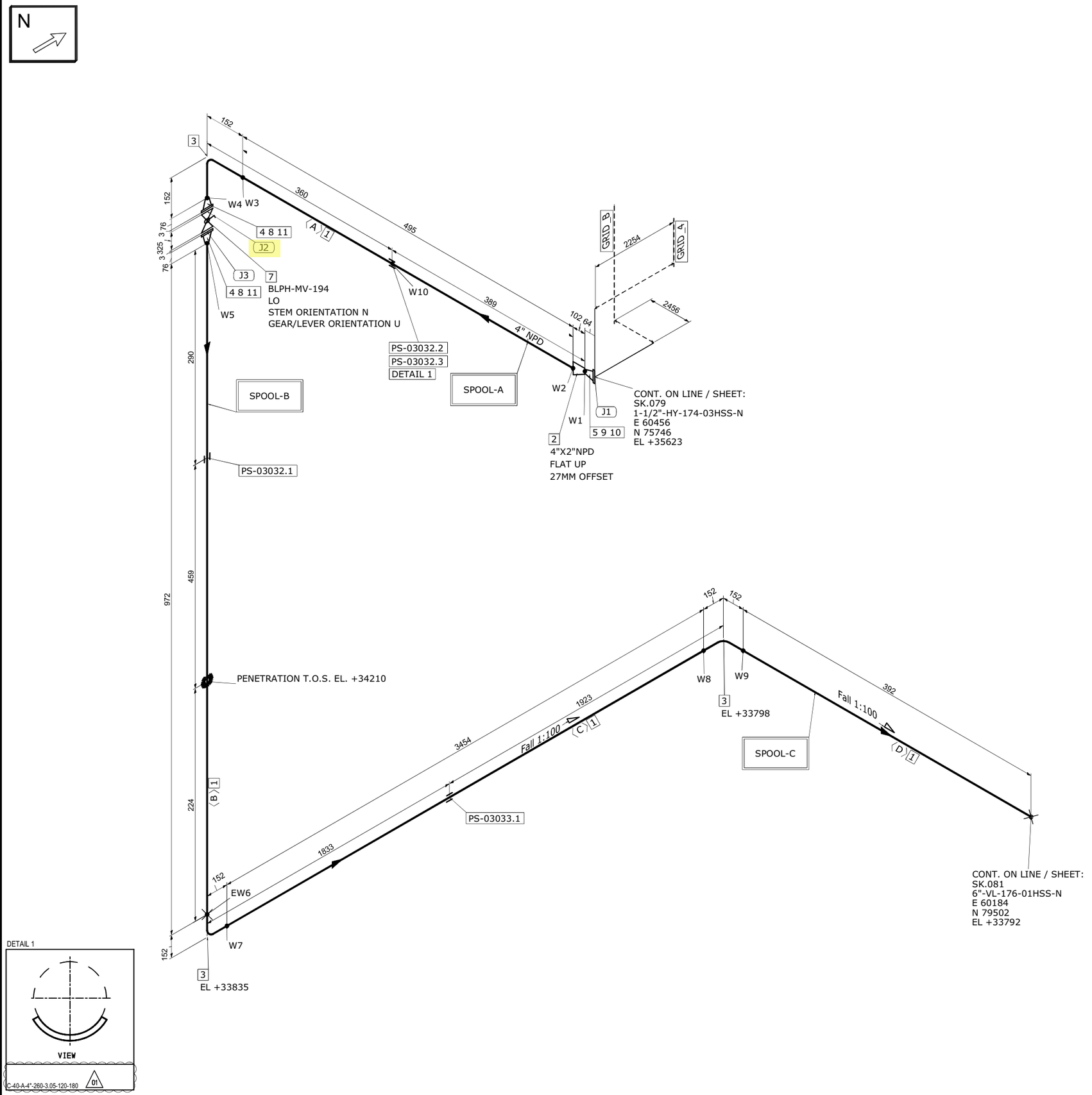
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-17	
Signature	Digitaly signed by Emanuele Delfino 2025-01-25T05:49:54.497Z	Digitaly signed by Massimo Bruschi 2025-02-17T16:16:49.702Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.3M	45.1
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.3
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	153.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	972	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03032.2
PS-03032.3
PS-03032.1
PS-03033.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.2
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-113-01HSS-N

SK.039

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB.	MEDIUM Water	

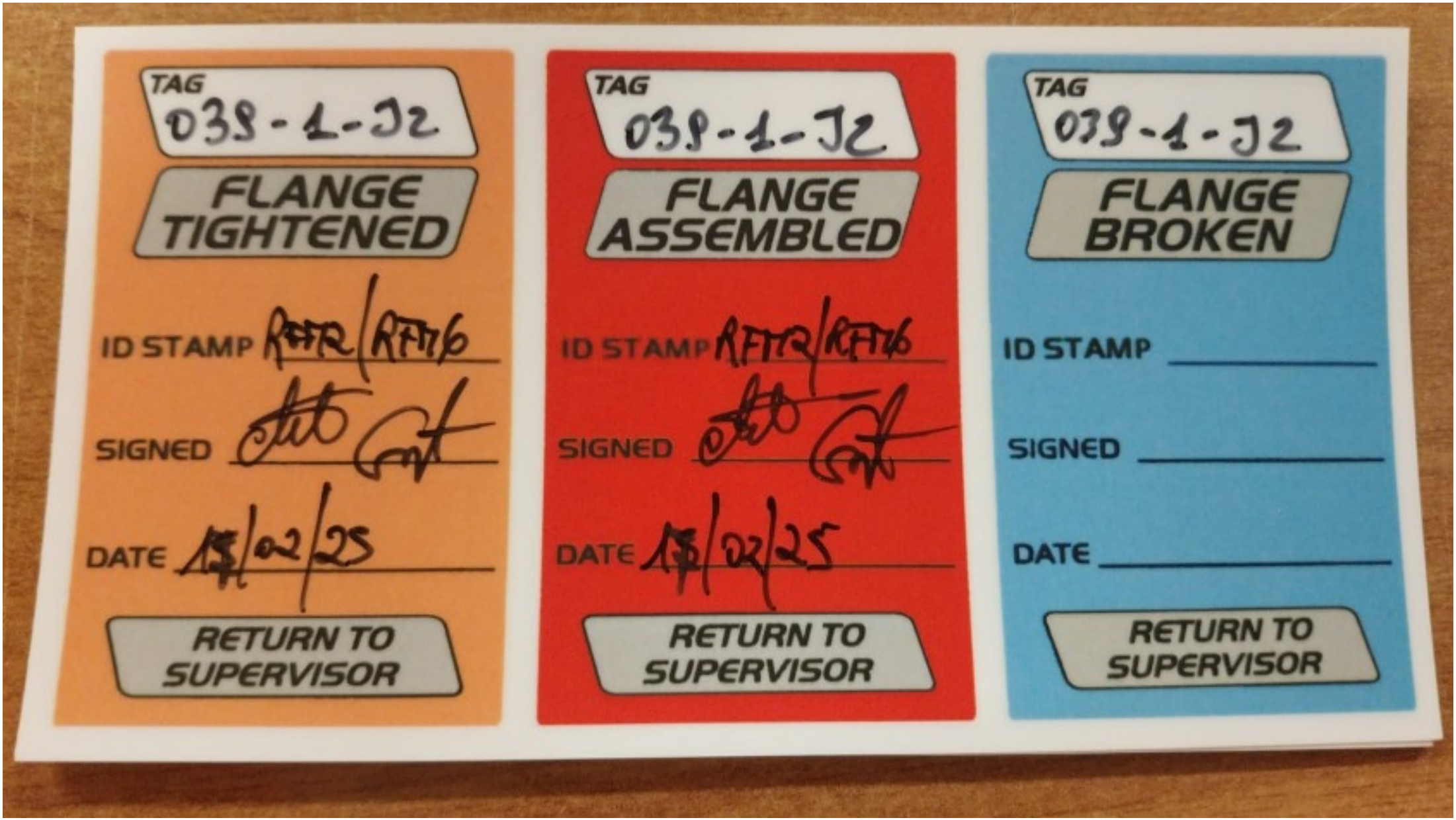
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80018
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

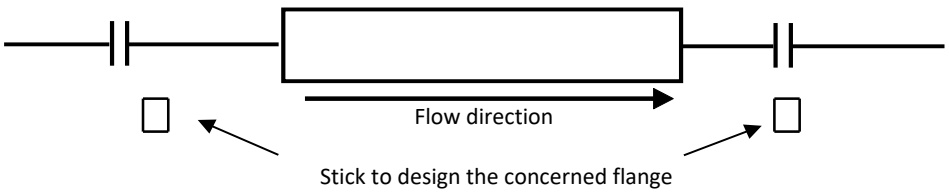
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	03-09-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00039
SHEET / OF	1/1
REV.	01


TAG
038-1-J2
FLANGE TIGHTENED
ID STAMP RFT2/RFT6
SIGNED
DATE 15/02/25
RETURN TO SUPERVISOR
TAG
038-1-J2
FLANGE ASSEMBLED
ID STAMP RFT2/RFT6
SIGNED
DATE 15/02/25
RETURN TO SUPERVISOR
TAG
038-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	039-1-J3	: Joint 039-1-J3			Dwg	123A90-FDL-PP-DI-00039-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004096		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5	37	123	37	73	122.2
6	37	123	37	73	122.2
7	37	123	37	73	122.2
8	37	123	37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

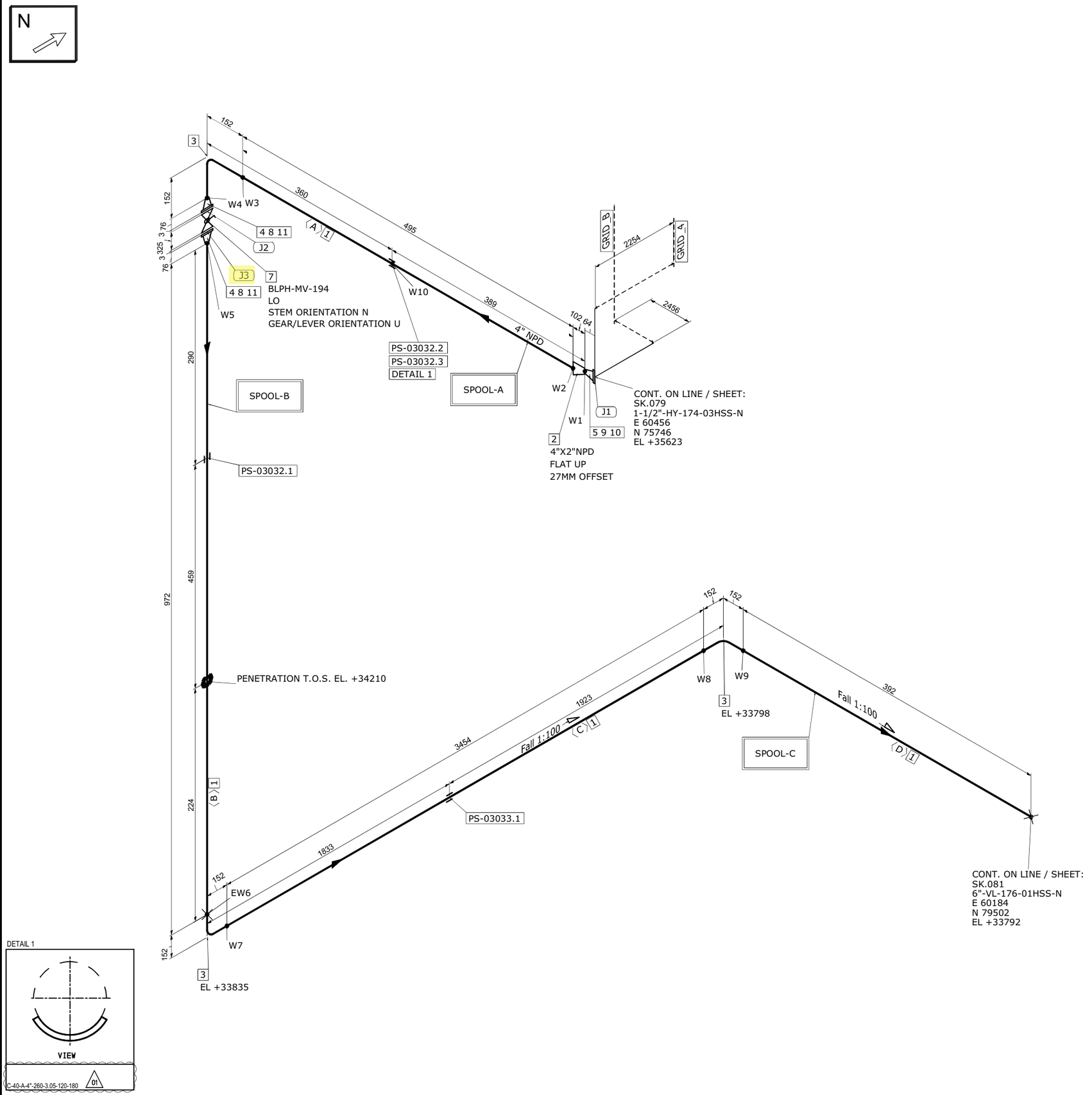
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-17	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:50:07.226Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-17T16:16:45.135Z	



DETAIL 1

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.3M	45.1
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.3
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	153.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	972	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03032.2
PS-03032.3
PS-03032.1
PS-03033.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.2
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-113-01HSS-N

SK.039

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB.	MEDIUM Water	

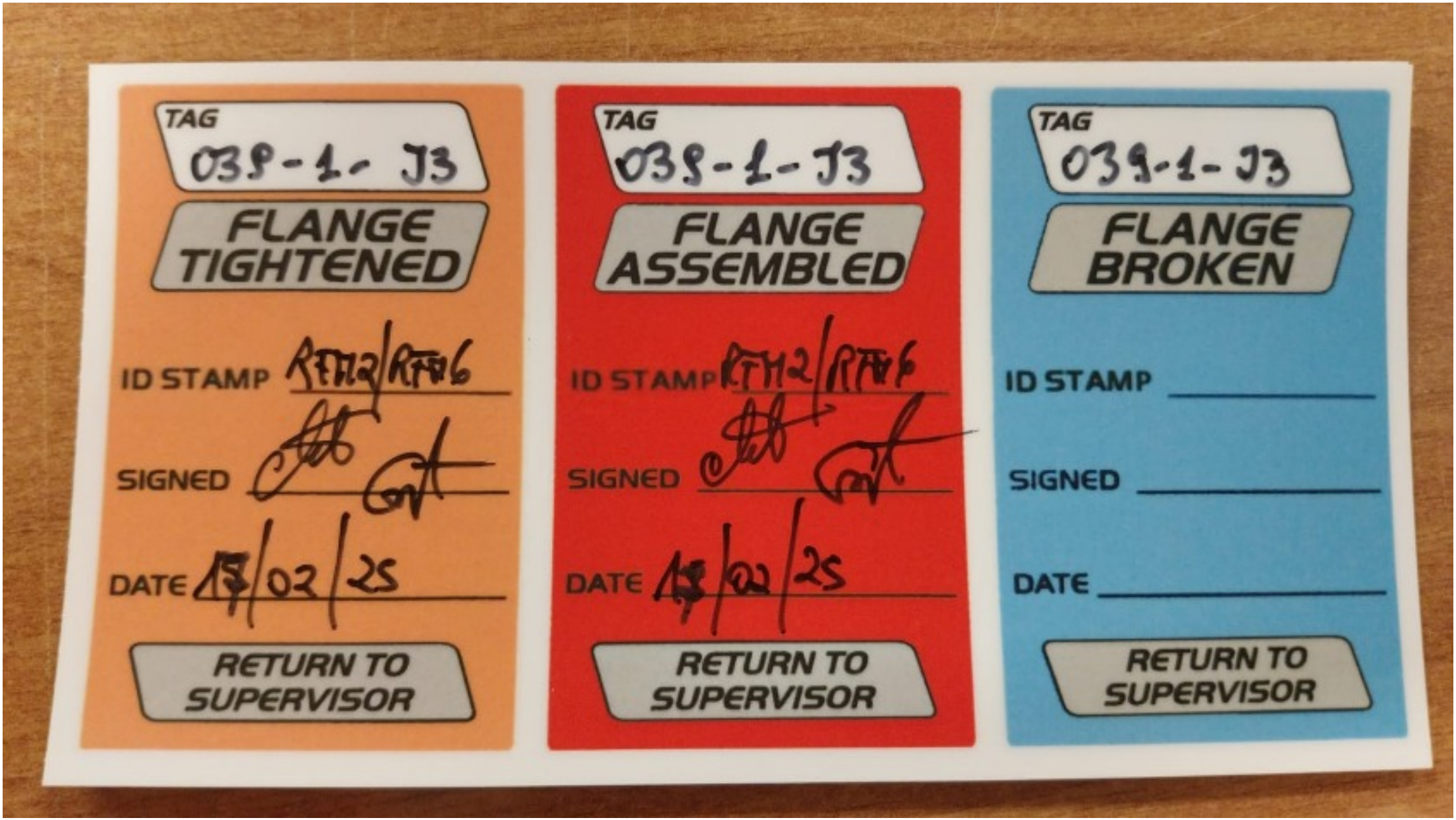
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80018
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

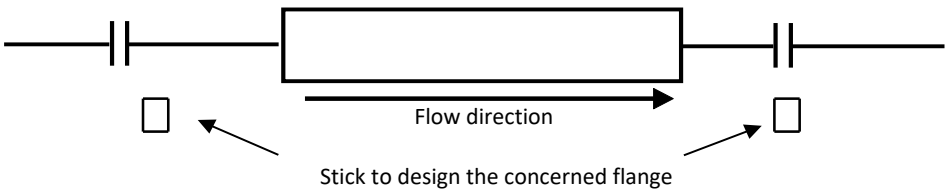
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	03-09-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00039
SHEET / OF	1/1
REV.	01


TAG
038-1-J3
FLANGE TIGHTENED
ID STAMP RTH2/RTH6
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
038-1-J3
FLANGE ASSEMBLED
ID STAMP RTH2/RTH6
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
039-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	040-1-J1	: Joint 040-1-J1			Dwg	123A90-FDL-PP-DI-00040-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004097	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5			37	73	122.2
6			37	73	122.2
7			37	73	122.2
8			37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

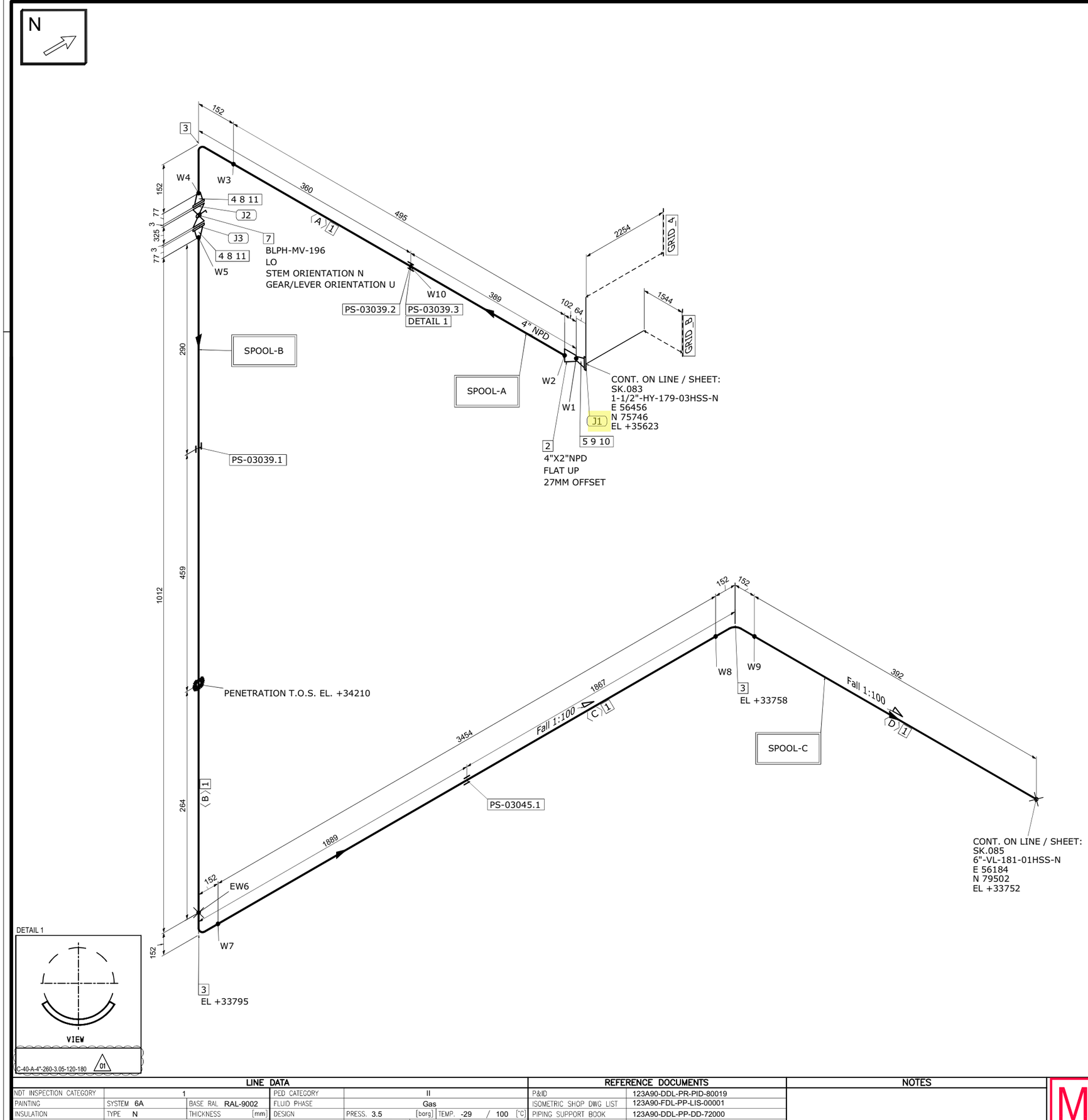
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:50:19.265Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:24:45.002Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.4M	45.5
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.8
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	154.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	1012	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03039.2
PS-03039.3
PS-03039.1
PS-03045.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.5
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-114-01HSS-N

SK.040

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	03-09-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00040			SHEET / OF	1/1	REV.	01

LINE DATA

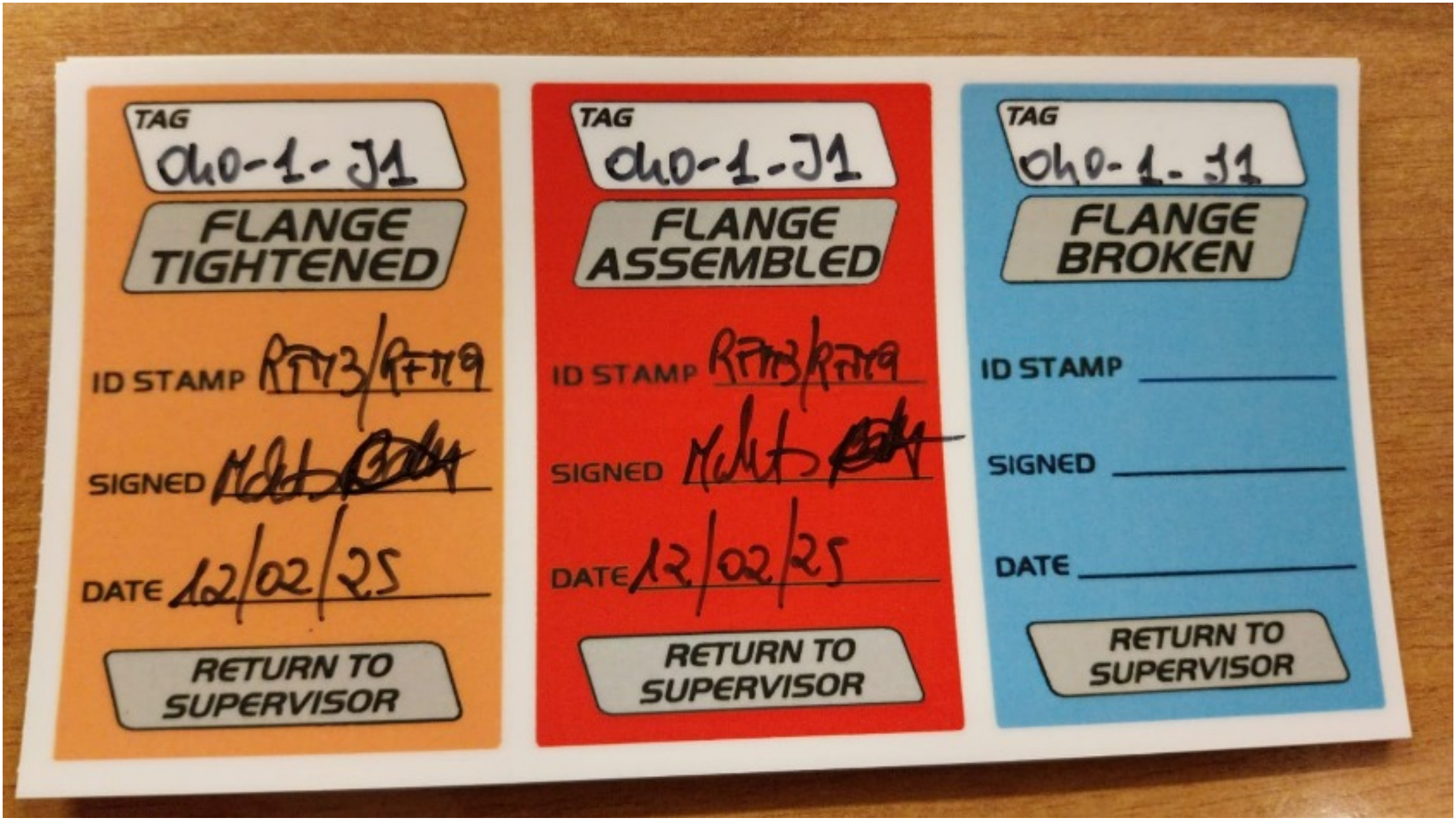
NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

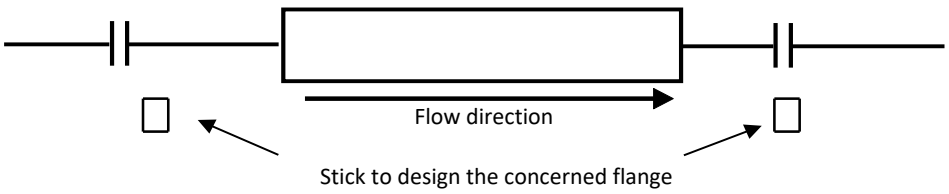
MASTER


TAG
CH0-1-J1
FLANGE TIGHTENED
ID STAMP RT13/RT19
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
CH0-1-J1
FLANGE ASSEMBLED
ID STAMP RT13/RT19
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
CH0-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	040-1-J2	: Joint 040-1-J2			Dwg	123A90-FDL-PP-DI-00040-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004098		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5	37	123	37	73	122.2
6	37	123	37	73	122.2
7	37	123	37	73	122.2
8	37	123	37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

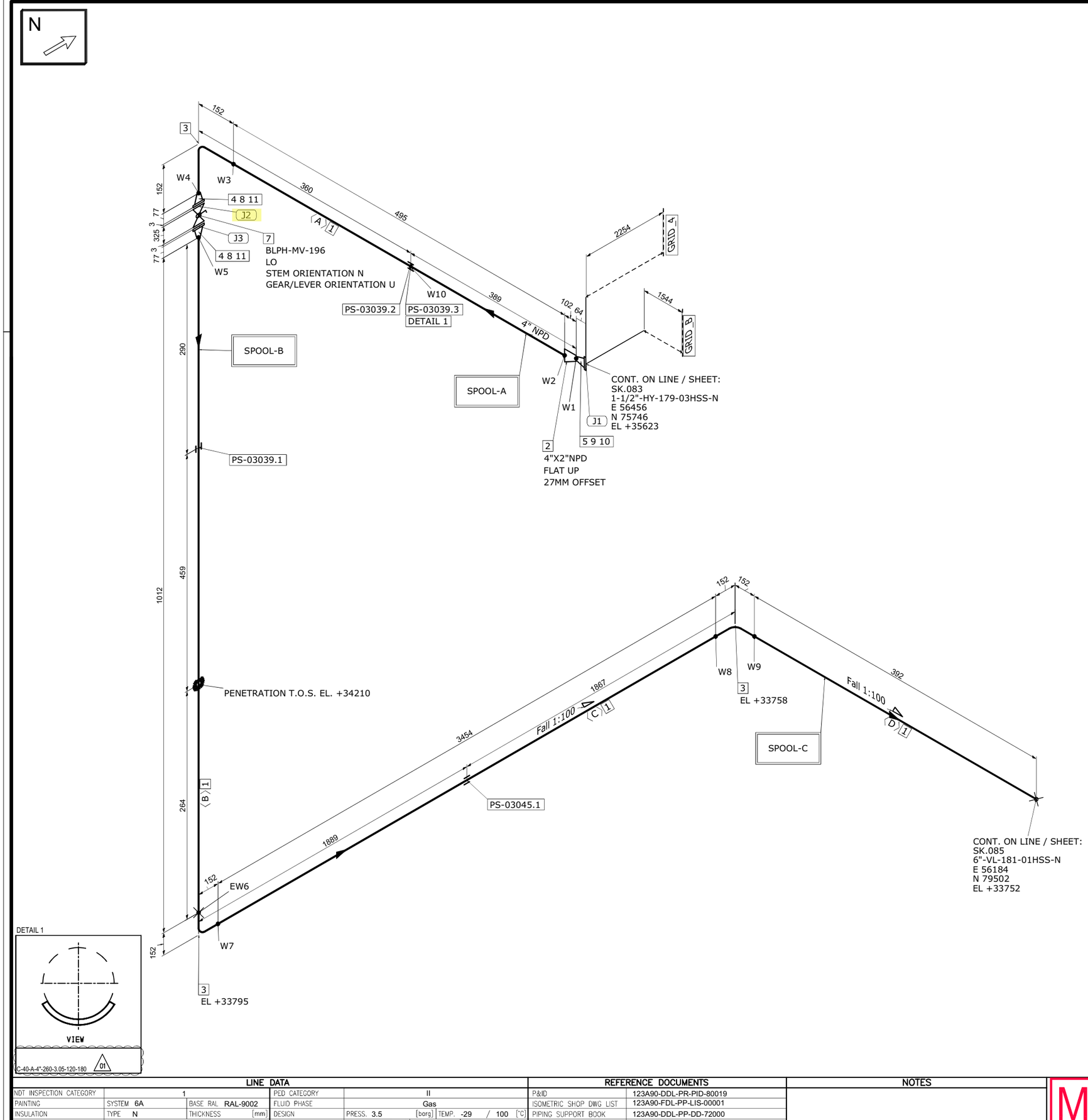
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:50:31.633Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:24:35.364Z	



DETAIL 1

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.4M	45.5
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.8
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	154.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	1012	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03039.2
PS-03039.3
PS-03039.1
PS-03045.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.5
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-114-01HSS-N

SK.040

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT
APPROVED	LM	DATE	03-09-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00040
SHEET / OF	1/1	REV.	01

LINE DATA

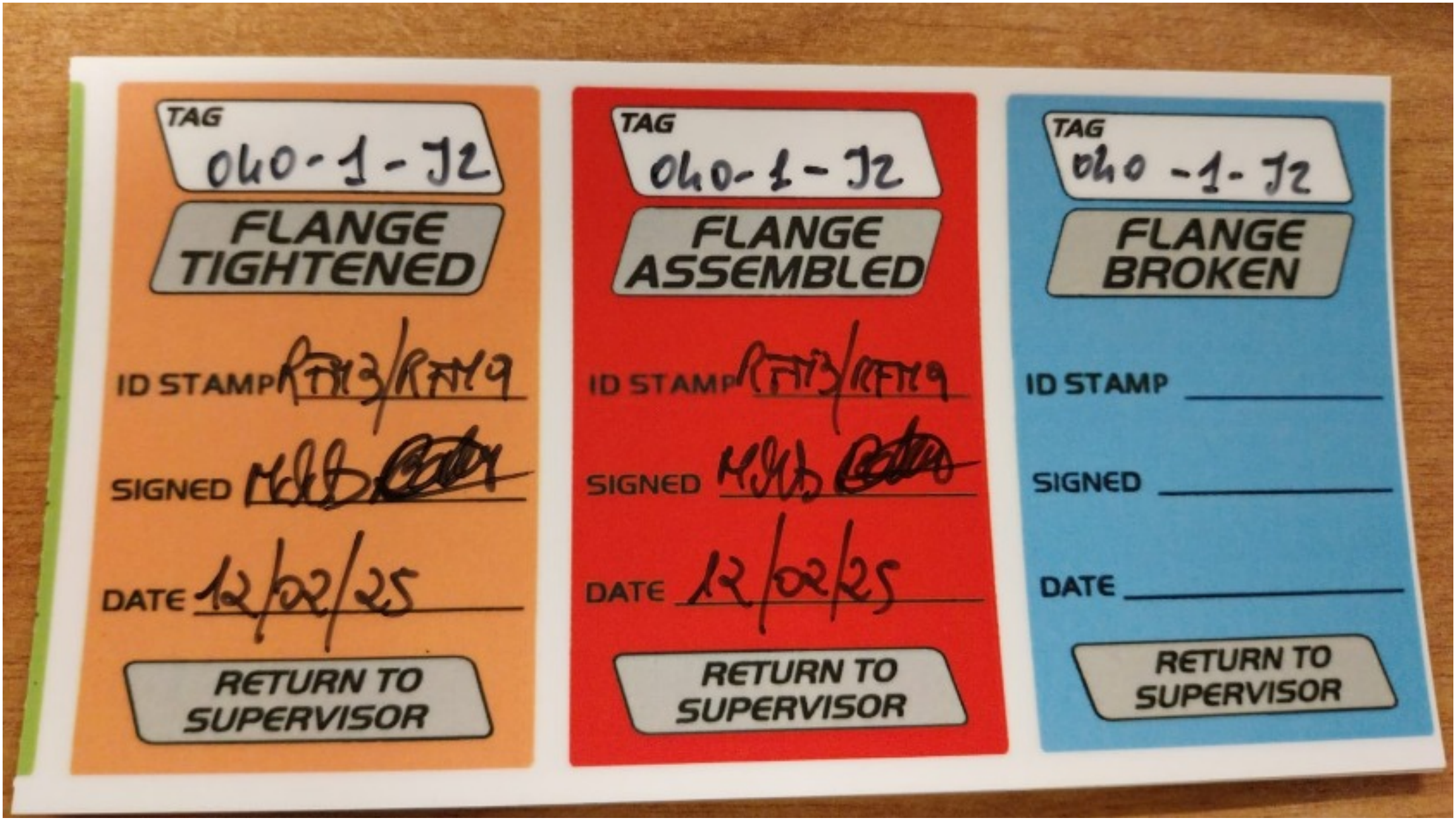
NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

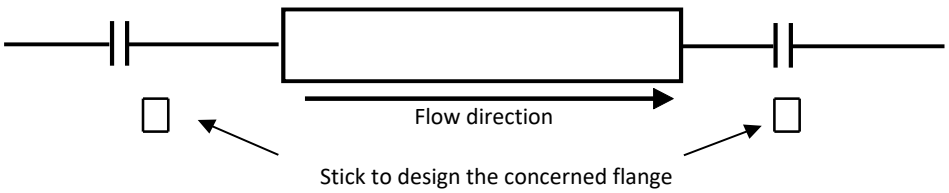
MASTER


TAG
040-1-J2
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
040-1-J2
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
040-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	040-1-J3	: Joint 040-1-J3			Dwg	123A90-FDL-PP-DI-00040-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004099		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5	37	123	37	73	122.2
6	37	123	37	73	122.2
7	37	123	37	73	122.2
8	37	123	37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

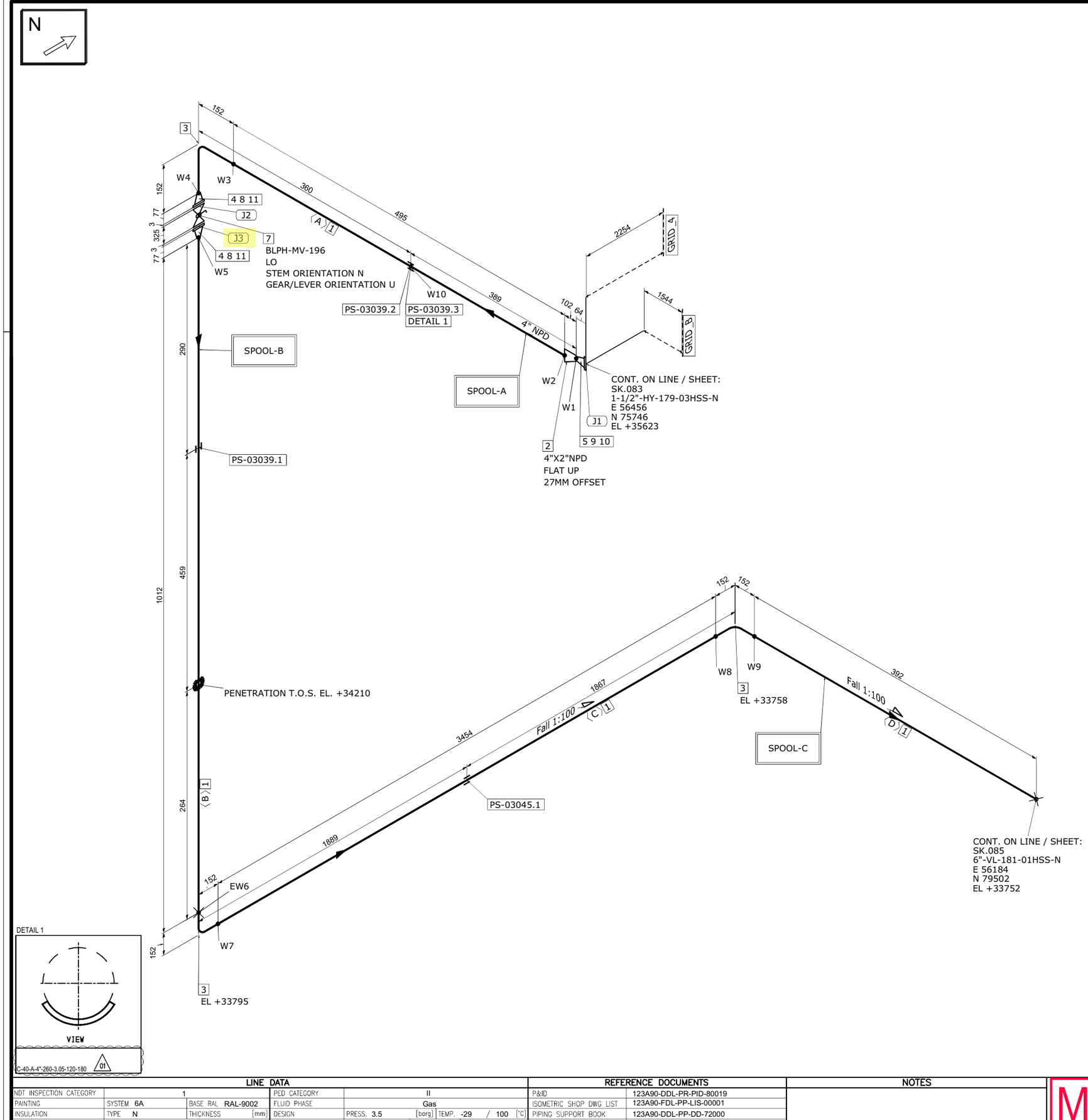
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:50:45.875Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:24:23.886Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.4M	45.5
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
8	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
9	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
10	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	68.8
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	154.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	495	BEVEL	BEVEL
B	4	1012	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	392	BEVEL	BEVEL

SUPPORT LIST

PS-03039.2
PS-03039.3
PS-03039.1
PS-03045.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	16.7
B	4	15.5
C	12	36.7
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-114-01HSS-N

SK.040

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	03-09-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00040			SHEET / OF	1/1	REV.	01

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

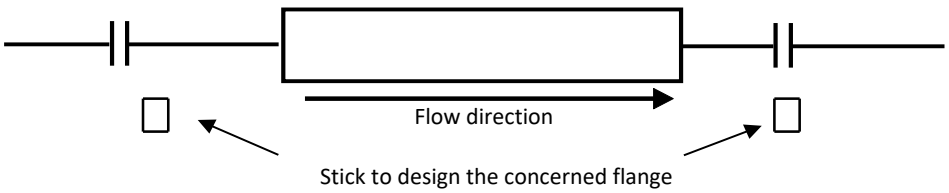
MASTER


TAG
OH0-1-J3
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE
12/02/25
RETURN TO SUPERVISOR
TAG
OH0-1-J3
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE
12/02/25
RETURN TO SUPERVISOR
TAG
OH0-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	041-1-J1	: Joint 041-1-J1			Dwg	123A90-FDL-PP-DI-00041-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004100		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5			37	73	122.2
6			37	73	122.2
7			37	73	122.2
8			37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

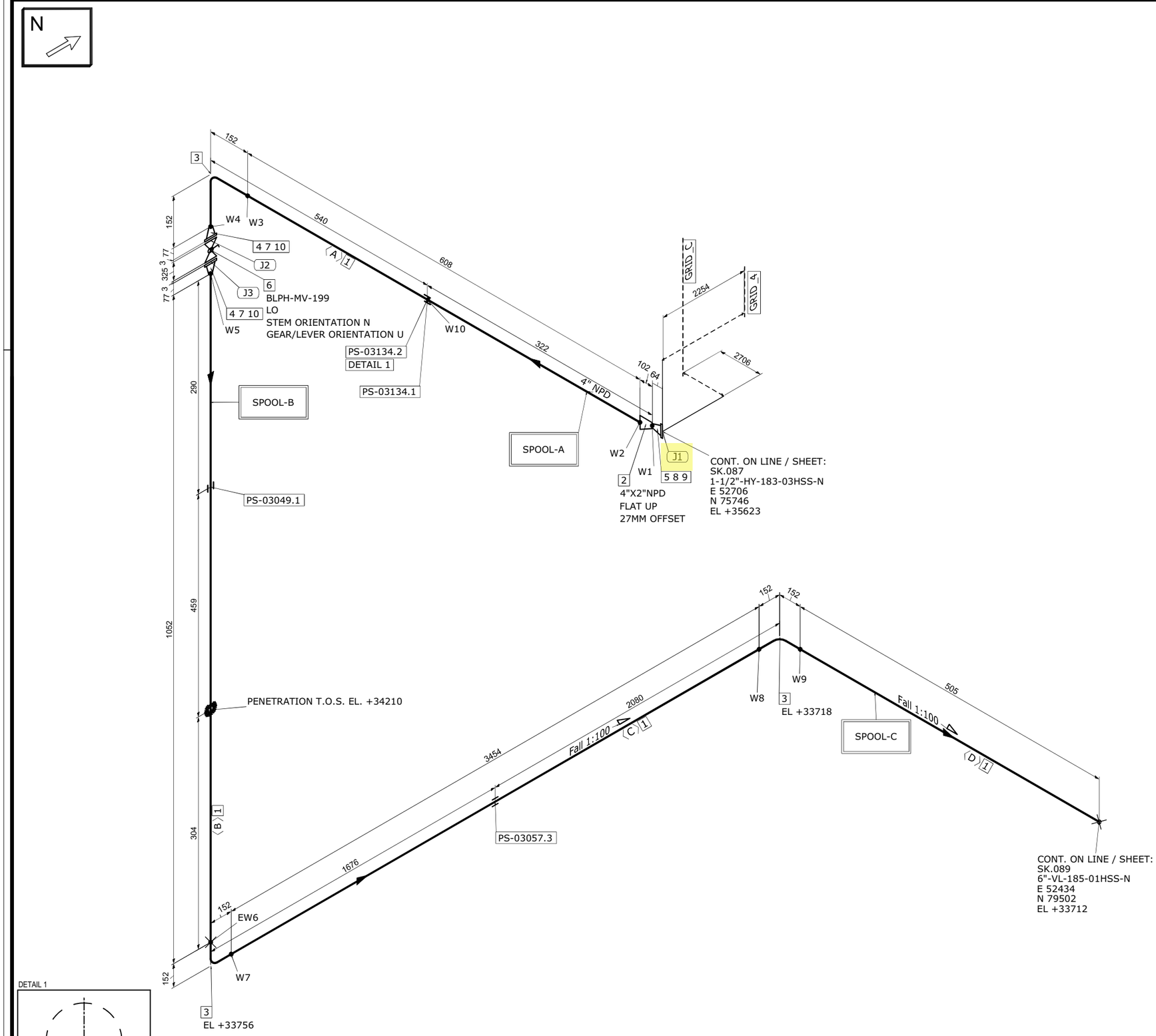
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:50:58.955Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-14T07:35:22.209Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.6M	47.7
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
7	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
8	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	71.0
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	156.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	608	BEVEL	BEVEL
B	4	1052	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	505	BEVEL	BEVEL

SUPPORT LIST

PS-03134.1
PS-03134.2
PS-03049.1
PS-03057.3

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	17.7
B	4	15.8
C	12	37.6
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-115-01HSS-N

SK.041

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-09-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00041 | SHEET / OF: 1/1 | REV.: 01

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80020
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

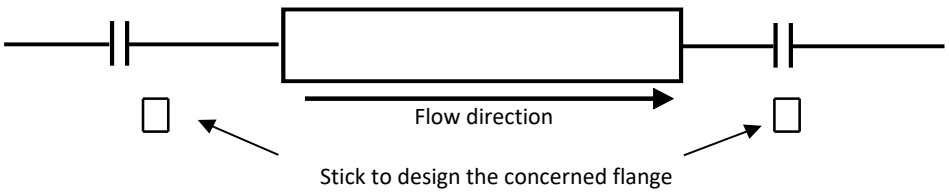
MASTER


TAG
041-1-J1
FLANGE TIGHTENED
ID STAMP RFIR2/RFIR6
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
041-1-J1
FLANGE ASSEMBLED
ID STAMP RFIR2/RFIR6
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
041-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	041-1-J2	: Joint 041-1-J2			Dwg	123A90-FDL-PP-DI-00041-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004101		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5	37	123	37	73	122.2
6	37	123	37	73	122.2
7	37	123	37	73	122.2
8	37	123	37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

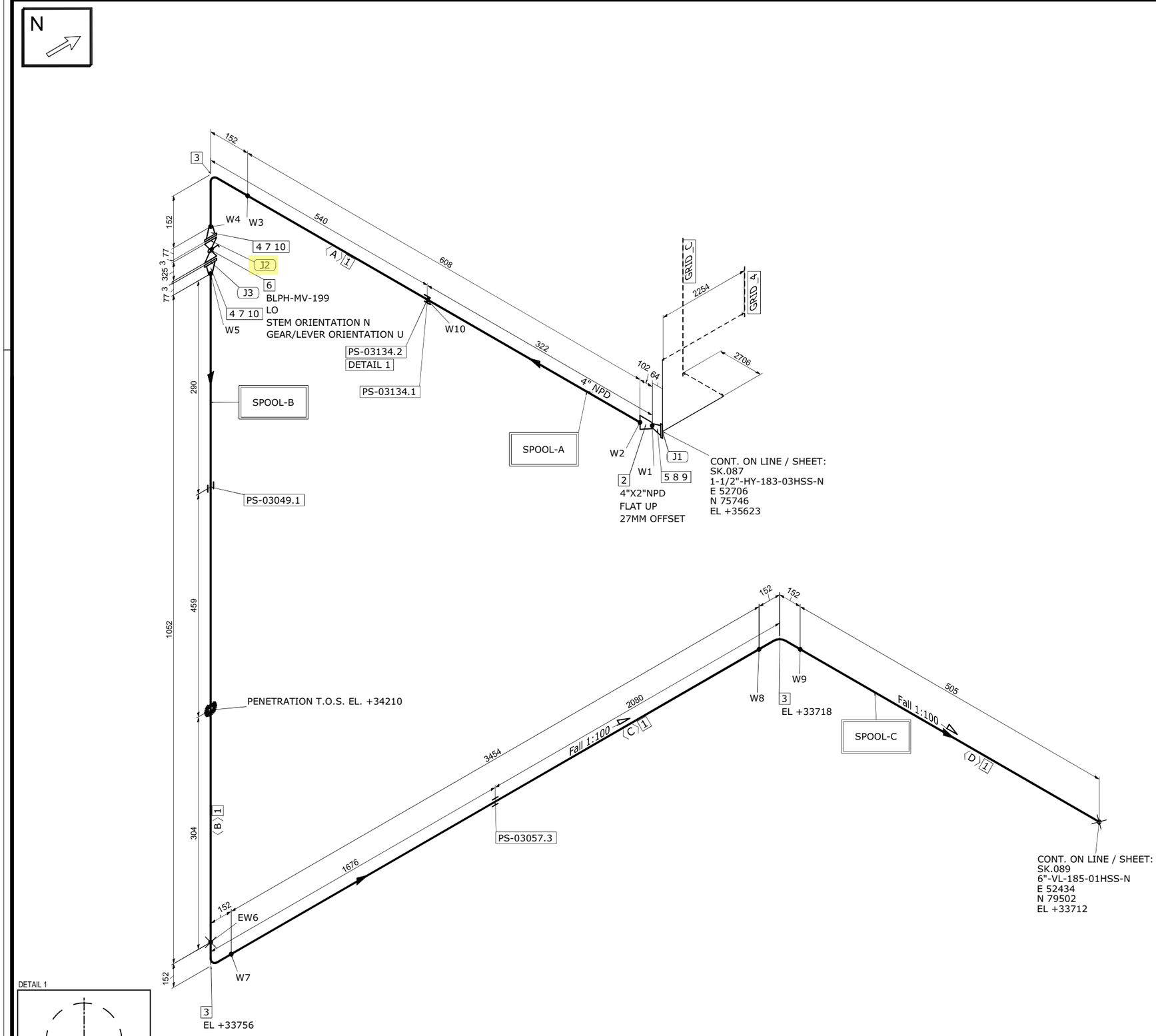
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

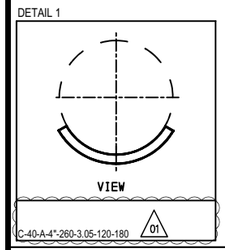
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:51:10.496Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-14T07:34:56.892Z	



DETAIL 1



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.6M	47.7
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
7	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
8	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	71.0
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	156.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	608	BEVEL	BEVEL
B	4	1052	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	505	BEVEL	BEVEL

SUPPORT LIST

PS-03134.1
PS-03134.2
PS-03049.1
PS-03057.3

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	17.7
B	4	15.8
C	12	37.6
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-115-01HSS-N

SK.041

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00041 | SHEET / OF: 1/1 | REV.: 01

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80020
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

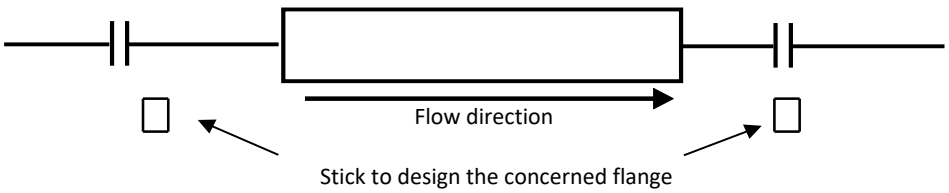
MASTER


TAG
041-1-J2
FLANGE TIGHTENED
ID STAMP RFH2/RFH6
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
041-1-J2
FLANGE ASSEMBLED
ID STAMP RFH2/RFH6
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
041-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	041-1-J3	: Joint 041-1-J3			Dwg	123A90-FDL-PP-DI-00041-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004102		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5	37	123	37	73	122.2
6	37	123	37	73	122.2
7	37	123	37	73	122.2
8	37	123	37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

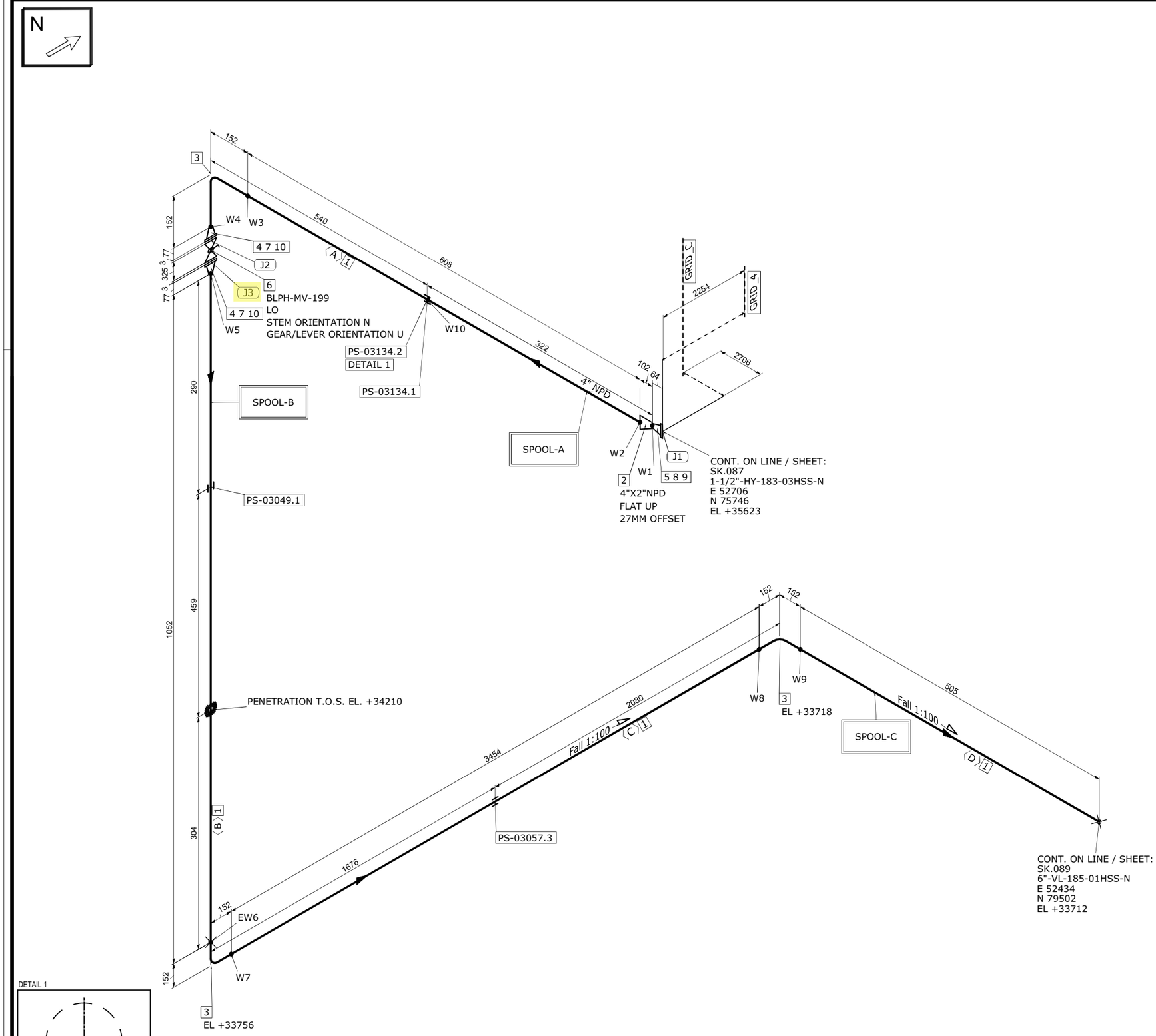
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-02-03	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:51:24.682Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-02-03T16:10:57.199Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	5.6M	47.7
2	4X2	REE0SS02470402	Reducer Eccentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.8
3	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
4	4	FLW0SS00880400	Flange WN ASME B16.5 150LB RF 3,05 FRG ASTM A182 Gr.F316/316L	2	13.8
5	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	1	2.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	4	VLBLNN01450400	Block & Bleed Valve API 6D FLG 150LB RF BA01C01RFHS	1	80.0
7	4	GSW0GK11150400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.5
8	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0

FABRICATION WEIGHT [kg]	71.0
ERECTION WEIGHT [kg]	85.6
OVERALL WEIGHT [kg]	156.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
EW6	4	BW
W7	4	BW
W8	4	BW
W9	4	BW
W10		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	608	BEVEL	BEVEL
B	4	1052	BEVEL	BEVEL
C	4	3454	BEVEL	BEVEL
D	4	505	BEVEL	BEVEL

SUPPORT LIST

PS-03134.1
PS-03134.2
PS-03049.1
PS-03057.3

SPOOL	WELD [inches]	WEIGHT [kg]
A	14	17.7
B	4	15.8
C	12	37.6
MONT	4	85.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 4"-VL-115-01HSS-N

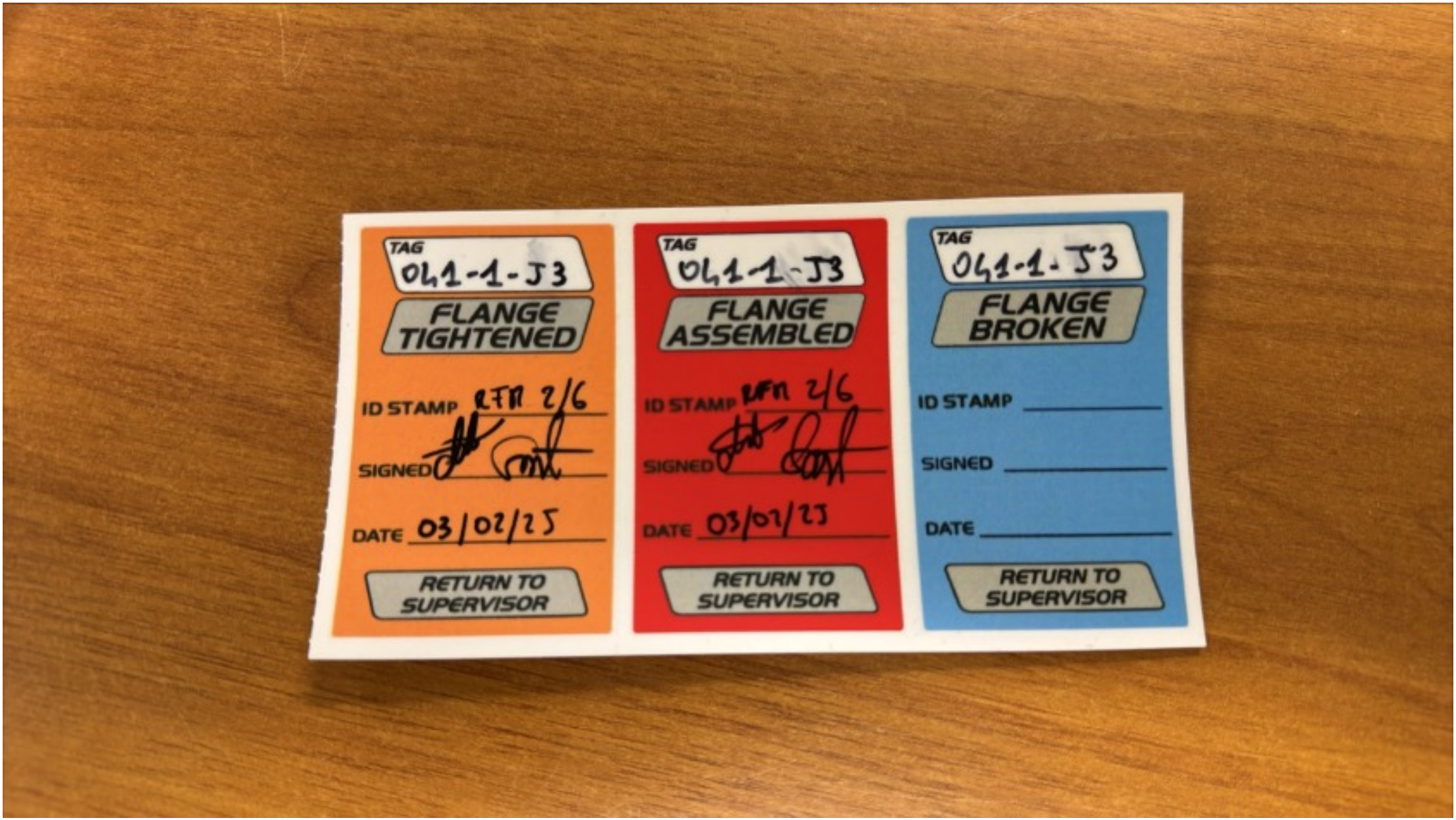
SK.041

NDT INSPECTION CATEGORY	1	PED CATEGORY	II	P&ID	123A90-DDL-PR-PID-80020
PAINTING	SYSTEM 6A / BASE RAL RAL-9002	FLUID PHASE	Gas	ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
INSULATION	TYPE N / THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg] / TEMP. -29 / 100 [°C]	PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
HEAT TRACING	N/A	TEST	PRESS. 5.25 [barg] / TEMP. AMB / MEDIUM Water	PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

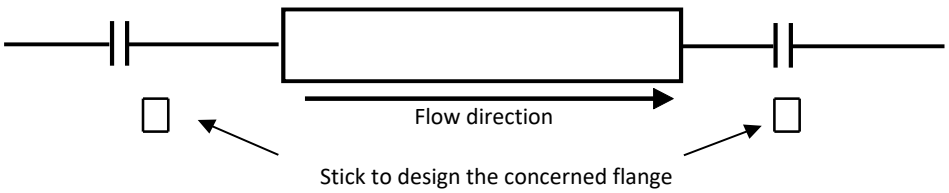
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE	03-09-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00041		SHEET / OF	1/1
			REV.	01


TAG
041-1-J3
FLANGE TIGHTENED
ID STAMP RFN 2/6
SIGNED
DATE 03/02/25
RETURN TO SUPERVISOR
TAG
041-1-J3
FLANGE ASSEMBLED
ID STAMP RFN 2/6
SIGNED
DATE 03/02/25
RETURN TO SUPERVISOR
TAG
041-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	042-2-J1	: Joint 042-2-J1			Dwg	123A90-FDL-PP-DI-00042-02
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004103		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	10"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	V050487
Bolt tensioning/Torquing value	340		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	102	340	102	204	340
2	102	340	102	204	340
3	102	340	102	204	340
4	102	340	102	204	340
5	102	340	102	204	340
6	102	340	102	204	340
7	102	340	102	204	340
8	102	340	102	204	340
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12	102	340	102	204	340
13			102	204	340
14			102	204	340
15			102	204	340
16			102	204	340
17			102	204	340
18			102	204	340
19			102	204	340
20			102	204	340

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

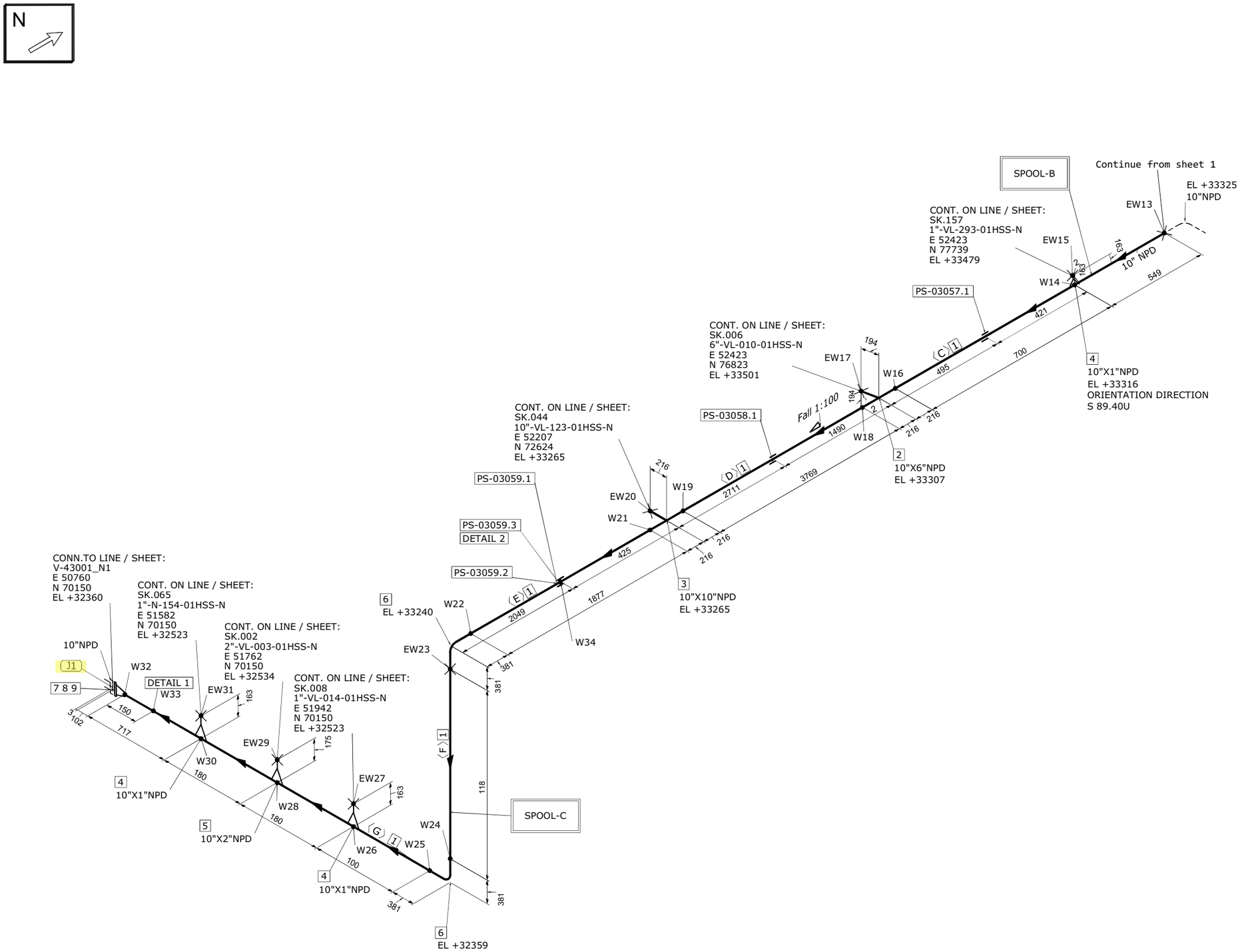
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

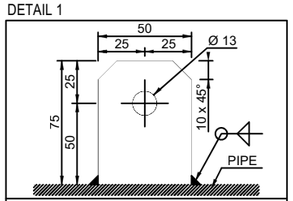
4 **Alignment:** Check alignment according to code. Yes

Comments:

	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-30	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:51:44.424Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-30T14:22:10.247Z	

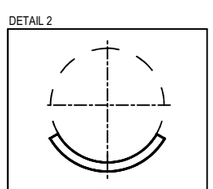


DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

DETAIL 2



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	10	PIPESS01701000	Pipe ASME B36.19M PE 4,19 SML ASTM A312 Gr.TP316/316L	8.2M	231.2
2	10X6	TER0SS03441006	Tee Reducing ASME B16.9 BW 4,19x3,4 WRS ASTM A403 Gr.WP316/316L	1	18.8
3	10X10	TEE0SS00941000	Tee ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	1	18.8
4	10X1	OWELSS02441001	Weldolet MSS SP-97 BW 4,19x3,38 FRG ASTM A182 Gr.F316/316L	3	0.9
5	10X2	OWELSS01971002	Weldolet MSS SP-97 BW 4,19x2,77 FRG ASTM A182 Gr.F316/316L	1	0.8
6	10	E90RSS01151000	90 Deg Elbow Long Radius ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	2	33.9
7	10	FLW0SS03491000	Flange WN ASME B16.5 150LB RF 4,19 FRG ASTM A182 Gr.F316/316L	1	24.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
8	10	SPIKNN00611000	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.6
9	7/8	SB20BO19840500	135 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	8.4

FABRICATION WEIGHT [kg]	328.8
ERECTION WEIGHT [kg]	9.0
OVERALL WEIGHT [kg]	337.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
EW13	10	BW
W14	1	LET
EW15	1	BW
W16	10	BW
EW17	6	BW
W18	10	BW
W19	10	BW
EW20	10	BW
W21	10	BW
W22	10	BW
EW23	10	BW
W24	10	BW
W25	10	BW
W26	1	LET
EW27	1	BW
W28	2	LET
EW29	2	BW
W30	1	LET
EW31	1	BW
W32	10	BW
W33		FW
W34		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
C	10	1249	BEVEL	BEVEL
D	10	3769	BEVEL	BEVEL
E	10	1877	BEVEL	BEVEL
F	10	118	BEVEL	BEVEL
G	10	1177	BEVEL	BEVEL

SUPPORT LIST

PS-03057.1
PS-03058.1
PS-03059.1
PS-03059.2
PS-03059.3

SPOOL	WELD [inches]	WEIGHT [kg]
B	51	249.4
C	34	79.4
MONT	41	9.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	14-10-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 10"-VL-116-01HSS-N

SK.042

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 14-10-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00042	SHEET / OF 2/2	REV. 02

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80028
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

TAG 042-2-J1

FLANGE TIGHTENED

ID STAMP RFM 2/6

SIGNED

DATE 30/01/25

RETURN TO SUPERVISOR

TAG 042-2-J1

FLANGE ASSEMBLED

ID STAMP RFM 2/6

SIGNED

DATE 30/01/25

RETURN TO SUPERVISOR

TAG 042-2-J1

FLANGE BROKEN

ID STAMP

SIGNED

DATE

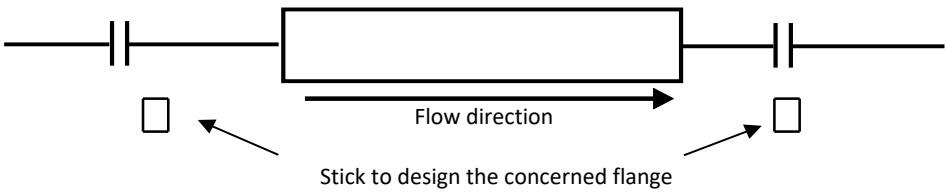
RETURN TO SUPERVISOR

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	043-1-J1	: Joint 043-1-J1			Dwg	123A90-FDL-PP-DI-00043-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004104		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-044

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	10"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	Torque wrench RD00261/V050487
Bolt tensioning/Torquing value	340		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	102	340	102	204	340
2	102	340	102	204	340
3	102	340	102	204	340
4	102	340	102	204	340
5	102	340	102	204	340
6	102	340	102	204	340
7	102	340	102	204	340
8	102	340	102	204	340
9	102	340	102	204	340
10	102	340	102	204	340
11	102	340	102	204	340
12	102	340	102	204	340
13			102	204	340
14			102	204	340
15			102	204	340
16			102	204	340
17			102	204	340
18			102	204	340
19			102	204	340
20			102	204	340

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

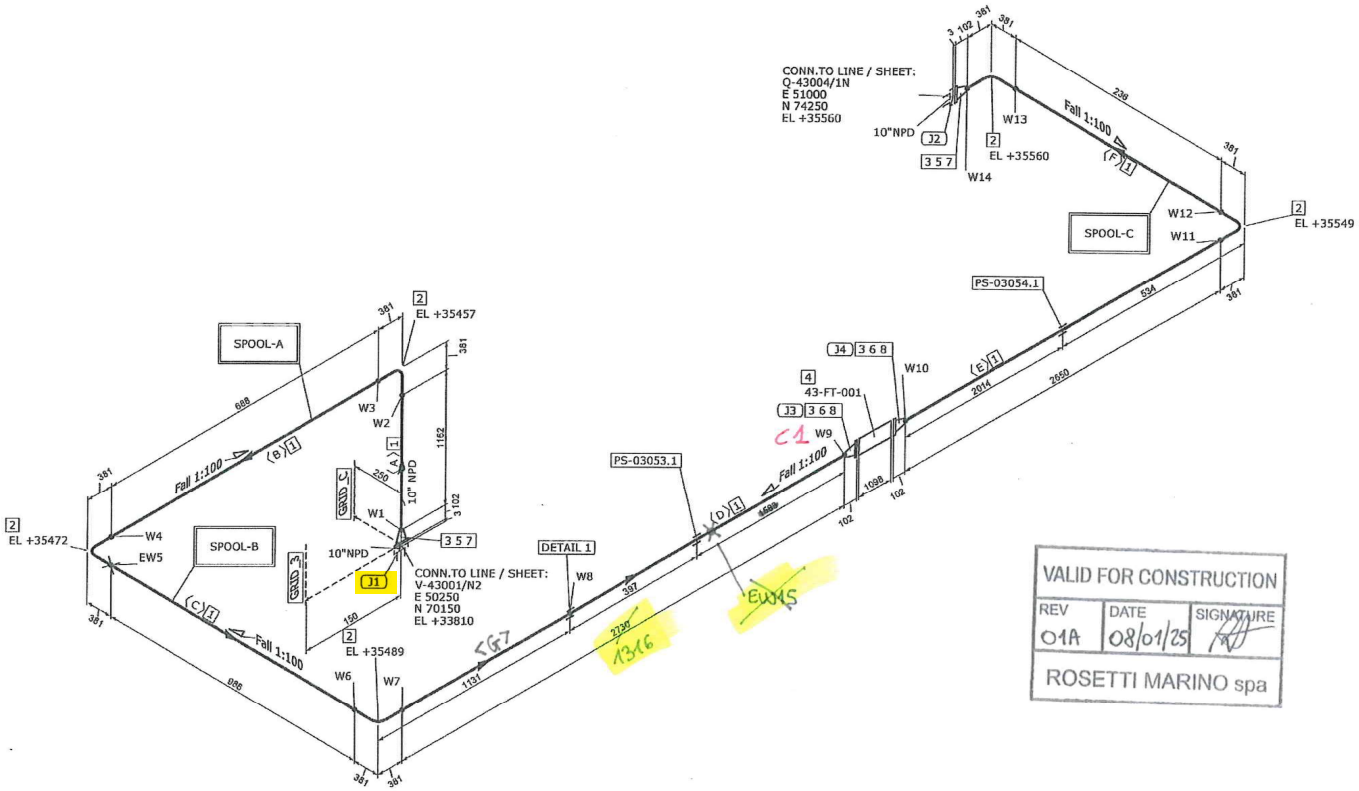
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

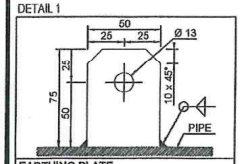
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-17	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:51:55.986Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-17T16:16:40.407Z	



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

VALID FOR CONSTRUCTION

REV	DATE	SIGNATURE
01A	08/01/25	

ROSETTI MARINO spa

ROSETTI MARINO SpA
Lorenzo Maggioli
Piping Engineering Dept.
10/02/2025
~~PRELIMINARY~~
~~TO BE VERIFIED ON SITE~~
VERIFIED ON SITE
CUT WELD W9

Quality Control Dept.
Alberto Cavazzi
Rosetti Marino SpA

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	10	PIPESS01701000	Pipe ASME B36.19M PE 4,19 SML ASTM A312 Gr.TP316/316L	8.5M	238.3
2	10	E90RSS01151000	90 Deg Elbow Long Radius ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	5	84.9
3	10	FLWOSS03491000	Flange WN ASME B16.5 150LB RF 4,19 FRG ASTM A182 Gr.F316/316L	4	97.5

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	10		Flow Meter 150#RF	1	96.0 (01)
5	10	SPIKNN00611000	Insulation Kit Ends as per ASME B16.5 150LB RF	2	1.1
6	10	GSWOGK11181000	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	1.1
7	7/8	SB20BO19840500	135 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24	16.6
8	7/8	SB20BO22250500	120 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24	15.6

FABRICATION WEIGHT [kg]		420.7
ERECTION WEIGHT [kg]		132.6 (01)
OVERALL WEIGHT [kg]		553.3

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	10	BW
W2	10	BW
W3	10	BW
W4	10	BW
EW5	10	BW
W6	10	BW
W7	10	BW
W8		FW
W9	10	BW
W10	10	BW
W11	10	BW
W12	10	BW
W13	10	BW
W14	10	BW
~~EW15~~	~~10~~	~~BW~~

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	10	1162	BEVEL	BEVEL
B	10	688	BEVEL	BEVEL
C	10	986	BEVEL	BEVEL
~~D~~	~~10~~	~~2730~~	~~BEVEL~~	~~BEVEL~~
E	10	2650	BEVEL	BEVEL
F	10	236	BEVEL	BEVEL
G	10	~~1730~~ 1316	BEV.	BEV.

SUPPORT LIST

PS-03053.1
PS-03054.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	40	110.7
B	30	146.1
C	50	163.6
MONT	~~10~~ 25	(01) 132.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-10-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND — ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 10"-VL-117-01HSS-N
SK.043

CONTRACT NO / TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-10-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00043
SHEET / OF: 1/1
REV.: 01

MASTER

LINE DATA

NDT INSPECTION CATEGORY	I	PED CATEGORY	II		
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas	
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg] TEMP. -29 / 100 [°C]	
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg] TEMP. AMB. MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-00029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

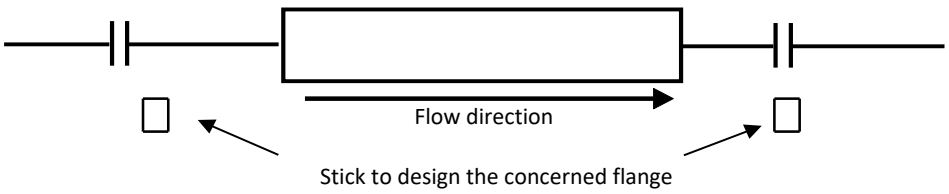
NOTES


TAG
043-1-J1
FLANGE TIGHTENED
ID STAMP RFH2/RFH6
SIGNED
DATE 17/02/25
RETURN TO SUPERVISOR
TAG
043-1-J1
FLANGE ASSEMBLED
ID STAMP RFH2/RFH6
SIGNED
DATE 17/02/25
RETURN TO SUPERVISOR
TAG
043-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	043-1-J2	: Joint 043-1-J2			Dwg	123A90-FDL-PP-DI-00043-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004105		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-044

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	10"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	Torque wrench RD00261/V050487
Bolt tensioning/Torquing value	340		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	102	340	102	204	340
2	102	340	102	204	340
3	102	340	102	204	340
4	102	340	102	204	340
5	102	340	102	204	340
6	102	340	102	204	340
7	102	340	102	204	340
8	102	340	102	204	340
9	102	340	102	204	340
10	102	340	102	204	340
11	102	340	102	204	340
12	102	340	102	204	340
13			102	204	340
14			102	204	340
15			102	204	340
16			102	204	340
17			102	204	340
18			102	204	340
19			102	204	340
20			102	204	340

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

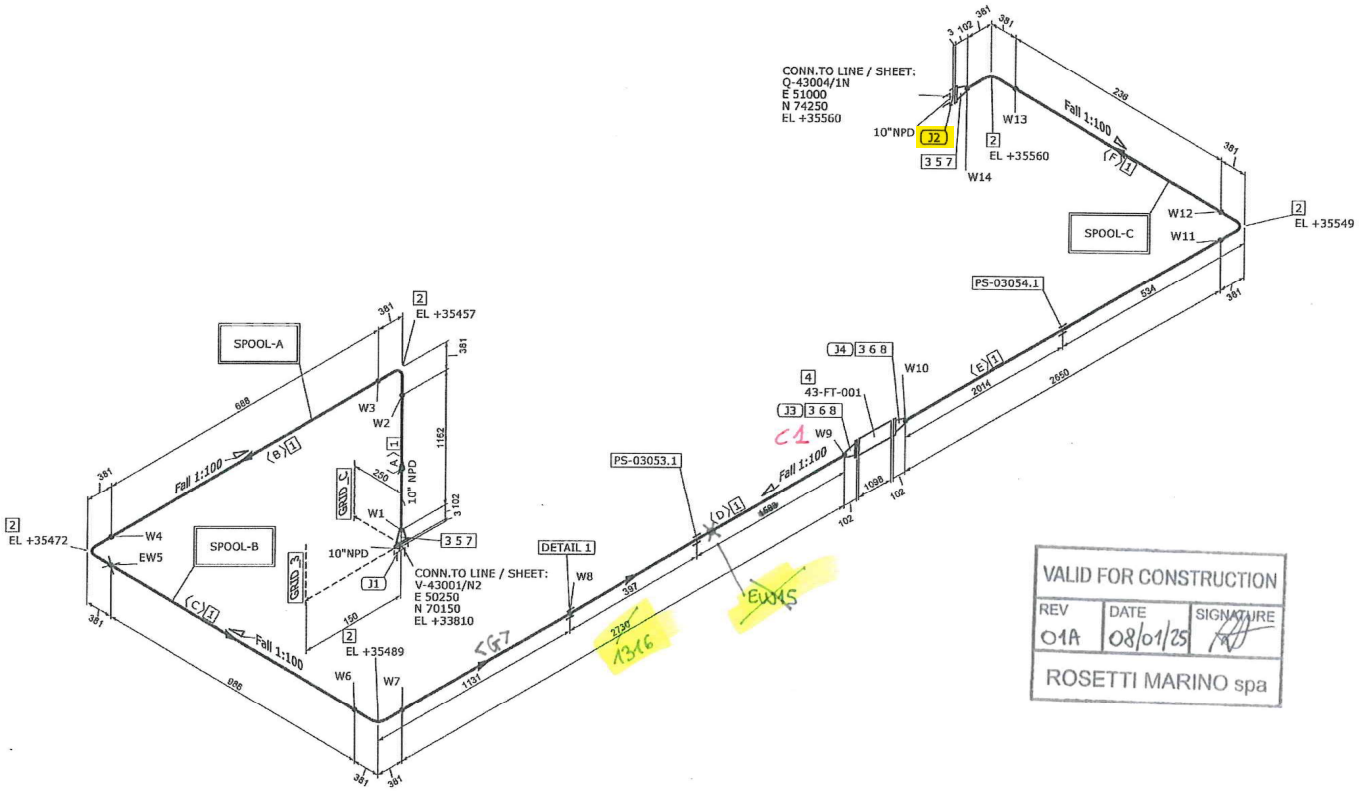
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

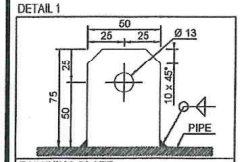
4 **Alignment:** Check alignment according to code. Yes

Comments:

	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-18	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:52:06.986Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-18T16:16:51.526Z	



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

VALID FOR CONSTRUCTION

REV	DATE	SIGNATURE
01A	08/01/25	

ROSETTI MARINO spa

ROSETTI MARINO SpA
Lorenzo Maggioli
Piping Engineering Dept.
10/02/2025
~~PRELIMINARY~~
~~TO BE VERIFIED ON SITE~~
VERIFIED ON SITE
CUT WELD W9

Quality Control Dept.
Alberto Cavazzi
Rosetti Marino SpA

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	10	PIPESS01701000	Pipe ASME B36.19M PE 4,19 SML ASTM A312 Gr.TP316/316L	8.5M	238.3
2	10	E90RSS01151000	90 Deg Elbow Long Radius ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	5	84.9
3	10	FLWOSS03491000	Flange WN ASME B16.5 150LB RF 4,19 FRG ASTM A182 Gr.F316/316L	4	97.5

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	10		Flow Meter 150#RF	1	96.0
5	10	SPIKNN00611000	Insulation Kit Ends as per ASME B16.5 150LB RF	2	1.1
6	10	GSWOGK11181000	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	1.1
7	7/8	SB20BO19840500	135 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24	10.6
8	7/8	SB20BO22250500	120 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24	15.6

FABRICATION WEIGHT [kg]	420.7
ERECTION WEIGHT [kg]	132.6
OVERALL WEIGHT [kg]	553.3

01

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	10	BW
W2	10	BW
W3	10	BW
W4	10	BW
EW5	10	BW
W6	10	BW
W7	10	BW
W8		FW
W9	10	BW
W10	10	BW
W11	10	BW
W12	10	BW
W13	10	BW
W14	10	BW
~~EW15~~	~~10~~	~~BW~~

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	10	1162	BEVEL	BEVEL
B	10	688	BEVEL	BEVEL
C	10	986	BEVEL	BEVEL
~~D~~	~~10~~	~~2730~~	~~BEVEL~~	~~BEVEL~~
E	10	2650	BEVEL	BEVEL
F	10	236	BEVEL	BEVEL
Gr	10	~~1730~~ 1316	Bev.	Bev.

SUPPORT LIST

PS-03053.1
PS-03054.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	40	110.7
B	30	146.1
C	50	163.6
	10	
	25	01
MONT	10"	132.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-10-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 10"-VL-117-01HSS-N
SK.043

CONTRACT NO / TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-10-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00043
SHEET / OF: 1/1
REV.: 01

LINE DATA

NDT INSPECTION CATEGORY	I	PED CATEGORY	II		
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas	
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB. MEDIUM Water

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-00029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

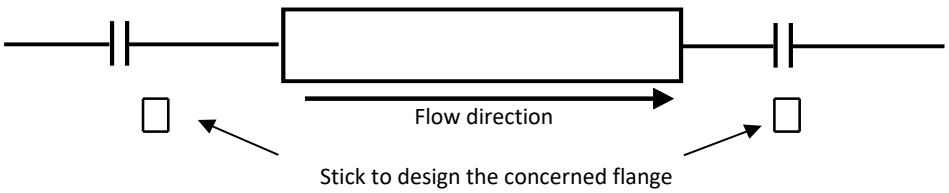
MASTER


TAG
043-1-J2
FLANGE TIGHTENED
ID STAMP RFM3/RFM9
SIGNED
DATE 18/02/25
RETURN TO SUPERVISOR
TAG
043-1 -J2
FLANGE ASSEMBLED
ID STAMP RFM3/RFM9
SIGNED
DATE 18/02/25
RETURN TO SUPERVISOR
TAG
043-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	043-1-J3	: Joint 043-1-J3			Dwg	123A90-FDL-PP-DI-00043-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004106		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-044

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	10"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench RD00261/V050487
Bolt tensioning/Torquing value	335.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	101	336	101	201	335.2
2	101	336	101	201	335.2
3	101	336	101	201	335.2
4	101	336	101	201	335.2
5	101	336	101	201	335.2
6	101	336	101	201	335.2
7	101	336	101	201	335.2
8	101	336	101	201	335.2
9	101	336	101	201	335.2
10	101	336	101	201	335.2
11	101	336	101	201	335.2
12	101	336	101	201	335.2
13			101	201	335.2
14			101	201	335.2
15			101	201	335.2
16			101	201	335.2
17			101	201	335.2
18			101	201	335.2
19			101	201	335.2
20			101	201	335.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

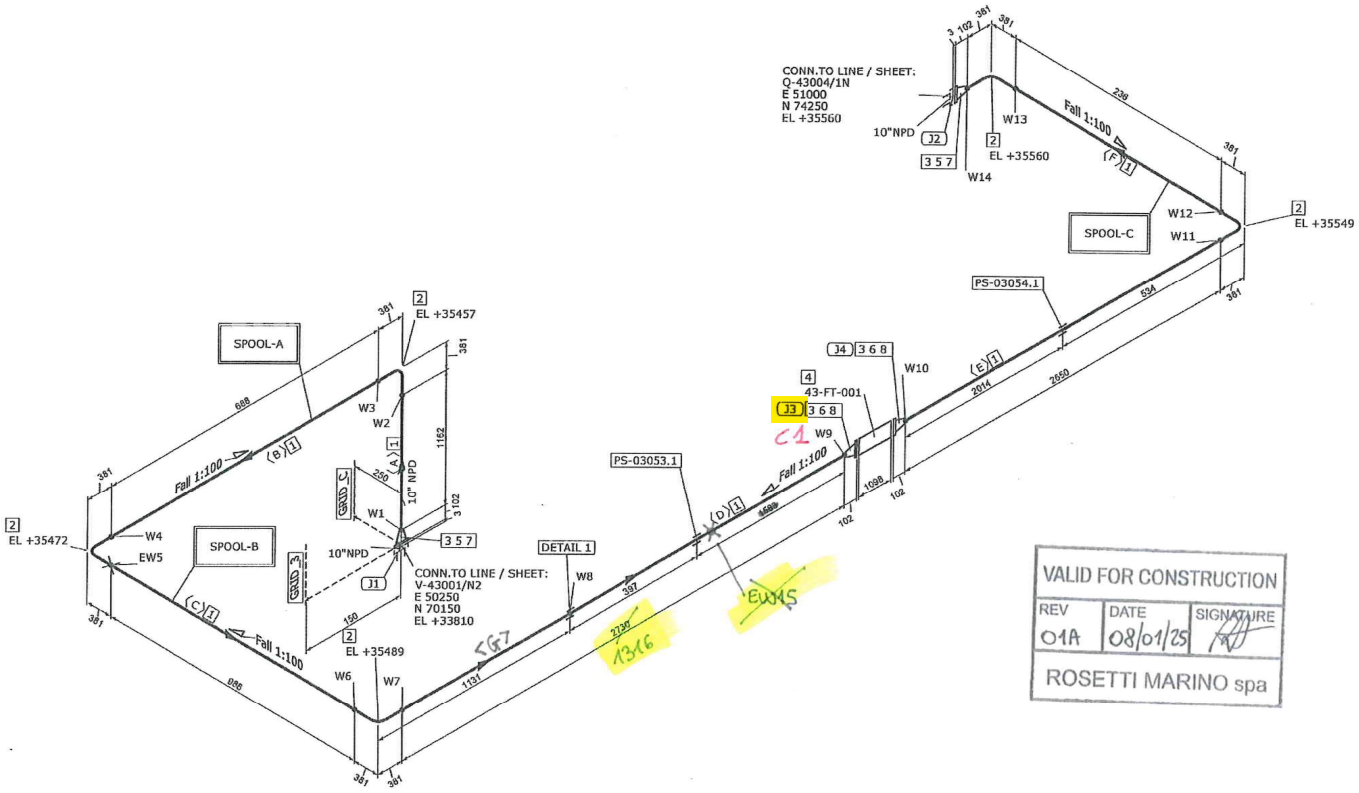
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-18	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:52:18.608Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-18T16:16:46.523Z	



VALID FOR CONSTRUCTION

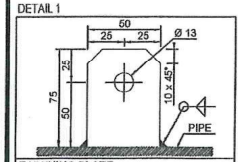
REV	DATE	SIGNATURE
01A	08/01/25	

ROSETTI MARINO spa

ROSETTI MARINO SpA
Lorenzo Maggioli
Piping Engineering Dept.
10/02/2025
~~PRELIMINARY~~
~~TO BE VERIFIED ON SITE~~
VERIFIED ON SITE
CUT WELD W9

Quality Control Dept.
Alberto Cavazzi
Rosetti Marino SpA

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	10	PIPESS01701000	Pipe ASME B36.19M PE 4,19 SML ASTM A312 Gr.TP316/316L	8.5M	238.3
2	10	E90RSS01151000	90 Deg Elbow Long Radius ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	5	84.9
3	10	FLWOSS03491000	Flange WN ASME B16.5 150LB RF 4,19 FRG ASTM A182 Gr.F316/316L	4	97.5

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	10		Flow Meter 150#RF	1	96.0
5	10	SPIKNN00611000	Insulation Kit Ends as per ASME B16.5 150LB RF	2	1.1
6	10	GSWOGK11181000	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	1.1
7	7/8	SB20BO19840500	135 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24	10.6
8	7/8	SB20BO22250500	120 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24	15.6

FABRICATION WEIGHT [kg]	420.7
ERECTION WEIGHT [kg]	132.6
OVERALL WEIGHT [kg]	553.3

01

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	10	BW
W2	10	BW
W3	10	BW
W4	10	BW
EW5	10	BW
W6	10	BW
W7	10	BW
W8		FW
W9	10	BW
W10	10	BW
W11	10	BW
W12	10	BW
W13	10	BW
W14	10	BW
~~EW15~~	~~10~~	~~BW~~

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	10	1162	BEVEL	BEVEL
B	10	688	BEVEL	BEVEL
C	10	986	BEVEL	BEVEL
~~D~~	~~10~~	~~2730~~	~~BEVEL~~	~~BEVEL~~
E	10	2650	BEVEL	BEVEL
F	10	236	BEVEL	BEVEL
Gr	10	~~1730~~ 1316	Bev.	Bev.

SUPPORT LIST

PS-03053.1
PS-03054.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	40	110.7
B	30	146.1
C	50	163.6
	10	
	25	01
MONT	10"	132.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-10-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 10"-VL-117-01HSS-N
SK.043

CONTRACT NO / TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-10-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00043
SHEET / OF: 1/1
REV.: 01

LINE DATA

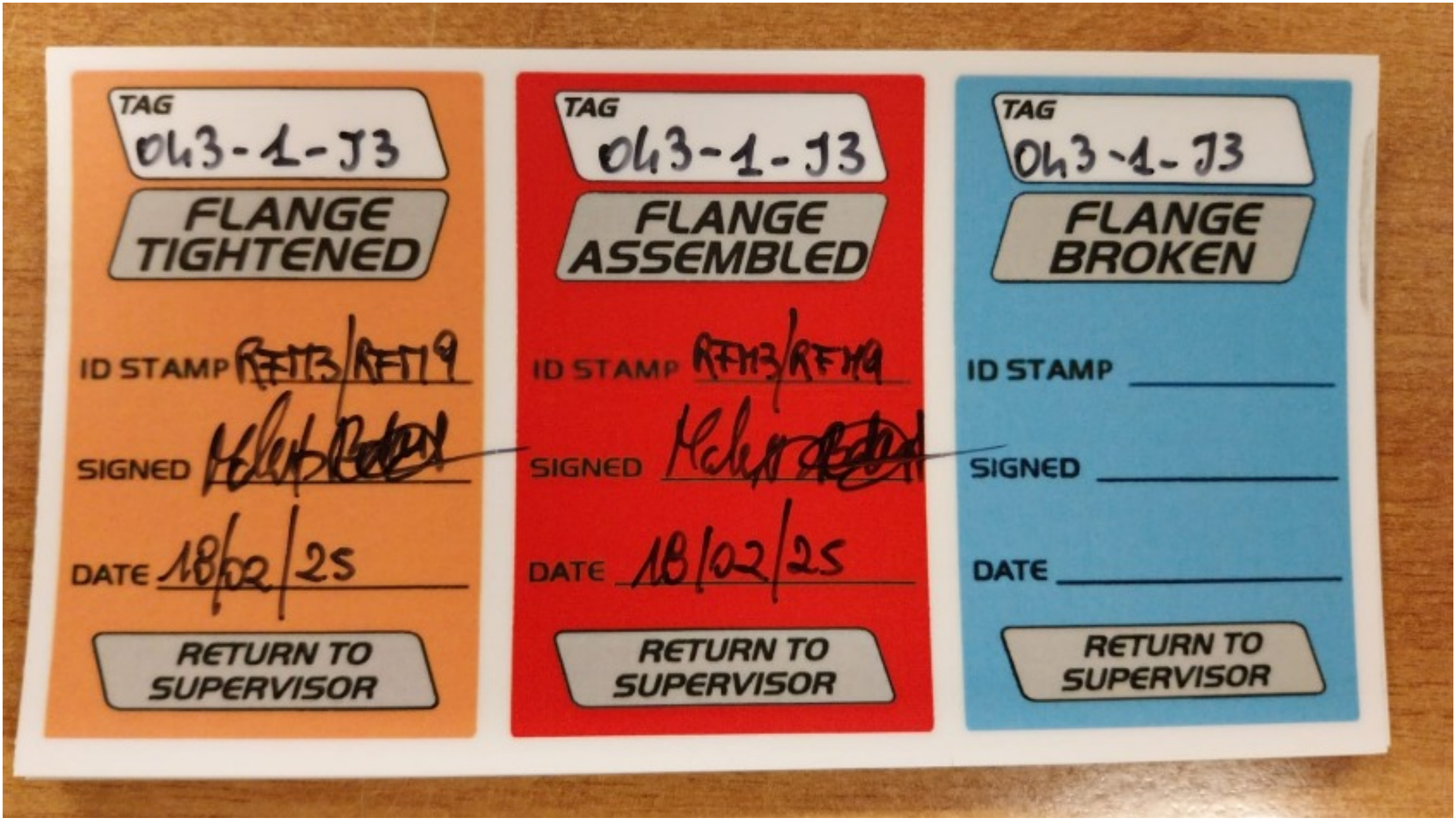
NDT INSPECTION CATEGORY	I	PED CATEGORY	II		
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas	
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg] TEMP. -29 / 100 [°C]	
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg] TEMP. AMB. MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-00029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

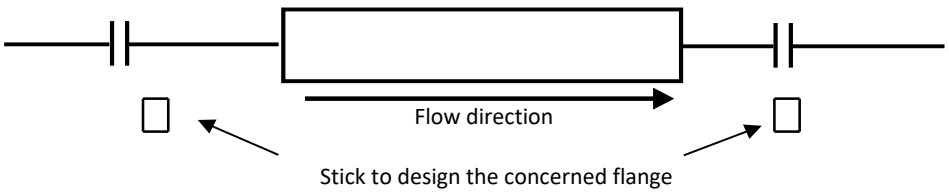
MASTER


TAG
043-1-J3
FLANGE TIGHTENED
ID STAMP RFH3/RFH9
SIGNED
DATE 18/02/25
RETURN TO SUPERVISOR
TAG
043-1-J3
FLANGE ASSEMBLED
ID STAMP RFH3/RFH9
SIGNED
DATE 18/02/25
RETURN TO SUPERVISOR
TAG
043-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	043-1-J4	: Joint 043-1-J4			Dwg	123A90-FDL-PP-DI-00043-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004107		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-044

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	10"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench RD00261/V050487
Bolt tensioning/Torquing value	335.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	101	336	101	201	335.2
2	101	336	101	201	335.2
3	101	336	101	201	335.2
4	101	336	101	201	335.2
5	101	336	101	201	335.2
6	101	336	101	201	335.2
7	101	336	101	201	335.2
8	101	336	101	201	335.2
9	101	336	101	201	335.2
10	101	336	101	201	335.2
11	101	336	101	201	335.2
12	101	336	101	201	335.2
13			101	201	335.2
14			101	201	335.2
15			101	201	335.2
16			101	201	335.2
17			101	201	335.2
18			101	201	335.2
19			101	201	335.2
20			101	201	335.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

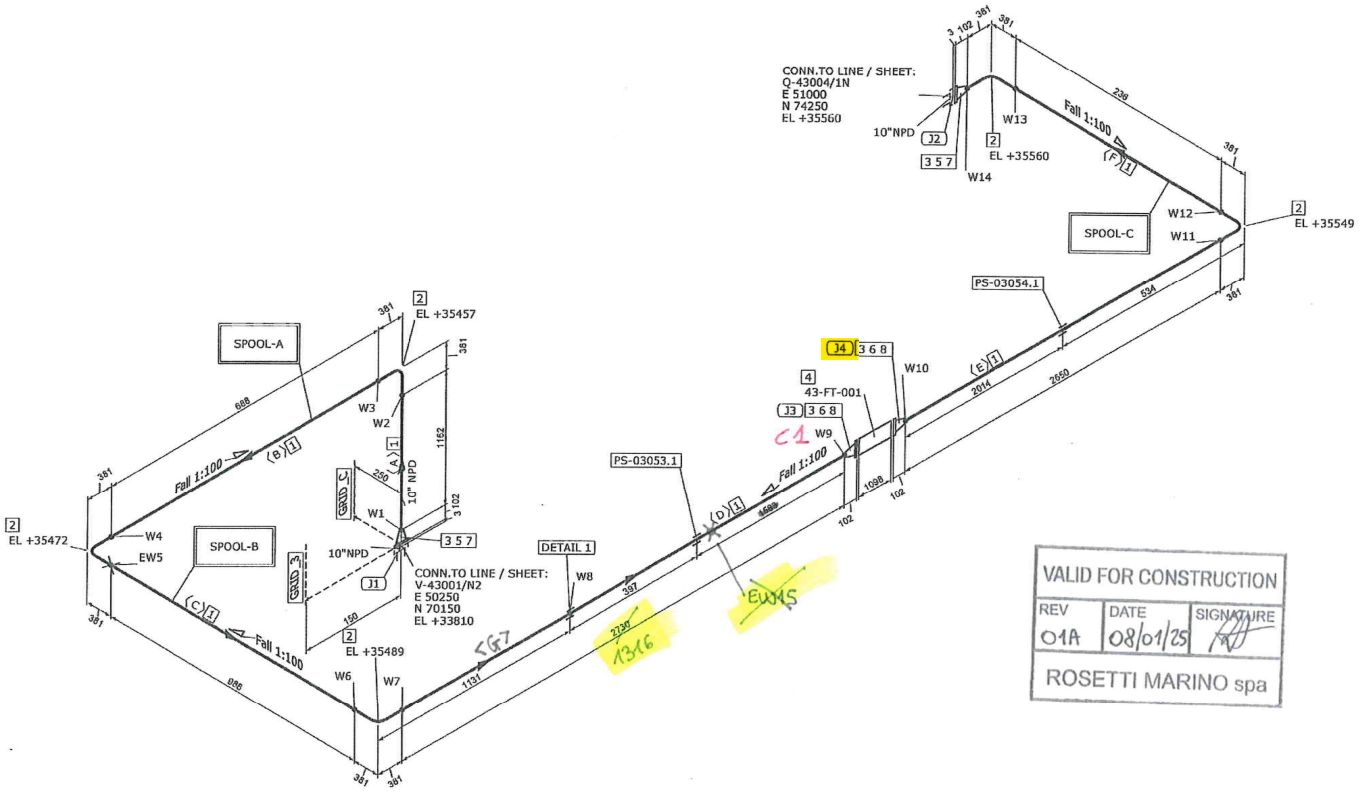
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

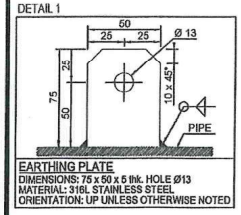
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-18	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:52:31.656Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-18T16:16:41.630Z	



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

VALID FOR CONSTRUCTION

REV	DATE	SIGNATURE
01A	08/01/25	

ROSETTI MARINO spa

ROSETTI MARINO SpA
Lorenzo Maggioli
Piping Engineering Dept.
10/02/2025
~~PRELIMINARY~~
~~TO BE VERIFIED ON SITE~~
VERIFIED ON SITE
CUT WELD W9

Quality Control Dept.
Alberto Cavazzi
Rosetti Marino SpA

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	10	PIPESS01701000	Pipe ASME B36.19M PE 4,19 SML ASTM A312 Gr.TP316/316L	8.5M	238.3
2	10	E90RSS01151000	90 Deg Elbow Long Radius ASME B16.9 BW 4,19 WRS ASTM A403 Gr.WP316/316L	5	84.9
3	10	FLWOSS03491000	Flange WN ASME B16.5 150LB RF 4,19 FRG ASTM A182 Gr.F316/316L	4	97.5

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	10		Flow Meter 150#RF	1	96.0
5	10	SPIKNN00611000	Insulation Kit Ends as per ASME B16.5 150LB RF	2	1.1
6	10	GSWOGK11181000	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	1.1
7	7/8	SB20BO19840500	135 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24	10.6
8	7/8	SB20BO22250500	120 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24	15.6

FABRICATION WEIGHT [kg]	420.7
ERECTION WEIGHT [kg]	132.6
OVERALL WEIGHT [kg]	553.3

01

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	10	BW
W2	10	BW
W3	10	BW
W4	10	BW
EW5	10	BW
W6	10	BW
W7	10	BW
W8		FW
W9	10	BW
W10	10	BW
W11	10	BW
W12	10	BW
W13	10	BW
W14	10	BW
~~EW15~~	~~10~~	~~BW~~

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	10	1162	BEVEL	BEVEL
B	10	688	BEVEL	BEVEL
C	10	986	BEVEL	BEVEL
~~D~~	~~10~~	~~2650~~	~~BEVEL~~	~~BEVEL~~
E	10	2650	BEVEL	BEVEL
F	10	236	BEVEL	BEVEL
G	10	~~1730~~ 1316	BEV.	BEV.

SUPPORT LIST

PS-03053.1
PS-03054.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	40	110.7
B	30	146.1
C	50	163.6
	10	
	25	01
MONT	10"	132.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-10-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 10"-VL-117-01HSS-N
SK.043

CONTRACT NO / TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-10-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00043
SHEET / OF: 1/1
REV.: 01

MASTER

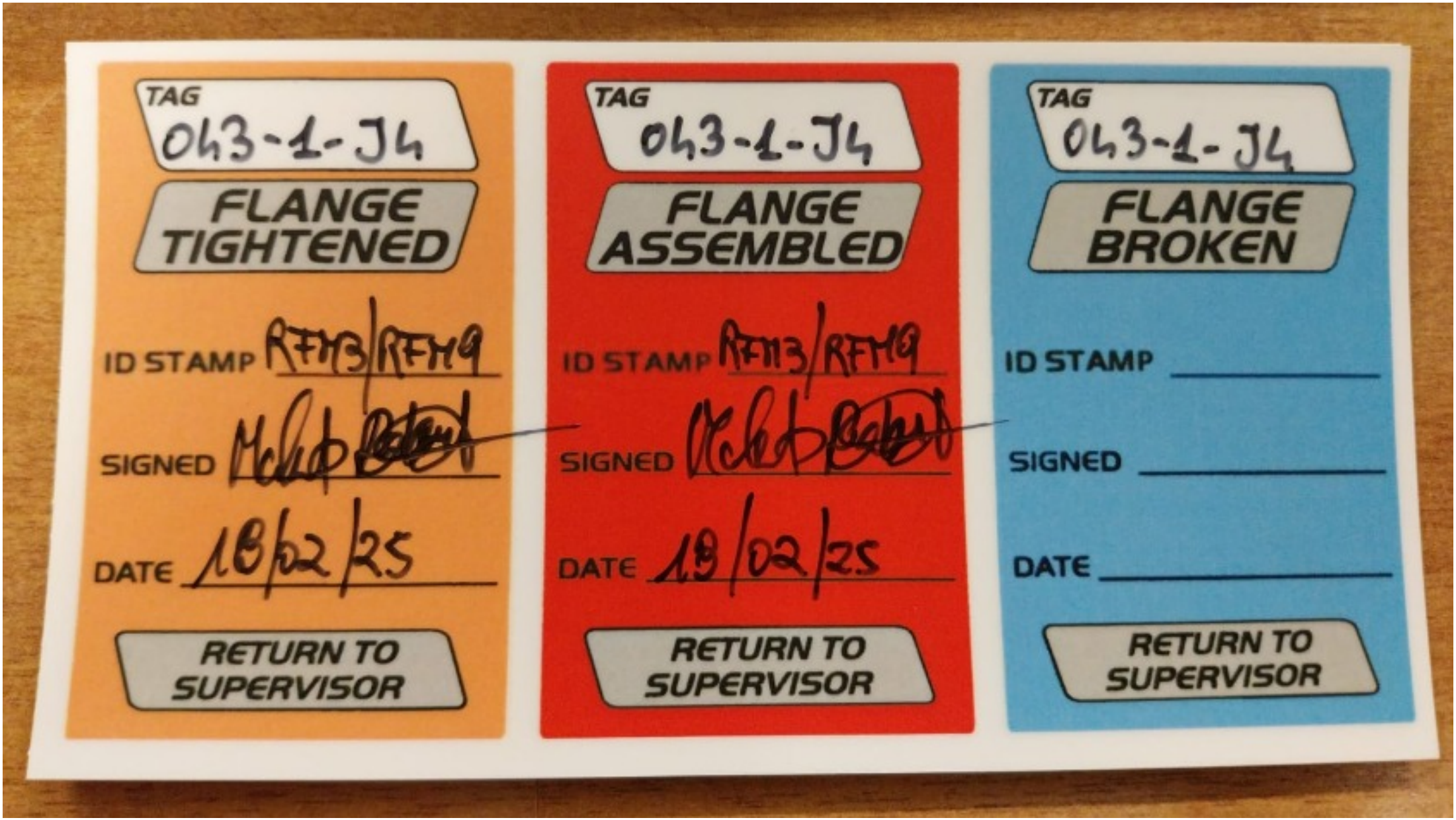
LINE DATA

NDT INSPECTION CATEGORY	I	PED CATEGORY	II		
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas	
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg] TEMP. -29 / 100 [°C]	
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg] TEMP. AMB. MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-00029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

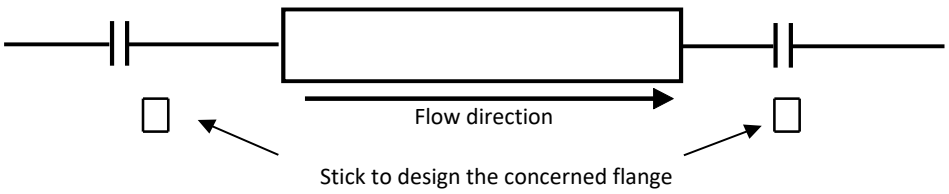
NOTES


TAG
043-1-J4
FLANGE TIGHTENED
ID STAMP RFH3/RFH9
SIGNED
DATE 18/02/25
RETURN TO SUPERVISOR
TAG
043-1-J4
FLANGE ASSEMBLED
ID STAMP RFH3/RFH9
SIGNED
DATE 19/02/25
RETURN TO SUPERVISOR
TAG
043-1-J4
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	065-1-J4	: Joint 065-1-J4			Dwg	123A90-FDL-PP-DI-00065-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004124	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	T064079 / RA00598
Bolt tensioning/Torquing value	62.5		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

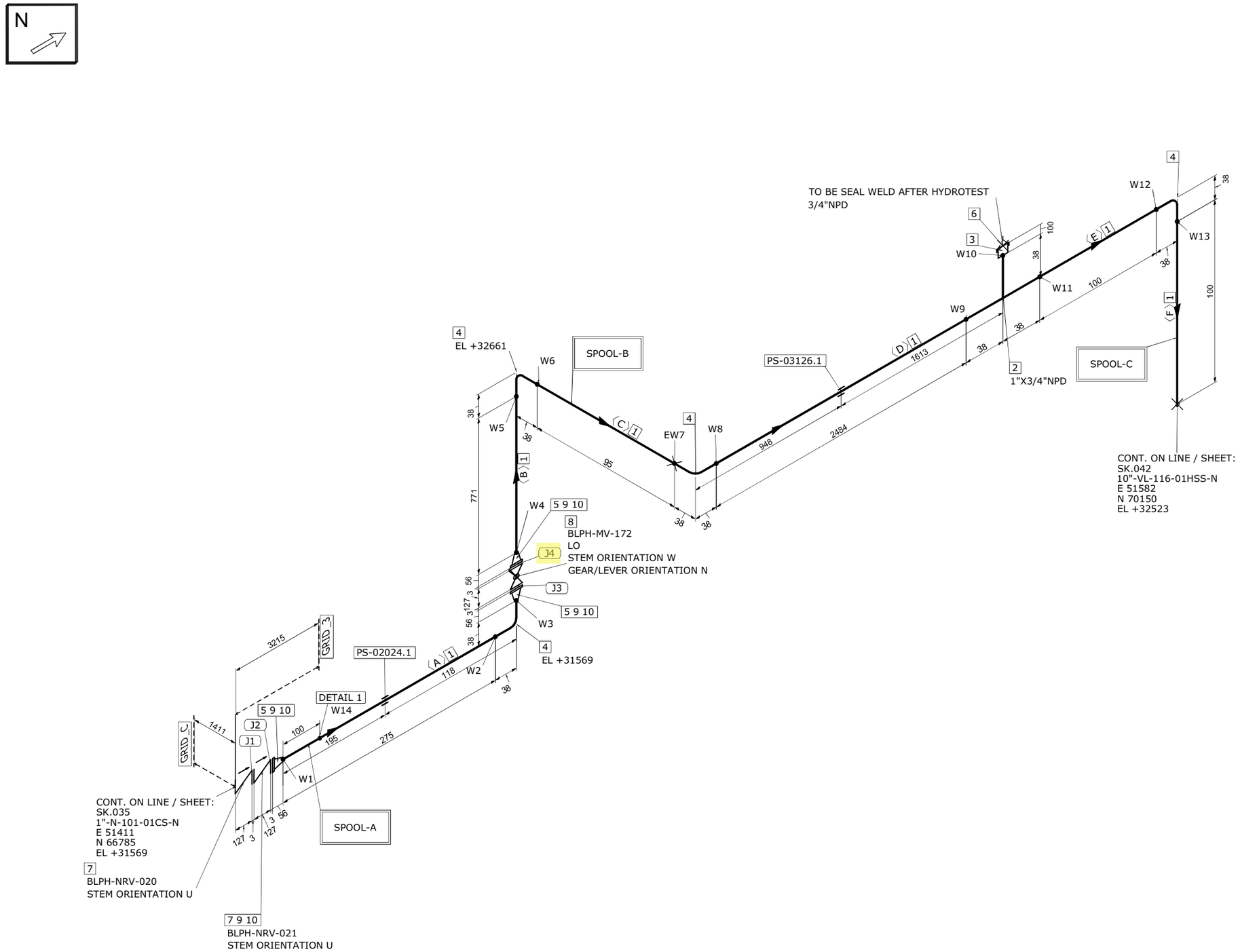
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

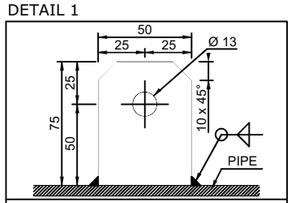
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-30	
Signature	Digitaly signed by Emanuele Delfino 2025-01-25T05:52:44.786Z	Digitaly signed by Andrea Mancini 2025-01-30T15:37:28.891Z	



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	3.8M	9.7
2	1X3/4	TER0SS0171013Q	Tee Reducing ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	3/4	N100SS02653Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A312 Gr.TP316/316L	1	0.2
4	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	4	0.6
5	1	FLW0SS00930100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F316/316L	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
6	3/4	CAPFSS00023Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F316/316L	1	0.2
7	1	VDRNNN02460100	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01C02RFH	2	0.0
8	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	6.0
9	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	4	0.2
10	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	1.9

FABRICATION WEIGHT [kg]	15.1
ERECTION WEIGHT [kg]	8.3
OVERALL WEIGHT [kg]	23.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
EW7	1	BW
W8	1	BW
W9	1	BW
W10	3/4	BW
W11	1	BW
W12	1	BW
W13	1	BW
W14		FW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	275	BEVEL	BEVEL
B	1	771	BEVEL	BEVEL
C	1	95	BEVEL	BEVEL
D	1	2484	BEVEL	BEVEL
E	1	100	BEVEL	BEVEL
F	1	100	BEVEL	BEVEL

SUPPORT LIST

PS-02024.1
PS-03126.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	3	3.7
B	3	3.8
C	5.75	7.6
MONT	1	8.3

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-N-154-01HSS-N
SK.065

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 20-08-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00065 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

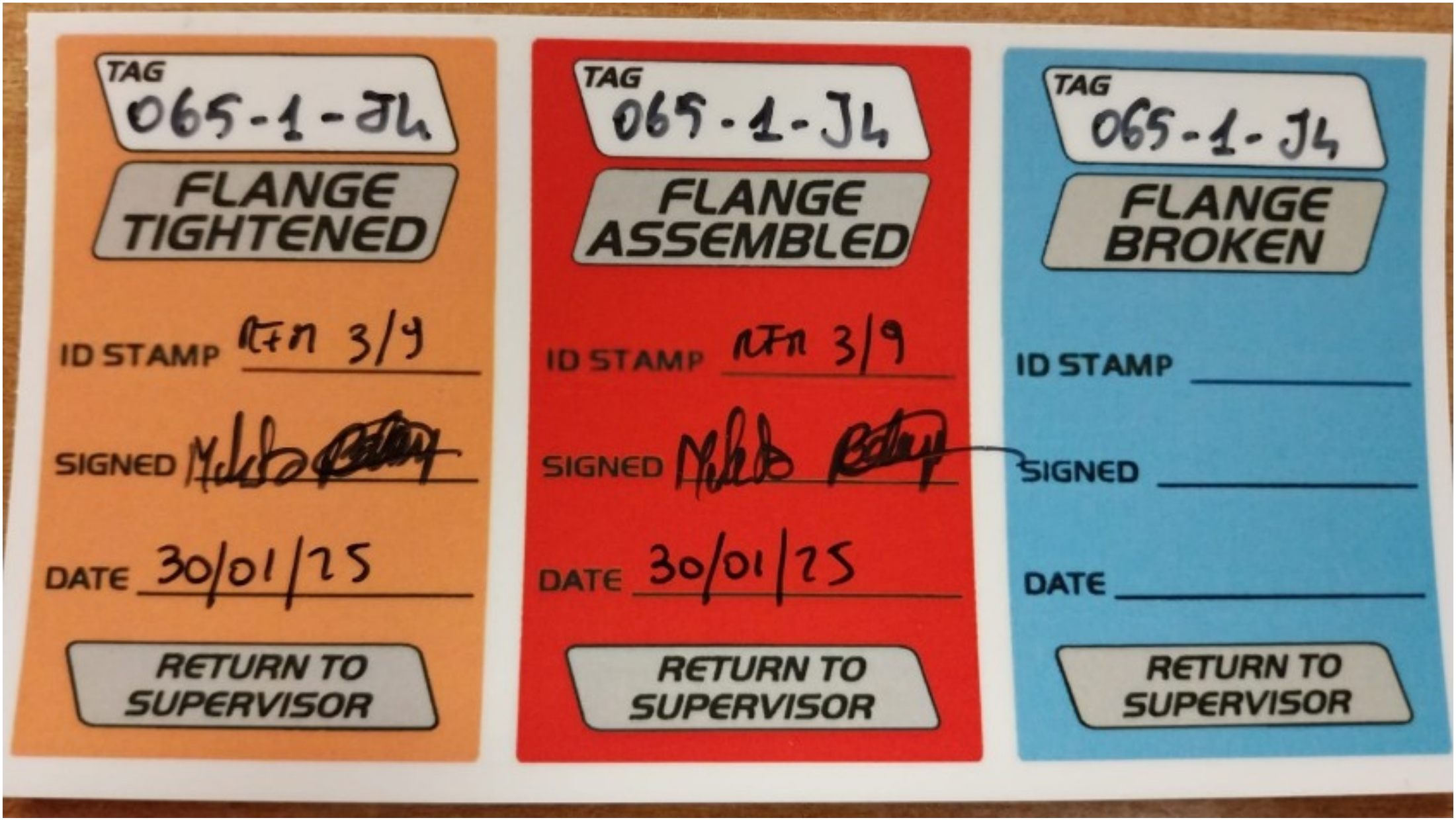
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3					
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas					
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5	[barg]	TEMP. -29 / 100	[°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25	[barg]	TEMP. AMB.	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80028
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

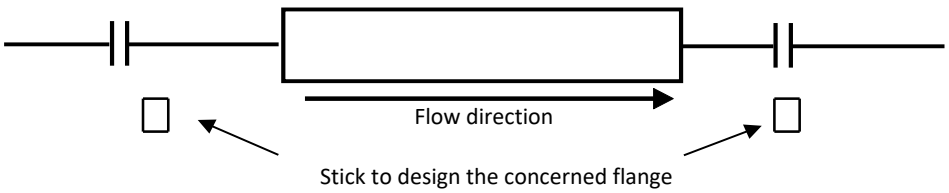
MASTER


TAG
065-1-J4
FLANGE TIGHTENED
ID STAMP RFN 3/9
SIGNED
DATE 30/01/25
RETURN TO SUPERVISOR
TAG
065-1-J4
FLANGE ASSEMBLED
ID STAMP RFN 3/9
SIGNED
DATE 30/01/25
RETURN TO SUPERVISOR
TAG
065-1-J4
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	157-1-J1	: Joint 157-1-J1			Dwg	123A90-FDL-PP-DI-00157-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004170		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-024

EQUIPMENT TAG



Flange Type 150LB

Flange Size 1"

Gasket Type Gasket Spiral Wound Thk. 3.2 mm

Bolt tensioning/Torquing value 62.5

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench V030390 (12-68 Nm)

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

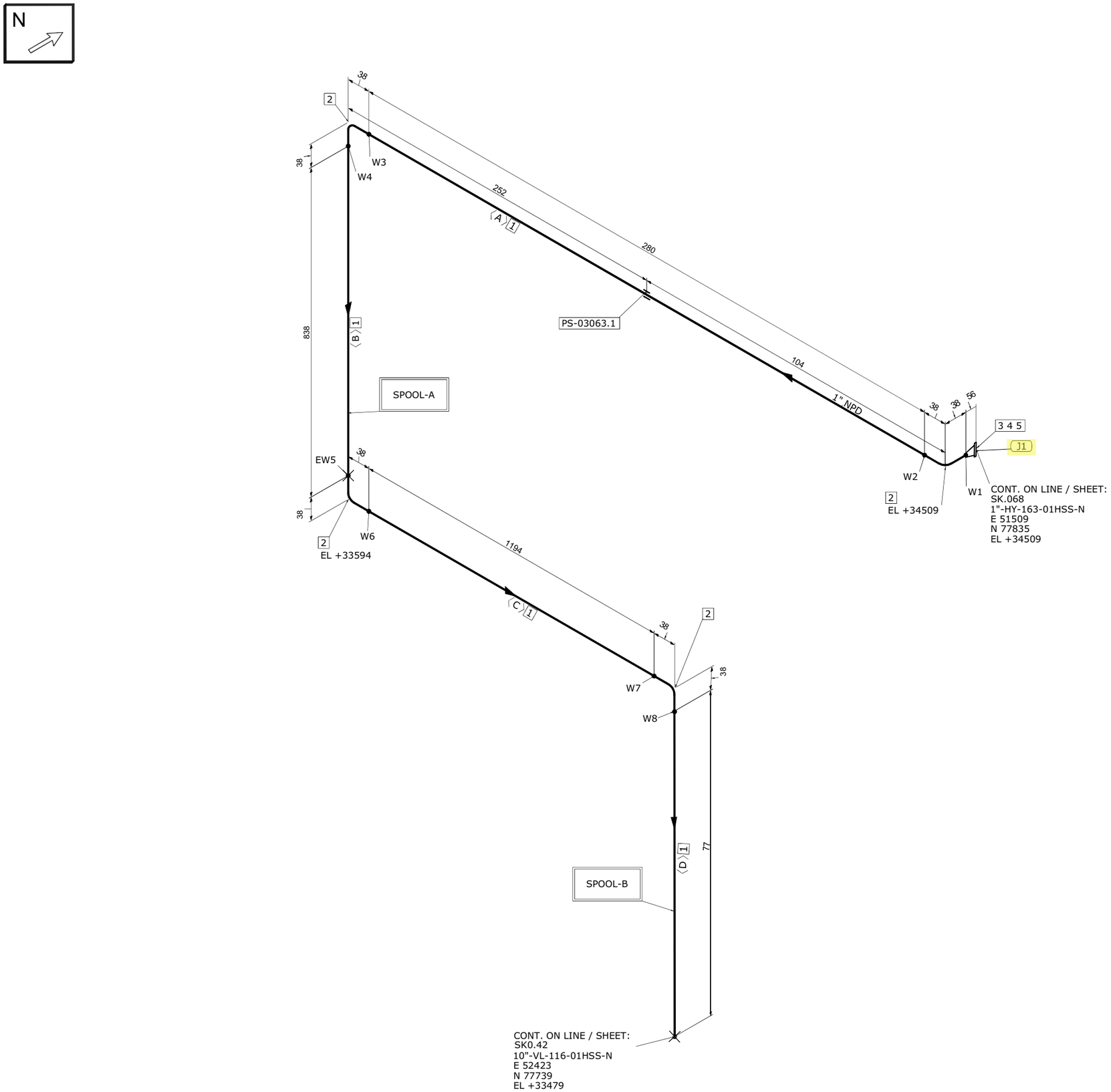
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-12	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:52:58.808Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-12T09:16:35.320Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	2.4M	6.1
2	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	4	0.6
3	1	FLW0SS00930100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	8.1
ERECTION WEIGHT [kg]	0.6
OVERALL WEIGHT [kg]	8.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
EW5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	280	BEVEL	BEVEL
B	1	839	BEVEL	BEVEL
C	1	1194	BEVEL	BEVEL
D	1	77	BEVEL	BEVEL

SUPPORT LIST

PS-03063.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4	4.6
B	3	3.5
MONT	1	0.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	20-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-VL-293-01HSS-N

SK.157

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	20-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00157			SHEET / OF	1/1
						REV.	00

LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002		FLUID PHASE	Gas				
INSULATION	TYPE N	THICKNESS [mm]		DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A			TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80012
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

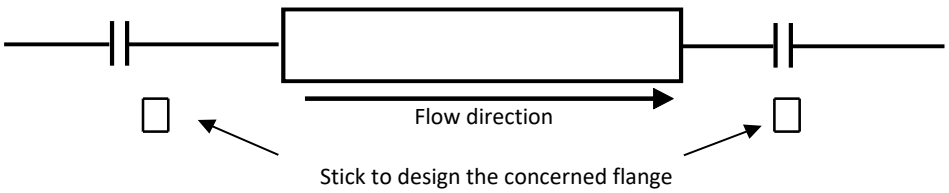
MASTER


TAG
197-1-J1
FLANGE TIGHTENED
ID STAMP RFH3/RF19
SIGNED
DATE 11/02/25
RETURN TO SUPERVISOR
TAG
197-1-J1
FLANGE ASSEMBLED
ID STAMP RFH3/RF19
SIGNED
DATE 11/02/25
RETURN TO SUPERVISOR
TAG
197-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	114-1-J1	: Joint 114-1-J1			Dwg	123A90-FDL-PP-DI-00114-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004273	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-064

EQUIPMENT TAG



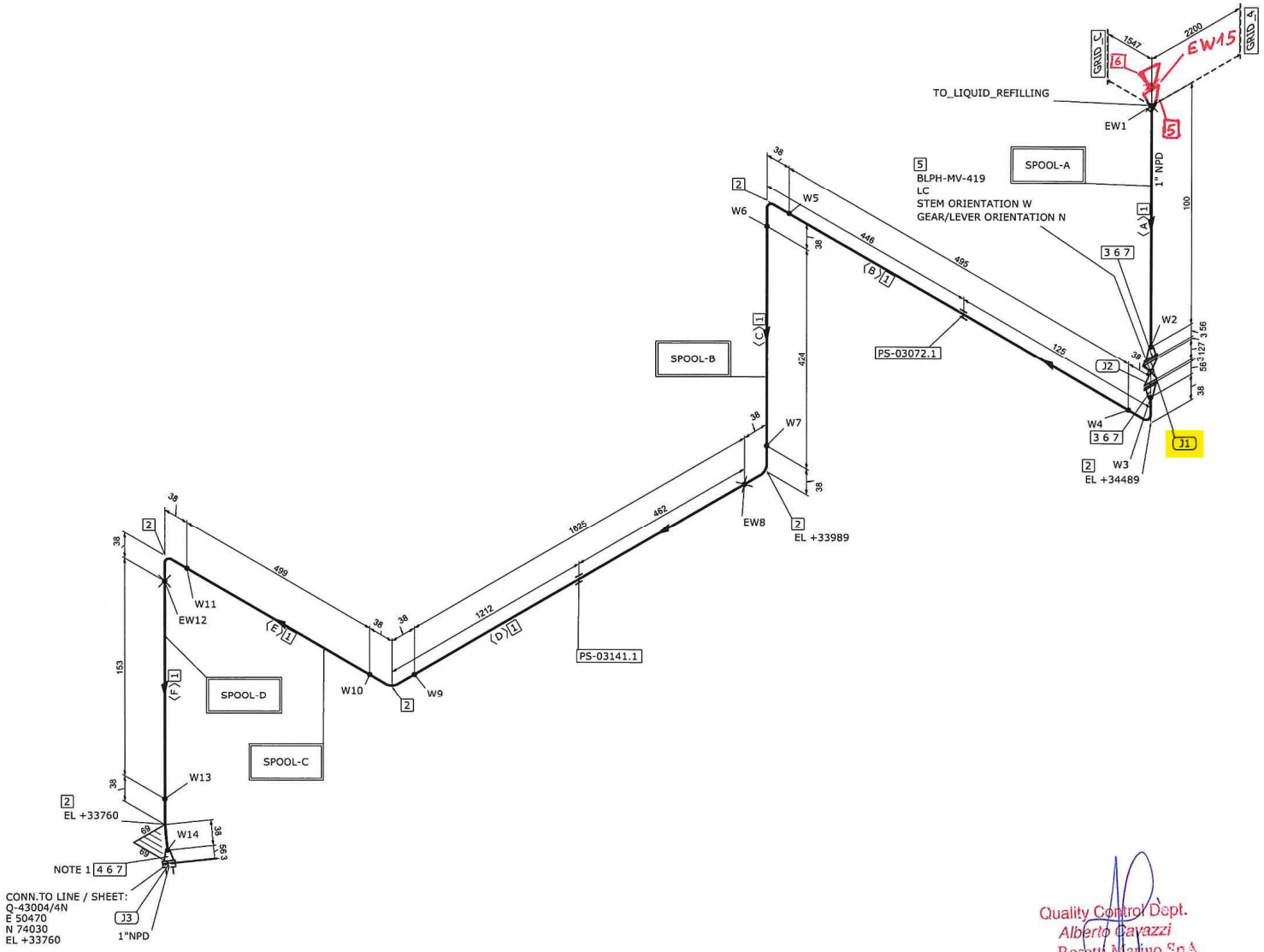
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	62.5		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:53:09.863Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-14T07:33:51.386Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	3.3M	10.7
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	6	1.1
3	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	2	2.8
4	1	FLWDCS02740100	Flange WN For Jackscrews ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	1	1.4
5	1×2		REDUCER CONC.		
6	2×4		REDUCER CONC.		

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	VBC0NN24710100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01B01RF	1	8.0
6	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	3	0.2
7	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	1.4

FABRICATION WEIGHT [kg]	16.0
ERECTION WEIGHT [kg]	9.6
OVERALL WEIGHT [kg]	25.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
EW1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
EW8	1	BW
W9	1	BW
W10	1	BW
W11	1	BW
EW12	1	BW
W13	1	BW
W14	1	BW
EW15	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL
B	1	495	BEVEL	BEVEL
C	1	424	BEVEL	BEVEL
D	1	1625	BEVEL	BEVEL
E	1	499	BEVEL	BEVEL
F	1	153	BEVEL	BEVEL

SUPPORT LIST

PS-03072.1
PS-03141.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	1	1.7
B	5	4.9
C	3	7.2
D	2	2.1
MONT	3	9.6

Quality Control Dept.
Alberto Cavazzi
Rosetti Marino SpA
06/02/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-216-01CS-N
SK.114

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00114
SHEET / OF: 1/1
REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 1	BASE RAL RAL-9002	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -46 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION NE\SW

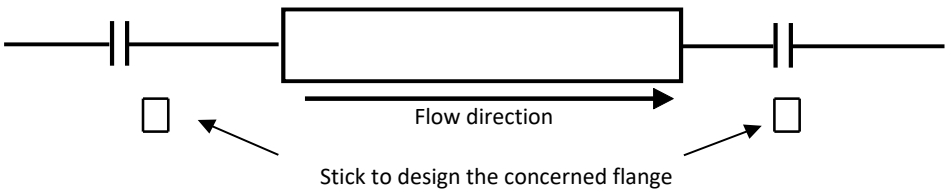
MASTER


TAG
114-1-J1
FLANGE TIGHTENED
ID STAMP RFH2/RFH6
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
114-1-J1
FLANGE ASSEMBLED
ID STAMP RFH2/RFH6
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
114-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	114-1-J2	: Joint 114-1-J2			Dwg	123A90-FDL-PP-DI-00114-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004274		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-064

EQUIPMENT TAG



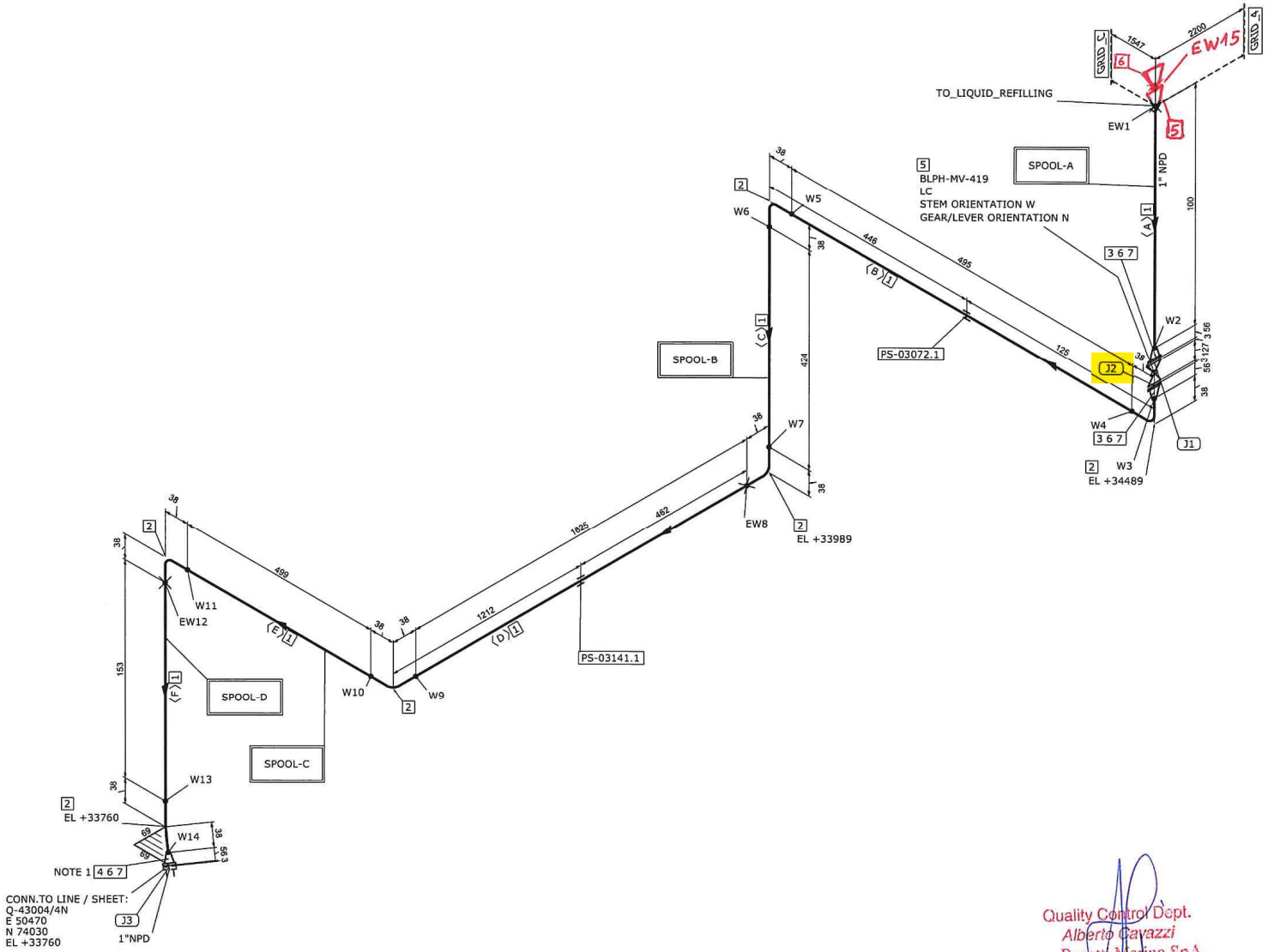
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	62.5		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:53:20.523Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-14T07:33:45.730Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	3.3M	10.7
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	6	1.1
3	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	2	2.8
4	1	FLWDCS02740100	Flange WN For Jackscrews ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	1	1.4
5	1×2		REDUCER CONC.		
6	2×4		REDUCER CONC.		

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	VBC0NN24710100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01B01RF	1	8.0
6	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	3	0.2
7	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	1.4

FABRICATION WEIGHT [kg]	16.0
ERECTION WEIGHT [kg]	9.6
OVERALL WEIGHT [kg]	25.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
EW1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
EW8	1	BW
W9	1	BW
W10	1	BW
W11	1	BW
EW12	1	BW
W13	1	BW
W14	1	BW
EW15	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL
B	1	495	BEVEL	BEVEL
C	1	424	BEVEL	BEVEL
D	1	1625	BEVEL	BEVEL
E	1	499	BEVEL	BEVEL
F	1	153	BEVEL	BEVEL

SUPPORT LIST

PS-03072.1
PS-03141.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	1	1.7
B	5	4.9
C	3	7.2
D	2	2.1
MONT	3	9.6

Quality Control Dept.
Alberto Cavazzi
Rosetti Marino SpA
06/02/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-216-01CS-N
SK.114

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00114
SHEET / OF: 1/1
REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 1	BASE RAL RAL-9002	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -46 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION NE\SW

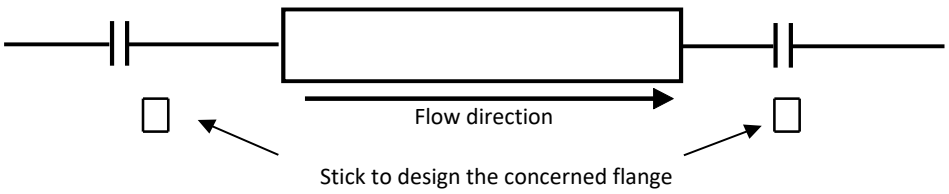
MASTER


TAG
114-1-J2
FLANGE TIGHTENED
ID STAMP RFH2/RFH6
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
114-1-J2
FLANGE ASSEMBLED
ID STAMP RFH2/RFH6
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
114-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	114-1-J3	: Joint 114-1-J3			Dwg	123A90-FDL-PP-DI-00114-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004275		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-064

EQUIPMENT TAG



Flange Type 150LB

Flange Size 1"

Gasket Type Gasket Spiral Wound Thk. 3.2 mm

Bolt tensioning/Torquing value 62.5

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench V030390 (12-68 Nm)

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

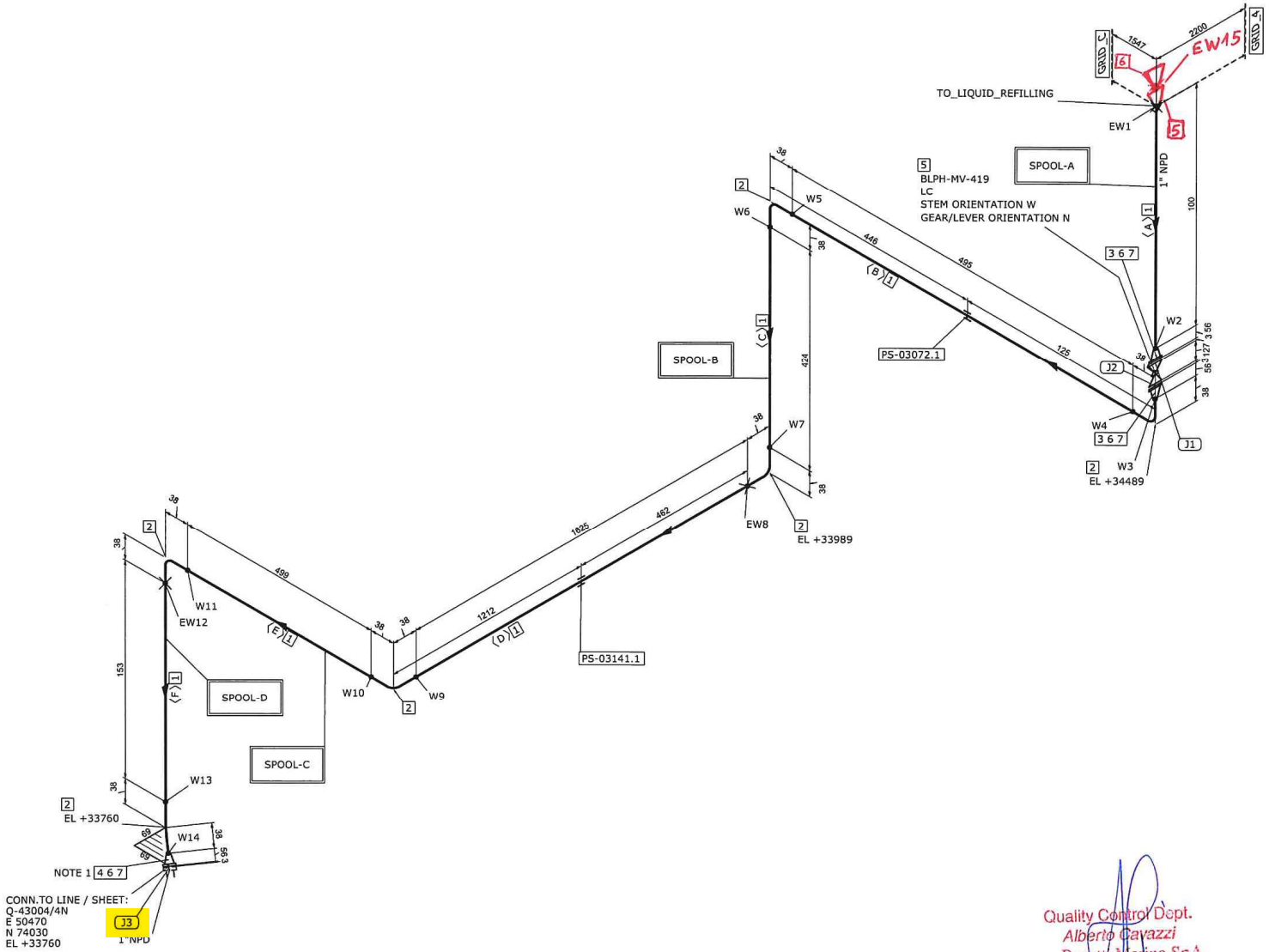
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:53:32.615Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-14T07:33:37.044Z	



Quality Control Dept.
Alberto Cavazzi
Rosetti Marino SpA
06/02/25

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	3.3M	10.7
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	6	1.1
3	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	2	2.8
4	1	FLWDCS02740100	Flange WN For Jackscrews ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	1	1.4
5	1×2		REDUCER CONC.		
6	2×4		REDUCER CONC.		

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	VBC0NN24710100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01B01RF	1	8.0
6	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	3	0.2
7	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	1.4

FABRICATION WEIGHT [kg]	16.0
ERECTION WEIGHT [kg]	9.6
OVERALL WEIGHT [kg]	25.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
EW1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
EW8	1	BW
W9	1	BW
W10	1	BW
W11	1	BW
EW12	1	BW
W13	1	BW
W14	1	BW
EW15	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL
B	1	495	BEVEL	BEVEL
C	1	424	BEVEL	BEVEL
D	1	1625	BEVEL	BEVEL
E	1	499	BEVEL	BEVEL
F	1	153	BEVEL	BEVEL

SUPPORT LIST

PS-03072.1
PS-03141.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	1	1.7
B	5	4.9
C	3	7.2
D	2	2.1
MONT	3	9.6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 1	BASE RAL RAL-9002	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -46 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION NE\SW

MASTER

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-216-01CS-N
SK.114

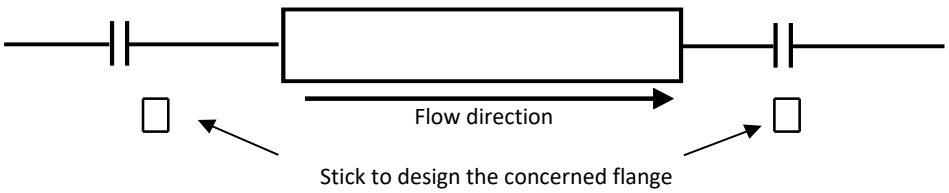
CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00114
SHEET / OF: 1/1
REV.: 00


TAG
114-1-J3
FLANGE TIGHTENED
ID STAMP RFH3/RFH9
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
114-1-J3
FLANGE ASSEMBLED
ID STAMP RFH3/RFH9
SIGNED
DATE 13/02/25
RETURN TO SUPERVISOR
TAG
114-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	116-1-J1	: Joint 116-1-J1			Dwg	123A90-FDL-PP-DI-00116-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10004276	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-022

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	3"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	
Bolt tensioning/Torquing value	120		

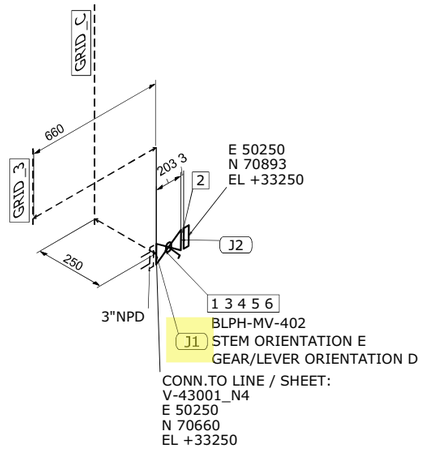
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	36	120	36	72	120
2	36	120	36	72	120
3	36	120	36	72	120
4	36	120	36	72	120
5			36	72	120
6			36	72	120
7			36	72	120
8			36	72	120
9			36	72	120
10			36	72	120
11			36	72	120
12			36	72	120
13			36	72	120
14			36	72	120
15			36	72	120
16			36	72	120
17			36	72	120
18			36	72	120
19			36	72	120
20			36	72	120

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-25	2025-01-27	
Signature	Digitaly signed by Emanuele Delfino 2025-01-25T05:53:48.807Z	Digitaly signed by Lorenzo Novaga 2025-01-27T08:23:29.671Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	3	VBD0NN16460300	Ball Valve Split Body RB API 6D FLG 150LB RF BC01C01RFH	1	23.3
2	3	FLB0SS00030300	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F316/316L	1	4.6
3	3	SPIKNN00570300	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.2
4	3	GSW0GK11140300	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.2
5	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
6	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	30.3
OVERALL WEIGHT [kg]	30.3

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	30.3

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 3"-VL-220-01HSS-N

SK.116

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00116			SHEET / OF	1/4
						REV.	00

LINE DATA

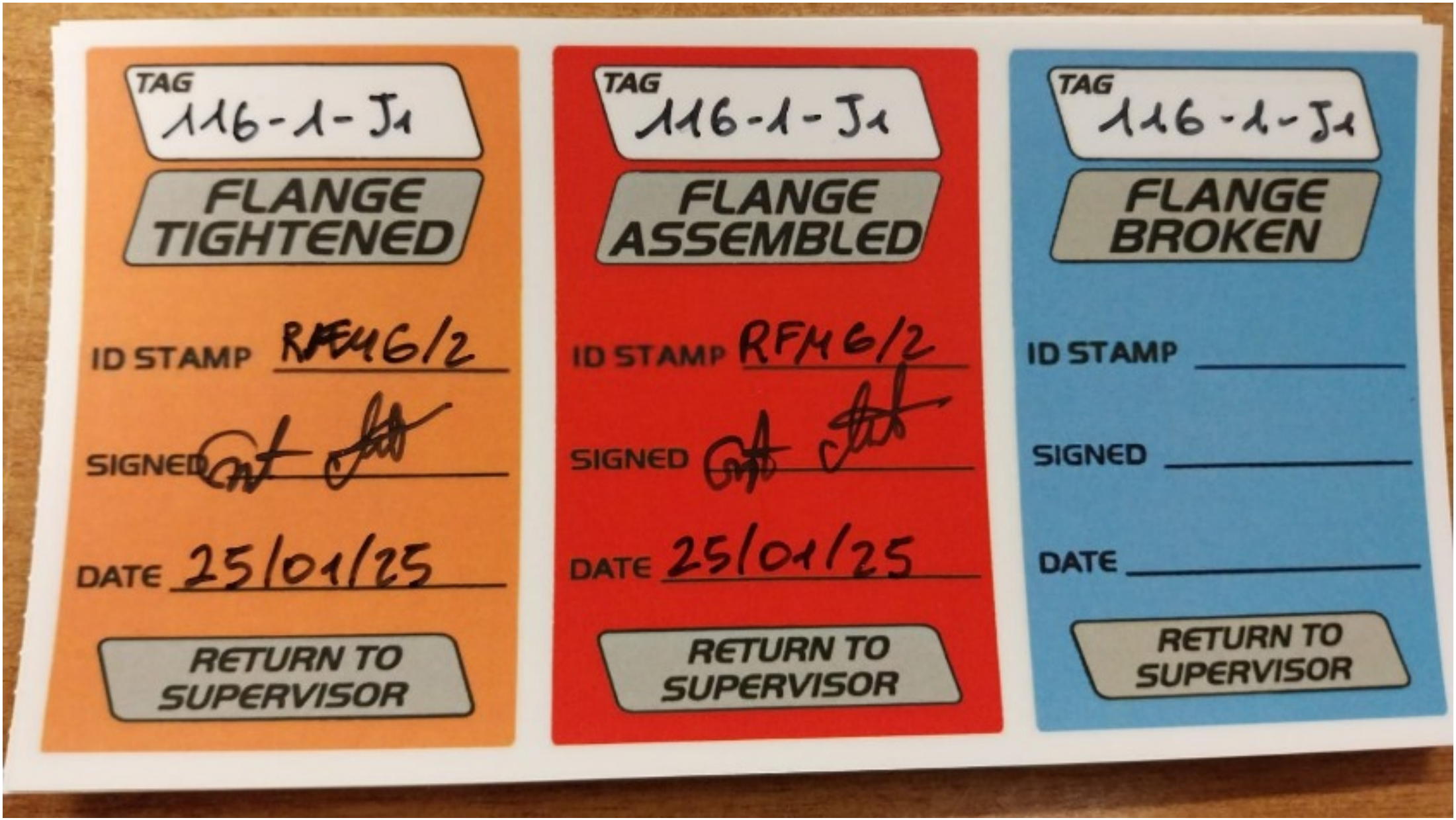
NDT INSPECTION CATEGORY	1			PED CATEGORY	I				
PAINTING	SYSTEM	6A	BASE RAL	RAL-9002	FLUID PHASE	N/A			
INSULATION	TYPE	N	THICKNESS	[mm]	DESIGN	PRESS. 3.5	[barg]	TEMP. -29 / 100	[°C]
HEAT TRACING	N/A				TEST	PRESS. N/A	[barg]	TEMP. AMB	MEDIUM N/A

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

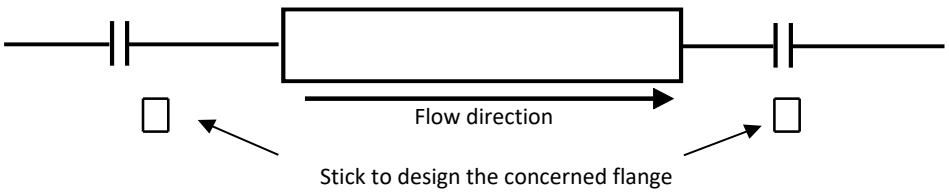
MASTER


TAG
116-1-J1
FLANGE TIGHTENED
ID STAMP RFM6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
116-1-J1
FLANGE ASSEMBLED
ID STAMP RFM6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
116-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	116-1-J2	: Joint 116-1-J2			Dwg	123A90-FDL-PP-DI-00116-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10004277		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-022

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	3"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	122.2		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	37	123	37	73	122.2
2	37	123	37	73	122.2
3	37	123	37	73	122.2
4	37	123	37	73	122.2
5			37	73	122.2
6			37	73	122.2
7			37	73	122.2
8			37	73	122.2
9			37	73	122.2
10			37	73	122.2
11			37	73	122.2
12			37	73	122.2
13			37	73	122.2
14			37	73	122.2
15			37	73	122.2
16			37	73	122.2
17			37	73	122.2
18			37	73	122.2
19			37	73	122.2
20			37	73	122.2

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

2 **Flange Face Check:** Both flanges clean and free from damage. Yes

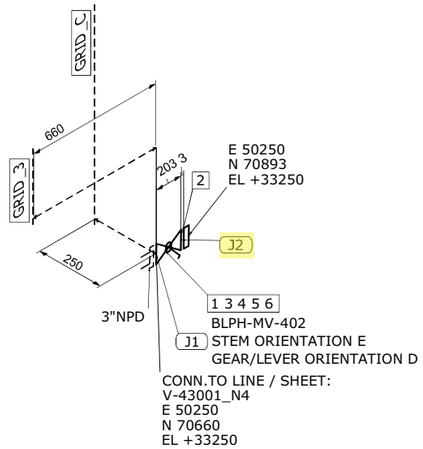
3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:54:00.415Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-01-27T08:23:47.493Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	3	VBD0NN16460300	Ball Valve Split Body RB API 6D FLG 150LB RF BC01C01RFH	1	23.3
2	3	FLB0SS00030300	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F316/316L	1	4.6
3	3	SPIKNN00570300	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.2
4	3	GSW0GK11140300	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.2
5	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
6	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	30.3
OVERALL WEIGHT [kg]	30.3

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	30.3

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 3"-VL-220-01HSS-N

SK.116

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00116			SHEET / OF	1/4
						REV.	00

LINE DATA

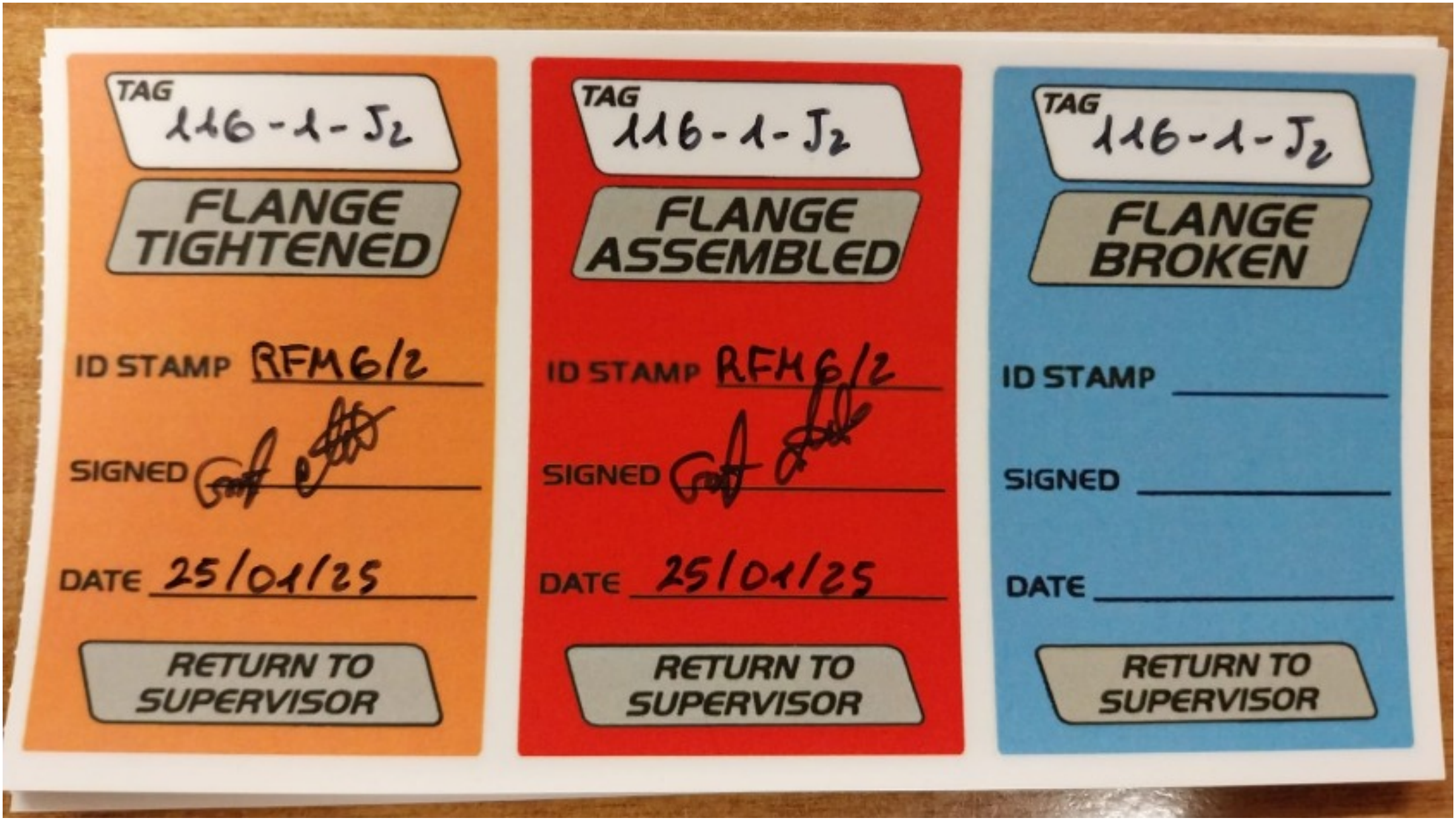
NDT INSPECTION CATEGORY	1		PED CATEGORY	I			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	N/A			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

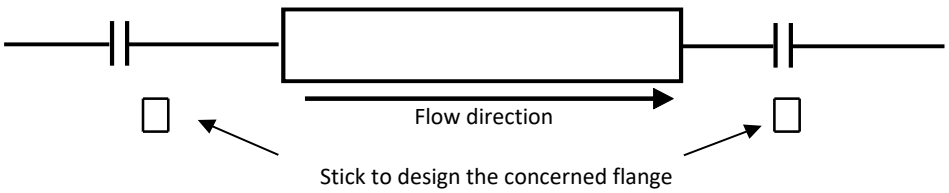
MASTER


TAG
116-1-J2
FLANGE TIGHTENED
ID STAMP RFM6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
116-1-J2
FLANGE ASSEMBLED
ID STAMP RFM6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
116-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	116-2-J3	: Joint 116-2-J3			Dwg	123A90-FDL-PP-DI-00116-02
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10004278	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-022

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	65		

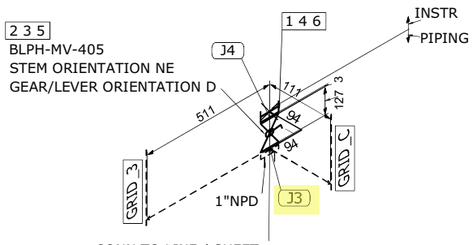
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	20	65	20	39	65
2	20	65	20	39	65
3	20	65	20	39	65
4	20	65	20	39	65
5			20	39	65
6			20	39	65
7			20	39	65
8			20	39	65
9			20	39	65
10			20	39	65
11			20	39	65
12			20	39	65
13			20	39	65
14			20	39	65
15			20	39	65
16			20	39	65
17			20	39	65
18			20	39	65
19			20	39	65
20			20	39	65

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:54:15.471Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-27T15:08:55.386Z	

N



CONN.TO LINE / SHEET:
V-43001_K1B
E 49889
N 70511
EL +31450

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X1/2	FLR0SS0034010H	Flange Reducing ASME B16.5 THRD-F NPT 150LB RF FRG ASTM A182 Gr.F316/316L	1	0.9
2	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	5.8
3	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	7.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 3"-VL-220-01HSS-N

SK.116

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00116 | SHEET / OF: 2/4 | REV.: 00

LINE DATA

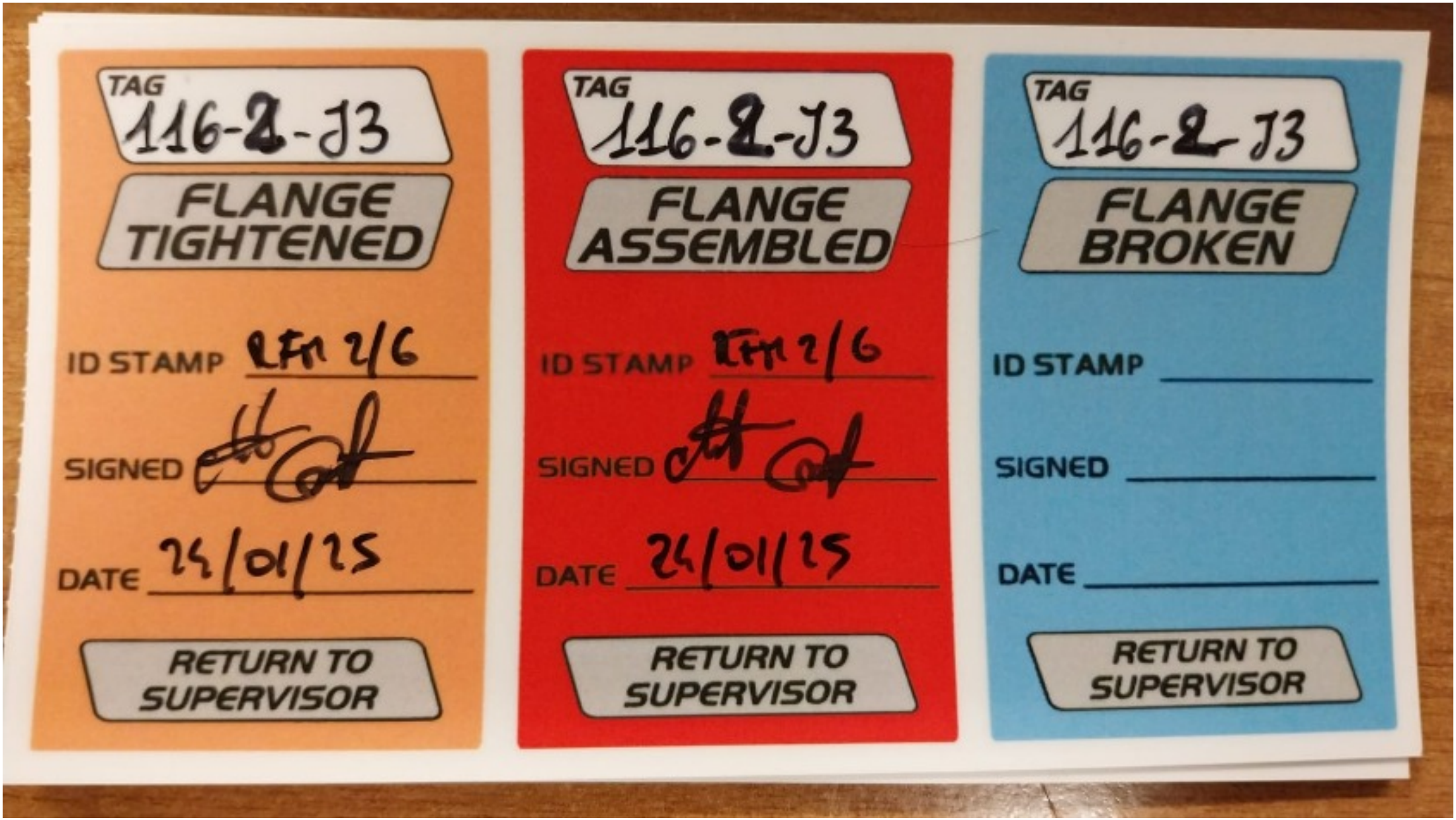
NDT INSPECTION CATEGORY	1		PED CATEGORY	I			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	N/A			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. N/A [barg]	TEMP. AMB.	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

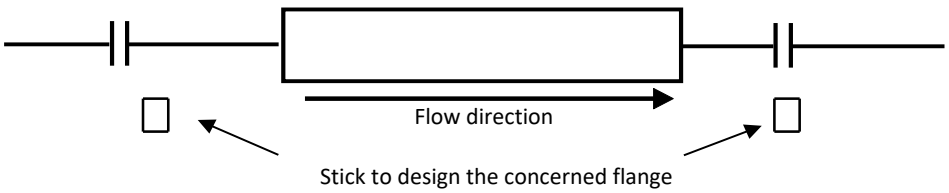
MASTER


TAG
116-2-J3
FLANGE TIGHTENED
ID STAMP EH 2/6
SIGNED
DATE 24/01/25
RETURN TO SUPERVISOR
TAG
116-2-J3
FLANGE ASSEMBLED
ID STAMP EH 2/6
SIGNED
DATE 24/01/25
RETURN TO SUPERVISOR
TAG
116-2-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	116-2-J4	: Joint 116-2-J4			Dwg	123A90-FDL-PP-DI-00116-02
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10004279		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 — Bolt tensioning / torquing

Test Pack N.: TP-022

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	62.5		

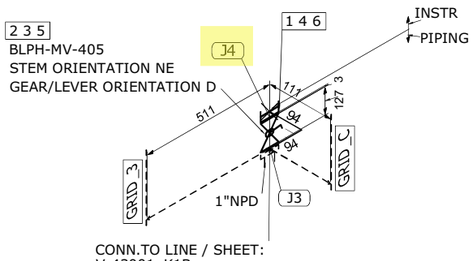
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:54:26.727Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-27T15:09:12.383Z	

N



CONN.TO LINE / SHEET:
V-43001_K1B
E 49889
N 70511
EL +31450

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X1/2	FLR0SS0034010H	Flange Reducing ASME B16.5 THRD-F NPT 150LB RF FRG ASTM A182 Gr.F316/316L	1	0.9
2	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	5.8
3	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	7.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 3"-VL-220-01HSS-N

SK.116

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM

DATE: 27-08-2024

FORMAT: A3

DRAWING NO.: 123A90-FDL-PP-DI-00116

SHEET / OF: 2/4

REV.: 00

LINE DATA

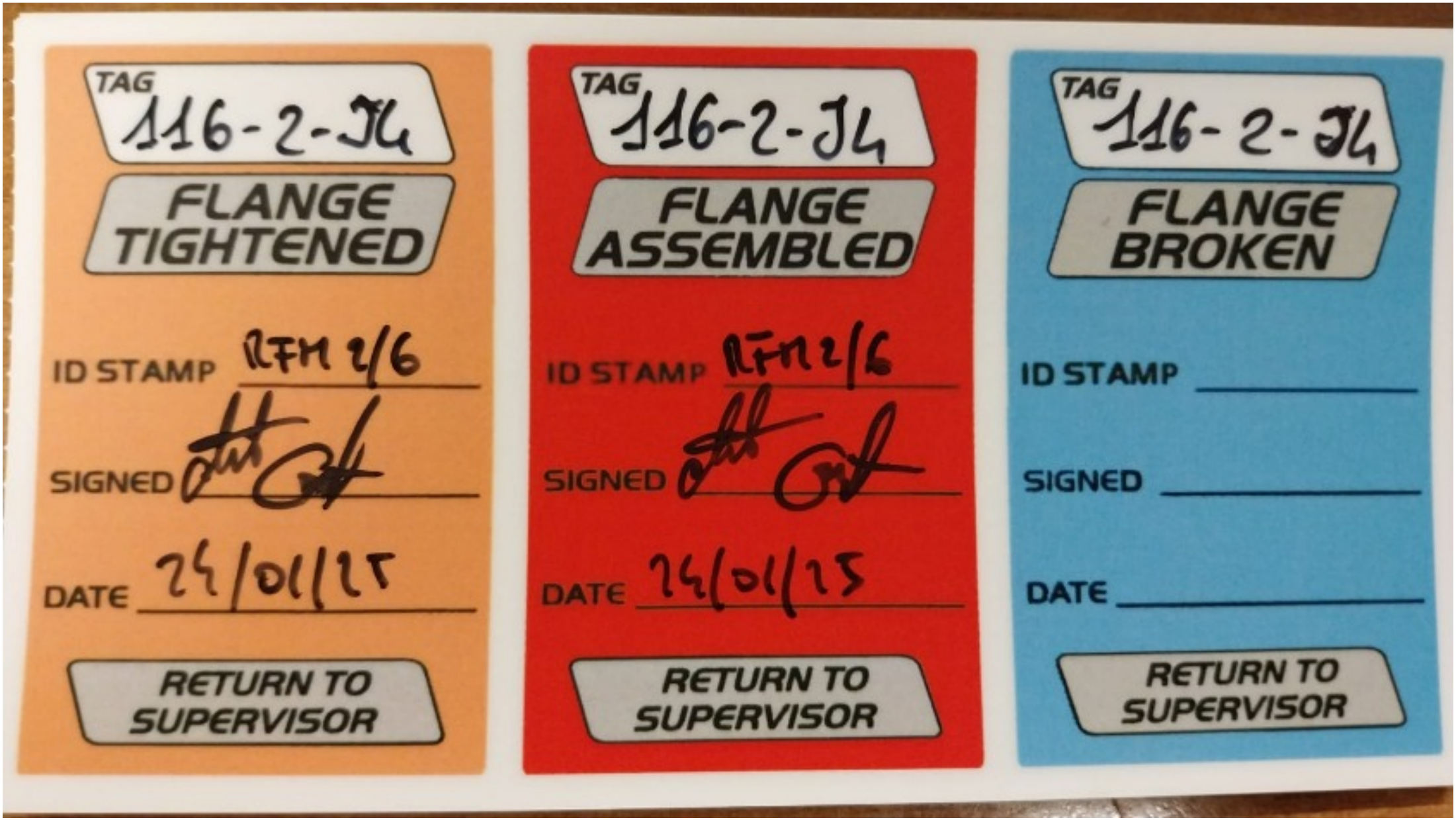
NDT INSPECTION CATEGORY	1		PED CATEGORY	I			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	N/A			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

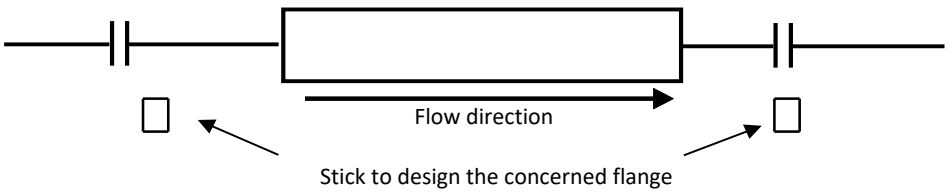
MASTER


TAG 116-2-J4
FLANGE TIGHTENED
ID STAMP RFM 2/6
SIGNED
DATE 24/01/25
RETURN TO SUPERVISOR
TAG 116-2-J4
FLANGE ASSEMBLED
ID STAMP RFM 2/6
SIGNED
DATE 24/01/25
RETURN TO SUPERVISOR
TAG 116-2-J4
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	116-3-J5	: Joint 116-3-J5			Dwg	123A90-FDL-PP-DI-00116-03
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10004280	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-022

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	65		

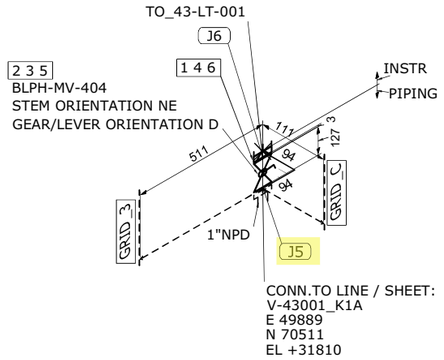
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	20	65	20	39	65
2	20	65	20	39	65
3	20	65	20	39	65
4	20	65	20	39	65
5			20	39	65
6			20	39	65
7			20	39	65
8			20	39	65
9			20	39	65
10			20	39	65
11			20	39	65
12			20	39	65
13			20	39	65
14			20	39	65
15			20	39	65
16			20	39	65
17			20	39	65
18			20	39	65
19			20	39	65
20			20	39	65

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:54:43.088Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-27T15:09:27.868Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X1/2	FLR0SS0034010H	Flange Reducing ASME B16.5 THRD-F NPT 150LB RF FRG ASTM A182 Gr.F316/316L	1	0.9
2	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	5.8
3	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	7.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 3"-VL-220-01HSS-N

SK.116

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00116	SHEET / OF 3/4	REV. 00

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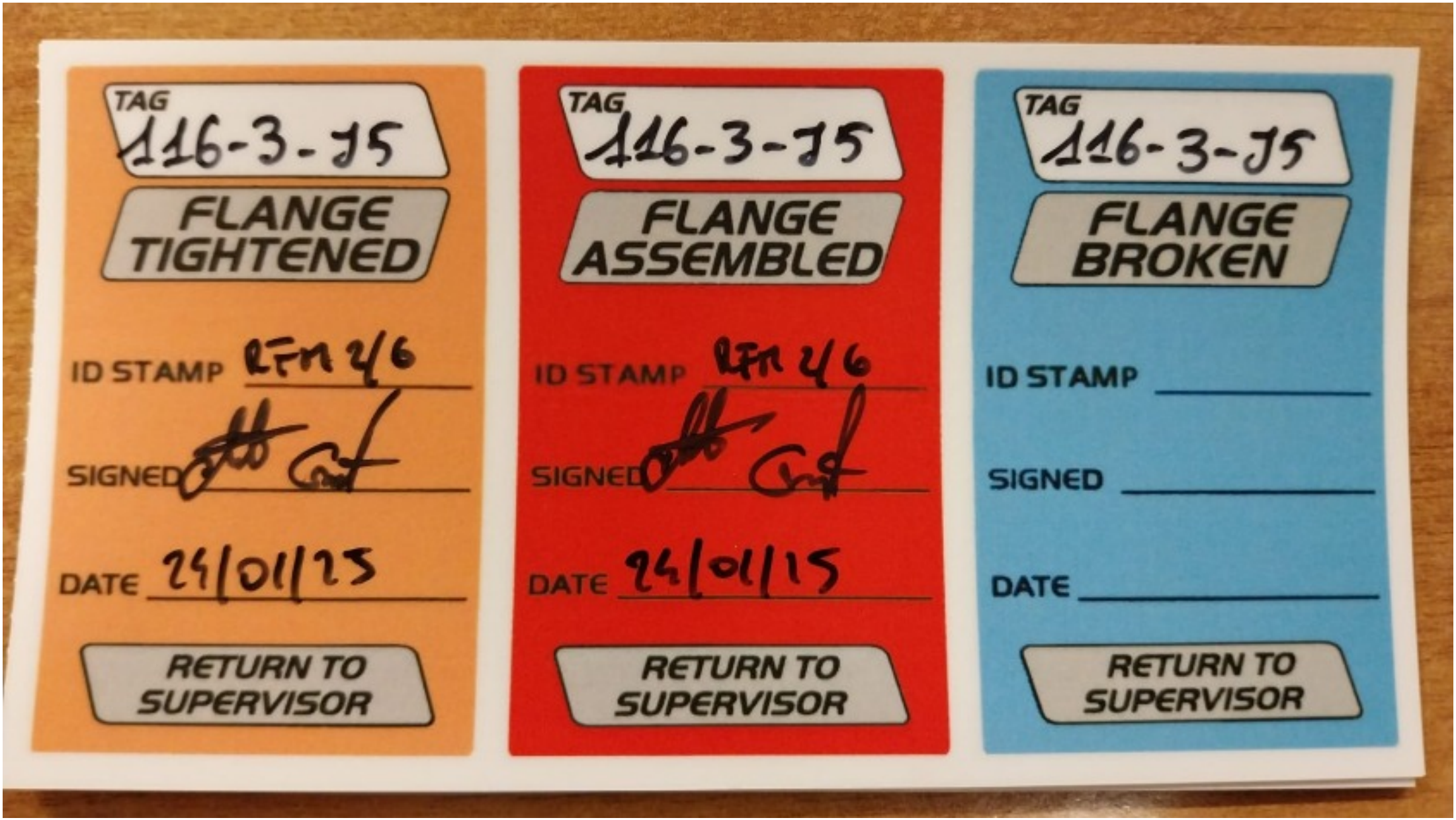
NDT INSPECTION CATEGORY	1		PED CATEGORY	I			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

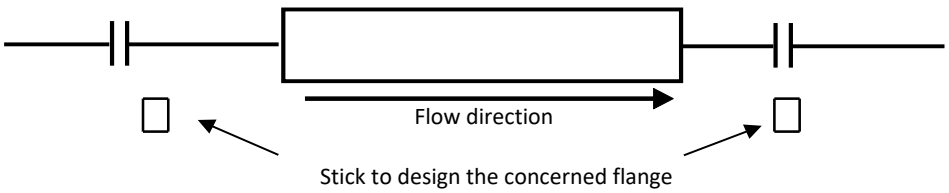

TAG
116-3-J5
FLANGE TIGHTENED
ID STAMP RFH 46
SIGNED
DATE 24/01/25
RETURN TO SUPERVISOR
TAG
116-3-J5
FLANGE ASSEMBLED
ID STAMP RFH 46
SIGNED
DATE 24/01/25
RETURN TO SUPERVISOR
TAG
116-3-J5
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ROSETTI MARINO — CROSSWIND

ITEM	Tag	116-3-J6	: Joint 116-3-J6			Dwg	123A90-FDL-PP-DI-00116-03
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10004281	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 — Bolt tensioning / torquing

Test Pack N.: TP-022

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	62.5		

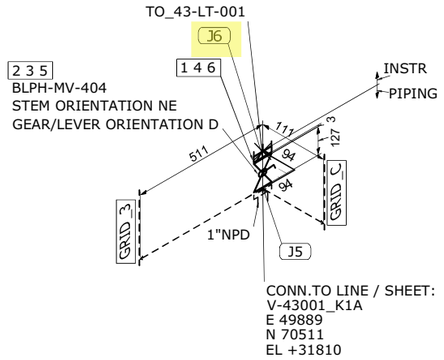
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-27	
Signature	Digitaly signed by Emanuele Delfino 2025-01-25T05:54:55.887Z	Digitaly signed by Andrea Mancini 2025-01-27T15:09:48.653Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X1/2	FLR0SS0034010H	Flange Reducing ASME B16.5 THRD-F NPT 150LB RF FRG ASTM A182 Gr.F316/316L	1	0.9
2	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	5.8
3	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	7.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 3"-VL-220-01HSS-N

SK.116

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00116			SHEET / OF	3/4
						REV.	00

LINE DATA

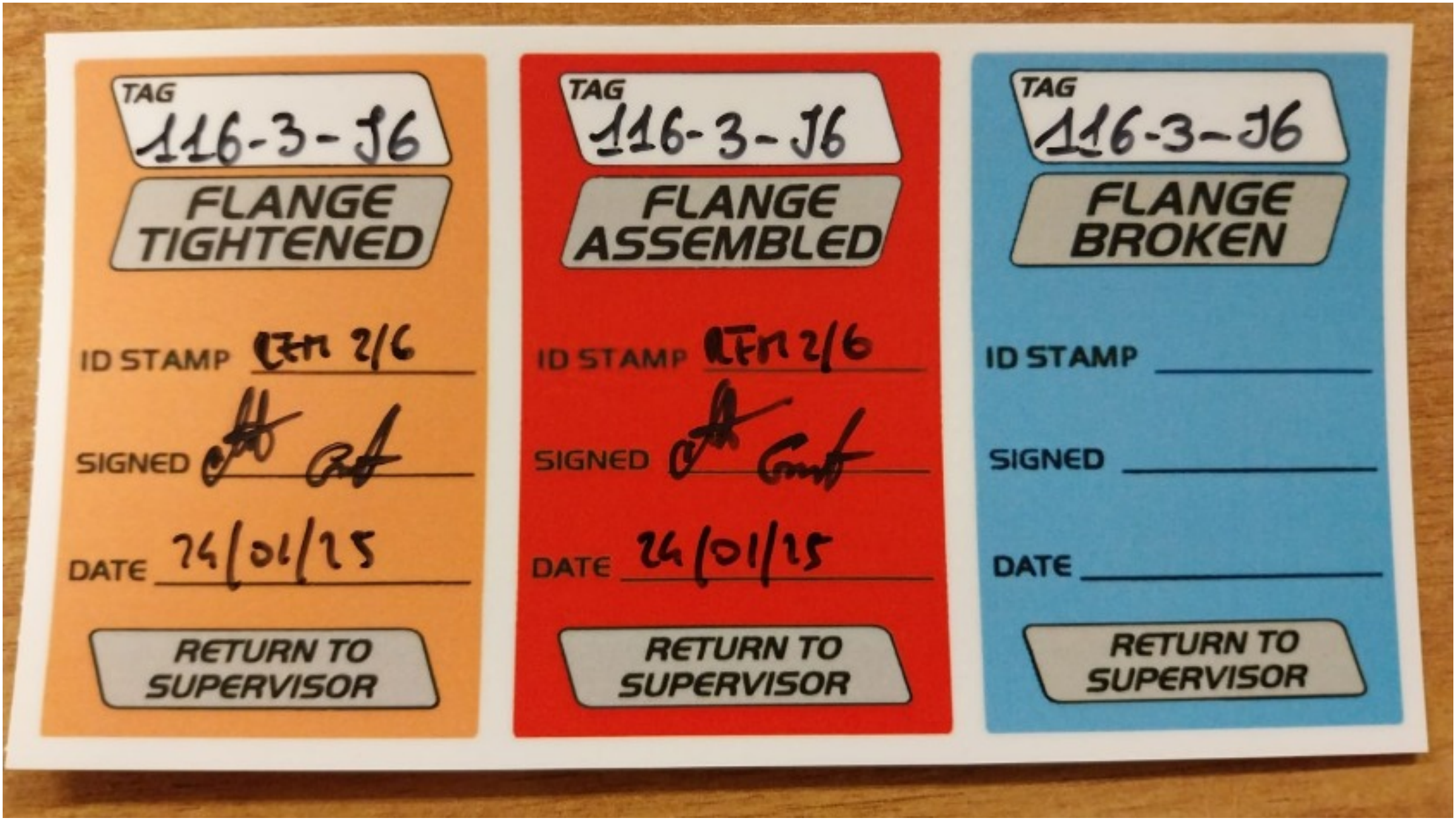
NDT INSPECTION CATEGORY	1		PED CATEGORY	I			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

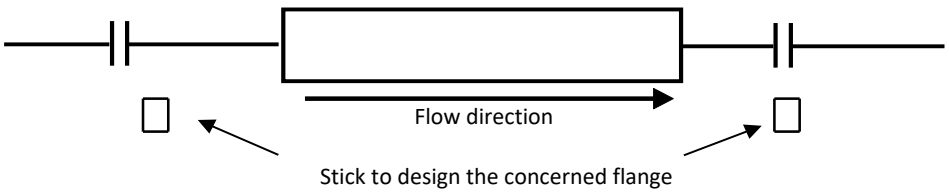

TAG
116-3-J6
FLANGE TIGHTENED
ID STAMP CFH 2/6
SIGNED
DATE 24/01/25
RETURN TO SUPERVISOR
TAG
116-3-J6
FLANGE ASSEMBLED
ID STAMP CFH 2/6
SIGNED
DATE 24/01/25
RETURN TO SUPERVISOR
TAG
116-3-J6
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	116-4-J7	: Joint 116-4-J7			Dwg	123A90-FDL-PP-DI-00116-04
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10004282		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 — Bolt tensioning / torquing

Test Pack N.: TP-022

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	65		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	20	65	20	39	65
2	20	65	20	39	65
3	20	65	20	39	65
4	20	65	20	39	65
5			20	39	65
6			20	39	65
7			20	39	65
8			20	39	65
9			20	39	65
10			20	39	65
11			20	39	65
12			20	39	65
13			20	39	65
14			20	39	65
15			20	39	65
16			20	39	65
17			20	39	65
18			20	39	65
19			20	39	65
20			20	39	65

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

2 **Flange Face Check:** Both flanges clean and free from damage. Yes

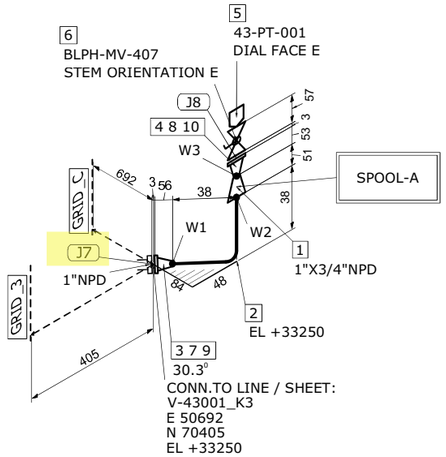
3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:55:08.030Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-01-27T08:27:05.983Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
2	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	1	0.1
3	1	FLW0SS00930100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.4
4	3/4	FLW0SS00923Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F316/316L	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1/2		Pressure Transmitter	1	0.0
6	3/4X1/2	VLBNNN00023Q0H	Monoflange Block & Bleed Valve API 6D FLG x THRD-F NPT 150LB RF MS01C02YH	1	4.3
7	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
8	3/4	GSW0GK11093Q00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
10	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	2.5
ERECTION WEIGHT [kg]	5.5
OVERALL WEIGHT [kg]	8.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2.75	2.6
MONT	0	5.5

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 3"-VL-220-01HSS-N

SK.116

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00116			SHEET / OF	4/4
						REV.	00

LINE DATA

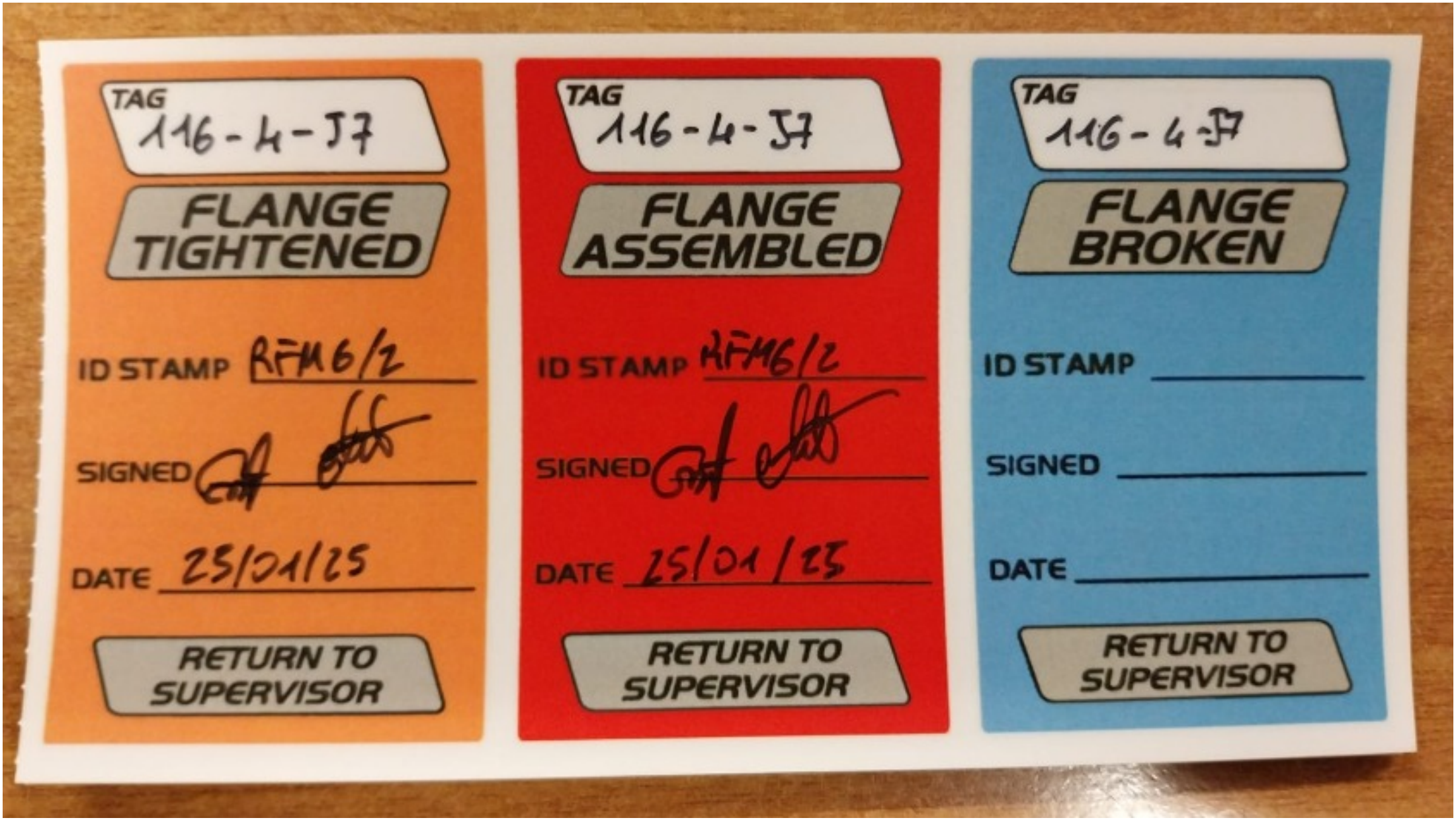
NDT INSPECTION CATEGORY	1			PED CATEGORY	I				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002		FLUID PHASE	Liquid				
INSULATION	TYPE N	THICKNESS [mm]		DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A			TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

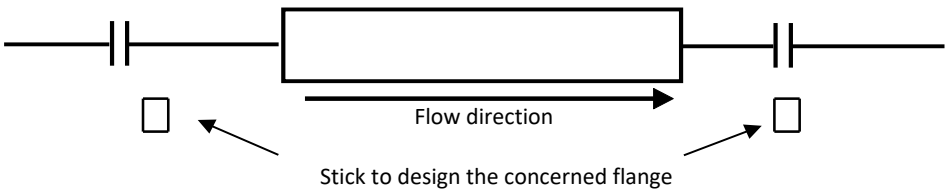
MASTER


TAG
116-4-J7
FLANGE TIGHTENED
ID STAMP RFM6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
116-4-J7
FLANGE ASSEMBLED
ID STAMP RFM6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
116-4-J7
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	116-4-J8	: Joint 116-4-J8			Dwg	123A90-FDL-PP-DI-00116-04
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10004283		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-022

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	3/4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	62.5		

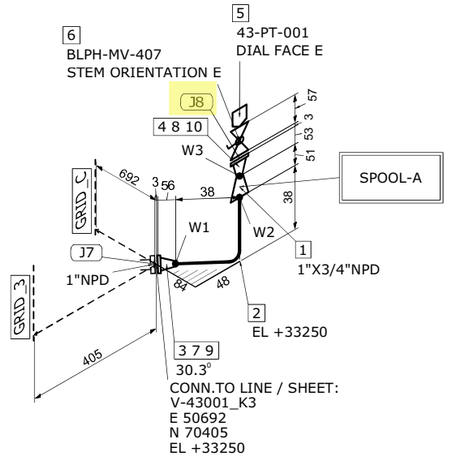
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-25	2025-02-03	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:55:19.847Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-03T16:40:30.263Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
2	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	1	0.1
3	1	FLW0SS00930100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.4
4	3/4	FLW0SS00923Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F316/316L	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1/2		Pressure Transmitter	1	0.0
6	3/4X1/2	VLBNNN00023Q0H	Monoflange Block & Bleed Valve API 6D FLG x THRD-F NPT 150LB RF MS01C02YH	1	4.3
7	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
8	3/4	GSW0GK11093Q00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
10	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	2.5
ERECTION WEIGHT [kg]	5.5
OVERALL WEIGHT [kg]	8.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2.75	2.6
MONT	0	5.5

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 3"-VL-220-01HSS-N

SK.116

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00116			SHEET / OF	4/4
						REV.	00

LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	I				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002		FLUID PHASE	Liquid				
INSULATION	TYPE N	THICKNESS [mm]		DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	N/A			TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

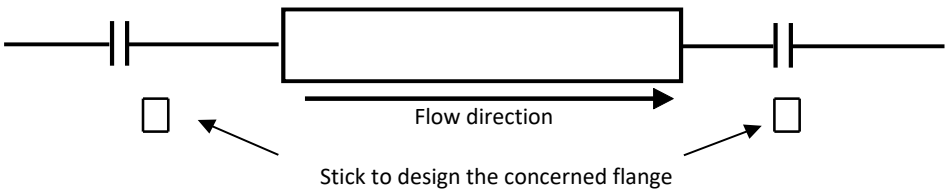
MASTER


TAG
116-4-38
FLANGE TIGHTENED
ID STAMP RH13/KE119
SIGNED
DATE 01/02/25
RETURN TO SUPERVISOR
TAG
116-4-38
FLANGE ASSEMBLED
ID STAMP RH13/KE119
SIGNED
DATE 01/02/25
RETURN TO SUPERVISOR
TAG
116-4-38
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	123-1-J1	: Joint 123-1-J1			Dwg	123A90-FDL-PP-DI-00123-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10004290	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-022

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	62.5		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-31	2025-01-31	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-31T07:07:44.954Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-31T09:13:25.601Z	



TAG 123-1-J1
FLANGE TIGHTENED
ID STAMP LFM 2/6
SIGNED
DATE 30/01/25
RETURN TO SUPERVISOR

TAG 123-1-J1
FLANGE ASSEMBLED
ID STAMP LFM 2/6
SIGNED
DATE 30/01/25
RETURN TO SUPERVISOR

TAG 123-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

TAG 123-1-J1
FLANGE TIGHTENED
ID STAMP LFM 6/2
SIGNED
DATE 23/01/25
RETURN TO SUPERVISOR

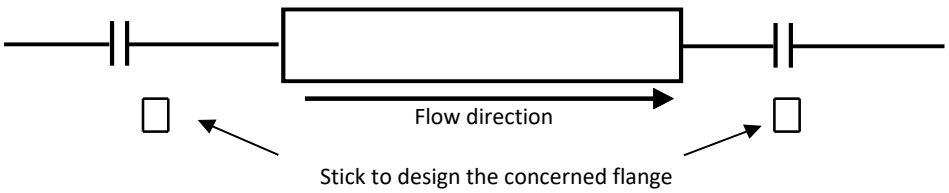
TAG 123-1-J1
FLANGE ASSEMBLED
ID STAMP LFM/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR

TAG 123-1-J1
FLANGE BROKEN
ID STAMP LFM 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR

ITEM	Tag	123-1-J1	: Joint 123-1-J1			Dwg	123A90-FDL-PP-DI-00123-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10004290	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form TMX27	Bolt tensioning / torquing

Test Pack N.: TP-022

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	V030390
Bolt tensioning/Torquing value	62.5		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
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9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
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14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
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18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

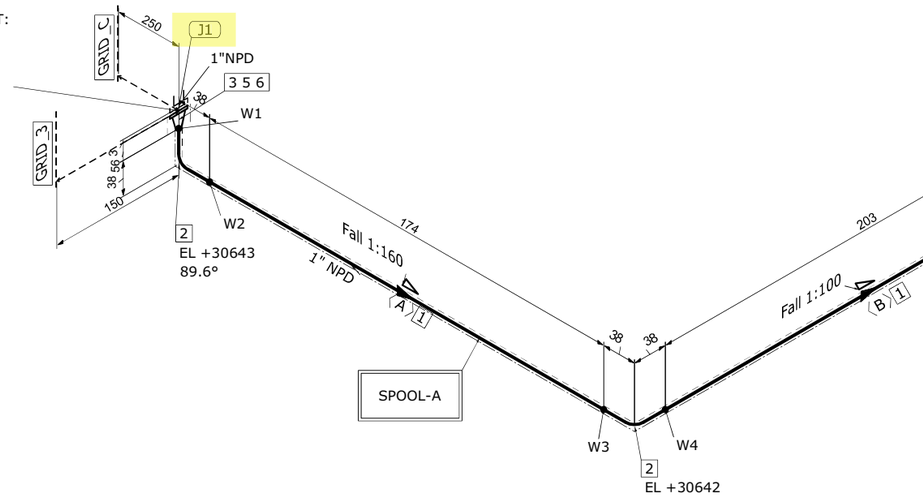
1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:55:30.256Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-27T08:44:55.029Z	

N

CONN.TO LINE / SHEET:
V-43001_N3
E 50250
N 70150
EL +30740



CONT. ON LINE / SHEET:
SK.030
1"-WW-071-01CS-H
E 50500
N 70656
EL +30637

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	0.4M	1.2
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	2	0.4
3	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	2	2.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1	VLBLNN01280100	Block & Bleed Valve API 6D FLG 150LB RF BS01B01RFS	1	12.5
5	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	3	0.2
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	1.4

FABRICATION WEIGHT [kg]	4.4
ERECTION WEIGHT [kg]	14.1
OVERALL WEIGHT [kg]	18.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	174	BEVEL	BEVEL
B	1	203	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	5	4.4
MONT	0	14.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-259-01CS-E

SK.123

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00123 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM 1D	BASE RAL N/A		FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20	[mm]	DESIGN	PRESS. 3.5	[barg]	TEMP. -46 / 100	[°C]	
HEAT TRACING	Yes			TEST	PRESS. 5.25	[barg]	TEMP. AMB	MEDIUM	Water

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

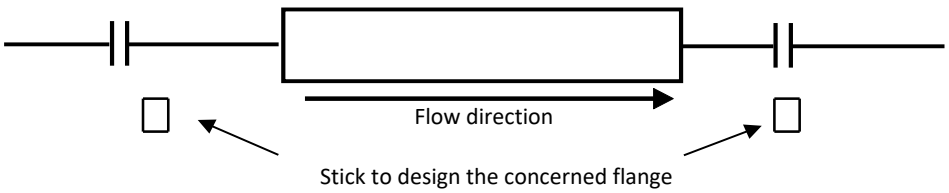
MASTER


TAG
123-1-J1
FLANGE TIGHTENED
ID STAMP LFM 6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
123-1-J1
FLANGE ASSEMBLED
ID STAMP LFM/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
123-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	123-1-J2	: Joint 123-1-J2		Dwg	123A90-FDL-PP-DI-00123-01	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	LD	
TASK	code	C10004291	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX27	Bolt tensioning / torquing

Test Pack N.: TP-022

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	V030390
Bolt tensioning/Torquing value	62.5		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
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20			19	38	62.5

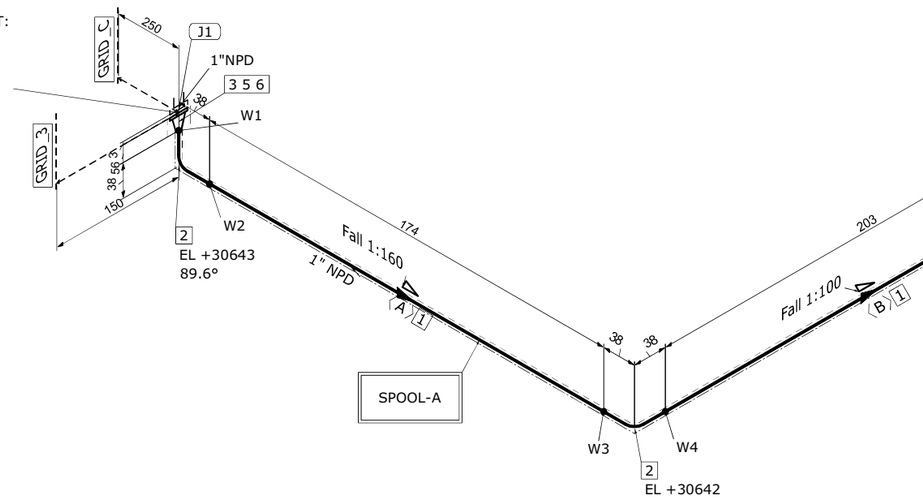
1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:55:42.613Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-27T08:46:04.580Z	

N

CONN.TO LINE / SHEET:
V-43001_N3
E 50250
N 70150
EL +30740



CONT. ON LINE / SHEET:
SK.030
1"-WW-071-01CS-H
E 50500
N 70656
EL +30637

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	0.4M	1.2
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	2	0.4
3	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	2	2.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1	VLBLNN01280100	Block & Bleed Valve API 6D FLG 150LB RF BS01B01RFS	1	12.5
5	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	3	0.2
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	1.4

FABRICATION WEIGHT [kg]	4.4
ERECTION WEIGHT [kg]	14.1
OVERALL WEIGHT [kg]	18.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	174	BEVEL	BEVEL
B	1	203	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	5	4.4
MONT	0	14.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-259-01CS-E

SK.123

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00123
SHEET / OF: 1/1
REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM 1D	BASE RAL N/A		FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20	[mm]	DESIGN	PRESS. 3.5	[barg]	TEMP. -46 / 100	[°C]	
HEAT TRACING	Yes			TEST	PRESS. 5.25	[barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

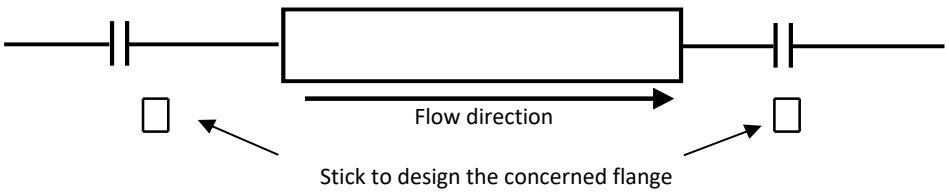
MASTER


TAG
123-1-J2
FLANGE TIGHTENED
ID STAMP KFH6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
123-1-J2
FLANGE ASSEMBLED
ID STAMP KFH6/2
SIGNED
DATE 25/01/23
RETURN TO SUPERVISOR
TAG
123-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	123-1-J3	: Joint 123-1-J3			Dwg	123A90-FDL-PP-DI-00123-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	LD
TASK	code	C10004292	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form TMX27	Bolt tensioning / torquing

Test Pack N.: TP-022

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	V030390
Bolt tensioning/Torquing value	62.5		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

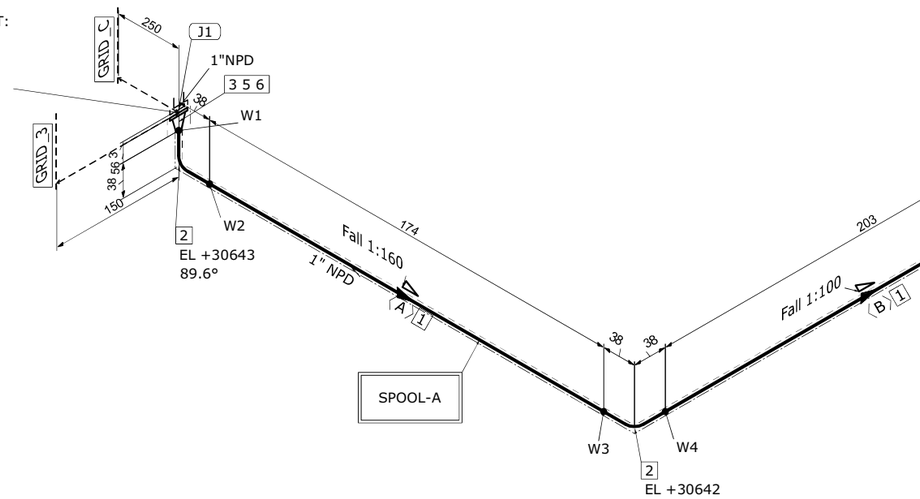
1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:56:06.189Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-27T08:46:35.022Z	

N

CONN.TO LINE / SHEET:
V-43001_N3
E 50250
N 70150
EL +30740



CONT. ON LINE / SHEET:
SK.030
1"-WW-071-01CS-H
E 50500
N 70656
EL +30637

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	0.4M	1.2
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	2	0.4
3	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	2	2.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1	VLBLNN01280100	Block & Bleed Valve API 6D FLG 150LB RF BS01B01RFS	1	12.5
5	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	3	0.2
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	1.4

FABRICATION WEIGHT [kg]	4.4
ERECTION WEIGHT [kg]	14.1
OVERALL WEIGHT [kg]	18.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	174	BEVEL	BEVEL
B	1	203	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	5	4.4
MONT	0	14.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-259-01CS-E

SK.123

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00123 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

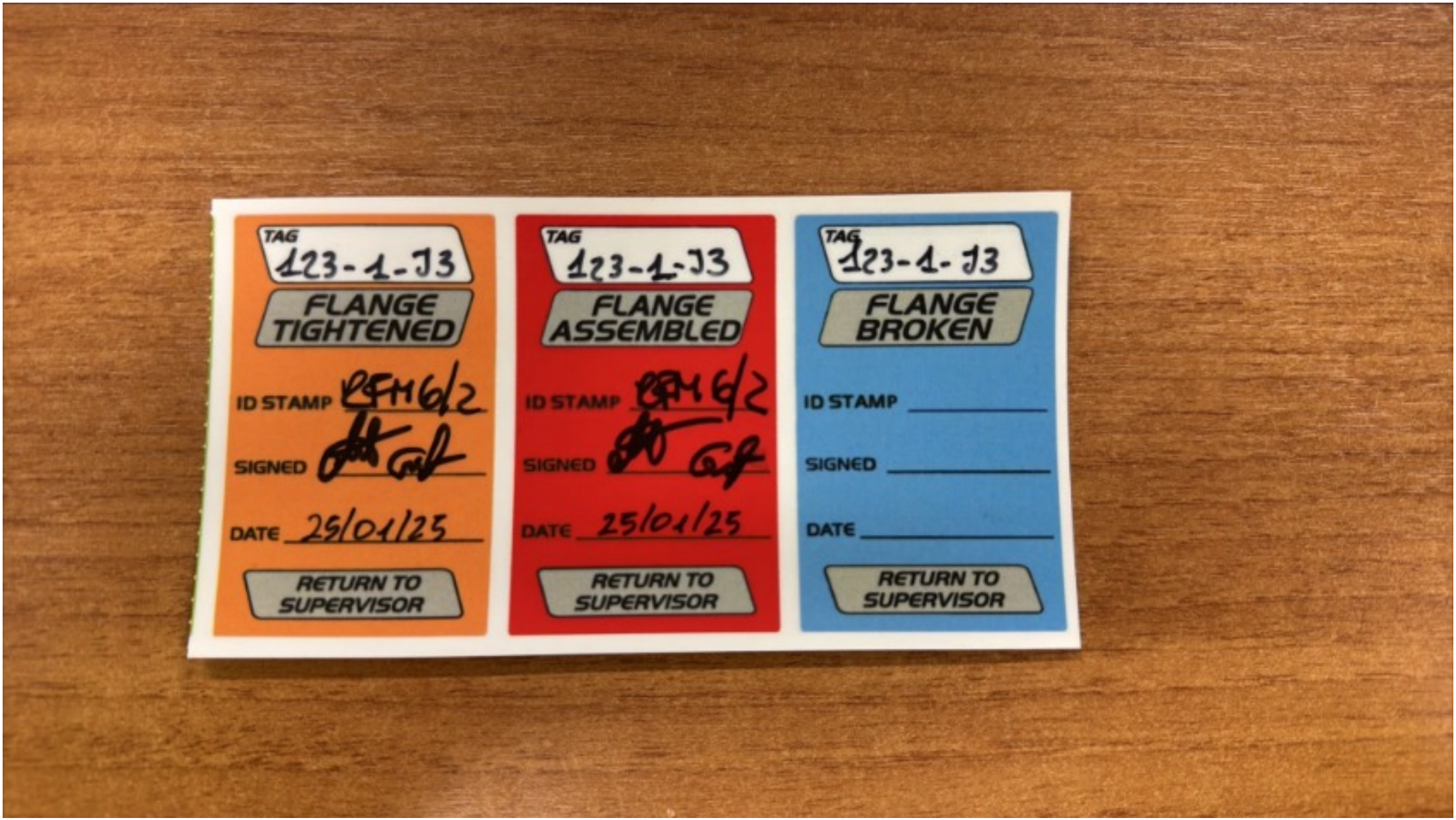
NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM 1D	BASE RAL N/A		FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20	[mm]	DESIGN	PRESS. 3.5	[barg]	TEMP. -46 / 100	[°C]	
HEAT TRACING	Yes			TEST	PRESS. 5.25	[barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

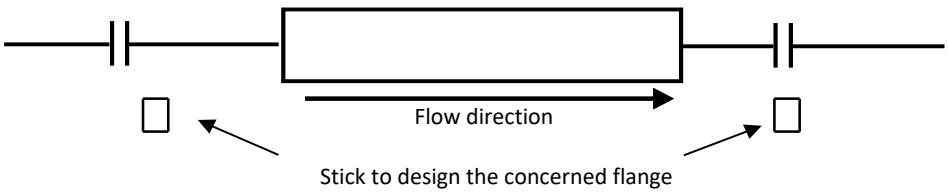
MASTER


TAG
123-1-J3
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
123-1-J3
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
123-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	124-1-J1	: Joint 124-1-J1			Dwg	123A90-FDL-PP-DI-00124-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004293	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-065

EQUIPMENT TAG



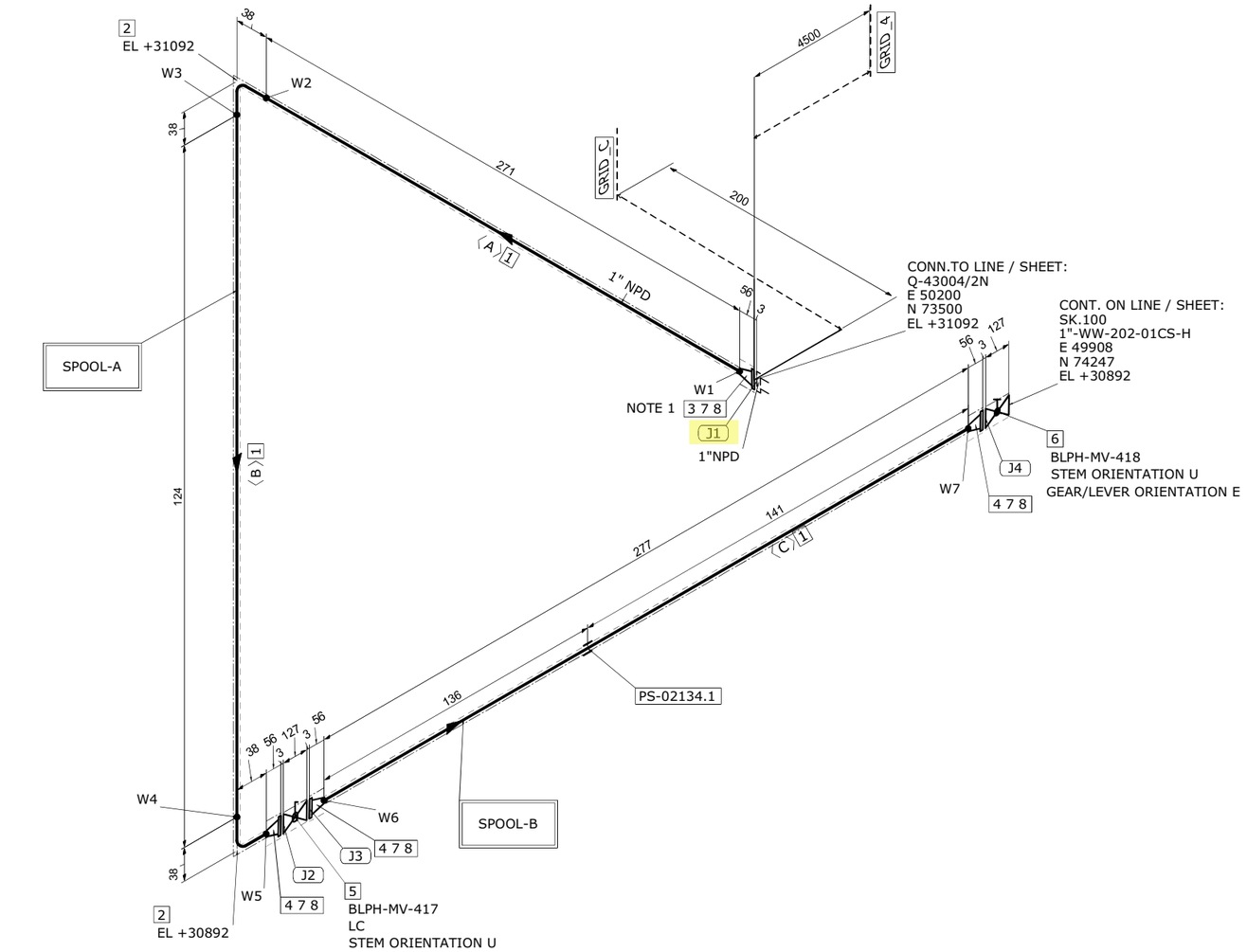
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	V030390
Bolt tensioning/Torquing value	62.5		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:56:21.078Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-27T08:47:03.076Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	0.6M	1.9
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	2	0.4
3	1	FLWDCS02740100	Flange WN For Jackscrews ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	1	1.4
4	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	3	4.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	VBC0NN24710100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01B01RF	1	8.0
6	1	VDA0NN16000100	Globe Valve EN ISO 15761 FLG 150LB RF HS01B02RF	1	9.0
7	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	4	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	1.9

FABRICATION WEIGHT [kg]	7.9
ERECTION WEIGHT [kg]	19.1
OVERALL WEIGHT [kg]	27.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	271	BEVEL	BEVEL
B	1	124	BEVEL	BEVEL
C	1	277	BEVEL	BEVEL

SUPPORT LIST

PS-02134.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	5	4.2
B	2	3.7
MONT	0	19.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 1D	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -46 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

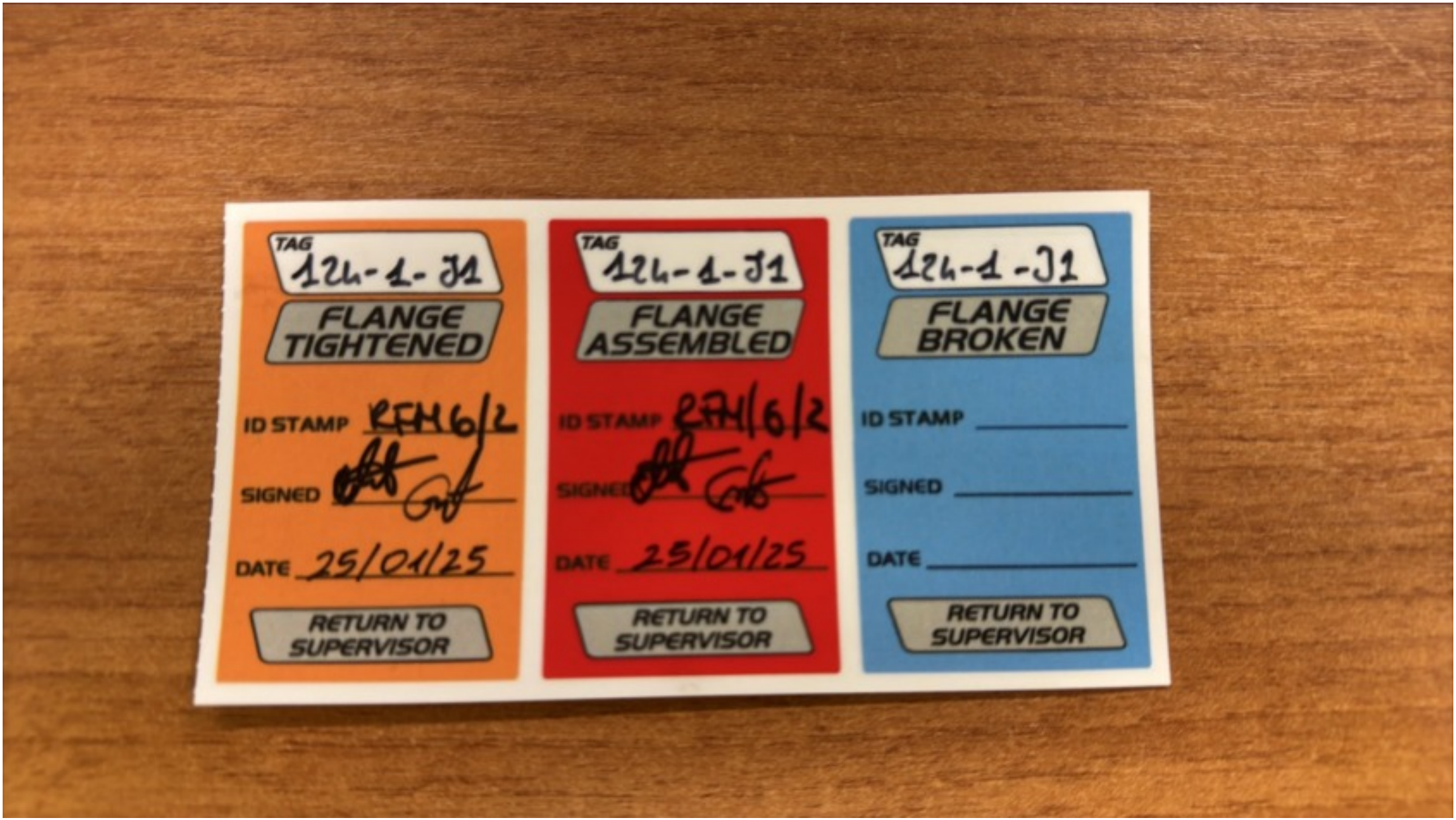
MASTER

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-260-01CS-E
SK.124

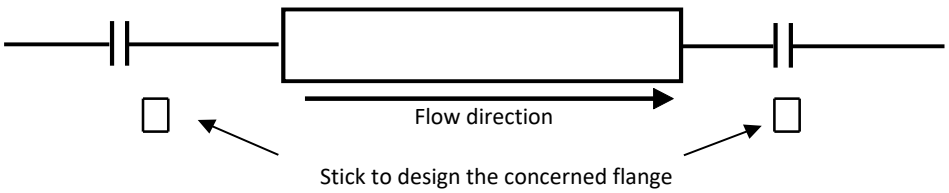
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE	27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00124		SHEET / OF 1/1	REV. 00


TAG
124-1-J1
FLANGE TIGHTENED
ID STAMP RFH6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
124-1-J1
FLANGE ASSEMBLED
ID STAMP RFH6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
124-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	124-1-J2	: Joint 124-1-J2			Dwg	123A90-FDL-PP-DI-00124-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004294		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-065

EQUIPMENT TAG



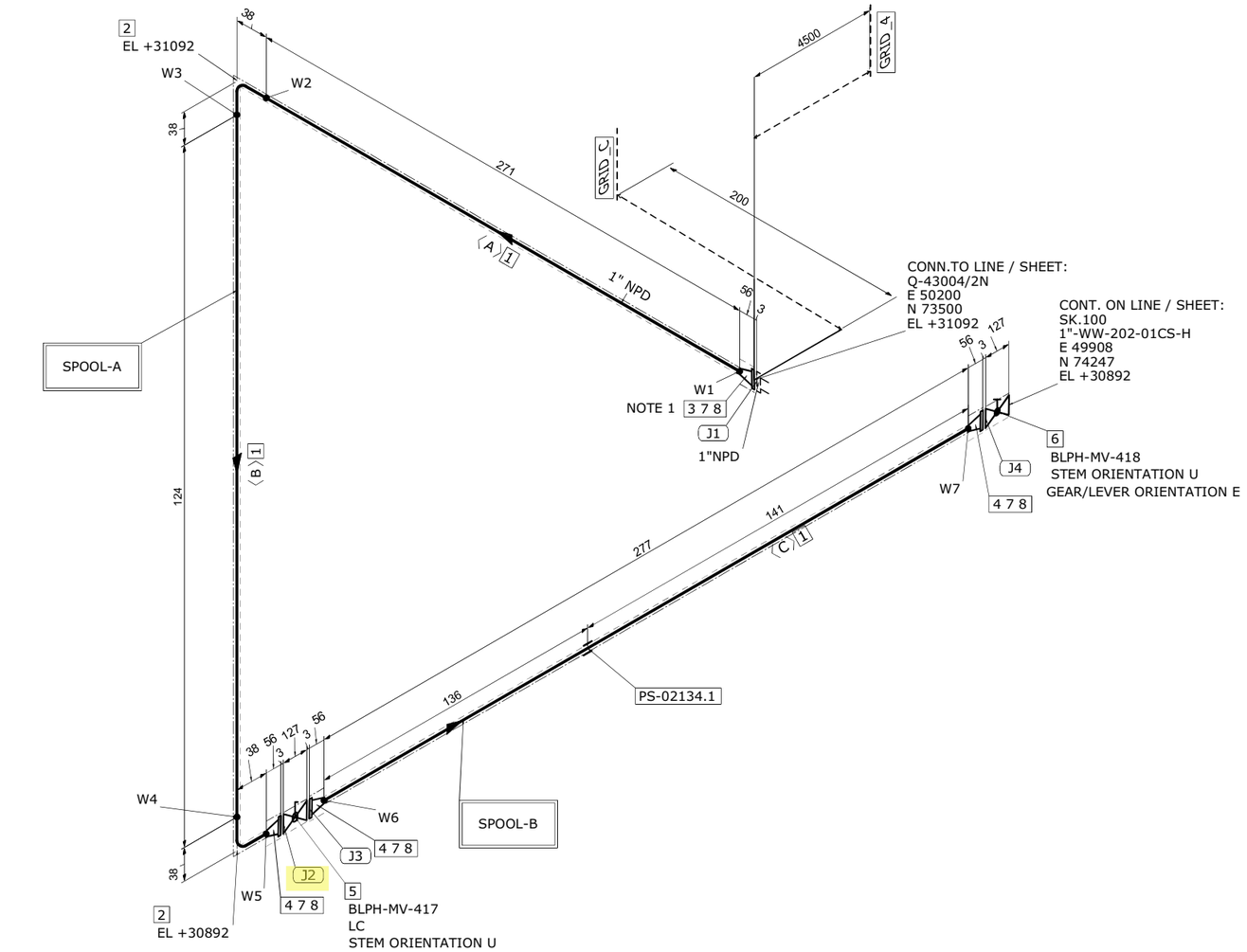
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	V030390
Bolt tensioning/Torquing value	62.5		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:56:33.741Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-27T08:47:27.863Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	0.6M	1.9
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	2	0.4
3	1	FLWDCS02740100	Flange WN For Jackscrews ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	1	1.4
4	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	3	4.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	VBC0NN24710100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01B01RF	1	8.0
6	1	VDA0NN16000100	Globe Valve EN ISO 15761 FLG 150LB RF HS01B02RF	1	9.0
7	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	4	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	1.9

FABRICATION WEIGHT [kg]	7.9
ERECTION WEIGHT [kg]	19.1
OVERALL WEIGHT [kg]	27.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	271	BEVEL	BEVEL
B	1	124	BEVEL	BEVEL
C	1	277	BEVEL	BEVEL

SUPPORT LIST

PS-02134.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	5	4.2
B	2	3.7
MONT	0	19.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-260-01CS-E

SK.124

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00124 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 1D	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -46 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

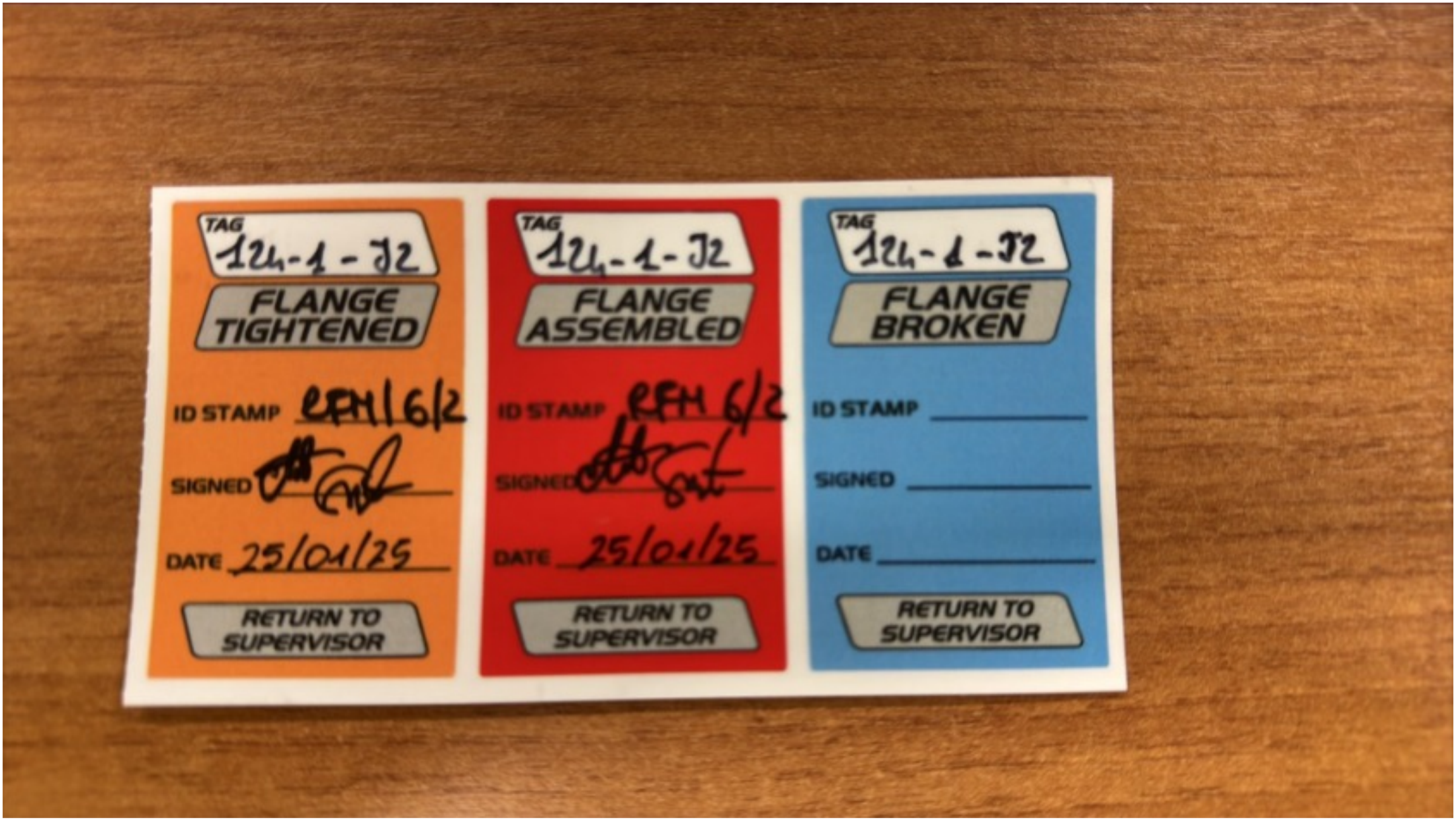
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

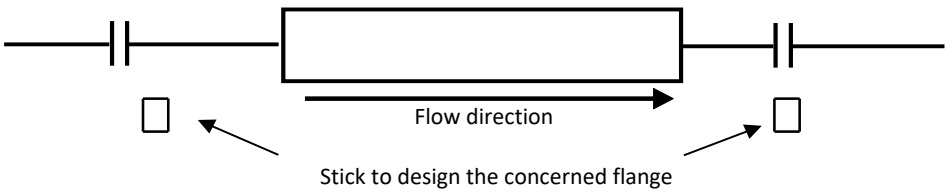
MASTER


TAG
124-1-J2
FLANGE TIGHTENED
ID STAMP RFH 6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
124-1-J2
FLANGE ASSEMBLED
ID STAMP RFH 6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
124-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	124-1-J3	: Joint 124-1-J3			Dwg	123A90-FDL-PP-DI-00124-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004295		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-065

EQUIPMENT TAG



Flange Type 150LB

Flange Size 1"

Gasket Type Gasket Spiral Wound Thk. 3.2 mm

Bolt tensioning/Torquing value 62.5

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools V030390

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

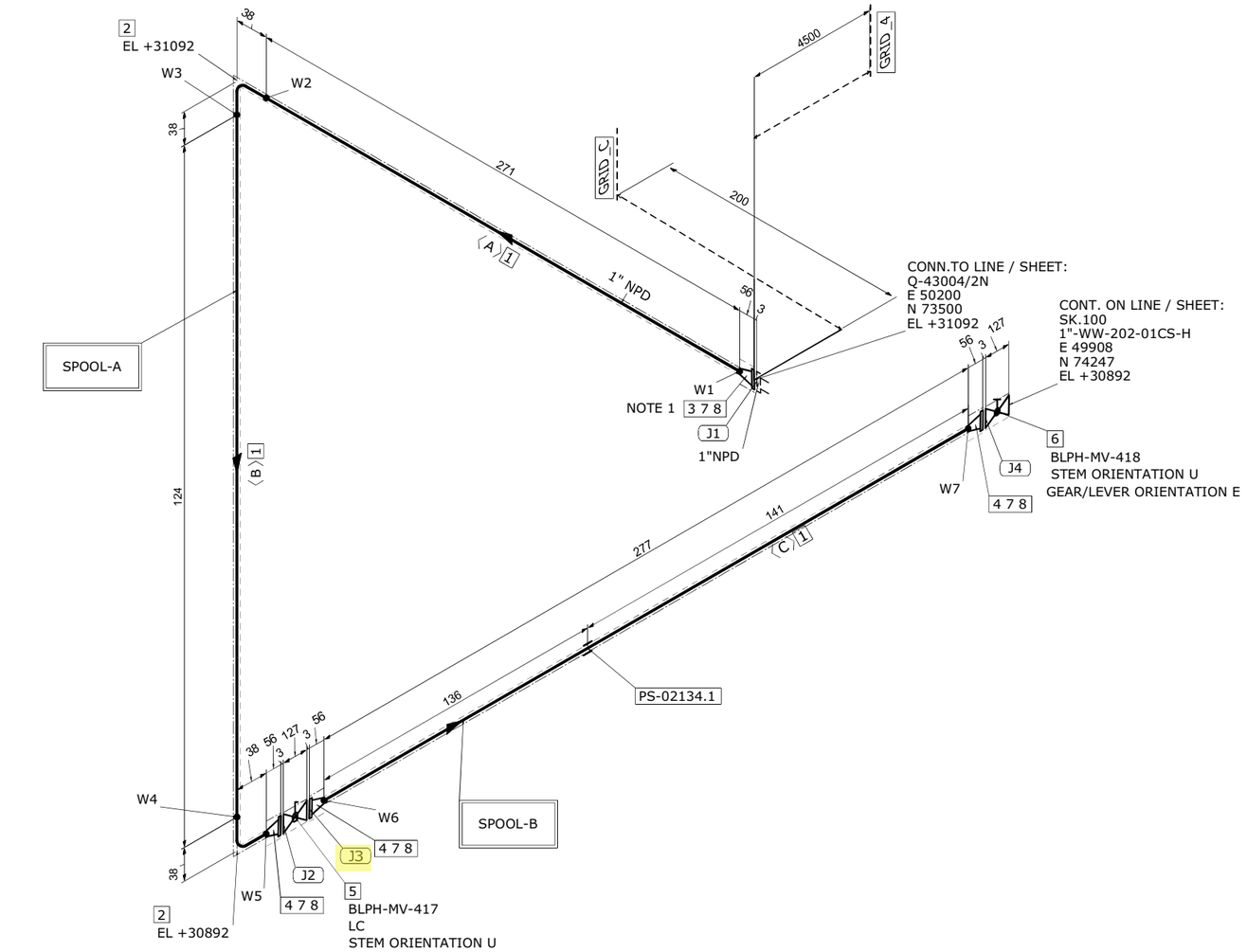
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:56:44.604Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-27T08:48:48.740Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	0.6M	1.9
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	2	0.4
3	1	FLWDCS02740100	Flange WN For Jackscrews ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	1	1.4
4	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	3	4.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	VBC0NN24710100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01B01RF	1	8.0
6	1	VDA0NN16000100	Globe Valve EN ISO 15761 FLG 150LB RF HS01B02RF	1	9.0
7	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	4	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	1.9

FABRICATION WEIGHT [kg]	7.9
ERECTION WEIGHT [kg]	19.1
OVERALL WEIGHT [kg]	27.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	271	BEVEL	BEVEL
B	1	124	BEVEL	BEVEL
C	1	277	BEVEL	BEVEL

SUPPORT LIST

PS-02134.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	5	4.2
B	2	3.7
MONT	0	19.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-260-01CS-E

SK.124

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 1D	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -46 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

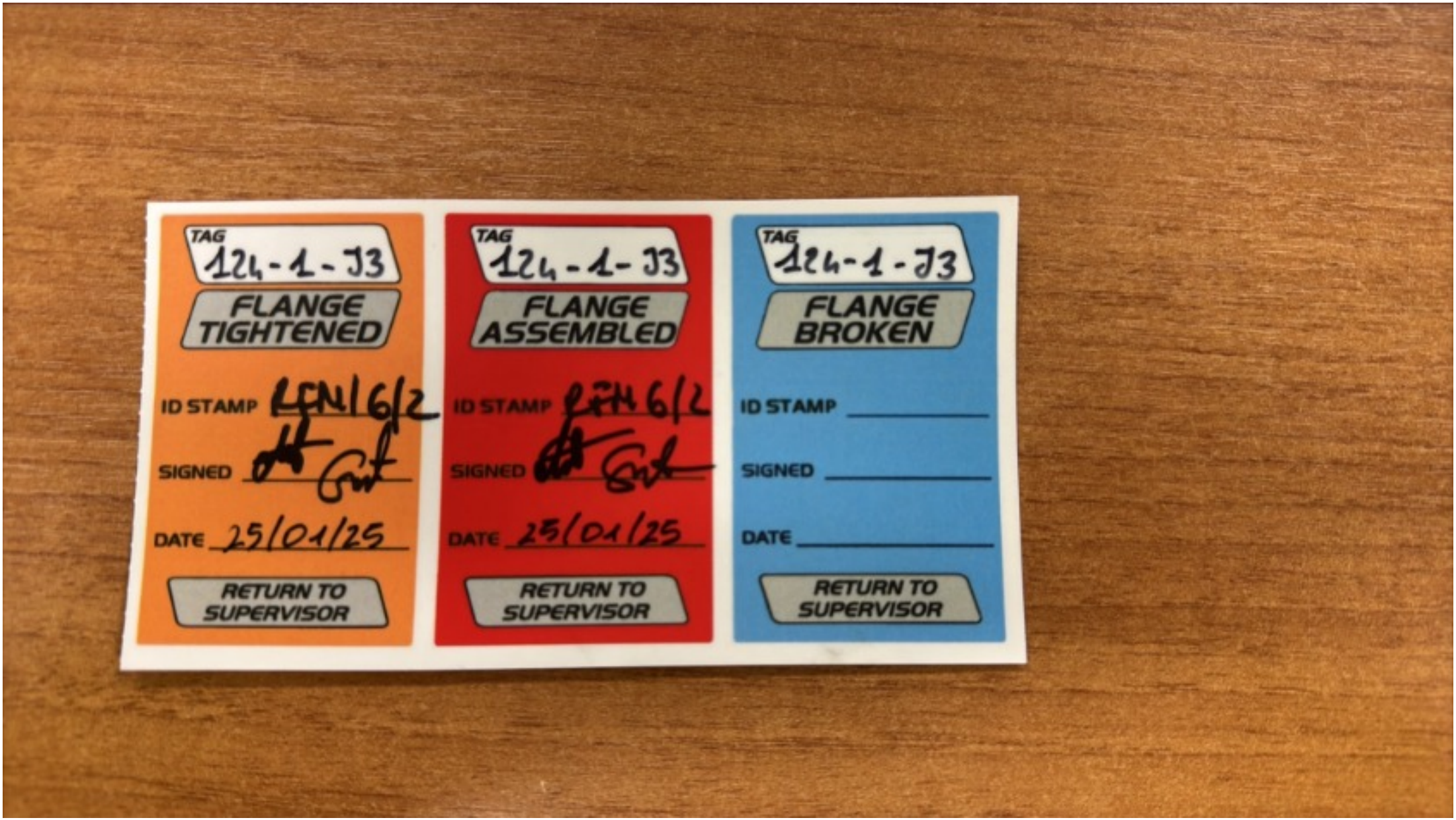
P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

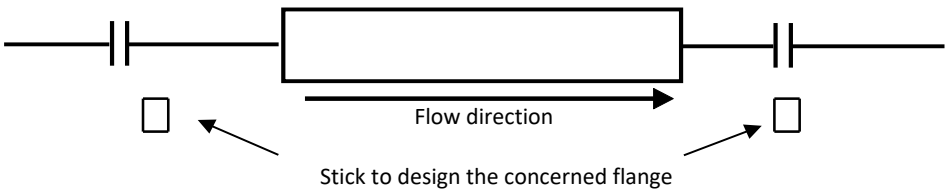
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	27-08-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00124
SHEET / OF	1/1
REV.	00


TAG
124-1-J3
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
124-1-J3
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
124-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	124-1-J4	: Joint 124-1-J4			Dwg	123A90-FDL-PP-DI-00124-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004296		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-065

EQUIPMENT TAG



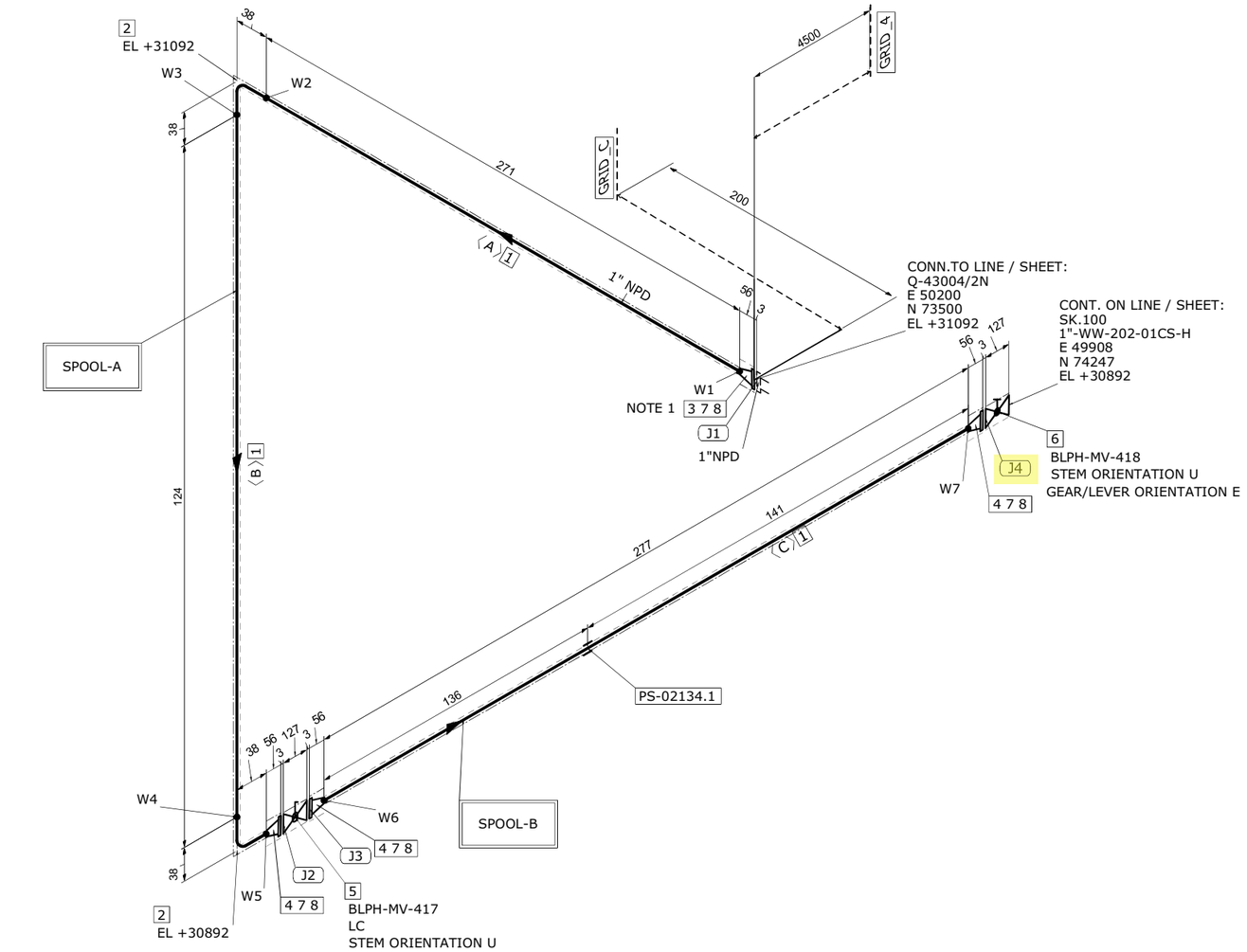
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	V030390
Bolt tensioning/Torquing value	62.5		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:56:55.628Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-27T08:53:50.871Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPECS08300100	Pipe ASME B36.10M PE 4,55 SML ASTM/ASME A/SA333 Gr.6	0.6M	1.9
2	1	E90RCS01780100	90 Deg Elbow Long Radius ASME B16.9 BW 4,55 WRS ASTM/ASME A/SA420 Gr.WPL6	2	0.4
3	1	FLWDCS02740100	Flange WN For Jackscrews ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	1	1.4
4	1	FLW0CS16540100	Flange WN ASME B16.5 150LB RF 4,55 FRG ASTM/ASME A/SA350 Gr.LF2	3	4.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	VBC0NN24710100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01B01RF	1	8.0
6	1	VDA0NN16000100	Globe Valve EN ISO 15761 FLG 150LB RF HS01B02RF	1	9.0
7	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	4	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	1.9

FABRICATION WEIGHT [kg]	7.9
ERECTION WEIGHT [kg]	19.1
OVERALL WEIGHT [kg]	27.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	271	BEVEL	BEVEL
B	1	124	BEVEL	BEVEL
C	1	277	BEVEL	BEVEL

SUPPORT LIST

PS-02134.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	5	4.2
B	2	3.7
MONT	0	19.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 1D	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -46 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-WW-260-01CS-E

SK.124

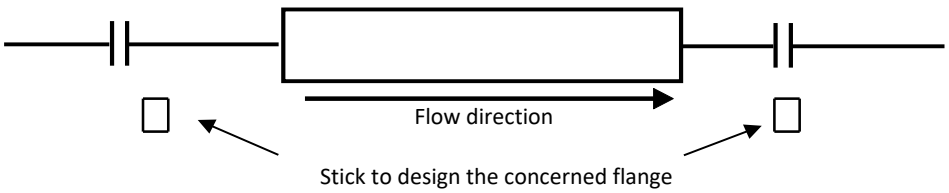
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE	27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00124		SHEET / OF 1/1	REV. 00


TAG
124-1-JL
FLANGE TIGHTENED
ID STAMP LFK 6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
124-1-JL
FLANGE ASSEMBLED
ID STAMP RFM 6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
124-1-JL
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	125-1-J1	: Joint 125-1-J1			Dwg	123A90-FDL-PP-DI-00125-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004297		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-050

EQUIPMENT TAG



Flange Type 150LB

Flange Size 1"

Gasket Type INSULATION KIT

Bolt tensioning/Torquing value 65

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench V030390 (12-68 Nm)

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	20	65	20	39	65
2	20	65	20	39	65
3	20	65	20	39	65
4	20	65	20	39	65
5			20	39	65
6			20	39	65
7			20	39	65
8			20	39	65
9			20	39	65
10			20	39	65
11			20	39	65
12			20	39	65
13			20	39	65
14			20	39	65
15			20	39	65
16			20	39	65
17			20	39	65
18			20	39	65
19			20	39	65
20			20	39	65

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

2 **Flange Face Check:** Both flanges clean and free from damage. Yes

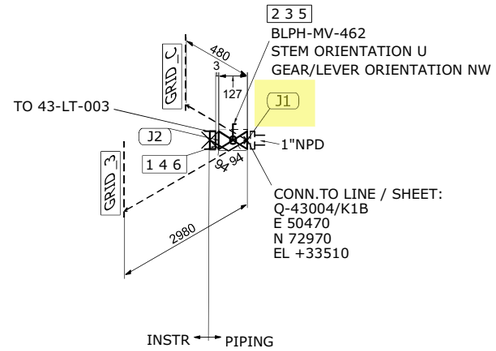
3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-25	2025-01-28	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:57:12.045Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-01-28T18:51:20.889Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X1/2	FLR0SS0034010H	Flange Reducing ASME B16.5 THRD-F NPT 150LB RF FRG ASTM A182 Gr.F316/316L	1	0.9
2	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	5.8
3	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	7.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-VL-261-01HSS-E

SK.125

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00125 | SHEET / OF: 1/2 | REV.: 00

LINE DATA

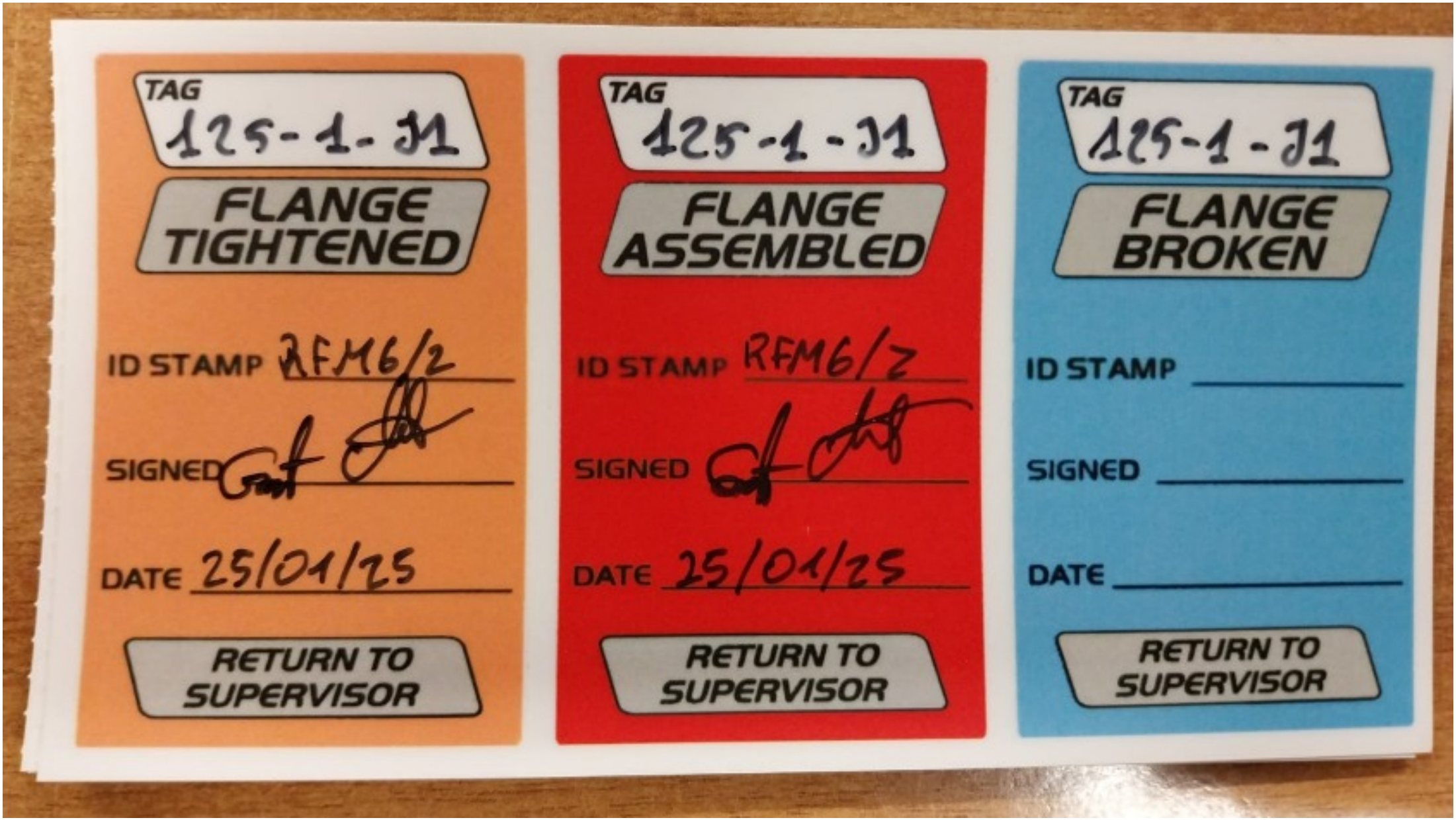
NDT INSPECTION CATEGORY	1			PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM 6C	BASE RAL RAL-9002		FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]		DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes			TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

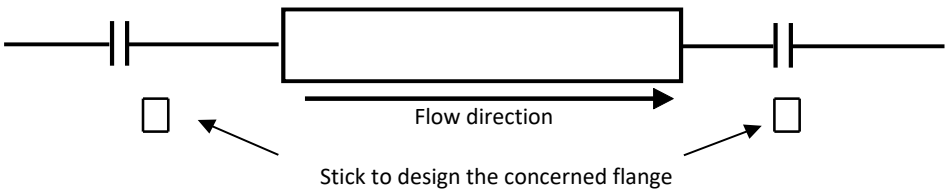
MASTER


TAG
125-1-J1
FLANGE TIGHTENED
ID STAMP RFM6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
125-1-J1
FLANGE ASSEMBLED
ID STAMP RFM6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
125-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	125-1-J2	: Joint 125-1-J2			Dwg	123A90-FDL-PP-DI-00125-01
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004298	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-050

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	62.5		

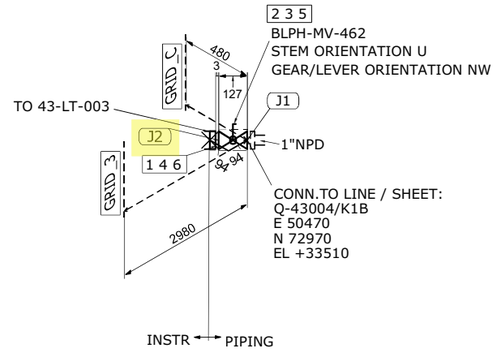
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:57:23.453Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-01-27T08:34:01.599Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X1/2	FLR0SS0034010H	Flange Reducing ASME B16.5 THRD-F NPT 150LB RF FRG ASTM A182 Gr.F316/316L	1	0.9
2	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	5.8
3	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	7.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-VL-261-01HSS-E

SK.125

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00125 | SHEET / OF: 1/2 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM 6C	BASE RAL RAL-9002		FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]		DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes			TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

TAG 125-1-12

FLANGE TIGHTENED

ID STAMP RFM6/2

SIGNED

DATE 25/01/23

RETURN TO SUPERVISOR

TAG 125-1-12

FLANGE ASSEMBLED

ID STAMP RFM6/2

SIGNED

DATE 25/01/23

RETURN TO SUPERVISOR

TAG 125-1-12

FLANGE BROKEN

ID STAMP

SIGNED

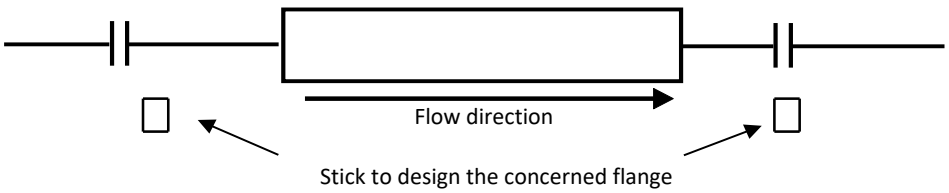
DATE

RETURN TO SUPERVISOR

ITEM	Tag	125-2-J3	: Joint 125-2-J3			Dwg	123A90-FDL-PP-DI-00125-02
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004299	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-050

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	65		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	20	65	20	39	65
2	20	65	20	39	65
3	20	65	20	39	65
4	20	65	20	39	65
5			20	39	65
6			20	39	65
7			20	39	65
8			20	39	65
9			20	39	65
10			20	39	65
11			20	39	65
12			20	39	65
13			20	39	65
14			20	39	65
15			20	39	65
16			20	39	65
17			20	39	65
18			20	39	65
19			20	39	65
20			20	39	65

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

2 **Flange Face Check:** Both flanges clean and free from damage. Yes

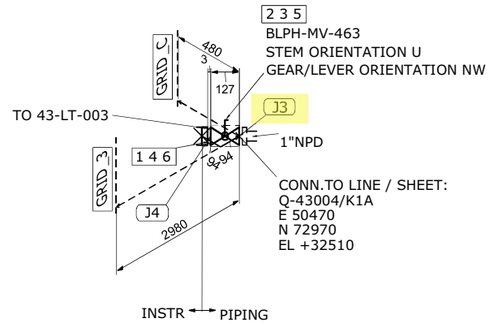
3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-25	2025-01-28	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-25T05:57:34.276Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-01-28T18:51:30.200Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X1/2	FLR0SS0034010H	Flange Reducing ASME B16.5 THRD-F NPT 150LB RF FRG ASTM A182 Gr.F316/316L	1	0.9
2	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	5.8
3	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	7.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-VL-261-01HSS-E

SK.125

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00125			SHEET / OF	2/2
						REV.	00

LINE DATA

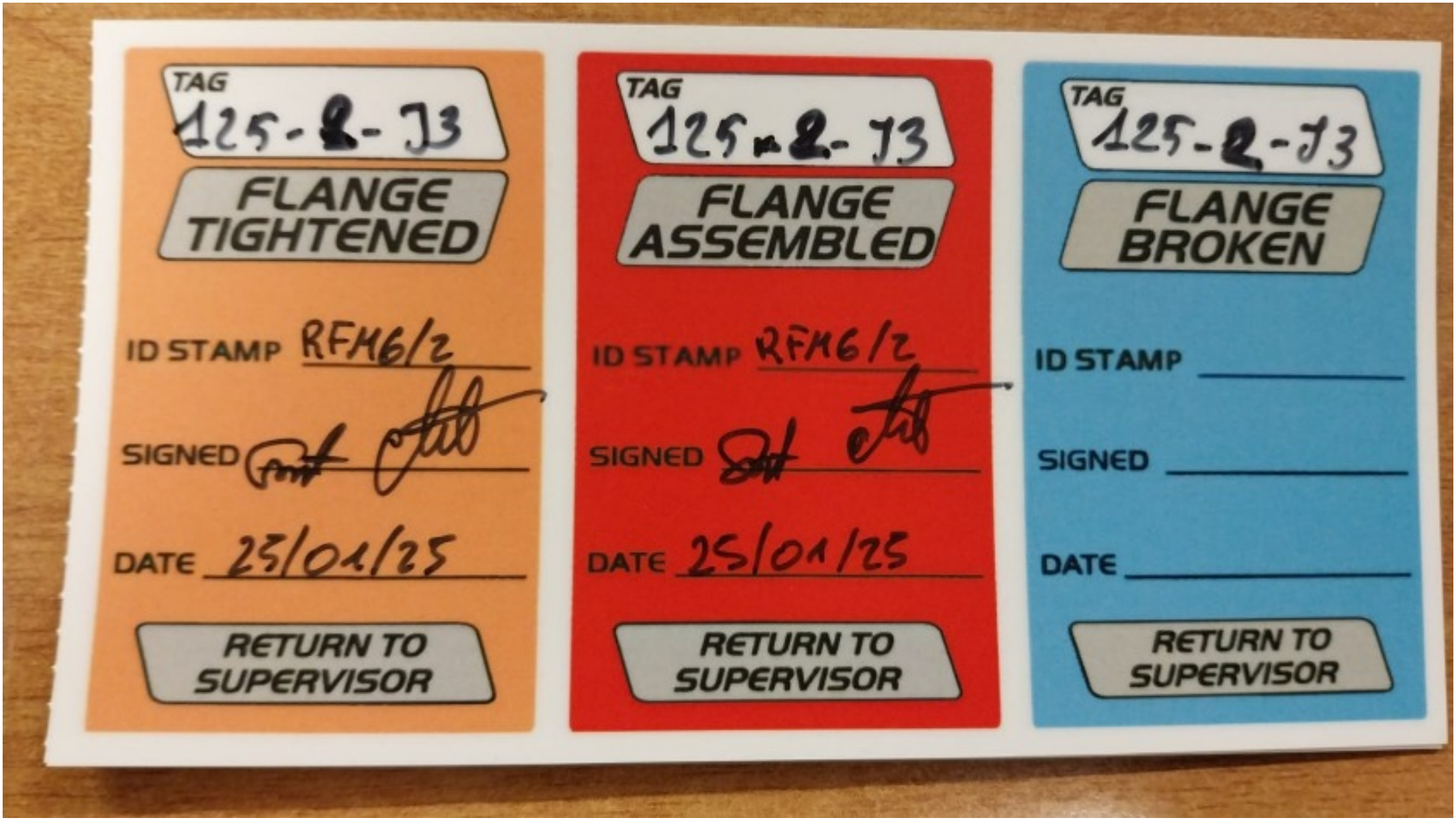
NDT INSPECTION CATEGORY	1		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM 6C	BASE RAL RAL-9002	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

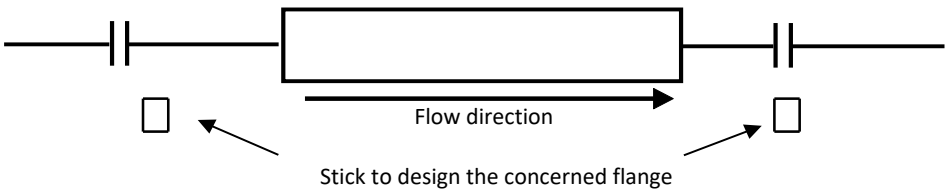
MASTER


TAG
125-2-J3
FLANGE TIGHTENED
ID STAMP RFM6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
125-2-J3
FLANGE ASSEMBLED
ID STAMP RFM6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
125-2-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	125-2-J4	: Joint 125-2-J4			Dwg	123A90-FDL-PP-DI-00125-02
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004300	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form TMX27	Bolt tensioning / torquing

Test Pack N.: TP-050

EQUIPMENT TAG



Flange Type 150LB

Flange Size 1"

Gasket Type Gasket Spiral Wound Thk. 3.2 mm

Bolt tensioning/Torquing value 62.5

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench V030390 (12-68 Nm)

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	19	63	19	38	62.5
2	19	63	19	38	62.5
3	19	63	19	38	62.5
4	19	63	19	38	62.5
5			19	38	62.5
6			19	38	62.5
7			19	38	62.5
8			19	38	62.5
9			19	38	62.5
10			19	38	62.5
11			19	38	62.5
12			19	38	62.5
13			19	38	62.5
14			19	38	62.5
15			19	38	62.5
16			19	38	62.5
17			19	38	62.5
18			19	38	62.5
19			19	38	62.5
20			19	38	62.5

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

2 **Flange Face Check:** Both flanges clean and free from damage. Yes

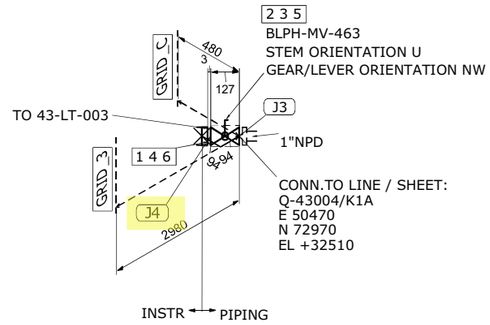
3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-25	2025-01-27	
Signature	Digitaly signed by Emanuele Delfino 2025-01-25T05:57:44.827Z	Digitaly signed by Lorenzo Novaga 2025-01-27T08:18:07.749Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1X1/2	FLR0SS0034010H	Flange Reducing ASME B16.5 THRD-F NPT 150LB RF FRG ASTM A182 Gr.F316/316L	1	0.9
2	1	VBC0NN24350100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01C01RFH	1	5.8
3	1	SPIKNN01220100	Insulation Kit Ends as per ASME B16.5 150LB RF	1	0.1
4	1	GSW0GK11100100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
5	1/2	SB20BO00980200	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
6	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	7.9

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-VL-261-01HSS-E

SK.125

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00125			SHEET / OF	2/2
						REV.	00

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM 6C	BASE RAL RAL-9002	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80029
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER


TAG
125-2-J4
FLANGE TIGHTENED
ID STAMP RFM6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
125-2-J4
FLANGE ASSEMBLED
ID STAMP RFM6/2
SIGNED
DATE 25/01/25
RETURN TO SUPERVISOR
TAG
125-2-J4
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	43-00-TP-066	: Test Pack 43-00-TP-066			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004555		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	NA
4	Check that pipework at pump and vessel nozzles are free from spring.	NA
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	NA
6	Check bolt tightening and flange management (excluded battery limit joints).	NA
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	NA
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	NA
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	NA
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Visual check of the TP performed on spools not assembled in erection.

This TP is for the seating of the flow element equipment. Dimensional check performed.

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-24	2025-01-25	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-24T07:11:01.916Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-25T09:55:22.852Z	

ITEM	Tag	43-00-TP-066	: Test Pack 43-00-TP-066			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004556		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	OK
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	NA
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	NA
8	After the (re) installation of a valve check that it operates freely.	NA
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	NA
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	PL
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-07	2025-02-25	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-07T13:27:28.302Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-02-25T16:23:35.588Z	

ROSETTI MARINO — CROSSWIND

ITEM	Tag	43-00-TP-066	: Test Pack 43-00-TP-066		Dwg	123A90-DDL-PR-PID-80029	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10004557	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX05	Pressure Test

TEST DATA

Reference procedure	123A90-PML-QHSE-PRO-00092				
Design pressure	3.5 barg	Max test pressure	5.25 barg	Min hold period	30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium	WATER

TEST RESULTS

Test date	See attachment	Start time	See attachment	End time	See attachment
Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min See attachment	Max See attachment		Variation	See attachment
Line has been depressurised to	NA			At maximum of bar/min	See attachment
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes
If required produce Red Line Mark Up for "AS BUILT".					

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-27	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-27T05:42:30.584Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-27T17:33:06.874Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP066

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FON32E
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:C5:19:D5)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:49:47
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	07:39:14 am

Logger protocol

Protocollo di acquisizione elenco dati

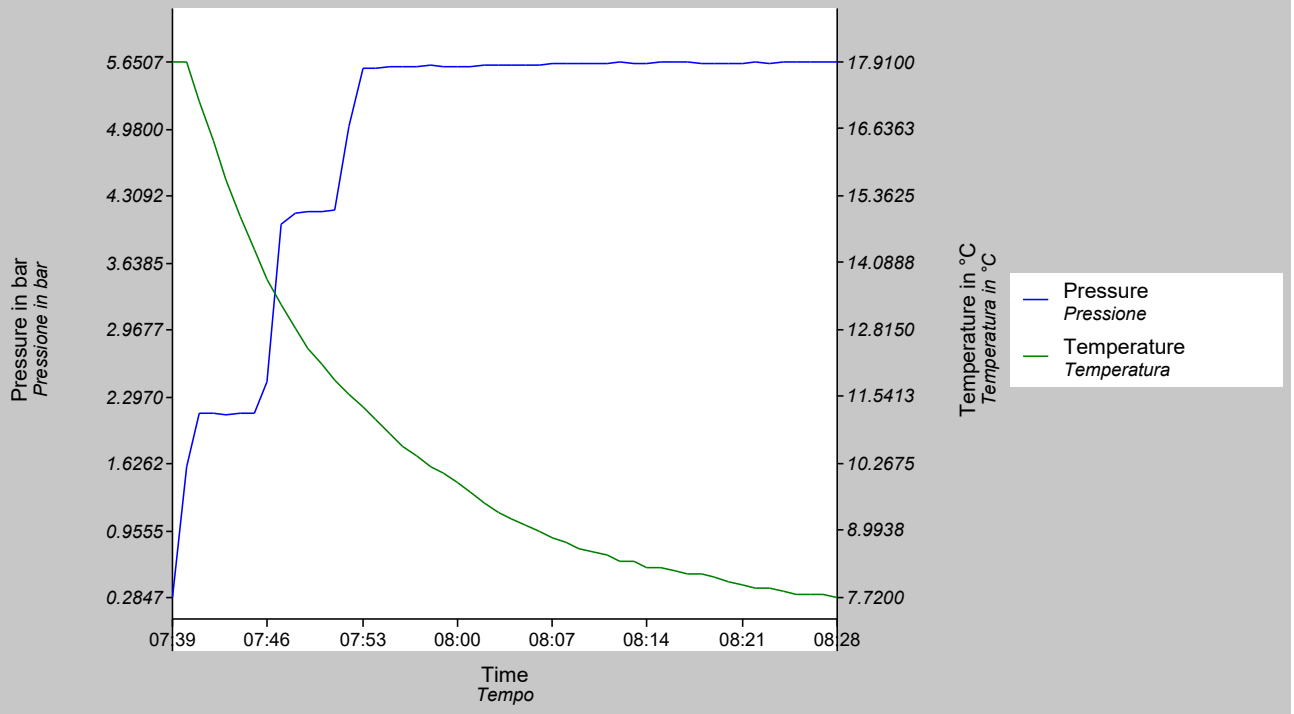
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP066

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/25/2025 07:39:14.000	0.2847	17.9100
01/25/2025 07:40:14.000	1.6012	17.9100
01/25/2025 07:41:14.000	2.1317	17.1600
01/25/2025 07:42:14.000	2.1299	16.4100
01/25/2025 07:43:14.000	2.1228	15.6600
01/25/2025 07:44:14.000	2.1239	14.9700
01/25/2025 07:45:14.000	2.1306	14.3500
01/25/2025 07:46:14.000	2.4440	13.7800
01/25/2025 07:47:14.000	4.0274	13.2800
01/25/2025 07:48:14.000	4.1319	12.8500
01/25/2025 07:49:14.000	4.1447	12.4700
01/25/2025 07:50:14.000	4.1470	12.1600
01/25/2025 07:51:14.000	4.1602	11.8500
01/25/2025 07:52:14.000	4.9986	11.6000
01/25/2025 07:53:14.000	5.5882	11.3500
01/25/2025 07:54:14.000	5.5939	11.1000
01/25/2025 07:55:14.000	5.6013	10.8500

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP066

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/25/2025 07:56:14.000	5.6033	10.6000
01/25/2025 07:57:14.000	5.6087	10.4100
01/25/2025 07:58:14.000	5.6173	10.2200
01/25/2025 07:59:14.000	5.6059	10.1000
01/25/2025 08:00:14.000	5.6015	9.9100
01/25/2025 08:01:14.000	5.6062	9.7200
01/25/2025 08:02:14.000	5.6116	9.5300
01/25/2025 08:03:14.000	5.6187	9.3500
01/25/2025 08:04:14.000	5.6252	9.2200
01/25/2025 08:05:14.000	5.6232	9.1000
01/25/2025 08:06:14.000	5.6237	8.9700
01/25/2025 08:07:14.000	5.6363	8.8500
01/25/2025 08:08:14.000	5.6342	8.7800
01/25/2025 08:09:14.000	5.6317	8.6600
01/25/2025 08:10:14.000	5.6307	8.6000
01/25/2025 08:11:14.000	5.6392	8.5300
01/25/2025 08:12:14.000	5.6439	8.4100
01/25/2025 08:13:14.000	5.6414	8.4100
01/25/2025 08:14:14.000	5.6404	8.2800
01/25/2025 08:15:14.000	5.6467	8.2800
01/25/2025 08:16:14.000	5.6505	8.2200
01/25/2025 08:17:14.000	5.6441	8.1600
01/25/2025 08:18:14.000	5.6389	8.1600
01/25/2025 08:19:14.000	5.6326	8.1000
01/25/2025 08:20:14.000	5.6358	8.0300
01/25/2025 08:21:14.000	5.6413	7.9700
01/25/2025 08:22:14.000	5.6432	7.9100
01/25/2025 08:23:14.000	5.6420	7.9100
01/25/2025 08:24:14.000	5.6444	7.8500
01/25/2025 08:25:14.000	5.6430	7.7800
01/25/2025 08:26:14.000	5.6453	7.7800
01/25/2025 08:27:14.000	5.6507	7.7800
01/25/2025 08:28:14.000	5.6468	7.7200

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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24

Certificate of Calibration

- data di emissione date of issue	2024-12-10
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A037FON32E
- data di ricev. oggetto *date of receipt of item*	2024-11-29
- data delle misure *date of measurements*	2024-12-10
- registro di laboratorio *laboratory reference*	0580-SM-24

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura k corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore k vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

WIKA Italia S.r.l. & C. s.a.s.
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LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico *Electrical pressure gauge*	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A037FON32E
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione *Reference standard (RS) Dead-weight tester*	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1007,5 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	100,0	100,0	100,0
199,82	200,0	200,0	200,0
299,73	299,9	300,0	299,9
399,63	399,8	399,9	399,8
499,53	499,6	499,7	499,7
599,44	599,5	599,6	599,5
699,34	699,3	699,4	699,3
799,24	799,2	799,3	799,2
899,14	899,1	899,1	899,1
999,04	999,0	999,0	999,0

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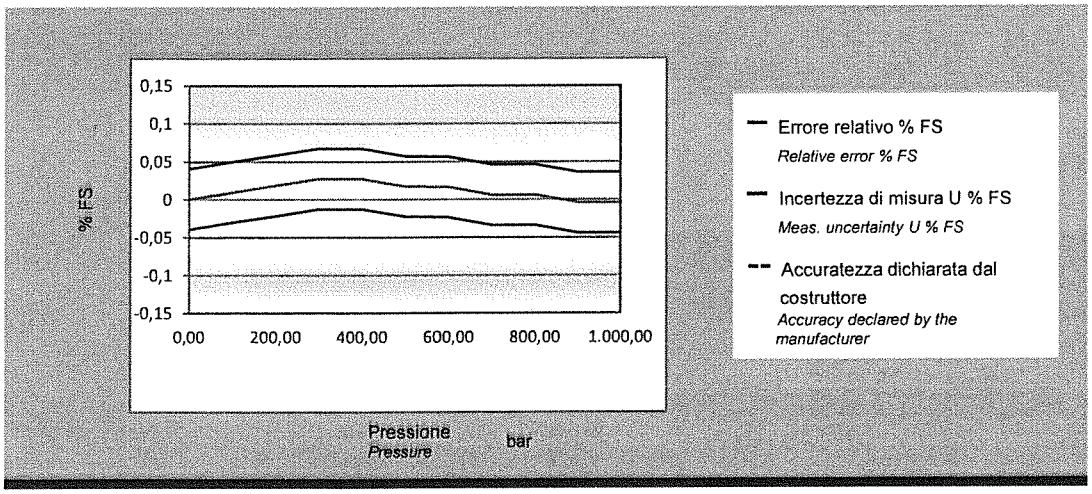
LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	100,0	0,1	0,0	0,0	0,40
199,82	200,0	0,2	0,0	0,0	0,40
299,73	300,0	0,3	0,0	0,1	0,40
399,63	399,9	0,3	0,0	0,1	0,40
499,53	499,7	0,2	0,1	0,1	0,40
599,44	599,6	0,2	0,0	0,1	0,40
699,34	699,4	0,1	0,0	0,1	0,40
799,24	799,3	0,1	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,0	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,7 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Base Load Power Hub (BLPH)

TEST PACK

N°43-00-TP-066
SUB-SYSTEM N° 43-00

System	43
Sub-System	43-00
Test Pressure	5.25 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

List of Contents

1. COLOURED MARKED P&IDs
2. PIPING TEST 3D CIRCUIT
3. MATERIAL LIST FOR TEST
4. EXTRACT OF LINE LIST – NOT APPLICABLE
5. ISOMETRIC RED-MARKED DRAWINGS & EXTRACT OF ISO LIST – NOT APPLICABLE
6. EXTRACT OF SUPPORT LIST AND DETAILS – NOT APPLICABLE
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
   - 8.1 CLX02A - Pipework Before test
   - 8.2 CLX02B - Pipework After Test
   - 8.3 CXX01 - Thermal insulation – NOT APPLICABLE
   - 8.4 CXX02 – Painting Line – NOT APPLICABLE
   - 8.5 TMX03 – Cleaning – NOT APPLICABLE
   - 8.6 TMX05 – Pressure test
   - 8.7 TMX25 – Gross Air Leak Test – NOT APPLICABLE
   - 8.8 TMX27 – Bolt Tensioning / Torquing – NOT APPLICABLE
   - 8.9 TPLX05 - Drying

1. COLOURED MARKED P&IDs

DRAWING NO. DRAWING_NO.

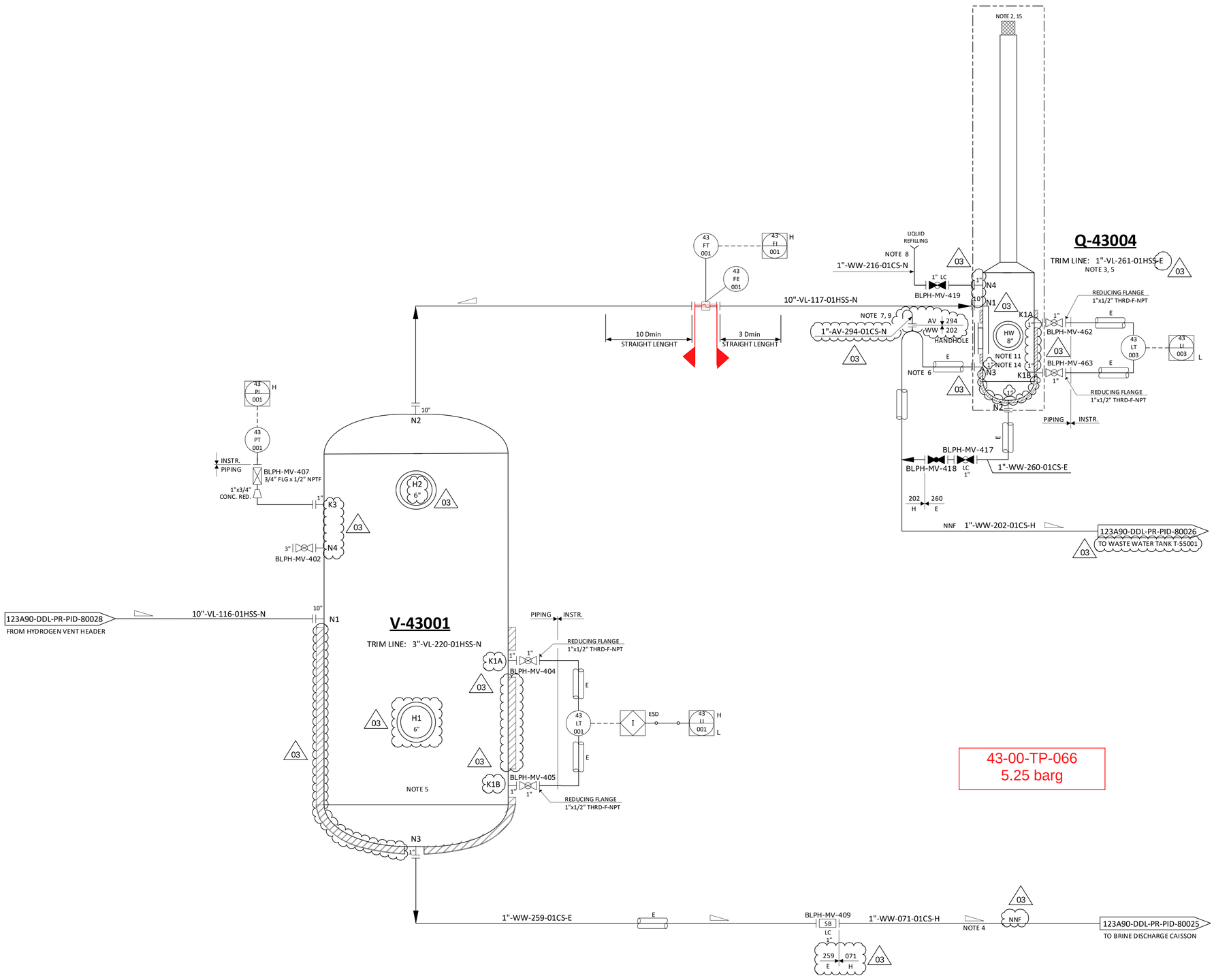
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



43-00-TP-066
5.25 barg

NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

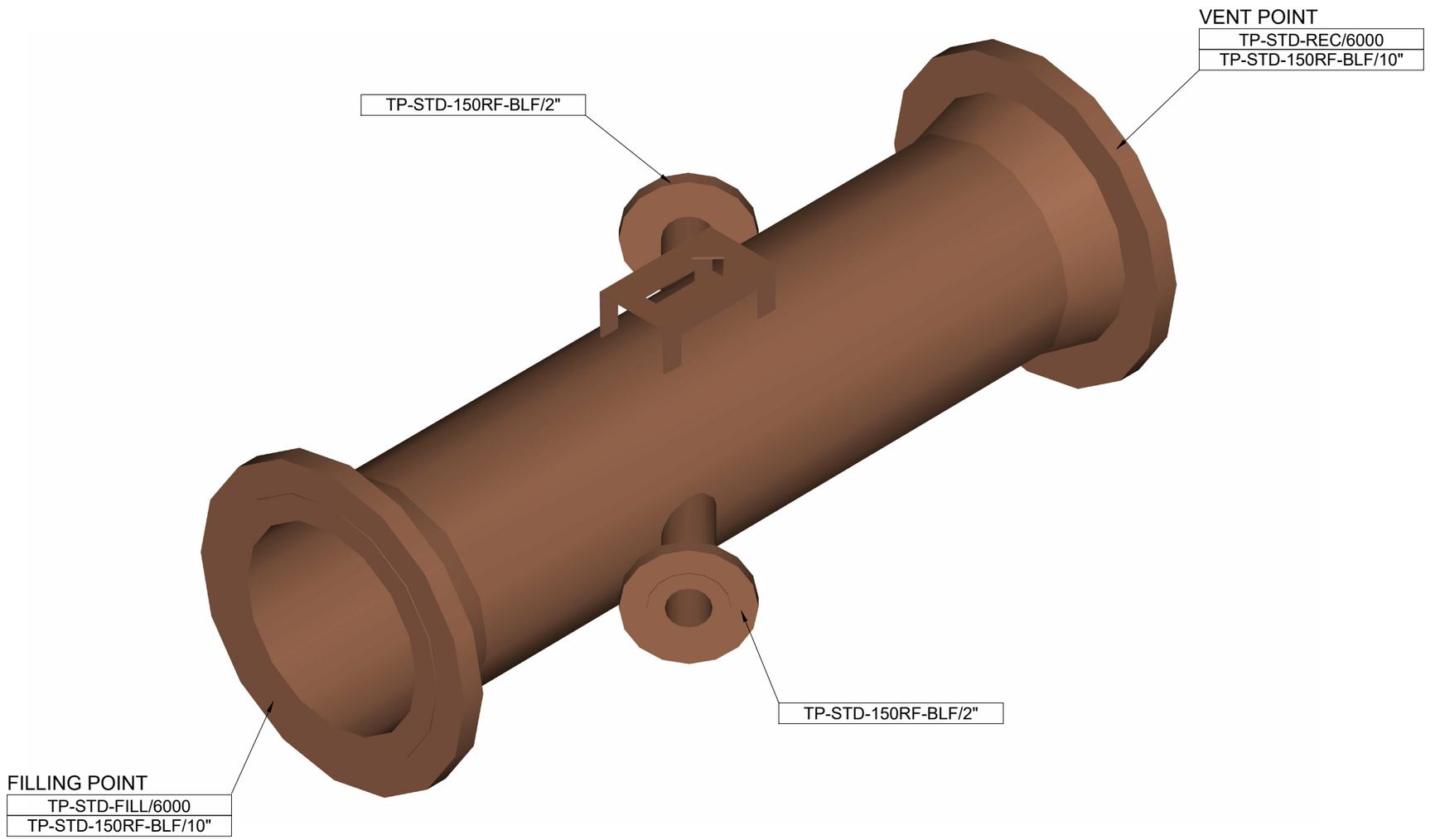
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029		SHEET 001 / REV. 03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



43-00-TP-066

5.25 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
43-00-TP-066

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

CROSSWIND / ROSETTI MARINO	CONTRACTOR: Rosetti Marino SpA	JOB :	123A90
	PROJECT: Base Load Power Hub (BLPH)	DATE :	20/09/2024
	TITLE: MATERIAL LIST FOR HYDROSTATIC TEST	REV. :	00

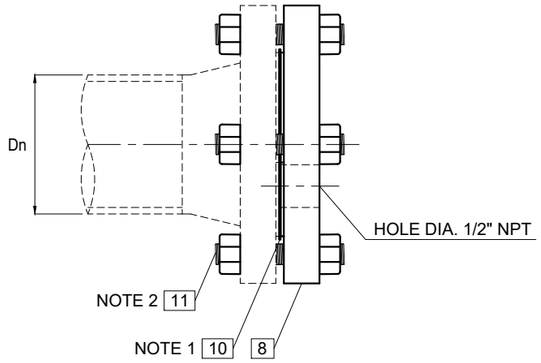
TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-066	TP-STD-150RF-BLF/2"	FLBHCS0007020H	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1	2	2	
TP-066	TP-STD-150RF-BLF/2"	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ø2" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	2	2	
TP-066	TP-STD-150RF-BLF/2"	SB20BO00660300	Stud Bolt + 2 Heavy Nuts 5/8" L=85MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	2	8	
TP-066	TP-STD-150RF-BLF/10"	FLBHCS0185100H	Flange Blind c/w NPT Hole ø10"x1/2" 150LB RF ASTM/ASME A/SA105	1	2	2	
TP-066	TP-STD-150RF-BLF/10"	GSW0GK11181000	Gasket Spiral Wound Thk. 3.2 mm ø10" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	2	2	
TP-066	TP-STD-150RF-BLF/10"	SB20BO04280500	Stud Bolt + 2 Heavy Nuts 7/8" L=120MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	2	24	

STD NAME	RATING	DESCRIPTION
TP-STD-150RF	150 RF	STANDARD FOR BLIND POINT

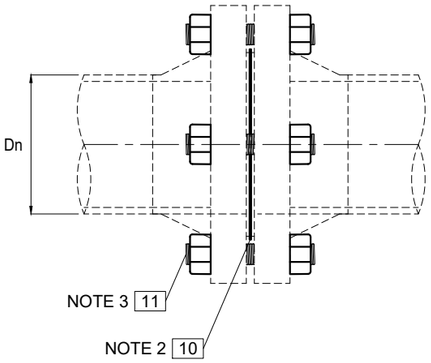
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-150RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=60 MM	4
TP-STD-150RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=85 MM	4
TP-STD-150RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-150RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-150RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-150RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=120 MM	12
TP-STD-150RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=125 MM	12
TP-STD-150RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=135 MM	12
TP-STD-150RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=140 MM	16
TP-STD-150RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=150 MM	16
TP-STD-150RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=160 MM	20
TP-STD-150RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=175 MM	20



TP-STD-150RF-BLF/Dn
BLIND FLANGE



TP-STD-150RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

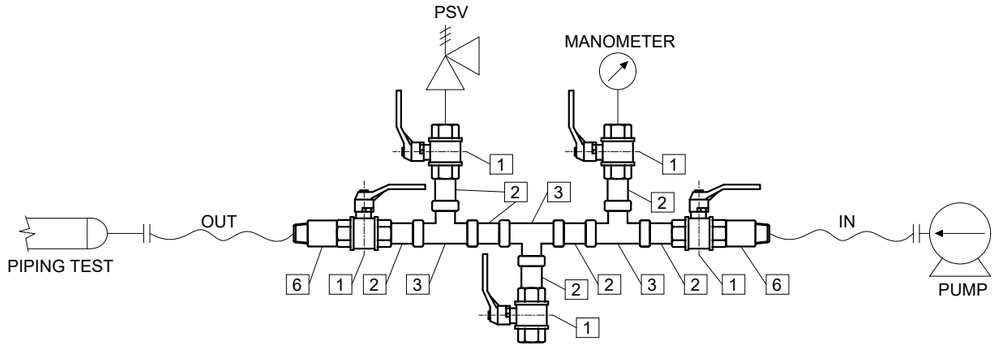
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-150RF
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_150RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

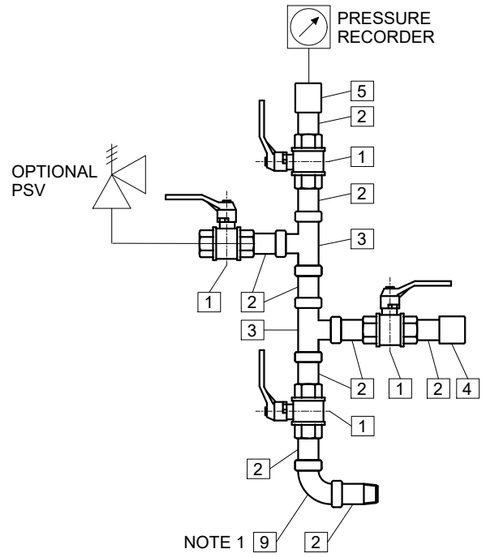
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

NOT APPLICABLE

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

NOT APPLICABLE

6. EXTRACT OF SUPPORT LIST & DETAILS

NOT APPLICABLE

7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	1	**To**	1
Sheet		**From**	0	**To**	0
Marks		**From**	FLOWCELL	**To**	FLOWCELL
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/1/1/FLOWCELL		**00**	**04-11-2024**	**66**	**AZ39**			**FWN**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-11-2024**	
1	VIS	FTP	FIT-UP and on weld			123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					05-11-2024			
	RT	FIN	Weld Completion			IDL-QCI-RT 0036 00	AA	100 %	000844	3	Acceptable					06-11-2024			
2/1/1/FLOWCELL		**00**	**04-11-2024**	**66**	**AZ39**			**FWN**	**10,00 in**	**4,19 mm**	**V**	**0,857 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**06-11-2024**	
1	VIS	FTP	FIT-UP and on weld			123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					05-11-2024			
	RT	FIN	Weld Completion			IDL-QCI-RT 0036 00	AA	100 %	000845	3	Acceptable					06-11-2024			
3/1/1/FLOWCELL		**00**	**04-11-2024**	**66**	**AZ39**			**FWN**	**2,00 in**	**9,27 mm**	**1/2V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**LET**	**06-11-2024**	
1	VIS	FTP	FIT-UP and on weld			123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					05-11-2024			
	LP	FIN	Weld Completion			IDL-QCI-LP 0002 01	BV	100 %	000039		Acceptable					06-11-2024			
4/1/1/FLOWCELL		**00**	**04-11-2024**	**66**	**AZ39**			**FWN**	**2,00 in**	**9,27 mm**	**1/2V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**LET**	**06-11-2024**	
1	VIS	FTP	FIT-UP and on weld			123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					05-11-2024			
	LP	FIN	Weld Completion			IDL-QCI-LP 0002 01	BV	100 %	000040		Acceptable					06-11-2024			
5/1/1/FLOWCELL		**00**	**04-11-2024**	**66**	**AZ39**			**PL**	**142,00 mm**	**3,00 mm**	**FILL**	**0,050 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**06-11-2024**	
1	VIS	FTP	FIT-UP and on weld			123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					05-11-2024			
	LP	FIN	Weld Completion			IDL-QCI-LP 0002 01	BV	100 %	000041		Acceptable					06-11-2024			

Totals per DWG	**1**	**Prefabrication**	**2,15 m**	**5 Nr. Welds**	**24,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**2,15 m**	**5 Nr. Welds**	**24,00 inch**
		Accepted	**2,15 m**	**5 Nr. Welds**	**24,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**2,15 m**	**5 Nr. Welds**	**24,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**2,15 m**	**5 Nr. Welds**	**24,00 inch**
		Accepted	**2,15 m**	**5 Nr. Welds**	**24,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**2,15 m**	**5 Nr. Welds**	**24,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**2,15 m**	**5 Nr. Welds**	**24,00 inch**
		Accepted	**2,15 m**	**5 Nr. Welds**	**24,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND / ROSETTI MARINO	Cliente/Contractor	**CROSSWIND**	
	SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	
	Progetto/Project	**Hollandse Kust Noord Wind Park Project**	
	Commessa/Job	**123A90 - Piping**	
	Disciplina/Discipline	**PIPING**	
	TitoloDocumento/DocumentTitle	**Material Traceability Report**	
	RosettiDoc.Num.	**123A90MTR001**	

Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
StatoDocumento/Document Status:		Data/Date: 25/01/2025

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
FLOWMETER_SK01	00	1	A	-	2	1	Flange WN ›10" Thk.4.19mm 150LB RF ASTM A182 Gr.F316/316L	DF309/1	1724000839	01060	23-04271	W1	
FLOWMETER_SK01	00	1	A	-	2	1	Flange WN ›10" Thk.4.19mm 150LB RF ASTM A182 Gr.F316/316L	DF309/1	1724000839	01060	23-04271	W2	
FLOWMETER_SK01	00	1	A	-	3	1	Flange LWN ›2" 150LB RF ASTM A182 Gr.F316/316L	E230125	1724001966	00010	3.825	W3	
FLOWMETER_SK01	00	1	A	-	3	1	Flange LWN ›2" 150LB RF ASTM A182 Gr.F316/316L	E230125	1724001966	00010	3.825	W4	
FLOWMETER_SK01	00	1	A	-	1A	0,894	Pipe 273.0mm(10") thk.4.19mm ASTM A312 Gr.TP316/316L	VCC062015	1724000839	00100	230320P007		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation – NOT APPLICABLE

8.4 CXX02 – Painting Line– NOT APPLICABLE

8.5 TMX03 – Cleaning– NOT APPLICABLE

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test– NOT APPLICABLE

8.8 TMX27 – Bolt Tensioning / Torquing– NOT APPLICABLE

8.9 TPLX05 - Drying

ITEM	Tag	43-00-TP-066	: Test Pack 43-00-TP-066			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004558		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air, ensuring all drains/vents (when present) were open to facilitate the removal of moisture. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, inlet and outlet points were closed with covers.
3	Temporary means :	Blind flanges and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA
5	Valve body cavity, branches, etc.. Have been drained form residual water	●
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Restricting access to the area.
11	REMARKS:	None

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-27	2025-01-27	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-27T05:42:43.429Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-27T17:33:28.558Z	

ITEM	Tag	43-00-TP-067	: Test Pack 43-00-TP-067		Dwg	123A90-DDL-PR-PID-80011	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10004786	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	CLX02A	Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	PL
4	Check that pipework at pump and vessel nozzles are free from spring.	Note
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	Note
6	Check bolt tightening and flange management (excluded battery limit joints).	NA
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	NA
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	NA
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	NA
10	Check the Blind list.	OK
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Visual check performed on spool not assembled in erection.
Inspection points n.4 and 5 have not been verified in erection, to be checked during flange management.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-24	2025-02-03	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-24T07:11:17.667Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-03T16:57:47.764Z	

ITEM	Tag	43-00-TP-067	: Test Pack 43-00-TP-067			Dwg	123A90-DDL-PR-PID-80011
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004787		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	OK
4	Check that all removed devices and valves have been re-installed.	NA
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	NA
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	NA
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	NA
8	After the (re) installation of a valve check that it operates freely.	NA
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	NA
10	Check all locking device.	NA
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	NA
13	Check that the bolts have been tightned at opened joints.	NA
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	OK
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	PL
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-07	2025-02-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-07T13:26:48.422Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-02-21T14:54:42.051Z	

ITEM	Tag	43-00-TP-067	: Test Pack 43-00-TP-067			Dwg	123A90-DDL-PR-PID-80011
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004788		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02
							Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	PL
3	Check that the fluid direction is correct.	PL
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	OK
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 1. Checked the painting report made by Vendor and signed by RM coating Dpt.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (Rosetti Marino)	
Name	Alex Sanna	Kangi Albonetti	
Date	2025-02-11	2025-02-25	
Signature	PROVERLIS Digitaly signed by Alex Sanna 2025-02-11T15:56:30.486Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-02-25T16:19:19.215Z	

ROSETTI MARINO — CROSSWIND

ITEM	Tag	43-00-TP-067	: Test Pack 43-00-TP-067		Dwg	123A90-DDL-PR-PID-80011	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10004789	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX03	Cleaning

CLEANING MEDIUM

Air	Water	Steam	Oil	Other	Mechanical
☐	●	☐	☐	☐	☐

Component: NA

Chemical treatment: No — NA | Filtration: No | Screen size: NA

EQUIPMENTS

Equipment **removed**	Yes	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	03/02/2025	Start time	16:00	End time	16:05
Flow rate	NA	Duration	5 min	Medium T°	NA

Operation Description

Connected the water source to the lowest point of the piping system.
Maintained a high flow rate to help dislodging and carry away debrises.
Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.

Safety Precautions

Restricting access to the area.

Result and comments

Water has been found clear of solid debris. All contaminants have been expelled.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-03	2025-02-04	
Signature	Digitaly signed by Emanuele Delfino 2025-02-03T08:58:05.017Z	Digitaly signed by Massimo Bruschi 2025-02-04T08:57:02.350Z	

ITEM	Tag	43-00-TP-067	: Test Pack 43-00-TP-067		Dwg	123A90-DDL-PR-PID-80011	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System		Module	UD	
TASK	code	C10004790	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX05	Pressure Test

TEST DATA

Reference procedure	123A90-PML-QHSE-PRO-00092				
Design pressure	3.5 barg	Max test pressure	5.25 barg	Min hold period	30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium	WATER

TEST RESULTS

Test date	See attachment	Start time	See attachment	End time	See attachment
Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min See attachment	Max See attachment		Variation	See attachment
Line has been depressurised to	NA			At maximum of bar/min	See attachment
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes
If required produce Red Line Mark Up for "AS BUILT".					

Comments:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-03	2025-02-04	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-03T08:58:27.519Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-04T08:57:31.779Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP-067

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILNH2N
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:E0:AF)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:49:21
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	04:11:00 pm

Logger protocol

Protocollo di acquisizione elenco dati

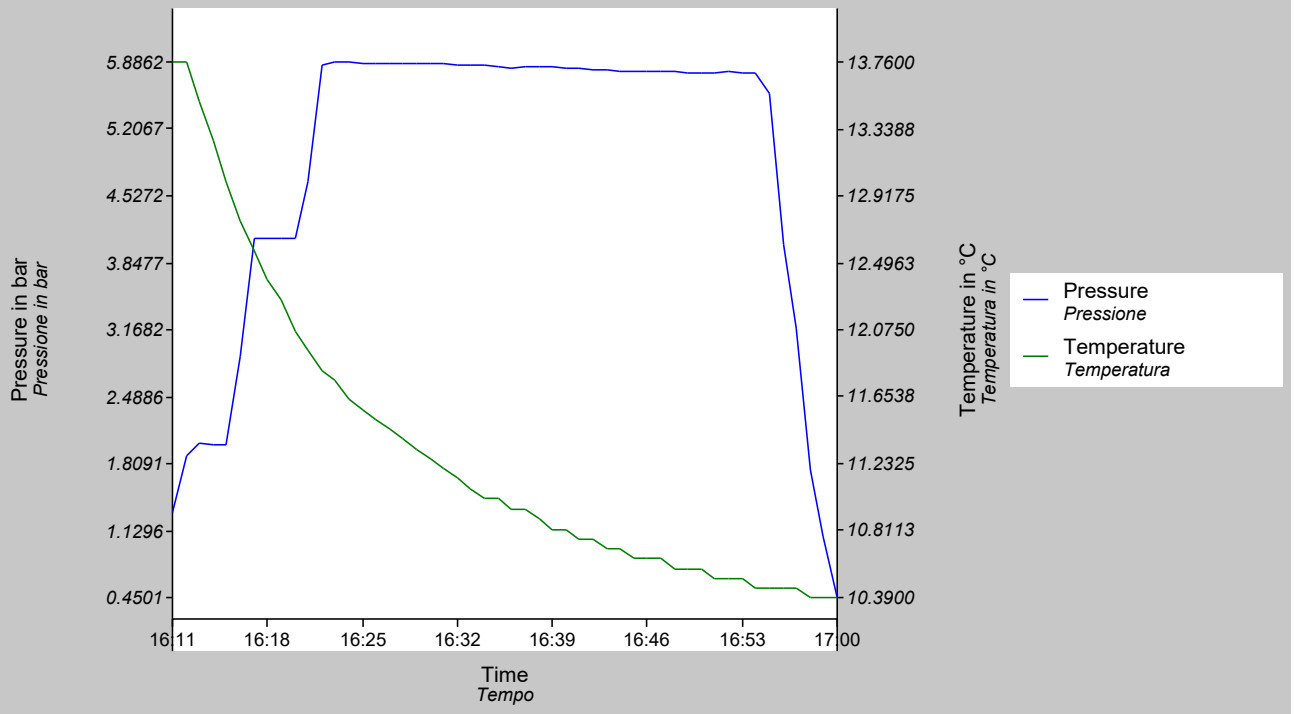
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP-067

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/03/2025 16:11:00.000	1.3211	13.7600
02/03/2025 16:12:00.000	1.8954	13.7600
02/03/2025 16:13:00.000	2.0116	13.5100
02/03/2025 16:14:00.000	2.0064	13.2600
02/03/2025 16:15:00.000	2.0044	13.0100
02/03/2025 16:16:00.000	2.8884	12.7600
02/03/2025 16:17:00.000	4.1021	12.5700
02/03/2025 16:18:00.000	4.1000	12.3900
02/03/2025 16:19:00.000	4.0934	12.2600
02/03/2025 16:20:00.000	4.0957	12.0700
02/03/2025 16:21:00.000	4.6634	11.9500
02/03/2025 16:22:00.000	5.8530	11.8200
02/03/2025 16:23:00.000	5.8862	11.7600
02/03/2025 16:24:00.000	5.8792	11.6400
02/03/2025 16:25:00.000	5.8780	11.5700
02/03/2025 16:26:00.000	5.8712	11.5100
02/03/2025 16:27:00.000	5.8658	11.4500

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-43-00-TP-067

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/03/2025 16:28:00.000	5.8767	11.3900
02/03/2025 16:29:00.000	5.8776	11.3200
02/03/2025 16:30:00.000	5.8723	11.2600
02/03/2025 16:31:00.000	5.8673	11.2000
02/03/2025 16:32:00.000	5.8595	11.1400
02/03/2025 16:33:00.000	5.8601	11.0700
02/03/2025 16:34:00.000	5.8570	11.0100
02/03/2025 16:35:00.000	5.8386	11.0100
02/03/2025 16:36:00.000	5.8285	10.9500
02/03/2025 16:37:00.000	5.8344	10.9500
02/03/2025 16:38:00.000	5.8398	10.8900
02/03/2025 16:39:00.000	5.8371	10.8200
02/03/2025 16:40:00.000	5.8171	10.8200
02/03/2025 16:41:00.000	5.8204	10.7600
02/03/2025 16:42:00.000	5.8111	10.7600
02/03/2025 16:43:00.000	5.8040	10.7000
02/03/2025 16:44:00.000	5.7973	10.7000
02/03/2025 16:45:00.000	5.7940	10.6400
02/03/2025 16:46:00.000	5.7906	10.6400
02/03/2025 16:47:00.000	5.7845	10.6400
02/03/2025 16:48:00.000	5.7840	10.5700
02/03/2025 16:49:00.000	5.7764	10.5700
02/03/2025 16:50:00.000	5.7730	10.5700
02/03/2025 16:51:00.000	5.7728	10.5100
02/03/2025 16:52:00.000	5.7839	10.5100
02/03/2025 16:53:00.000	5.7750	10.5100
02/03/2025 16:54:00.000	5.7725	10.4500
02/03/2025 16:55:00.000	5.5618	10.4500
02/03/2025 16:56:00.000	4.0272	10.4500
02/03/2025 16:57:00.000	3.1794	10.4500
02/03/2025 16:58:00.000	1.7374	10.3900
02/03/2025 16:59:00.000	1.0762	10.3900
02/03/2025 17:00:00.000	0.4501	10.3900

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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0514-SM-24

Certificate of Calibration

- data di emissione date of issue	2024-10-31
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILNH2N
- data di ricev. oggetto *date of receipt of item*	2024-10-24
- data delle misure *date of measurements*	2024-10-31
- registro di laboratorio *laboratory reference*	0514-SM-24

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico *Electrical pressure gauge*	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILNH2N
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione *Reference standard (RS) Dead-weight tester*	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato	Sebacate
Pressure medium	*Sebacate*
Livello di riferimento	Superficie di tenuta DUT
Refence height (for reference value)	*Sealing face DUT*
Posizione di montaggio	verticale
Position during calibration	*vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1016,6 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	100,0	99,9
199,82	199,9	199,9	199,9
299,72	299,8	299,9	299,8
399,63	399,7	399,8	399,7
499,53	499,6	499,6	499,6
599,43	599,5	599,5	599,5
699,33	699,3	699,4	699,4
799,24	799,2	799,2	799,2
899,13	899,1	899,1	899,1
999,03	999,0	999,0	999,0

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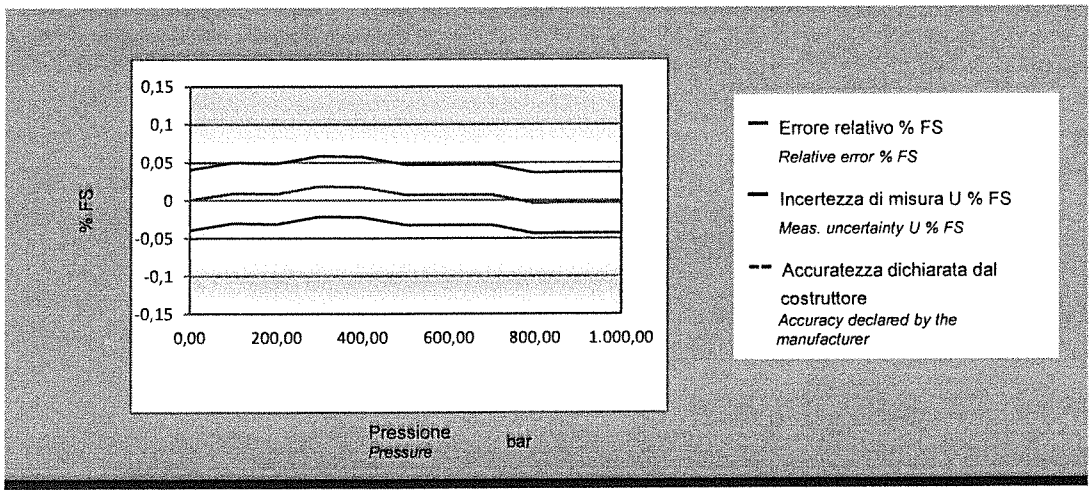
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Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	100,0	0,1	0,0	0,1	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,72	299,9	0,2	0,0	0,1	0,40
399,63	399,8	0,2	0,0	0,1	0,40
499,53	499,6	0,1	0,0	0,0	0,40
599,43	599,5	0,1	0,0	0,0	0,40
699,33	699,4	0,1	0,1	0,1	0,40
799,24	799,2	0,0	0,0	0,0	0,40
899,13	899,1	0,0	0,0	0,0	0,40
999,03	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,6 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Base Load Power Hub (BLPH)

TEST PACK

N°43-00-TP-067
SUB-SYSTEM N° 43-00

System	43
Sub-System	43-00
Test Pressure	5.25 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

List of Contents

1. COLOURED MARKED P&IDs
2. PIPING TEST 3D CIRCUIT
3. MATERIAL LIST FOR TEST
4. EXTRACT OF LINE LIST
5. ISOMETRIC RED-MARKED DRAWINGS & EXTRACT OF ISO LIST
6. EXTRACT OF SUPPORT LIST AND DETAILS
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
   - 8.1 CLX02A - Pipework Before test
   - 8.2 CLX02B - Pipework After Test
   - 8.3 CXX01 - Thermal insulation – NOT APPLICABLE
   - 8.4 CXX02 – Painting Line
   - 8.5 TMX03 – Cleaning
   - 8.6 TMX05 – Pressure test
   - 8.7 TMX25 – Gross Air Leak Test
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 - Drying

1. COLOURED MARKED P&IDs

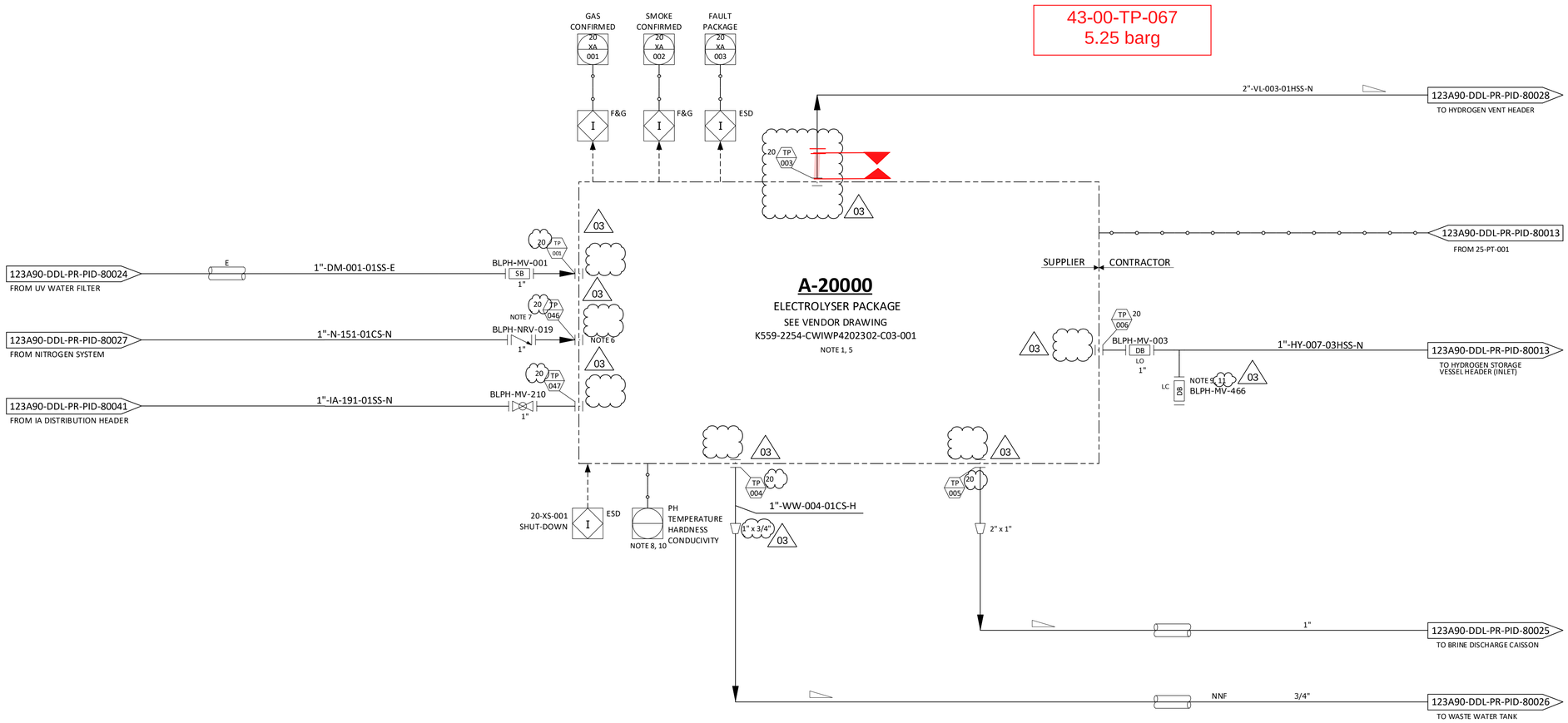
DRAWING NO. DRAWING_NO.

REV. REV

A-20000

ELECTROLYSER PACKAGE

DUTY: 2.5MW
DESIGN PRESSURE: 40 barg
DESIGN TEMPERATURE: 80 °C
H2 GENERATING CAPACITY: 500 Nm³/h



NOTES

1. PACKAGE SUPPLIED WITH POWER FROM THE BLPH ELECTRICAL SYSTEM.
2. DELETED.
3. DELETED.
4. DELETED.
5. ELECTROLYSER PACKAGE INCLUDES AN OXYGEN VENT LINE WHICH IS IN THE SCOPE OF SUPPLY OF THE ELECTROLYSER PACKAGE UP TO THE ATMOSPHERE. NO PHYSICAL INTERFACE IS PRESENT BETWEEN ELECTROLYSER PACKAGE AND CONTRACTOR ON THIS LINE.
6. AN ISOLATION VALVE DOWNSTREAM THE CHECK VALVE NRV-019 IS PROVIDED WITHIN THE PACKAGE A-20000.
7. CHECK VALVE NRV-019 TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE ELECTROLYSER PACKAGE A-20000.
8. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
9. NITROGEN PURGING CONNECTION TO BE LOCATED AS CLOSE AS POSSIBLE TO MANUAL VALVE BLPH-MV-003.
10. PH, TEMPERATURE, HARDNESS AND CONDUCTIVITY SHALL BE SENT FROM CONTROL SYSTEM TO ELECTROLISER UCP IN ADDITION TO THE OTHER SOFTWARE SIGNALS. 03
11. MANUAL VALVE BLPH-MV-466 TO BE CONNECTED WITH MANUAL VALVE BLPH-MV-275 (INSTALLED ON NITROGEN GENERATION PACKAGE EXIT LINE) BY MEAN ON A FLEXIBLE HOSE DURING COMMISSIONING PHASE FOR PURGING OPERATION.

HOLDS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

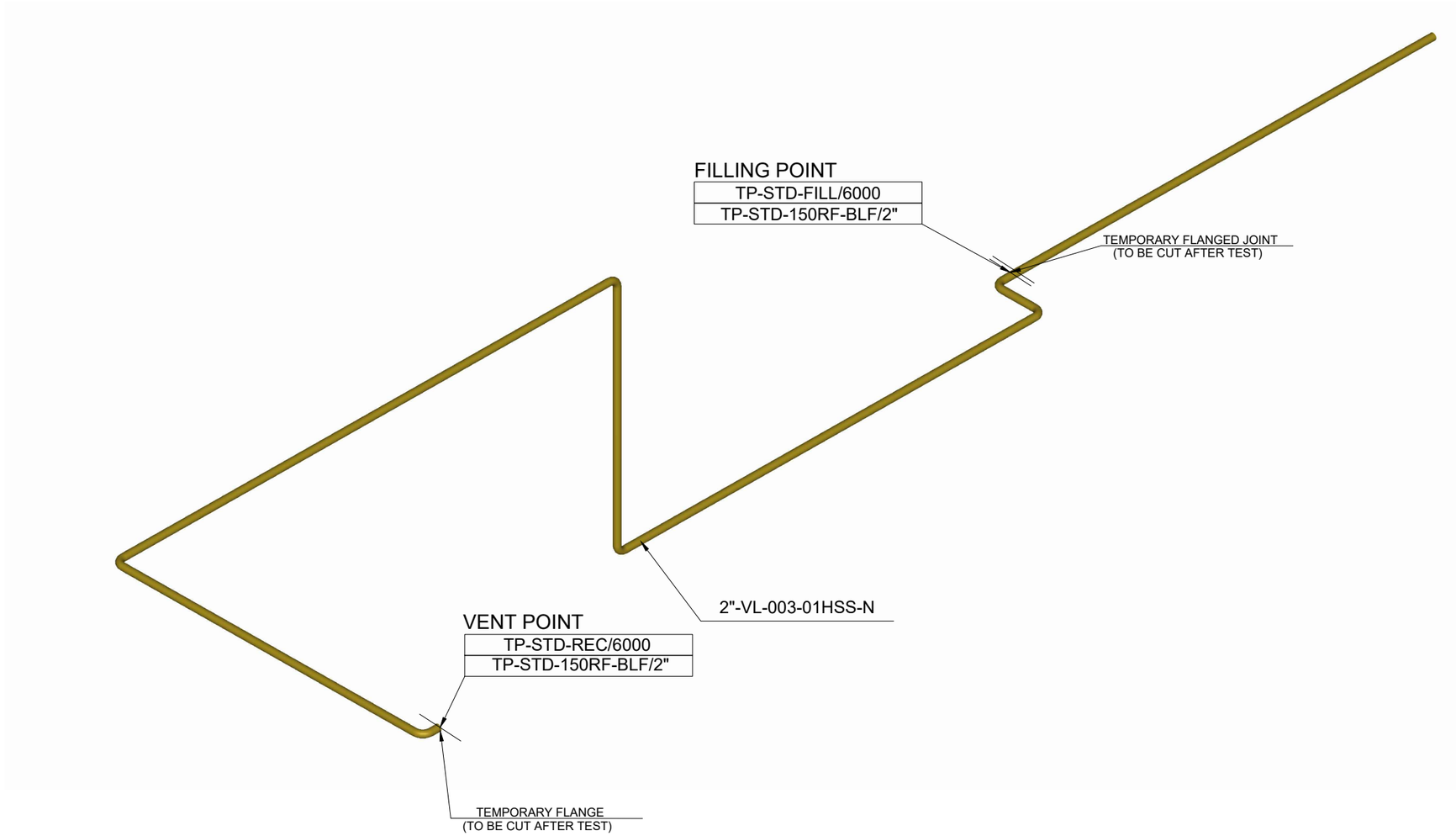
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
ELECTROLYSER PACKAGE

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80011	SHEET 001	REV. 03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



43-00-TP-067

5.25 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
43-00-TP-067

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

CROSSWIND / ROSETTI MARINO	CONTRACTOR: Rosetti Marino SpA	JOB :	123A90
	PROJECT: Base Load Power Hub (BLPH)	DATE :	20/09/2024
	TITLE: MATERIAL LIST FOR HYDROSTATIC TEST	REV. :	00

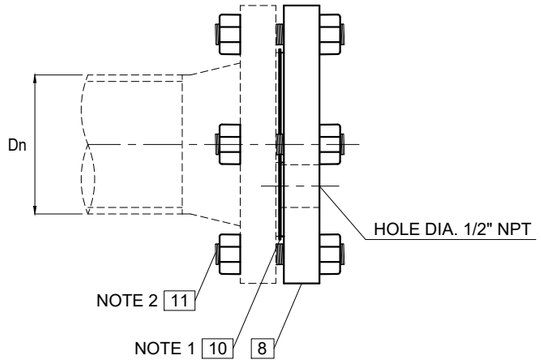
TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-067	TP-STD-150RF-BLF/2"	FLBHCS0007020H	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1	2	2	
TP-067	TP-STD-150RF-BLF/2"	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ø2" 150LB RF AISI 316 + GRAPHITE c/w INNER RING	1	2	2	
TP-067	TP-STD-150RF-BLF/2"	SB20BO00660300	Stud Bolt + 2 Heavy Nuts 5/8" L=85MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	2	8	

STD NAME	RATING	DESCRIPTION
TP-STD-150RF	150 RF	STANDARD FOR BLIND POINT

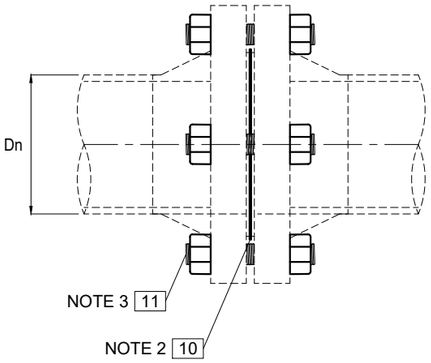
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-150RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=60 MM	4
TP-STD-150RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=85 MM	4
TP-STD-150RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-150RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-150RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-150RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=120 MM	12
TP-STD-150RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=125 MM	12
TP-STD-150RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=135 MM	12
TP-STD-150RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=140 MM	16
TP-STD-150RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=150 MM	16
TP-STD-150RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=160 MM	20
TP-STD-150RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=175 MM	20



TP-STD-150RF-BLF/Dn
BLIND FLANGE



TP-STD-150RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

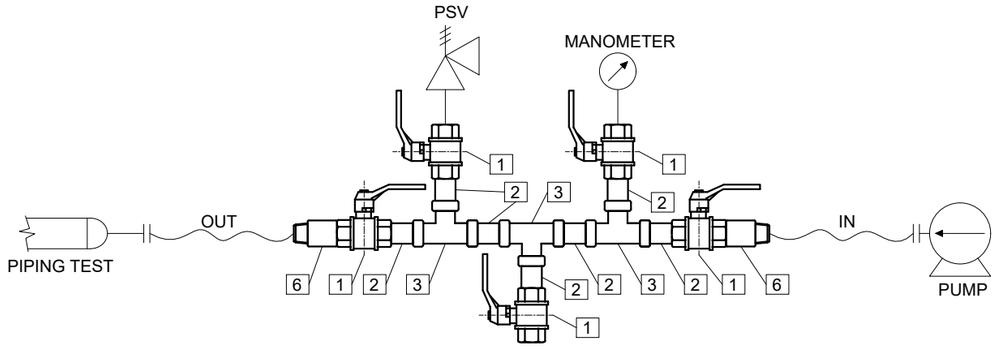
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-150RF
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_150RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

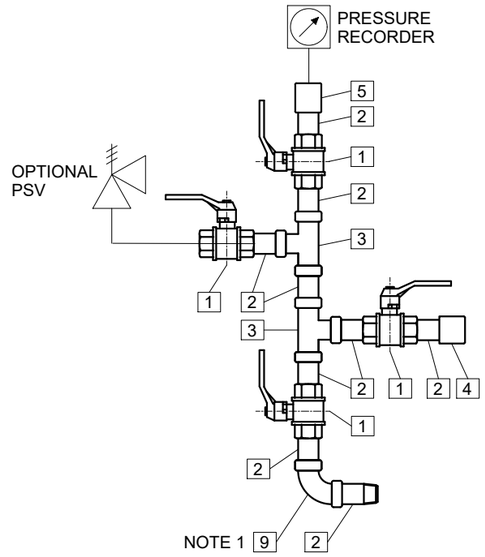
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
2	VL-003	003	2	01HSS	N	2,77	10S	N/A	2"-VL-003-01HSS-N	123A90-DDL-PR-PID-80011	3,50	43	43-00	TP-024/TP-067	Water	5.25	LP Vent	Stainless Steel	SUP	I	6A	RAL 9002

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

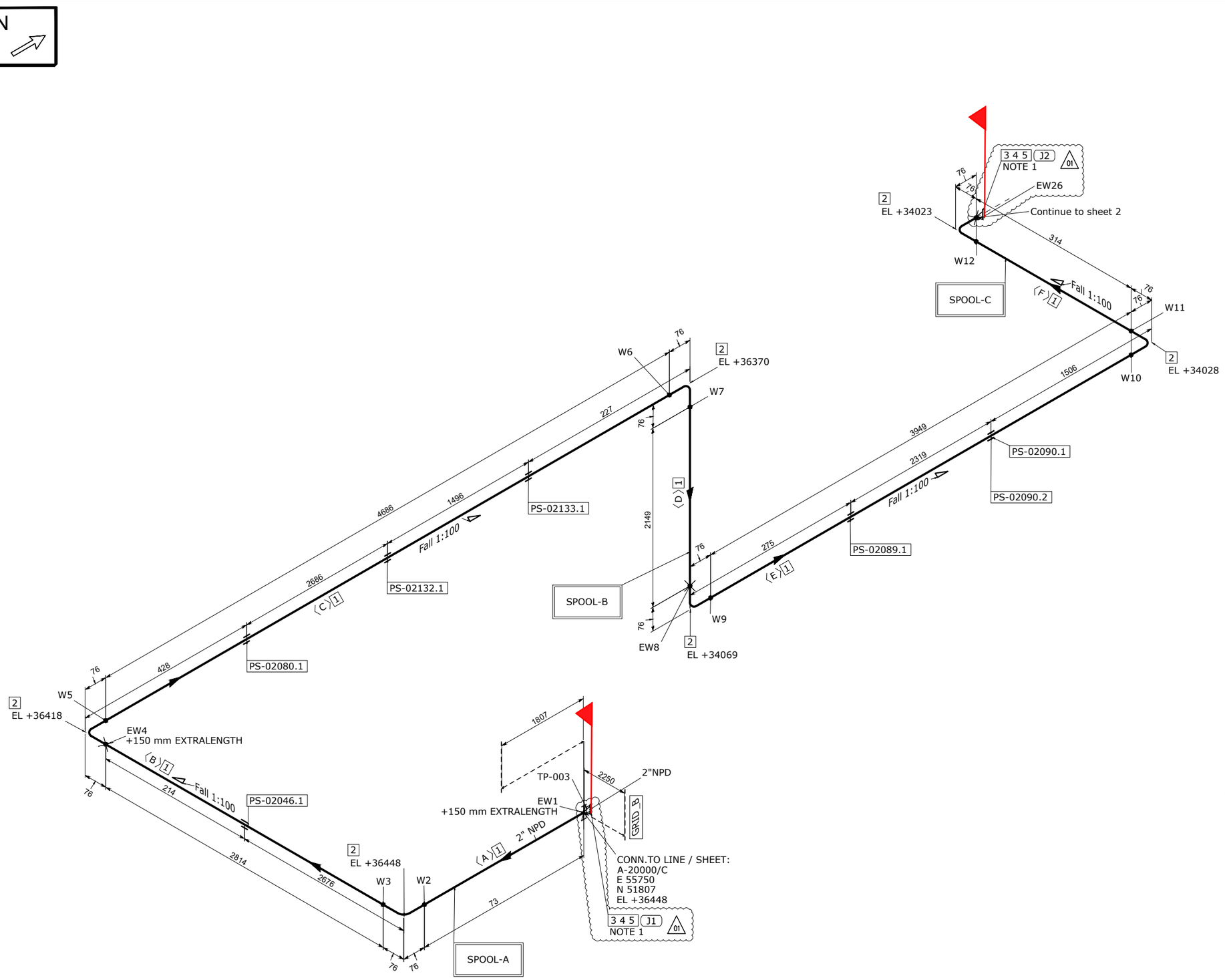
REV. **08**

TITLE

SHOP DRAWING ISOMETRIC LIST

DATE **04/12/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
2	123A90-FDL-PP-DI-00002-01	**002**	01	SHOP DRAWING ISOMETRIC - LINE NR 2"-VL-003-01HSS-N	03/09/2024	04/12/2024												**01**	**08**		**TP-067**



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	14.3M	57.0
2	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	6	2.8

ERECTION

	POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
	3	2	FLW0SS00010200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	5.5
01	4	2	GSW0GK11130200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 150LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.2
	5	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	2.0

FABRICATION WEIGHT [kg]	59.8
ERECTION WEIGHT [kg]	7.7
OVERALL WEIGHT [kg]	67.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
EW1	2	SW
W2	2	BW
W3	2	BW
EW4	2	BW
W5	2	BW
W6	2	BW
W7	2	BW
EW8	2	BW
W9	2	BW
W10	2	BW
W11	2	BW
W12	2	BW
01 EW26	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	2	223	SQ.CUT	BEVEL
B	2	2964	BEVEL	SQ.CUT
C	2	4686	BEVEL	BEVEL
D	2	2149	BEVEL	BEVEL
E	2	3949	BEVEL	BEVEL
F	2	314	BEVEL	BEVEL

SUPPORT LIST

PS-02046.1
PS-02080.1
PS-02132.1
PS-02133.1
PS-02089.1
PS-02090.2
PS-02090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4	13.2
B	6	28.2
C	8	18.4
01 MONT	8	7.7

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	04-12-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	03-09-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

43-00-TP-067

MASTER

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	I			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Gas			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 5.25 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80011
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

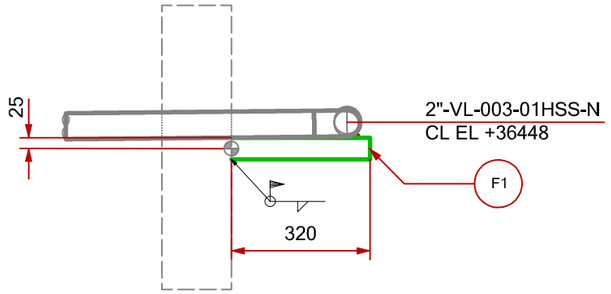
1) TEMPORARY FLANGE FOR HYDROTEST, TO BE CUT AFTER TEST 01

TITLE	SHOP DRAWING ISOMETRIC LINE NR. 2"-VL-003-01HSS-N
SK.002	
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	03-09-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00002
SHEET / OF	1/2
REV.	01

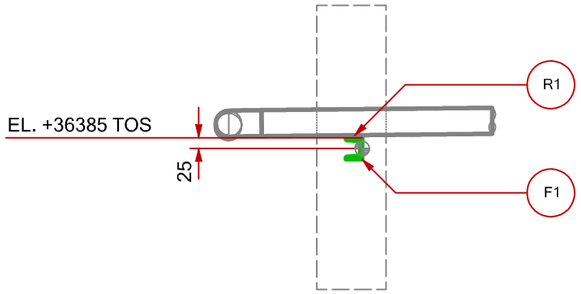
6. EXTRACT OF SUPPORT LIST & DETAILS

SUPPORT LIST

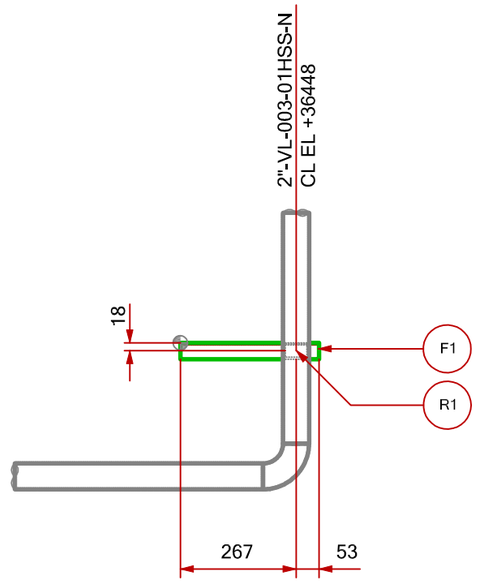
SUPPORT	SUFFIX	SERVICE	DECK IDENTIFICATION	SUB ASSEMBLY	LINE	SUPPORTS STANDARD	NDT CATEGORY	QUANTITY	TOT. WEIGTH (KG)	PAINTING SURFACE (SQM)	REV	DATE	STATUS	NOTES	Test Pack N°
PS-02045	B1	PIP	UPPER DECK		2"-VL-003-01HSS-N	C-16 - 50 - 30 - 5		1	0,017	0,000	01	04/11/2024	AFC		TP-067
PS-02065	B1	PIP	UPPER DECK		2"-VL-003-01HSS-N	C-16 - 50 - 30 - 5		1	0,017	0,000	01	04/11/2024	AFC		TP-067
PS-02069	B1	PIP	UPPER DECK		2"-VL-003-01HSS-N	S-75 - 2" - 100 - 92 - 200		1	6,348	0,046	01	04/11/2024	AFC		TP-067
PS-02090	B1	PIP	UPPER DECK		2"-VL-003-01HSS-N	S-75 - 2" - 100 - 92 - 200		1	6,348	0,046	01	04/11/2024	AFC		TP-067
PS-02091	B2	PIP	UPPER DECK		2"-VL-003-01HSS-N	C-34 - 1 - I - 2		1	2,044	0,023	01	04/11/2024	AFC		TP-067
PS-02132	B1	PIP	UPPER DECK		2"-VL-003-01HSS-N	S-211 - 2"		1	0,519	0,000	01	04/11/2024	AFC		TP-067
PS-02133	B1	PIP	UPPER DECK		2"-VL-003-01HSS-N	C-16 - 50 - 30 - 5		1	0,017	0,000	01	04/11/2024	AFC		TP-067



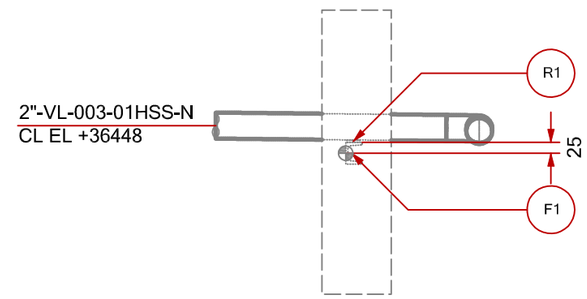
VIEW LOOKING EAST



VIEW LOOKING NORTH



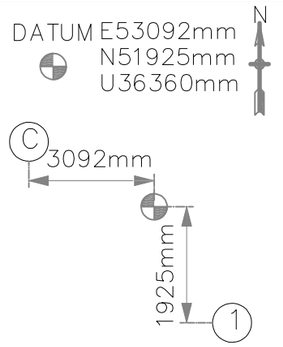
PLAN VIEW

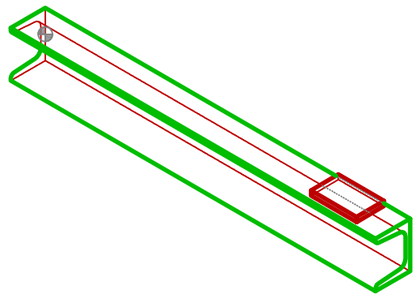


VIEW LOOKING SOUTH

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-16-50-30-5	-	-	1	-	0.02	-
F1	BEAM	UPN50	Carbon Steel	400	1	5.61	2.24	0.093
						TOTAL	2.3	0.09





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

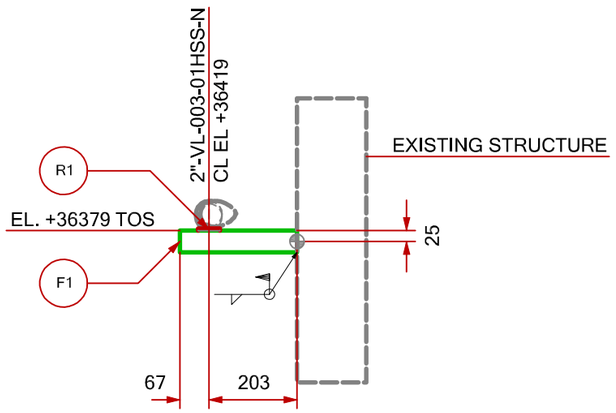
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

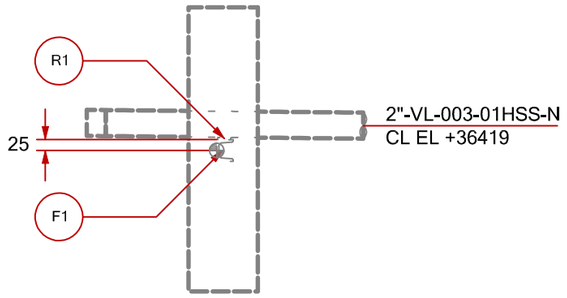
PS-02046

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

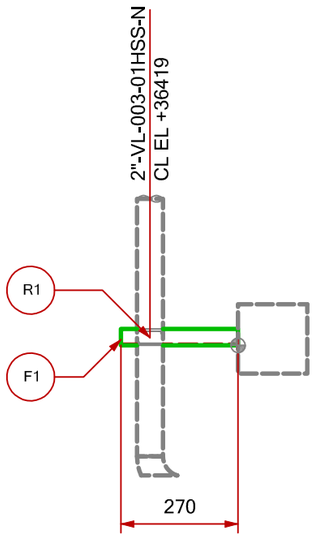
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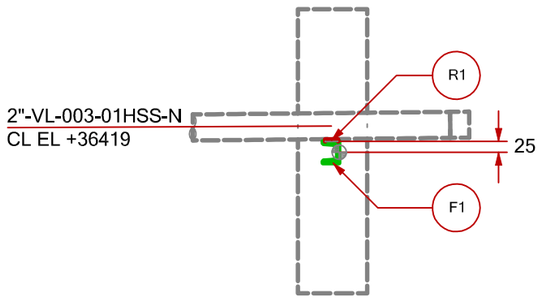
VIEW LOOKING NORTH



VIEW LOOKING WEST



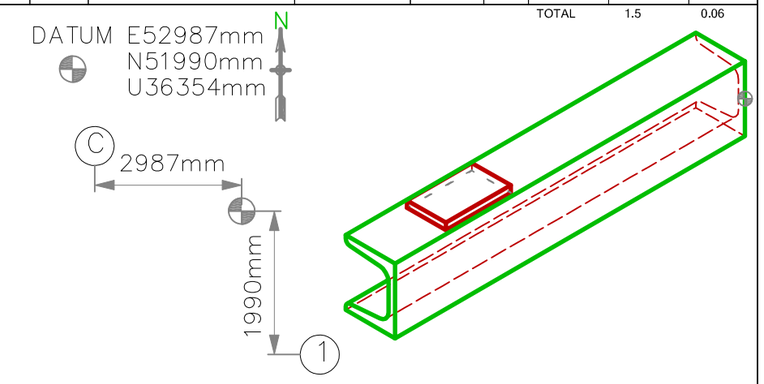
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-16-50-30-5	-	-	1	-	0.02	-
F1	BEAM	UPN50	Carbon Steel	270	1	5.61	1.51	0.063
						TOTAL	1.5	0.06



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

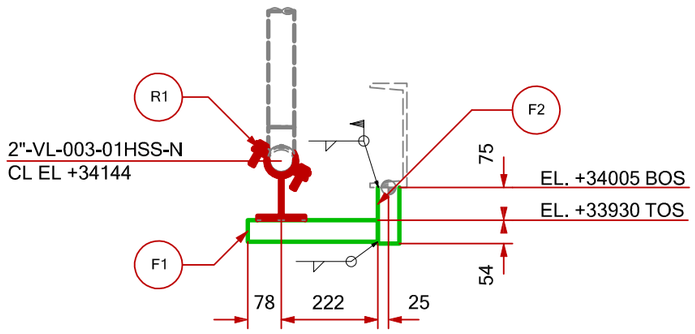
ROSETTI MARINO

TITLE :

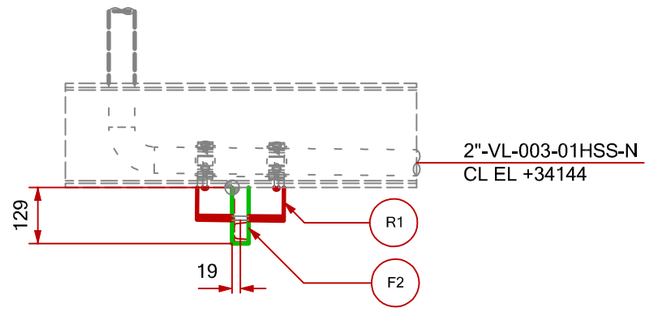
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-02080

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

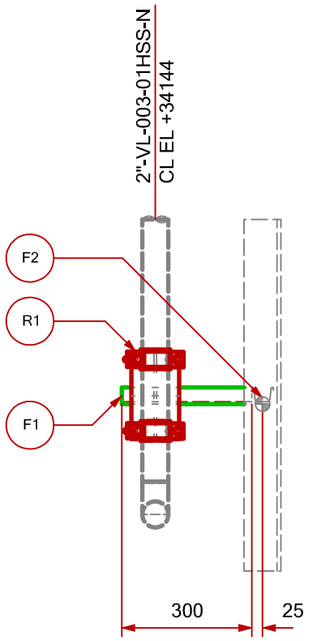
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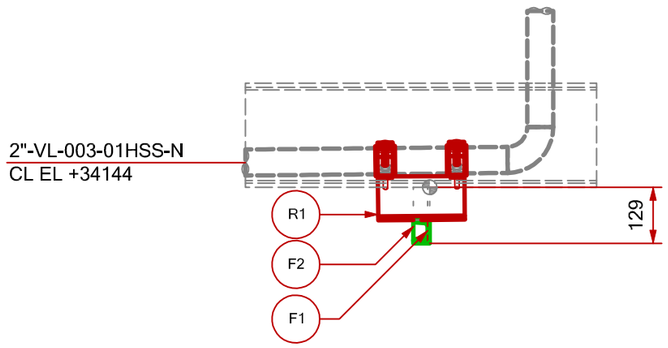
VIEW LOOKING NORTH



VIEW LOOKING WEST



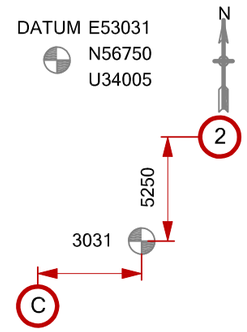
PLAN VIEW

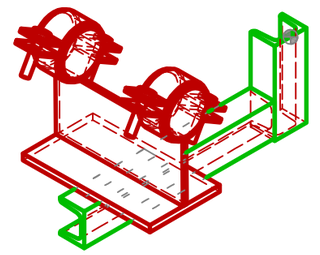


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-75-2"-100-92-200	-	-	1	-	6.35	0.046
F1	BEAM	UPN50	Carbon Steel	300	1	5.61	1.68	0.070
F2	BEAM	UPN50	Carbon Steel	129	1	5.61	0.72	0.031
						TOTAL	8.8	0.15





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

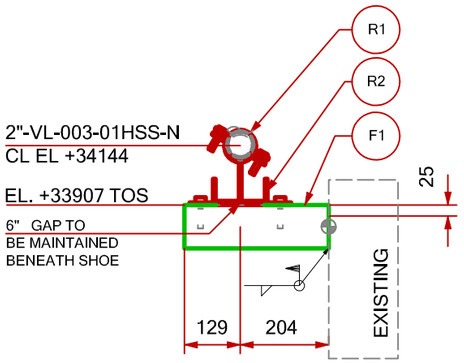
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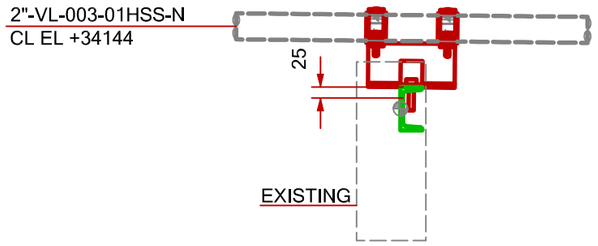
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-02089

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

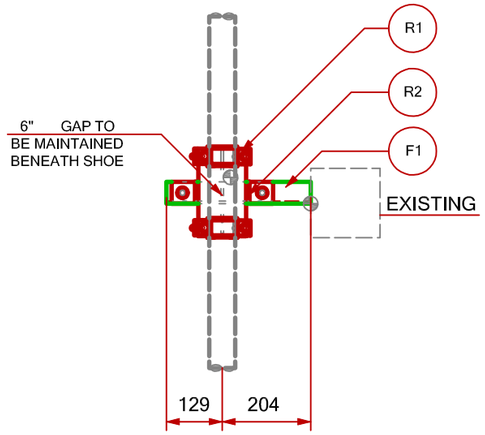
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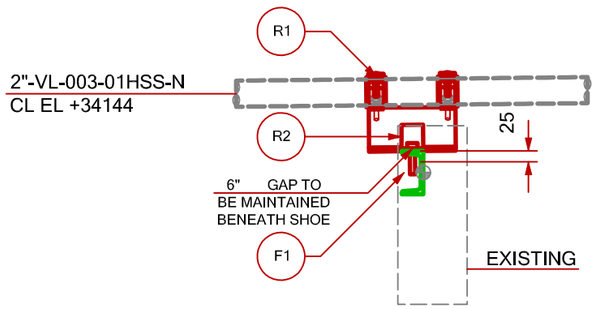
VIEW LOOKING NORTH



VIEW LOOKING WEST



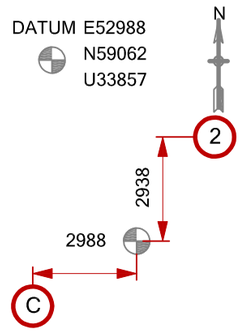
PLAN VIEW

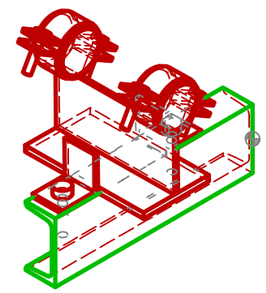


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-75-2"-100-92-200	-	-	1	-	6.35	0.046
R2	STD	C-34-1-I-2	-	-	1	-	2.04	0.023
F1	BEAM	UPN100	Carbon Steel	333	1	10,57	3,52	0.126
						TOTAL	11.9	0.20





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

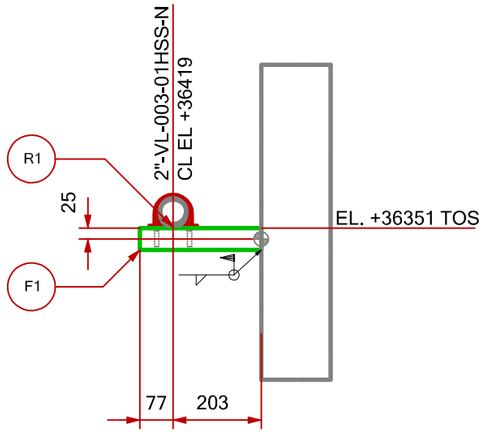
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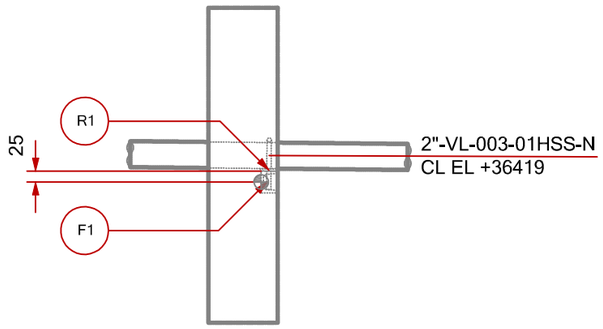
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-02090

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

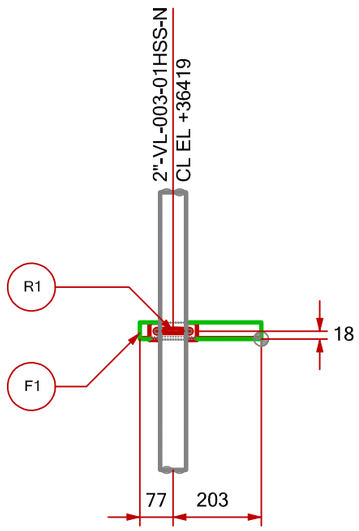
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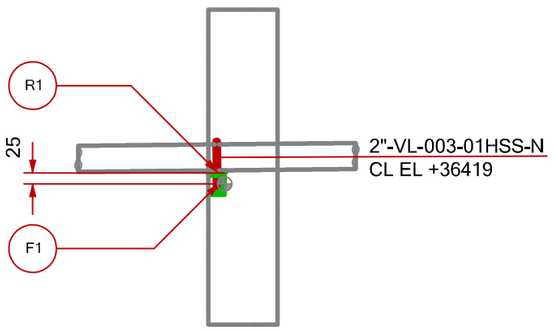
VIEW LOOKING NORTH



VIEW LOOKING WEST



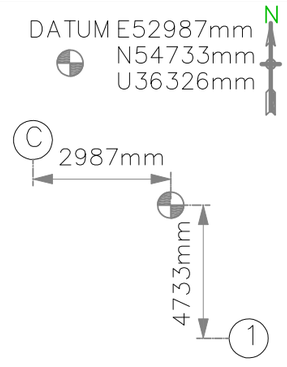
PLAN VIEW

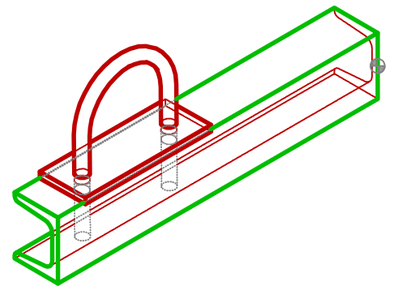


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-2"	-	-	1	-	0.52	-
F1	BEAM	UPN50	Carbon Steel	280	1	5.61	1.57	0.066
						TOTAL	2.1	0.07





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

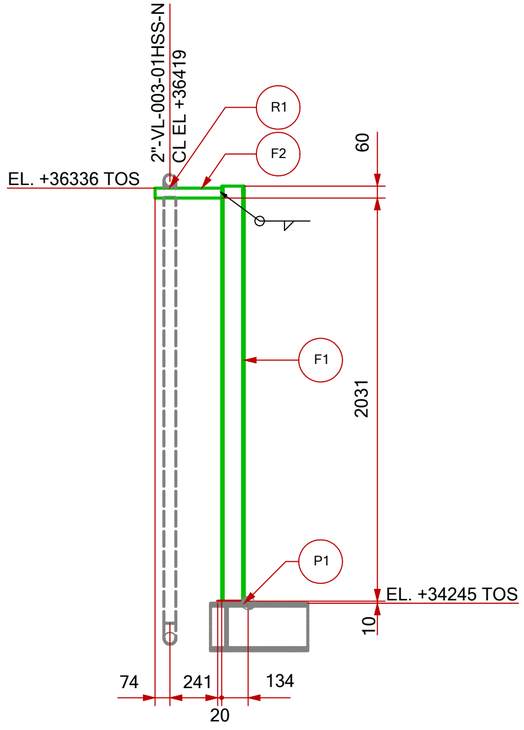
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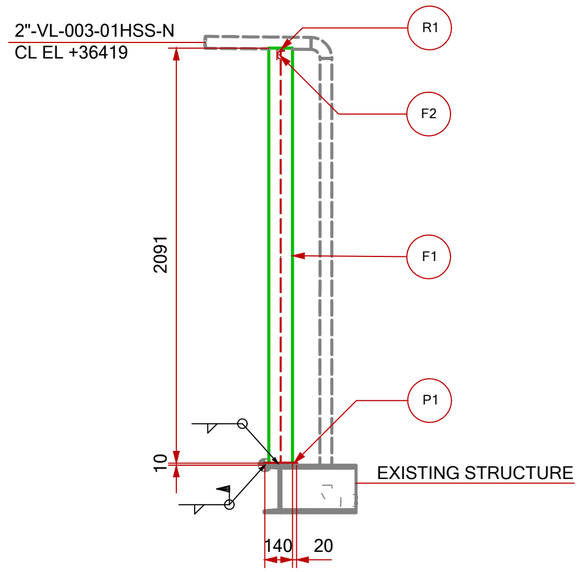
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-02132

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

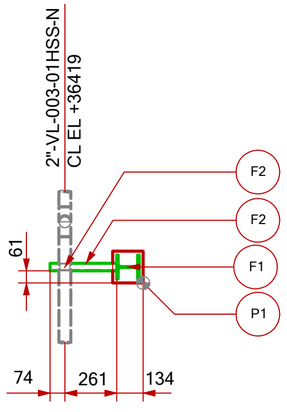
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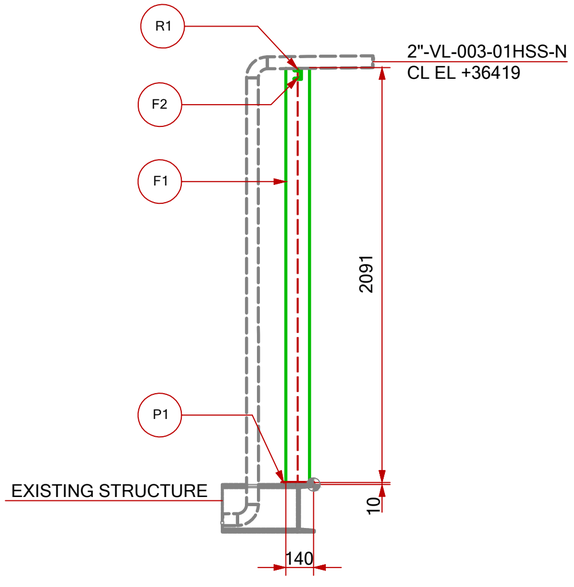
VIEW LOOKING NORTH



VIEW LOOKING WEST



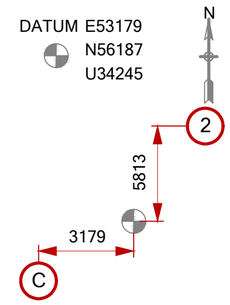
PLAN VIEW

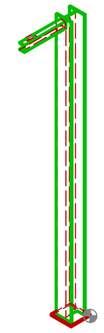


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-16-50-30-5	PTFE	-	1	-	0.02	-
F1	BEAM	HEA120	Carbon Steel	2091	1	19.98	41.79	1.421
F2	BEAM	UPN50	Carbon Steel	335	1	5.61	1.88	0.078
P1	PLATE	10	Carbon Steel	154x160	1	-	1.93	0.049
						TOTAL	45.6	1.52





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	04/11/24	MMA	SLO	DLO	ACCEPTED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-02133

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1 : 20
DRAWN	CHECKED	APPROVED		DATE 04/11/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1	REV. 01

File Name :

ROSETTI MARINO

STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

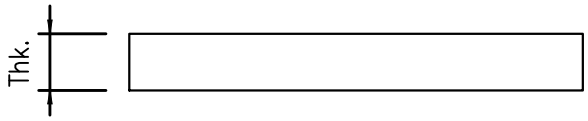
Revision: 0

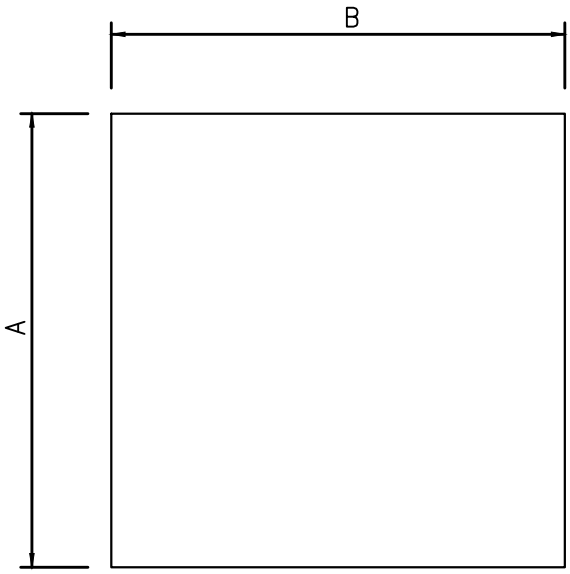
Date: –

PIATTO DI ISOLAMENTO IN PTFE Sp=VARIABILE
PTFE ISOLATING PAD Thk=VARIABLE

C–16

Example of designation : STD – A – B – Thk.
(C–16 – 70 – 100 – 5)





NOTES:
1– MATERIAL: PTFE
2– STRENGHT FOR COMPRESSION (1% DI DEFORMATION) = 5 N/mm² x Thk. (mm)
3– THE PTFE PAD SHALL BE COVERED ALSO AFTER THE POSSIBLE DISPLACEMENTS OF THE PIPING LINE

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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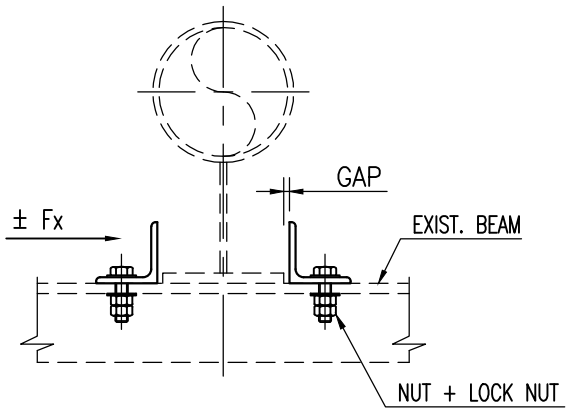
STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001
Revision: 0
Date: –

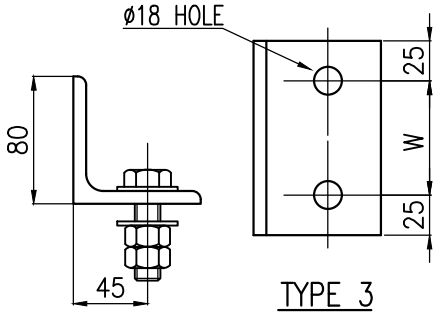
GUIDA BULLONATA
BOLTED GUIDE

C–34

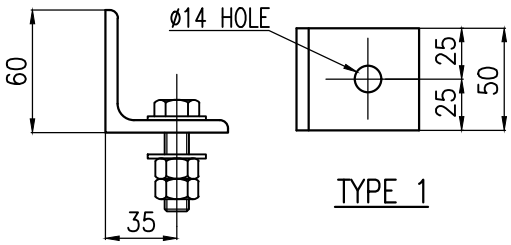
Example of designation : STD – TYPE – SIZE – GAP
(C–34 – 5 – M – 2)



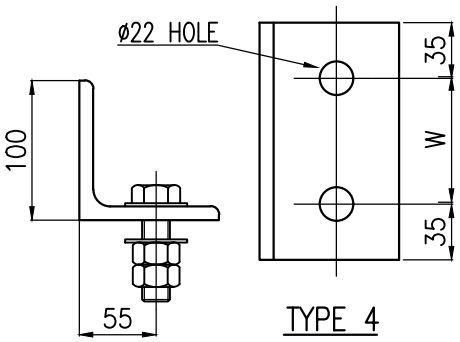
TYPICAL ASSEMBLY



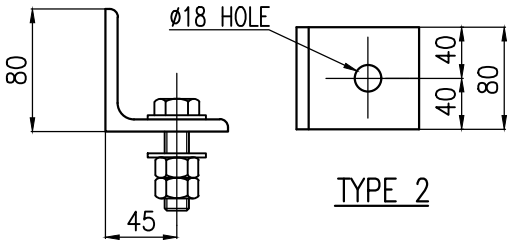
TYPE 3



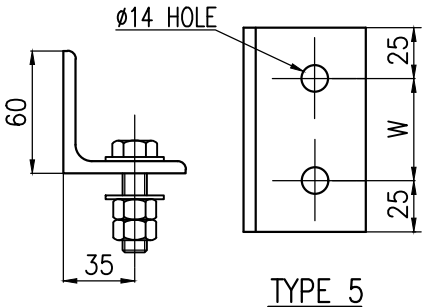
TYPE 1



TYPE 4



TYPE 2



TYPE 5

SIZE	EXIST. BEAM	W mm
A	HEA 100	58
B	HEA 120	66
C	HEA 140	76
D	HEA 160	86
E	HEA 180	96
F	HEA 200	106
	HEA 220	
G	HEA 240	120
	HEA 260	
	HEA 280	
H	HEA 300	126

SIZE	EXIST. BEAM	W mm
I	UPN 100	46
	UPN 120	
J	UPN 140	60
K	UPN 200	100
L	IPE 200	64
	IPE 220	
M	IPE 270	70
N	IPE 300	72
O	IPE 600	94
Z	–	0

TYPE	PROFILE	BOLTING (DIN933)	MAXIMUM LOAD Fx (KN)	WEIGHT (BOLTS INCL.)
1	L60x60x6	M12x60	10	0.8
2	L80x80x8	M16x70	18	2.0
3	L80x80x8	M16x70	36	.....
4	L100x100x10	M20x75	56	.....
5	L60x60x6	M12x60	20	.....

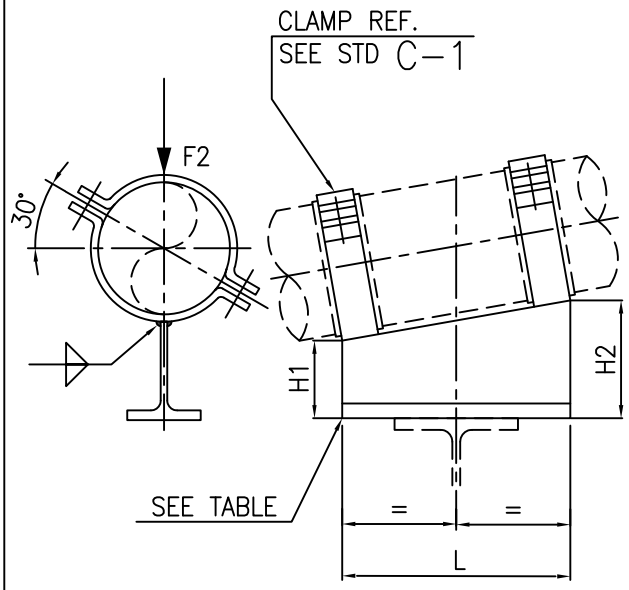
NOTES:
1– PROFILE MATERIAL : CARBON STEEL
2– BOLTS (UNI 5739 CI 8.8), NUTS (UNI 5588 CI 8.8), LOCK NUT (UNI 7474 CI.10) & WASHERS (UNI 6592) SHALL BE H.D.G.
3– SAFE LOADS ARE BASED ON BOLT SHEAR LOADS ONLY.
4– GUIDES ARE TO BE SITE LOCATED AND DRILLED UNLESS OTHERWISE ON.
5– VARIABLE WEIGHT ADDICTED TO THE "TYPE" SELECTED AND THE "W" DIMENSION INDICATED.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

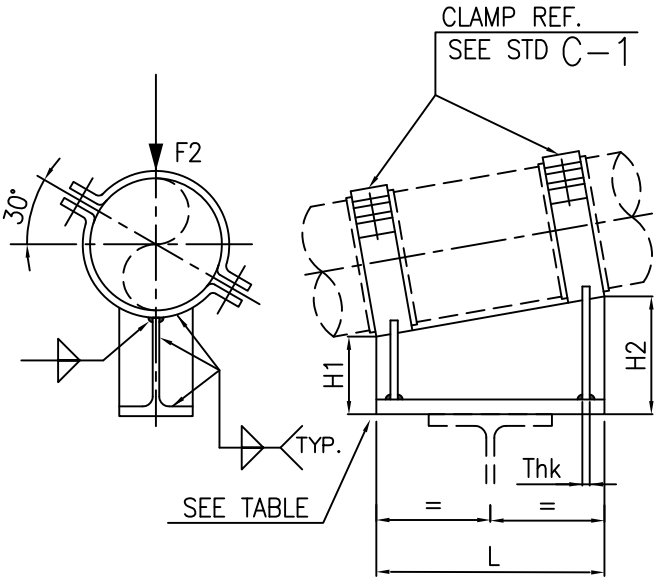
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	ROSETTI MARINO	Document Number: STD–PP–DD–0001
	STANDARD SPECIFICATION PIPE SUPPORT DETAIL STANDARD	Revision: 0 Date: –
SCARPETTA CLAMPATA PER TUBAZIONI IN PENDENZA IN C.S.–S.S. E ALLOY CLAMPED SHOE FOR SLOPED PIPE IN C.S. – S.S. AND ALLOY		S–75

Example of designation : STD – PIPE ND" – H1 – H2 – L
(S–75 – 4" – 148 – 152 – 400)



PIPES ½" TO 4"



PIPES 6" TO 24"

PIPE		TEE CUT FROM	GUSSET Thk	"H" MAX	MAX LOAD (KN)
ND"	ND				F2
½"	15	IPE 140	–	120	2
3/4"	20	IPE 140	–		
1"	25	IPE 140	–		
1½"	40	IPE 140	–		
2"	50	IPE 220	–	190	4.5
3"	80	IPE 220	–		
4"	100	IPE 220	–		
6"	150	IPE 270	10	240	7.9
8"	200	IPE 270	10		
10"	250	HE220A	10	180	47
12"	300	HE220A	10		
14"	350	HE220A	10		
16"	400	HE220A	10		
18"	450	HE300A	15	230	64
20"	500	HE300A	15		
24"	600	HE300A	15		

ALLOWABLE RANGE FOR SHOE LENGTH		
ø PIPE	MIN. "L" mm	MAX. "L" mm
½" ÷ 6"	200	600
8" ÷ 24"	250	600

NOTES:
1– THIS STANDARD SHALL BE USE ONLY FOR LINE WITH SLOPE >= 1%
2– MATERIAL TO BE CARBON STEEL
3– ALL FILLET WELDING MUST HAVE THE EQUAL TO 0.8 OF THE MINIMUM THICKNESS TO BE WELDED EXCEPT WHERE OTHERWISE INDICATED.
4– VARIABLE WEIGHT ADDICTED TO THE "PIPE ND" SELECTED AND THE "L", "H" DIMENSIONS INDICATED.
5– "H" DIMENSIONS ARE REFFERED FROM BOTTOM OF THE CLAMP & NOT FROM BOTTOM OF THE PIPE

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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ROSETTI MARINO

STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

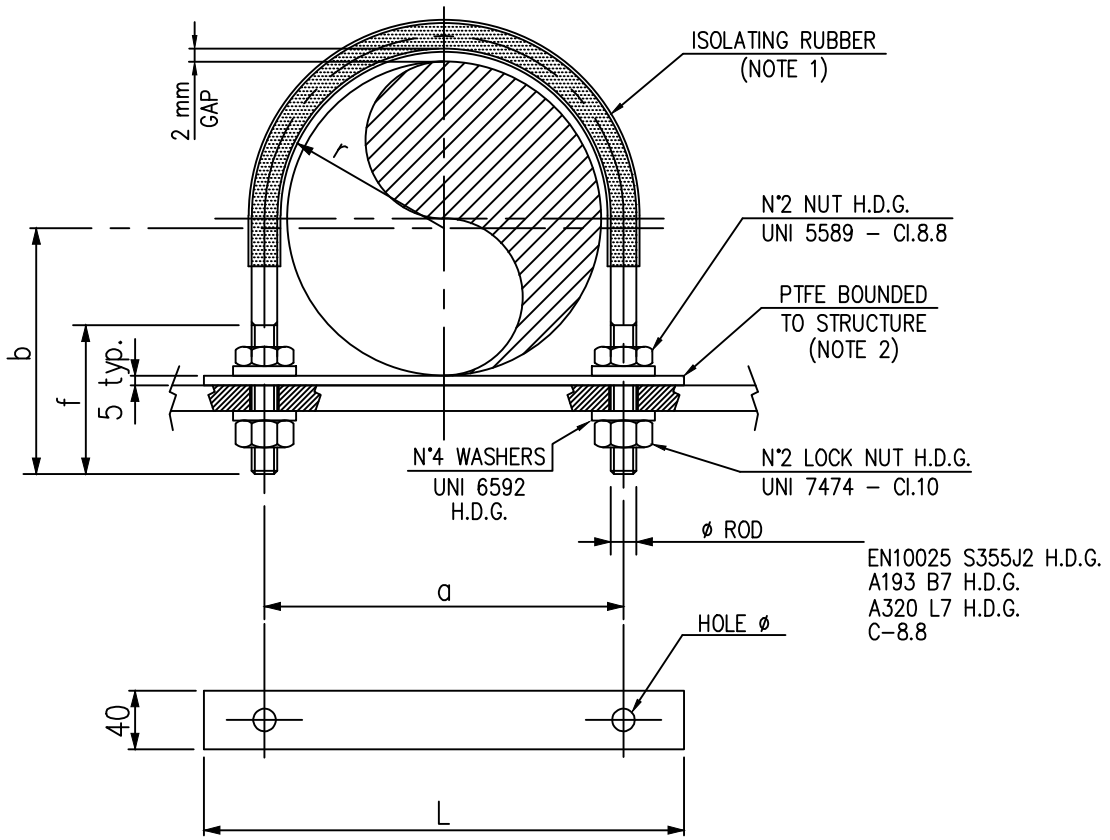
Revision: 0

Date: –

CAVALLOTTI GALVANIZZATI DI GUIDA PER TUBAZIONI IN C.S S.S. E ALLOY
GALVANIZED U–BOLTS GUIDE FOR C.S. S.S. AND ALLOY PIPES (NON GRIP)

S–211

Example of designation : STD – PIPE ND"
(S–211 – 10")



SIZE ND	ROD DIA	r	a	b	f	L	HOLE ø	DEV	DEV. RUBBER	WEIGHT Kg
½"	M8	14	36	55	52	65	10	167	62	0.16
3/4"	M8	17	42	55	52	70	10	176	75	0.16
1"	M8	20	48	60	55	80	10	196	90	0.18
1½"	M10	27	64	70	65	100	12	240	120	0.32
2"	M10	33	76	80	70	110	12	280	150	0.35
3"	M12	48	108	100	80	150	14	370	210	0.60
4"	M12	60	132	110	80	180	14	430	260	0.67
6"	M16	87	190	150	100	250	18	600	380	1.39
8"	M16	113	242	170	100	300	18	720	500	1.60
10"	M16	140	296	200	100	350	18	865	650	1.86
12"	M20	165	350	240	120	420	22	1030	750	3.31
14"	M20	181	382	260	120	450	22	1120	840	3.55
16"	M24	207	438	290	130	520	26	1270	1000	5.76
18"	M24	232	488	320	130	570	26	1410	1100	6.28
20"	M30	257	544	360	160	640	32	1570	1200	11.02
24"	M30	308	646	410	160	750	32	1830	1450	12.52

NOTES:

1) HEAT SHRINK TUBE TYPE FLAME RETARDANT, WITH RATIO 2:1
2) MULTIPLE SHEETS OF PTFE CAN BE ADDED IN ORDER TO ENSURE THE CORRECT ELEVATION AND SLOPE OF THE LINES.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	2	**To**	2
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material	WPS / Defect length	Techn. Weld. / CND date	Type Conn / NOTE	Accept. Date	Spool
1/2/1/_		**01**	**08-01-2025**	**124**	**AX 453**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**09-01-2025**	
01HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable					09-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001143	3	Acceptable					09-01-2025			
2/2/1/_		**01**	**01-10-2024**	**25**	**AZ35**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**07-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000251	3	Acceptable					07-10-2024			
3/2/1/_		**01**	**02-10-2024**	**26**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000252	3	Acceptable					07-10-2024			
4/2/1/_		**01**	**20-01-2025**	**149**	**AX84**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**21-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK		Acceptable					21-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001189	3	Acceptable					21-01-2025			
5/2/1/_		**01**	**02-10-2024**	**26**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**10-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000294	3	Acceptable					10-10-2024			
6/2/1/_		**01**	**02-10-2024**	**26**	**AZ35**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**10-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000295	3	Acceptable					10-10-2024			
7/2/1/_		**01**	**01-10-2024**	**25**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					03-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000293	3	Acceptable					10-10-2024			
8/2/1/_		**01**	**21-01-2025**	**151-152**	**AX84**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**24-01-2025**	
					AX410	**After Cutting**													
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK		Acceptable					21-01-2025			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001191	3	Repair				0,020 m	22-01-2025			
Cut 23-01-2025 Prod sh.152 AX410		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable C1A		GTAW			25-01-2025			
		RT	C 1 DTA	After Cutting		IDL-QCI-RT 0036 00	AA	100 %	001193	3	Acceptable					24-01-2025			
9/2/1/_		**01**	**02-10-2024**	**26**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**C**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
9/2/1/_		**01**	**02-10-2024**	**26**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				03-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000255	3	Acceptable				07-10-2024				
10/2/1/_		**01**	**02-10-2024**	**26**	**AZ35**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**07-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				03-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000256	3	Acceptable				07-10-2024				
11/2/1/_		**01**	**01-10-2024**	**25**	**AZ35**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**07-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				03-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000253	3	Acceptable				07-10-2024				
12/2/1/_		**01**	**01-10-2024**	**25**	**AZ35**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**07-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				03-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000254	3	Acceptable				07-10-2024				
26/2/1/_		**01**	**08-01-2025**	**123**	**AX 453**			**FWN**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**09-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				09-01-2025				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	001136	3	Acceptable				09-01-2025				

Totals per DWG	**2**	**Prefabrication**	**1,71 m**	**9 Nr. Welds**	**18,00 inch**
		Erection	**0,76 m**	**4 Nr. Welds**	**8,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**2,47 m**	**13 Nr. Welds**	**26,00 inch**
		Accepted	**2,47 m**	**13 Nr. Welds**	**26,00 inch**
		Repaired	**0,02 m**	**1 Nr. Welds**	**2,00 inch**
Totals by Discipline		**Prefabrication**	**1,71 m**	**9 Nr. Welds**	**18,00 inch**
		Erection	**0,76 m**	**4 Nr. Welds**	**8,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**2,47 m**	**13 Nr. Welds**	**26,00 inch**
		Accepted	**2,47 m**	**13 Nr. Welds**	**26,00 inch**
		Repaired	**0,02 m**	**1 Nr. Welds**	**2,00 inch**
Totals by Project		**Prefabrication**	**1,71 m**	**9 Nr. Welds**	**18,00 inch**
		Erection	**0,76 m**	**4 Nr. Welds**	**8,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**2,47 m**	**13 Nr. Welds**	**26,00 inch**
		Accepted	**2,47 m**	**13 Nr. Welds**	**26,00 inch**
		Repaired	**0,02 m**	**1 Nr. Welds**	**2,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**		
Commessa/Job	**123A90 - Piping**		
Disciplina/Discipline	**PIPING**		
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:	
RosettiDoc.Num.	**123A90MTR001**		

Approvato da/Approved by	
Nome/Name:	
Data/Date:	28/01/2025

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
2	01	1	A	01HSS	2	1	90 Deg Elbow Long Radius BW >2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724001267	00070	24-01-0126	W2-W3	
2	01	1	A	01HSS	1A	0,223	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
2	01	1	A	01HSS	1B	2,964	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
2	01	1	B	01HSS	2	1	90 Deg Elbow Long Radius BW >2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724001267	00070	24-01-0126	W5	
2	01	1	B	01HSS	2	1	90 Deg Elbow Long Radius BW >2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724001267	00070	24-01-0126	W6-W7	
2	01	1	B	01HSS	1C	4,686	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
2	01	1	B	01HSS	1D	2,149	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
2	01	1	C	01HSS	2	1	90 Deg Elbow Long Radius BW >2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724001267	00070	24-01-0126	W9	
2	01	1	C	01HSS	2	1	90 Deg Elbow Long Radius BW >2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724001267	00070	24-01-0126	W10-W11	
2	01	1	C	01HSS	2	1	90 Deg Elbow Long Radius BW >2" Thk.2.77mm ASTM A403 Gr.WP316/316L	M230234-1	1724001267	00070	24-01-0126	W12	
2	01	1	C	01HSS	1E	3,949	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
2	01	1	C	01HSS	1F	0,314	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation – NOT APPLICABLE

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	43-00-TP-067	: Test Pack 43-00-TP-067			Dwg	123A90-DDL-PR-PID-80011
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004792		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air, ensuring all drains/vents (when present) were open to facilitate the removal of moisture. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, inlet and outlet points were closed with covers.
3	Temporary means :	Blind flanges and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA
5	Valve body cavity, branches, etc.. Have been drained form residual water	●
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Restricting access to the area.
11	REMARKS:	None

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-03	2025-02-04	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-03T08:58:40.141Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-04T08:57:39.008Z	

ITEM	Tag	43-00-TP-065	: Test Pack 43-00-TP-065			Dwg	123A90-DDL-PR-PID-80029
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	UD
TASK	code	C10004858		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX01 Thermal Insulation

1	Ensure CLX02B Pipework After Test (reinstatement) check completed.	OK
2	Ensure CXX02 "Painting Line" check (for the concerned insulated lines) completed.	OK
3	Ensure CPX22A "Heat tracing Before Insulation" check completed.	OK
4	Check that the insulation and cladding materials conform to the specifications.	OK
5	Check that the insulation is compatible with the Heat tracing system.	OK
6	Check that the surface condition prior to the application of the insulation	OK
7	Check the installation of wire mesh	OK
8	Check the overlap of the metal cladding.	OK
9	Check that each joint is sealed with a suitable sealant specified for water proofing.	OK
10	Check the staggering of the metal cladding joints and verify that they have been applied as per the specifications.	OK
11	Control that locking devices boxes operate satisfactorily.	PL
12	Check the blinds, the spectacles and the instruments are visible.	NA
13	Check the flange accessibility without damaging the insulation.	PL
14	Check that color coding/line marking/flow direction are correct	PL

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM_CONSTR (ROSETTI MARINO)	RM (ROSETTI MARINO)	
Name	Gianluca De Maglie	Lorenzo Novaga	
Date	2025-03-21	2025-03-25	
Signature	PROVERLIS Digitaly signed by Gianluca De Maglie 2025-03-21T15:20:10.763Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-03-25T12:46:55.028Z	

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ITEM	Tag	TP-001	: H2 Vent System			Dwg	
	S/Sys	43-00	: Hydrogen Vent Header & Drum System			Module	
TASK	code	C10004888		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX25 — Gross Air Leak Test

TEST PREPARATION					
1	EQUIPMENT REINSTATED	Yes	2	TEMPORARY EQUIPMENT REMOVED	Yes
3	CONFORMITY TO P&ID'S	Yes	4	FLANGE MANAGEMENT COMPLETED	Yes

DATA		
Design pressure:	Test pressure*:	Test medium:

TEST RESULTS		
Test date:	Test duration:	Witnessed by:
Test pressure-start:	Test pressure - finish:	

Note*: Pressure to be 7 bars or below if maximum operating pressure is lower

Comments: SEE ATTACHED TEST REPORT

	Performed by	☐ WITNESS ☉ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM (ROSETTI MARINO)	RM (ROSETTI MARINO)	
Name	Wolmer Borghi	Anthony Iveson	
Date	2025-02-26	2025-02-26	
Signature	PROVERLIS Digitaly signed by Wolmer Borghi 2025-02-26T15:08:17.122Z	PROVERLIS Digitaly signed by Anthony Iveson 2025-02-26T16:05:24.814Z	

Logger protocol

Protocollo di acquisizione elenco dati

	Log no. *N. elenco dati*	123A90_GALT_07

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FOLZJ9
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:0E:DF:71)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:31:22
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	04:33:02 pm

Logger protocol

Protocollo di acquisizione elenco dati

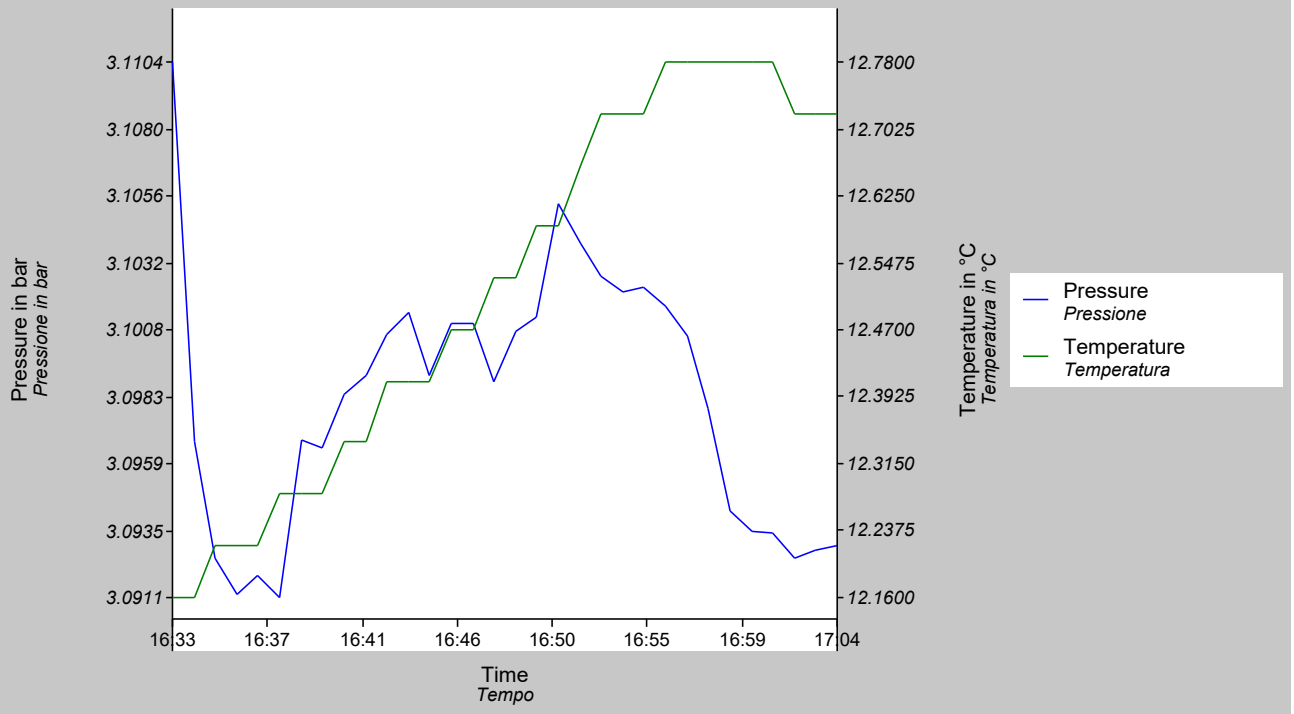
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90_GALT_07

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/25/2025 16:33:02.000	3.1104	12.1600
02/25/2025 16:34:02.000	3.0967	12.1600
02/25/2025 16:35:02.000	3.0925	12.2200
02/25/2025 16:36:02.000	3.0912	12.2200
02/25/2025 16:37:02.000	3.0919	12.2200
02/25/2025 16:38:02.000	3.0911	12.2800
02/25/2025 16:39:02.000	3.0968	12.2800
02/25/2025 16:40:02.000	3.0965	12.2800
02/25/2025 16:41:02.000	3.0984	12.3400
02/25/2025 16:42:02.000	3.0991	12.3400
02/25/2025 16:43:02.000	3.1006	12.4100
02/25/2025 16:44:02.000	3.1014	12.4100
02/25/2025 16:45:02.000	3.0991	12.4100
02/25/2025 16:46:02.000	3.1010	12.4700
02/25/2025 16:47:02.000	3.1010	12.4700
02/25/2025 16:48:02.000	3.0989	12.5300
02/25/2025 16:49:02.000	3.1007	12.5300

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90_GALT_07

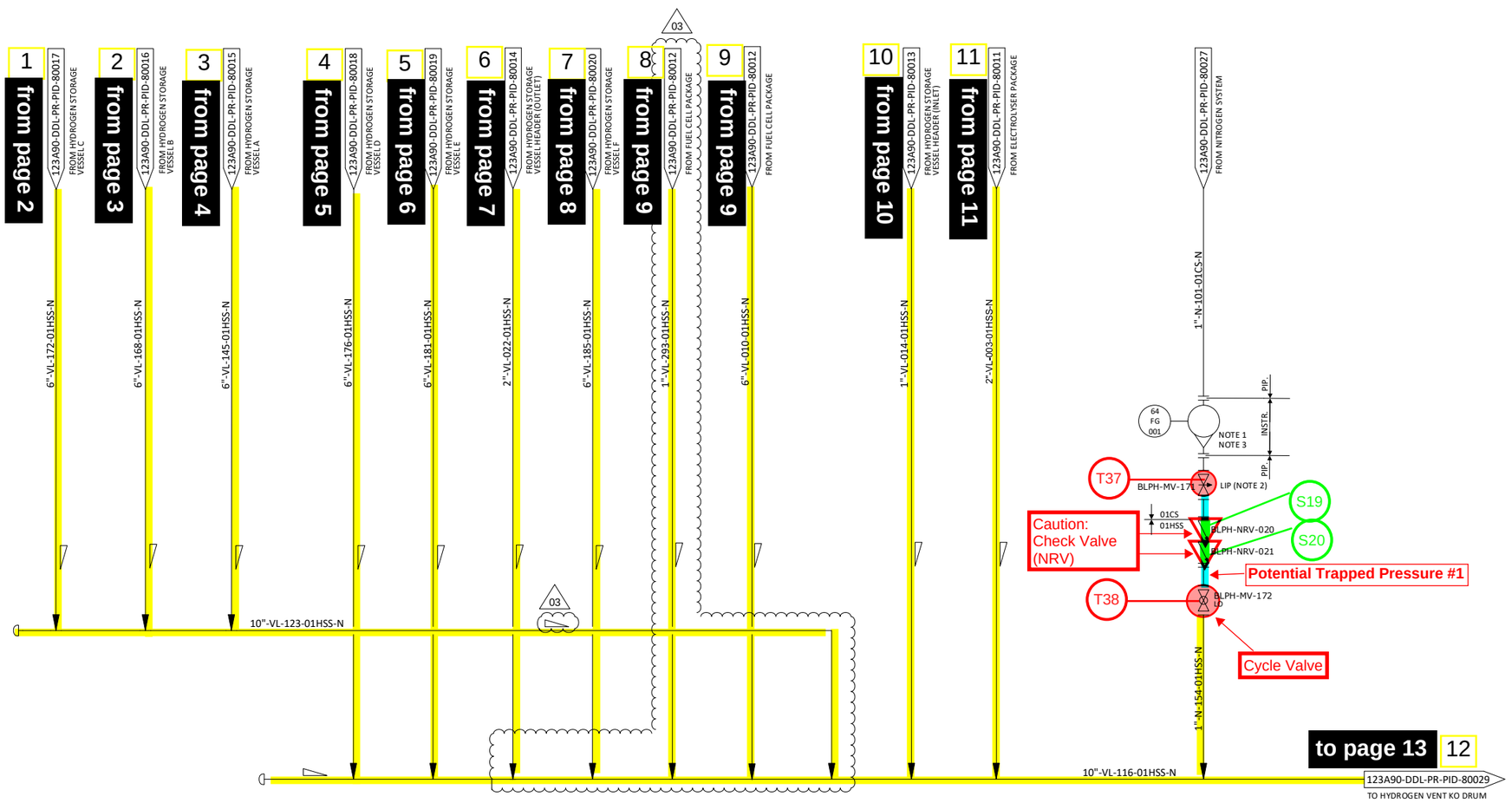
Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/25/2025 16:50:02.000	3.1012	12.5900
02/25/2025 16:51:02.000	3.1053	12.5900
02/25/2025 16:52:02.000	3.1039	12.6600
02/25/2025 16:53:02.000	3.1027	12.7200
02/25/2025 16:54:02.000	3.1021	12.7200
02/25/2025 16:55:02.000	3.1023	12.7200
02/25/2025 16:56:02.000	3.1016	12.7800
02/25/2025 16:57:02.000	3.1005	12.7800
02/25/2025 16:58:02.000	3.0979	12.7800
02/25/2025 16:59:02.000	3.0942	12.7800
02/25/2025 17:00:02.000	3.0935	12.7800
02/25/2025 17:01:02.000	3.0934	12.7800
02/25/2025 17:02:02.000	3.0925	12.7200
02/25/2025 17:03:02.000	3.0928	12.7200
02/25/2025 17:04:02.000	3.0930	12.7200

DRAWING NO. DRAWING_NO.

REV. REV



Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

NOTES

1. FLOW METER 64-FG-001 SHALL BE READABLE FROM MANUAL VALVE MV-171.
2. VALVE BLPH-MV-171 TO BE LOCKED IN PLACE.
3. VERTICAL INSTALLATION.

HOLDS

1. DELETED.
2. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT HEADER

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80028	SHEET 001	REV. 03

File Name : FILE_NAME

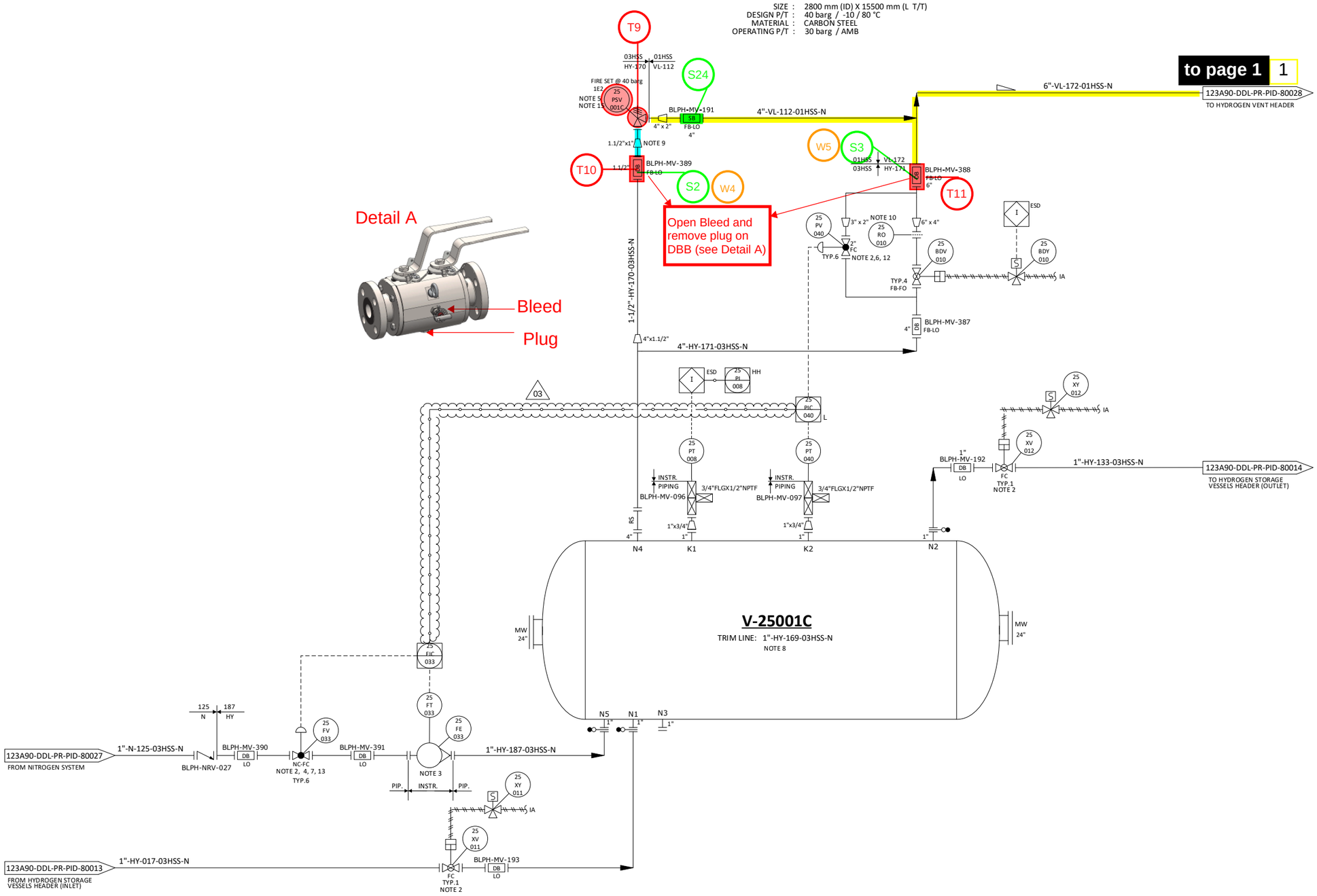
DRAWING NO. DRAWING_NO.

REV. REV

V-25001_C

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-033) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-040 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-040 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-033 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-040 HAS FAILED TO CLOSE.
15. 25-PS-V001C SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL C

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80017		SHEET 001	REV. 03

File Name : FILE_NAME

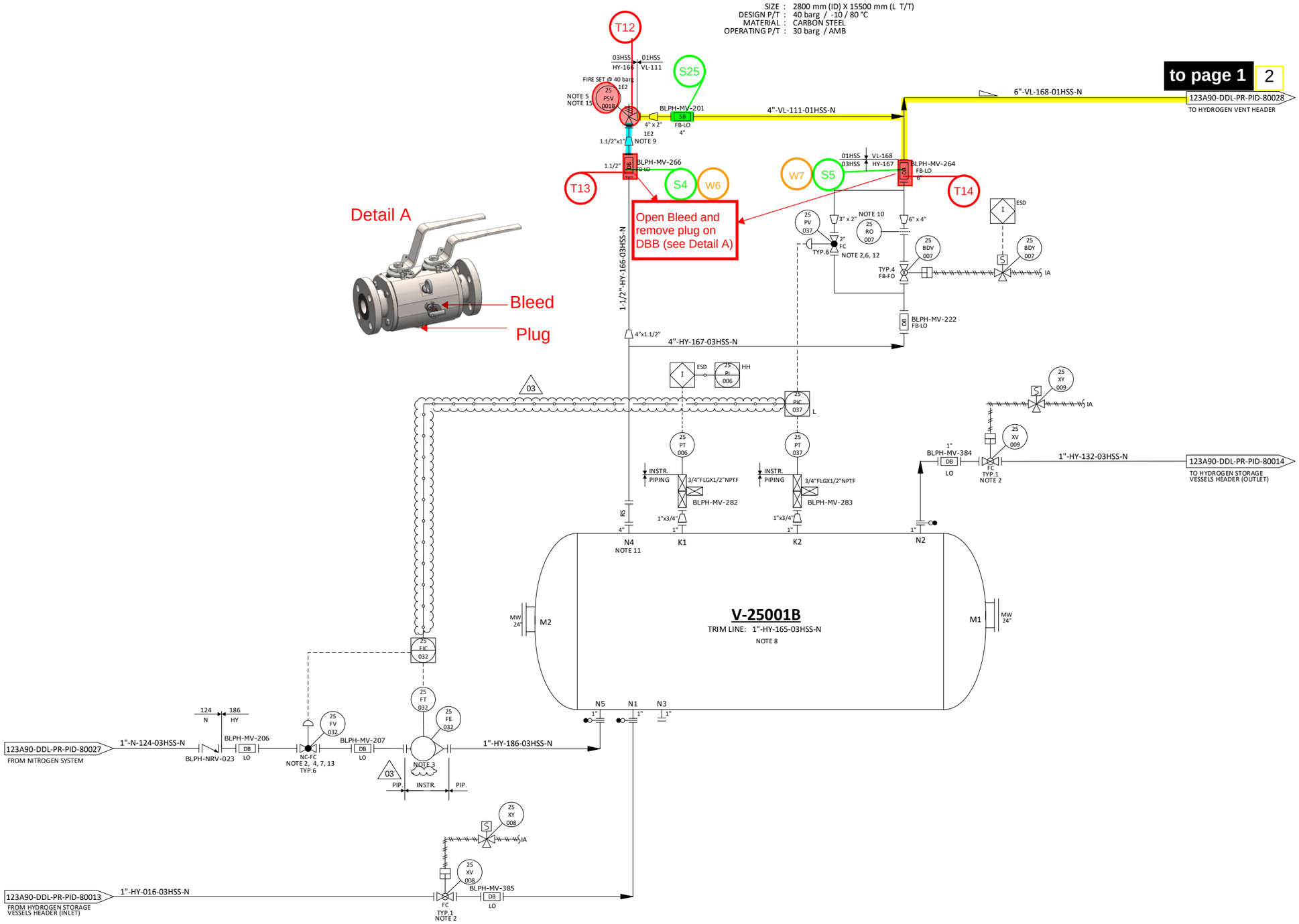
DRAWING NO. DRAWING_NO.

REV. REV

V-25001 B

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-032) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. (03)
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT "DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-037 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC."PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-037 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. (03)
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-032 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-037 HAS FAILED TO CLOSE.
15. 25-PSV-001B SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL B

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80016		SHEET 001	REV. 03

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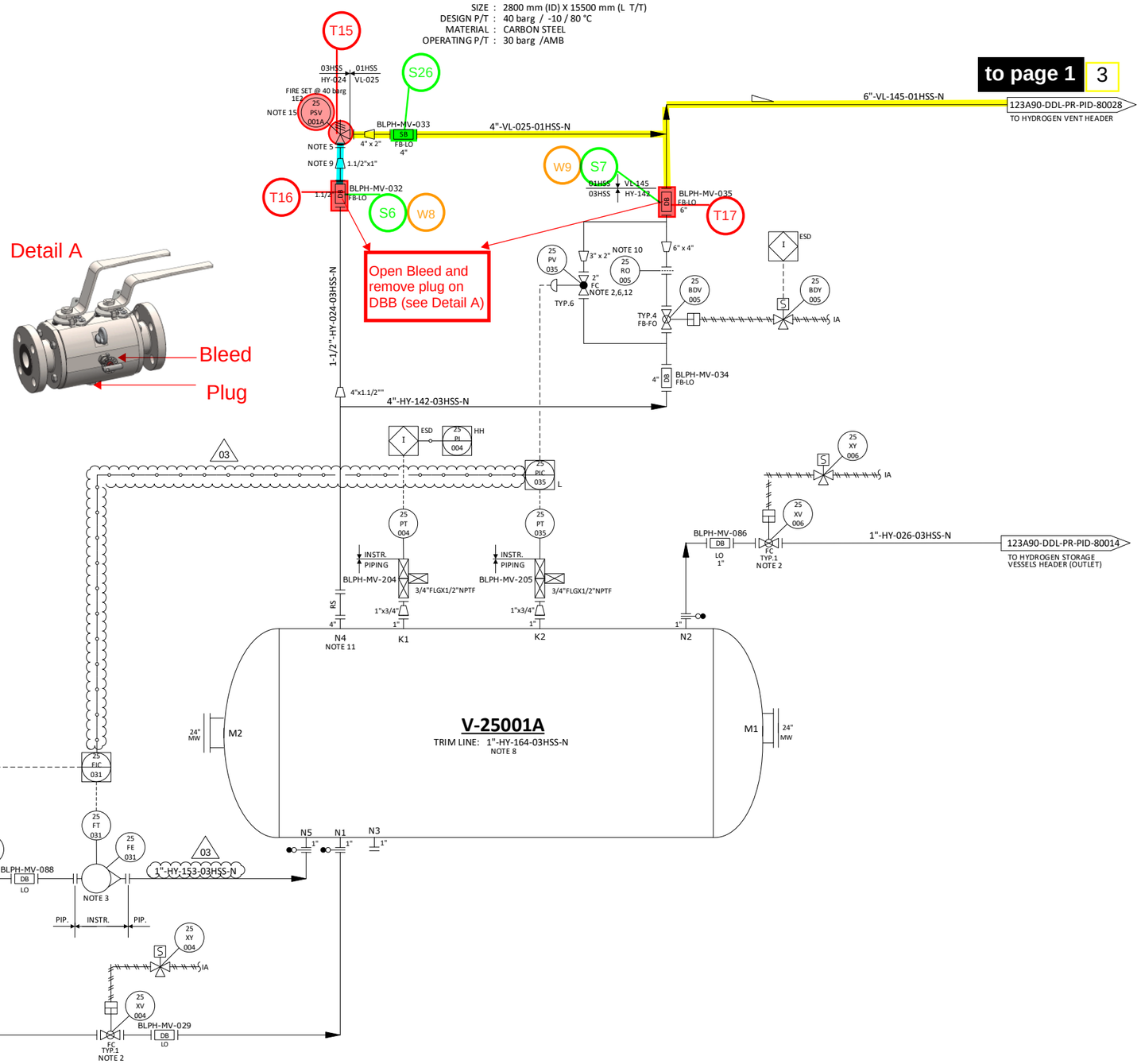
DRAWING NO. DRAWING_NO.

REV. REV

V-25001 A

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg /AMB



Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-031) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT "DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-035 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-035 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-031 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-035 HAS FAILED TO CLOSE.
15. 25-PSV-001A SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL A

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80015		SHEET 001	REV. 03

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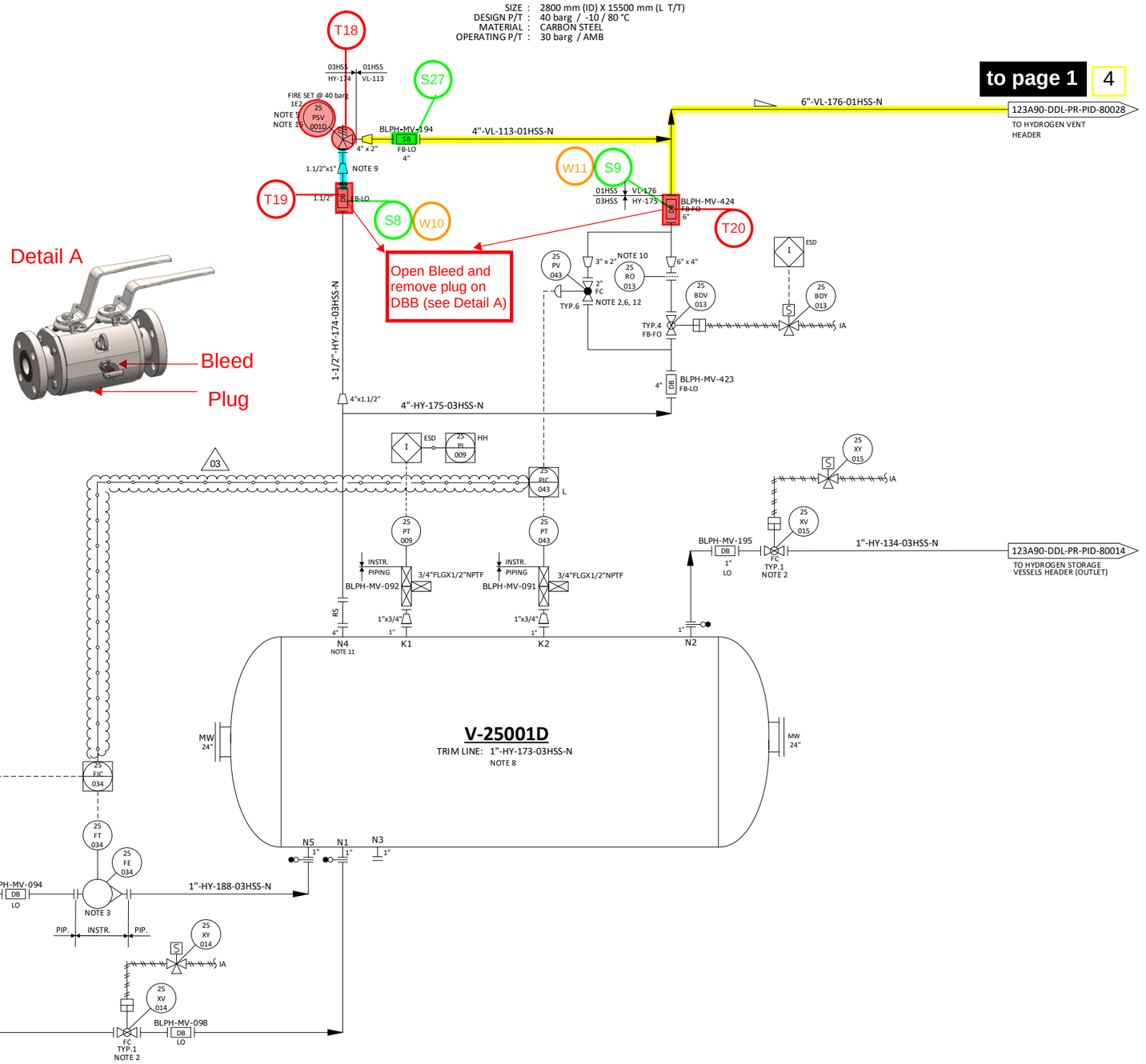
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REV. REV

V-25001_D

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



Detail A

Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-034) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-043 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-043 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-034 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-043 HAS FAILED TO CLOSE.
15. 25-PSV-001D SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL D

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80018	SHEET 001	REV. 03

File Name : FILE_NAME

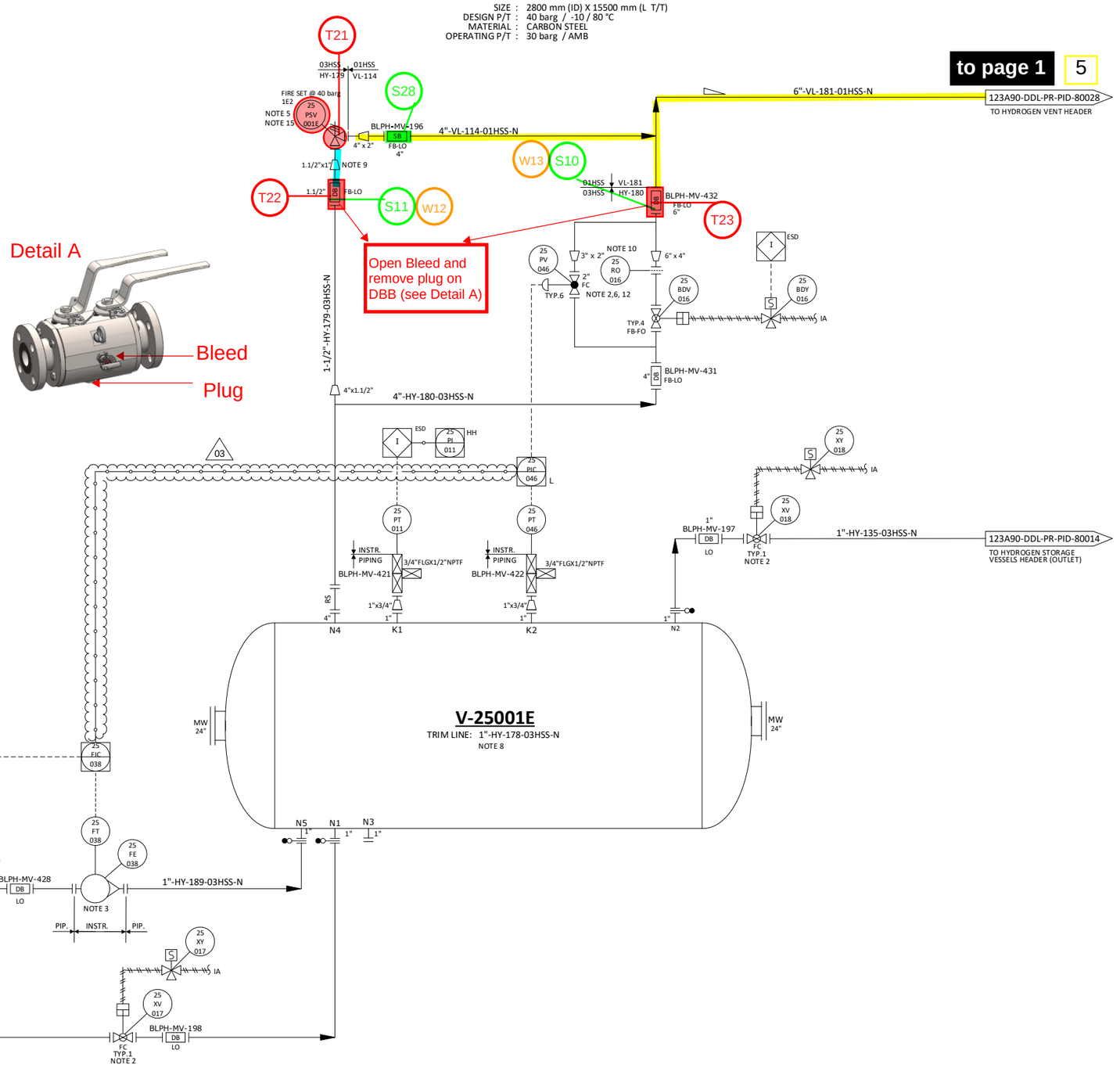
DRAWING NO. DRAWING_NO.

REV. REV

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

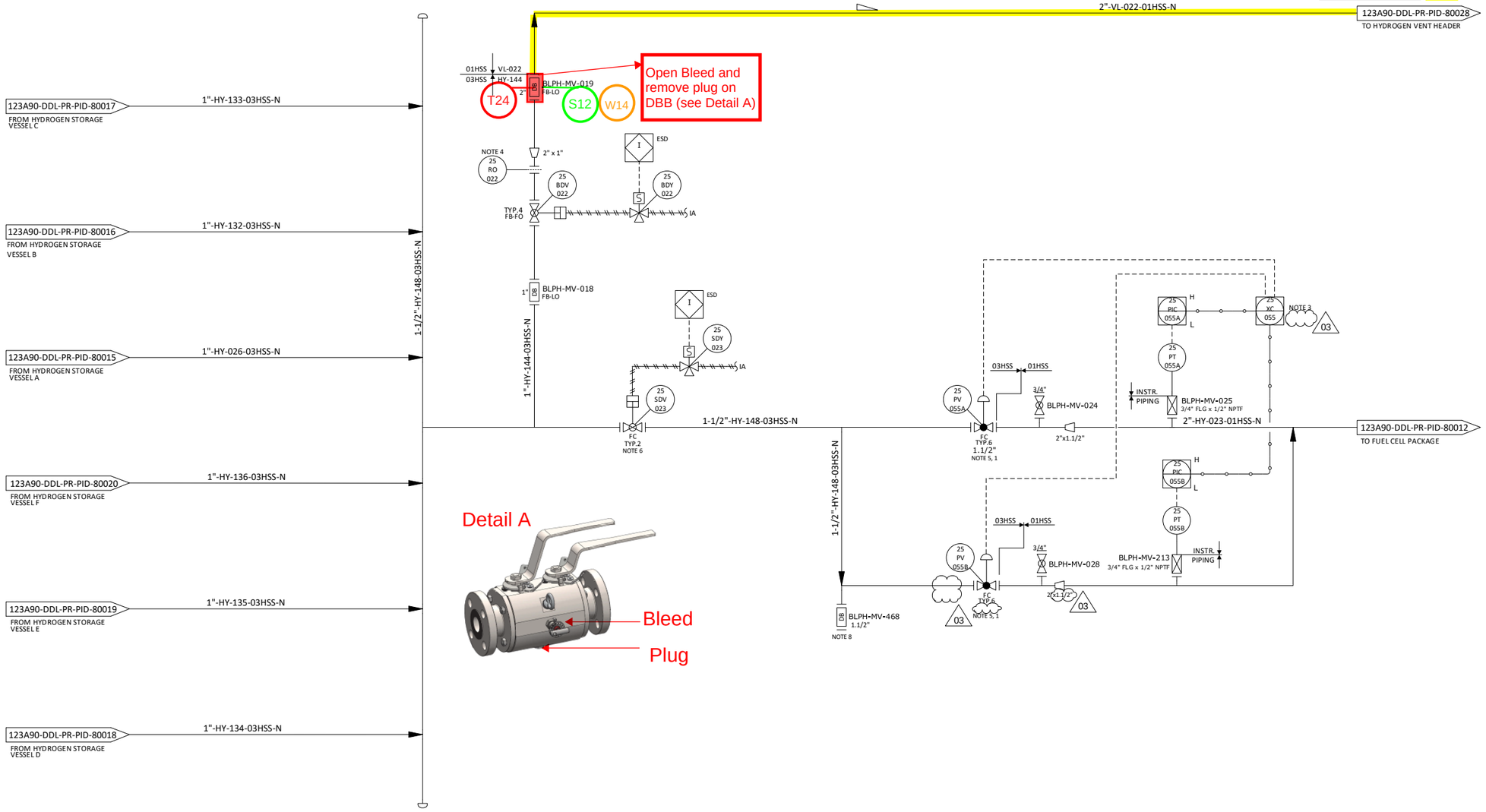
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80019	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV



NOTES

1. TIGHT SHUT-OFF VALVE.
2. DELETED.
3. CONTROL VALVES 25-PV-055A/B WORK IN SPLIT RANGE:
   - FOR LOW OPERATING CV (UP TO 0.31) VALVE "B" IS USED
   - FOR HIGH OPERATING CV (FROM 0.31) VALVE "A" IS USED
4. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
5. SOFTWARE INTERLOCK PREVENTS OPENING OF THE CONTROL VALVES 25-PV-055A/B IN CASE FUEL CELL PACKAGE (A-80000) IS NOT READY TO START. 03
6. SDV VALVE 25-SDV-023 TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE CONTROL VALVES 25-PV-055A/B. 03
7. DELETED. 03
8. TO BE USED DURING COMMISSIONING PHASE.

HOLDS

1. DELETED.
2. DELETED. 03

Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSELS HEADER (OUTLET)

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80014		SHEET 001 / REV. 03

File Name : FILE_NAME

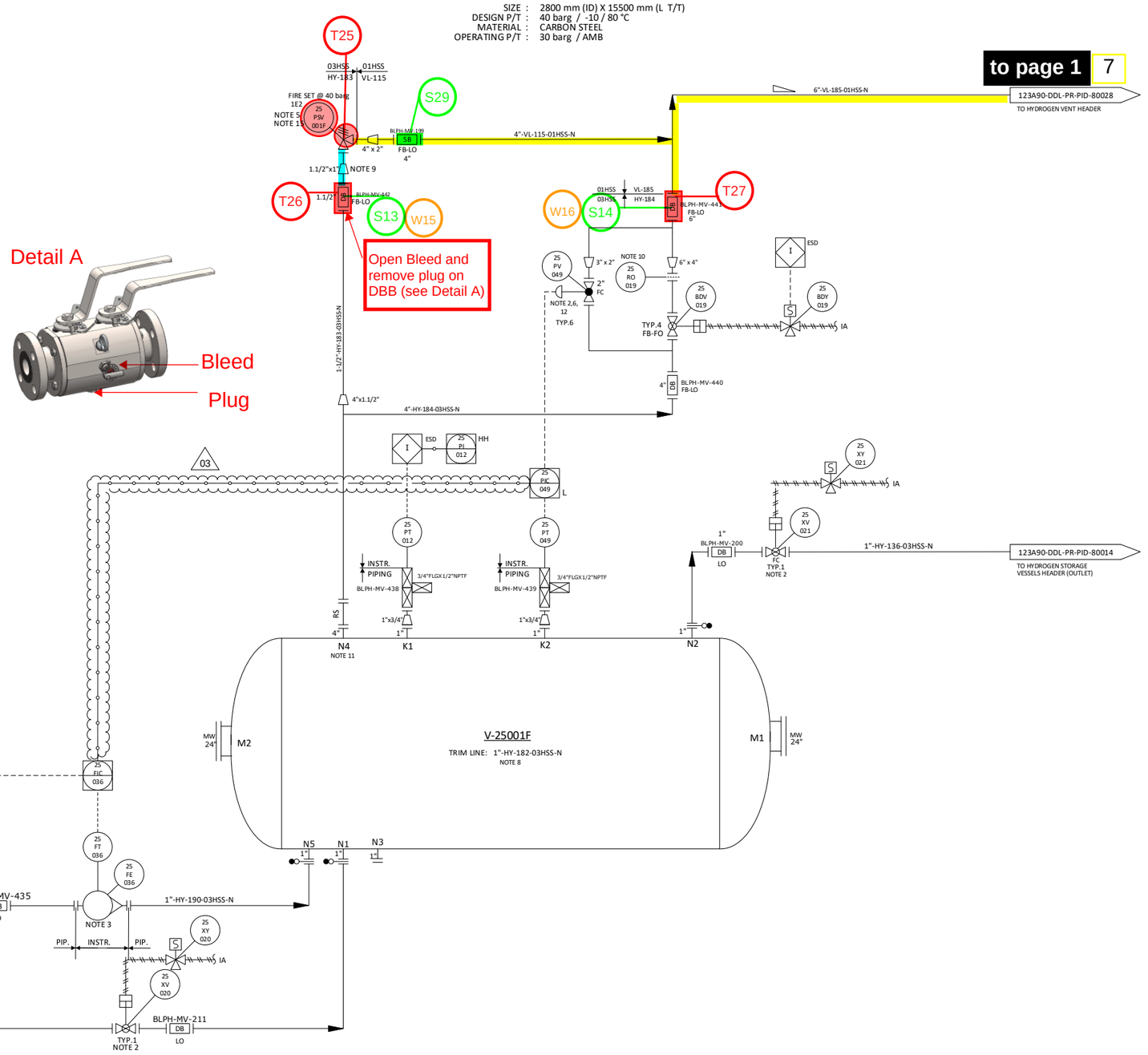
DRAWING NO. DRAWING_NO.

REV. REV

V-25001_F

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-036) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-049 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-049 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25FV036 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-049 HAS FAILED TO CLOSE.
15. 25-PSV-001F SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR HAZOP (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

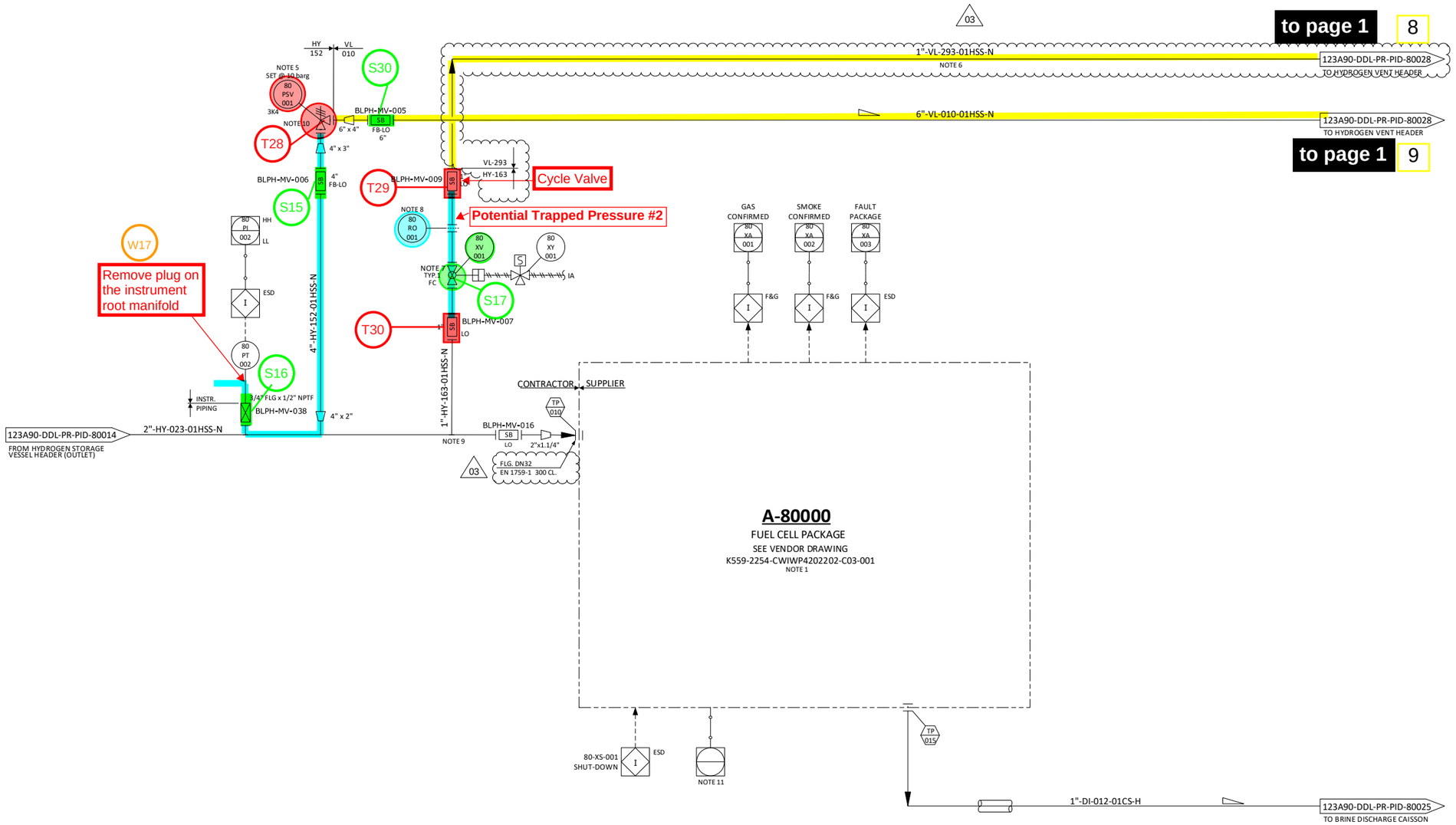
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL F

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80020	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV



NOTES

1. THE VENDOR PACKAGE WILL CONTAIN AIR INTAKE AND EXHAUST, SUITABLY SAFEGUARDED AND SEPARATED.
2. DELETED.
3. DELETED.
4. DELETED
5. ONE UNINSTALLED SPARE PSV SHALL BE AVAILABLE.
6. LINE REQUIRED FOR PURGING OF PIPING WORK.
7. TIGHT SHUT-OFF VALVE.
8. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
9. LINE 1"-HY-163-01HSS-N WILL BE LOCATED AS CLOSE TO THE PACKAGE AS POSSIBLE TO ENSURE COMPLETE PURGING OF THE LINE.
10. 80-PSV-001 SIZED FOR CV FAILURE OF UPSTREAM CONTROL VALVE 25-PV-055A/B.
11. SERIAL COMMUNICATION WITH CONTROL SYSTEM.

HOLDS

1. DELETED.
2. DELETED.

Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
FUEL CELL PACKAGE

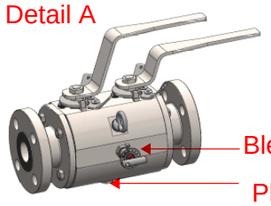
CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80012	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

Detail A



Open Bleed and remove plug on DBB (see Detail A)

to page 1 10

1"-VL-014-01HSS-N → 123A90-DDL-PR-PID-80028 TO HYDROGEN VENT HEADER

01HSS VL-014
03HSS HY-143

1" DB BLPH-MV-212 FB-LO

W18 S18 T36

NOTE 3
25 RO 024

25 XV 024

TYP.1 FB-FC

NOTE 1

25 XY 024 S IA

1" DB BLPH-MV-010 FB-LO

1"-HY-143-03HSS-N

N-SSHE0-007-H-1"

25 PI 002 HH

ESD I

25 PT 002

INSTR. PIPING

BLPH-MV-013 3/4" FLG x 1/2" NPTF

NOTE 4

ESD I

25 SDY 001 S IA

25 SDV 001

123A90-DDL-PR-PID-80011 FROM ELECTROLYSER PACKAGE

1"-HY-007-03HSS-N

FC TYP.2

02

BLPH-MV-014 3/4" FLG x 1/2" NPTF

PIPING INSTR.

25 PT 001

25 PI 001 H

123A90-DDL-PR-PID-80011 TO ELECTROLYSER PACKAGE

1"-HY-015-03HSS-N → 123A90-DDL-PR-PID-80015 TO HYDROGEN STORAGE VESSEL A

1"-HY-016-03HSS-N → 123A90-DDL-PR-PID-80016 TO HYDROGEN STORAGE VESSEL B

1"-HY-017-03HSS-N → 123A90-DDL-PR-PID-80017 TO HYDROGEN STORAGE VESSEL C

1"-HY-020-03HSS-N → 123A90-DDL-PR-PID-80020 TO HYDROGEN STORAGE VESSEL F

02

1"-HY-019-03HSS-N → 123A90-DDL-PR-PID-80019 TO HYDROGEN STORAGE VESSEL E

1"-HY-018-03HSS-N → 123A90-DDL-PR-PID-80018 TO HYDROGEN STORAGE VESSEL D

02

NOTES

1. TIGHT SHUT OFF XV.
2. DELETED. 02
3. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
4. PIPING CONNECTION TO 25-XV-003 SHALL BE AS CLOSE TO THE MANIFOLD AS POSSIBLE, TO ENSURE COMPLETE PURGING OF FEED LINE.

HOLDS

1. DELETED.

Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSELS HEADER (INLET)

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80013	SHEET 001	REV. 02

File Name : FILE_NAME

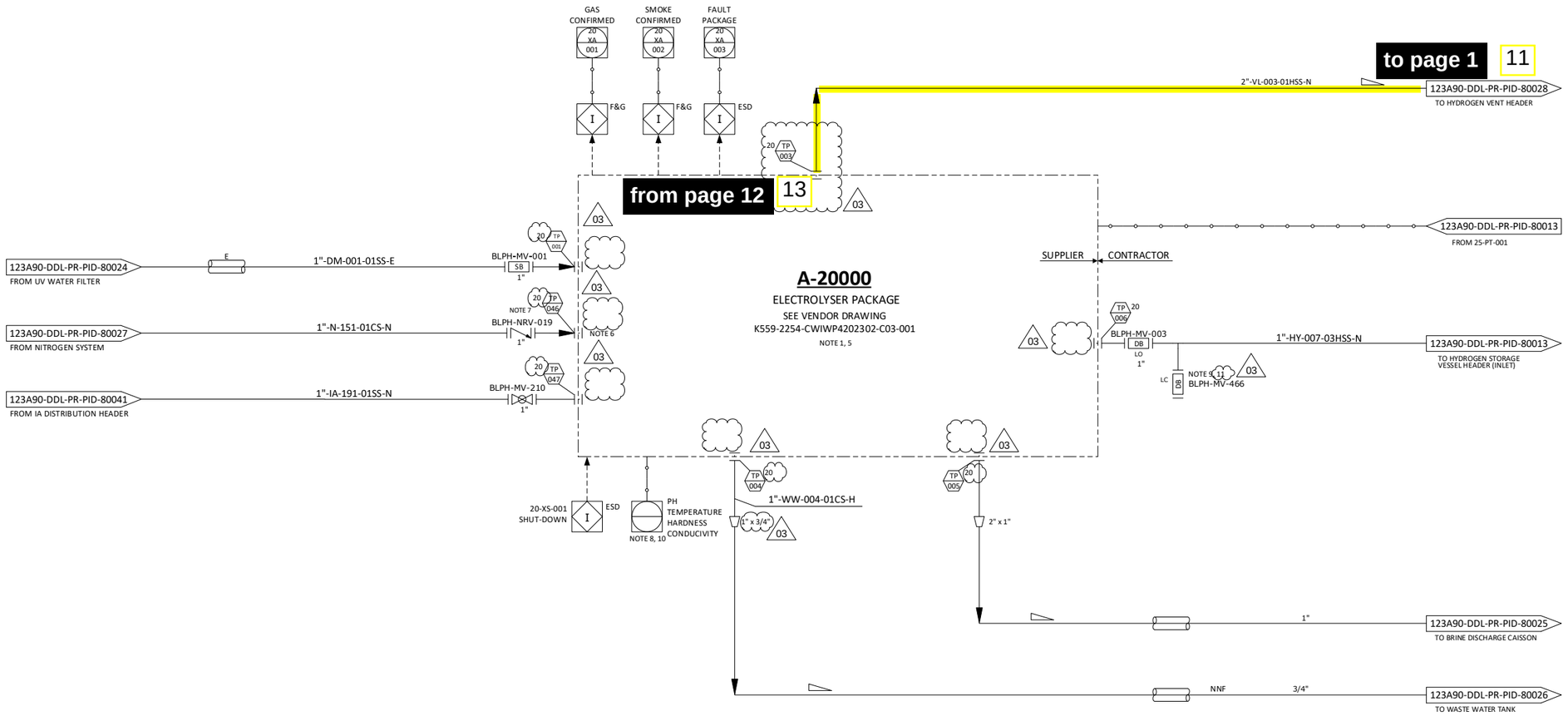
DRAWING NO. DRAWING_NO.

REV. REV

A-20000

ELECTROLYSER PACKAGE

DUTY: 2.5MW
DESIGN PRESSURE: 40 barg
DESIGN TEMPERATURE: 80 °C
H2 GENERATING CAPACITY: 500 Nm³/h



Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

NOTES

1. PACKAGE SUPPLIED WITH POWER FROM THE BLPH ELECTRICAL SYSTEM.
2. DELETED.
3. DELETED.
4. DELETED.
5. ELECTROLYSER PACKAGE INCLUDES AN OXYGEN VENT LINE WHICH IS IN THE SCOPE OF SUPPLY OF THE ELECTROLYSER PACKAGE UP TO THE ATMOSPHERE. NO PHYSICAL INTERFACE IS PRESENT BETWEEN ELECTROLYSER PACKAGE AND CONTRACTOR ON THIS LINE.
6. AN ISOLATION VALVE DOWNSTREAM THE CHECK VALVE NRV-019 IS PROVIDED WITHIN THE PACKAGE A-20000.
7. CHECK VALVE NRV-019 TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE ELECTROLYSER PACKAGE A-20000.
8. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
9. NITROGEN PURGING CONNECTION TO BE LOCATED AS CLOSE AS POSSIBLE TO MANUAL VALVE BLPH-MV-003.
10. PH, TEMPERATURE, HARDNESS AND CONDUCTIVITY SHALL BE SENT FROM CONTROL SYSTEM TO ELECTROLISER UCP IN ADDITION TO THE OTHER SOFTWARE SIGNALS. 03
11. MANUAL VALVE BLPH-MV-466 TO BE CONNECTED WITH MANUAL VALVE BLPH-MV-275 (INSTALLED ON NITROGEN GENERATION PACKAGE EXIT LINE) BY MEAN ON A FLEXIBLE HOSE DURING COMMISSIONING PHASE FOR PURGING OPERATION.

HOLDS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

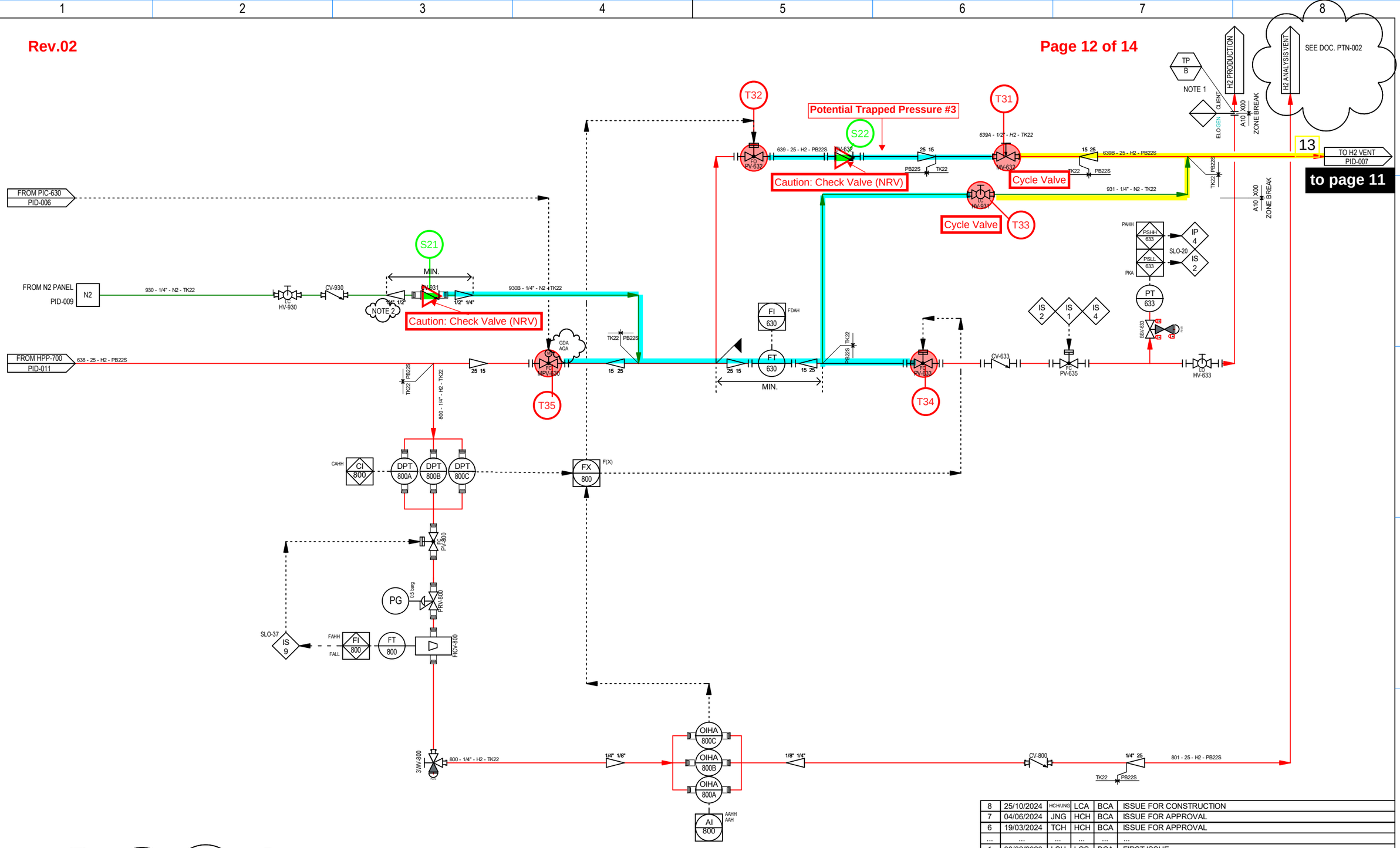
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TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
ELECTROLYSER PACKAGE

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80011	SHEET 001	REV. 03

File Name : FILE_NAME



Rev.	Date	Ed.	Ver.	App.	Description
8	25/10/2024	HCH/JNG	LCA	BCA	ISSUE FOR CONSTRUCTION
7	04/06/2024	JNG	HCH	BCA	ISSUE FOR APPROVAL
6	19/03/2024	TCH	HCH	BCA	ISSUE FOR APPROVAL
...	...	...	...	...	...
1	08/02/2023	LSH	LCS	BCA	FIRST ISSUE

NOTES :
NOTE 1 : ALL OUTDOOR FLANGES MUST BE EQUIPPED WITH FLANGE GUARD DUCTED TO H2 VENT
NOTE 2 : DISSIMILAR TECHNOLOGY BETWEEN THE TWO CHECK VALVES/ CHECK VALVE SHALL MEET CLASS 1 REQUIREMENT

Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

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PROCESS	C63-PID-001-008	HCH/JNG	LCA	BCA	1:1

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Client:

Document type	Document status
P&ID	DETAILED DESIGN

Title, Supplementary title: H2 PANEL

Client reference: -

Rev.	Date of issue	Lang.	Page
8	25/10/2024	EN	8/16

DRAWING NO. DRAWING_NO.

REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



Remove Spool

Remove Spool W3 T8

Install 12" Blind RF 150#

Depressurisation Point #1

T2

LIQUID REFILLING

NOTE 8

1"-WW-216-01CS-N

03

BLPH-MV-419

10"-VL-117-01HSS-N

43 FT 001

43 FE 001

43 FI 001 H

10 Dmin STRAIGHT LENGHT

3 Dmin STRAIGHT LENGHT

NOTE 7, 9

1"-AV-294-01CS-N

AV 294
WW 202

HANDHOLE

NOTE 6

Disconnect Spool

Install 1" Test Blind RF 150# tapped to 1/2" NPT

Injection Point #1

W1 T7

Pressure Monitoring Point #2

43 PI 001 H

43 PT 001

LOTO S1 OPEN

INSTR. PIPING

BLPH-MV-407 3/4" FLG x 1/2" NPTF

1"x3/4" CONC. RED.

10" N2

T4 H2 6"

03

1" K3

3" N4

BLPH-MV-402

S31

12

123A90-DDL-PR-PID-80028
FROM HYDROGEN VENT HEADER

10"-VL-116-01HSS-N

10" N1

from page 1

V-43001

TRIM LINE: 3"-VL-220-01HSS-N

T5 H1 6"

NOTE 5

PIPING INSTR.

S32

REDUCING FLANGE 1"x1/2" THRD-F-NPT

K1A

BLPH-MV-404

K1B

BLPH-MV-405

S33

N3

43 LT 001

ESD

43 LI 001 H L

Q-43004

NOTE 2, 15

N1 N4 N2

TRIM LINE: 1"-VL-261-01HSS-E
NOTE 3, 5

S34

BLPH-MV-462

BLPH-MV-463

S35

BLPH-MV-417

BLPH-MV-418

1"-WW-260-01CS-E

See Detail A

S23 S36 LOTO OPEN

NNF 1"-WW-264-01CS-H

123A90-DDL-PR-PID-80026
TO WASTE WATER TANK T-55001

Disconnect Spool

Install 1" Test Blind RF 150# tapped to 1/2" NPT

T3 W2

Instrumentation and PRV Connection Point (Pressure Gauge & Chart Recorder and PRV)

Depressurization Point #2

T6

1"-WW-259-01CS-E

BLPH-MV-409

1"-WW-071-01CS-H

NOTE 4

123A90-DDL-PR-PID-80025
TO BRINE DISCHARGE CAISSON

to page 15 1

Test Pack Number: TP-001
Test Pack Name: H2 Vent System
Test Pressure: 3.15 barg
Test Type: N2He 90% Design Pressure

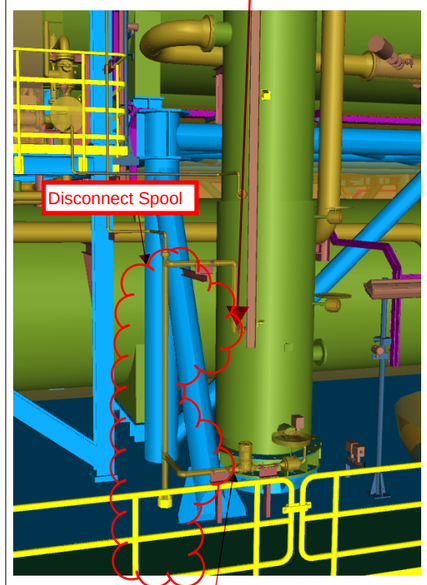
NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. 03
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.

Detail A



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80029		SHEET 001	REV. 03

File Name : FILE_NAME

Section 11 MECHANICAL COMPLETION INDEX - SAFETY DISCIPLINE

NOT APPLICABLE

Section 12 FAT / VENDOR REPORTS

ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** **IR-0887-ENC-01**	SHEET 1 di 12
		Data *Date* ***24-24/10/2024***	Rev. *Rev.* ***00***

PROGETTO	**CLIENTE**	**COMMESSA /** *Job*	**COMMESSA FORNITORE** / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	

FORNITORE/*Supplier*	**No. Ordine/***P.O. No.*	**OGGETTO/** *Object:*
ENCORE THERMOENGINEERING	*1724000887*	**Hydrogen Vent**

DESCRIZIONE DEL MATERIALE / *Material Description*					
POS. *Item*	**QUANTITA'** *Quantity*	**DESCRIZIONE** *Description*	**Nr. TAG S/N** *TAG No. S/N*	**TIPO DI ISPEZIONE** / *Kind of Inspection*	**ESITO** / *Result*
10	**1**	**Hydrogen Vent – Vent TIP 12", Length 5M Riser 20" Water Seal Included Cable Tray HDG Included**	**Q43004**	**2.1**	**Satisfactory**
10	**1**	**Hydrogen Vent – Vent TIP 12", Length 5M Riser 20" Water Seal Included Cable Tray HDG Included**	**Q43004**	**2.2**	**Satisfactory**
10	**1**	**Hydrogen Vent – Vent TIP 12", Length 5M Riser 20" Water Seal Included Cable Tray HDG Included**	**Q43004**	**3.1**	**Satisfactory**
10	**1**	**Hydrogen Vent – Vent TIP 12", Length 5M Riser 20" Water Seal Included Cable Tray HDG Included**	**Q43004**	**3.2**	**Satisfactory**
10	**1**	**Hydrogen Vent – Vent TIP 12", Length 5M Riser 20" Water Seal Included Cable Tray HDG Included**	**Q43004**	**3.3**	**Satisfactory**
10	**1**	**Hydrogen Vent – Vent TIP 12", Length 5M Riser 20" Water Seal Included Cable Tray HDG Included**	**Q43004**	**3.4**	**Satisfactory**
10	**1**	**Hydrogen Vent – Vent TIP 12", Length 5M Riser 20" Water Seal Included Cable Tray HDG Included**	**Q43004**	**3.5**	**Satisfactory**
10	**1**	**Hydrogen Vent – Vent TIP 12", Length 5M Riser 20" Water Seal Included Cable Tray HDG Included**	**Q43004**	**3.6**	**Satisfactory**

DOCUMENTI APPLICABILI / *Applicable Documents*			
TITOLO DOCUMENTO / *Document Title*	**NUMERO DOCUMENTO** / *Document Number*	**REVISIONE** / *Revision*	**STATO DOCUMENTO** / *Document Status*
INSPECTION AND TEST PLAN	1724000887-QC-ITP-00002	02	1 - NO COMMENTS
GENERAL ARRANGEMENT INCLUDING FOUNDATION LOADS	1724000887-MAC-DA-00003	03	NO EVIDENCE OF CLIENT APPROVAL

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Armando Della Pina Enginex Inspector on Behalf of Rosetti Marino		Angelo Domenico LONGONI Operations & Quality Director ENCORE THERMOENGINEERING SRL

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.

ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** **IR-0887-ENC-01**	SHEET 2 di 12
		Data *Date* ***24-24/10/2024***	Rev. *Rev.* ***00***

PROGETTO **HOLLANDSE KUST NOORD WIND PARK**	**CLIENTE** CROSSWIND	**COMMESSA** / *Job* **123A90**	**COMMESSA FORNITORE** / *Job Vendor*
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine**/*P.O. No.* *1724000887*	**OGGETTO**/ *Object:* **Hydrogen Vent**	

DETAILED DRAWING WITH PART LIST	1724000887-MAC-DD-00005	02	NO EVIDENCE OF CLIENT APPROVAL
EQUIPMENT DATA SHEETS	1724000887-MAC-DS-00006	02	2 MINOR COMMENTS
NON-DESTRUCTIVE EXAMINATIONS PROCEDURES (NDE) AND OPERATORS LIST AND QUALIFICATIONS	1724000887-NDT-PRO-00008	01	NO EVIDENCE OF CLIENT APPROVAL
HYDROSTATIC TEST PROCEDURES	1724000887-QC-PRO-00009	01	NO EVIDENCE OF CLIENT APPROVAL
WELD PROCEDURE SPECIFICATION (WPS) WLED LOCATION PLAN (WLP) AND QUALIFICATIONS RECORDS (PQR) WELD OPERATORS LIST and WELDER QUALIFICATIONS RECORDS (WPQ)	1724000887-WEL-PRO-00011	00	2 MINOR COMMENTS

DISTRIBUZIONE A: / *Distribution to:*	
☐**GESTIONE FORNITURE** / *Supply Management Department*	☐**CAPO COMMESSA** / *Project Manager*
☐**PRODUZIONE** / *Production*	☒**FORNITORE** / *Supplier*
☐**PPLM** */ Project Procurement & Logistic Manager*	☐**P.Q.M.**
☐**MAGAZZINO** / *Warehouse*	☐**P.E.M.**

ATTIVITA' ESEGUITE / *Activities Carried Out*

A – INTRODUZIONE / *Preliminary Introduction*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Armando Della Pina Enginex Inspector on Behalf of Rosetti Marino		Angelo Domenico LONGONI Operations & Quality Director ENCORE THERMOENGINEERING SRL

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ROSETTI MARINO	INSPECTION REPORT	Report No. IR-0887-ENC-01	SHEET 3 di 12
		Data *Date* ***24-24/10/2024***	Rev. *Rev.* ***00***

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	

FORNITORE/*Supplier*	No. Ordine/*P.O. No.*	OGGETTO/ *Object:*
ENCORE THERMOENGINEERING	*1724000887*	**Hydrogen Vent**

The inspector attended the inspection and test activities listed in the above tab and in accordance with applicable NOI 01 Rev.0, dated 16th October 2024 at the Sub-Vendor premises T.I.C.I. S.r.l., Montodine (CR) Italy on October 24th and 25th, 2024.

Attendees:
- Monica Denti - T.I.C.I. S.r.l. Representative
- Angelo Longoni - ENCORE THERMOENGINEERING SRL Representative
- Armando Della Pina - Inspector on behalf of ROSETTI MARINO
- Giovanni Dozzo – DNV Inspector Certification Agency

The scope of inspection was to carry out the checks as per followings ITP Steps: 2.1; 2.2; 3.1; 3.2; 3.3; 3.4; 3.5; 3.6.
All tests gave satisfactory results.
At the end of the visit, the supplier provided the relevant test certificates for completeness of the visit.
All documents were reviewed, stamped and signed by the writer.

Inspection Results: Satisfactory.

B –SCOPO DELL'ISPEZIONE / *Scope of Inspection*

DESCRIZIONE DEI TEST PRESENZIATI / *Description of witnessed tests*	**ESITO /** *Result*
ITP Step 2.1: Review of Material Certificated	Satisfactory
ITP Step 2.2: UT + MT	Satisfactory
ITP Step 3.1: RT 100% on all weld crosses	Satisfactory
ITP Step 3.2: Check of material identification prior the hydrostatic test	Satisfactory
ITP Step 3.3: Inner and outlet visual examination of vessel, prior to hydrostatic testing	Satisfactory
ITP Step 3.4: Hydrostatic test on carbon steel stack and water seal. (test pressure= 1,5*design pressure; duration= 1h)	Satisfactory
ITP Step 3.5: Liquid penetrant examination, after hydrostatic test, of 100% weld areas and weld deposit overlay vessels	Satisfactory
ITP Step 3.6: Visual and dimensional check of the assembled vessel before release to painting	Satisfactory

C –DETTAGLIO DEGLI STRUMENTI UTILIZZATI PER TEST E ISPEZIONE / *Details of Inspection and Test Instruments used*

NOME DELLO STRUMENTO *Equipment name*	**PRODUTTORE** *Manufacturer*	**MODELLO** *Model*	**PROSSIMA TARATURA** *Next calibration*
Pressure Gauge	**Fratelli Magni**	**S/N 26440**	**17/07/2025**

D –ALLEGATI / *Attachments (***CERTIFICATI E TEST REPORT** */ Certificates and Test Reports)*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Armando Della Pina Enginex Inspector on Behalf of Rosetti Marino		Angelo Domenico LONGONI Operations & Quality Director ENCORE THERMOENGINEERING SRL

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** **IR-0887-ENC-01**	SHEET 4 di 12
		Data *Date* ***24-24/10/2024***	Rev. *Rev.* ***00***

PROGETTO **HOLLANDSE KUST NOORD WIND PARK**	**CLIENTE** CROSSWIND	**COMMESSA /** *Job* **123A90**	**COMMESSA FORNITORE** */ Job Vendor*
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine/***P.O. No.* *1724000887*	**OGGETTO/** *Object:* **Hydrogen Vent**	

NUMERO DOCUMENTO / *Document Number*	**DESCRIZIONE** / *Description*	**TIPO** / *Type*	**NR. PAGINE** / *No. Pages*
HT report	Test report		6
ITP signed	ITP signed		3
MTC signed	Materials Certificates		16
NDT reports collection and operator qualifications	Test report		19
VD drawing signed	Markup Drawing		1
VD report signed	Test report		1

E – DETTAGLI ED ESITO DELL'ISPEZIONE */ Details and Results of Inspection*

POS. *Item*	**BREVE DESCRIZIONE MATERIALE** *Material brief description*	**Q.TA' ODA** *Order Q.ty*	**Q.TA' TESTATA** *Tested Q.ty*	**ACCETTATO** *Accepted*	**DATA ACCETTAZIONE** *Acceptance date*
10	HYDROGEN VENT	1	1	1	25/10/2024

F – CONCLUSIONI */ Conclusions*

The inspector attended the inspection and test activities listed in the applicable NOI 01 Rev.0, dated 16th October 2024 at the Sub-Vendor premises T.I.C.I. S.r.l., Montodine (CR) Italy on October 24th and 25th, 2024.

Attendees:
- Monica Denti - T.I.C.I. S.r.l. Representative
- Angelo Longoni - ENCORE THERMOENGINEERING SRL Representative
- Armando Della Pina - Inspector on behalf of ROSETTI MARINO
- Giovanni Dozzo – DNV Inspector Certification Agency

The scope of inspection was the following:

ACTIVITY TO BE PERFORMED:
2.1 MTC review (R)
2.2 Ultrasonic examination of steel plates (if any); Ultrasonic examination of head after forming; Magnetic particle examination of formed heads on the external knuckle radius surface; Ultrasonic examination of forgings (R)
3.1 RT 100% on weld crosses (R)
3.2 Check of material identification, prior the hydrostatic test (W)
3.3 Inner and outlet visual examination of vessel, prior to hydrostatic testing (W)
3.4 Hydrostatic test on carbon steel stack and water seal. (test pressure= 1,5*design pressure; duration= 1h) (W)

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Armando Della Pina Enginex Inspector on Behalf of Rosetti Marino		Angelo Domenico LONGONI Operations & Quality Director ENCORE THERMOENGINEERING SRL

ROSETTI MARINO	INSPECTION REPORT	Report No. IR-0887-ENC-01	SHEET 5 di 12
		Data *Date* ***24-24/10/2024***	Rev. *Rev.* ***00***

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine/***P.O. No.* *1724000887*	**OGGETTO/** *Object:* **Hydrogen Vent**	

3.5 Liquid penetrant examination, after hydrostatic test, of 100% weld areas and weld deposit overlay vessels (W)
3.6 Visual and dimensional check of the assembled vessel (CARBON STEEL PART) before release to painting (W)

All the above mentioned checks and test gave satisfactory results.
At the end of the visit, the supplier provided the relevant test certificates for completeness of the visit.
All documents provided were were reviewed, stamped and signed by the writer.

Inspection Results: Satisfactory.

G – PUNTI IRRISOLTI / *Outstanding points*

None

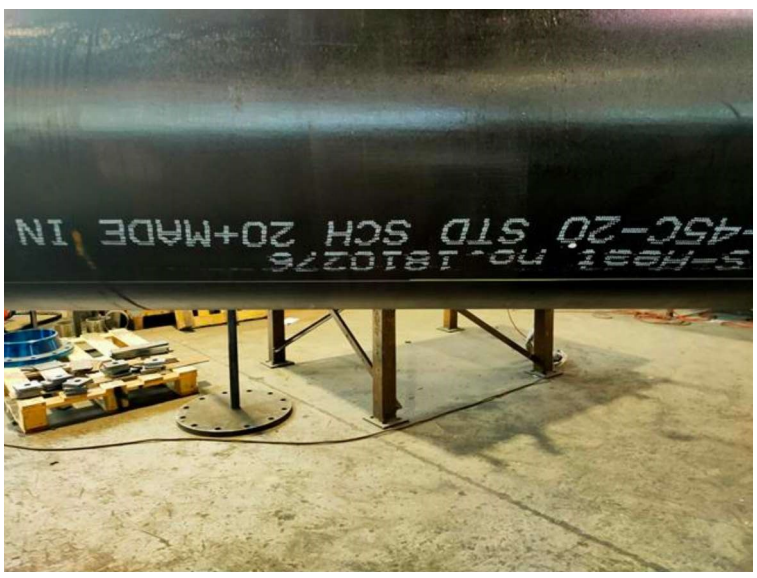
H – STATO PACKING LIST / *Packing List Status*	☐ EMESSO / *Issued*	☒ NON EMESSO / *Not Issued*	DD/MM/YYYY **ULTIMA DATA UTILE** / *Last Date*

PUNCH LIST REPORT: VEDI ALLEGATO N° / *Refer to Attachment n° N/A*

REPORT FOTOGRAFICO (SE PRESENTE) / *Digital Pictures (if any)*

MATERIAL IDENTIFICATION





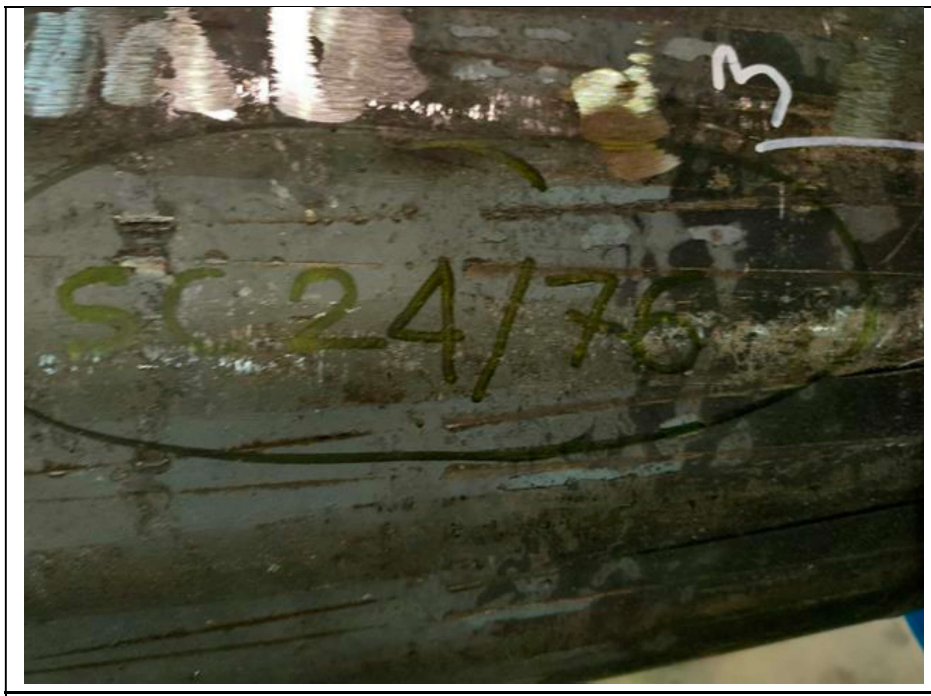
L' INCARICATO / *The person in charge*	IL RAPP. DEL CLIENTE / *Client's Representative*	IL FORNITORE / *Supplier*
Armando Della Pina Enginex Inspector on Behalf of Rosetti Marino		Angelo Domenico LONGONI Operations & Quality Director ENCORE THERMOENGINEERING SRL

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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ROSETTI MARINO	INSPECTION REPORT	Report No. IR-0887-ENC-01	SHEET 6 di 12
		Data *Date* ***24-24/10/2024***	Rev. *Rev.* ***00***

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	

FORNITORE/*Supplier*	No. Ordine/*P.O. No.*	OGGETTO/ *Object:*
ENCORE THERMOENGINEERING	*1724000887*	**Hydrogen Vent**









L' INCARICATO / *The person in charge*	IL RAPP. DEL CLIENTE / *Client's Representative*	IL FORNITORE / *Supplier*
Armando Della Pina Enginex Inspector on Behalf of Rosetti Marino		Angelo Domenico LONGONI Operations & Quality Director ENCORE THERMOENGINEERING SRL

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ROSETTI MARINO	INSPECTION REPORT	Report No. IR-0887-ENC-01	SHEET 7 di 12
		Data *Date* ***24-24/10/2024***	Rev. *Rev.* ***00***

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine/***P.O. No.* *1724000887*	**OGGETTO/** *Object:* **Hydrogen Vent**	

VISUAL AND DIMENSIONAL









L' INCARICATO / *The person in charge*	IL RAPP. DEL CLIENTE / *Client's Representative*	IL FORNITORE / *Supplier*
Armando Della Pina Enginex Inspector on Behalf of Rosetti Marino		Angelo Domenico LONGONI Operations & Quality Director ENCORE THERMOENGINEERING SRL

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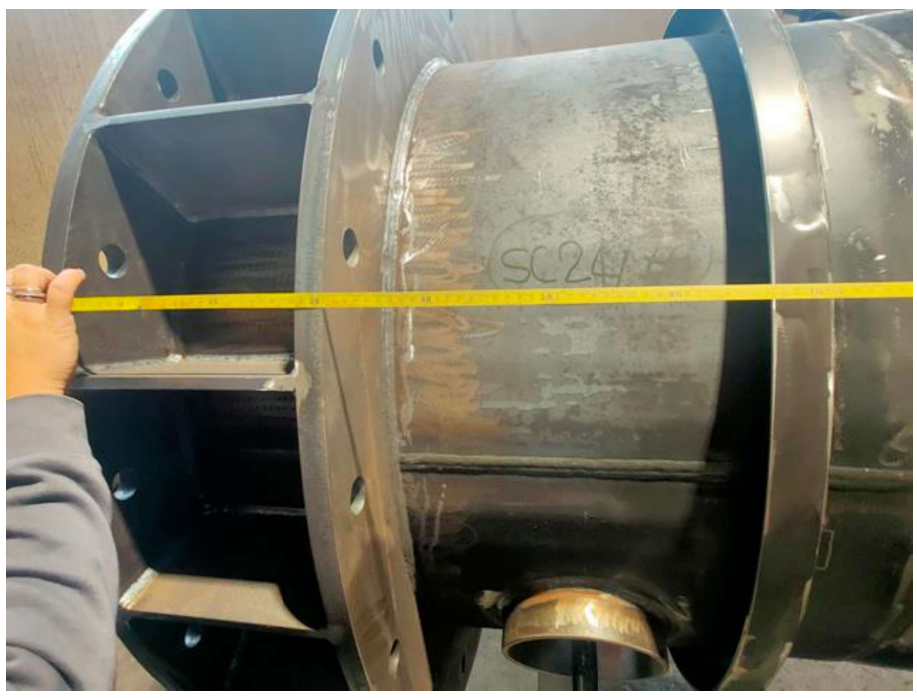
ROSETTI MARINO	INSPECTION REPORT	Report No. IR-0887-ENC-01	SHEET 8 di 12
		Data *Date* ***24-24/10/2024***	Rev. *Rev.* ***00***

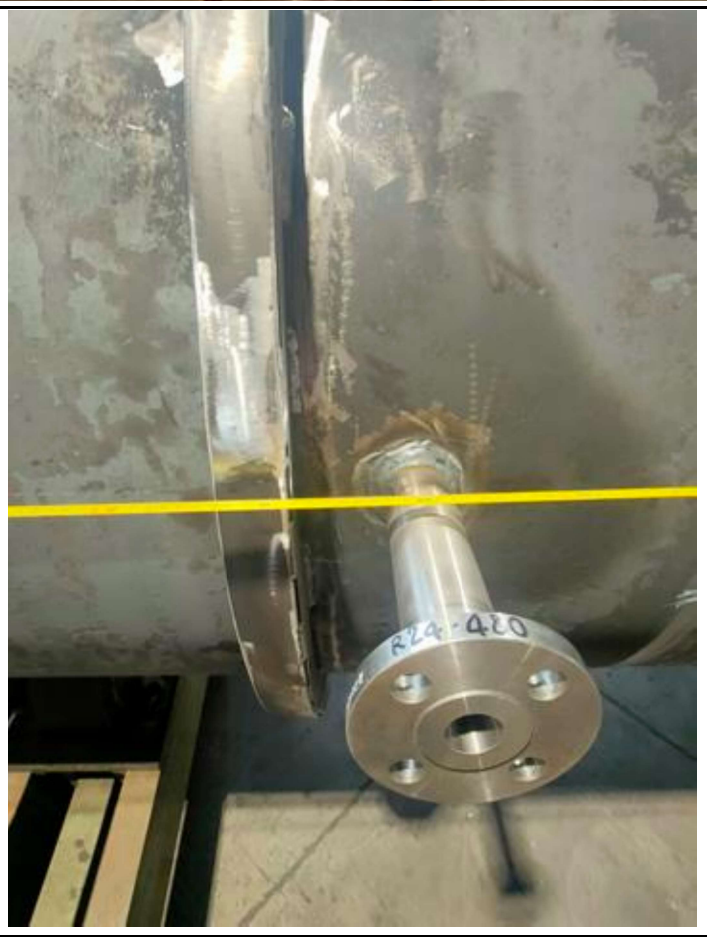
PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	

FORNITORE/*Supplier*	No. Ordine/*P.O. No.*	OGGETTO/ *Object:*
ENCORE THERMOENGINEERING	*1724000887*	**Hydrogen Vent**









L' INCARICATO / *The person in charge*	IL RAPP. DEL CLIENTE / *Client's Representative*	IL FORNITORE / *Supplier*
Armando Della Pina Enginex Inspector on Behalf of Rosetti Marino		Angelo Domenico LONGONI Operations & Quality Director ENCORE THERMOENGINEERING SRL

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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ROSETTI MARINO	INSPECTION REPORT	Report No. IR-0887-ENC-01	SHEET 9 di 12
		Data *Date* ***24-24/10/2024***	Rev. *Rev.* ***00***

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	

FORNITORE/*Supplier*	No. Ordine/*P.O. No.*	OGGETTO/ *Object:*
ENCORE THERMOENGINEERING	*1724000887*	**Hydrogen Vent**

HYDROSTATIC TEST









L' INCARICATO / *The person in charge*	IL RAPP. DEL CLIENTE / *Client's Representative*	IL FORNITORE / *Supplier*
Armando Della Pina Enginex Inspector on Behalf of Rosetti Marino		Angelo Domenico LONGONI Operations & Quality Director ENCORE THERMOENGINEERING SRL

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ROSETTI MARINO	INSPECTION REPORT	Report No. IR-0887-ENC-01	SHEET 10 di 12
		Data *Date* ***24-24/10/2024***	Rev. *Rev.* ***00***

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	

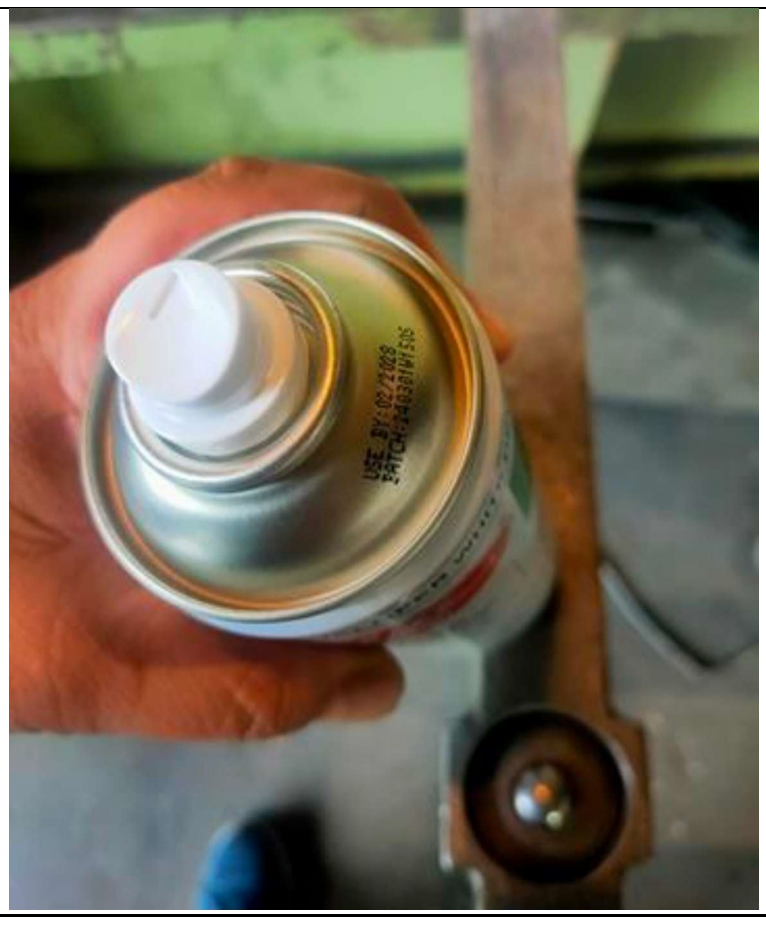
FORNITORE/*Supplier*	No. Ordine/*P.O. No.*	OGGETTO/ *Object:*
ENCORE THERMOENGINEERING	*1724000887*	**Hydrogen Vent**





Liquid penetrant examination





L' INCARICATO / *The person in charge*	IL RAPP. DEL CLIENTE / *Client's Representative*	IL FORNITORE / *Supplier*
Armando Della Pina Enginex Inspector on Behalf of Rosetti Marino		Angelo Domenico LONGONI Operations & Quality Director ENCORE THERMOENGINEERING SRL

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ROSETTI MARINO	INSPECTION REPORT	Report No. IR-0887-ENC-01	SHEET 11 di 12
		Data *Date* ***24-24/10/2024***	Rev. *Rev.* ***00***

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine/***P.O. No.* *1724000887*	**OGGETTO/** *Object:* **Hydrogen Vent**	









L' INCARICATO / *The person in charge*	IL RAPP. DEL CLIENTE / *Client's Representative*	IL FORNITORE / *Supplier*
Armando Della Pina Enginex Inspector on Behalf of Rosetti Marino		Angelo Domenico LONGONI Operations & Quality Director ENCORE THERMOENGINEERING SRL

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ROSETTI MARINO	INSPECTION REPORT	Report No. IR-0887-ENC-01	SHEET 12 di 12
		Data *Date* ***24-24/10/2024***	Rev. *Rev.* ***00***

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	

FORNITORE/*Supplier*	No. Ordine/*P.O. No.*	OGGETTO/ *Object:*
ENCORE THERMOENGINEERING	*1724000887*	**Hydrogen Vent**









NON VALIDO PER IL RILASCIO DELLA FORNITURA / *It is not valid for the supply's release*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Armando Della Pina Enginex Inspector on Behalf of Rosetti Marino		Angelo Domenico LONGONI Operations & Quality Director ENCORE THERMOENGINEERING SRL

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.

ROSETTI MARINO	**INSPECTION REPORT**	**Report No**. **IR-0887-ENC-02**	SHEET 1 di 9
		Data *Date* ***19/11/2024***	Rev. *Rev.* ***00***

PROGETTO **HOLLANDSE KUST NOORD WIND PARK**	**CLIENTE** CROSSWIND	**COMMESSA** / *Job* **123A90**	**COMMESSA FORNITORE** / *Job Vendor*
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine**/*P.O. No.* *1724000887*	**OGGETTO**/ *Object:* **Hydrogen Vent**	

DESCRIZIONE DEL MATERIALE / *Material Description*					
POS. *Item*	**QUANTITA'** *Quantity*	**DESCRIZIONE** *Description*	**Nr. TAG S/N** *TAG No. S/N*	**TIPO DI ISPEZIONE** / *Kind of Inspection*	**ESITO** / *Result*
10	**1**	**Hydrogen Vent – Vent TIP 12", Length 5M Riser 20" Water Seal Included Cable Tray HDG Included**	**Q-43004**	**Visual and Final Inspection**	**Satisfactory with Note**
20	**1**	**Commissioning Spare Parts**	**-**	**Visual and Final Inspection**	**Satisfactory**
30	**1**	**2y Spare Parts**	**-**	**Visual and Final Inspection**	**Satisfactory**
50	**1**	**Heat Tracing System**	**-**	**Visual and Final Inspection**	**Satisfactory**
70	**2**	**Platform and Ladder**	**-**	**Visual and Final Inspection**	**Satisfactory**

DOCUMENTI APPLICABILI / *Applicable Documents*			
TITOLO DOCUMENTO / *Document Title*	**NUMERO DOCUMENTO** / *Document Number*	**REVISIONE** / *Revision*	**STATO DOCUMENTO** / *Document Status*
INSPECTION AND TEST PLAN	1724000887-QC-ITP-00002	02	1 - NO COMMENTS
GENERAL ARRANGEMENT INCLUDING FOUNDATION LOADS	1724000887-MAC-DA-00003	04	1 - NO COMMENTS
DETAILED DRAWING WITH PART LIST	1724000887-MAC-DD-00005	03	Under Review

DISTRIBUZIONE A: / *Distribution to:*	
☐**GESTIONE FORNITURE** / *Supply Management Department*	☐**CAPO COMMESSA** / *Project Manager*
☐**PRODUZIONE** / *Production*	☒**FORNITORE** / *Supplier*
☐**PPLM** */ Project Procurement & Logistic Manager*	☐**P.Q.M.**
☐**MAGAZZINO** / *Warehouse*	☐**P.E.M.**

ATTIVITA' ESEGUITE / *Activities Carried Out*

A – INTRODUZIONE / *Preliminary Introduction*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Stefano Linari Quality Control Dept.		

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ROSETTI MARINO	**INSPECTION REPORT**	**Report No**. **IR-0887-ENC-02**		SHEET 2 di 9
		Data *Date* ***19/11/2024***		Rev. *Rev.* ***00***
PROGETTO **HOLLANDSE KUST NOORD WIND PARK**	**CLIENTE** CROSSWIND	**COMMESSA** / *Job* **123A90**	**COMMESSA FORNITORE** / *Job Vendor*	
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine**/*P.O. No.* *1724000887*	**OGGETTO**/ *Object:* **Hydrogen Vent**		

The inspector attended the inspection and test activities listed in the above tab and in accordance with applicable NOI 05 at the Sub-Vendor premises T.I.C.I. S.r.l., Montodine (CR) Italy on November 19th, 2024.

Attendees:
- Monica Denti - T.I.C.I. S.r.l. Representative
- Angelo Longoni - ENCORE THERMOENGINEERING SRL Representative
- Linari Stefano – SQL for ROSETTI MARINO
- Michele Sacchi – QC Painting for ROSETTI MARINO
- Pasquale Anacleto – On behalf Crosswind

The scope of inspection was to carry out the checks as per followings ITP Steps:
a. 4.1 Visual and dimensional check of the assembled Vessel (W)
b. 4.2 Painting inspection (final, dry film Thickness and color) (R) PARTE CARBON STEEL/L&P E PARTE STAINLESS STEEL → See **IR-0887-ENC-03**
c. 5.4 Check of name plate and marking (W)
d. 5.5 Spare parts check (type, quantity) (W)
e. 5.6 Completeness supply check according to the purchase order (W)

All tests gave satisfactory results.

Inspection Results: Satisfactory.

B –SCOPO DELL'ISPEZIONE / *Scope of Inspection*

DESCRIZIONE DEI TEST PRESENZIATI / *Description of witnessed tests*	**ESITO** / *Result*
ITP Step 4.1 Visual and dimensional check of the assembled Vessel	Satisfactory
ITP 4.2 Painting inspection (final, dry film Thickness and color) (R) PARTE CARBON STEEL/L&P E PARTE STAINLESS STEEL	Satisfactory with Note (see **IR-0887-ENC-03)**
ITP 5.4 Check of name plate and marking (W)	Satisfactory
ITP 5.5 Spare parts check (type, quantity) (W)	Satisfactory
ITP . 5.6 Completeness supply check according to the purchase order	Satisfactory

C –DETTAGLIO DEGLI STRUMENTI UTILIZZATI PER TEST E ISPEZIONE / *Details of Inspection and Test Instruments used*

NOME DELLO STRUMENTO *Equipment name*	**PRODUTTORE** *Manufacturer*	**MODELLO** *Model*	**PROSSIMA TARATURA** *Next calibration*
Pressure Gauge	**Fratelli Magni**	**S/N 26440**	**17/07/2025**

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Stefano Linari Quality Control Dept.		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** **IR-0887-ENC-02**	SHEET 3 di 9
		Data *Date* ***19/11/2024***	Rev. *Rev.* ***00***

PROGETTO	**CLIENTE**	**COMMESSA** / *Job*	**COMMESSA FORNITORE** / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	

FORNITORE/*Supplier*	**No. Ordine**/*P.O. No.*	**OGGETTO**/ *Object:*
ENCORE THERMOENGINEERING	*1724000887*	**Hydrogen Vent**

D –ALLEGATI / *Attachments (***CERTIFICATI E TEST REPORT** */ Certificates and Test Reports)*

NUMERO DOCUMENTO / *Document Number*	**DESCRIZIONE** / *Description*	**TIPO** / *Type*	**NR. PAGINE** / *No. Pages*
Visual & Dimensional reports	Test report		1
ITP signed	ITP signed		1
Painting Certificates	Materials Certificates		2
1724000887-MAC-DA-00003	Dwg		1
1724000887-MAC-DD-00005	Dwg		7
Gratings Inspection Certificate	Test report		1
1724000887-MAC-DD-00019	Dwg		4

E – DETTAGLI ED ESITO DELL'ISPEZIONE */ Details and Results of Inspection*

POS. *Item*	**BREVE DESCRIZIONE MATERIALE** *Material brief description*	**Q.TA' ODA** *Order Q.ty*	**Q.TA' TESTATA** *Tested Q.ty*	**ACCETTATO** *Accepted*	**DATA ACCETTAZIONE** *Acceptance date*
10	HYDROGEN VENT	1	1	1	19/11/2024

F – CONCLUSIONI */ Conclusions*

Test Activities carried out with positive results
About DFT checks, has been satisfactory with note (see **IR-0887-ENC-03)**
The Lifting Drawing 1724000887-MAC-DD-00019 will be re issued in rev 02 within current week
Name plate will be installed within today 19/11/2024
Encore will supply cable tray; RM will complete installation of it between Stack and Tip.

Note:
is suggested, just before installation (on the part below the stack) and after the installation, to be performed painting touch up.

See pictures below of all details
Encore will deliver all materials next Monday 26th of November

Inspection Results: Satisfactory.

G – PUNTI IRRISOLTI */ Outstanding points*

None

H – STATO PACKING LIST / *Packing List Status*	☐ **EMESSO** / *Issued*	☒ **NON EMESSO** / *Not Issued*	DD/MM/YYYY **ULTIMA DATA UTILE** / *Last Date*

PUNCH LIST REPORT: VEDI ALLEGATO N° / *Refer to Attachment n° N/A*

REPORT FOTOGRAFICO (SE PRESENTE) / *Digital Pictures (if any)*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Stefano Linati Quality Control Dept.		

ROSETTI MARINO	**INSPECTION REPORT**	**Report No**. **IR-0887-ENC-02**	SHEET 4 di 9
		Data *Date* ***19/11/2024***	Rev. *Rev.* ***00***

PROGETTO **HOLLANDSE KUST NOORD WIND PARK**	**CLIENTE** CROSSWIND	**COMMESSA** / *Job* **123A90**	**COMMESSA FORNITORE** / *Job Vendor*
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine**/*P.O. No.* *1724000887*	**OGGETTO**/ *Object:* **Hydrogen Vent**	

MATERIAL IDENTIFICATION



TIP



CABLE TRAY OF TIP

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Stefano Linari Quality Control Dept.		

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ROSETTI MARINO	**INSPECTION REPORT**	**Report No**. **IR-0887-ENC-02**		SHEET 5 di 9
		Data *Date* ***19/11/2024***		Rev. *Rev.* ***00***
PROGETTO **HOLLANDSE KUST NOORD WIND PARK**	**CLIENTE** CROSSWIND	**COMMESSA** / *Job* **123A90**	**COMMESSA FORNITORE** / *Job Vendor*	
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine**/*P.O. No.* *1724000887*	**OGGETTO**/ *Object:* **Hydrogen Vent**		



LADDER and Platform



HANDRAILS

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
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ROSETTI MARINO	**INSPECTION REPORT**	**Report No**. **IR-0887-ENC-02**		SHEET 6 di 9
		Data *Date* ***19/11/2024***		Rev. *Rev.* ***00***
PROGETTO **HOLLANDSE KUST NOORD WIND PARK**	**CLIENTE** CROSSWIND	**COMMESSA** / *Job* **123A90**	**COMMESSA FORNITORE** / *Job Vendor*	
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine**/*P.O. No.* *1724000887*	**OGGETTO**/ *Object:* **Hydrogen Vent**		



STACK



STACK

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Stefano Linari Quality Control Dept.		

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ROSETTI MARINO	**INSPECTION REPORT**	**Report No**. **IR-0887-ENC-02**	SHEET 7 di 9
		Data *Date* ***19/11/2024***	Rev. *Rev.* ***00***

PROGETTO **HOLLANDSE KUST NOORD WIND PARK**	**CLIENTE** CROSSWIND	**COMMESSA** / *Job* **123A90**	**COMMESSA FORNITORE** / *Job Vendor*
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine**/*P.O. No.* *1724000887*	**OGGETTO**/ *Object:* **Hydrogen Vent**	



HEAT TRACING



HEAT TRACING



HEAT TRACING



HEAT TRACING

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Stefano Linari Quality Control Dept.		

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ROSETTI MARINO	**INSPECTION REPORT**	**Report No**. **IR-0887-ENC-02**	SHEET 8 di 9
		Data *Date* ***19/11/2024***	Rev. *Rev.* ***00***

PROGETTO **HOLLANDSE KUST NOORD WIND PARK**	**CLIENTE** CROSSWIND	**COMMESSA** / *Job* **123A90**	**COMMESSA FORNITORE** / *Job Vendor*
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine**/*P.O. No.* *1724000887*	**OGGETTO**/ *Object:* **Hydrogen Vent**	



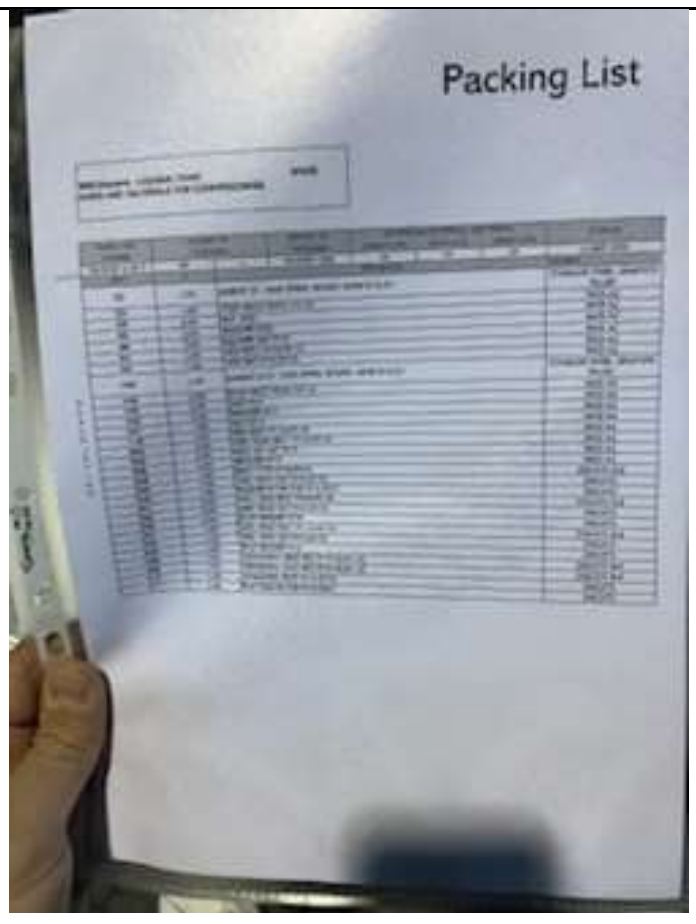
HEAT TRACING



CABLE TRAY



PKL 2Y SPARE PARTS



PKL COMMISSIONING SPARE PARTS

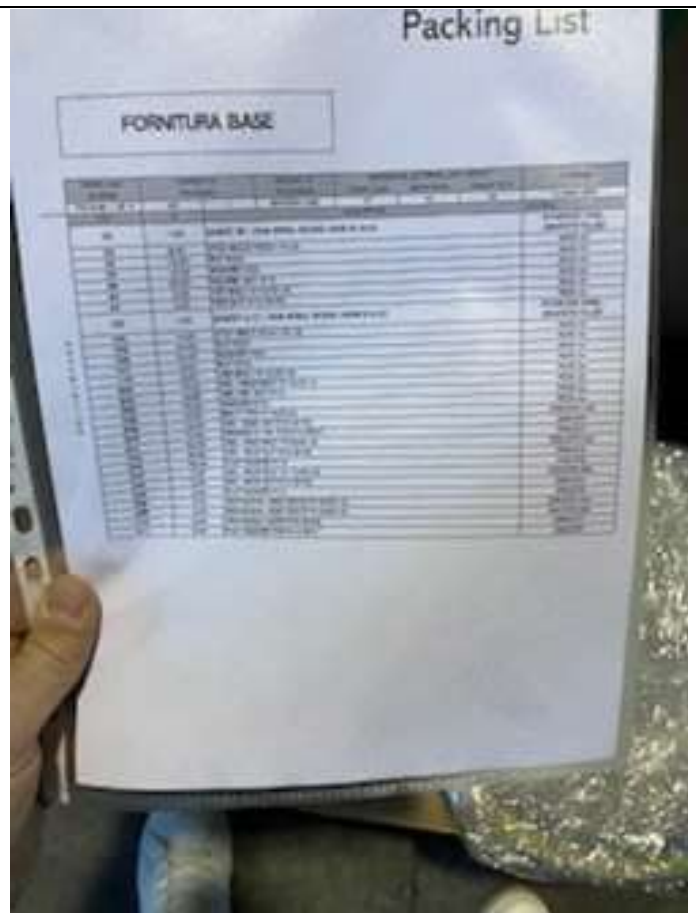
HYDROSTATIC TEST

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Stefano Linari Quality Control Dept.		

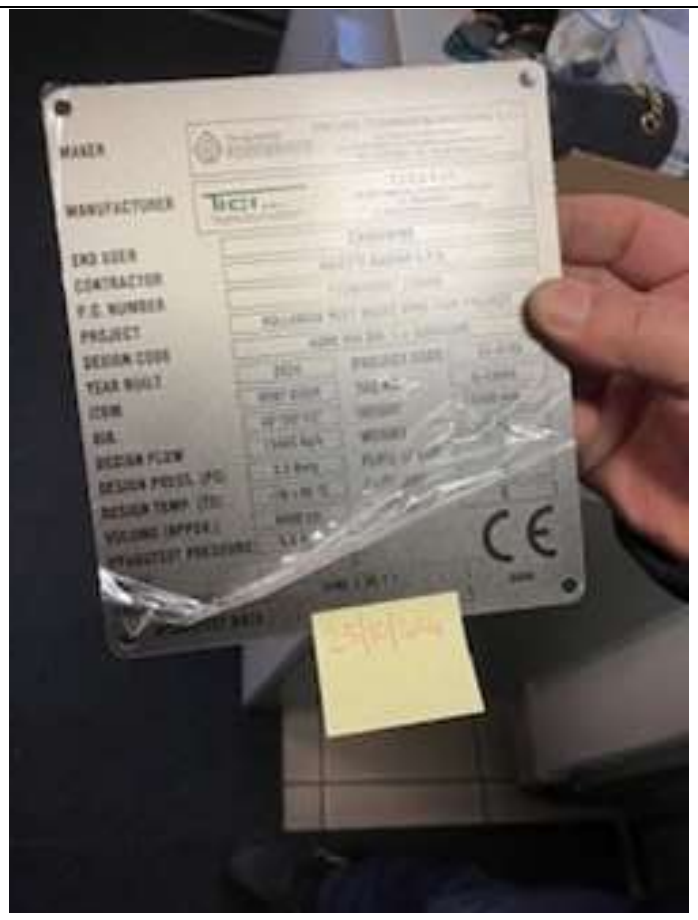
QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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ROSETTI MARINO	**INSPECTION REPORT**	**Report No**. **IR-0887-ENC-02**	SHEET 9 di 9
		Data *Date* ***19/11/2024***	Rev. *Rev.* ***00***

PROGETTO **HOLLANDSE KUST NOORD WIND PARK**	**CLIENTE** CROSSWIND	**COMMESSA** / *Job* **123A90**	**COMMESSA FORNITORE** / *Job Vendor*
FORNITORE/*Supplier* *ENCORE THERMOENGINEERING*	**No. Ordine**/*P.O. No.* *1724000887*	**OGGETTO**/ *Object:* **Hydrogen Vent**	



PKL ACCESSORIES



NAMEPLATE



Gratings



Gratings

NON VALIDO PER IL RILASCIO DELLA FORNITURA / *It is not valid for the supply's release*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Stefano Linari Quality Control Dept.		

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Section 13 MECHANICAL COMPLETION CHANGES / MARK-UPS

NOT APPLICABLE