

Line Number	021601WSS0016	Stress CN / Level	Nº 021	Level: I
Isometric Number	023A2021601WSS0016_01	Process Approval Required	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
		Intrumentation Approval Required (N/A)	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Information to be attached:				
Master Copy of PID:	YES <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	Nº 800124-026-PID-0021-017-1	Rev.
PID Modification Sheet:	YES <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	Nº	Rev.
Equipment Vendor Dwg.:	YES <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	Nº	Rev.
Instrument Dwg.:	YES <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	Nº	Rev.
Project By-Pass ⁽⁴⁾ :	YES <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	Nº	Rev.
SPO Approved Isometric:	YES <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	Rev.	Extraction Date:
SIT Approved Isometric:	YES <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	Rev.	Extraction Date:



TechnipFMC – Butterfly Project

HOI DS

Nº	SHORT DESCRIPTION	RESOLVED (✓)

A VERIFICAR / TO BE CHECKED

Revision By : (D) Designer / (LDG) Design Leader / (ST) Stress Specialist / (LST) Stress Leader / (SP) Supports Specialist / (LSP) Supports leader / (M) Materials / (SL) Spooler / (CHK) Issuer / (L) Discipline Lead

"N/A"
NO APPLICA /
NOT

IFC	REV 0	REV 1	REV 2
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
✓	X ⁽¹⁾	1st-Chk ⁽²⁾	2nd-Chk ⁽³⁾
By: D		By: LDG	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
By: D		By: LDG	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
By: ST		By: LST	
✓		✓	
✓		✓	
By: SP		By: LSP	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
✓		✓	
By: M			
✓			
✓			
By: CHK			
1st-Chk ⁽²⁾	X	✓	X
✓			
✓			
✓			
✓			
✓			

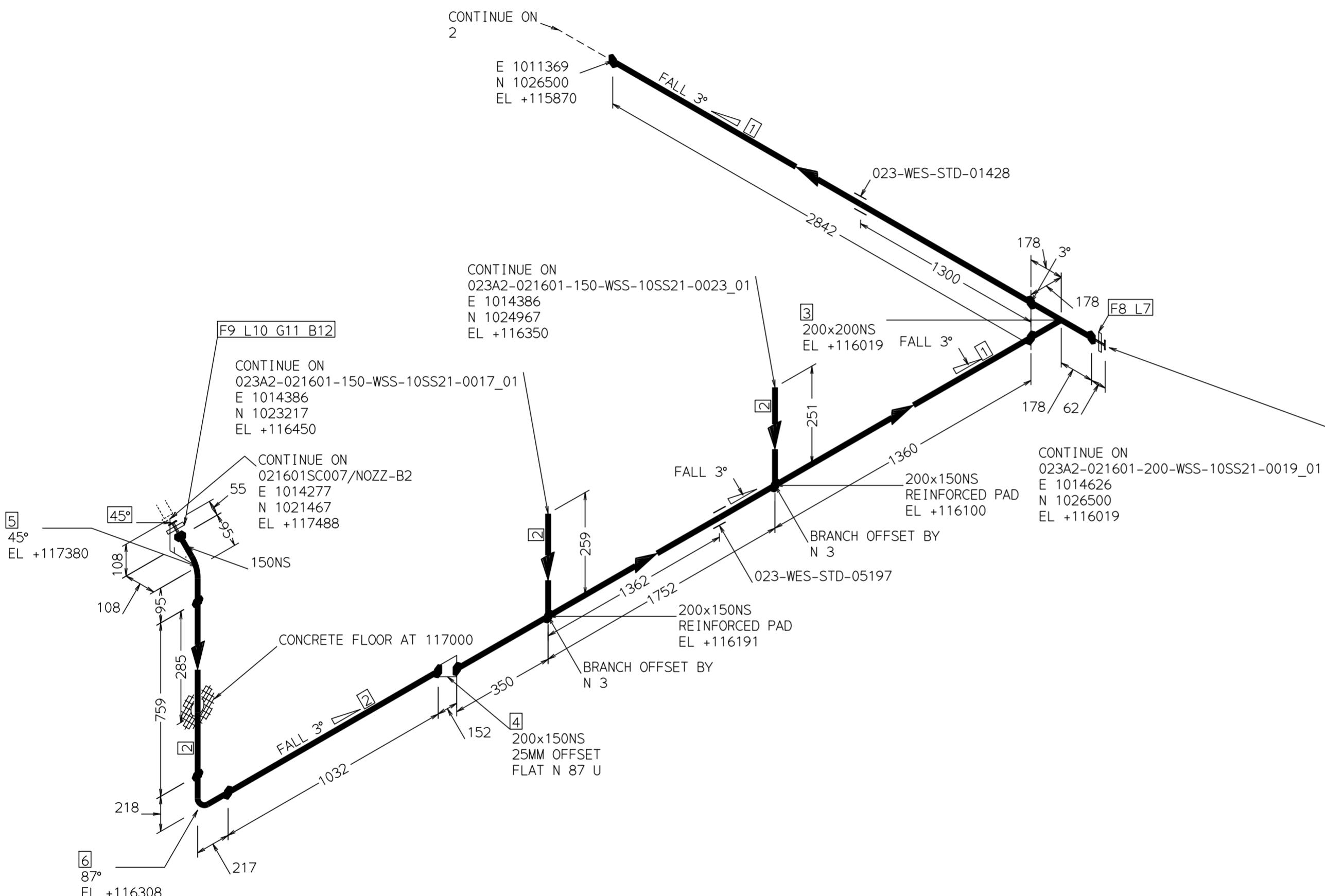
SIGNATURES (Name and date)

SIGNATURES (Name and date)				
DESIGN LEADER (LD)	REVIEWED By rvasquezhu at 4:14 pm, Jan 04, 2021	SUPPORTS LEADER (LSP)	REVIEWED By Sergio Zamora at 12:28 pm, Feb 03, 2021	ISSUER (CHK)
STRESS LEADER (LST)	REVIEWED By J. LL. at 4:15 pm, Feb 03, 2021	MATERIALS (M)	REVIEWED By Jose G. Suarez at 4:58 pm, Feb 03, 2021	DISCIPLINE LEAD (L)

NOTES:

- NOTES:**

 - [1] If "X" marqued, a "HOLD" note should be included in the Holds area for justification.
 - [2] 1st checking round: Checker to place a or a (X) confirming or not Designer verification. A or a (X) should also be placed to confirm or reject any mark placed by the Designer confirming or not the implicit HOLD.
 - [3] 2nd checking round: Checker to place a to validate the points that were not confirmed in the 1st round and were corrected by respective Specialist.
 - [4] If an isometric with HOLD is approved by IFC Leader for issuance, the correspondent By-Pass should be attached.


MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	200	Pipes (Length), EN 10220, BE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPG0	6.4M
2	150	Pipes (Length), EN 10220, BE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPF0	2.2M
3	200 x 200	Eq Te, EN 10253-4 Type B, BW Ends, Welded + 100% RT, Serie 1, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1TJF5CV	1
4	200 x 150	Ecc Reducer, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -, /2MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9W89	1
5	150	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKE8K M.3D, Serie 1, /2MM EN 10253-4 Gr.X2CrNi19-11,	1	1
6	150	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKEKF M.3D, Serie 1, /2MM EN 10253-4 Gr.X2CrNi19-11,	1	1
7	200	Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN10 Flgs./3.2MM EN 10216-5 Gr.X2CrNi19-11,	C3J5USZC	1
8	200	LJ Flg, EN 1092-1 Type 02, FF, PN 10, -, / EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C1KXSGY8	1
9	150	LJ Flg, EN 1092-1 Type 02, FF, PN 16, -, / EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C1KXSGYK	1
10	150	Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN16 Flgs./3.2MM EN 10216-5 Gr.X2CrNi19-11,	C3J5USU0	1

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
11	150	NM Flat Gk, EN 1514-1, RF as per EN 1092-1, PN 16, IBC Type, Thk=3.2mm, Klingsil C-4430, TA-Luft & EC1935 (D.S. 5101)/ CNAF,	C1NKU6DX	1
12	20	125 SBLT 2 HHx N&W, ISO 261/ISO 4032, Full Length Threaded, F.Wash. EN ISO 887, A2, EN ISO 7089 ISO 3506-1 Gr.A2-70,	C3JHBDAZ	8

**PIPING DPT.
ISSUER
CHECKED**

By oscar at 5:08 pm, Feb 04, 2021

0	18/12/20	AF	LP	OMC	IFC - ISSUED FOR CONSTRUCTION
REV	DATE	DWN	CHK	APP	DESCRIPTION

ALL dimensions to be checked in field prior to construction. Dimensions and routing shall be field adjusted, it is the piping contractors responsibility to check and verify all closing dimensions to equipment and make adjustments as required in field. All dimensions, elevations and coordinates are in millimeter unless noted otherwise. Fieldwelds and overlengths to be determined by piping contractor. Bolt holes to straddle horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.

NOTES:

For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.

REFERENCES / DOCUMENTS

LINE LIST	30201-042-001000-001
ISOMETRIC INDEX	30303-042-023000-200
PIPING SUPPORT	30207-042-021300-001

SPEC
SYMBOLIC
10SS21
BUTTERFLY PROJECT/KREFELD

PROCESS UNIT	DESIGN AREA	LINE NUMBER	TRAIN	sheet	REV
026	023A2	021601-200-WSS-10SS21-0016	01	1 OF 2	0

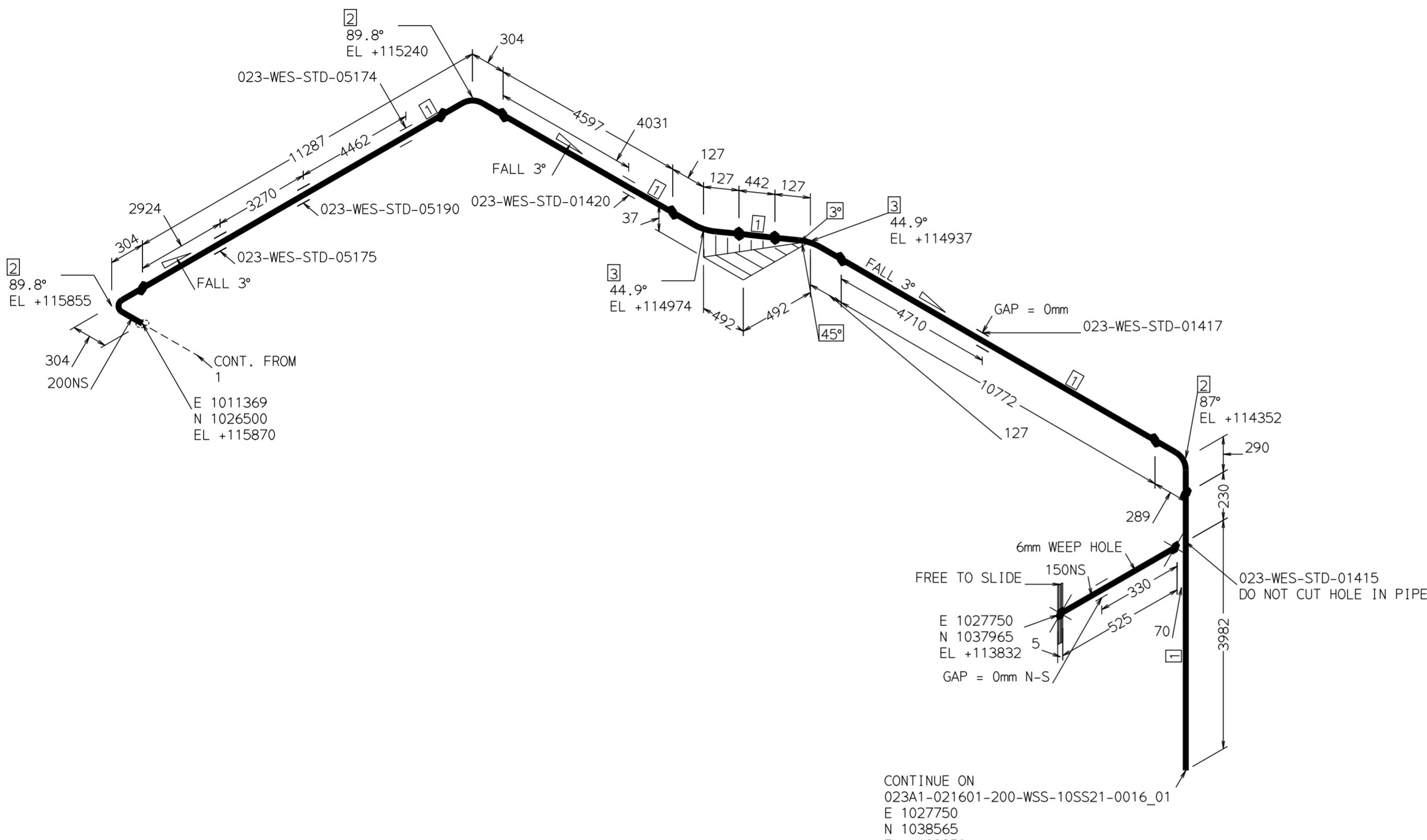
TechnipFMC

Cargill

N

MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	200	Pipes (Length), EN 10220, BE, EFW + 100% RT, -./2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPG0	31.1M
2	200	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKEKG M.3D, Serie 1./2MM EN 10253-4 Gr.X2CrNi19-11,	3	
3	200	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKE8L M.3D, Serie 1./2MM EN 10253-4 Gr.X2CrNi19-11,	2	



0	18/12/20	AF	LP	OMC	IFC - ISSUED FOR CONSTRUCTION
REV	DATE	DWN	CHK	APP	DESCRIPTION
ALL dimensions to be checked in field prior to construction. Dimensions and routing shall be field adjusted, it is the piping contractors responsibility to check and verify all closing dimensions to equipment and make adjustments as required in field. All dimensions, elevations and coordinates are in millimeter unless noted otherwise. Fieldwelds and overlengths to be determined by piping contractor. Bolt holes to straddle horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.					
TechnipFMC Cargill					
SPEC	10SS21	PROJECT DESCRIPTION/LOCATION		LINE NUMBER	TRAIN
SYMBOLIC		BUTTERFLY PROJECT/KREFELD			SHEET
PROCESS UNIT	DESIGN AREA	026	023A2	021601-200-WSS-10SS21-0016	REV

NOTES:

For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.

REFERENCES / DOCUMENTS

LINE LIST	30201-042-001000-001
ISOMETRIC INDEX	30303-042-023000-200
PIPING SUPPORT	30207-042-021300-001

SPEC

SYMBOLIC

Insulated Pipe

Insulated and Traced Pipe

— — — — —

PROJECT DESCRIPTION/LOCATION

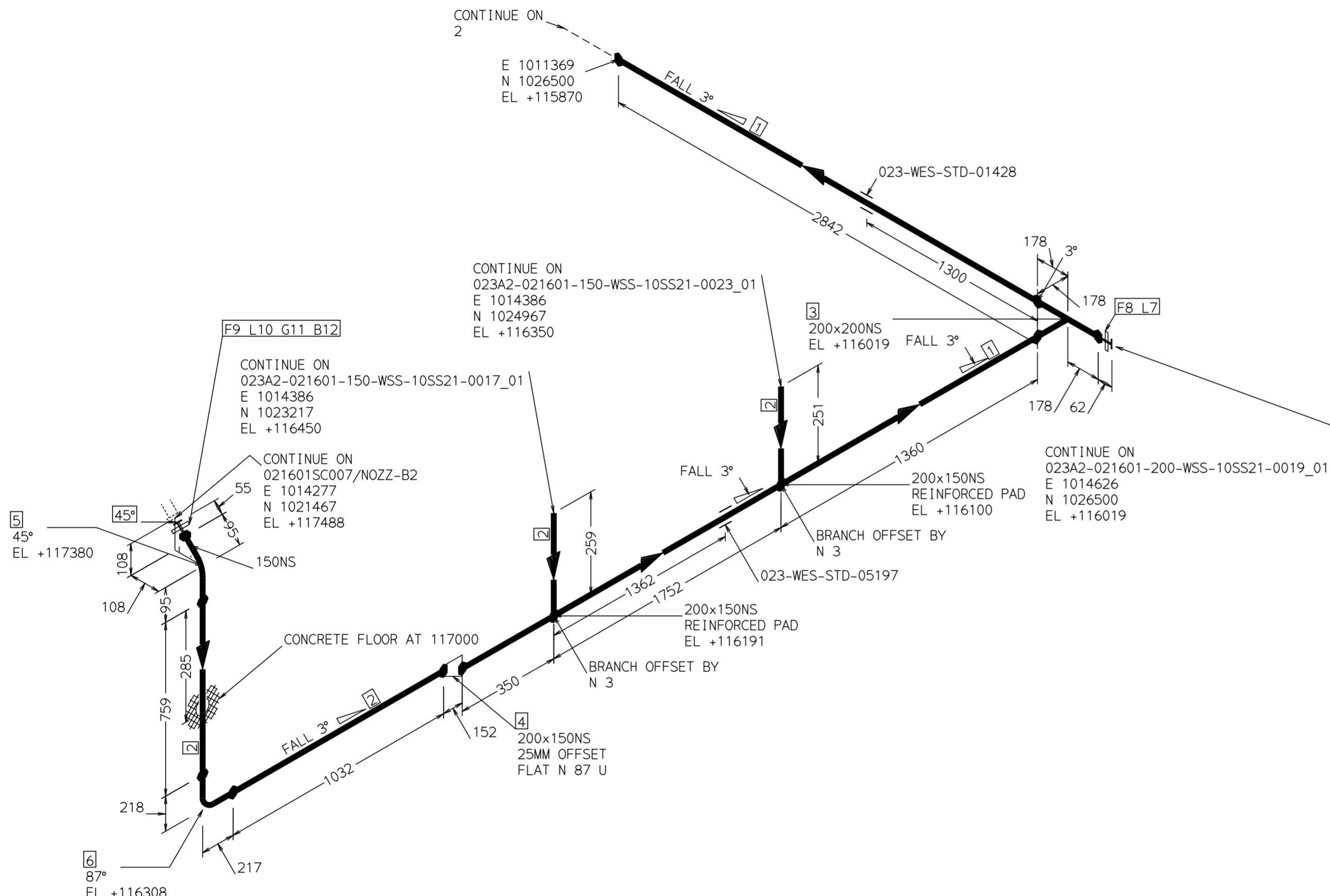
BUTTERFLY PROJECT/KREFELD

LINE NUMBER

TRAIN

SHEET

REV



MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	200	Pipes (Length), EN 10220, BE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPG0	6.4M
2	150	Pipes (Length), EN 10220, BE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPF0	2.2M
3	200 x 200	Eq Te, EN 10253-4 Type B, BW Ends, Welded + 100% RT, Serie 1, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1TJF5CV	1
4	200 x 150	Ecc Reducer, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -, /2MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9W89	1
5	150	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 1, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1KXKE8K	1
6	150	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 1, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1KXKEKF	1
7	200	Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN10 Flgs, /3.2MM EN 10216-5 Gr.X2CrNi19-11,	C3J5USZC	1
8	200	LJ Flg, EN 1092-1 Type 02, FF, PN 10, -, / EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C1KXSGY8	1
9	150	LJ Flg, EN 1092-1 Type 02, FF, PN 16, -, / EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C1KXSGYK	1
10	150	Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN16 Flgs, /3.2MM EN 10216-5 Gr.X2CrNi19-11,	C3J5USU0	1

MATERIAL LIST - ERECTION

<u>PT NO</u>	<u>N.S. (MM)</u>	<u>DESCRIPTION</u>	<u>IDENT</u>	<u>QTY</u>
11	150	NM Flat Gk, EN 1514-1, RF as per EN 1092-1, PN 16, IBC Type, Thk=3.2mm, Klingsersil C-4430, TA-Luft & EC1935 (D.S. 5101)/ CNAF,	C1NKU6DX	1
12	20	125 SBlt 2 HHx N&2W, ISO 261/ISO 4032, Full Length Threaded, F.Wash. EN ISO 887, A2, EN ISO 7089 ISO 3506-1 Gr.A2-70.	C3JHBDAZ	8

PIPING DPT.
MATERIALS
CHECKED

By Jose G. Suarez at 4:57 pm, Feb 03, 2021

0	18/12/20	AF	LP	OMC	IFC - ISSUED FOR CONSTRUCTION
REV	DATE	DWN	CHK	APP	DESCRIPTION

ALL dimensions to be checked in field prior to construction. Dimensions and routing shall be field adjusted, it is the piping contractors responsibility to check and verify all closing dimensions to equipment and make adjustments as required in field. All dimensions, elevations and coordinates are in millimeter unless noted otherwise. Fieldwelds and overlengths to be determined by piping contractor. Bolt holes to straddle horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.

NOTES:

For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.

REFERENCES / DOCUMENTS

SPEC

1

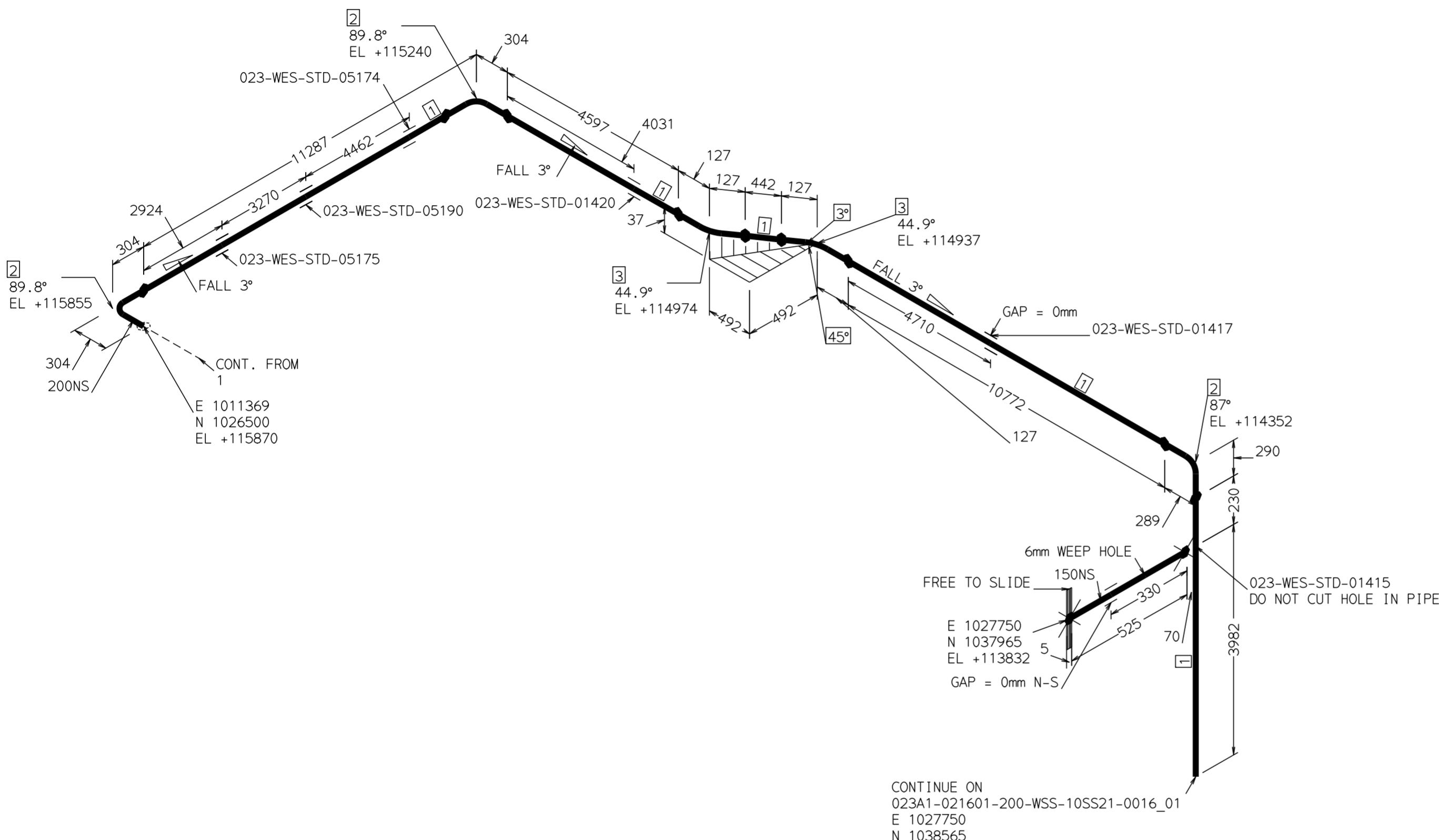
OSS21

horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.						
PROJECT DESCRIPTION/LOCATION			 TechnipFMC			
BUTTERFLY PROJECT/KREFELD						
PROCESS UNIT	DESIGN AREA	LINE NUMBER			TRAIN	SHEET
026	023A2	021601-200-WSS-10SS21-0016			01	1 OF 2
						0

N

MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	200	Pipes (Length), EN 10220, BE, EFW + 100% RT, -./2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPG0	31.1M
2	200	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKEKG M.3D, Serie 1./2MM EN 10253-4 Gr.X2CrNi19-11,	3	
3	200	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKE8L M.3D, Serie 1./2MM EN 10253-4 Gr.X2CrNi19-11,	2	



PIPING DPT.
MATERIALS
CHECKED

By Jose G. Suarez at 4:57 pm, Feb 03, 2021

0	18/12/20	AF	LP	OMC	IFC - ISSUED FOR CONSTRUCTION
REV	DATE	DWN	CHK	APP	DESCRIPTION
ALL dimensions to be checked in field prior to construction. Dimensions and routing shall be field adjusted, it is the piping contractors responsibility to check and verify all closing dimensions to equipment and make adjustments as required in field. All dimensions, elevations and coordinates are in millimeter unless noted otherwise. Fieldwelds and overlengths to be determined by piping contractor. Bolt holes to straddle horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.					
PROJECT DESCRIPTION/LOCATION BUTTERFLY PROJECT/KREFELD					
026	023A2	021601-200-WSS-10SS21-0016	01	2 OF 2	0

NOTES:

For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.

REFERENCES / DOCUMENTS

SPEC

10SS21

SYMBOLIC

PROCESS UNIT

DESIGN AREA

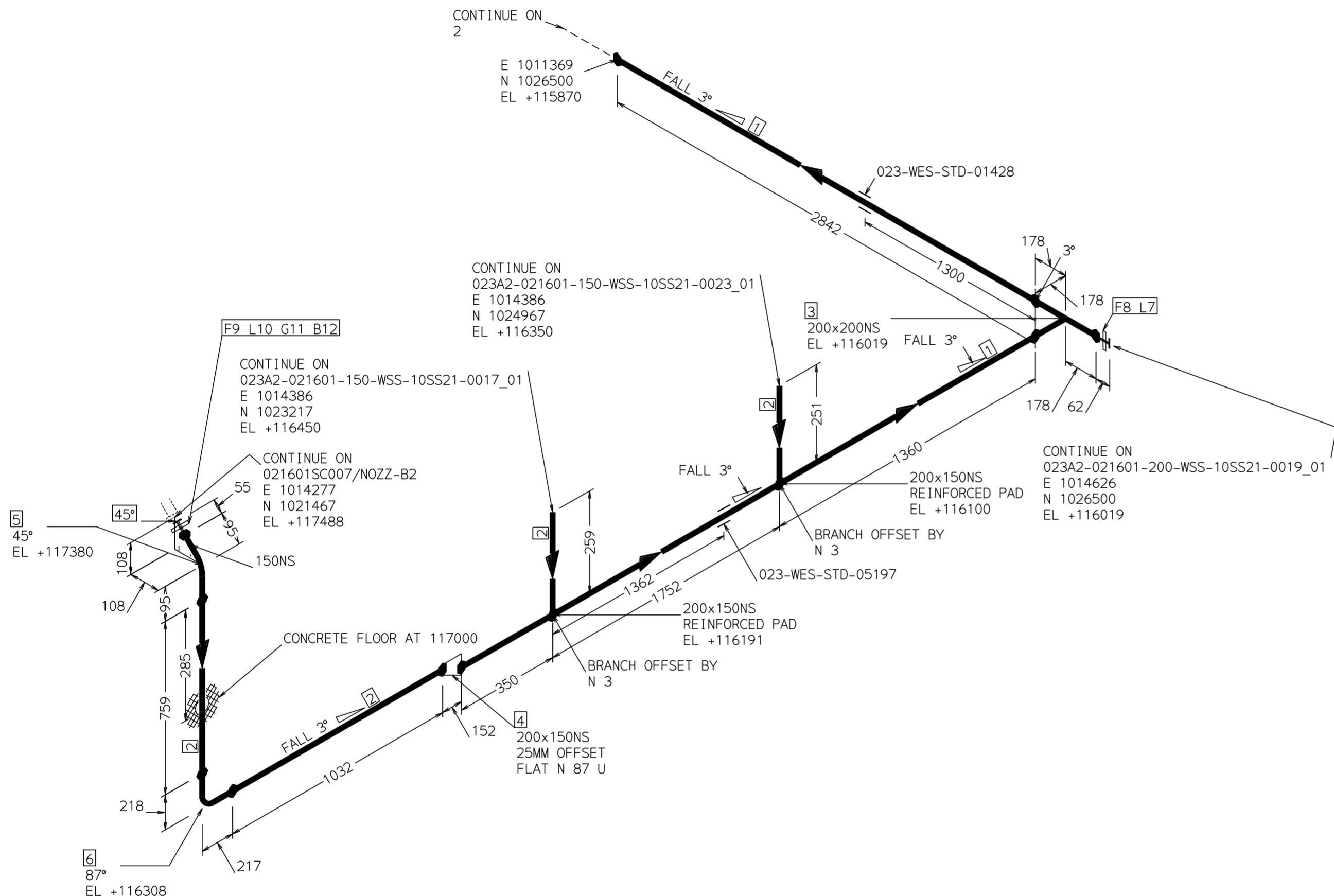
LINE NUMBER

TRAIN

SHEET

REV





MATERIAL LIST - FABRICATION					
PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY	
1	200	Pipes (Length), EN 10220, BE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPG0	6.4M	
2	150	Pipes (Length), EN 10220, BE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPF0	2.2M	
3	200 x 200	Eq Te, EN 10253-4 Type B, BW Ends, Welded + 100% RT, Serie 1, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1TJF5CV	1	
4	200 x 150	Ecc Reducer, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -, /2MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9W89	1	
5	150	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 1, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1KXKE8K	1	
6	150	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 1, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1KXKEKF	1	
7	200	Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN10 Flgs, /3.2MM EN 10216-5 Gr.X2CrNi19-11,	C3J5USZC	1	
8	200	LJ Flg, EN 1092-1 Type 02, FF, PN 10, -, / EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C1KXSGY8	1	
9	150	LJ Flg, EN 1092-1 Type 02, FF, PN 16, -, / EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C1KXSGYK	1	
10	150	Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN16 Flgs, /3.2MM EN 10216-5 Gr.X2CrNi19-11,	C3J5USU0	1	

MATERIAL LIST - ERECTION					
PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY	
11	150	NM Flat Gk, EN 1514-1, RF as per EN 1092-1, PN 16, IBC Type, Thk=3.2mm, Klingsersil C-4430, TA-Luft & EC1935 (D.S. 5101)/ CNAF,	C1NKU6DX	1	
12	20	125 SBLt 2 HHx N&2W, ISO 261/ISO 4032, Full Length Threaded, F.Wash. EN ISO 887, A2, EN ISO 7089 ISO 3506-1 Gr.A2-70,	C3JHBDAZ	8	

PIPING DPT.
SUPPORTED

By D. Navarro at 12:30 pm, Feb 03, 2021

PIPING DPT.
SUPPORTS
CHECKED

By Sergio Zamora at 12:29 pm, Feb 03, 2021

0	18/12/20	AF	LP	OMC	IFC - ISSUED FOR CONSTRUCTION
REV	DATE	DWN	CHK	APP	DESCRIPTION

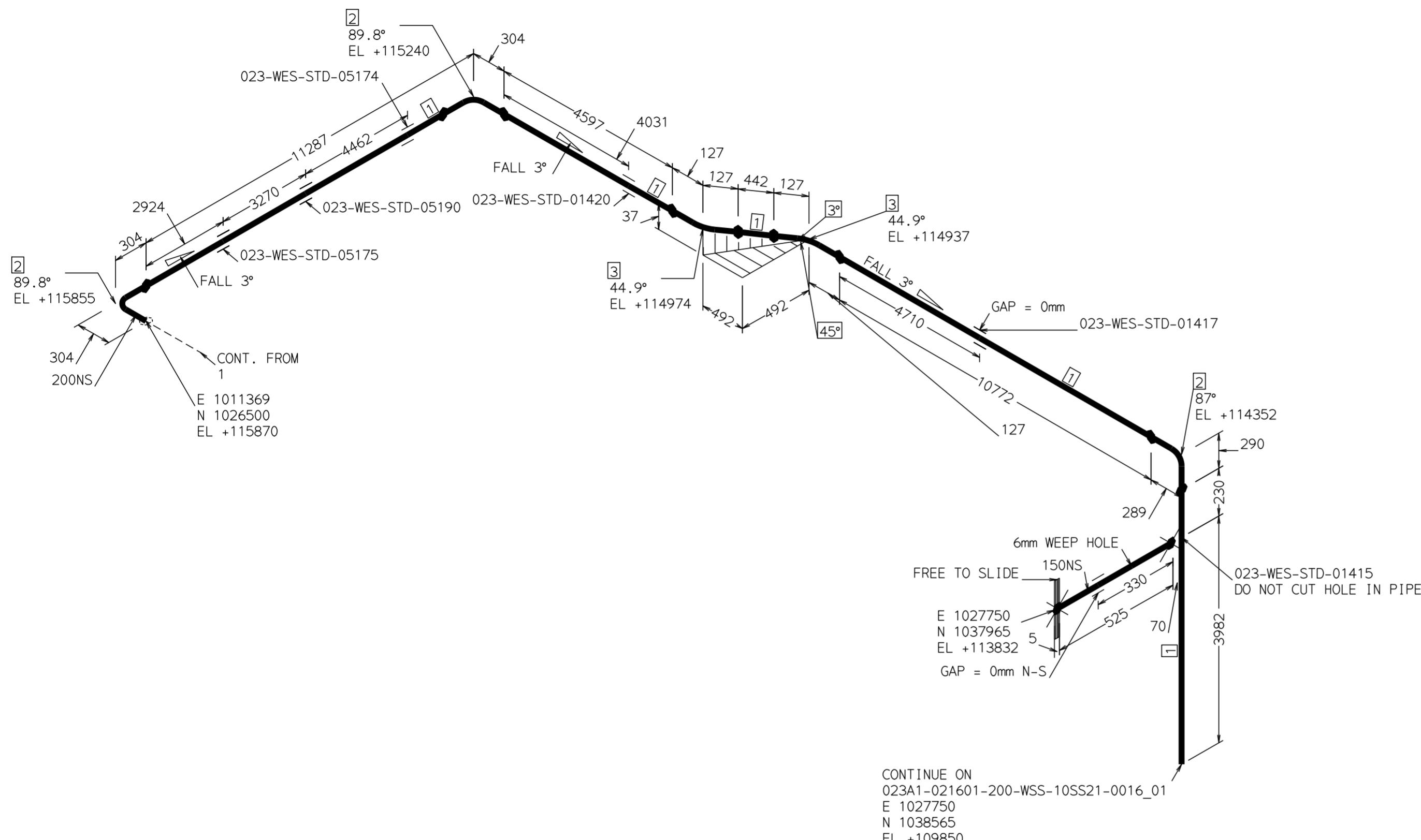
All dimensions to be checked in field prior to construction. Dimensions and routing shall be field adjusted, it is the piping contractors responsibility to check and verify all closing dimensions to equipment and make adjustments as required in field. All dimensions, elevations and coordinates are in millimeter unless noted otherwise. Fieldwelds and overlengths to be determined by piping contractor. Bolt holes to straddle horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.

horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.											
NOTES: For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.	REFERENCES / DOCUMENTS			SPEC	10SS21	PROJECT DESCRIPTION/LOCATION					
				SYMBOLS		BUTTERFLY PROJECT/KREFELD		 TechnipFMC			
	LINE LIST	30201-042-001000-001		Insulated Pipe — — — —	Insulated and Traced Pipe — — — — —	LINE NUMBER		TRAIN	SHEET		
	ISOMETRIC INDEX	30303-042-023000-200						REV			
	PIPING SUPPORT	30207-042-021300-001				021601-200-WSS-10SS21-0016		01	1 OF 2		

N

MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	200	Pipes (Length), EN 10220, BE, EFW + 100% RT, -./2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPG0	31.1M
2	200	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKEKG M.3D, Serie 1./2MM EN 10253-4 Gr.X2CrNi19-11,	3	
3	200	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKE8L M.3D, Serie 1./2MM EN 10253-4 Gr.X2CrNi19-11,	2	



PIPING DPT.
STRESS CHECKED

By J. LL at 4:13 pm, Feb 03, 2021

PIPING DPT.
SUPPORTED

By D. Navarro at 12:20 pm, Feb 03, 2021

PIPING DPT.
SUPPORTS CHECKED

By Sergio Zamora at 12:29 pm, Feb 03, 2021

0	18/12/20	AF	LP	OMC	IFC - ISSUED FOR CONSTRUCTION
REV	DATE	DWN	CHK	APP	DESCRIPTION

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NOTES:

For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.

REFERENCES / DOCUMENTS

SPEC

10SS21

SYMBOLS

LINE LIST 30201-042-001000-001

ISOMETRIC INDEX 30303-042-023000-200

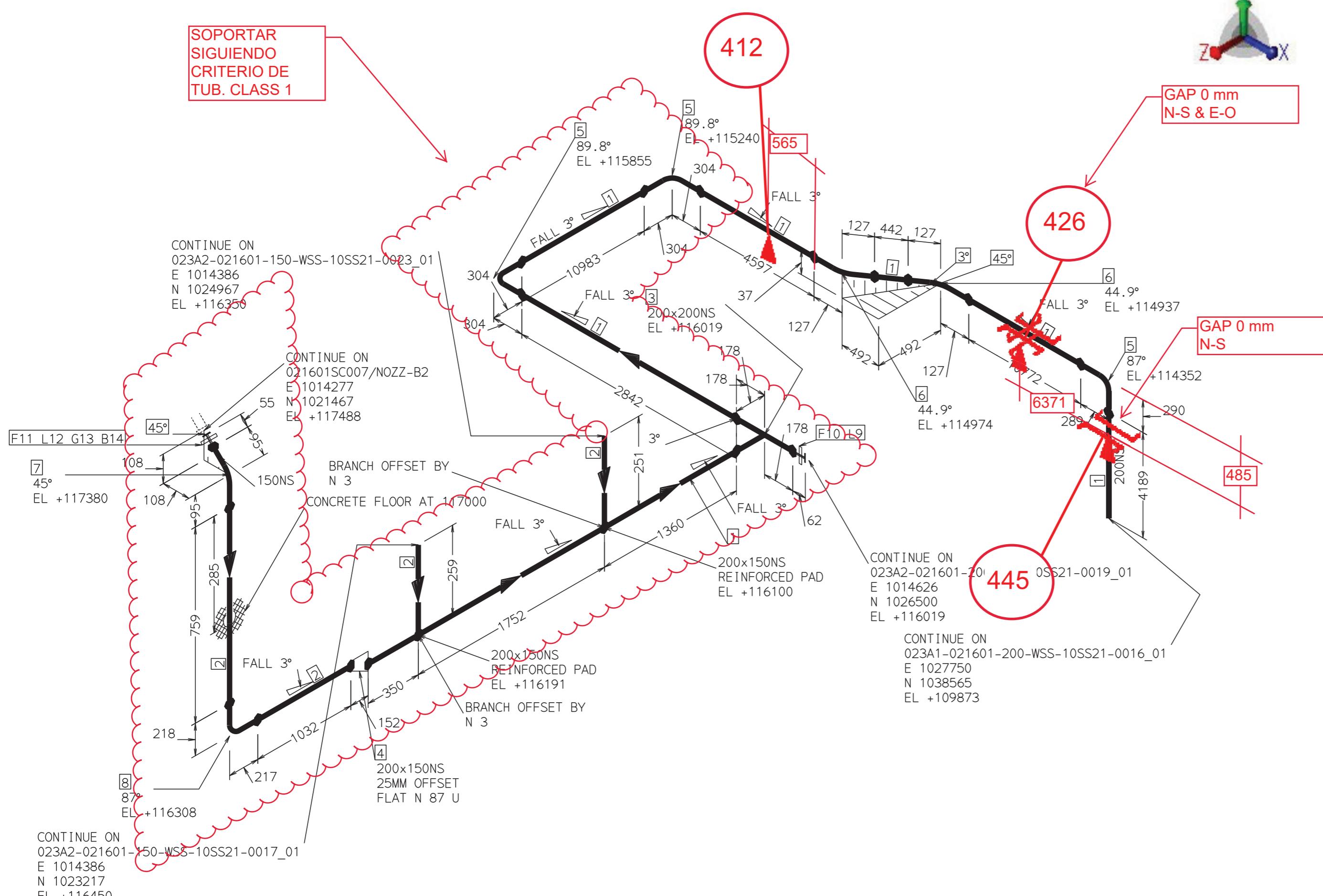
PIPING SUPPORT 30207-042-021300-001

Insulated Pipe

Insulated and Traced Pipe

PROCESS UNIT	DESIGN AREA	LINE NUMBER	TRAIN	SHEET	REV
026	023A2	021601-200-WSS-10SS21-0016	01	2 OF 2	0





MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	200	Pipes (Length), EN 10220, BE, EFW + 100% RT, - ,/2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPG0	37.3M
2	150	Pipes (Length), EN 10220, BE, EFW + 100% RT, - ,/2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPF0	2.2M
3	200 x 200	Eq Te, EN 10253-4 Type B, BW Ends, Welded + 100% RT, Serie 1,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1TJF5CV	1
4	200 x 150	Ecc Reducer, EN 10253-4 Type A, BW Ends, Welded + 100% RT, - ,/2MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9W89	1
5	200	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 1,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1KXKEKG	3
6	200	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 1,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1KXKE8L	2
7	150	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 1,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1KXKE8K	1
8	150	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 1,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1KXKEKF	1
9	200	Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN10 Flgs,/3.2MM EN 10216-5 Gr.X2CrNi19-11,	C3J5USZC	1
10	200	LJ Flg, EN 1092-1 Type 02, FF, PN 10, - ,/ EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C1KXSGY8	1
11	150	LJ Flg, EN 1092-1 Type 02, FF, PN 16, - ,/ EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C1KXSGYK	1
12	150	Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN16 Flgs,/3.2MM EN 10216-5 Gr.X2CrNi19-11,	C3J5USU0	1

MATERIAL LIST - ERECTION

<u>PT NO</u>	<u>N.S. (MM)</u>	<u>DESCRIPTION</u>	<u>IDENT</u>	<u>QTY</u>
13	150	NM FFlat Gk, EN 1514-1, RF as per EN 1092-1, PN 16, IBC Type, Thk=3.2mm, Klingsersil C-4430, TA-Luft & EC1935 (D.S. 5101)/ CNAF,	C1NKU6DX	1
14	20	125 SBlt 2 HHx N&W, ISO 261/ISO 4032, Full Length Threaded, F.Wash. EN ISO 887, A2, EN ISO 7089 ISO 3506-1 Gr. A2-70	C3JHBDAZ	8

**PIPING DPT.
STRESS
MASTER**

By Carlos Hernández Orense at 3:14 pm, Feb 01, 2021

REV	DATE	DWN	CHK	APP	DESCRIPTION
0	18/12/20	AF	LP	OMC	IFC - ISSUED FOR CONSTRUCTION

ALL dimensions to be checked in field prior to construction. Dimensions and routing shall be field adjusted, it is the piping contractors responsibility to check and verify all closing dimensions to equipment and make adjustments as required in field. All dimensions, elevations and coordinates are in millimeter unless noted otherwise. Fieldwelds and overlengths to be determined by piping contractor. Bolt holes to straddle horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.

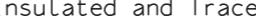
PROJECT DESCRIPTION/LOCATION		 TechnipFMC			
BUTTERFLY PROJECT/KREFELD					
PROCESS UNIT	DESIGN AREA	LINE NUMBER	TRAIN	SHEET	REV
026	023A2	021601-200-WSS-10SS21-0016	01	1 OF 1	0

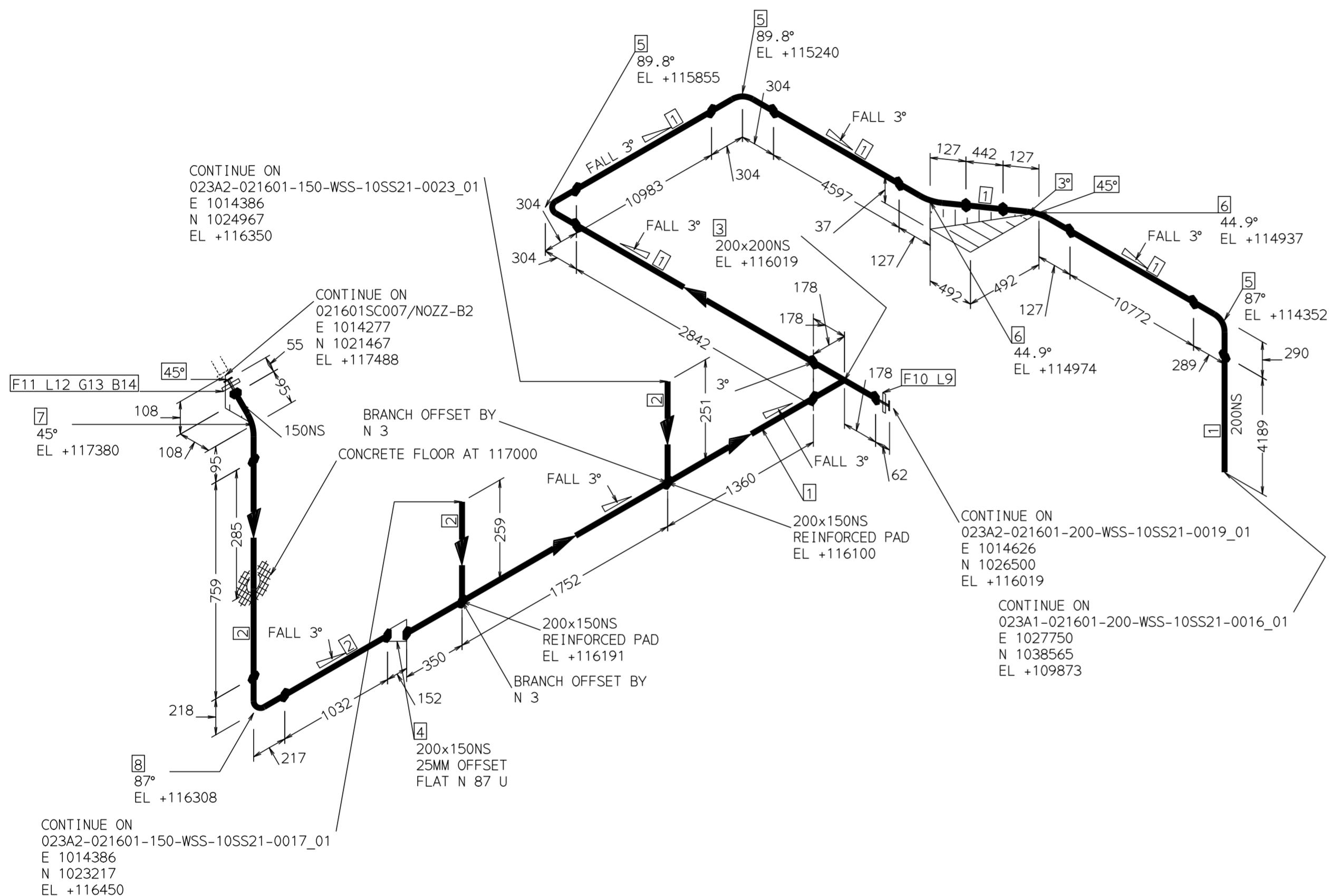
NOTES

For pipes < dn50 supporting to be studied and defined by construction contractor before

REFERENCES / DOCUMENTS

before	LINE LIST	30201-042-001000-001
	ISOMETRIC INDEX	30303-042-023000-200
	PIPING SUPPORT	30207-042-021300-001

SPEC	10SS21
SYMBOLS	
Insulated Pipe	Insulated and Traced Pipe
	



D

MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	200	Pipes (Length), EN 10220, BE, EFW + 100% RT, - ,/2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPG0	37.3M
2	150	Pipes (Length), EN 10220, BE, EFW + 100% RT, - ,/2MM EN 10217-7 Gr.X2CrNi19-11,	C1P0FPF0	2.2M
3	200 x 200	Eq Te, EN 10253-4 Type B, BW Ends, Welded + 100% RT, Serie 1,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1TJF5CV	1
4	200 x 150	Ecc Reducer, EN 10253-4 Type A, BW Ends, Welded + 100% RT, - ,/2MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9W89	1
5	200	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKEKG M.3D, Serie 1,/2MM EN 10253-4 Gr.X2CrNi19-11,		3
6	200	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKE8L M.3D, Serie 1,/2MM EN 10253-4 Gr.X2CrNi19-11,		2
7	150	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKE8K M.3D, Serie 1,/2MM EN 10253-4 Gr.X2CrNi19-11,		1
8	150	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKEKF M.3D, Serie 1,/2MM EN 10253-4 Gr.X2CrNi19-11,		1
9	200	Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN10 Flgs./3.2MM EN 10216-5 Gr.X2CrNi19-11,	C3J5USZC	1
10	200	LJ Flg, EN 1092-1 Type 02, FF, PN 10, - ,/ EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C1KXSGY8	1
11	150	LJ Flg, EN 1092-1 Type 02, FF, PN 16, - ,/ EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C1KXSGYK	1
12	150	Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN16 Flgs./3.2MM EN 10216-5 Gr.X2CrNi19-11,	C3J5USU0	1

MATERIAL LIST - ERECTION

<u>PT NO</u>	<u>N.S. (MM)</u>	<u>DESCRIPTION</u>	<u>IDENT</u>	<u>QTY</u>
13	150	NM Flat Gk, EN 1514-1, RF as per EN 1092-1, PN 16, IBC Type, Thk=3.2mm, Klingsersil C-4430, TA-Luft & EC1935 (D.S. 5101)/ CNAF,	C1NKU6DX	1
14	20	125 SBLt 2 HHx N&2W, ISO 261/ISO 4032, Full Length Threaded, F.Wash. EN ISO 887, A2, EN ISO 7089 ISO 3506-1 Gr. A2-70	C3JHBDAZ	8

DESTINED

PIPING DPT.
DESIGNED

Part 4: **5** – 11.11.2020 – Page 17/2020

**PIPING DPT.
DESIGN
CHECKED**

Digitized by srujanika at 4:28 pm, Jan 24, 2021

0	18/12/20	AF	LP	OMC	IFC - ISSUED FOR CONSTRUCTION

All dimensions to be checked in field prior to construction. Dimensions and routing shall be field adjusted, it is the piping contractors responsibility to check and verify all closing dimensions to equipment and make adjustments as required in field. All dimensions, elevations and coordinates are in millimeter unless noted otherwise. Fieldwelds and overlengths to be determined by piping contractor. Bolt holes to straddle horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.

PROJECT DESCRIPTION/LOCATION BUTTERFLY PROJECT/KREFELD		 TechnipFMC			
PROCESS UNIT	DESIGN AREA	LINE NUMBER	TRAIN	SHEET	REV
026	023A2	021601-200-WSS-10SS21-0016	01	1 OF 1	0

NOTES:

For pipes $< dn_{50}$ supporting to be studied and defined by construction contractor before line fabrication and installation.

REFERENCES / DOCUMENTS

LINE LIST	30201-042-001000-001
ISOMETRIC INDEX	30303-042-023000-200
PIPING SUPPORT	30207-042-021300-001

SPEC	10SS21	
	SYMBOLS	
	Insulated Pipe	Insulated and Traced Pipe