Base Load Power Hub (BLPH)

90% 3D Model Review Report

Document Number: 123A90-DDL-PP-RE-70010

Document Class: 2

Rev.	Date	Description	Prepared	Reviewed	Approved
01	18/12/2024	Accepted for Construnction (AFC)	MMA	CBO	DLO
00	25/07/2024	Issue for Review (IFR)	MMA	CBO	DLO

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1	Cover	X	X						
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6	Action Item Register	X	X						
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21	MR90-TAG15	X	X						
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23	MR90-TAG17	X	X						
24	MR30-TAG07	X	X	X					
25	MR30-TAG25	X	X	X					
26	MR60-TAG03	X	X	X					
27	MR60-TAG08	X	X	X					

GENERAL NOTES

1. Legend

Priority Class 1: need CPY review for approval and closure

Priority Class 2: can be closed by engineering

2. Reference document

Base Load Power Hub (BLPH) - Plot Plan - Lower & Upper deck	123A90-DDL-PP-DL-70070	rev.01
Base Load Power Hub (BLPH) - Plot Plan - Below Lower deck	123A90-DDL-PP-DL-70071	rev.01
Base Load Power Hub (BLPH) - Plot Plan - Elevation looking north & East	123A90-DDL-PP-DL-70072	rev.01
BLPH P&ID - General Notes	123A90-DDL-PR-PID-80009	rev.02
BLPH P&ID - Piping Symbology	123A90-DDL-PR-PID-80010	rev.02
BLPH P&ID - Instrumentation Symbology	123A90-DDL-PR-PID-80042	rev.02
BLPH P&ID - Electrolyser Package	123A90-DDL-PR-PID-80011	rev.02
BLPH P&ID - Fuel cell Package	123A90-DDL-PR-PID-80012	rev.02
BLPH P&ID - Hydrogen Storage Vessels Header (INLET)	123A90-DDL-PR-PID-80013	rev.02
BLPH P&ID - Hydrogen Storage Vessels Header (OUTLET)	123A90-DDL-PR-PID-80014	rev.02
BLPH P&ID - Hydrogen Storage Vessel A	123A90-DDL-PR-PID-80015	rev.02
BLPH P&ID - Hydrogen Storage Vessel B	123A90-DDL-PR-PID-80016	rev.02
BLPH P&ID - Hydrogen Storage Vessel C	123A90-DDL-PR-PID-80017	rev.02
BLPH P&ID - Hydrogen Storage Vessel D	123A90-DDL-PR-PID-80018	rev.02
BLPH P&ID - Hydrogen Storage Vessel E	123A90-DDL-PR-PID-80019	rev.02
BLPH P&ID - Hydrogen Storage Vessel F	123A90-DDL-PR-PID-80020	rev.02
BLPH P&ID - Sea Water intake System Sh. 1	123A90-DDL-PR-PID-80021	rev.02
BLPH P&ID - Sea Water intake System Sh.2	123A90-DDL-PR-PID-80022	rev.02
BLPH P&ID - Water Treatment plant Sh.1	123A90-DDL-PR-PID-80023	rev.02
BLPH P&ID - Water Treatment plant Sh.2	123A90-DDL-PR-PID-80024	rev.02
BLPH P&ID - Water Disposal Sh.1	123A90-DDL-PR-PID-80025	rev.02
BLPH P&ID - Water Disposal Sh.2	123A90-DDL-PR-PID-80026	rev.02
BLPH P&ID - Instrument Air & Nitrogen Package	123A90-DDL-PR-PID-80027	rev.02
BLPH P&ID - Hydrogen Vent Header	123A90-DDL-PR-PID-80028	rev.02
BLPH P&ID - Hydrogen Vent Drum	123A90-DDL-PR-PID-80029	rev.02
BLPH P&ID - Instrument Air distribution Header	123A90-DDL-PR-PID-80041	rev.02
BLPH P&ID - Open drain system	123A90-DDL-PR-PID-80043	rev.00
Escape Routes, Fire Fighting, Life Saving Equipment and Safety Equipment Layouts Drawings - Lower deck	123A90-DDL-SAF-DL-30025	rev.00
Escape Routes, Fire Fighting, Life Saving Equipment and Safety Equipment Layouts Drawings - Lower deck	123A90-DDL-SAF-DL-30026	rev.01
Main equipment including CPI	Received First supplier data	
Primary steel & secondary steel	IFR/AFC	
Ele & Instru Cable Routing	Preliminary study	

3.Attachment

Attachment 1 - P&IDs Markup

ATTENDANCE LIST 16/07/2024

CROSSWIND	Base Load Power Hub (BLPH) 3D Model Review 90%	ROSETTI MARINO

Attendance List			
Project Name: Base Load Power Hub (BLPH) PROJECT	Date: 16/07/2024	Location: Rosetti Marino (MI)	
Name	Discipline	Company	Signature
DAVIDE LO STORTO	PGM	ROSETTI	
CARLA BORTOLIN	PIPING	ROSETTI	
PHILIP ROBINSON	INST/CONTROL	CROSSWIND	
CLAUDIA GUNCHI	PE	ROSETTI	
CALABRESE LOREDANA	INSTRUM	ROSETTI	
JEROEN VAN 'T HOOD	Construction	Crosswind	
HAMANT PATEL	PROCESS	KBR/CW	
ANDREA MASCHI	ELECTRICAL	ROSETTI	
VITTORIO RAMPONI	ELECTRICAL	ROSETTI	
PAUL KYLE	MECHANICAL	CROSSWIND	
KEN ROSE	ELECTRICAL	CROSSWIND	
DOMINIK SZNAYDER	PM	CW	
Eunice Low	Operation	CW	
Hanta Iacopetti	Project eng	Crosswind	
NICOLAS LO DRUN *	HSE	CW	
ALESSANDRO SUTTO *	LM	CW	

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ATTENDANCE LIST 16/07/2024

CROSSWIND	Base Load Power Hub (BLPH) 3D Model Review 90%	ROSETTI MARINO

Attendance List			
Project Name: Base Load Power Hub (BLPH) PROJECT	Date: 16/07/2024	Location: Rosetti Marino (MI)	
Name	Discipline	Company	Signature
ANDY KOUN *	MECHANICAL DEPT	CW	

* ON LINE

File: BLPH 3DMR_Attendance List template.docx

ATTENDANCE LIST 17/07/2024

CROSSWIND	Base Load Power Hub (BLPH) 3D Model Review 90%	ROSETTI MARINO

Attendance List			
Project Name: Base Load Power Hub (BLPH) PROJECT	Date: 17/07/2024	Location: Rosetti Marino (MI)	
Name	Discipline	Company	Signature
CARLA BORTOLIN	PIPING	ROSETTI	
DANIELE DI STEFANO	P&R	ROSETTI	
PHILIP ROBINSON	INST ~~CROSSWIND~~	CROSSWIND	
ANDREA MASSARONI	ELECTRICAL	ROSETTI	
VITTORIO RAMPONI	ELECTRICAL	ROSETTI	
HAMANT PATEL	PROCESS	CROSSWIND	
PAUL KYLE	MECHANICAL	CROSSWIND	
CLAUDIA GIUNCHI	PE	ROSETTI	
Thijs Philippo	PE	CW	
Paul v. Rossum	T&E	CW	
Jeroen van Loon	construction	CW	
Marta Iacometti	Project engineer	CW	
LOREDANA CALABRESE	INSTRUMENT.	ROSETTI	
ANDY KOBN *	MECH.	CW	
DOMINIK SENAJSKIK *	PM	CW	
JUNICO LION	OPERATION	CW	
GUILLAUME LAVABRE *			
NICOLAS LE BRUN *	HSE	CW	

* ONGOING

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ATTENDANCE LIST 17/07/2024

CROSSWIND	Base Load Power Hub (BLPH) 3D Model Review 90%	ROSETTI MARINO

Attendance List			
Project Name: Base Load Power Hub (BLPH) PROJECT	Date: 17/07/2024	Location: Rosetti Marino (MI)	
Name	Discipline	Company	Signature
STEPHEN BRANNEP	ELECT	CW	
KEN ROSE	ELECTRICAL	CROSSWIND	

File: BLPH 3DMR_Attendance List template.docx

CROSSWIND

BLPH - 90% 3D MODEL REVIEW
ACTION ITEM REGISTER

ROSETTI MARINO

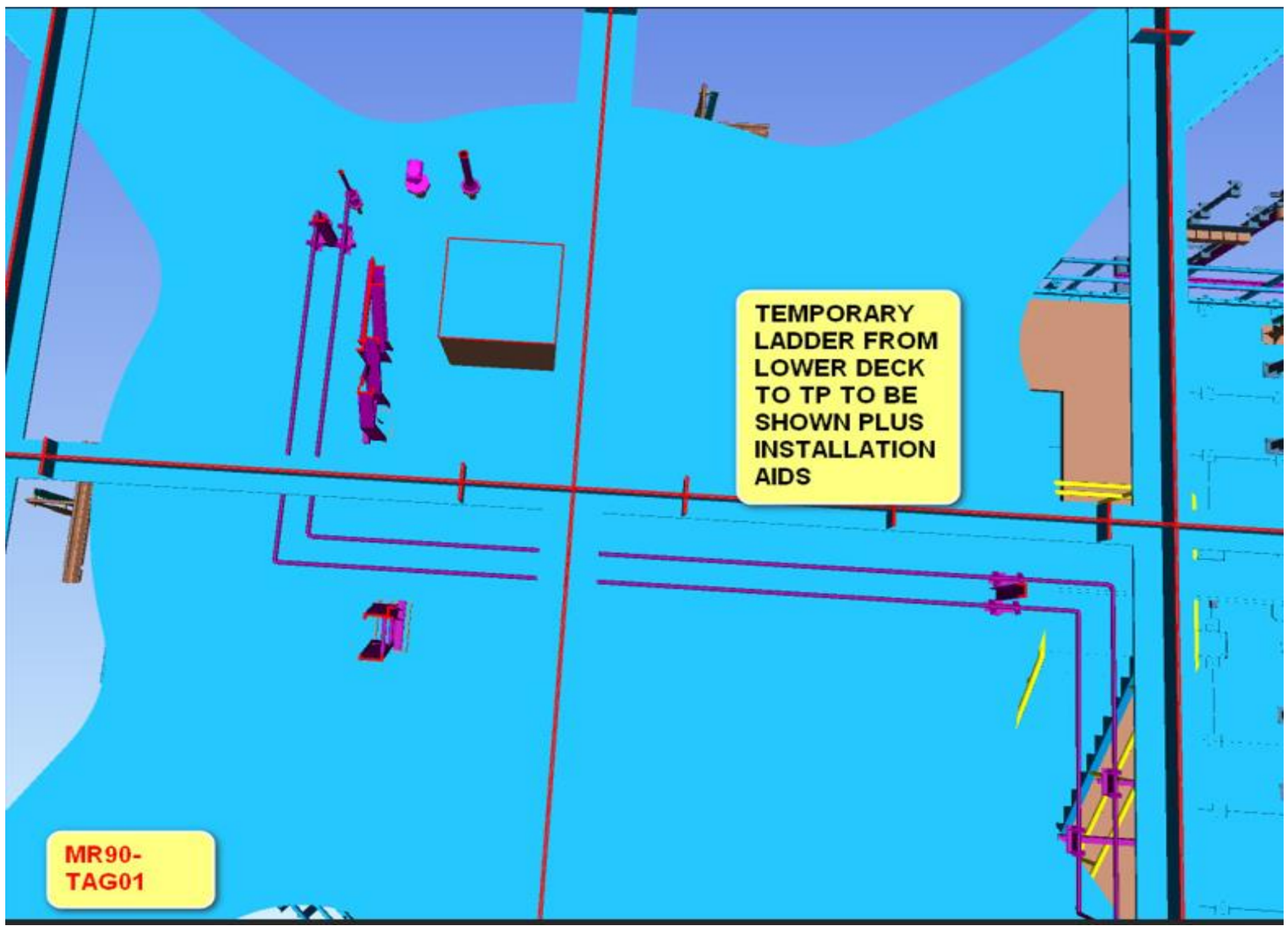
DATE: 18/12/2024

ITEM		COMMENTS						CLOSE OUT		COMMENT STATUS		REMARKS
S.No	Snapshot No.	Platform / Location	System / Equipment / Component	Description	Priority Class	Date	Responsible Discipline	Description	Action By	Open/ Closed	Closed On	
1	MR90 TAG-01	Transition Piece / Lower Deck	Transition Piece / Lower Deck	Temporary ladder from lower deck to TP to be shown plus installation aids	Class 2	16-17/07/2024	STRU	Removable panels in LD are indicated in doc. n. 123A90-DDL-ST-DD-90059. Vertical connection will be provided by alluminium certified ladders shipped loose and secured with cargo strap on topside. No additional installation aids are foreseen since on TP all workplatform are permanently welded (ref. doc. 123A90-DDL-TI-DD-99043)	STRU	Closed	7-Oct-24	
2	MR90 TAG-02	Transition Piece	Monopile	Temporary installations aids to be shown	Class 2	16-17/07/2024	T&I	Temporary installation aids have been shown	T&I	Closed	17-Dec-24	
3	MR90 TAG-03	Transition Piece	Internal ring Transition Piece	Removable handrail to be shown	Class 2	16-17/07/2024	STRU	All handrails in TP ring are removable as per doc. n 123A90-DDL-ST-DD-90037	STRU	Closed	7-Oct-24	
4	MR90 TAG-04	Transition Piece	Waste Water Tank	Hook-up activities to be discussed with CPY	Class 1	16-17/07/2024	T&I	Top of TP will be free of any obstacle, redy to use during installation campaign. Refer to drawing 99043. the only items present will be proteted by phisical barrier (wooden piece) and clearly identified (e.g. n.4 valves)	T&I	Closed	7-Oct-24	
5	MR90 TAG-05	Lower Deck	External handrail	To put the handrail	Class 2	16-17/07/2024	STRU	Handrail not foreseen, space to be left without handrail to allow access to safety equipment cabinet and liferaft.	STRU	Closed	7-Oct-24	
6	MR90 TAG-06	Transition Piece	Transition Piece / Lower Deck	To discuss anti intrusion barrier	Class 1	16-17/07/2024	CPY	The topic has been already closed in October, please refer to the close-out sheet which is part of the latest HAZID close-out update (123A90-DDL-SAF-RE-30010 issued by Rosetti)	CPY	Closed	6-Nov-24	
7	MR90 TAG-07	Transition Piece	Transition Piece / Lower Deck	To check the correct dimension of the handrail with construction	Class 2	16-17/07/2024	STRU	removable handrail will be installed on portion of stair connected to TP. The final connection with MAP will be with bolted portion of stair offshore installed to avoid clash with MAP during TP set down. No handrail is required on portion of ladder offshore installed	STRU	Closed	24-Sep-24	
8	MR90 TAG-08	Transition Piece	Transition Piece / Lower Deck	Installation of drain water to be checked	Class 2	16-17/07/2024	PIP	During transportation and installation drain pipe will be maintained in temporary position (lowered around 60cm from final position) by dedicated supports. After Topside installation, during hook up it will be liftet and flanged connection will be performed.	T&I	Closed	17-Dec-24	
9	MR90 TAG-09	Upper deck	Vent platform	To provide installation and access platform for h2 vent	Class 2	16-17/07/2024	MEC	The platform and access ladder to the vent have been added.	MEC	Closed	31-Oct-24	
10	MR90 TAG-10	Lower deck	Lower deck	To put temporary beam clamps for sea water lift pumps decommissioning	Class 2	16-17/07/2024	STRU	Temporay beam clamps will be as per industrial practice. The items will be purchased when needed.	STRU	Closed	7-Oct-24	
11	MR90 TAG-11	Lower deck	Water treatment package	Internal water tratmemnt to be completed	Class 2	16-17/07/2024	MEC	Internal water treatment has been completed.	MEC	Closed	5-Nov-24	
12	MR90 TAG-12	Upper deck	Crane area	Envelope 180° (5m,10m)	Class 2	16-17/07/2024	MEC	The 180° envelope (5m, 10m) has been represented	MEC	Closed	21-Oct-24	
13	MR90 TAG-13	Upper deck	Fuel Cell	Check the drain connection on the fuel cell	Class 2	16-17/07/2024	PIP	The fuel cell drain has been connected	PIP	Closed	24-Sep-24	
14	MR90 TAG-14	Lower deck	B-300	Lightswitch shall be moved in more accessible position	Class 2	16-17/07/2024	ELE/INS	Lightswitch have been moved outer wall of the container as per the container vendor GA drawing	ELE/INS	Closed	10-Sep-24	
15	MR90 TAG-15	Lower deck	B-400	Sounders and beacons shall be moved on the left	Class 2	16-17/07/2024	INS	Manual Call Point has been moved close to opposite door together to beacons and sounder for space missing.	INS	Closed	10-Sep-24	
16	MR90 TAG-16	Lower deck	B-400	Manual call point 04201 shall be moved close the door	Class 2	16-17/07/2024	INS	Manual Call Point has been moved close to opposite door together to beacons and sounder for space missing.	INS	Closed	10-Sep-24	
17	MR90 TAG-17	Lower deck	B-400	Extinguisher shall be moved	Class 2	16-17/07/2024	INS	The fire extinguisher has been moved	INS	Closed	21-Oct-24	
Open points from 60% Model Review												
18	BLPH-07 (30%MR)	Monopile	Ladder from/to supply vessel	Anchor point for existing winch to be shown.	Class 2	12-Dec-23	STRU	Anchor point for new winch will be installed on TP. Temporarily the exisiting SRL system will be fixed with a soft sling to the access ladder (solution already used in the past)	STRU	CLOSED	17-Dec-24	Action coming from 60%MR

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19	BLPH-26 (30%MR)	Monopile	Internal ring Transition Piece	CPY to confirm if this is considered confined space.	Class 1	12-Dec-23	CPY	CPY confirmed is not a confined space	CPY	Closed	17-Dec-24	Action coming from 60%MR
20	BLPH-03 (60%MR)	Transition Piece	Existing service platform	To provide portable CPY Crane	Class 1	5-Mar-24	CPY	The portable CPY Crane has been added	CPY	Closed	13-Nov-24	Action coming from 60%MR
21	BLPH-08 (60%MR)	Transition Piece	Internal ring Transition Piece	Update the ladder with final configuration agreed with CPY	Class 2	5-Mar-24	STRU	Final ladder configuration modelled	STRU	CLOSED	17-Dec-24	Action coming from 60%MR

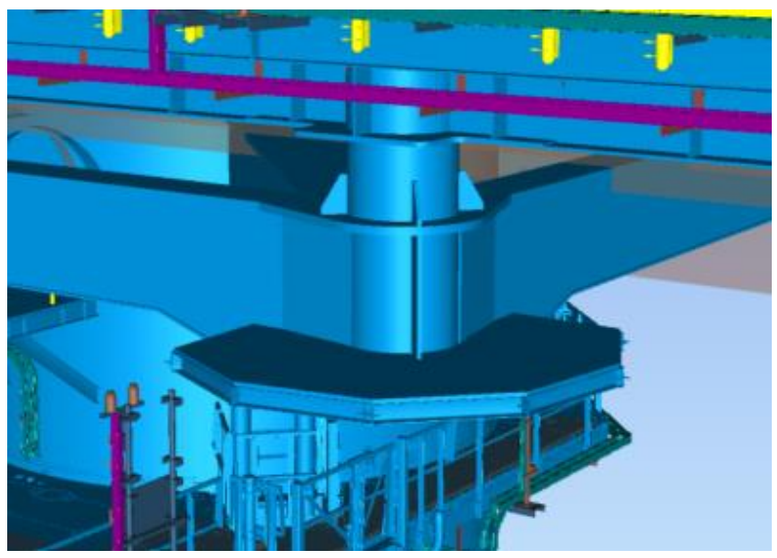
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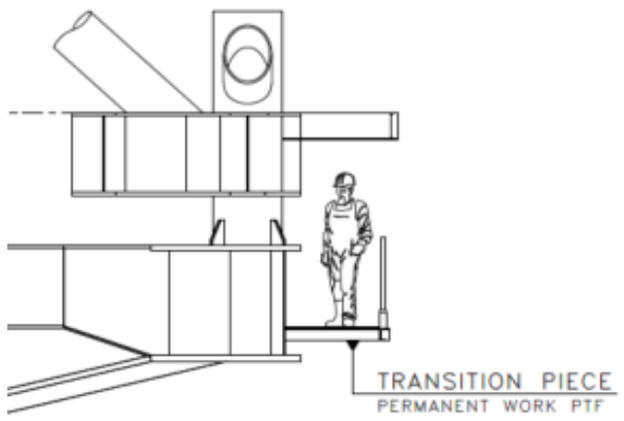


ACTION

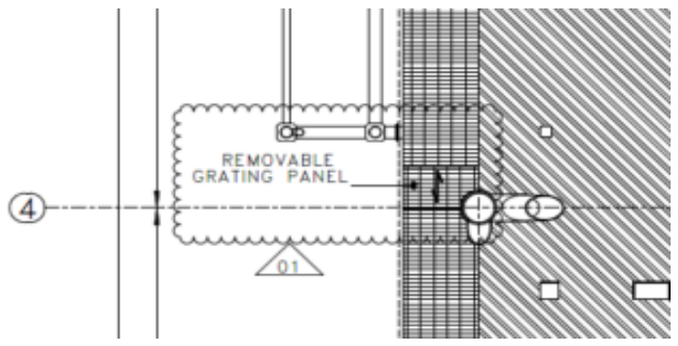
Temporary ladder from lower deck to TP to be shown plus installation aids

workplatform are permanently welded to TP:

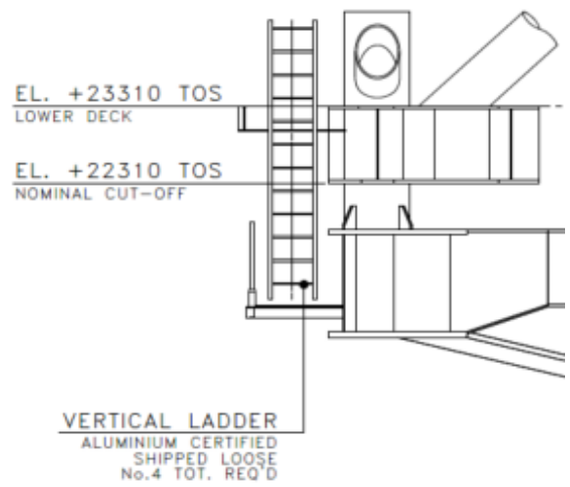




Removable panels in LD have been designed:



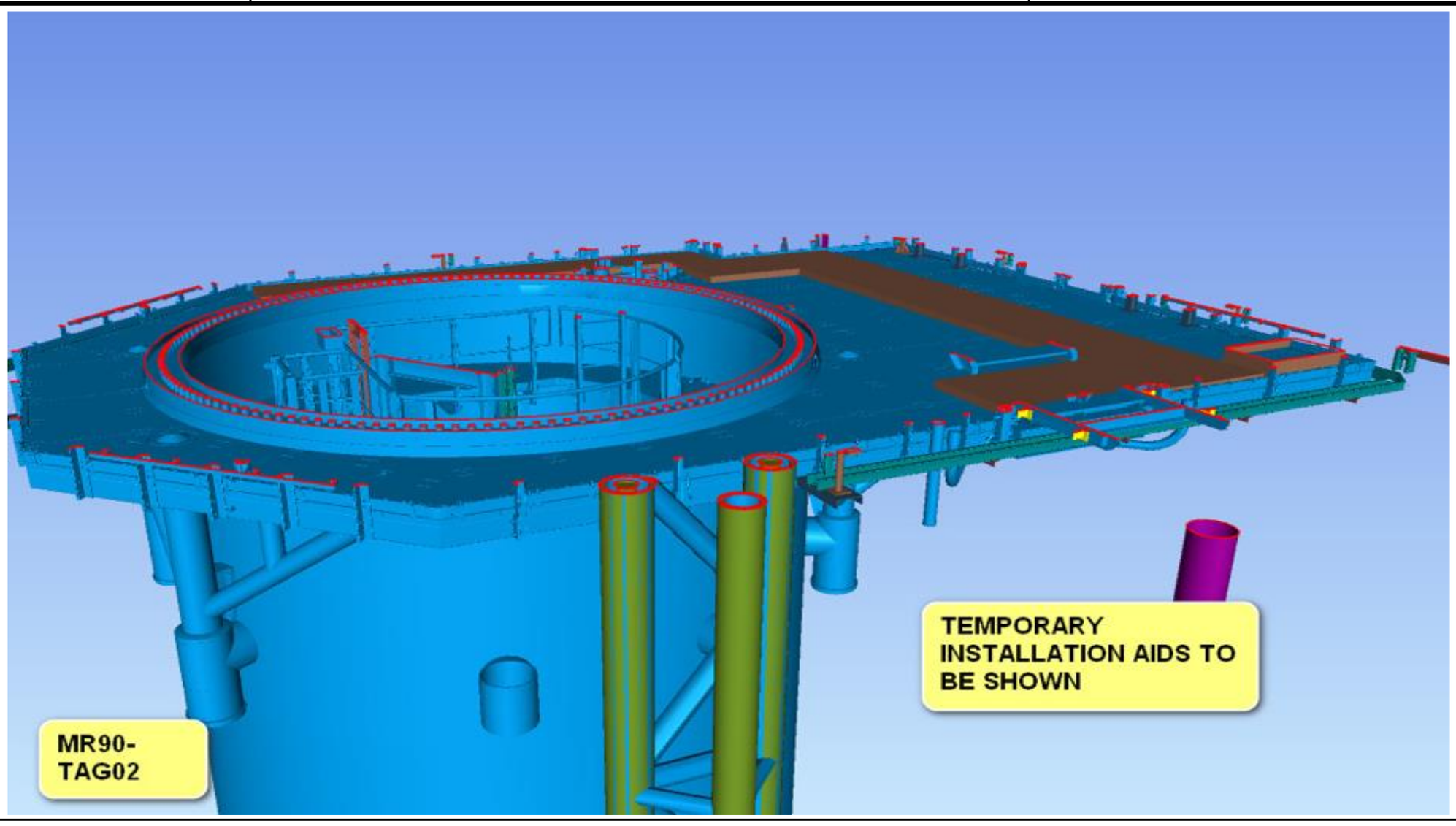
Vertical connection will be provided by alluminium certified ladders:



CLOSE-OUT

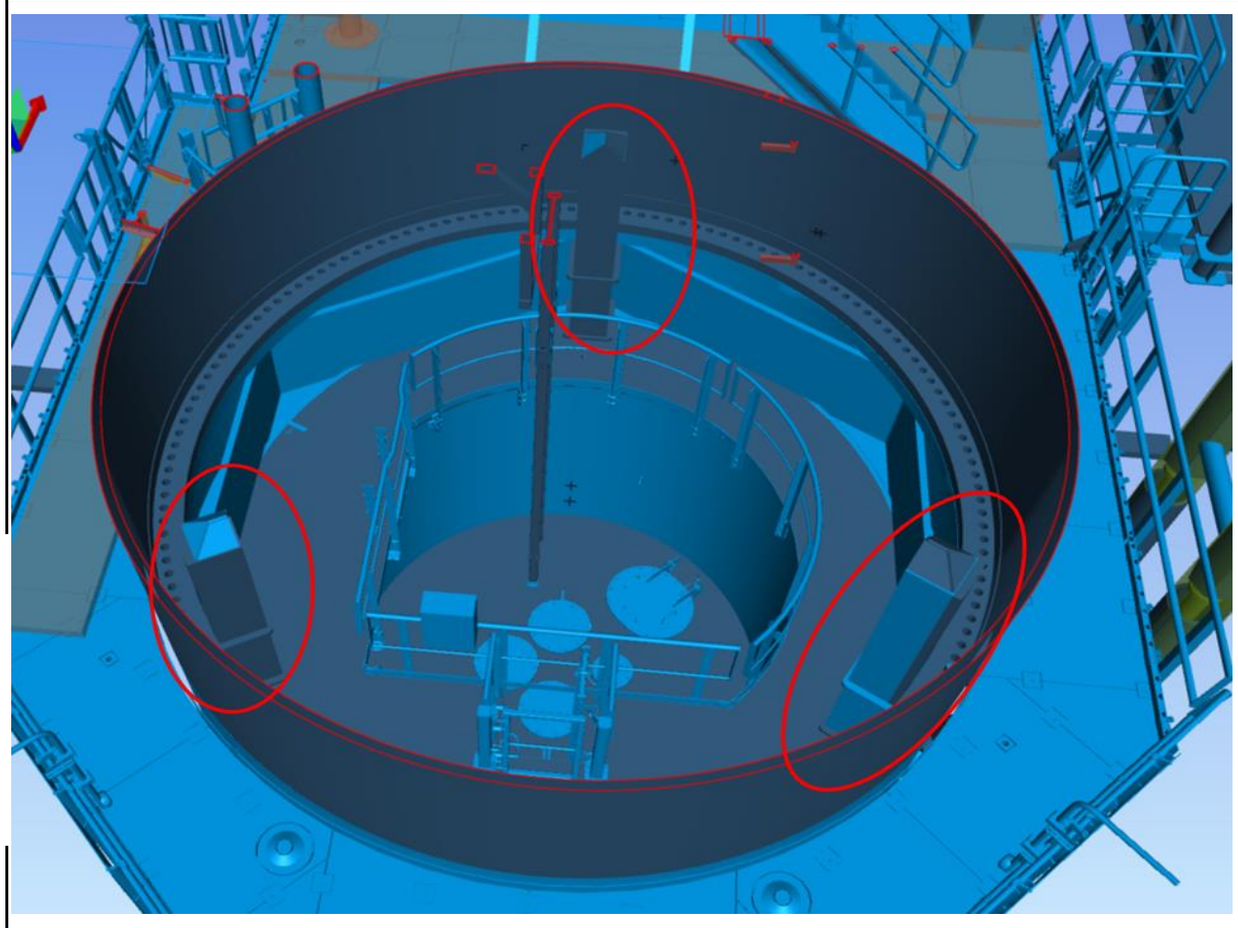
Removable panels in LD are indicated in doc. n. 123A90-DDL-ST-DD-90059. Vertical connection will be provided by alluminium certified ladders shipped loose and secured with cargo strap on topside. No additional installation aids are foreseen since on TP all workplatform are permanently welded
(ref. doc. 123A90-DDL-TI-DD-99043)

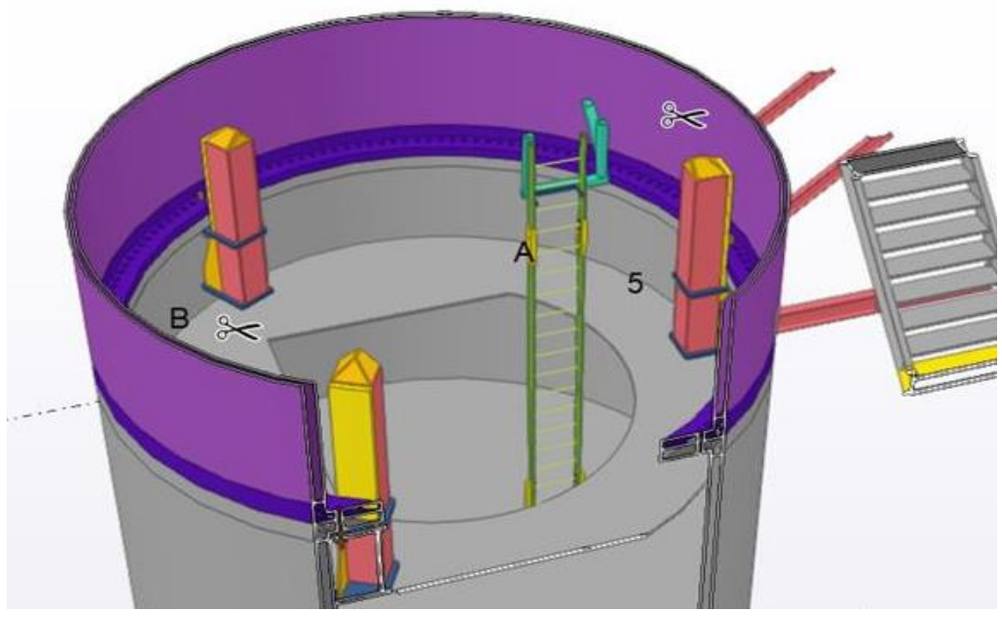
MR90-TAG01



ACTION

Temporary installations aids to be shown

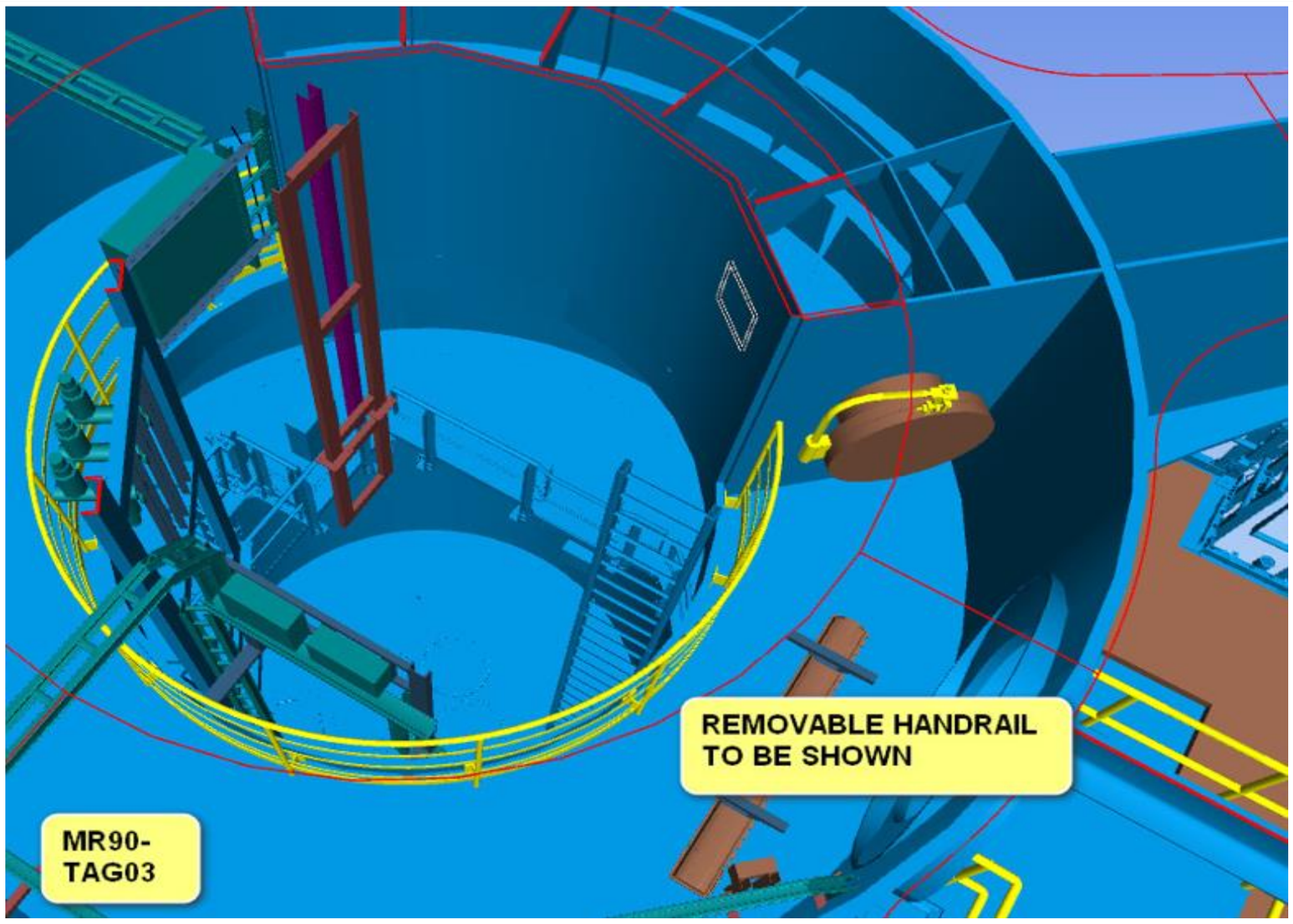




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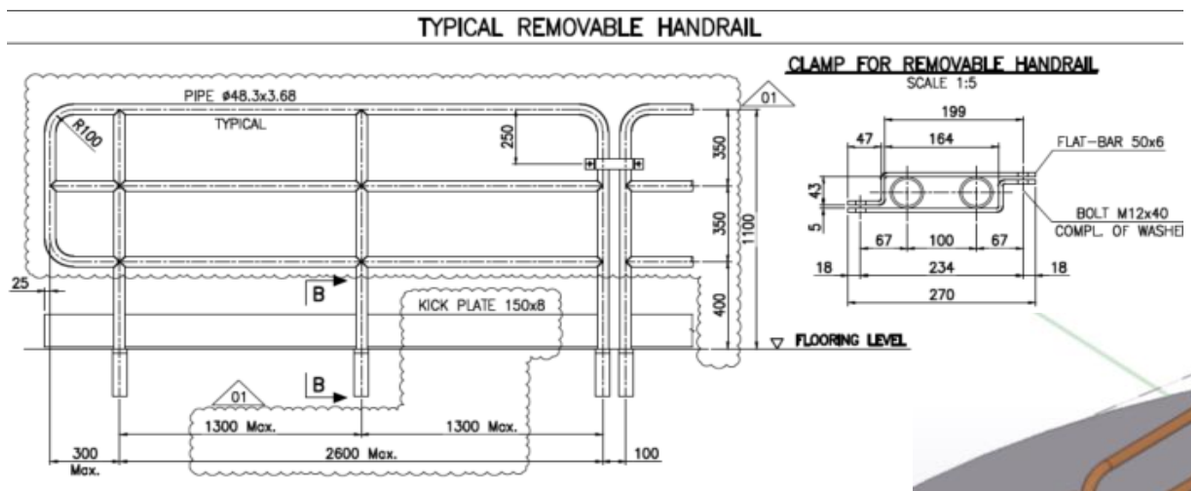
Temporary installation AIDS have been shown

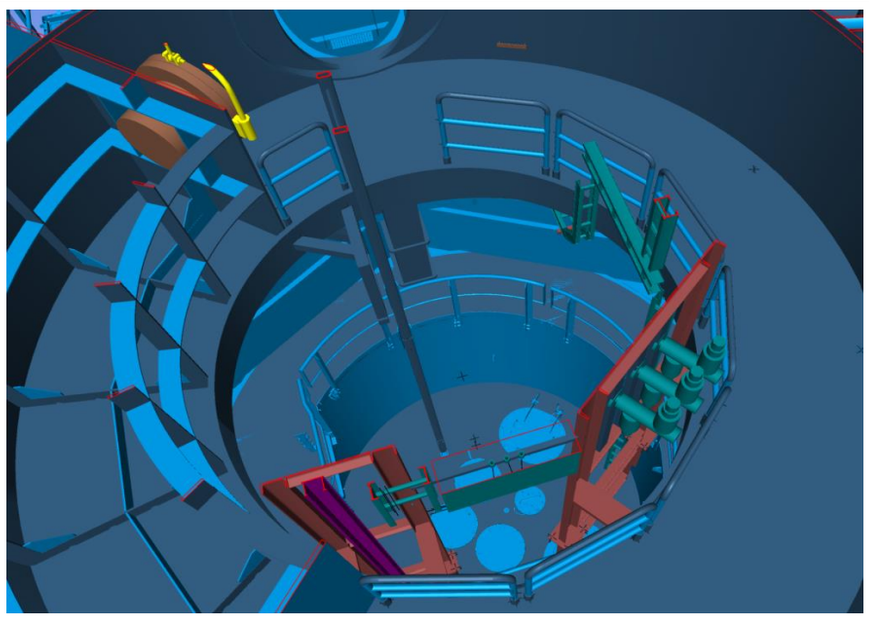
MR90-TAG02

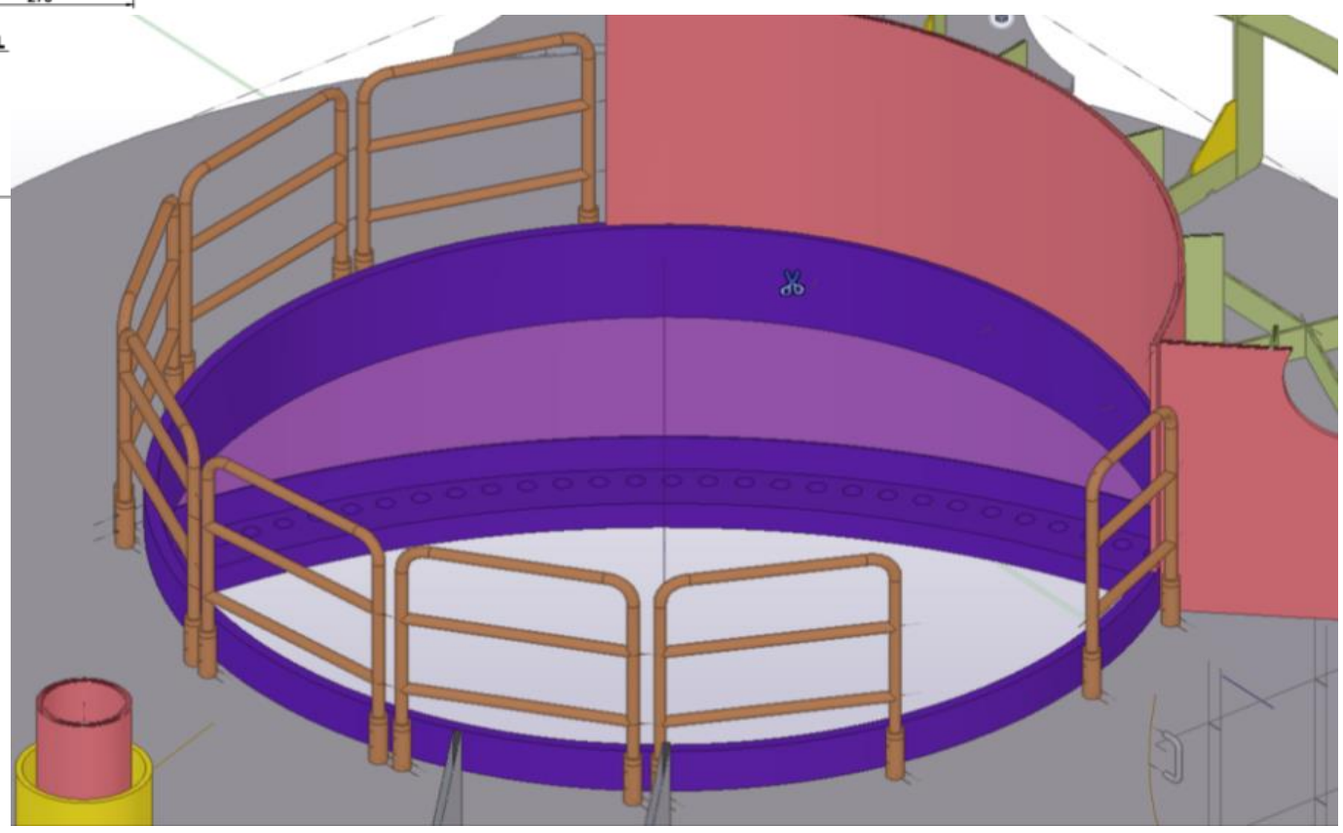


ACTION

Removable handrail to be shown



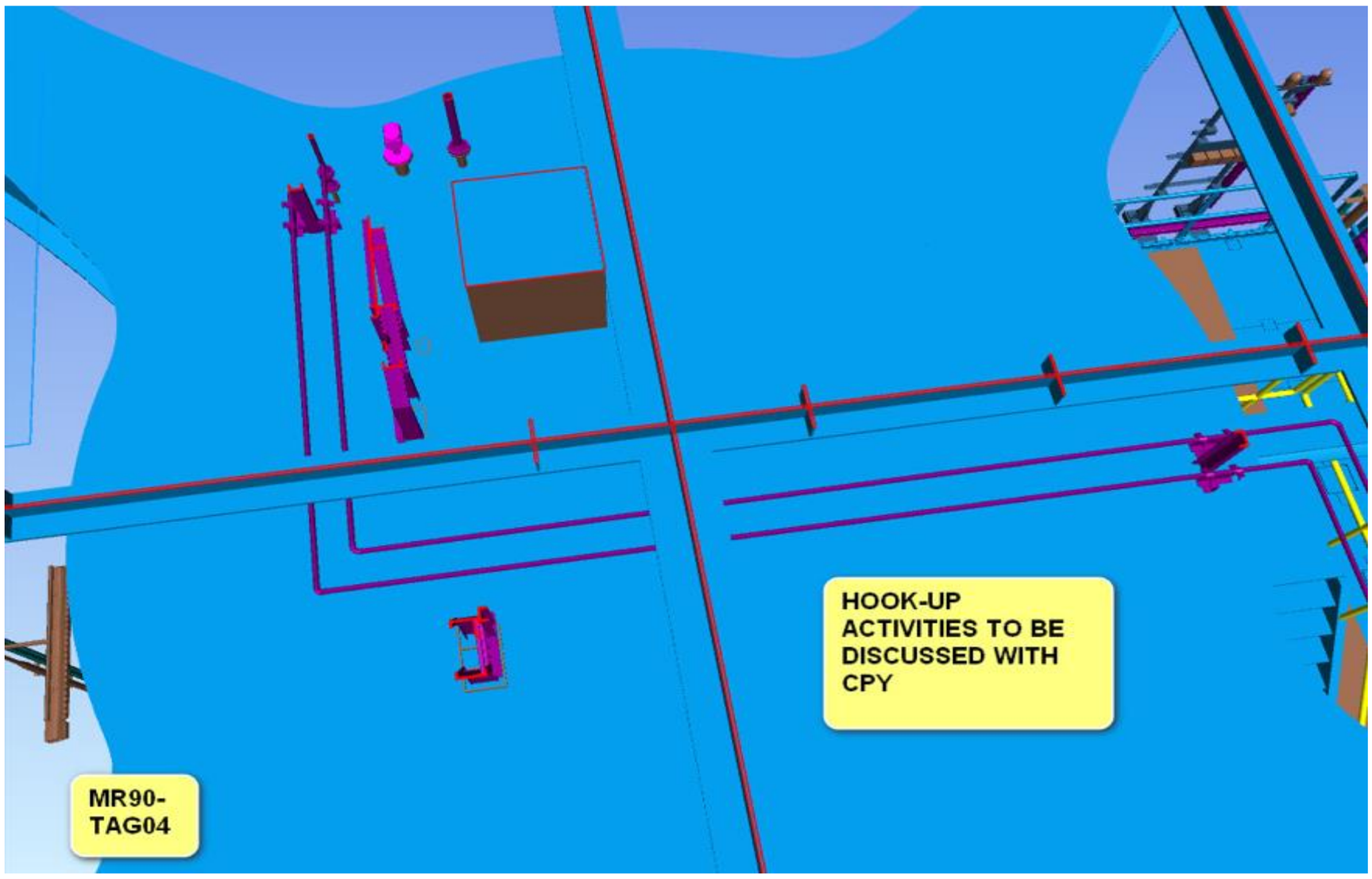




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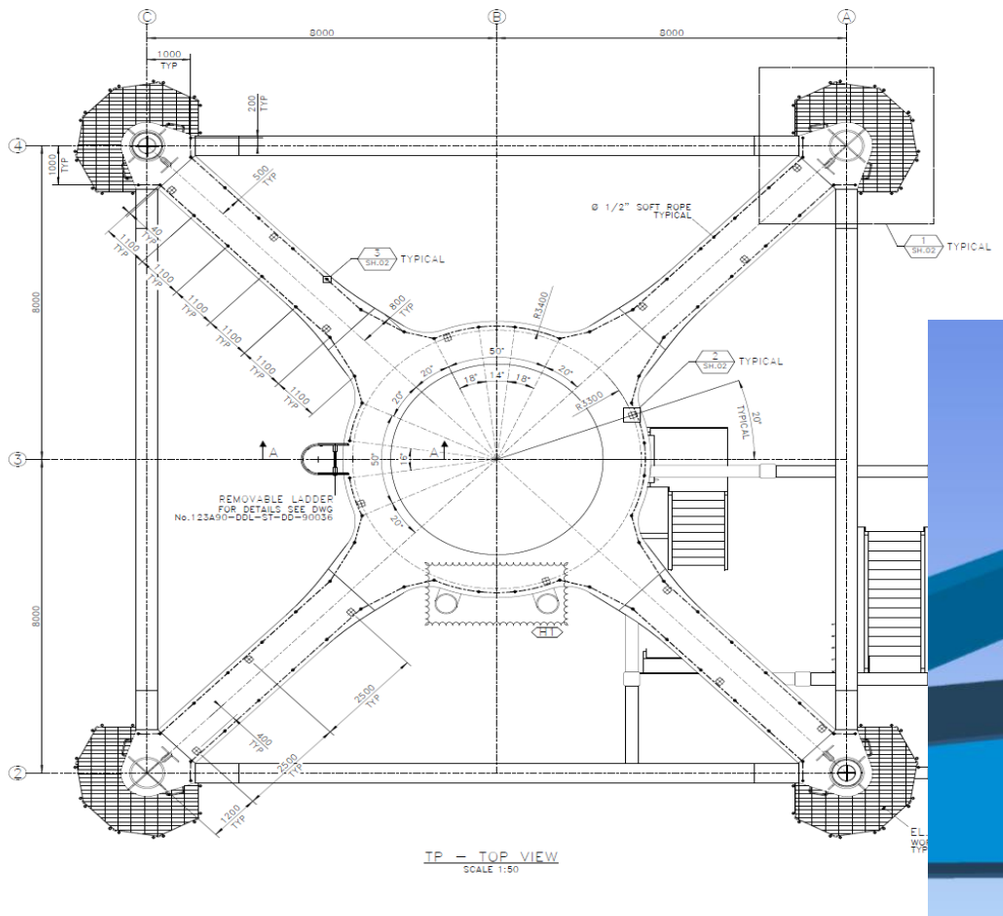
All handrails in TP ring are removable as per doc. n 123A90-DDL-ST-DD-90037

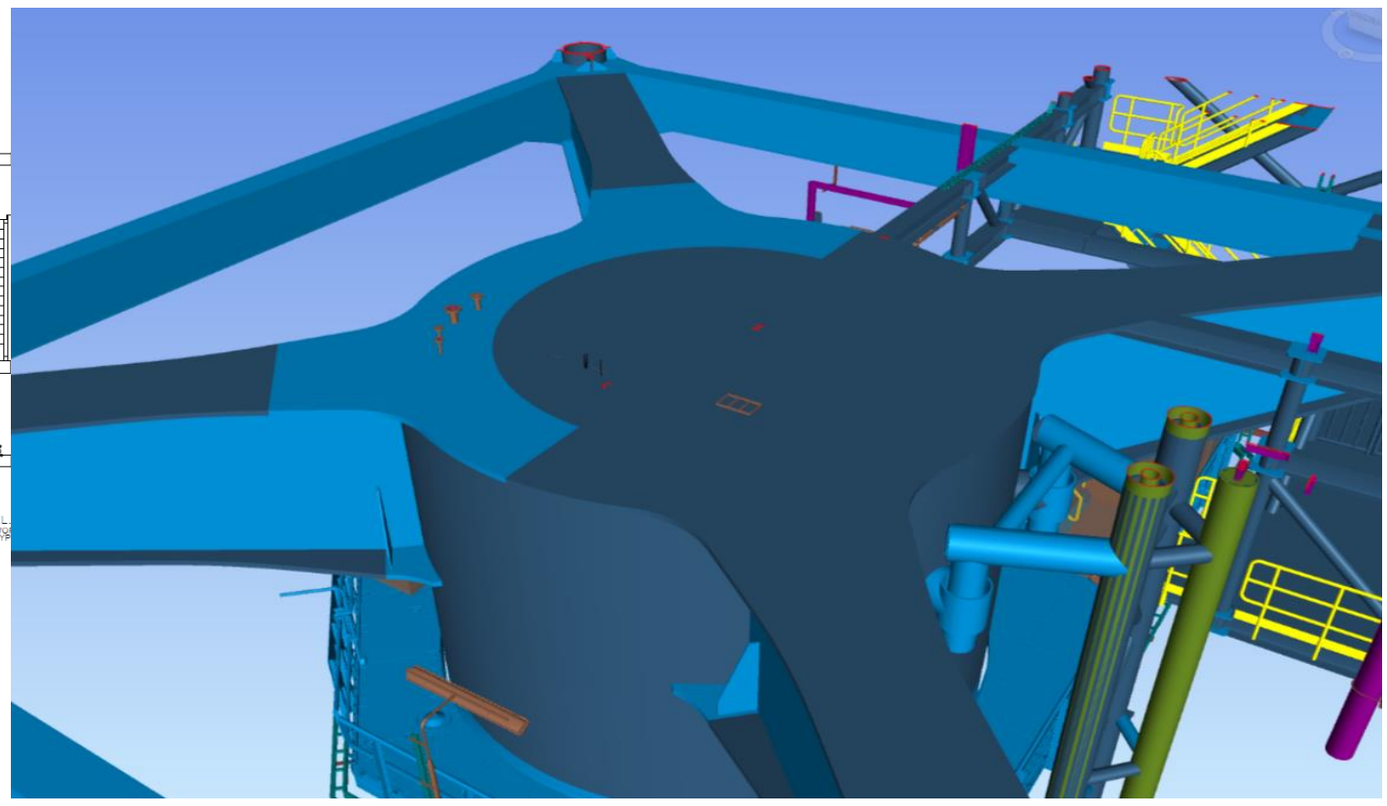
MR90-TAG03



ACTION

Hook-up activities to be discussed with CPY

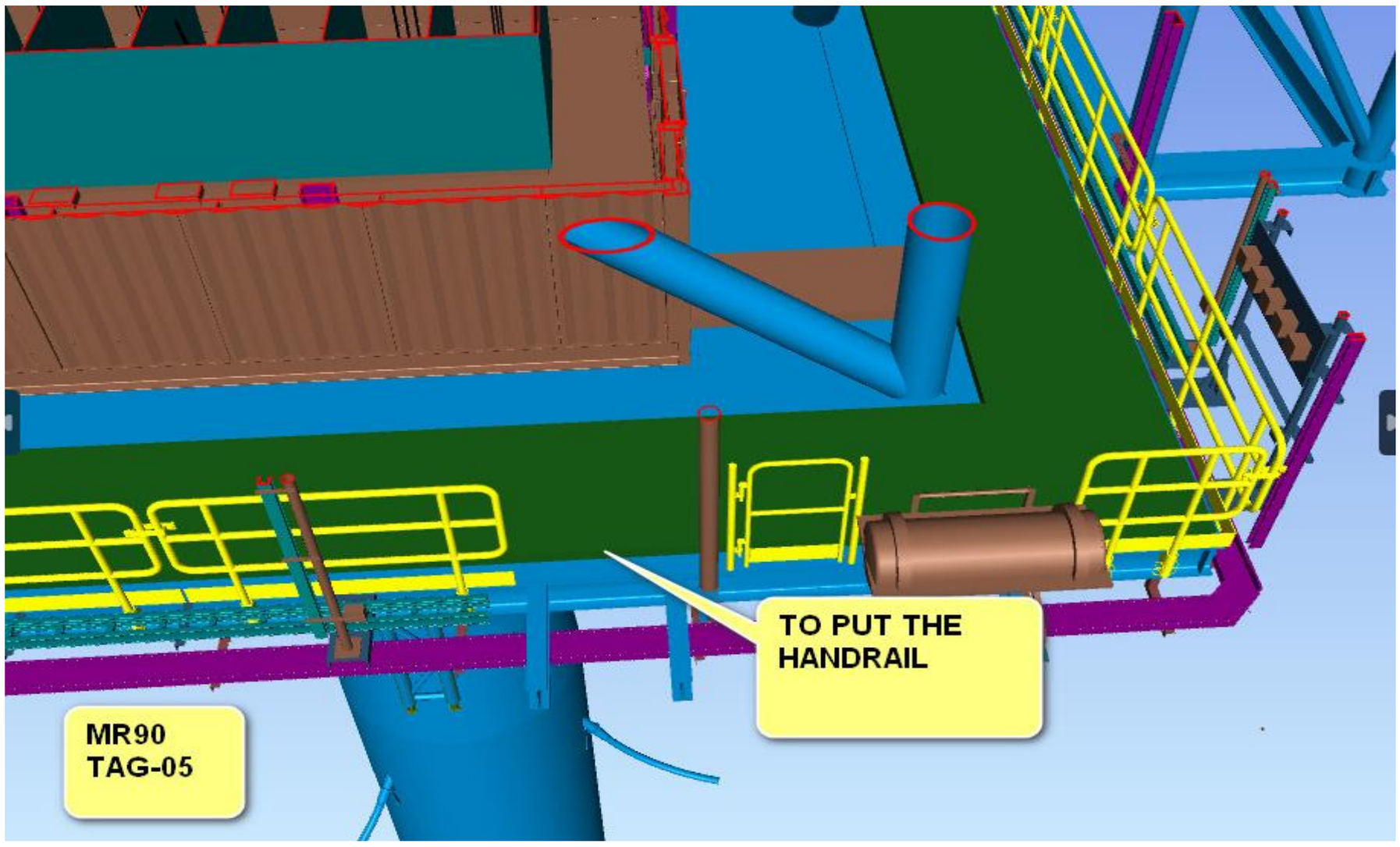




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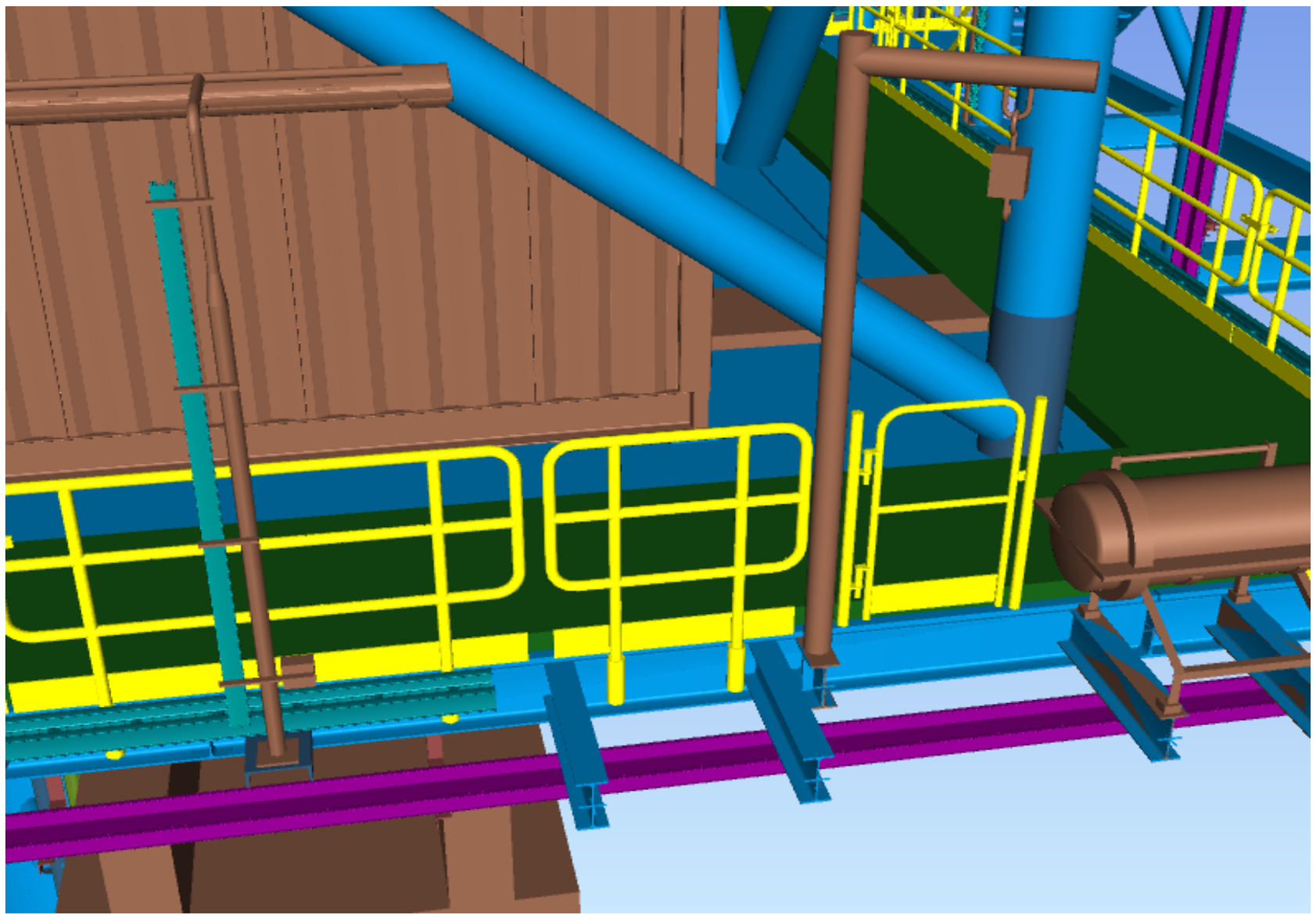
Top of TP will be free of any obstacle, redy to use during installation campaign. Refer to drawing 99043. the only items present will be proteted by phisical barrier (wooden piece) and clearly identified (e.g. n.4 valves)

MR90-TAG04



ACTION

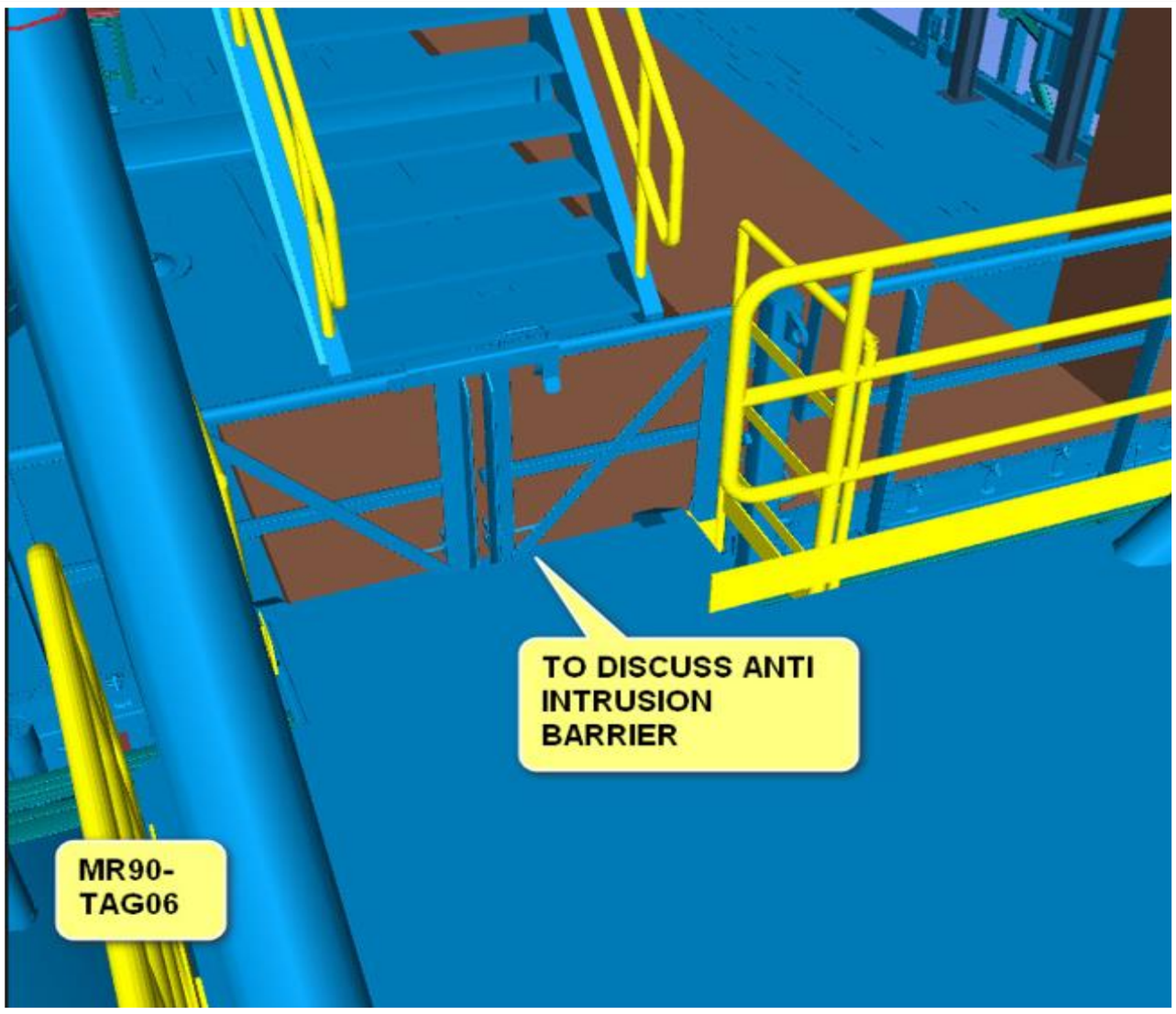
To put the handrail



CLOSE-OUT

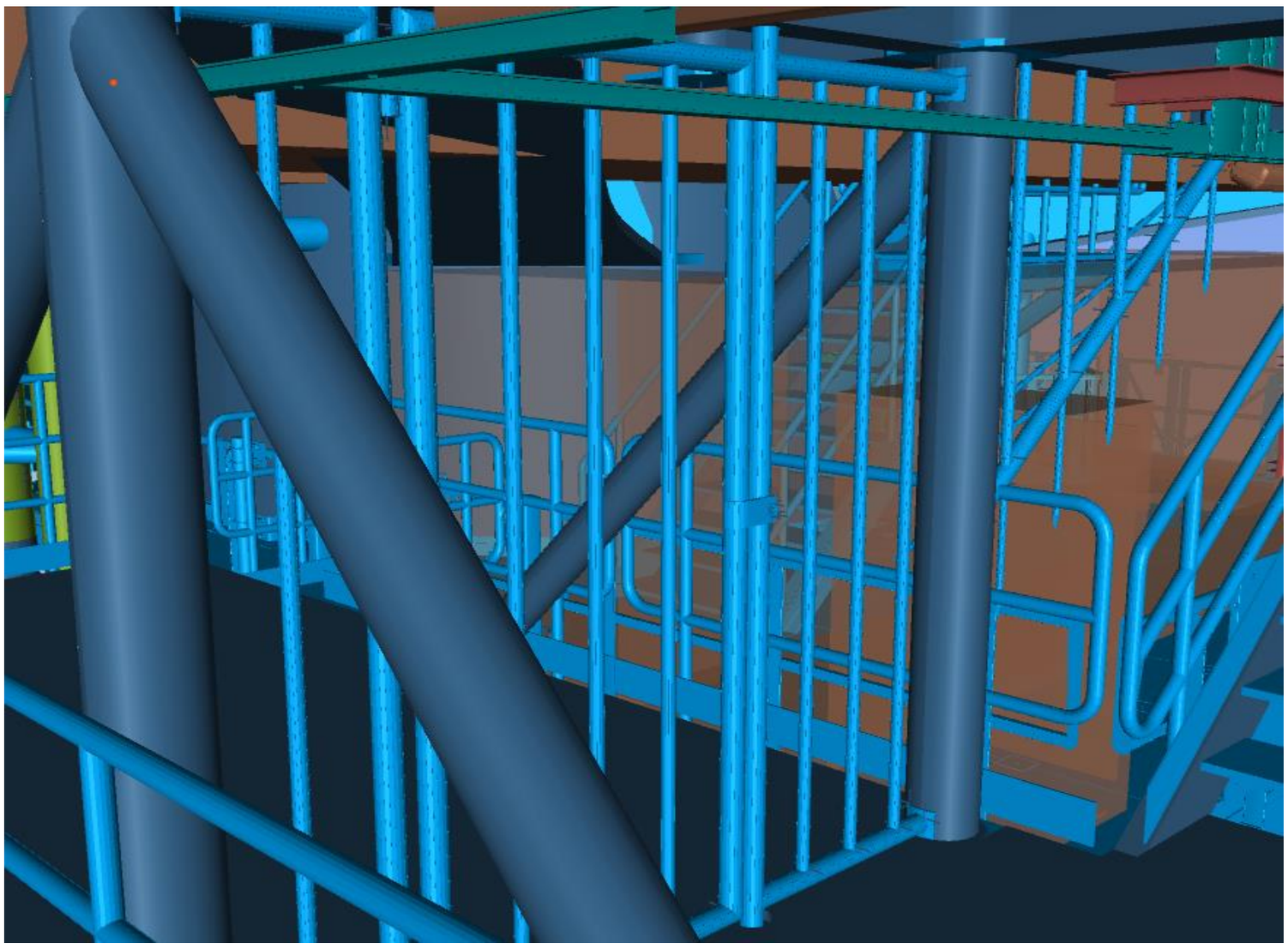
Added a new handrail

MR90-TAG05



ACTION

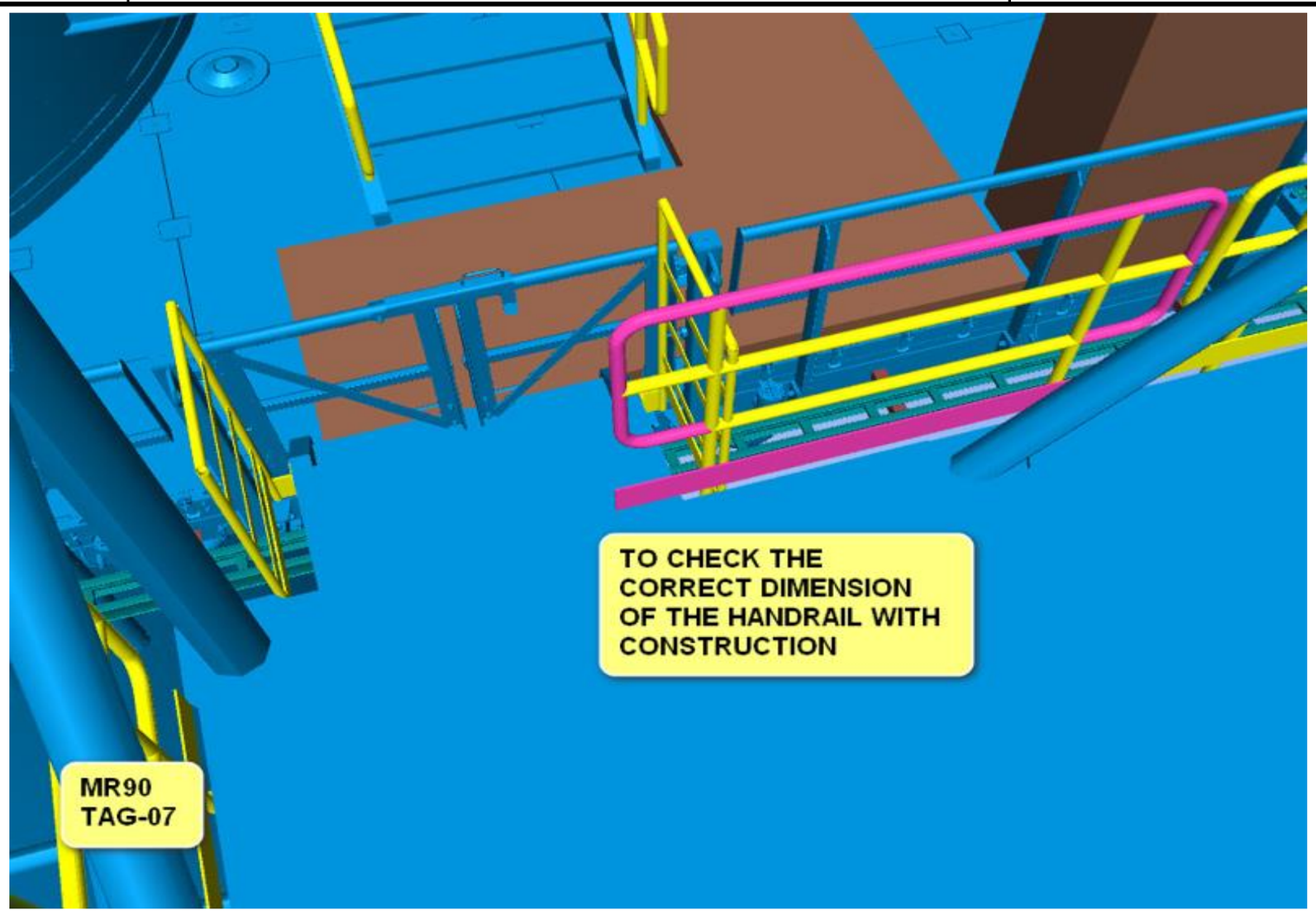
To discuss anti intrusion barrier



CLOSE-OUT

The topic has been already closed in October, please refer to the close-out sheet which is part of the latest HAZID close-out update (123A90-DDL-SAF-RE-30010 issued by Rosetti)

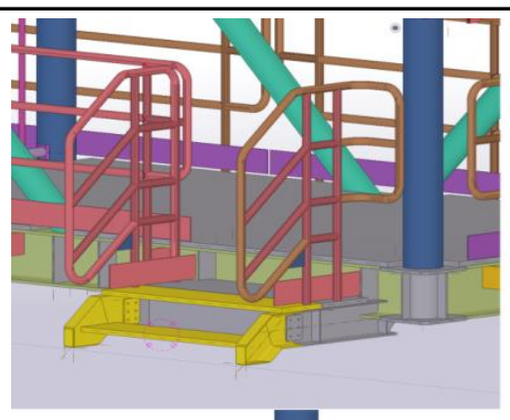
MR90-TAG06



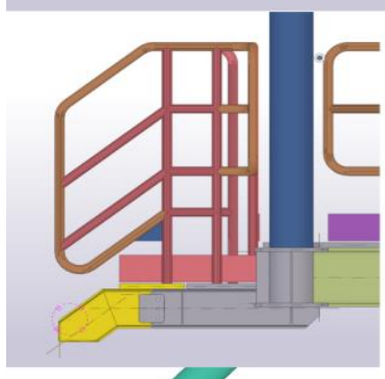
ACTION

To check the correct dimension of the handrail with construction

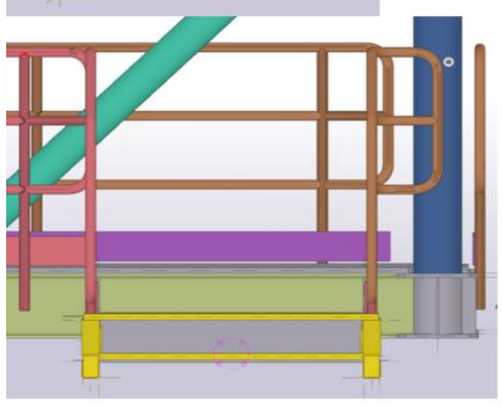
NEW



3D VIEW

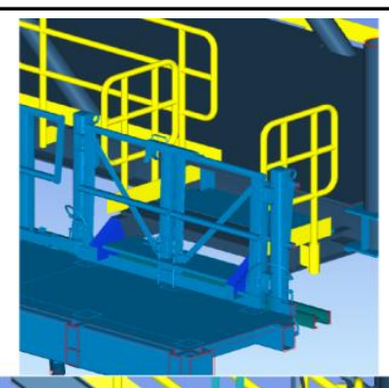


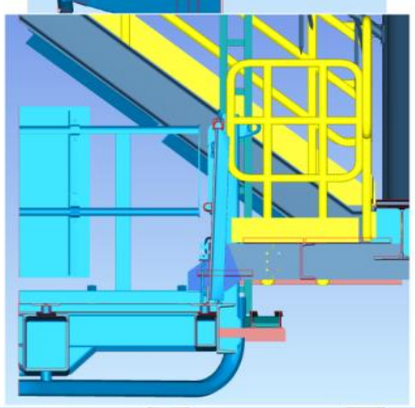
LATERAL VIEW

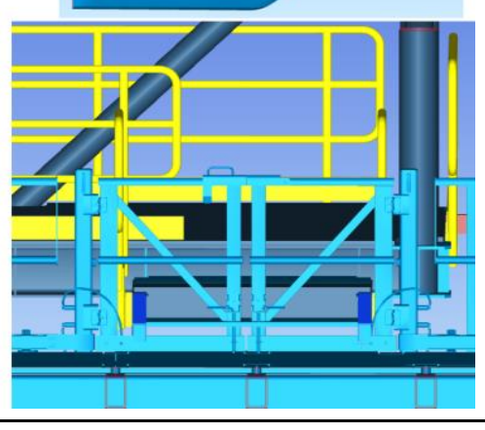


FRONT VIEW

OLD



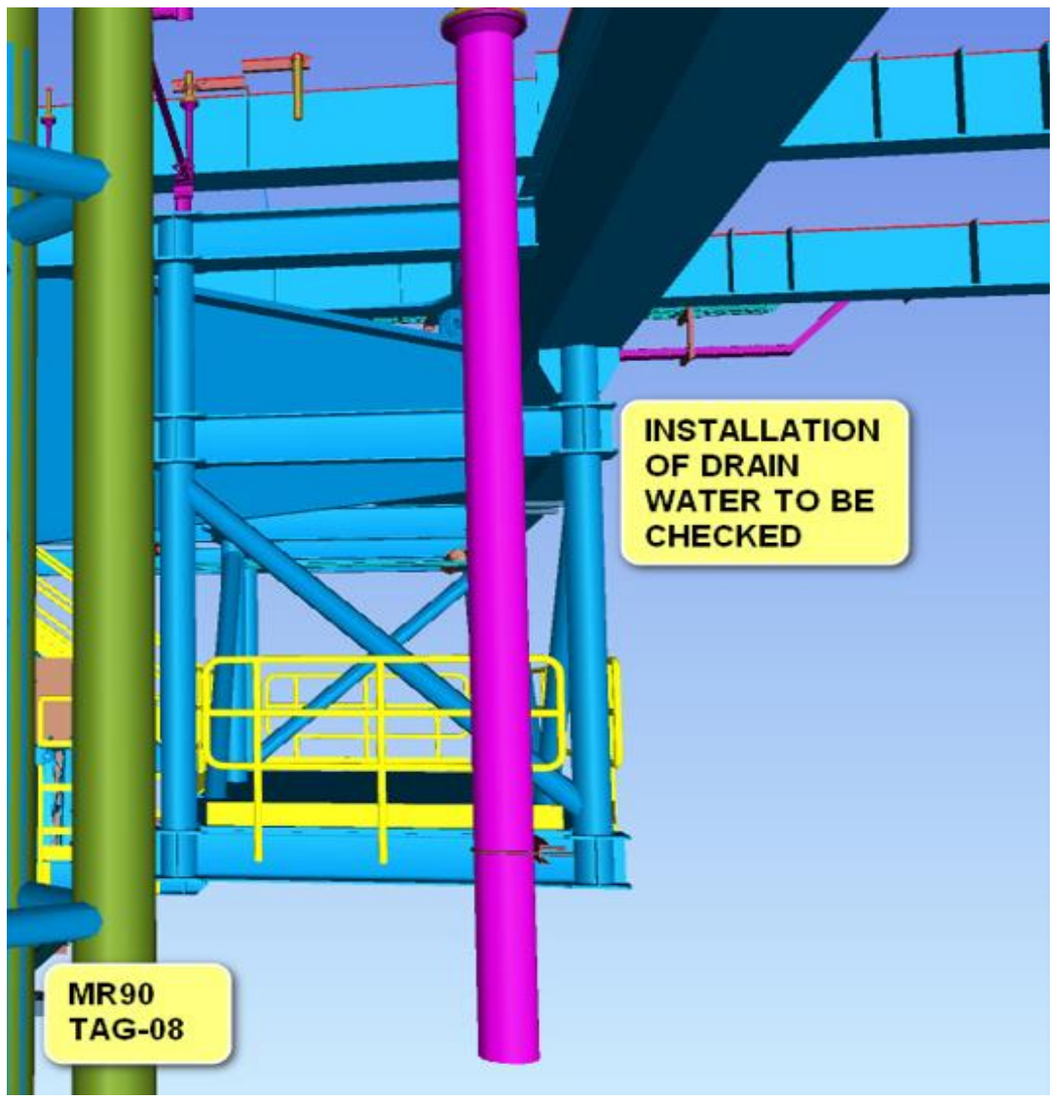




CLOSE-OUT

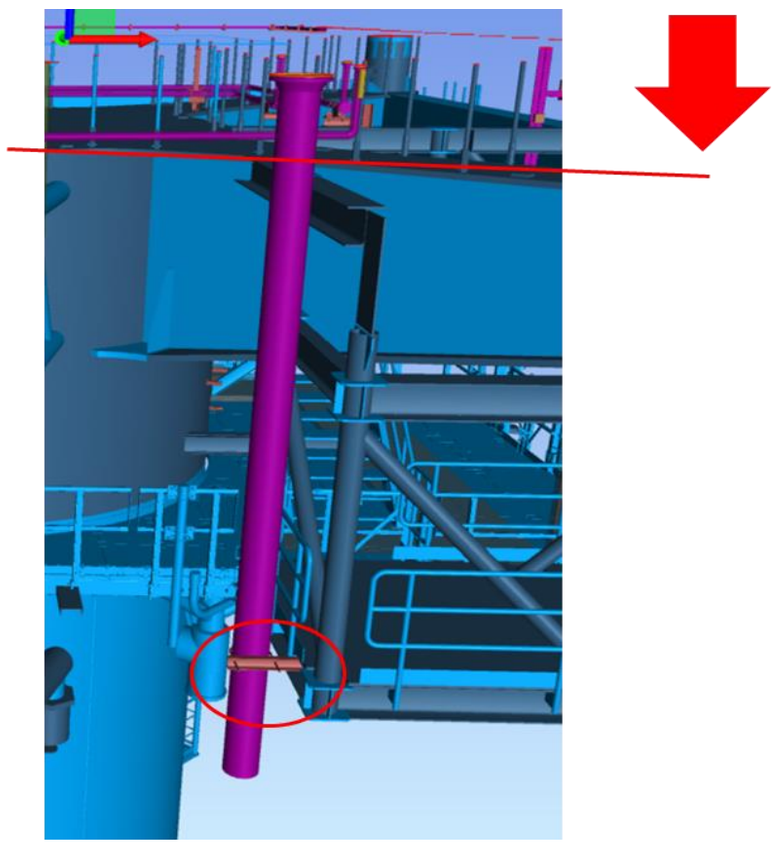
removable handrail will be installed on portion of stair connected to TP. The final connection with MAP will be with bolted portion of stair offshore installed to avoid clash with MAP during TP set down. NOTE: gate to be opened before installation and removed once portion of ladder will be installed and bolted.

MR90-TAG07



ACTION

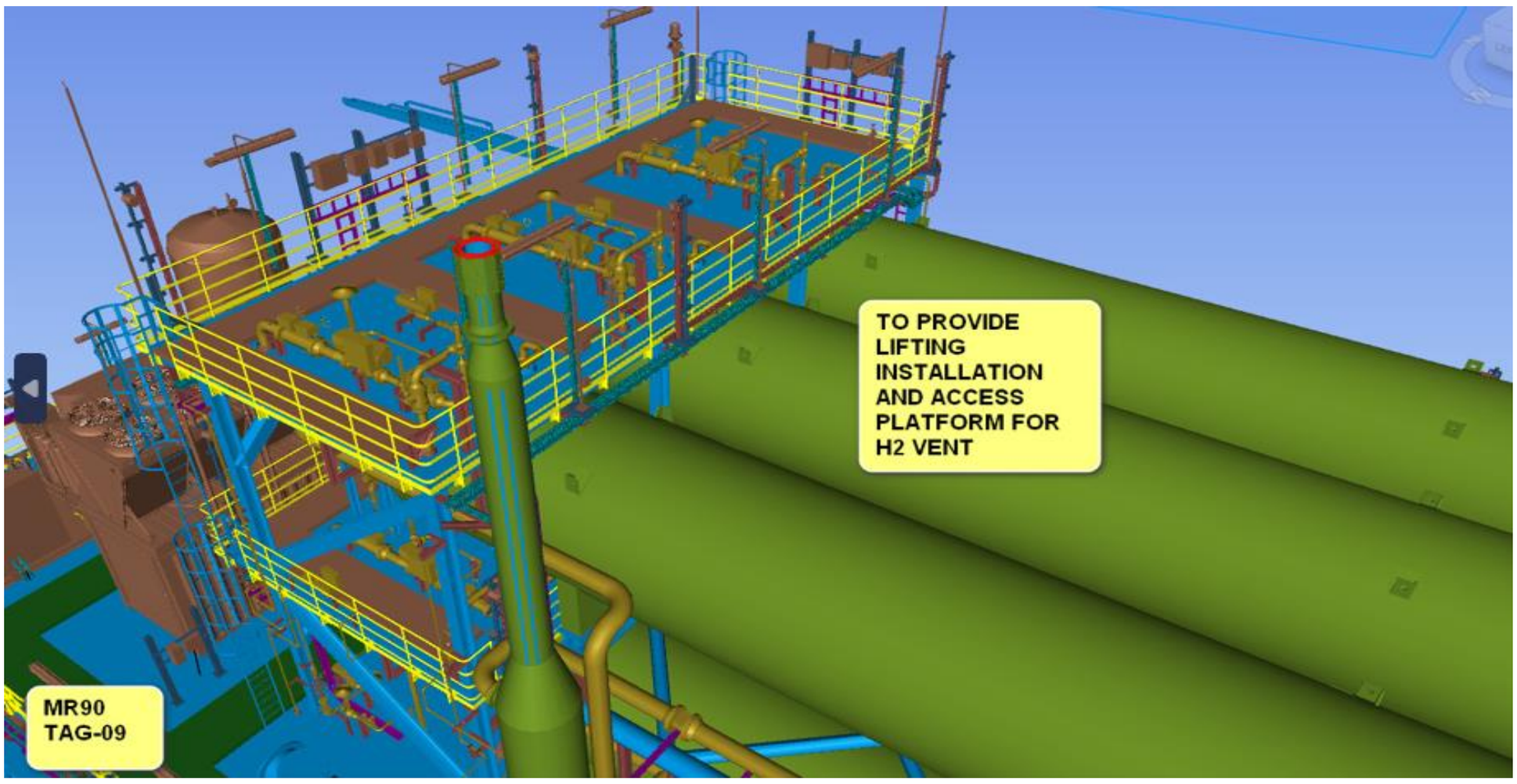
Installation of drain water to be checked



CLOSE-OUT

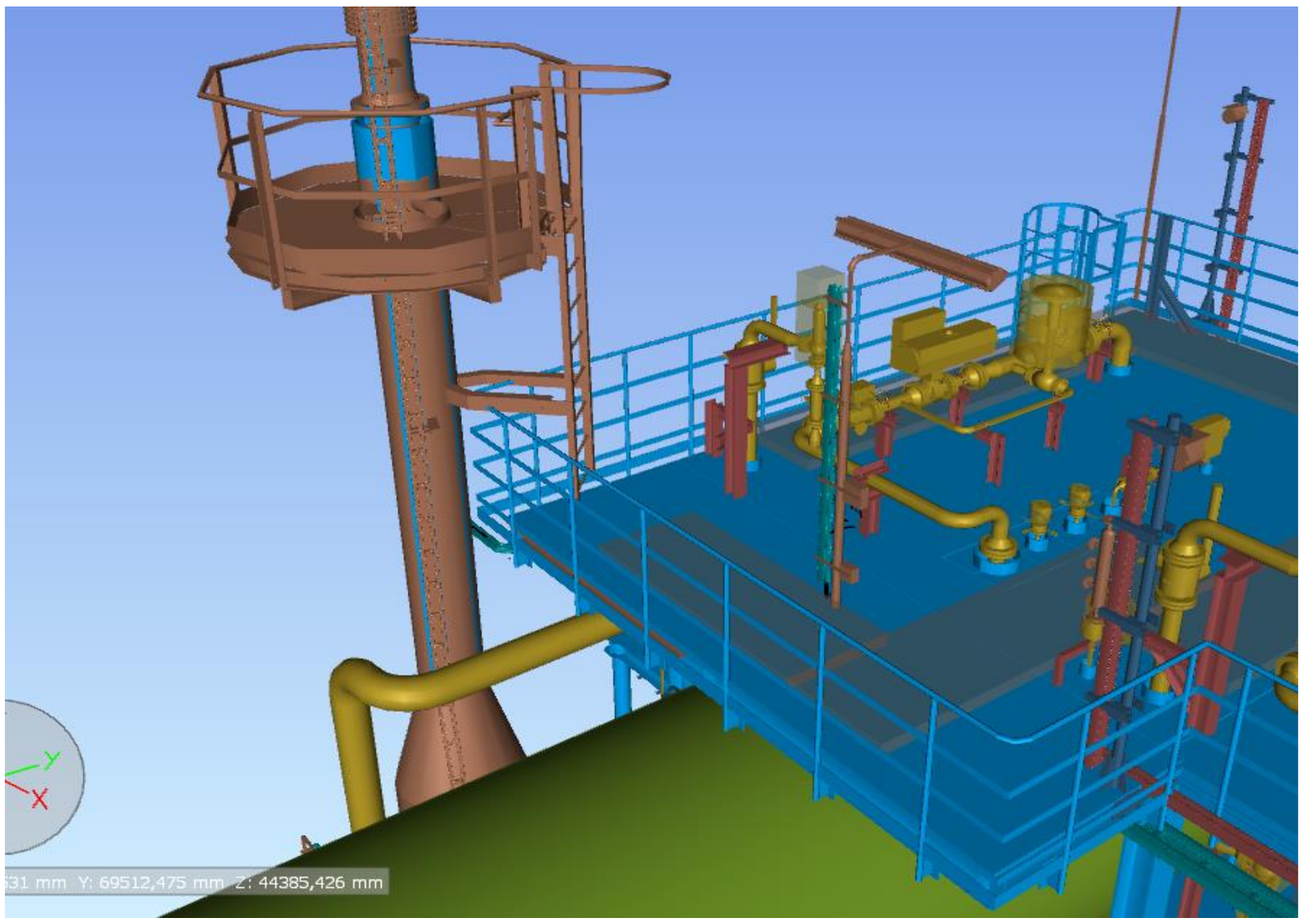
During transportation and installation drain pipe will be maintained in temporary position (lowered around 60cm from final position) by dedicated supports. After Topside installation, during hook up it will be liftet and flanged connection will be performed.

MR90-TAG08



ACTION

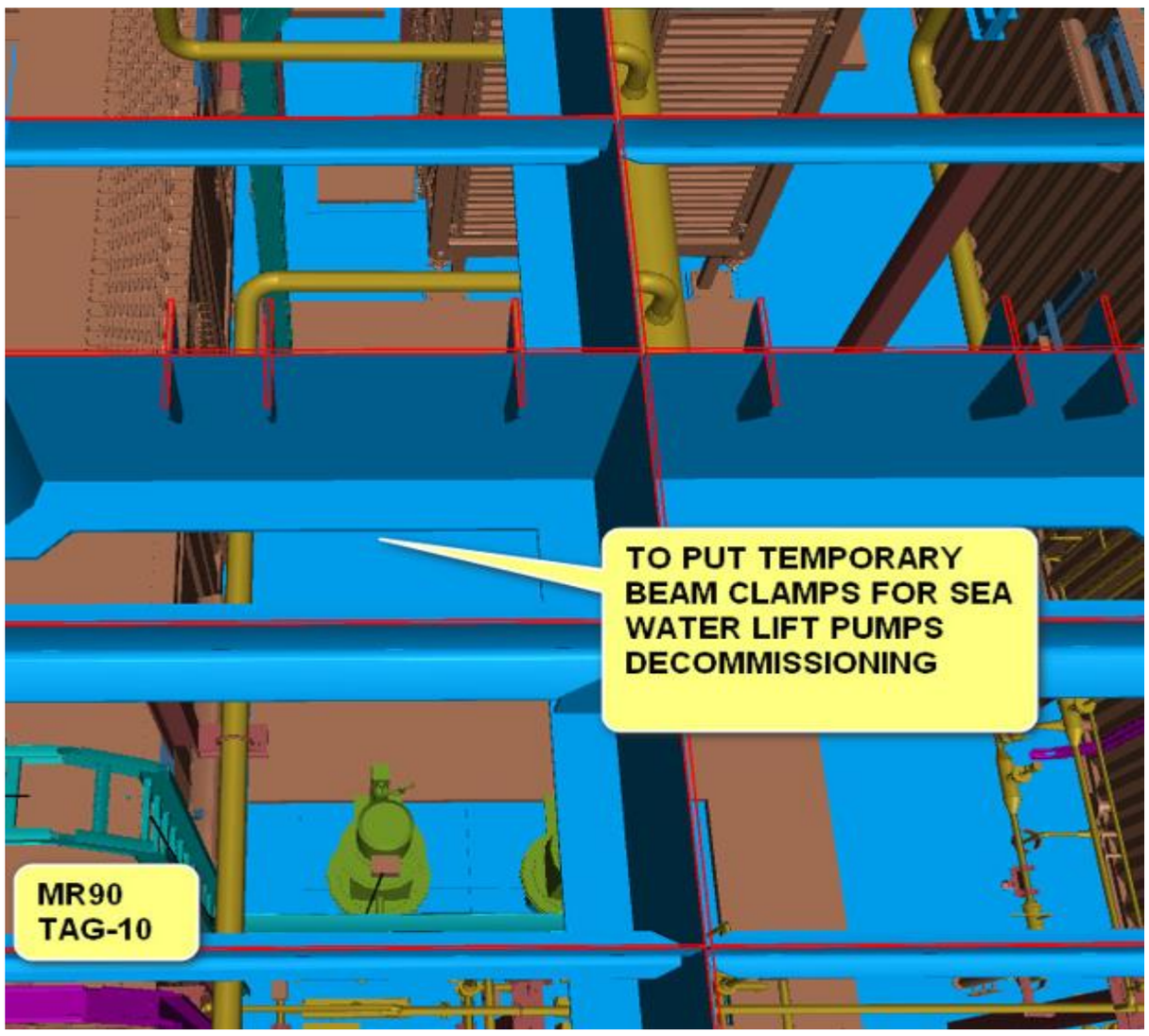
To provide installation and access platform for h2 vent



CLOSE-OUT

The platform and access ladder to the vent have been added.

MR90-TAG09



ACTION

To put temporary beam clamps for sea water lift pumps decommissioning



CLOSE-OUT

Temporay beam clamps will be as per industrial practice. The items will be purchased when needed.

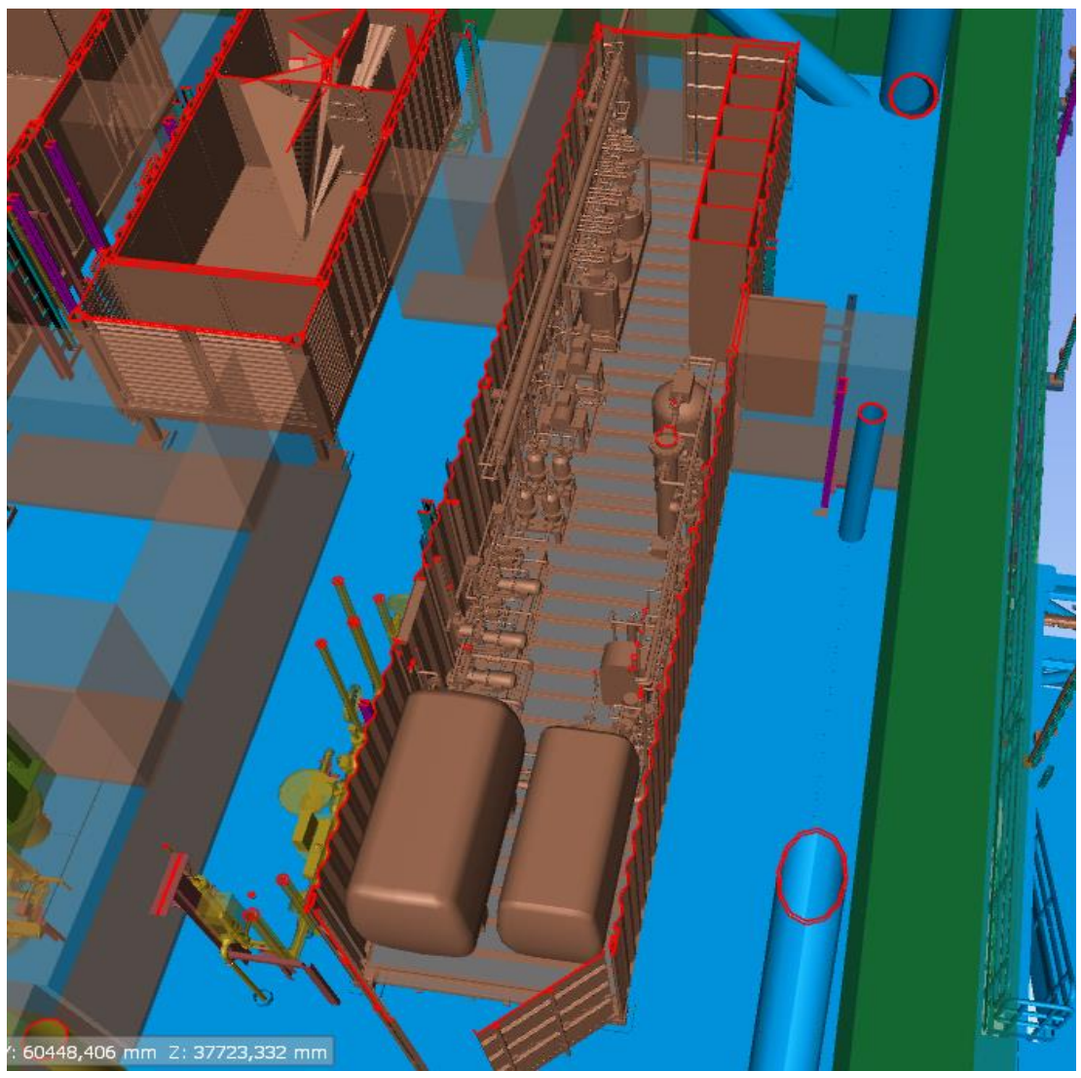
MR90-TAG10

ù



ACTION

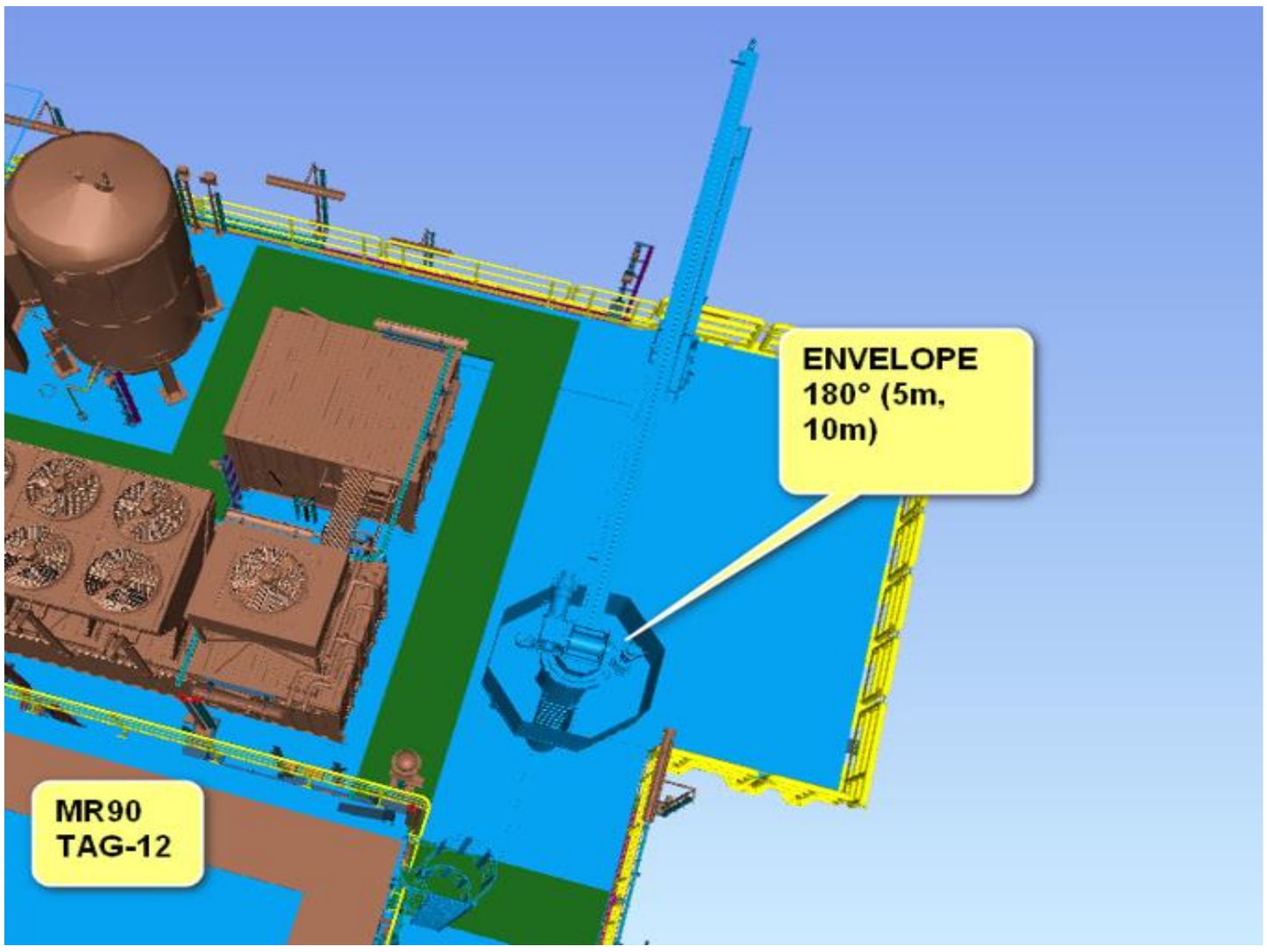
Internal water treatment to be completed



CLOSE-OUT

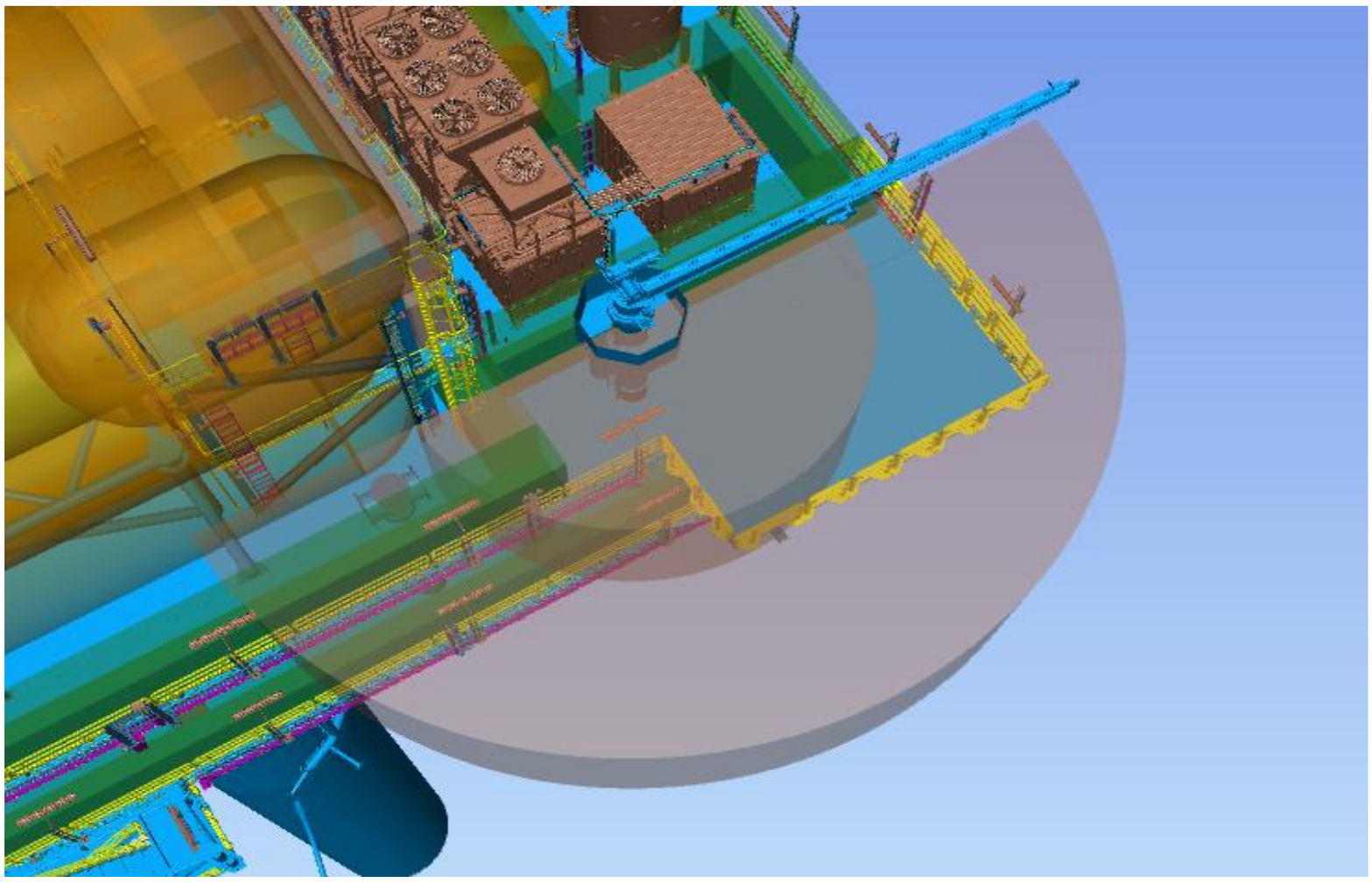
Internal water treatment has been completed.

MR90-TAG11



ACTION

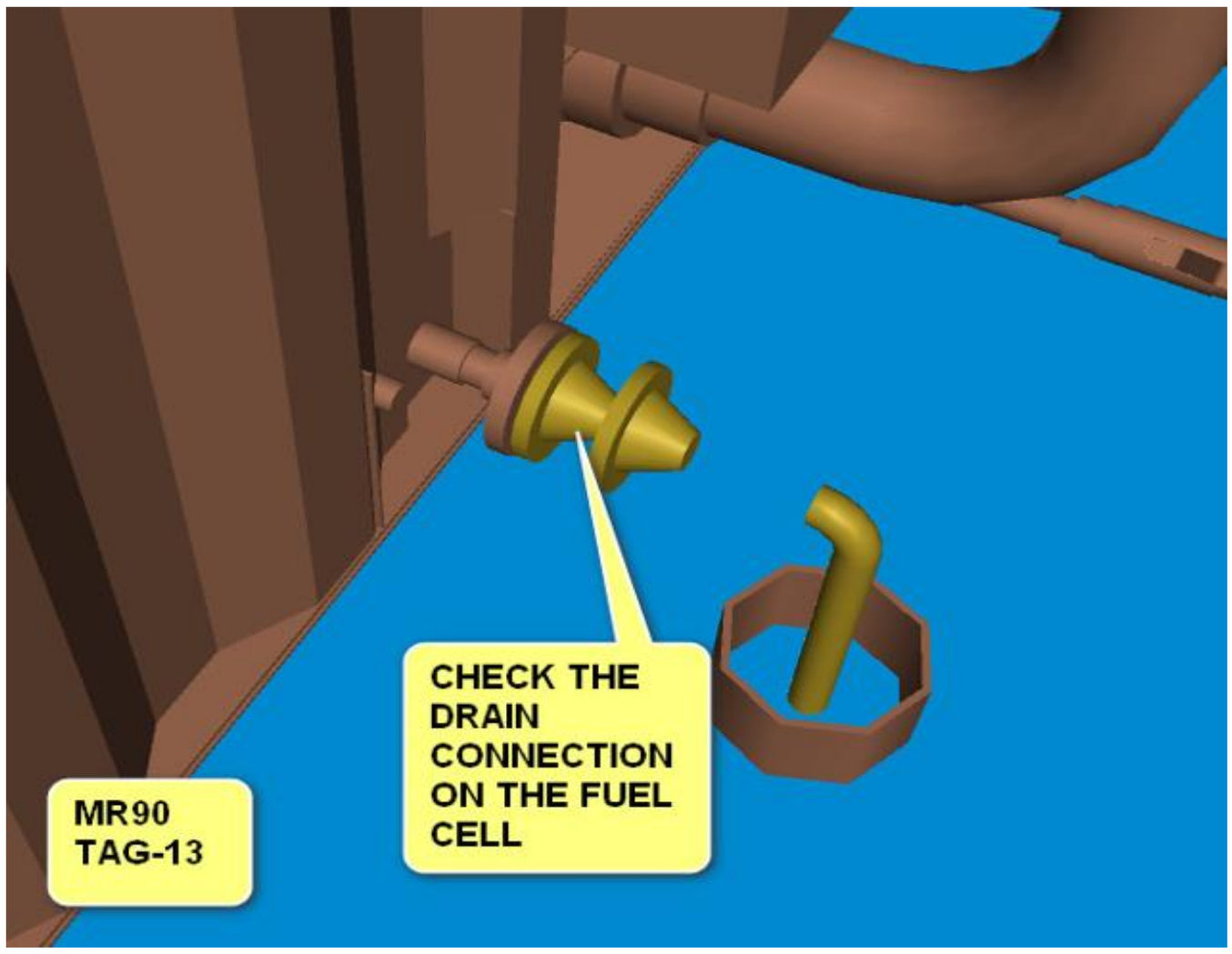
Envelope 180° (5m,10m)



CLOSE-OUT

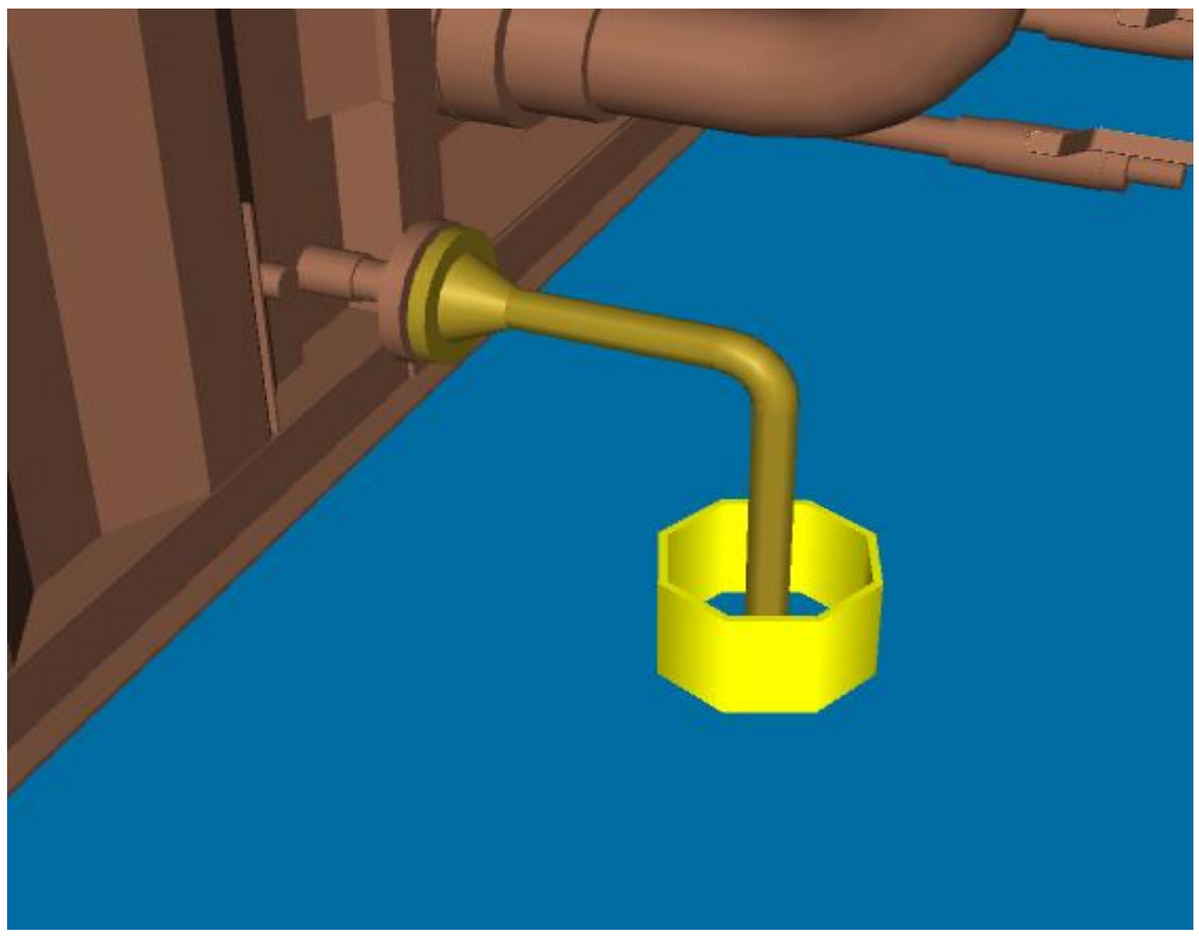
The 180° envelope (5m, 10m) has been represented

MR90-TAG12



ACTION

Check the drain connection on the fuel cell



CLOSE-OUT

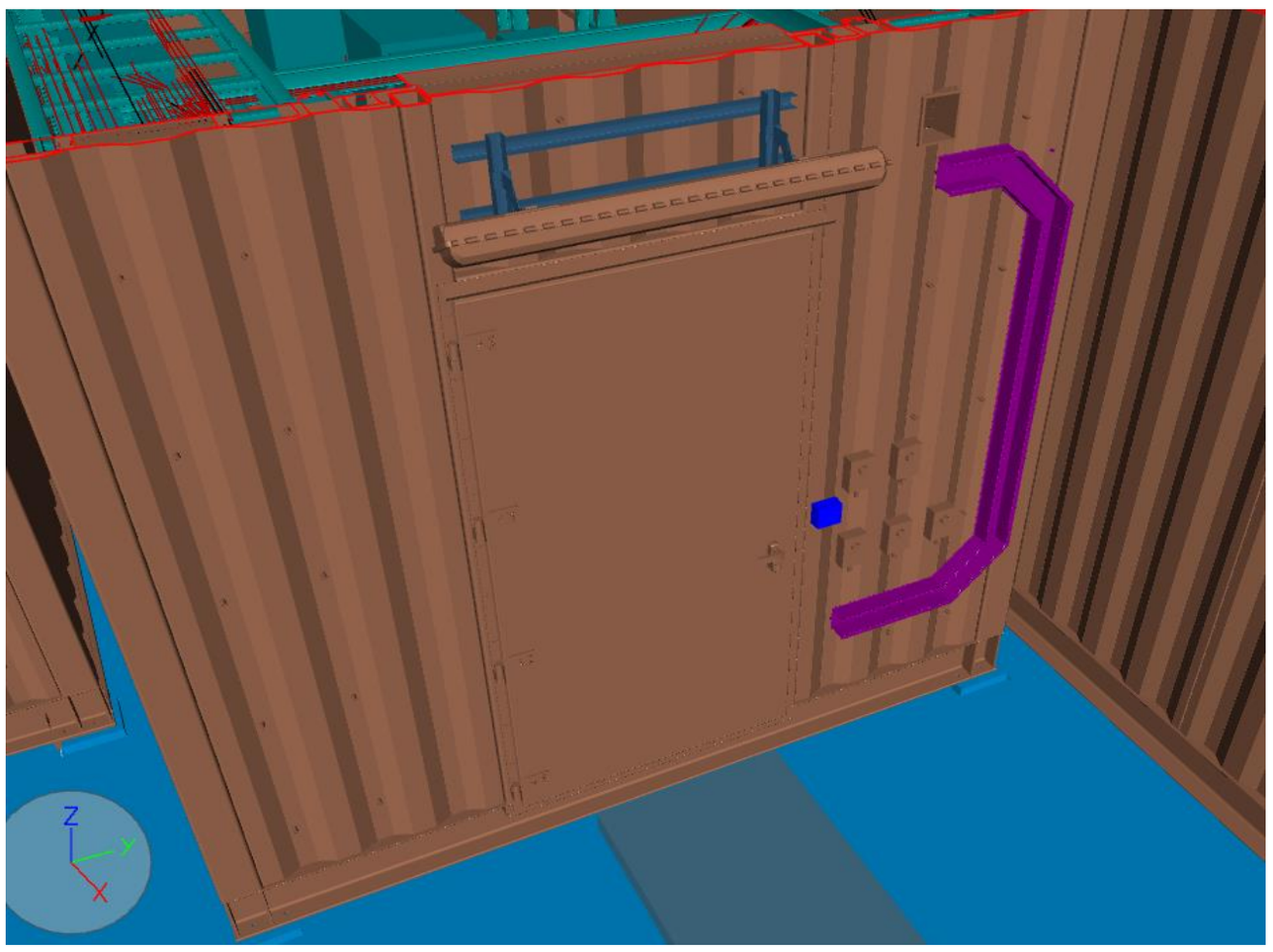
The fuel cell drain has been connected

MR90-TAG13



ACTION

Lightswitch shall be moved in more accessible position



CLOSE-OUT

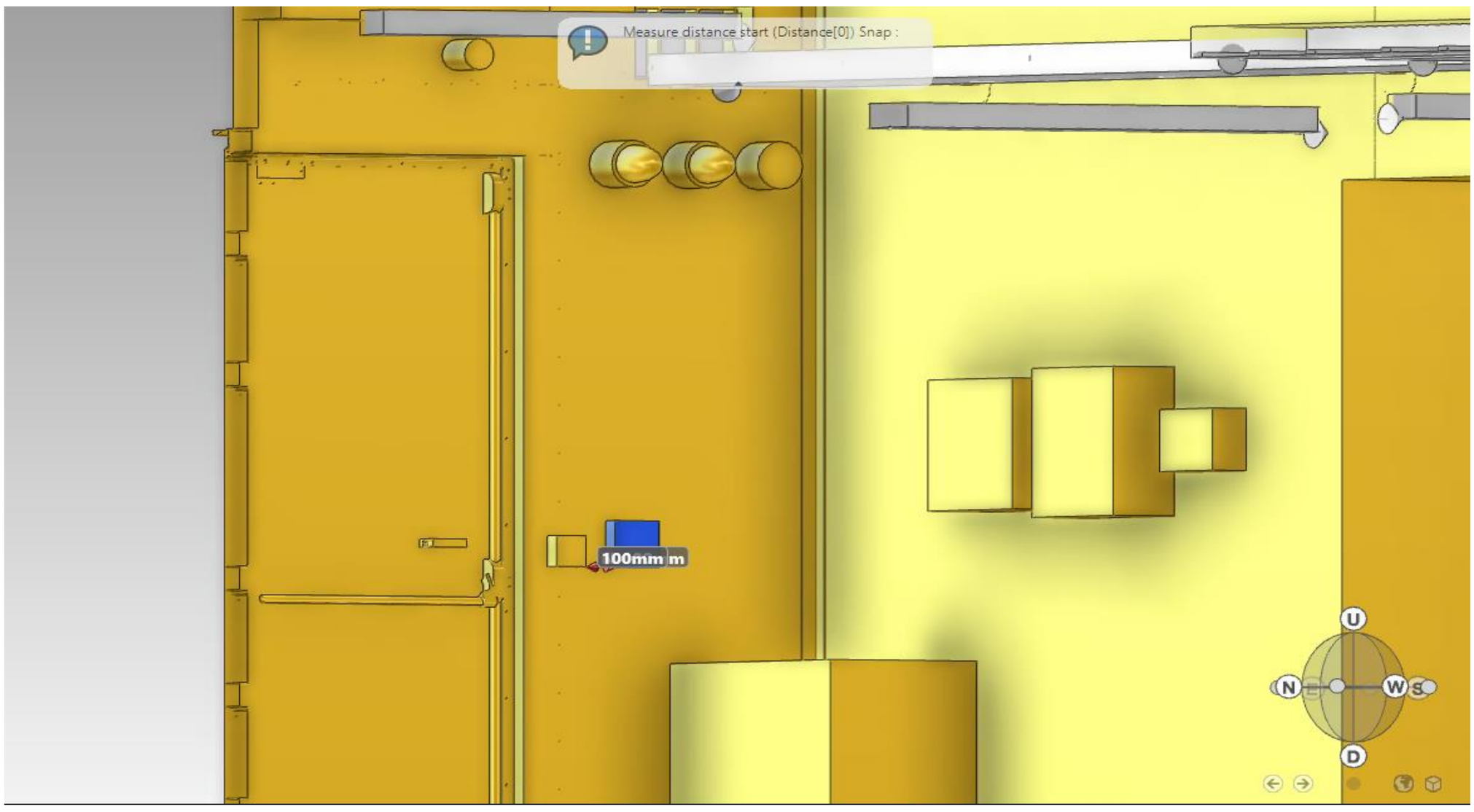
Lightswitch have been moved outer wall of the container as per the container vendor GA drawing

MR90-TAG14



ACTION

Sounders and beacons shall be moved on the left



CLOSE-OUT

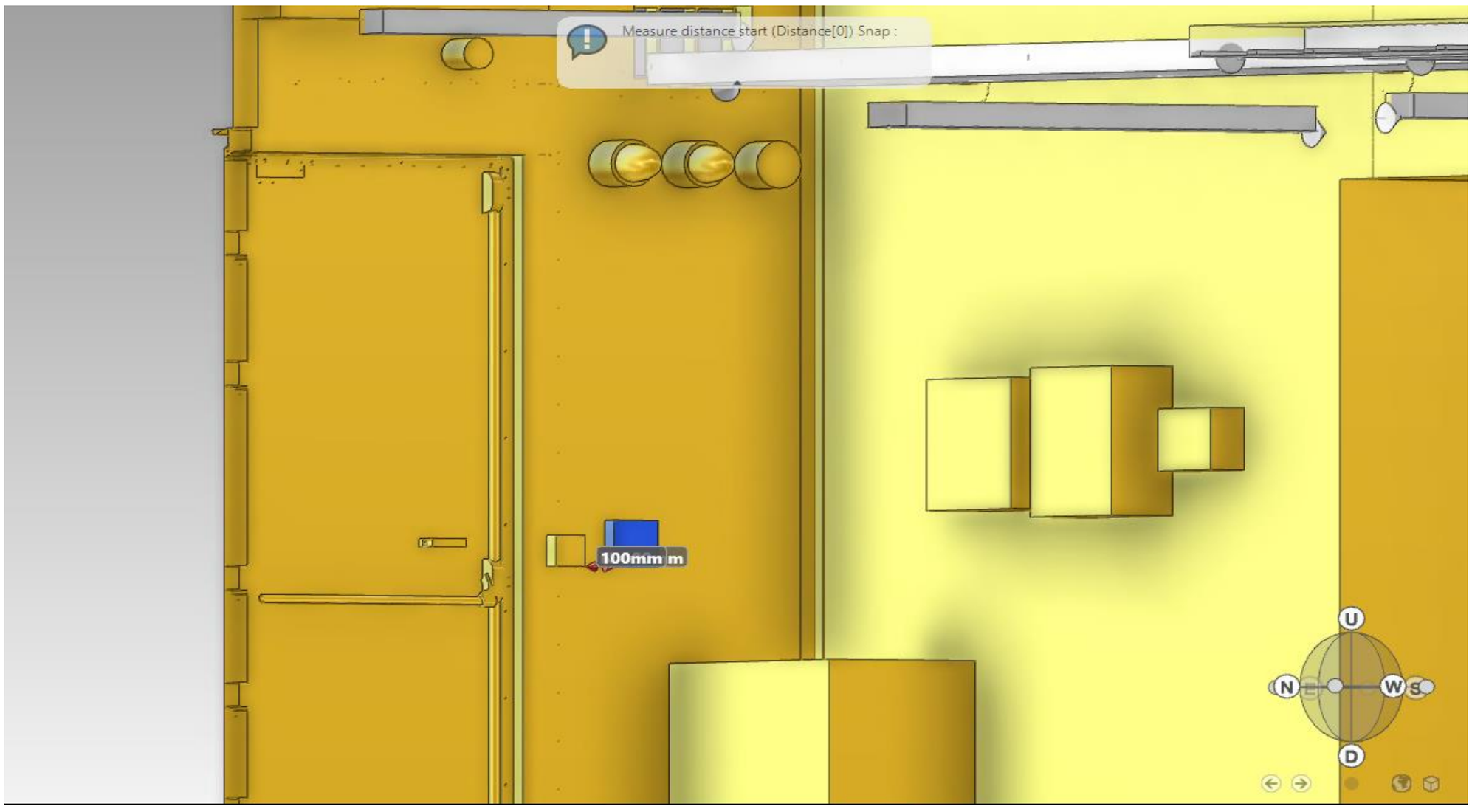
Manual Call Point has been moved close to opposite door together to beacons and sounder for space missing.

MR90-TAG15



ACTION

Manual call point 04201 shall be moved close the door



CLOSE-OUT

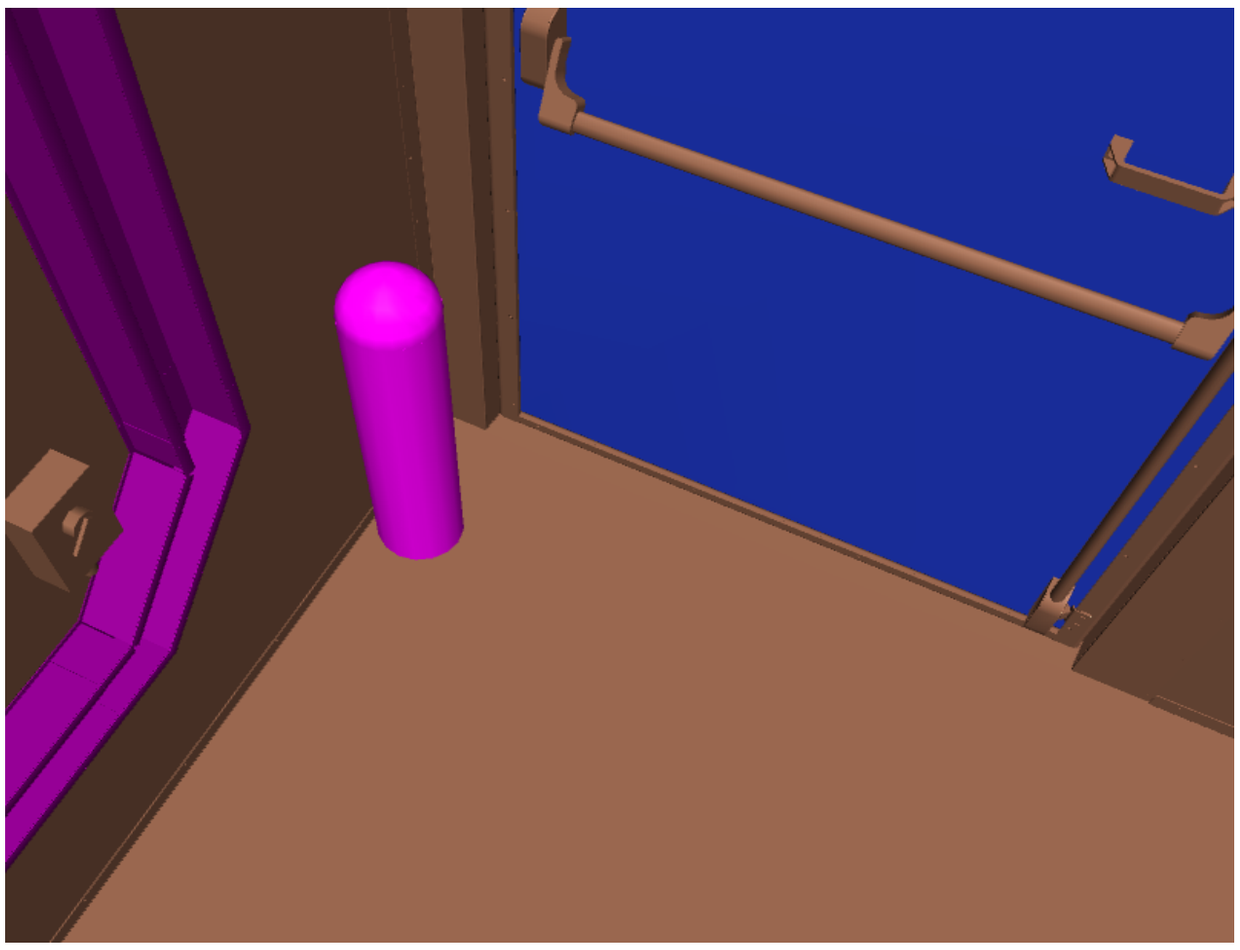
Manual Call Point has been moved close to opposite door together to beacons and sounder for space missing.

MR90-TAG16



ACTION

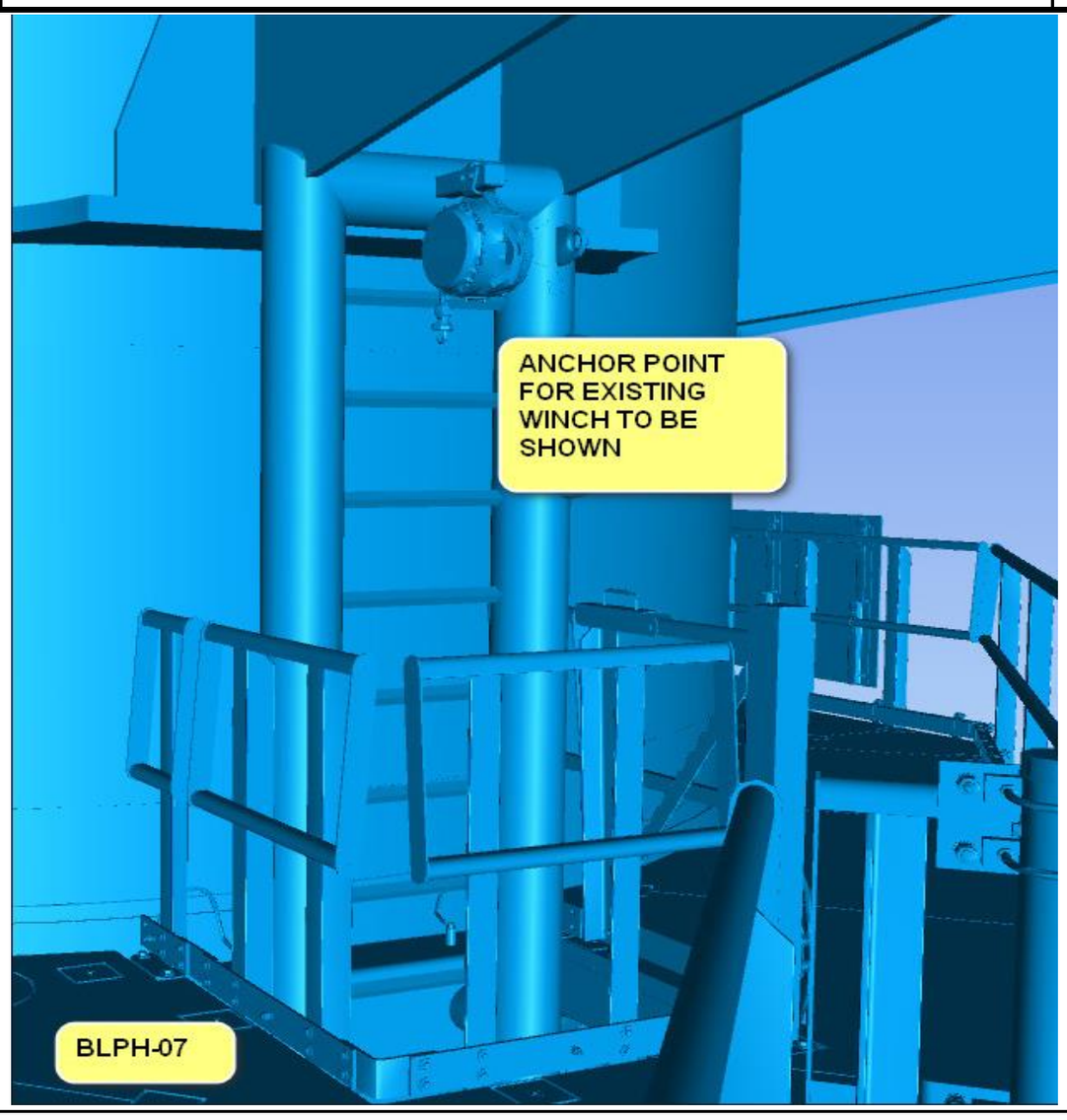
Extinguisher shall be moved



CLOSE-OUT

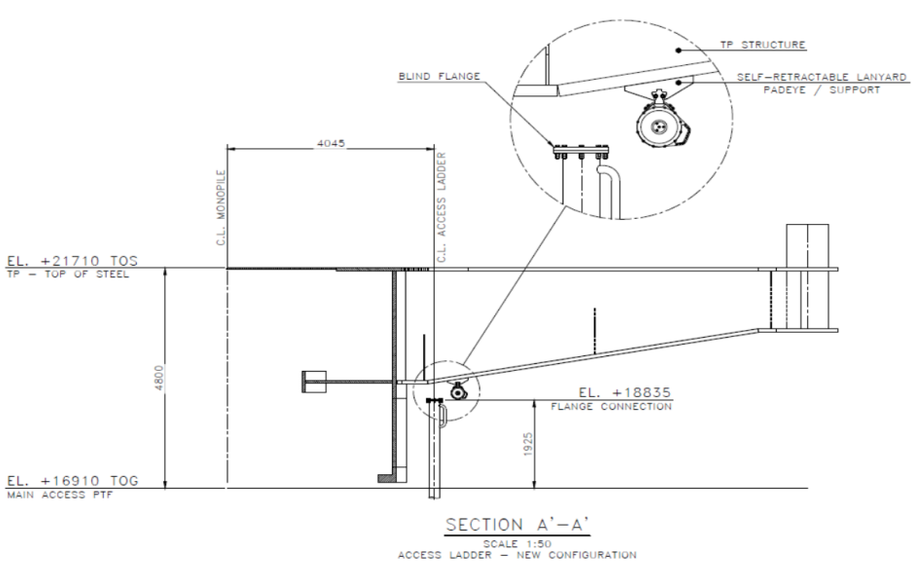
The fire extinguisher has been moved

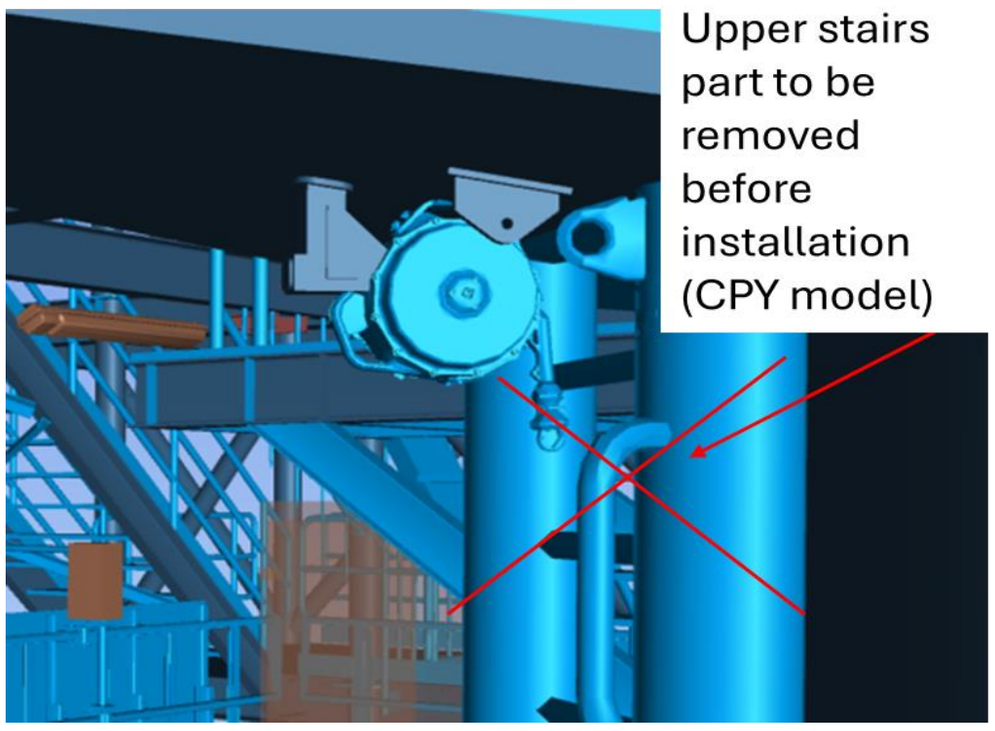
MR90-TAG17

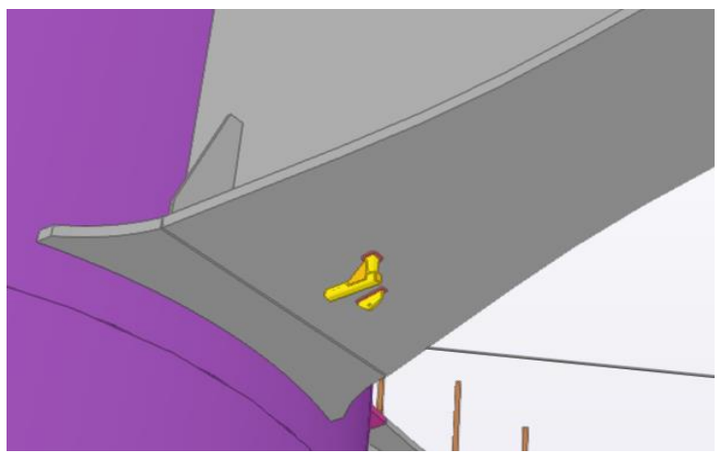


ACTION

Anchor point for existing winch to be shown.



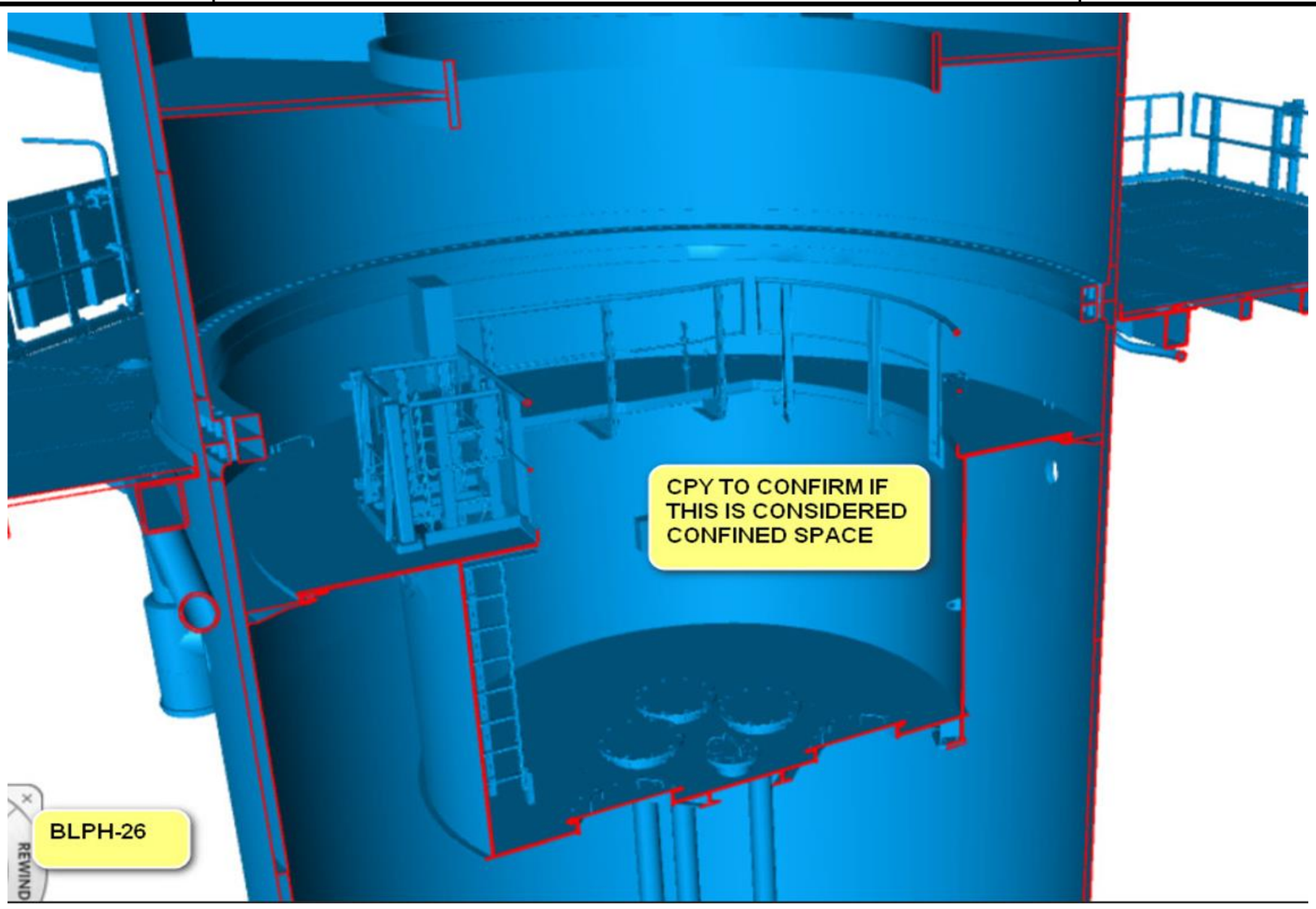




CLOSE-OUT

Anchor point for new winch will be installed on TP. Temporarily the exisiting SRL system will be fixed with a soft sling to the access ladder (solution already used in the past)

MR30-TAG07



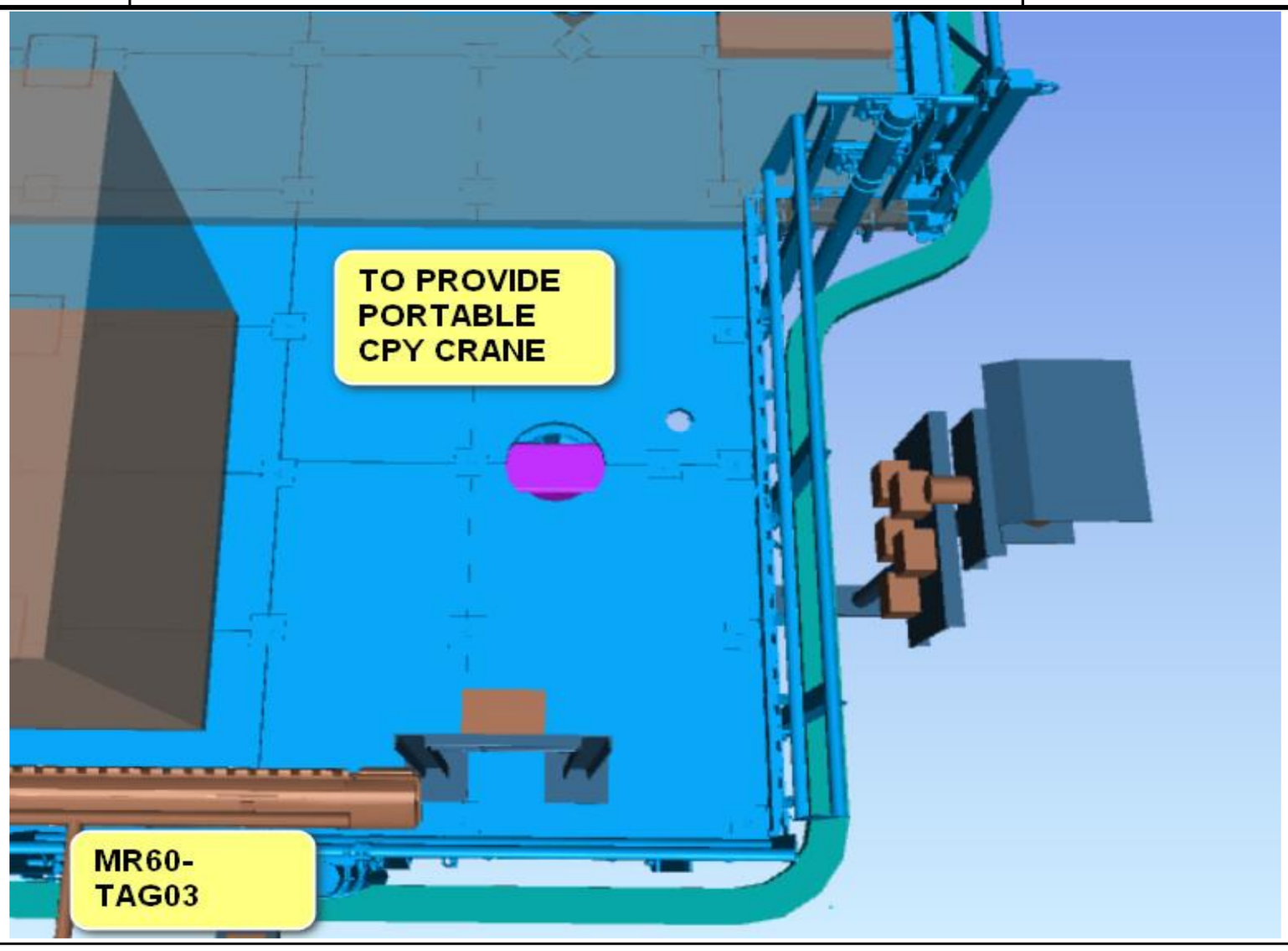
ACTION

CPY to confirm if this is considered confined space.

CLOSE-OUT

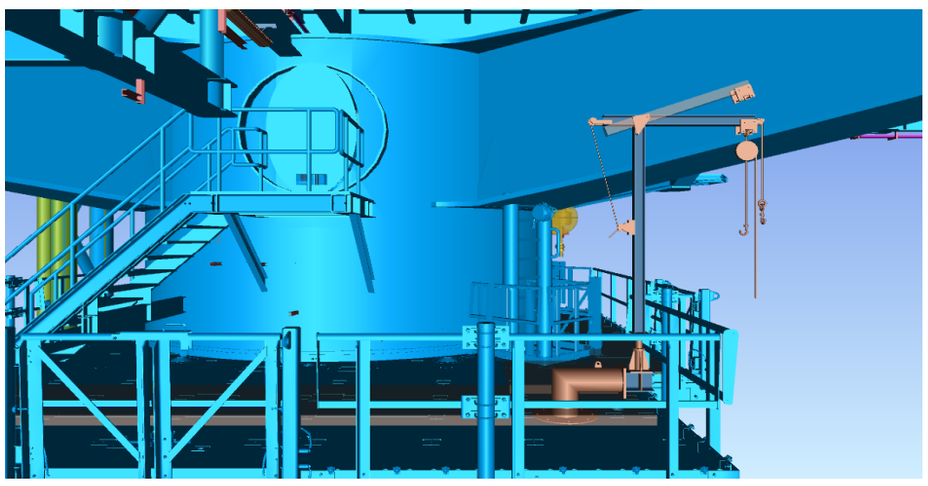
CPY confirmed is not a confined space

MR30-TAG26



ACTION

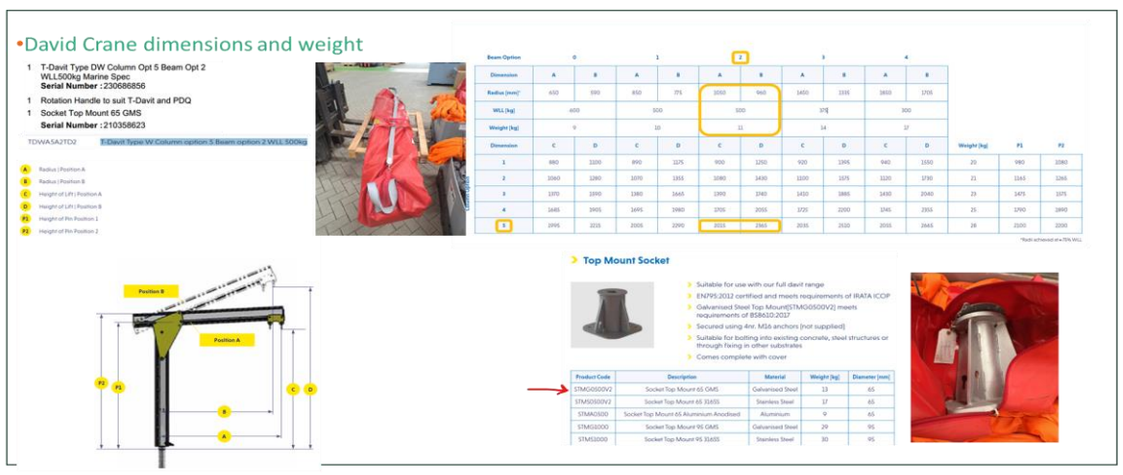
To provide portable CPY Crane





Interface with MP

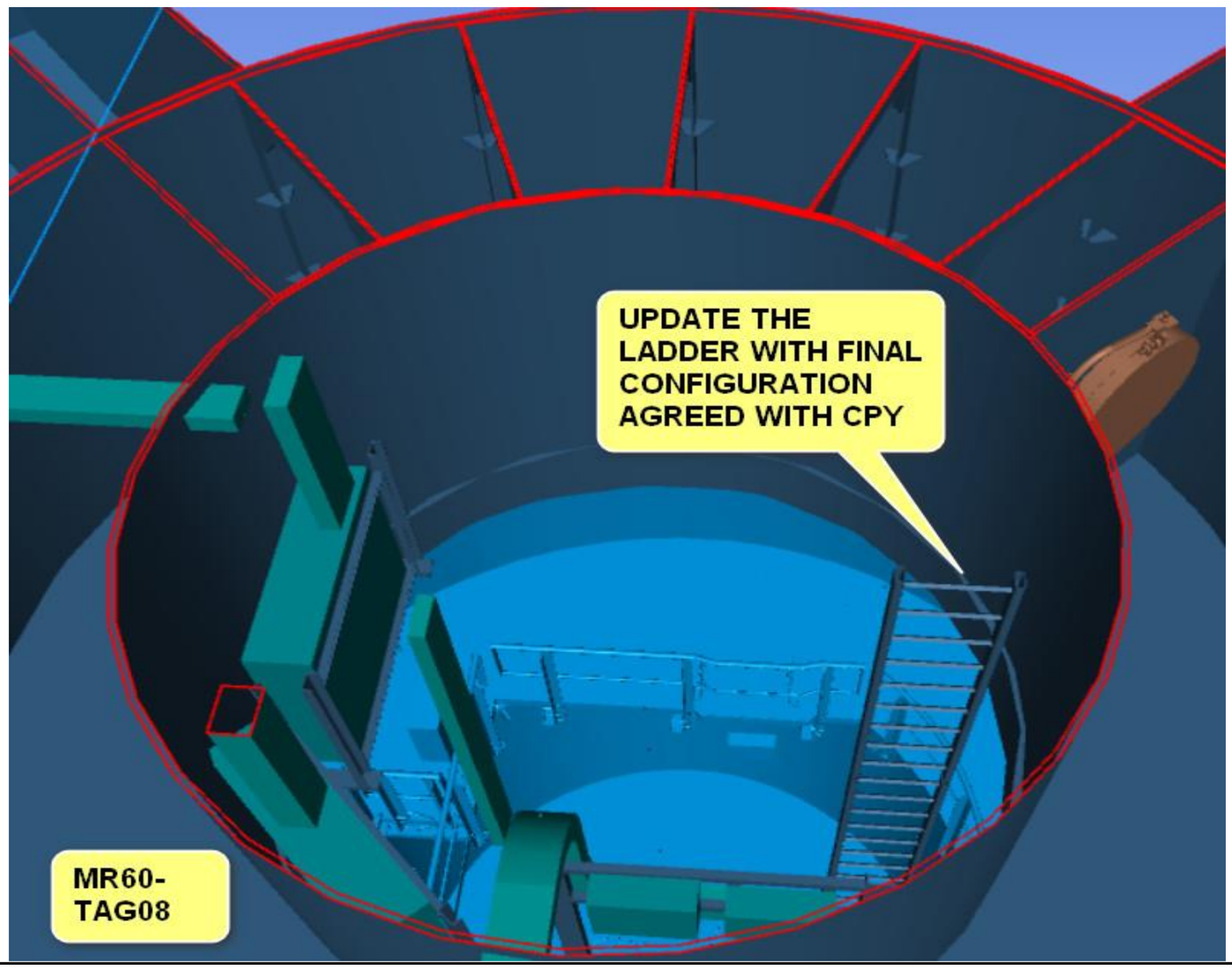
Preparation of Monopile David Crane



CLOSE-OUT

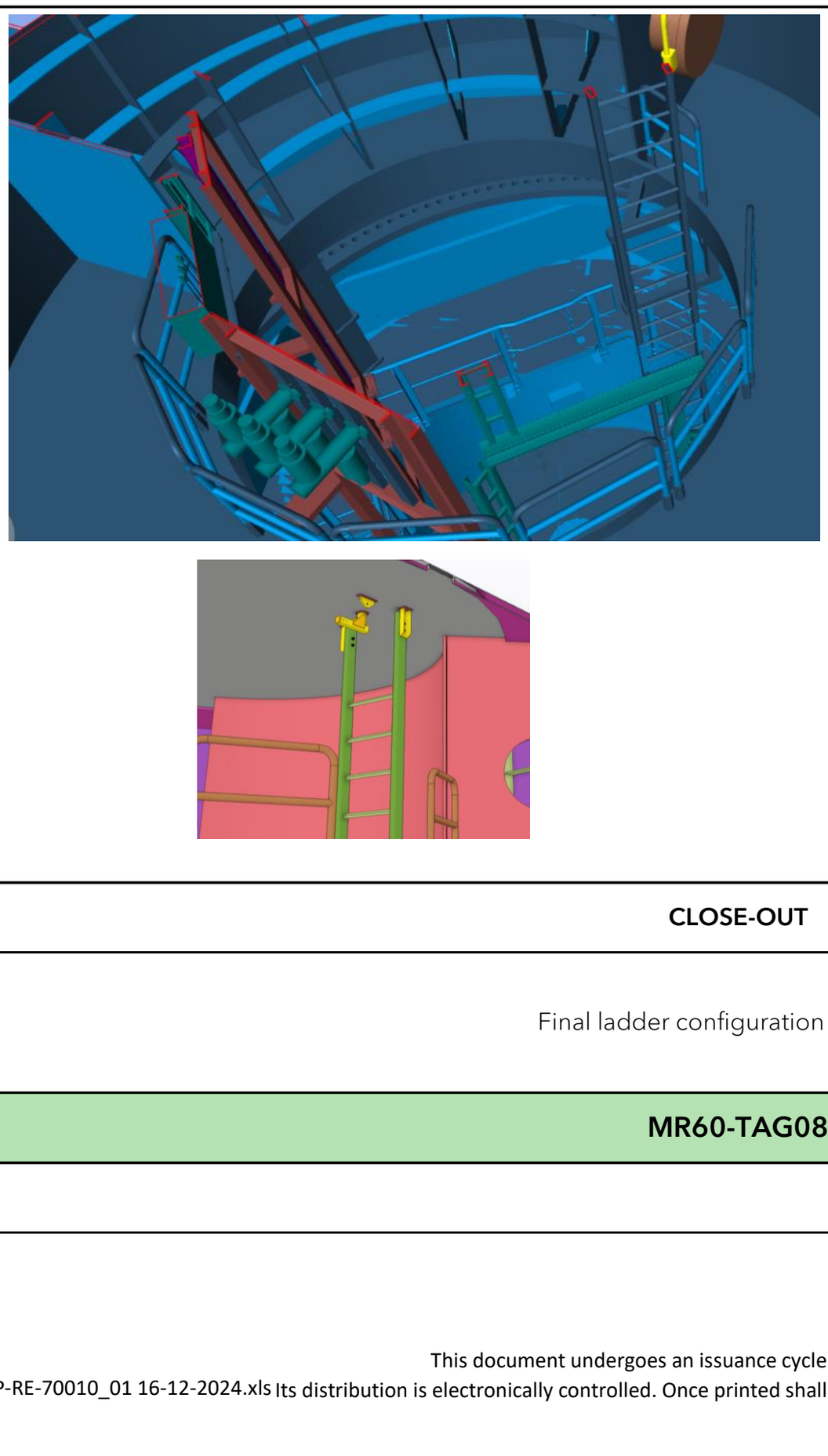
The portable CPY Crane has been added

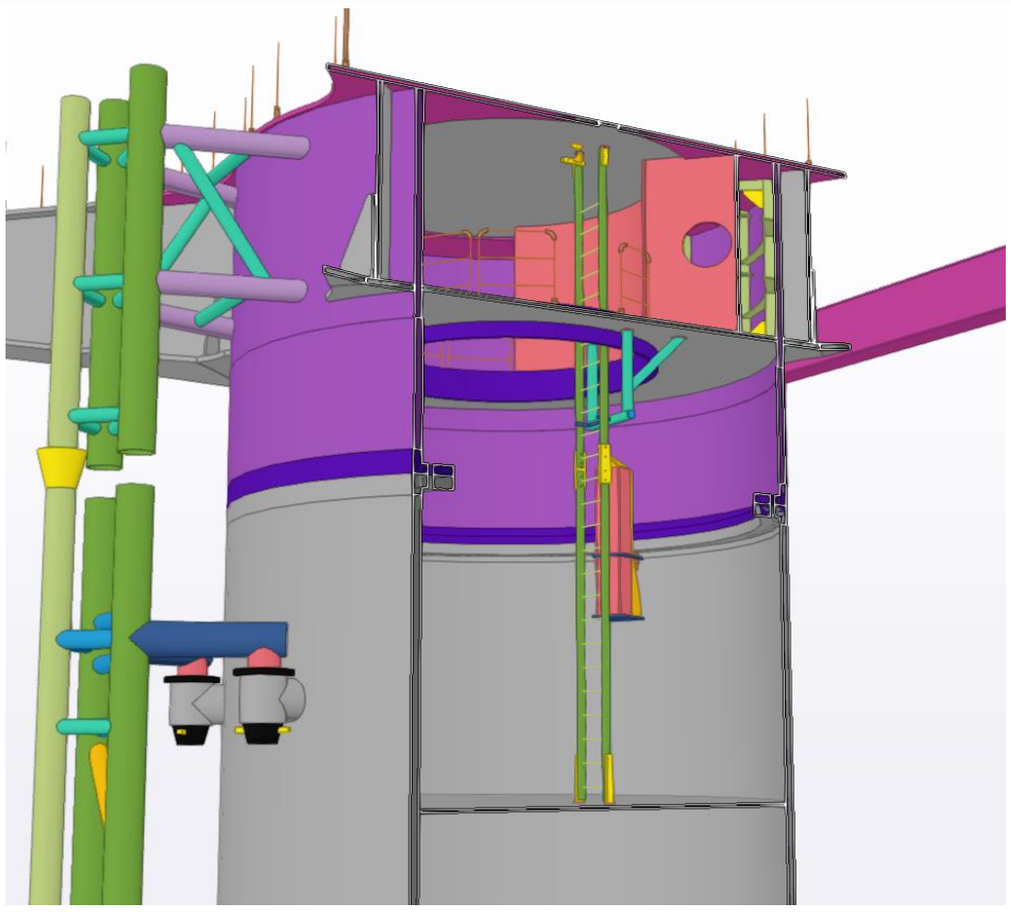
MR60-TAG03



ACTION

Update the ladder with final configuration agreed with CPY





CLOSE-OUT

Final ladder configuration modelled

MR60-TAG08

DRAWING NO. DRAWING_NO.

REV. REV

GENERAL NOTES

1. ALL VENTS AND DRAINS SHOWN BY THE FOLLOWING SYMBOLS REPRESENT A 3/4" VALVE.

   EXCEPT AS NOTED.

   VENT/DRAIN WITH BLIND FLANGE

2. ALL VALVED CONNECTION TO ATMOSPHERE IN PROCESS SERVICE WILL BE PLUGGED OR BLIND FLANGED.
3. HIGH POINT VENTS AND LOW POINT DRAINS USED FOR HYDROTEST PURPOSES ONLY ARE PROVIDED BUT ARE NOT SHOWN ON P&Ids.
4. FOR GENERAL PIPING REQUIREMENTS SEE THE RELEVANT DESIGN SPECIFICATION.
5. DEFINITIONS:

   SLOPE → ELEVATION CHANGES ARE CONSTANTLY DOWNWARD ONLY, NO POCKETS ARE PERMITTED. SPECIFIC SLOPES REQUIRED ARE SHOWN BY SYMBOLS.

   WHERE NO GRADIENT IS SHOWN IT IS ASSUMED THAT THE MINIMUM PREFERED GRADIENT OF 1:100 IS USED.

   I / X

   WHERE X HAS UNITS THE SAME AS I

   GRAVITY DRAINING ELEVATION CHANGES ARE DOWNWARD ONLY. NO POCKETS ARE PERMITTED.

6. INLET LINES TO PRESSURE RELIEF DEVICES EXCEEDING 15 m IN LENGTH OR HAVING MORE THAN TWO ELBOWS, UNLESS OTHERWISE NOTED, MUST BE APPROVED BY PROCESS ENGINEERING.
7. ALL CLOSED PRESSURE RELIEF VALVE DISCHARGE LINES SHALL BE FREE DRAINING FROM THE PRESSURE RELIEF VALVE TO THE TOP OF THE DISCHARGE HEADER. EACH LINE IS TO BE CHECKED FOR A DOWNWARD SLOPE AFTER CONSTRUCTION.
8. ALL PRESSURE RELIEF VALVES DISCHARGING TO ATMOSPHERE AT SAFE LOCATION SHALL CONFORM TO THE RELEVANT DESIGN SPECIFICATION.
9. FOR UNSPARED PRESSURE RELIEVING DEVICES, WHEN AN INLET BLOCK VALVE IS PROVIDED BETWEEN A VESSEL AND ITS PRESSURE RELIEVING DEVICE OR WHEN A DISCHARGE BLOCK VALVE IS PROVIDED BETWEEN A PRESSURE RELIEVING DEVICE AND A COMMON DISCHARGE HEADER, THE BLOCK VALVE SHALL BE ARRANGED SO THAT IT CAN BE LOCKED OR SEALED OPEN. UNDER NO CONDITION SHALL A DISCHARGE BLOCK VALVE BE CLOSED, WHILE THE VESSEL IS IN OPERATION, BEFORE THE INLET BLOCK VALVE IS CLOSED, THE OWNER ASSUMES RESPONSIBILITY FOR ADMINISTRATIVE CONTROL OF THESE VALVES IN STRICT ACCORDANCE WITH ASME SECTION VIII, APPENDIX M.
10. SPACE AND ACCESS IS REQUIRED FOR ON-LINE SET-POINT VERIFICATION (OLSPV) OF ALL PSV's.
11. WHEN PIPE STRAINERS ARE INDICATED, THE STRAINER BODY, SCREEN AND SIZE OF OPENINGS ARE AS SPECIFIED BY THE RELEVANT SPECIFICATION.
12. FOR PRESSURE RELIEF VALVE AND RUPTURE DISC DISCHARGING TO ATMOSPHERE 6 MM WEEP HOLES ARE PROVIDED AT LOW POINTS OF THE DISCHARGE LINES
13. REDUCERS IN PRESSURE RELIEF VALVE INLET OR OUTLET PIPING SHALL BE MINIMUM DISTANCE FROM THE PRESSURE RELIEF VALVES.
14. DOCUMENTED ADMINSTRATIVE PROCEDURES SHALL ENSURE THAT WHENEVER SELECTED EQUIPMENT ITEMS (FOR EXAMPLE, EXCHANGERS OR FILTERS) ARE ISOLATED FOR MAINTENANCE, THEY SHALL BE VENTED AND DRAINED IMMEDIATELY.

02

15. ACCORDING TO TQ-00069, DCS START-STOP FUNCTIONS ARE SHOWN AS REQUIRED.
16. TSO FOR A CONTROL VALVE WILL RESULT IN CLASS V MINIMUM SHUT OFF. ON-OFF VALVES WILL MEET API598.
17. OWNER AND ROSETTI MARINO CONTRACTOR SHALL DESIGN THE SAFETY INSTRUMENTED SYSTEM (SIS) IN ACCORDANCE WITH APPLICABLE PROCESS INDUSTRY STANDARDS, SUCH AS ISA S84, IEC 61511 AND IEC 61508. OWNER AND ROSETTI MARINO CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR DEVELOPING AND IMPLEMENTING THE SAFETY INSTRUMENTED FUNCTIONS (SIF) AND PERFORMING SAFETY INTEGRITY LEVEL (SIL) DETERMINATION TO ALL SAFETY INSTRUMENTED FUNCTIONS IN ACCORDANCE WITH OWNER'S RISK MANAGEMENT POLICY.
18. DELETED.
19. THE OWNER IS RESPONSIBLE FOR ESTABLISHING ADMINISTRATIVE CONTROLS AND PROCEDURES OF USE OF ANY SHUTDOWN SYSTEM BYPASS FEATURES FOR TESTING OR MAINTENANCE OF THE SYSTEM. ANY PROCESS INTERLOCK OF SAFETY INTEGRITY LEVEL SIL-3 SHALL NOT BE BYPASSED UNDER ANY CIRCUMSTANCES.
20. ALL THERMOWELL CONNECTIONS ARE FLANGED CONNECTIONS UNLESS OTHERWISE NOTED.
21. DELETED.

LINE SERVICE

AV	ATMOSPHERIC VENT
CB	CONCENTRATED BRINE
CI	CHEMICAL INJECTION
DI	DEIONISED WATER
DM	DEMINERALIZED WATER
HY	HYDROGEN
IA	INSTRUMENT AIR
N	NITROGEN GAS
SWR	SEA WATER RETURN
SWS	SEA WATER SUPPLY
VL	LP VENT
WW	WASTE WATER

ABBREVIATIONS

ATM.	ATMOSPHERE
BDV	BLOWDOWN VALVE
BRS	BIRDSCREEN
CCS	CENTRAL CONTROL SERVICE
DIFF.	DIFFERENTIAL
DWG	DRAWING
ESD	EMERGENCY SHUTDOWN
FB	FULL BORE
FC	FAIL CLOSED ON LOSS OF MOTIVE POWER OR SIGNAL
FO	FAIL OPEN ON LOSS OF MOTIVE POWER OR SIGNAL
FGS	FIRE & GAS SYSTEM
GVC	GOOSENECK VENT
HH	HIGH HIGH ALARM TRIP
H	HIGH ALARM
ID	INSIDE DIAMETER
IA	INSTRUMENT AIR
L	LOW ALARM
LIP	LOCKED IN PLACE
LL	LOW LOW ALARM AND TRIP
LO	LOCKED OPEN
LP	LOW PRESSURE
M	ELECTRIC MOTOR
MCC	MOTOR CONTROL CENTER
NC	NORMALLY CLOSED
NNF	NORMALLY NO FLOW
NO	NORMALLY OPEN
NPS	NOMINAL PIPE SIZE
PSV	PRESSURE SAFETY VALVE
P/T	PRESSURE/TEMPERATUE
RO	RESTRICTION ORIFICE
RS	REMOVABLE SPOOL
SAM	SAMPLE CONNECTION
SP	SPECIALITY PIPING ITEM
SPB	SPECTACLE BLIND
STR	STRAINER
TSO	TIGHT SHUT-OFF
T/T	TANGENT TO TANGENT
VB	VORTEX BREAKER

EQUIPMENT

PUMPS

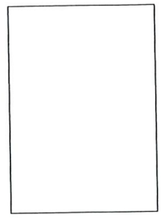


CENTRIFUGAL PUMP



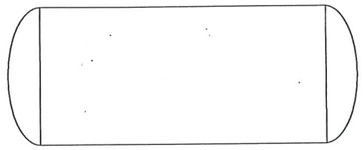
LIFT INLINE

STORAGE TANK



TANK

VESSEL



HORIZONTAL VESSEL

MISCELLANEOUS



MOTOR

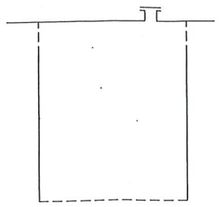


MOTOR

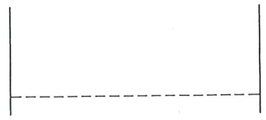


PACKAGE ITEM

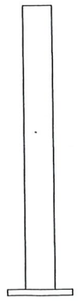
OTHERS



CAISSON



CAISSON



VENT STACK

NOTES

1. FOR PIPING AND INSTRUMENTATION SYMBOLOGY, SEE DRAWINGS: 123A90-DDL-PR-PID-80010 AND 123A90-DDL-PR-PID-80042, RESPECTIVELY.

Work Copy
MR 90%
17/7/24

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

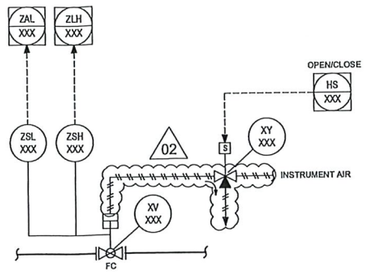
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
GENERAL NOTES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80009		SHEET 001 / REV. 02

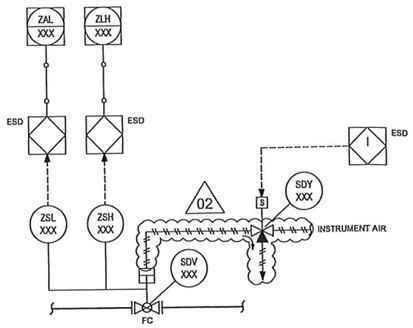
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TYPICAL INSTRUMENTATION VALVE

TYP.1 (XV - ON OFF VALVES)

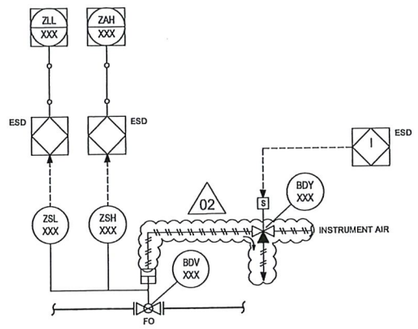


TYP.2 (SDV - SAFETY NO CRITICAL VALVES)



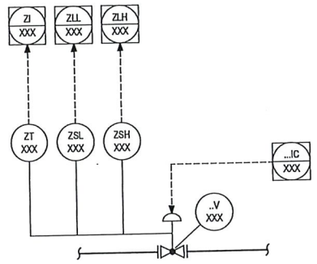
02

TYP.4 (BDV - SAFETY NO CRITICAL VALVES)

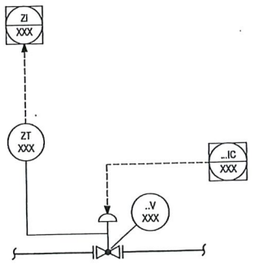


02

TYP.6 (CONTROL VALVES - CRITICAL)



TYP.7 (CONTROL VALVES - NOT CRITICAL)



INSTRUMENT SYMBOLOGY DEFINITION

MEANINGS OF IDENTIFICATION LETTERS
THIS TABLE APPLIES TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

	FIRST- LETTER		SUCCEEDING-LETTER		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
C				CONTROL	
E			SENSOR (PRIMARY ELEMENT) ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G			GLASS VIEWING DEVICE		
H	HAND				HIGH
I			INDICATE		
L	LEVEL				LOW
O			ORIFICE, OPEN		
P	PRESSURE, VACUUM				
R		RELIEF			
S		SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
V				VALVE, DAMPER, LOUVER	
X	UNCLASSIFIED				
Y				AUXILIARY DEVICES	
Z	POSITION DIMENSION				

NOTE: FOR FURTHER EXPLANATORY NOTES, REFER TO ANSI/ISA-5.1

NOTES

1. FOR GENERAL NOTES AND PIPING SYMBOLOGY SEE DRAWINGS: 123A90-DDL-PR-PID-80009 AND 123A90-DDL-PR-PID-80010.
2. DELETED.

HOLDS

1 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
INSTRUMENTATION SYMBOLOGY

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE NTS
DRAWN | CHECKED | APPROVED | DATE

A1 | DRAWING NO. 123A90-DDL-PR-PID-80042 | SHEET 001 | REV. 02

DRAWING NO.
REV. 00

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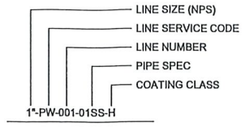
DRAWING NO. DRAWING_NO.

REV. REV

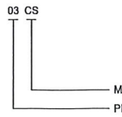
PIPING SYMBOLS

- PRIMARY PIPING
- SECONDARY PIPING
- INSULATED PIPING
- E — ELECTRICALLY HEAT TRACED PIPING

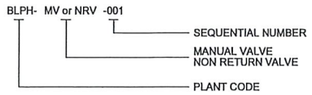
LINE NOMENCLATURE



PIPING SPECIFICATION (NOTE 4)



VALVE IDENTIFICATION CODE



PIPE CLASS RATING

01	CLASS 150# ACCORDING TO ASME B31.3
03	CLASS 300# ACCORDING TO ASME B31.3
06	CLASS 600# ACCORDING TO ASME B31.3
01H	CLASS 150# ACCORDING TO ASME B31.12
03H	CLASS 300# ACCORDING TO ASME B31.12

MATERIAL

CS	CARBON STEEL
SS	STAINLESS STEEL
SD	SUPER DUPLEX STAINLESS STEEL
GRP	GLASS REINFORCED PLASTIC

INSULATION CLASS

H	HEAT CONSERVATION
P	PERSONNEL PROTECTION
E	ELECTRICALLY HEAT TRACED
N	NOT INSULATED (PAINTED)

PIPING CONNECTORS

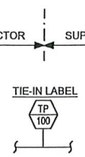
DRAWING CONTINUATION ARROW

CONNECTOR NUMBER — DWG NUMBER
TO/FROM EQUIPT NO.

3RD PARTY BATTERY LIMIT

CONTRACTOR — SUPPLIER

TIE-IN LABEL



INSTRUMENTATION CONNECTOR

DRAWING CONTINUATION ARROW

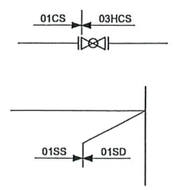
CONNECTOR NUMBER — DWG NUMBER
TO/FROM INSTRUMENT NO.

VALVES, CONTROL VALVES AND RELIEF VALVES

SYMBOL	DESCRIPTION
	CHECK VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	NEEDLE VALVE
	BALL VALVE
	ANGLE VALVE
	GATE
	3-WAY
	PRESSURE RELIEF VALVE
DB	DOUBLE BLOCK AND BLEED VALVE
SB	SINGLE BLOCK AND BLEED VALVE
	SINGLE BLOCK AND BLEED VALVE (MONOFLANGE)
	DOUBLE BLOCK AND BLEED VALVE (MONOFLANGE)

PIPING SEGMENT BREAKS & LABELS

PIPE SPEC BREAK
INDICATES CHANGE PIPE SPEC



SPECIALTY LABELS



0001 = SP SEQUENCE NO.

FITTINGS

	FLANGE
	CAP
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	HOSE CONNECTION

SPECIALTY ITEMS

BRS		BIRD SCREEN
STR		Y-TYPE STRAINER
	RS	REMOVABLE SPOOL
SAM	S	SAMPLE CONNECTION (SAM) SAMPLE STATION NOTE 3
GVC		GOOSENECK VENT W/MESH NOTE 3
RO		RESTRICTION ORIFICE NOTE 3
SPS		SPECTACLE BLIND (BOTTOM CIRCLE DENOTES NORMAL POSITION)
VB		VORTEX BREAKER NOTE 2
MV		AIR RELEASE VALVE

EQUIPMENT NOZZLE CONNECTIONS

	FLANGED NOZZLE
C	FLANGED NOZZLE ON SIDE OF VESSEL
MW	MANWAY
	MANWAY

INSTRUMENT LABELS



PRV SIZE (INLET, ORIFICE, OUTLET)
SET PRESSURE

ACTUATORS

	DIAPHRAGM ACTUATOR
	SINGLE/DOUBLE ACTING CYLINDER ACTUATOR
S	SINGLE SOLENOID ACTUATOR
S	OFF-LINE 3-WAY SOLENOID VALVE WITH SINGLE ACTUATOR

INSTRUMENT SIGNAL LINES

	INSTRUMENT TO PROCESS
	ELECTRIC
02	PNEUMATIC
	SOFTWARE OR CCS LINK

PRIMARY INLINE ELEMENT SYMBOLS

	VARIABLE AREA METER
	ULTRASONIC
	DIAPHRAGM SEAL WITH CAPILLARY

OTHER INSTRUMENTATION

	INSTRUMENT COMPONENT LABEL SYMBOL WITH NO DATA
10 PV 100 A	10 = UNIT NUMBER P = MEASURED VARIABLE CODE V = INSTRUMENT TYPE MODIFIER 100 = INSTRUMENT SEQUENCE NUMBER A = SUFFIX
FV, 2", FO	CONTROL VALVE LABEL CONTROL VALVE WITH NOMINAL DIAMETER AND FAIL ACTION LABEL
FIC, HH, H, L, LL	ALARM HIGH HIGH LABEL ALARM HIGH LABEL ALARM LOW LABEL ALARM LOW LOW LABEL
FT, M	IF PRIMARY ELEMENT HAS INTEGRAL TRANSMITTER SHOW FT INSTEAD OF FE INSIDE OF TAG

INSTRUMENT OR FUNCTION SYMBOLS

	FIELD MOUNTED INSTRUMENT
	INSTRUMENT MOUNTED ON CENTRAL CONTROL ROOM PANEL
	DCS DISPLAY ACCESSIBLE TO OPERATOR
	CRITICAL INTERLOCK
02	VENDOR'S UCP

NOTES

1. FOR GENERAL NOTES AND INSTRUMENTATION SIMBOLOGY SEE DRAWINGS: 123A90-DDL-PR-PID-80009 AND 123A90-DDL-PR-PID-80042 RESPECTIVELY.
2. ITEMS ARE SHOWN UNDER SPECIALTY ITEMS FOR SYMBOLOGY REFERENCE ONLY. ITEMS ARE NOT SP ITEMS.
3. ITEMS ARE NOT SPECIALITY ITEMS UNLESS OTHERWISE SPECIFIED.
4. PIPE SPECIFICATION AND PIPING MATERIAL CLASS INDEX AS PER PIPE MATERIAL CLASSES (DOC. N. 123A90-DDL-PP-SP-70000)

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
PIPING SYMBOLOGY

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-80010		SHEET 001 / REV. 02

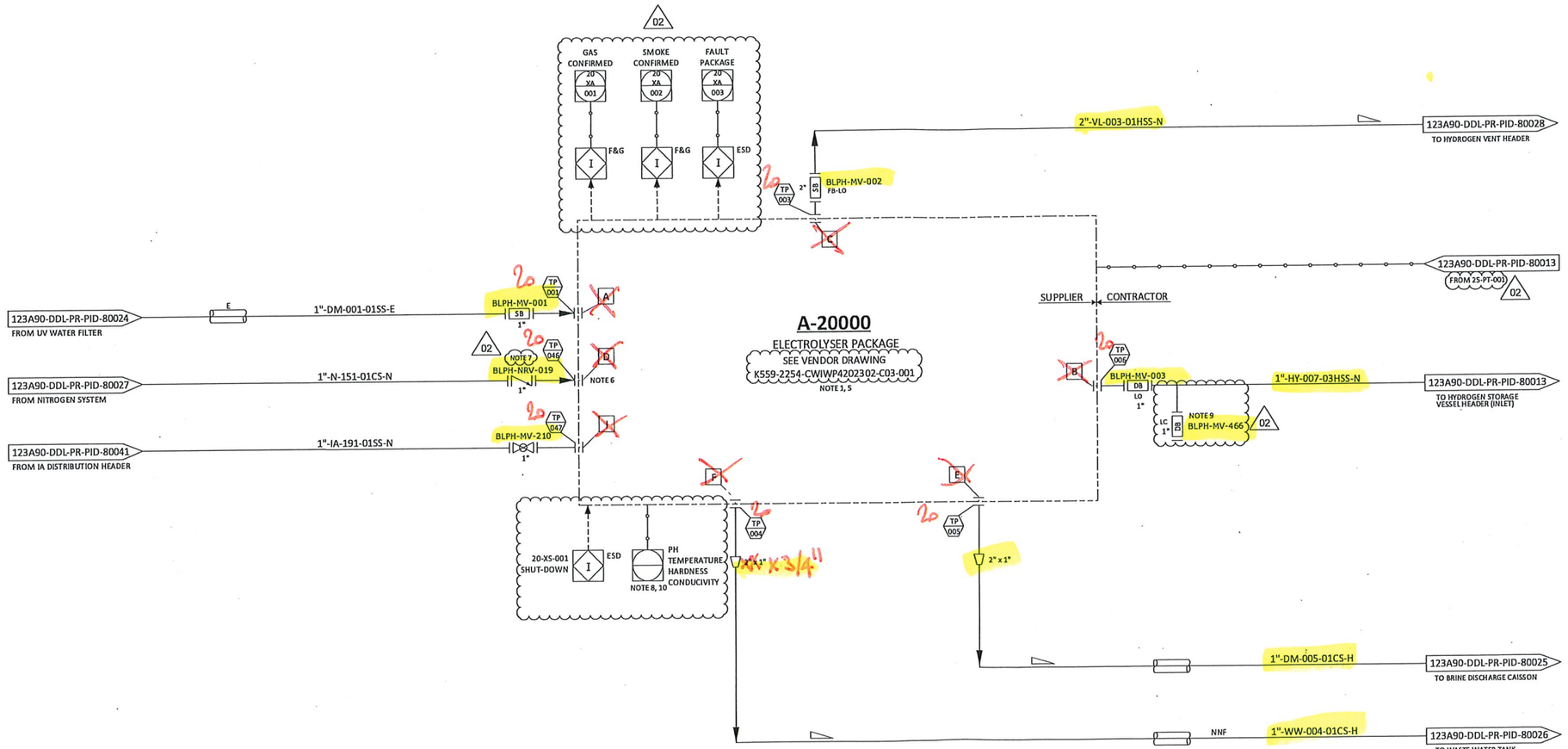
File Name: - DRAWING_NO.

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.

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

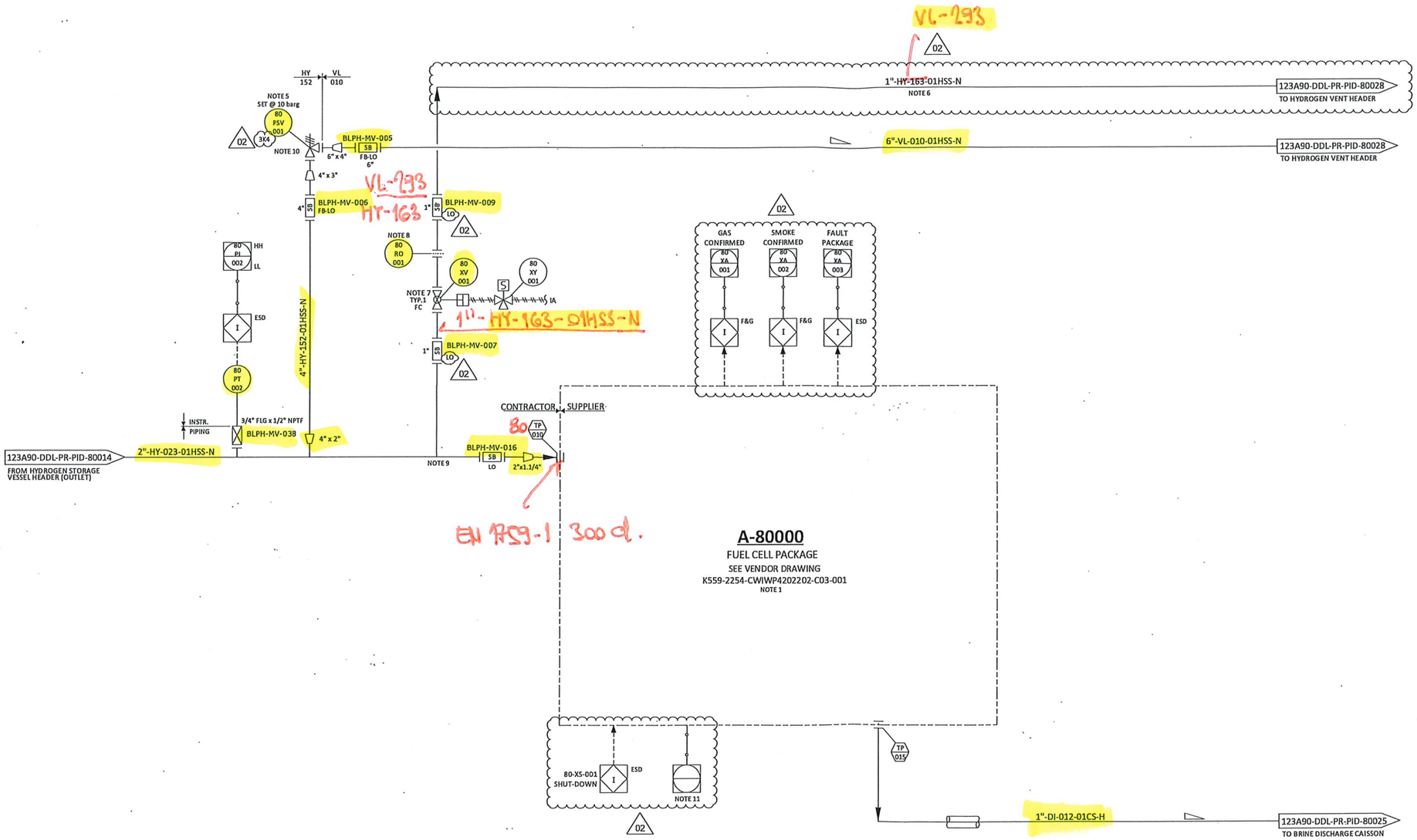
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
ELECTROLYSER PACKAGE

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

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV



NOTES

1. THE VENDOR PACKAGE WILL CONTAIN AIR INTAKE AND EXHAUST, SUITAL 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

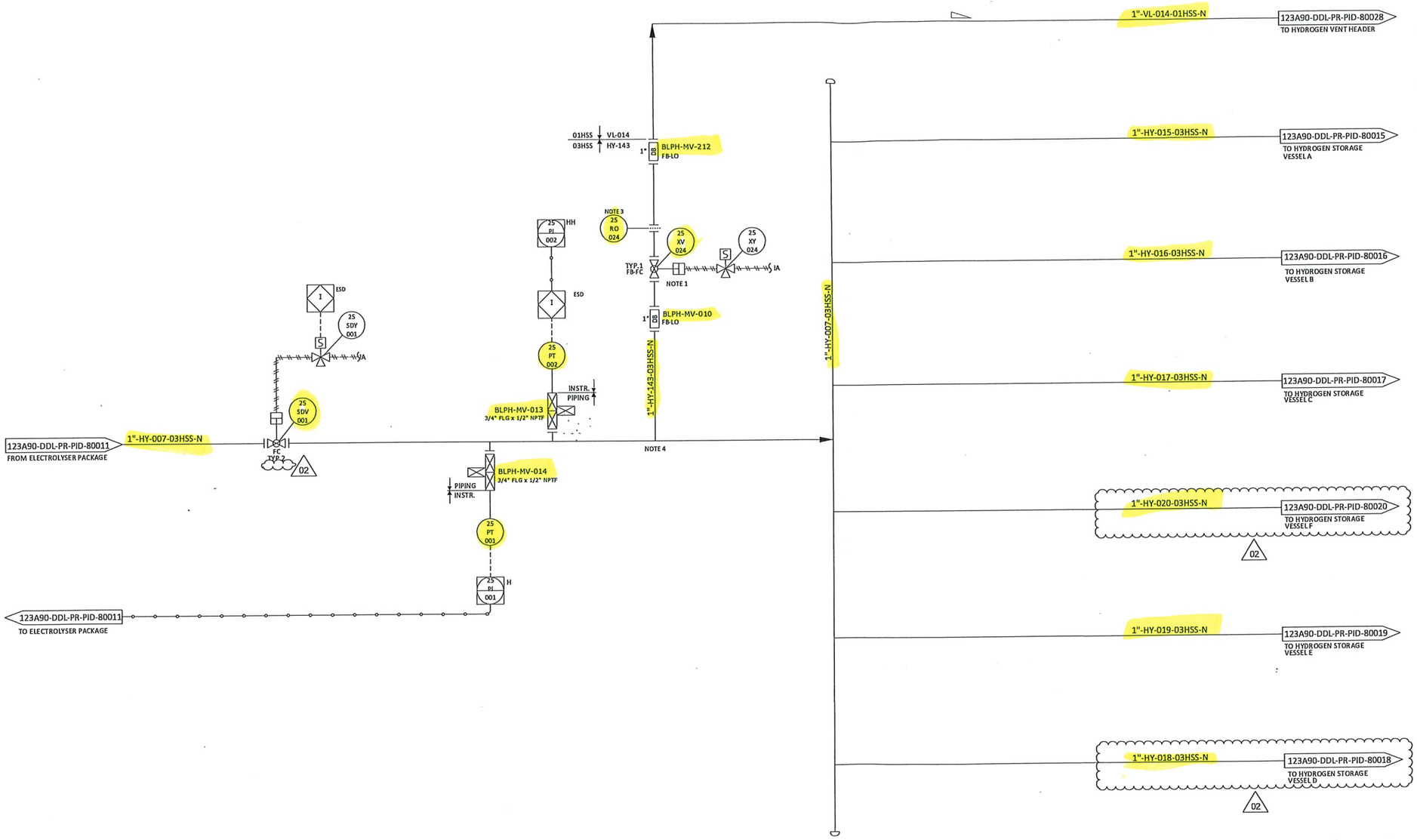
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
FUEL CELL PACKAGE

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

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV



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

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

01HSS VL-022
03HSS HY-144
2" BLPH-MV-019 FB-LO

NOTE 4
25 RO 022
2" x 1"
25 BDV 022
TYP.4 FB-FO
ESD
25 BDY 022
IA

1" BLPH-MV-018 FB-LO

1"-HY-144-03HSS-N

25 SDY 023
25 SDV 023
FC TYP.2
NOTE 6

1-1/2"-HY-148-03HSS-N

2"-VL-022-01HSS-N

123A90-DDL-PR-PID-80028
TO HYDROGEN VENT HEADER

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 PT 055A
02 NOTE 3 NOTE 7 055
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

1-1/2"-HY-148-03HSS-N

25 PIC 055B
25 PT 055B
03HSS 01HSS
25 PV 055B
3/4"
BLPH-MV-028
BLPH-MV-213
3/4" FLG x 1/2" NPTF
INSTR. PIPING
FC TYP.6 HOLD 2
NOTE 5, 1
2" x 1"
1 1/2"

02 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

   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)

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. 02

File Name : FILE_NAME

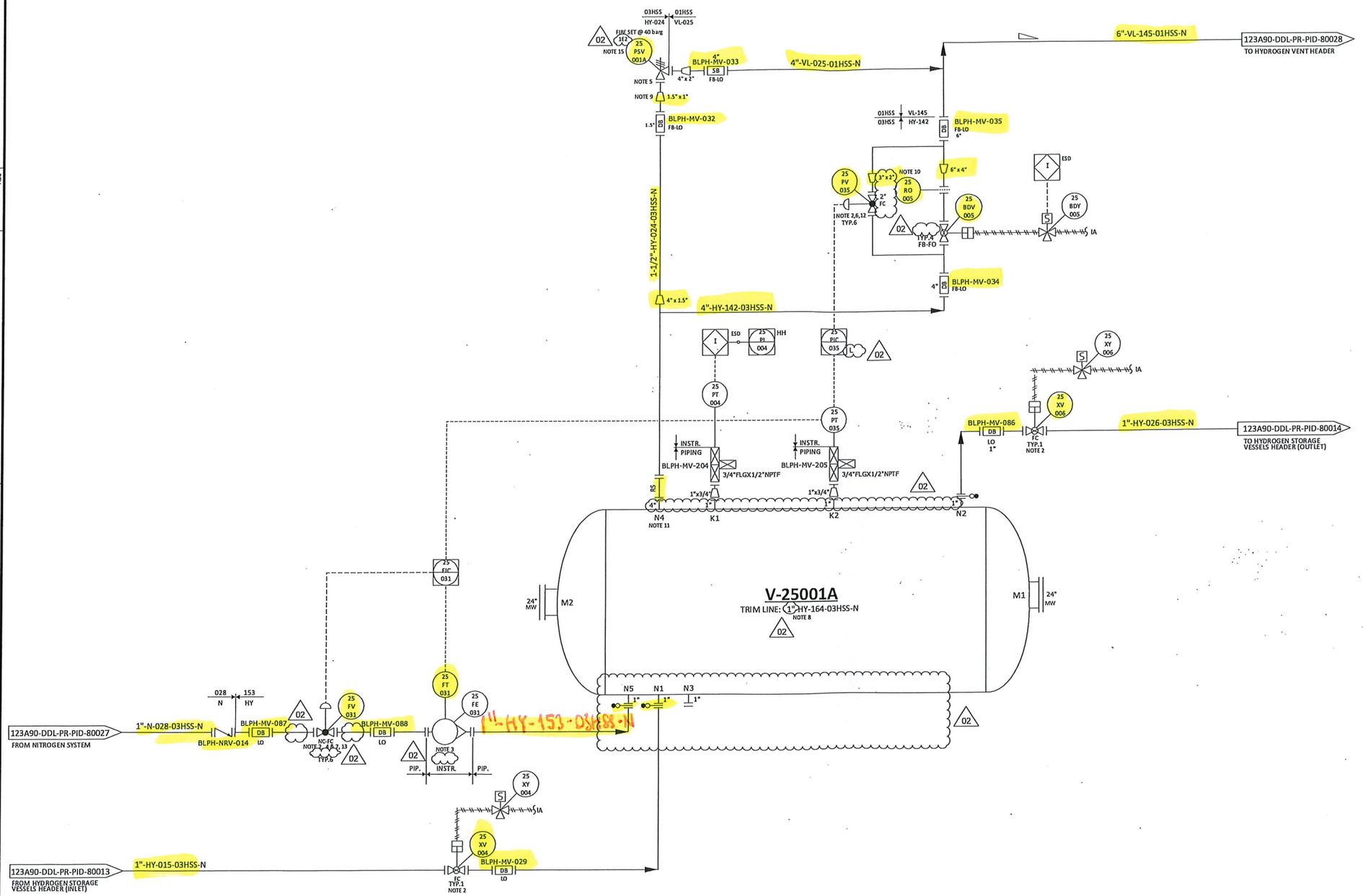
DRAWING NO. DRAWING_NO.

REV. REV

V-25001_A

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 35500 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 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

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. 02

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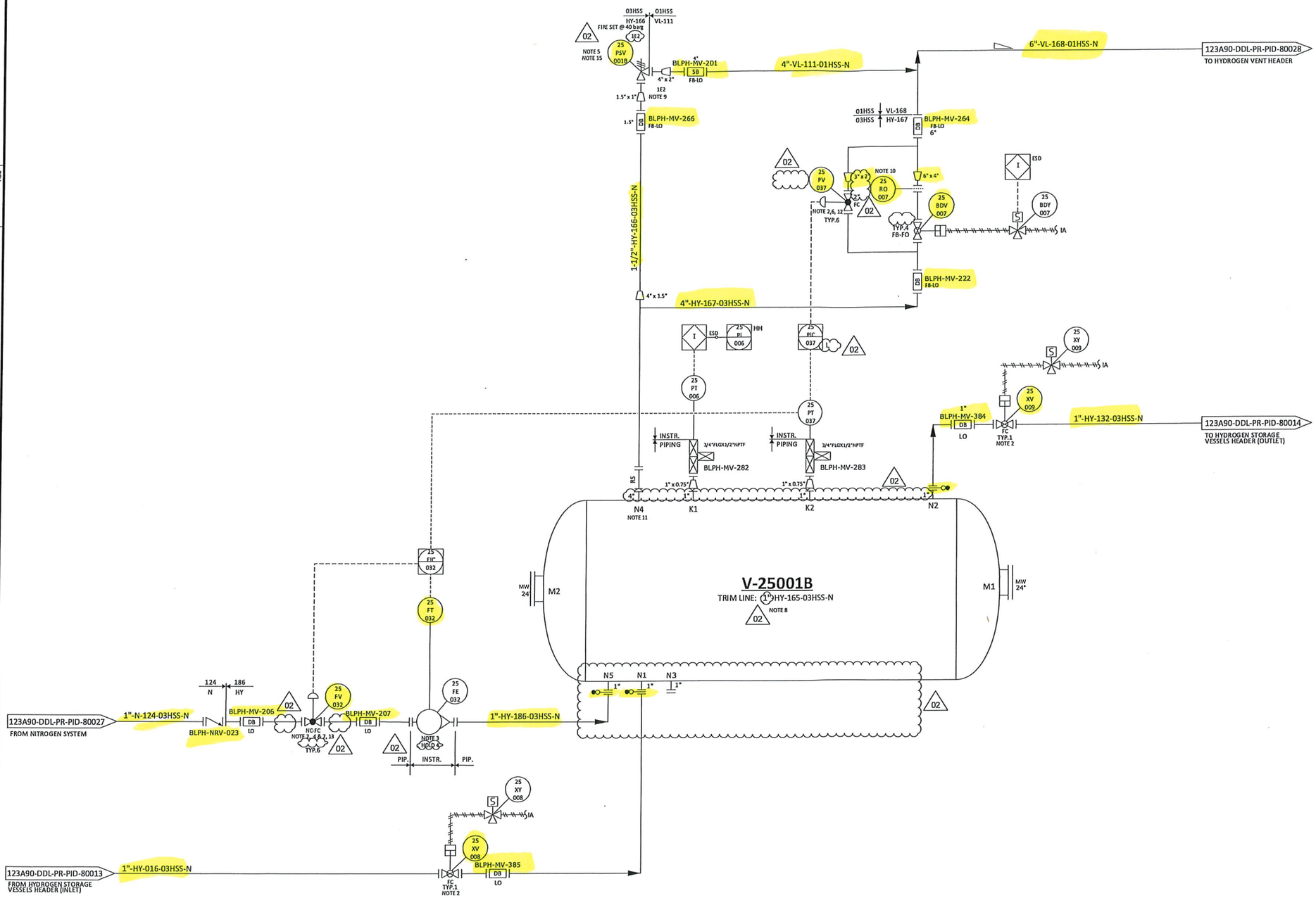
DRAWING NO. DRAWING_NO.

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



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
A1	DRAWING NO. 123A90-DDL-PR-PID-80016		SHEET 001 / REV. 02

File Name : FILE_NAME

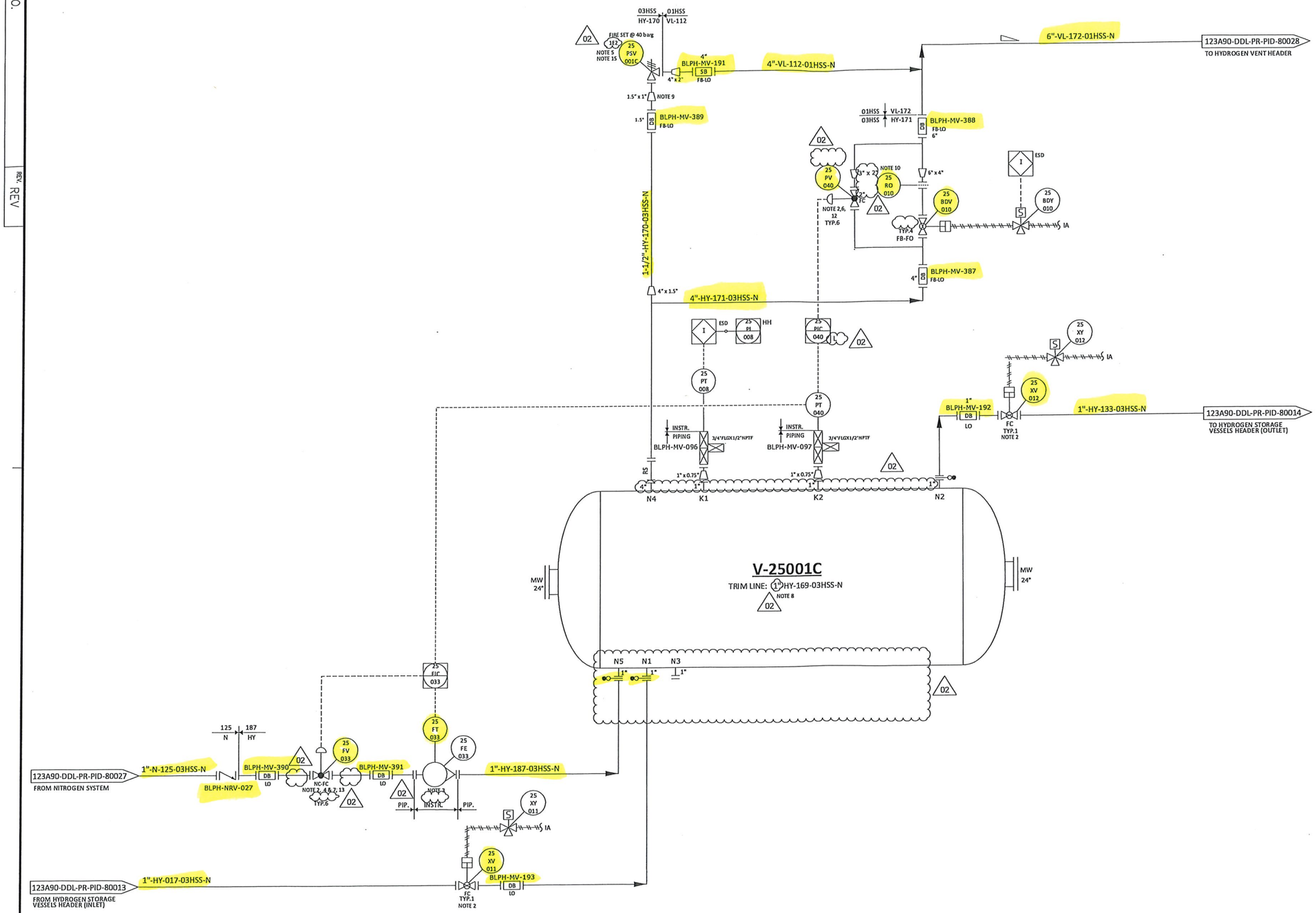
DRAWING_NO.

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



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

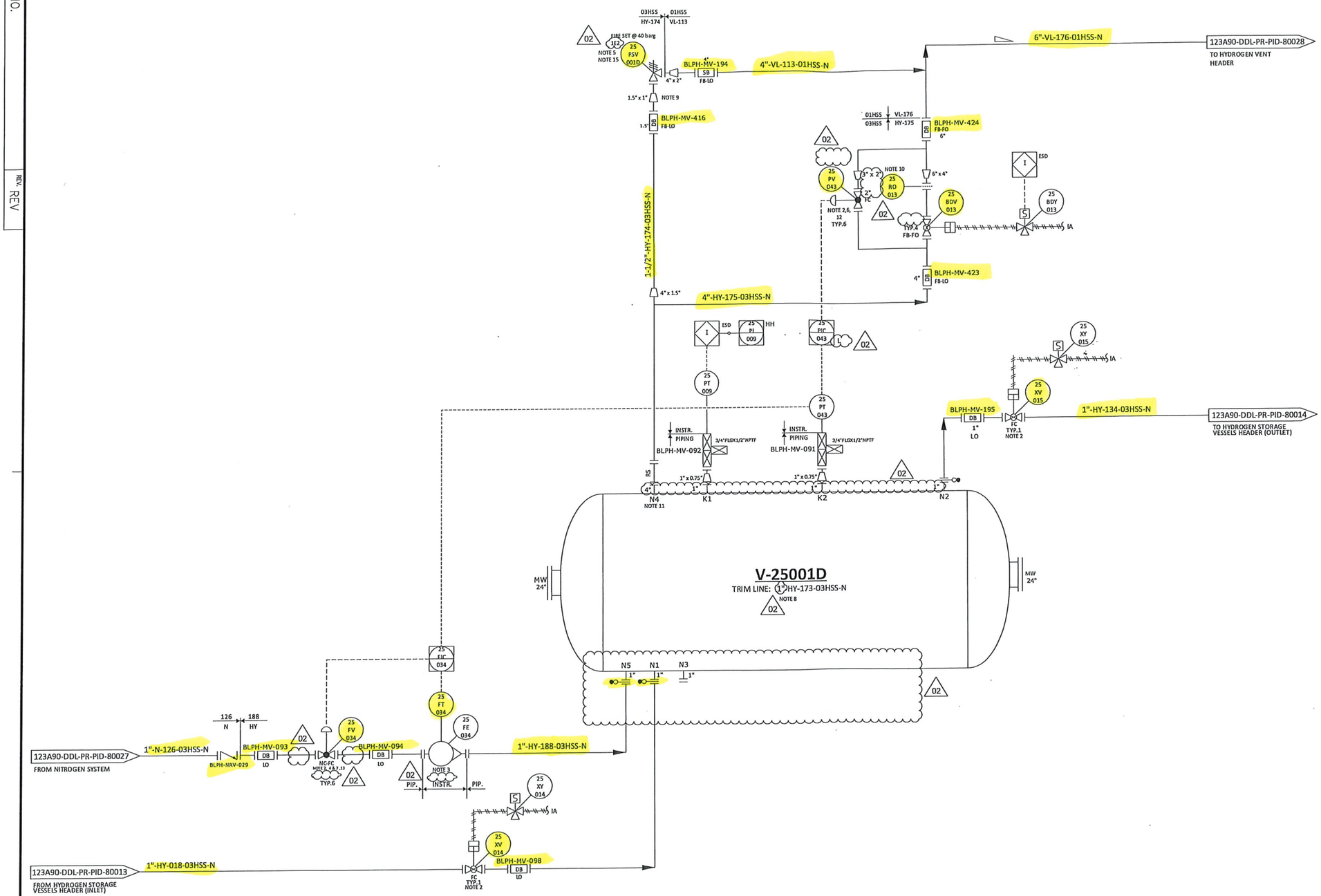
DRAWING NO. DRAWING_NO.

REV. REV

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



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

File Name : FILE_NAME

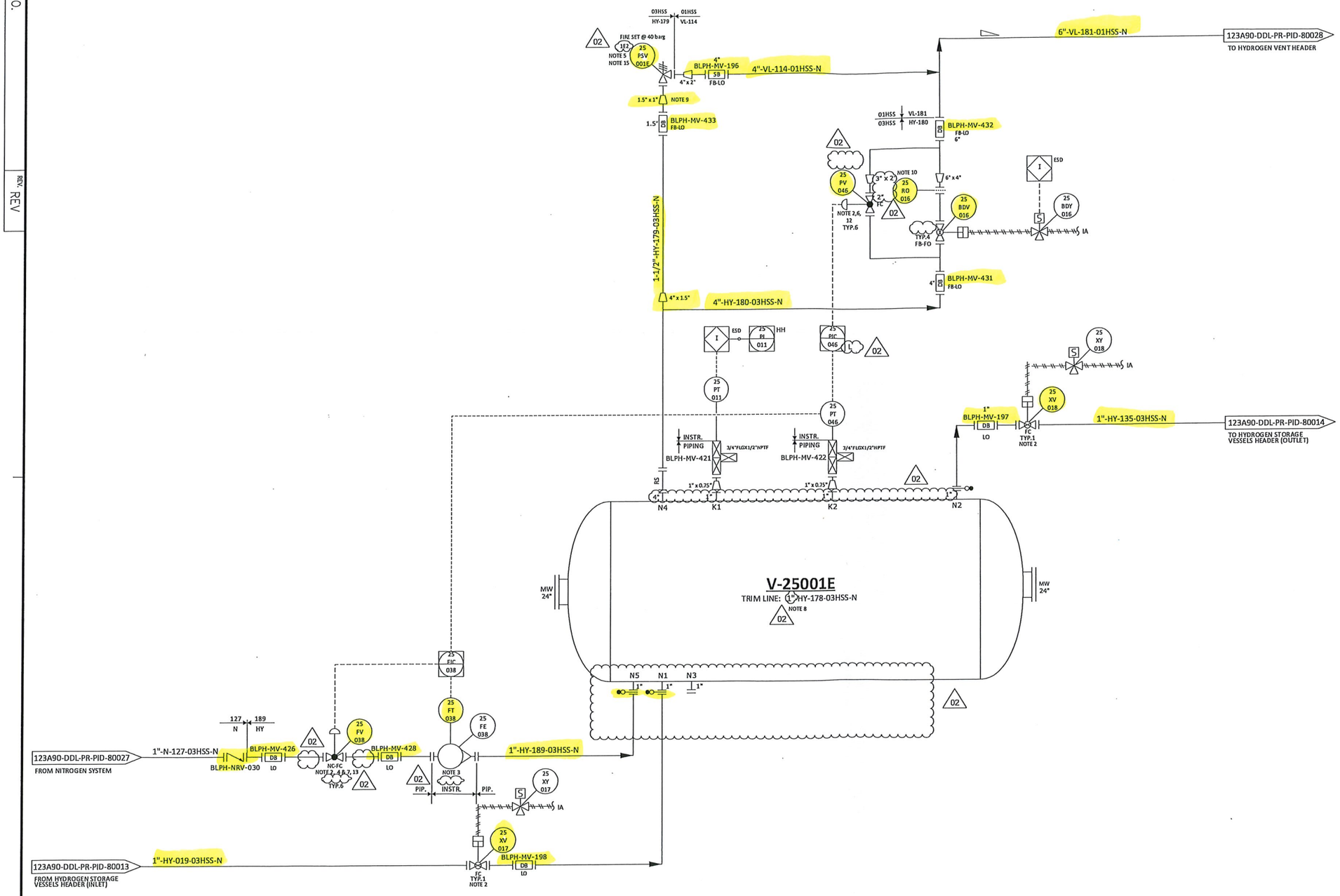
DRAWING NO. DRAWING_NO.

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



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

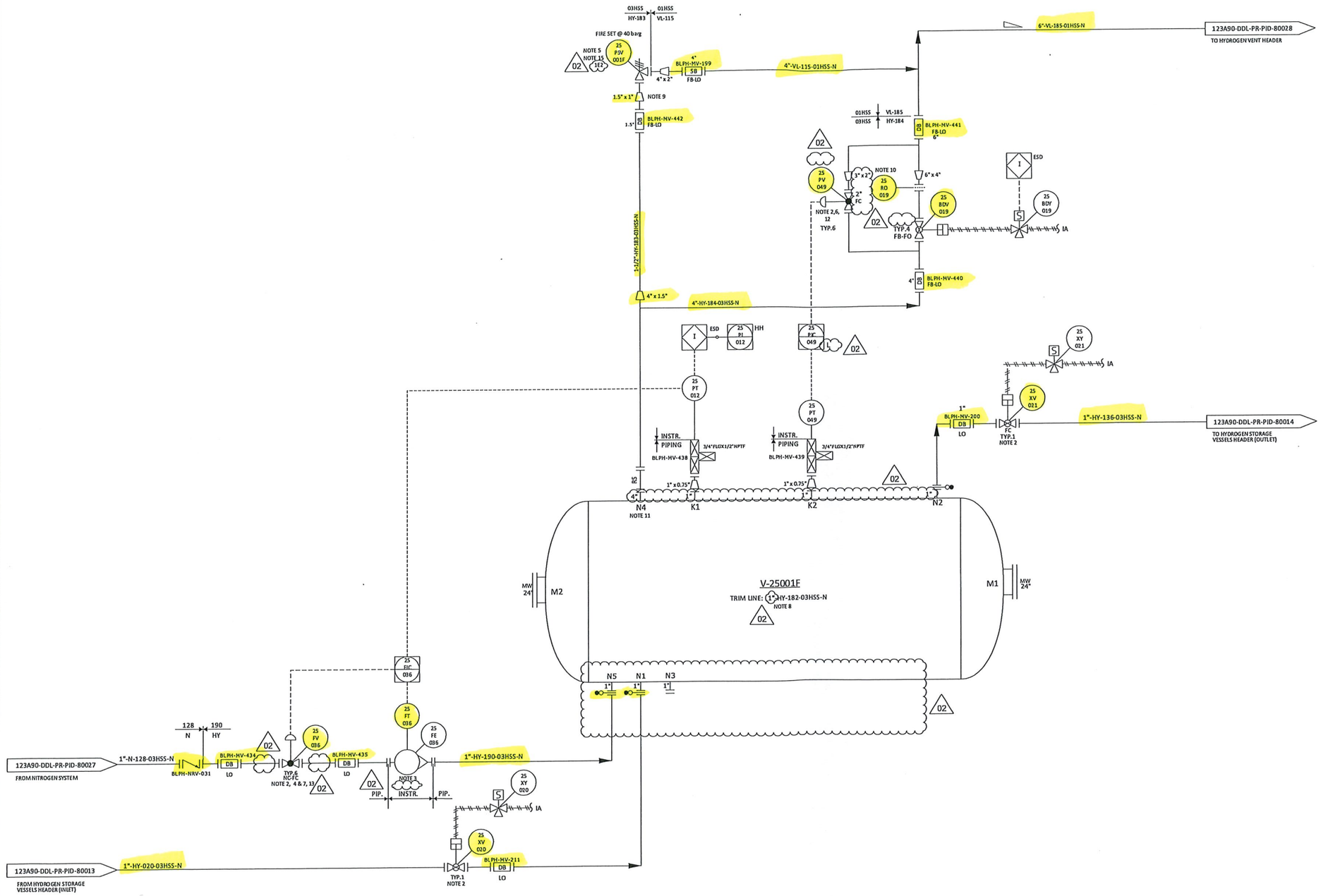
DRAWING NO. DRAWING_NO.

REV. REV

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 "REUEF, 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

DRAWING NO. DRAWING_NO.

REV. REV

P-50001 A/B
SEA WATER LIFT PUMPS

POWER : 1.6 KW
FLOW : 2.5 m³/h
DESIGN P/T : 7.6 barg / 80°C
DISCHARGE PRESSURE : 5.6 barg (NOTE 9)
MATERIAL : SDSS

02

B-50013 A/B
SEA WATER LIFT PUMPS CAISSONS

02

SIZE : 343 mm (ID) x 27308 mm (H)
MATERIAL : CS + CA

123A90-DDL-PR-PID-80022
BIOCIDE DOSING UNIT

1"-CI-029-01CP-E

3/4" BLPH-MV-214

3/4"x1/2" CONC. RED.

1/2" BLPH-MV-215

1-1/2"-SWS-035-01SD-E

123A90-DDL-PR-PID-80022
SEA WATER COARSE FILTER PACKAGE

SWS-035
SWS-031

BLPH-MV-043 1-1/2"

1-1/2"-SWS-031-01SD-E

BLPH-MV-050 1-1/2"

SWS-035
SWS-033

1-1/2"-SWS-033-01SD-E

50 XY 001 / 50 XV 001 — IA — FC TYP.1 — NOTE 5
50 XY 002 / 50 XV 002 — IA — FC TYP.1 — NOTE 3
50 RO 001 — NOTE 7
3/4" BLPH-MV-044
1.1/2" BLPH-NRV-004
INSTR. PIPING
50 PI 001 / 50 PT 001 — H / L — 2" — 2" x 1.5" — BLPH-MV-464
1"-SWS-146-01SD-E

50 XY 003 / 50 XV 003 — I.A. — FC TYP.1 — NOTE 5
50 XY 004 / 50 XV 004 — I.A. — FC TYP.1 — NOTE 3
50 RO 002 — NOTE 7
3/4" BLPH-MV-054
1.1/2" BLPH-NRV-008
INSTR. PIPING
50 PI 002 / 50 PT 002 — H / L — 2" — 2" x 1.5" — BLPH-MV-465
1"-SWS-147-01SD-E

BLPH-NRV-007 1"

1"-CI-030-01CP-E

START/STOP 50 HS 001
RUNNING/STOPPED 50 YI 001
AUTO START READY 50 YI 002
TRIPPED/FAULT 50 YA 001
SHUTDOWN ALARM 50 YA 002
ESD — I

SP 0043
BLOCKED OUTLET SET @ 7.6 barg
50 PSV 006 1D2
2"-SWR-289-01SD-N

MCC

SP 0033
1"-SWS-222-01SD-E

BLPH-MV-048 1"

BLPH-MV-469 SB

1"-SWS-288-01SD-E

PM-50001A

M — RS

KS

LOWER DECK: +23.310 m

TOP OF CAISSON: +21.808 m

SUCTION

NOTE 1, 2, 8

P-50001A

EL. -5.500 m

PUMP RETENTION BARS

B-50013A

BLPH-NRV-024 1"

1"-CI-032-01CP-E

START/STOP 50 HS 002
RUNNING/STOPPED 50 YI 003
AUTO START READY 50 YI 004
TRIPPED/FAULT 50 YA 003
SHUTDOWN ALARM 50 YA 004
ESD — I

SP 0044
BLOCKED OUTLET SET @ 7.6 barg
50 PSV 007 1D2
2"-SWR-287-01SD-N

MCC

SP 0034
1"-SWS-221-01SD-E

BLPH-MV-051 1"

BLPH-MV-470 SB

1"-SWS-286-01SD-E

PM-50001B

M — RS

KS

LOWER DECK: +23.310 m

TOP OF CAISSON: +21.808 m

SUCTION

NOTE 1, 2, 8

P-50001B

EL. -5.500 m

PUMP RETENTION BARS

B-50013B

NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED. 02
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING UNLESS DISCHARGE XV IS FULLY CLOSED.
6. DELETED. 02
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.

02

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. 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
SEA-WATER INTAKE SYSTEM SHEET 1

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-80021		SHEET 001 / REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr 02

02

GAS CONFIRMED SO XA 001 — F&G
SMOKE CONFIRMED SO XA 002 — F&G
FAULT PACKAGE SO XA 003 — ESD
50-XS-001 SHUT-DOWN — ESD
NOTE 6

CONTRACTOR | SUPPLIER

123A90-DDL-PR-PID-80025
TO 50-TDI-002
SO TI 001
BLOCKED OUTLET SET @ 6 barg
SO PSV 011 1D2
2"-SWR-291-01SD-N
02
BLPH-MV-471 SBS
1"-SWS-290-01SD-E
SO TT 001
SO TE 001
1.1/2"
TP 017
001
E
4"x1.1/2" ECC. RED.
4"x1.1/2" ECC. RED.
123A90-DDL-PR-PID-80021
FROM SEA WATER LIFT PUMP
1-1/2"-SWS-035-01SD-E
BLPH-MV-241 3/4"

A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

02
FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

E
TP 005
123A90-DDL-PR-PID-80021
TO SEA WATER LIFT PUMP AND LIFT PUMP CAISSONS
1"-CI-029-01CP-E

1"-CI-043-01CP-E
TP 009
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK
DECK HOOK-UP 003
02

SUPPLIER | CONTRACTOR

TP 003
1.1/2"x1"
3"x1.1/2"
1"-SWR-045-01CS-H
123A90-DDL-PR-PID-80025
TO BRINE DISCHARGE CAISSON

TP 007
1.1/2"x1"
1"-WW-038-01CS-H
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

NOTES
1. DELETED. 02
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED. 02
6. SERIAL COMMUNICATION WITH CONTROL SYSTEM.

HOLDS
1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED. 02
5. DELETED.
6. 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
SEA-WATER INTAKE SYSTEM SHEET 2

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-80022	SHEET 001	REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

A-50000

WATER TREATMENT PACKAGE

CAPACITY : 2.5 m³/hr 02

02

CONTRACTOR SUPPLIER

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80022

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80024

A-50000

SEE VENDOR DRAWING

DOC. N. 1724000448-PR-PID-00013

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80022

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80024

SUPPLIER CONTRACTOR

NOTES

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

02

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
WATER TREATMENT PLANT SHEET 1

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-80023	SHEET 001	REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

A-50000

WATER TREATMENT PACKAGE

CAPACITY : 2.5 m³/hr 02

02

FOR CONTINUATION SEE DOC N.
123A90-DDL-PR-PID-80023

SUPPLIER | CONTRACTOR

A-50000

WATER TREATMENT PACKAGE

SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

1"-DM-001-01SS-E-1

123A90-DDL-PR-PID-80011
TO ELECTROLYSER PACKAGE

TP 002

PH
TEMPERATURE
HARDNESS
CONDUCIVITY

NOTE 8

FOR CONTINUATION SEE DOC N.
123A90-DDL-PR-PID-80023

NOTES

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. DELETED.
7. DELETED.
8. PH, TEMPERATURE, HARDNESS AND CONDUCTIVITY SHALL BE SENT FROM WATER TREATMENT UCP TO CONTROL SYSTEM IN ADDITION TO THE OTHER SOFTWARE SIGNALS.

02

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. 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
WATER TREATMENT PLANT SHEET 2

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-80024		SHEET 001	REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

123A90-DDL-PR-PID-80022
FROM 50-TI-001

02

123A90-DDL-PR-PID-80027
FROM INSTRUMENT AIR PACKAGE
1"-WW-079-01CS-H

123A90-DDL-PR-PID-80012
FROM FUEL CELL PACKAGE
1"-DI-012-01CS-H

123A90-DDL-PR-PID-80011
FROM ELECTROLYSER PACKAGE
1"-DM-005-01CS-H

123A90-DDL-PR-PID-80022
FROM WATER TREATMENT PACKAGE
1"-SWR-045-01CS-H

123A90-DDL-PR-PID-80029
FROM HYDROGEN VENT KO DRUM
1"-WW-071-01CS-H NNF

02 1-1/2"-WW-073-01CS-H

50 PI 014 H

50 PT 014

3/4" FLG x 1/2" NPTF
BLPH-MV-411

INSTR. PIPING

3/4" E

4"x1.1/2" ECC. RED.

50 TI 002 H

50 TI 002

50 TT 002

50 TE 002

1.1/2"

4"x1.1/2" ECC. RED.

DECK HOOK-UP 005 02

BLPH-MV-412 LO

BLPH-NRV-028

1-1/2"-WW-073-01CS-H

1"-WW-071-01CS-H

02 DECK HOOK-UP 004

1"-WW-071-01CS-H

02

EL +21.8 m

NOTE 2

B-50014
NOTE 1

ELEVATION
0.00m (L.A.T.)

B-50014
BRINE DISCHARGE CAISSON
SIZE : 323 mm (ID) x 21808 mm (H) 02
MATERIAL : CARBON STEEL) 02

NOTES

1. CAISSON IS OPEN TOPPED.
2. ALL LINES TO TERMINATE APPROXIMATLEY ~~0.00 mm~~ 21.00 mm BELOW SEAWATER LEVEL (LAT) INSIDE THE MAIN CAISSON 02

HOLDS

1. 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

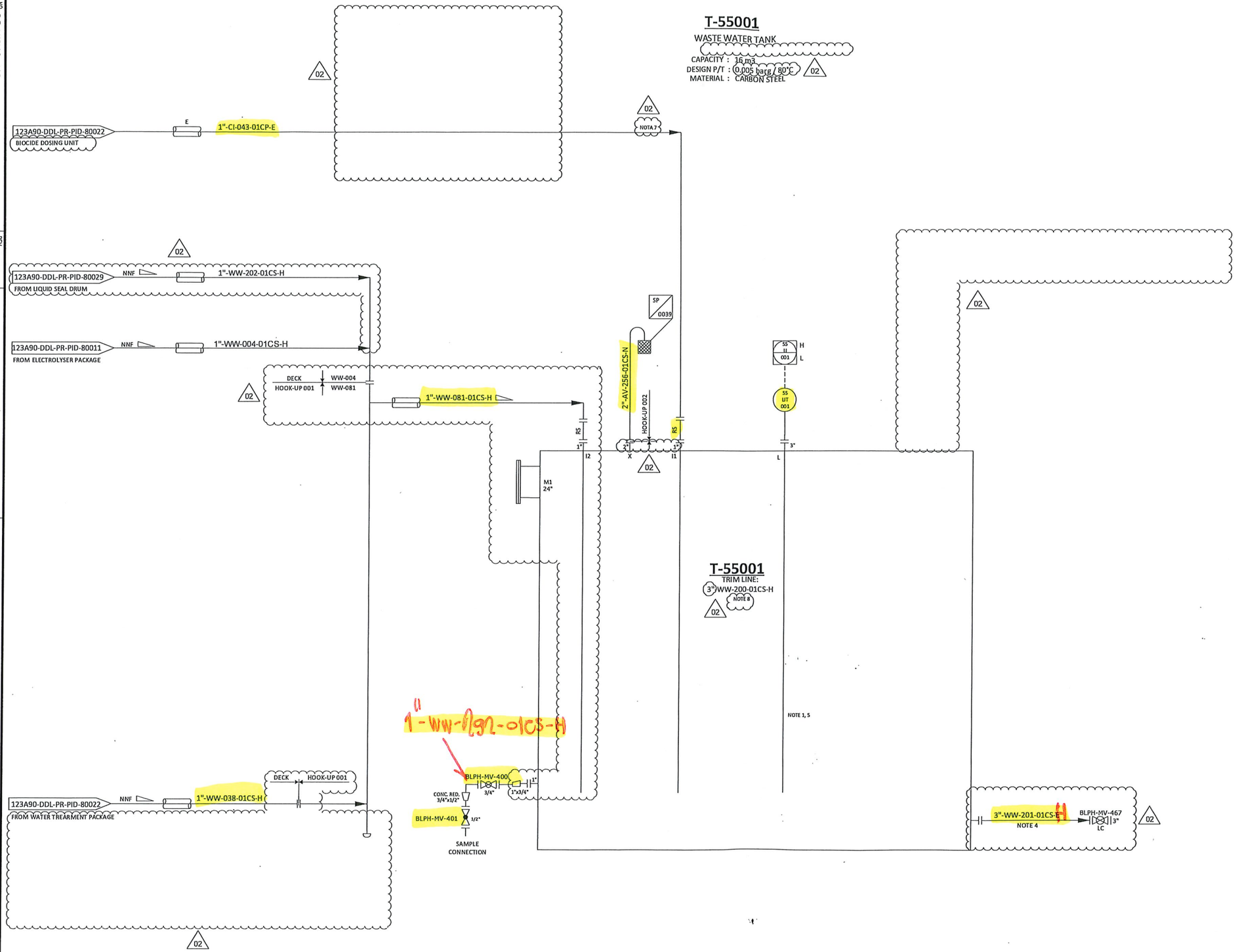
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
WATER DISPOSAL SHEET 1

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-80025		SHEET 001 / REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV



NOTES

1. ALL STILLING TUBES AND DIP PIPES SHALL BE SUPER DUPLEX.
2. DELETED.
3. DELETED.
4. DRAIN LINE TO SHIP DISPOSAL. 02
5. PERFORATED STILLING TUBE.
6. DELETED. 02
7. FOR PERIODIC DOSING OF THE WASTE WATER TANK.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR WASTE WATER TANK - T-55001, DOC. N. "123A90-DDL-MAC-DS-50008"

HOLDS

1. DELETED.
2. DELETED.
3. DELETED. 02
4. DELETED.
5. 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
WATER DISPOSAL SHEET 2

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-80026	SHEET 001	REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

A-63000
INSTRUMENT AIR AND DRYER PACKAGE
CAPACITY : 313 Sm3/h (PRODUCTION)

A-64000
NITROGEN GENERATION SYSTEM
CAPACITY : 52.7 Sm3/h (PRODUCTION)

SUCTION 63 PI 001 · DISCHARGE 63 PI 002 · COMMON ALARM 63 YA 001 · MCC DEVICE COMMS FAIL 63 XI 001 · AVAILABLE STATUS 63 XI 002 · RUN/STOP STATUS 63 XI 003 · SHUTDOWN STATUS 63 XI 004 · SHUTDOWN ALARM 63 YA 002 · ESD I

FAULT PACKAGE 63 XA 003

ESD I — 63-XS-001 SHUT-DOWN

NOTE 14

A-63000
INSTRUMENT AIR AND DRYER PACKAGE
SEE VENDOR DIAGRAM
NOTE 2, 3, 4, 5, 6

V-63001
AIR RECEIVER

1-1/2"-IA-263-01SS-N

TP 041 · LD · BLPH-MV-149

1-1/2"-IA-108-01SS-N

63 PI 003 L · 63 PT 003 · 63 PI 004 LL · 63 PT 004 · ESD I

INSTR. PIPING · BLPH-MV-150 3/4" FLG x 1/2" NPTF · BLPH-MV-151 3/4" FLG x 1/2" NPTF

123A90-DDL-PR-PID-80041 TO INSTRUMENT AIR DISTRIBUTION HEADER

TP 039 · BLPH-MV-269 SB LD · 1"-WW-079-01CS-H

123A90-DDL-PR-PID-80025 TO BRINE DISCHARGE CAISSON

BLPH-MV-270 LD 1.1/2" · 1-1/2"-IA-204-01SS-N

TO SAFE LOCATION

ESD I · 2"-AV-224-01CS-N · TP 045 · TP 043

A-64000
NITROGEN SYSTEM
SEE VENDOR DIAGRAM

TP 042 · BLPH-MV-271 SB LD · 1"-N-158-01CS-N · 3/4" · BLPH-MV-275

1"-N-262-01CS-N

64 HS 031 · 64 PIC 031A H L · 64 PIC 031B H L · 64 PT 031A · 64 PT 031B · 64 PT 002 · 64 PV 031A · 64 PV 031B · FL-DC TYP.6 1" N-158 N-100

INSTR. PIPING · 3/4" FLG x 1/2" NPTF · BLPH-MV-386 · BLPH-MV-166 · BLPH-MV-167

NOTE 15 · 64 PI 002 L LL · NOTE 1, 12 SET @ 30 barg 102 · 64 PSV 001 · NOTE 10 TO ATM

2"-AV-160-01CS-N · 1.5" x 1" · SB BLPH-MV-278 FB-LD 1.1/2" · 1-1/2"-N-197-01CS-N · 1.5" x 1"

1"-N-100-01CS-N

ESD I · 64-XS-001 SHUT-DOWN · ESD I · NOTE 14

64 XA 003 FAULT PACKAGE

V-64001
NITROGEN RECEIVER

1"-N-101-01CS-N — 123A90-DDL-PR-PID-80028 TO HYDROGEN VENT HEADER

1"-N-257-03HSS-N

1"-N-125-03HSS-N — 123A90-DDL-PR-PID-80017 TO HYDROGEN STORAGE VESSEL C

1"-N-124-03HSS-N — 123A90-DDL-PR-PID-80016 TO HYDROGEN STORAGE VESSEL B

1"-N-028-03HSS-N — 123A90-DDL-PR-PID-80015 TO HYDROGEN STORAGE VESSEL A

UPPER LEVEL · LOWER LEVEL

1"-N-126-03HSS-N — 123A90-DDL-PR-PID-80018 TO HYDROGEN STORAGE VESSEL D

64 SDV 001 · 64 SDV 001 · NOTE 13 · NC-FC TYP.2

1"-N-127-03HSS-N — 123A90-DDL-PR-PID-80019 TO HYDROGEN STORAGE VESSEL E

1"-N-128-03HSS-N — 123A90-DDL-PR-PID-80020 TO HYDROGEN STORAGE VESSEL F

1"-N-151-01CS-N — 123A90-DDL-PR-PID-80011 TO ELECTROLYSER PACKAGE

01CS · 03HSS

NOTES

1. ONE UNINSTALLED SPARE PSV SHALL BE AVAILABLE.
2. COMPRESSORS AND DRIERS DESIGNED FOR 2 X 100% CONFIGURATION. INSTRUMENT AIR RECEIVER DESIGNED FOR 1 X 100%.
3. VENDOR TO PROVIDE NECESSARY CONTROLS, INSTRUMENTATIONS AND ISOLATIONS IN ORDER TO OPERATE THE PLANT IN SAFE MANNER.
4. COMPRESSORS WILL OPERATE ON THE BASIS OF ONE WORKING AND ONE ON STANDBY.
5. COMPRESSORS TO BE ROTARY SCREW TYPE OIL FREE.
6. AIR COMPRESSOR INLET TO BE LOCATED AWAY FROM ANY VENTS.
7. DELETED.
8. DELETED.
9. DELETED.
10. TO SAFE LOCATION, ROUTED AWAY FROM WALKWAYS.
11. DELETED. 02
12. 64PSV001 SIZED FOR UPSTREAM CV FAILURE.
13. 64SDV001 IS NORMALLY CLOSED. IF REQUIRED THE OPERATOR CAN REMOTELY OPEN THE VALVE TO ALLOW PURGING OPERATION. VALVE 64SDV001 IS ALSO CONNECTED TO THE PCS SYSTEM.
14. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
15. THE ALARM 64-PAL-002 WILL CLOSE 64-SDV-001 THROUGH SAFETY SYSTEM.

02

HOLDS

1. DELETED.
2. DELETED. 02
3. DELETED.
4. 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

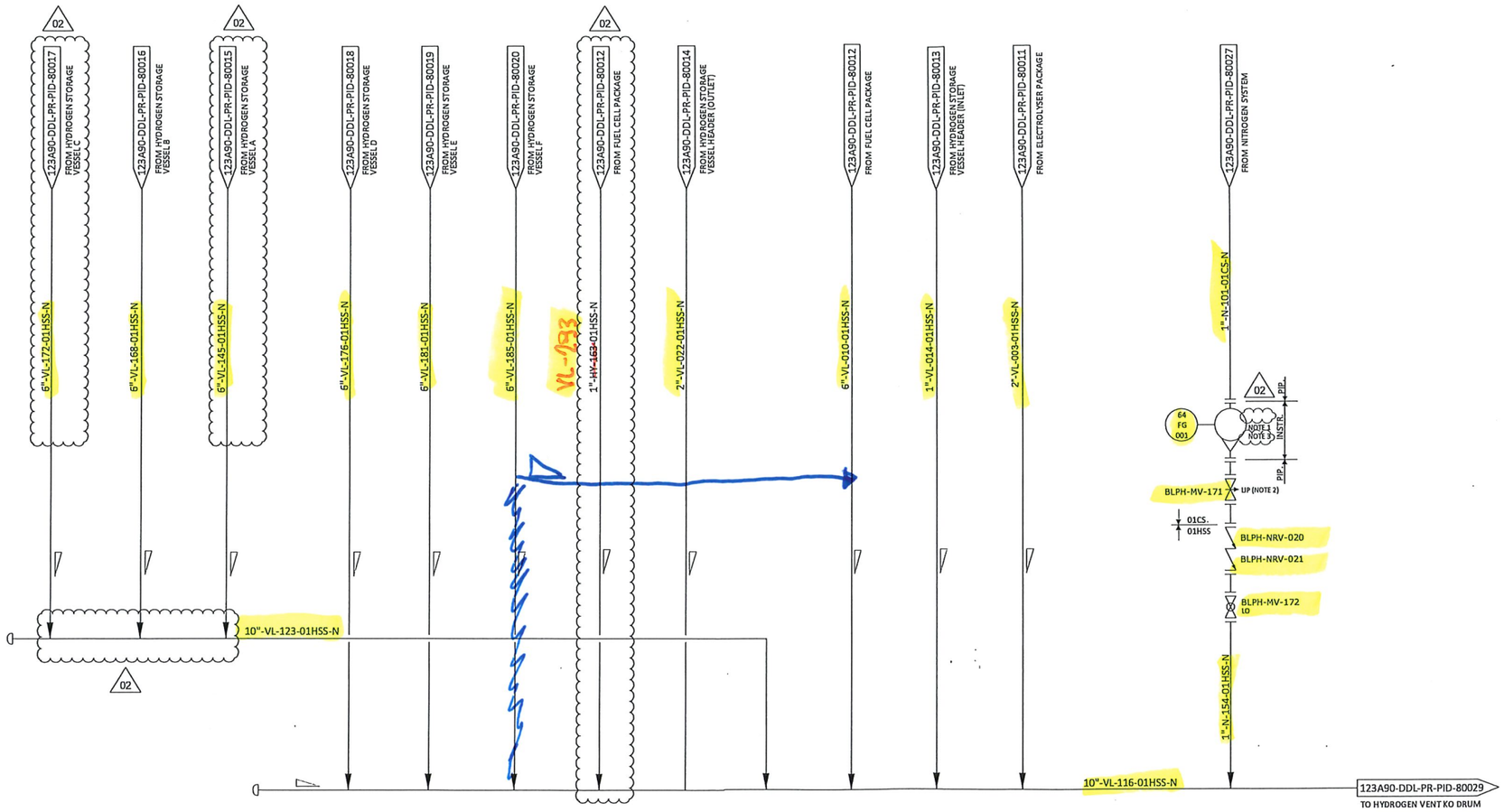
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
INSTRUMENT AIR PACKAGE

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-80027			SHEET 001	REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV



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

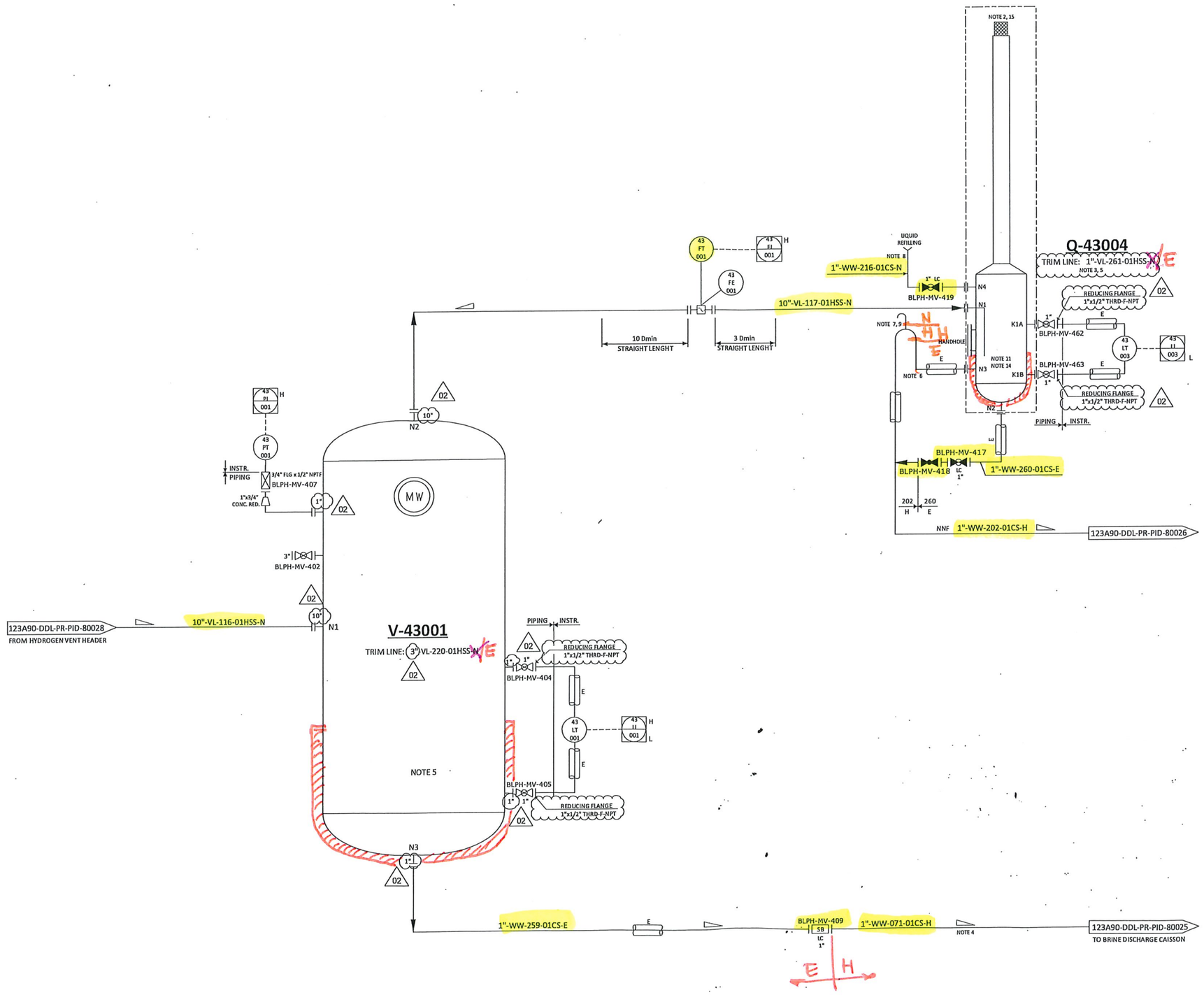
File Name : FILE_NAME

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 (D2)

Q-43004
HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA (D2)



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. (D2)
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. (D2)
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m. (D2)
12. DELETED. (D2)
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)
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00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

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ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

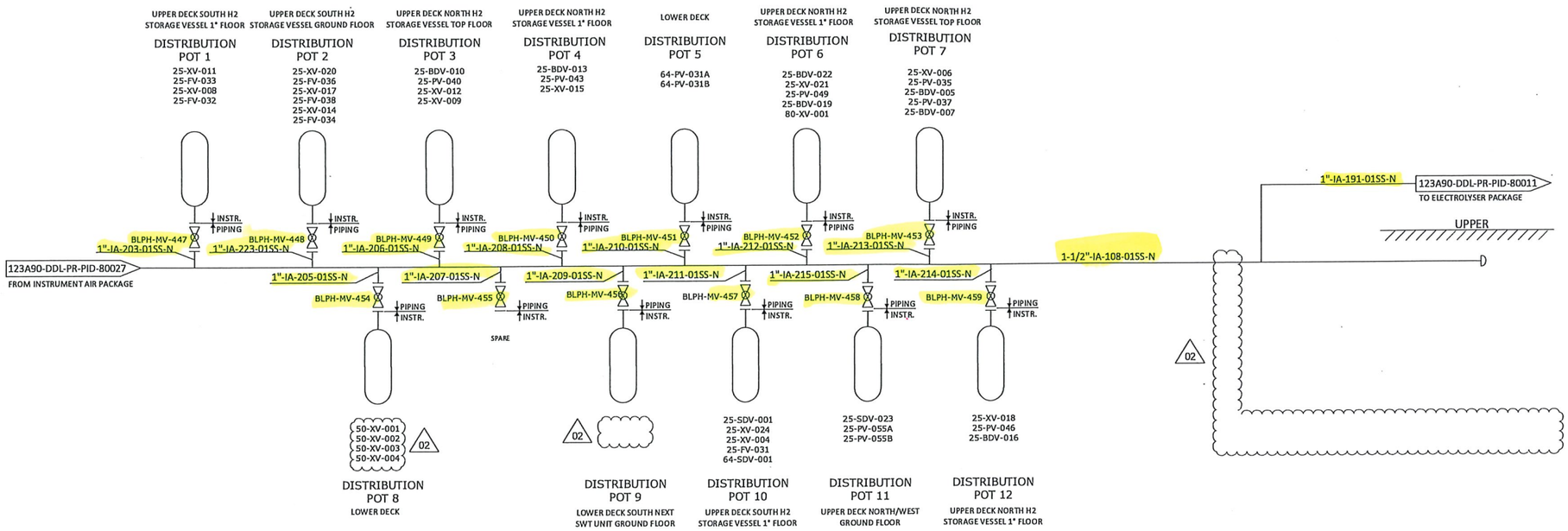
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE NTS
DRAWN | CHECKED | APPROVED | DATE

A1 | DRAWING NO. 123A90-DDL-PR-PID-80029 | SHEET 001 | REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV



NOTES

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

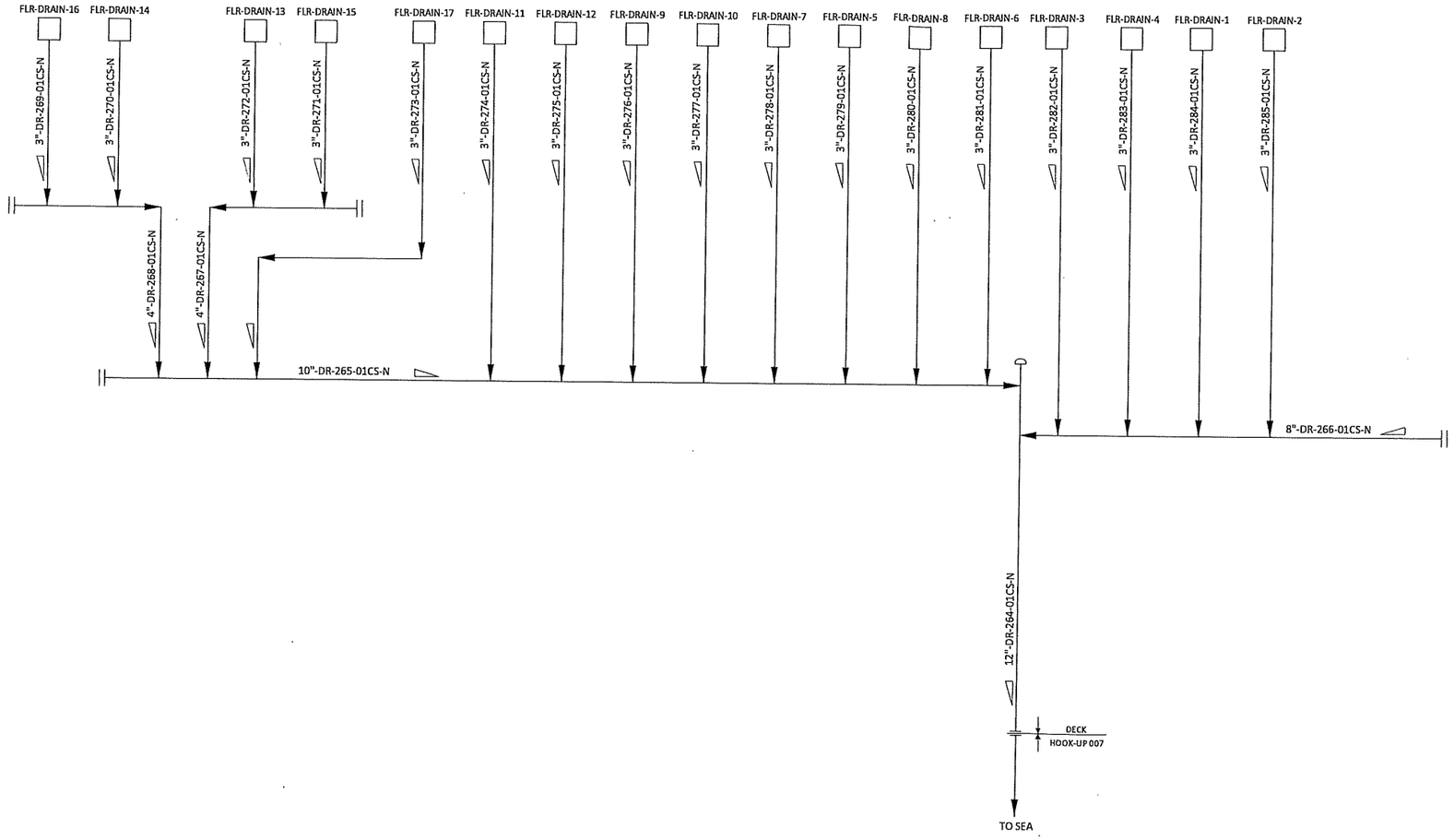
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
INSTRUMENT AIR DISTRIBUTION HEADER

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-80041		SHEET 001 / REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV



NOTES

HOLDS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	12/06/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
OPEN DRAIN SYSTEM

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-80043		SHEET 001 / REV. 00

File Name : FILE_NAME