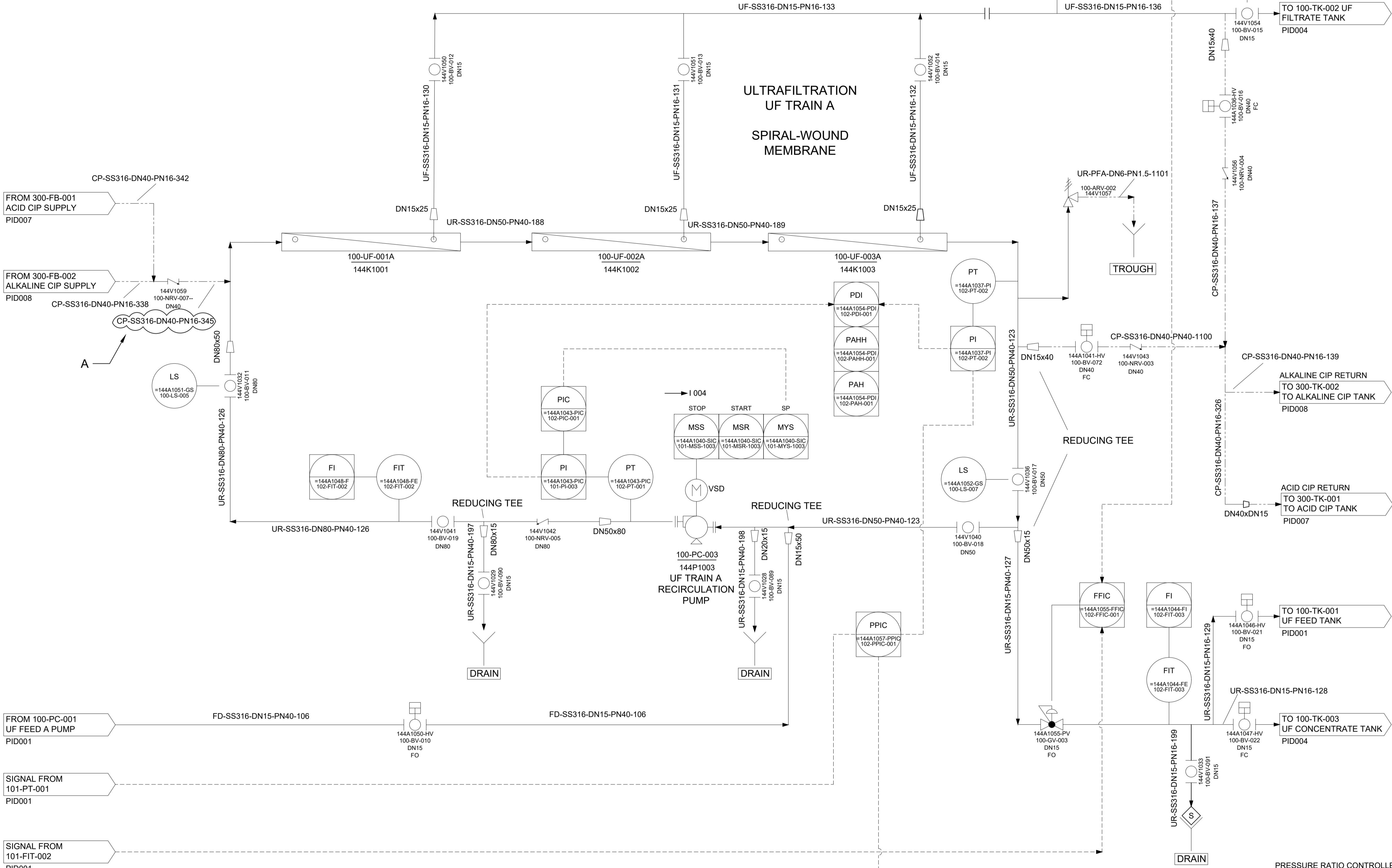


100-UF-001A	UF TRAIN A	100-UF-002A	UF TRAIN A	100-UF-003A	UF TRAIN A	100-PC-003	UF A RECIRCULATION PUMP
NO OF PV'S	1	NO OF PV'S	1	NO OF PV'S	1	CAPACITY	17.0 m³/h
PRESSURE RATING	PN 60	PRESSURE RATING	PN 60	PRESSURE RATING	PN 60	HEAD	22 m
MEMBRANES PER PV	2	MEMBRANES PER PV	2	MEMBRANES PER PV	2	POWER	2.2 kW

TYPE	SPIRAL	TYPE	SPIRAL	TYPE	SPIRAL	MOC	316 SS
MOC	316 SS	MOC	316 SS	MOC	316 SS	MOC	316 SS



MATERIAL CODE

FLUID	CODE
LigniOx Solution	LS
UF Feed	FD
UF Filtrate	UF
UF Reject	UR
Combined Concentrate	CC
NF Feed (High Pressure)	FN
NF Concentrate	NC
NF Permeate	NP
CIP Supply	CS
CIP Return	CP
Sulfuric Acid	AS
Caustic Soda (Liquid)	AC
Water Hot (Hot Condensate)	WH
Water Cold (Demineralized)	WC
Water Potable	WP
Effluent	EF
Offgas Vapour	EV
40% SMBS	SM
INSTRUMENT AIR	IA

LEGEND

Process Stream	—
Signal	- - -
Intermittent	- - - - -
Flexible line	wavy line
Fail Open	FO
Fail Closed	FC
Sample Valve	◊

A RE-ADDED "CP-345"

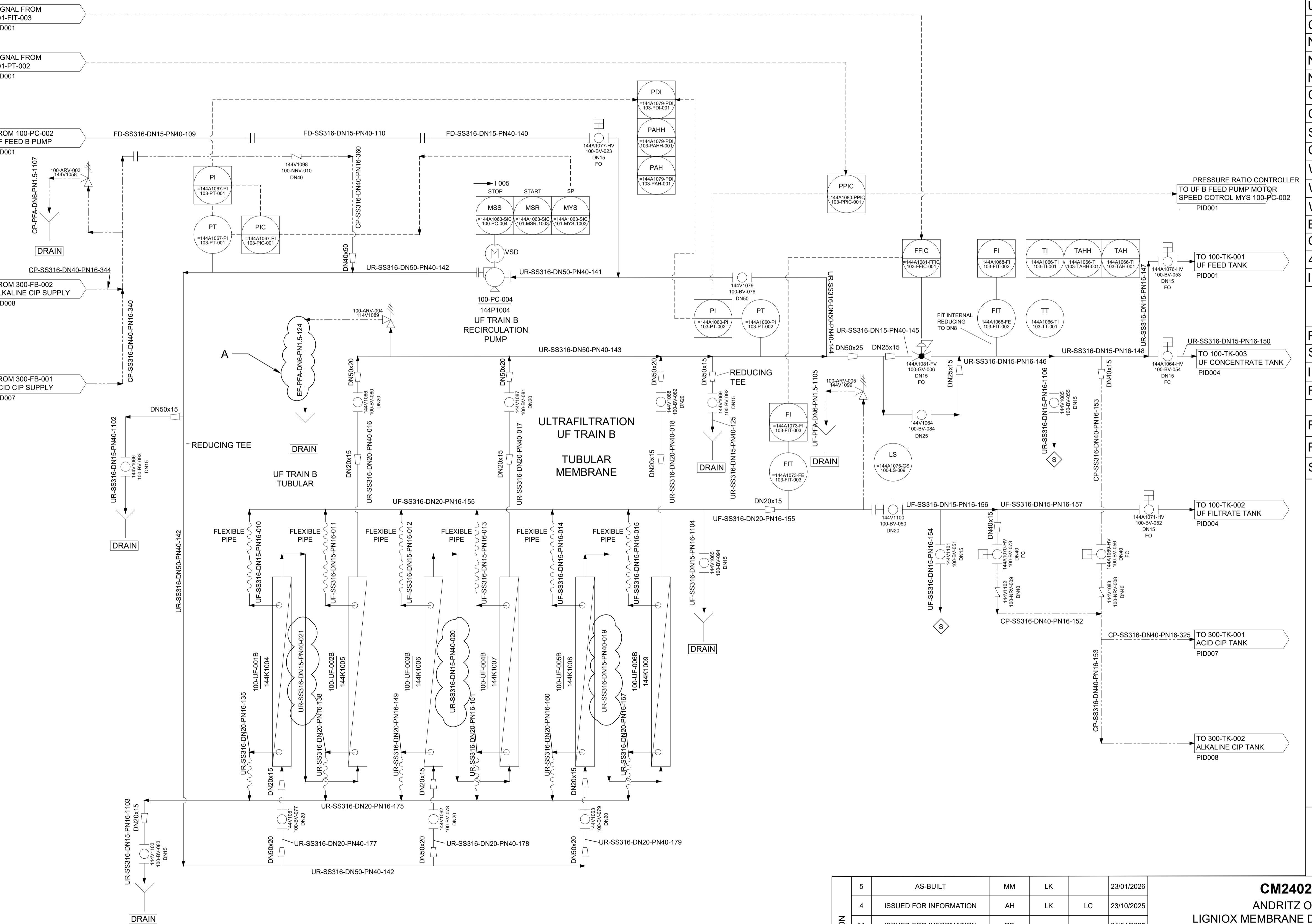
REVISION	5	AS-BUILT	MM	LK		23/01/2026
	4	ISSUED FOR INFORMATION	AH	LK	LC	23/10/2025
	3A	ISSUED FOR INFORMATION	RB	-	-	04/04/2025
	2	ISSUED FOR CONSTRUCTION	AH	MB	RW	01/02/2025
	0	ISSUED FOR INFORMATION	RB	SCV	DS	17/05/2024
REV	DESCRIPTION	DRAWN	CHECKED	APPRVD	DATE	

CM2402
ANDRITZ OY
LIGNIOX MEMBRANE DEMO PLANT
PIPING & INSTRUMENTATION DIAGRAM
AREA 100 - UF TRAIN A (SPIRAL) - AS-BUILT

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DRAWING NO.: CM2402-AND001-4A-PID002
PID NO.: PID002
REV.: 5B



MATERIAL CODE

FLUID	CODE
LigniOx Solution	LS
UF Feed	FD
UF Filtrate	UF
UF Reject	UR
Combined Concentrate	CC
NF Feed (High Pressure)	FN
NF Concentrate	NC
NF Permeate	NP
CIP Supply	CS
CIP Return	CP
Sulfuric Acid	AS
Caustic Soda (Liquid)	AC
Water Hot (Hot Condensate)	WH
Water Cold (Demineralized)	WC
Water Potable	WP
Effluent	EF
Offgas Vapour	EV
40% SMBS	SM
INSTRUMENT AIR	IA

LEGEND	
Process Stream	—
Signal	- - -
Intermittent	- - - - -
Flexible line	~~~~~
Fail Open	FO
Fail Closed	FC
Sample Valve	◊ S

LEGEND

Process Stream	<hr/>
Signal	<hr/>
Intermittent	<hr/>
Flexible line	
Fail Open	FO
Fail Closed	FC
Sample Valve	

A. MATERIAL CHANGE SS316 TO PFA

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CM2402

**ANDRITZ OY
IMBRANE DEMO PLANT
FRUMENTATION DIAGRAM
RAIN B (TUBULAR) - AS-BUILT**



CHIMERICAL TECHNOLOGY

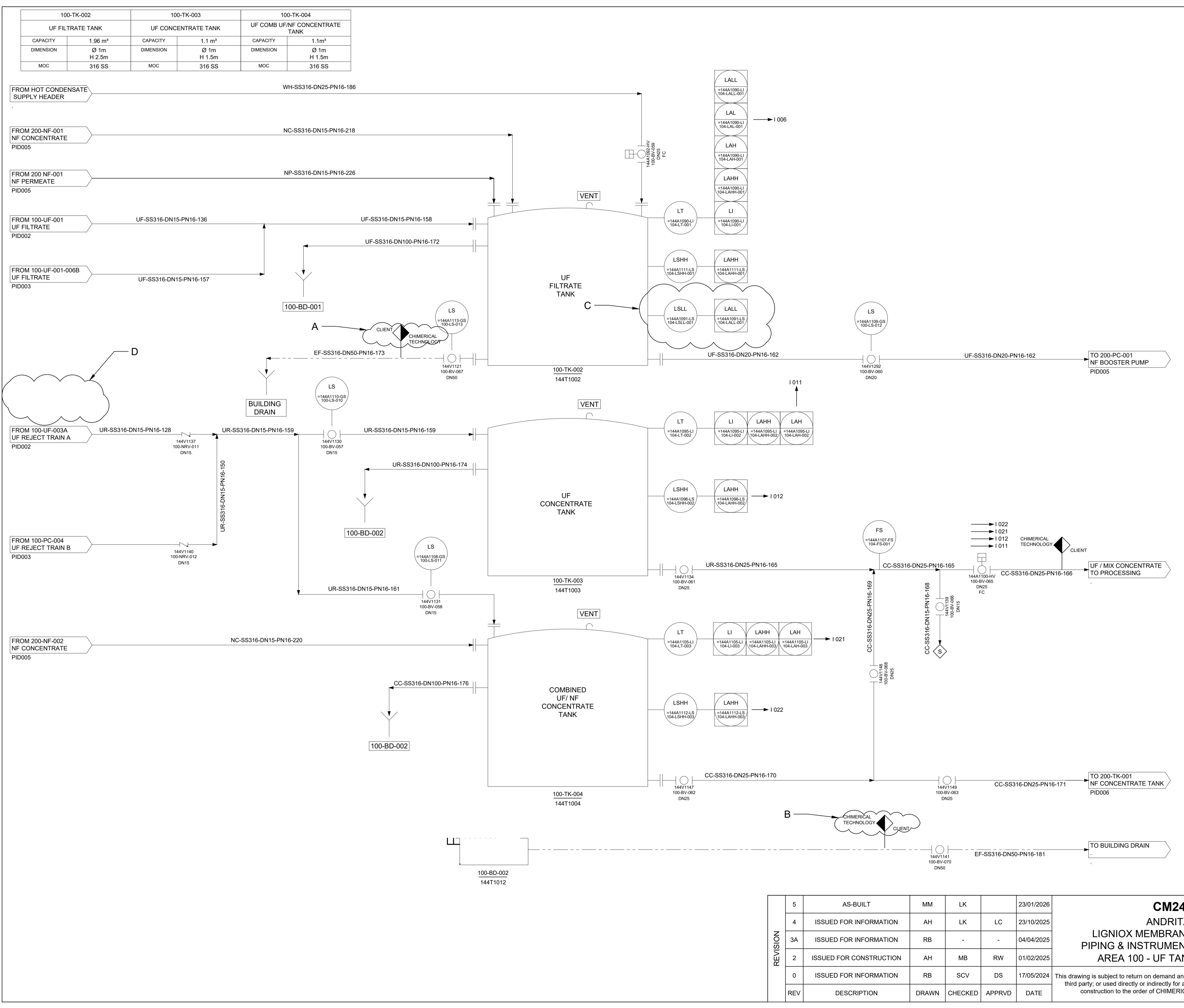
CM2402
ANDRITZ OY
LIGNIOX MEMBRANE DEMO PLANT
PIPING & INSTRUMENTATION DIAGRAM
AREA 100 - UF TRAIN B (TUBULAR) - AS-BUILT

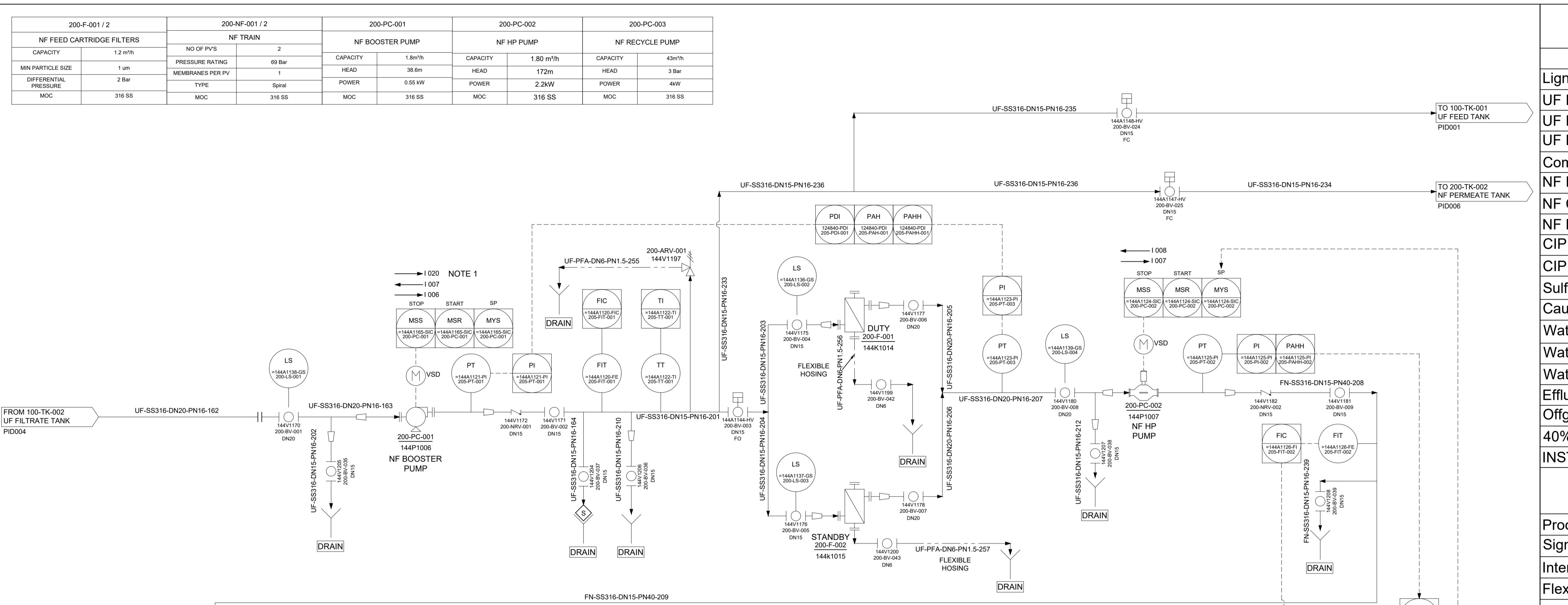
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CHIMERICAL TECHNOLOGY

AWING NO.:	PID NO.:	REV.
2402-AND001-4A-PID003	PID003	5B





FLUID	CODE
LigniOx Solution	LS
UF Feed	FD
UF Filtrate	UF
UF Reject	UR
Combined Concentrate	CC
NF Feed (High Pressure)	FN
NF Concentrate	NC
NF Permeate	NP
CIP Supply	CS
CIP Return	CP
Sulfuric Acid	AS
Caustic Soda (Liquid)	AC
Water Hot (Hot Condensate)	WH
Water Cold (Demineralized)	WC
Water Potable	WP
Effluent	EF
Offgas Vapour	EV
40% SMBS	SM
INSTRUMENT AIR	IA

LEGEND

Process Stream	—
Signal	- - -
Intermittent	—
Flexible line	wavy
Fail Open	FO
Fail Closed	FC
Sample Valve	◊

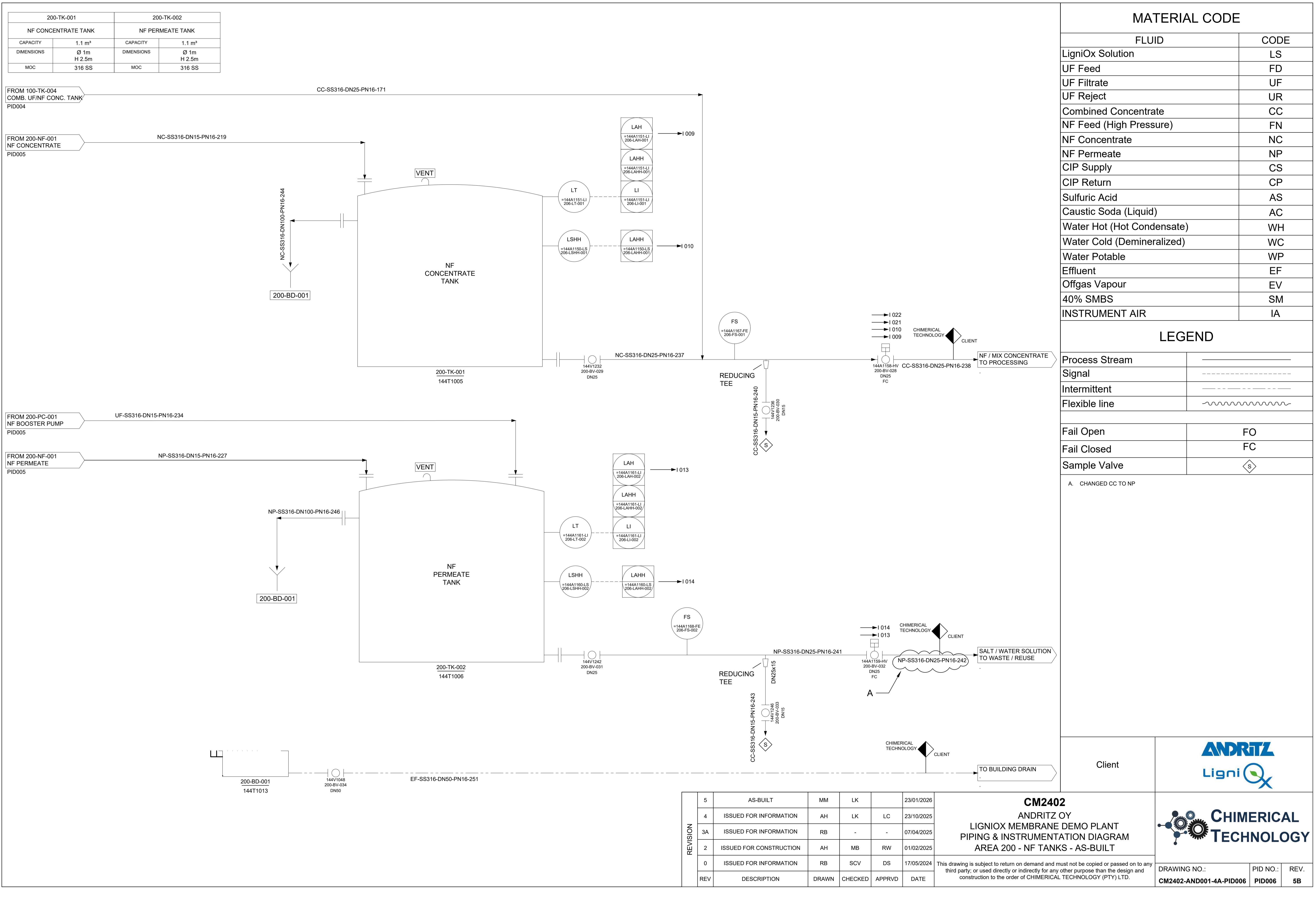
A. CHANGED CS TO CP
B. CHANGED ANDRITZ TAGS FROM 144V TO 144A

NOTES:
1. ON THE CONDITION VALVE 144A1148-HV IS OPEN

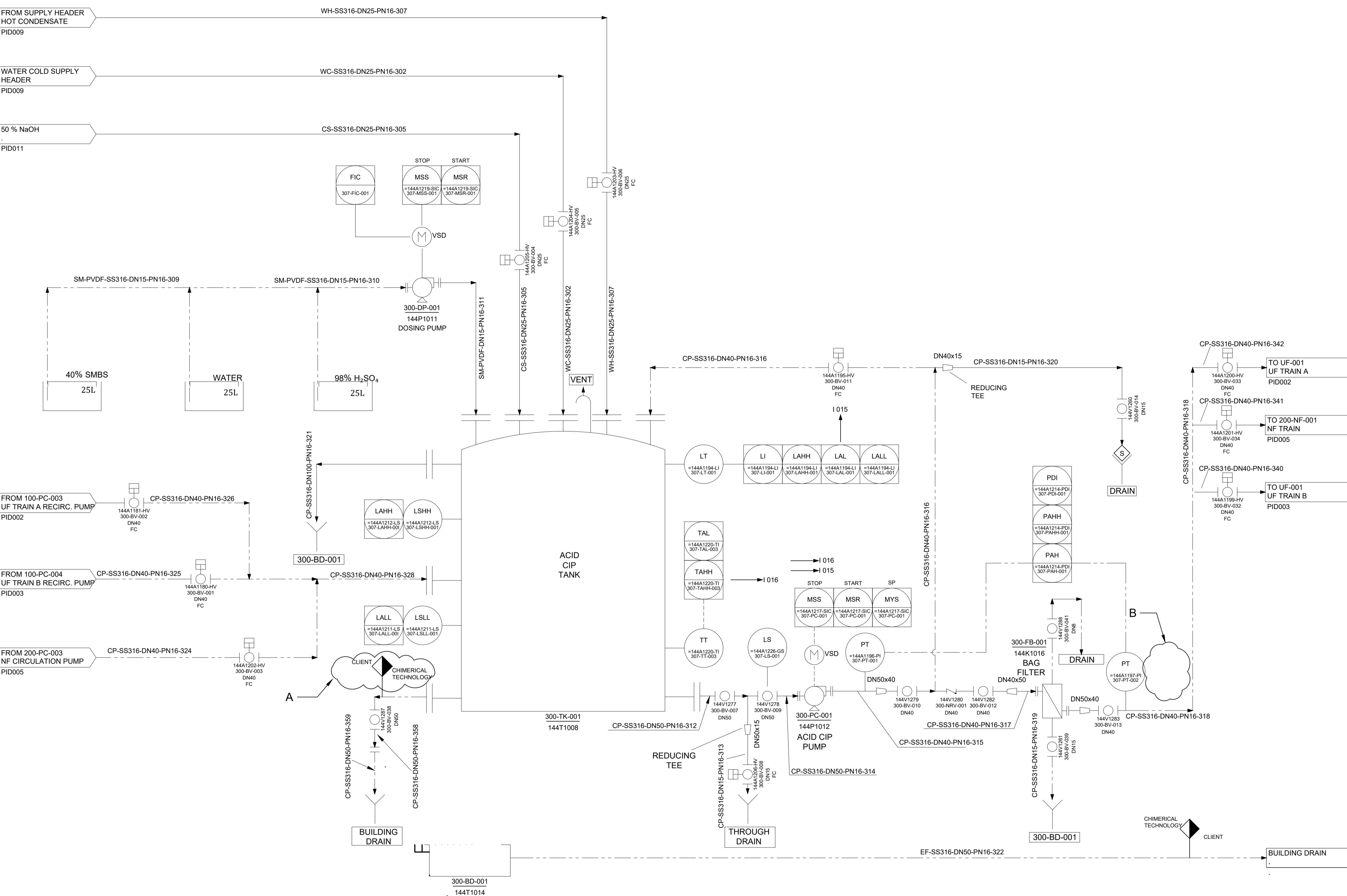
CM2402	ANDRITZ OY
LIGNIOX MEMBRANE DEMO PLANT	
PIPING & INSTRUMENTATION DIAGRAM	
AREA 200 - NF - AS-BUILT	
Client	Chimerical Technology
DRAWING NO.: CM2402-AND001-4A-PID005	PID NO.: PID005
REV. 5B	

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REVISION	5	AS-BUILT	MM	LK	23/01/2026
4	ISSUED FOR INFORMATION	AH	LK	LC	23/10/2025
3A	ISSUED FOR INFORMATION	RB	-	-	04/04/2025
2	ISSUED FOR CONSTRUCTION	AH	MB	RW	01/02/2025
0	ISSUED FOR INFORMATION	RB	SCV	DS	17/05/2024
REV	DESCRIPTION	DRAWN	CHECKED	APPRVD	DATE



300-FB-001		300-DP-001	300-PC-001	300-TK-001
BAG FILTER		DOSING PUMP	ACID CIP PUMP	ACID CIP TANK
CAPACITY	17m³/h	CAPACITY	17m³/h	CAPACITY
MIN PARTICLE SIZE	1 um	HEAD	30m	1.01m ³
DIFFERENTIAL PRESSURE	2 bar	POWER	3 kW	DIMS Ø 0.89m H 1.16m
MOC	316 SS	MOC	316 SS	MOC
				316 SS



MATERIAL CODE

FLUID	CODE
LigniOx Solution	LS
UF Feed	FD
UF Filtrate	UF
UF Reject	UR
Combined Concentrate	CC
NF Feed (High Pressure)	FN
NF Concentrate	NC
NF Permeate	NP
CIP Supply	CS
CIP Return	CP
Sulfuric Acid	AS
Caustic Soda (Liquid)	AC
Water Hot (Hot Condensate)	WH
Water Cold (Demineralized)	WC
Water Potable	WP
Effluent	EF
Offgas Vapour	EV
40% SMBS	SM
INSTRUMENT AIR	IA

LEGEND

Process Stream	—
Signal	- - -
Intermittent	- - - -
Flexible line	wavy
Fail Open	FO
Fail Closed	FC
Sample Valve	◊

A. ADDED BATTERY LIMIT
B. TT REMOVED

REVISION	5	AS-BUILT	MM	LK	23/01/2026	CM2402 ANDRITZ OY LIGNIOX MEMBRANE DEMO PLANT PIPING & INSTRUMENTATION DIAGRAM AREA 300 - CIP ACID - AS-BUILT
	4	ISSUED FOR INFORMATION	AH	LK	23/10/2025	
	3A	ISSUED FOR INFORMATION	RB	-	-	
	2	ISSUED FOR CONSTRUCTION	AH	MB	RW	
	0	ISSUED FOR INFORMATION	RB	SCV	DS	
	REV	DESCRIPTION	DRAWN	CHECKED	APPRVD	DATE

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DRAWING NO.: CM2402-AND001-4A-PID007
PID NO.: PID007
REV. 5B

