

ISOMETRIC IFC - CHECK LIST

Line Number	021601WSS0003	Stress CN / Level	Nº 042	Level: II	 TechnipFMC – Butterfly Project	
Isometric Number	023A1021601WSS0003_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-0021-015; 800124-020-PID-0021-002	Rev. 1 IFC		
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 checked="" type="checkbox"/>	N/A <input type="checkbox"/>	Nº BFLY-BYP-STU-ISOS-041	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:		
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" = NOT APPLICABLE	
Revision By : (D) Designer / (LDG) Design Leader					IFC REV 0 REV 1 REV 2	
Iso Information	Nº de linea según PID y lista de líneas / Line Nbr. according to PID and line list	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Datos de la linea según lista de líneas / Line data according to line list	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Clase de tubería según PID y Lista de Líneas / Piping class according to PID and Line List	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Vinculo E3D con Diagramas (Process Unit, Temp Operación, Numeracion TODAS válvulas manuales) / Link between E3D and Diagrams (Process Unit, Op Temp, ALL manual valves Tagged)	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Diámetro de la linea indicado en número de linea en el cajetín / Line diameter indicated in the line number in the title block	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Equipo modelado según plano Vendor válido para generar isométrica IFC / Equipment modelled according Vendor drawing valid for Isometric IFC generation Código / Code : 2 <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 021000TK003	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Equipo modelado según plano Vendor válido para generar isométrica IFC / Equipment modelled according Vendor drawing valid for Isometric IFC generation Código / Code : 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 021601TK001	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Nombre de tubuladuras según PID y pliego Vendor / Name of nozzle according to PID and Vendor drawing	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Rating y diámetro de tubuladuras según pliego Vendor / Rating and diameter of nozzles according to vendor drawing	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Posición y elevación de tubuladuras según pliego Vendor / Position and elevation of nozzles according to Vendor drawing	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
Revision By : (D) Designer / (LDG) Design Leader					By: D By: LDG	
Line Design	Línea sin colisión (verificación incluyendo la nube de puntos) / Line is clash free (checked including points cloud)	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Comentarios de SPO a líneas críticas recibidos e implementados antes de extracción final para emisión / Process comments to critical lines received and implemented before final extraction for issuance	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Verificación contra P&ID y Lista de Líneas / Check Iso vs P&ID and Line List : Correcta referencia de la continuidad de la isométrica en líneas nuevas, líneas existentes u otra hoja de la isométrica en los extremos de linea y sus ramales, incluyendo elevaciones y coordenadas / Correct continuity isometric reference to new lines, existing lines or other isometric sheet in each end of the line and its branches including elevations and coordinates	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Verificación contra P&ID / Check Iso vs P&ID : Elementos en linea incluidos, secuencia de picajes, pendiente, sentido de flujo, numeración de instrumentos, cambios de especificación, cumplimiento de notas / in-line components included, branch sequence, slope, flow direction, instrument numbering, pipe class breaks, notes accomplishment	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Verificación contra P&ID / Check Iso vs P&ID : Longitudes requeridas de entrada y/o salida a equipos, distancias y/o elevaciones mínimas o máximas requeridas, formación de condensados / Required inlet and/or outlet lengths to equipments, minimum or maximum distances and/or elevations, condensate generation	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Comentarios de SIT a recibidos e implementados antes de extracción final para emisión / Instrumentation comments received and implemented before final extraction for issuance	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Verificación contra Planos de Vendor o Hook-up Instrumentation / Check Iso vs Instrument Vendor Drawings or Hook-up : Tamaño de las válvulas de control y de seguridad, instalación de acuerdo a hook-up / Size of control valves and safety valves, instrument installation according to hook-up	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Picajes según tabla de picajes correspondiente / Branch configuration according to correspondent branch table	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Ventilos y drenajes de Procesos según requerimientos de PIDs y de puntos altos y bajos para prueba hidrostática y modelados según "assembly" correspondiente / Process vents and drains according PID requirements and high and low points for hydrostatic test and modelled according proper assembly	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Verificación de distancia mínima entre soldaduras / Check minimum distance between welds	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
Notas explicativas adicionales incorporadas / Additional clarification notes added	<input checked="" type="checkbox"/>		<input type="checkbox"/>			
Revision By : (ST) Stress Specialist / (LST) Stress Leader					By: ST By: LST	
Stress	El cálculo de stress disponible no está pendiente de revisión en curso / Available stress calculation is not awaiting for revision	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Los requisitos según el cálculo de stress están incorporados (si son aplicables) / Stress calculation requirements have been added (if applicable)	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Revision By : (SP) Supports Specialist / (LSP) Supports leader	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	La linea está soportada por completo y la lista de soportes rellena / Line is completely supported and support list updated	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Concepto de soporte y separación máxima entre soportes / Support concept and support spans	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
Supports	Requerimientos de soportes están de acuerdo al cálculo de stress y ajustados con el especialista de Stress / Support requirements according to stress calculation note are included and adjusted jointly with stress specialist	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Numeración correcta de los soportes / Supports correctly numbered	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Código de soportes correctamente indicados (STD - SPC - COM - MRS - PRF) / Support code correctly indicated (STD - SPC - COM - MRS - PRF)	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Marcado de elementos soldados de los soportes en Iso Spool preliminar correspondiente / Mark-up of welded supports components in the correspondent preliminary Iso Spool	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
Revision By : (M) Materials					By: M	
Materials	La Línea pertenece a alguna o varias categorías de Crítica. La Línea está lista en la Lista de Líneas Críticas de Materiales. Sus isométricas requieren Verificación exhaustiva / The Line belongs to some or several categories of Criticality. The Line is listed in the Critical Material Lines List. The isometrics require exhaustive verification	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Todos los materiales están identificados en la isométrica y se encuentran listados en el listado de materiales / All materials are identified in the isometric and are listed in the BOM	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Añadidos elementos especiales de tubería en Línea de acuerdo a PIDs última revisión y lista de especiales de tubería (Verificar en adicional correcta Numeración, criterios de Posicionamiento en diseño si aplican) / Inclusion of special piping elements in line according to PIDs latest review and Special Piping Material List (Verify identification number, piping design location criteria if applicable)	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Nº de identificación de válvulas manuales (según PID) / Identification number of manual valve (according to PID)	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Todas las juntas y pernos colocadas según tipo requerido (RF, FF, Bolts, Machine Bolts) / All gaskets and bolts placed according required type (RF, FF, Bolts, Machine Bolts)	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Extensión de volante de válvula modelada y reflejada en lista de materiales de la isométrica / Valves axis extension modelled and reflected in Isometric BOM	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Válvulas colocadas según PID y Piping Class / Valves placed according PID an Piping Class	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
Revision By : (CHK) Issuer					By: CHK	
Final Check	La isométrica verificada por Procesos (SPO) se corresponde a la última revisión / The isometric verified by Process (SPO) corresponds to its last revision	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	La isométrica verificada por Instrumentación (SIT) se corresponde a la última revisión / The isometric verified by Instrumentation (SIT) corresponds to its last revision	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Las notas a mano están incorporadas en las isométricas / The hand-made annotation is included	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	La revisión de los documentos para la verificación siguen siendo las actuales / Current revision of documents for checking are still the latest available	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	El número de revisión y la fecha son correctos / The revision number and the date are correct	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Todos los comentarios se han revisado para se incluidos o descartados / All comments have been checked to be included or discarded	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
	Holds resueltos o en su defecto By-Pass aprobado / Holds resolved or instead By-Pass approved	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
SIGNATURES (Name and date)						
DESIGN LEADER (LD)	REVIEWED By rvasquezhu at 3:11 pm, Feb 02, 2021	SUPPORTS LEADER (LSP)	REVIEWED By Sergio Zamora at 4:28 pm, Feb 08, 2021	ISSUER (CHK)	REVIEWED By oscar at 11:58 am, Feb 12, 2021	
STRESS LEADER (LST)	REVIEWED By J. LL at 5:25 pm, Feb 09, 2021	MATERIALS (M)	REVIEWED By Jose G. Suarez at 9:57 am, Feb 10, 2021	DISCIPLINE LEAD (L)		
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 (X) confirming or not Designer verification. A (✓) or a (X) should also be placed to confirm or reject any (X) 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.						

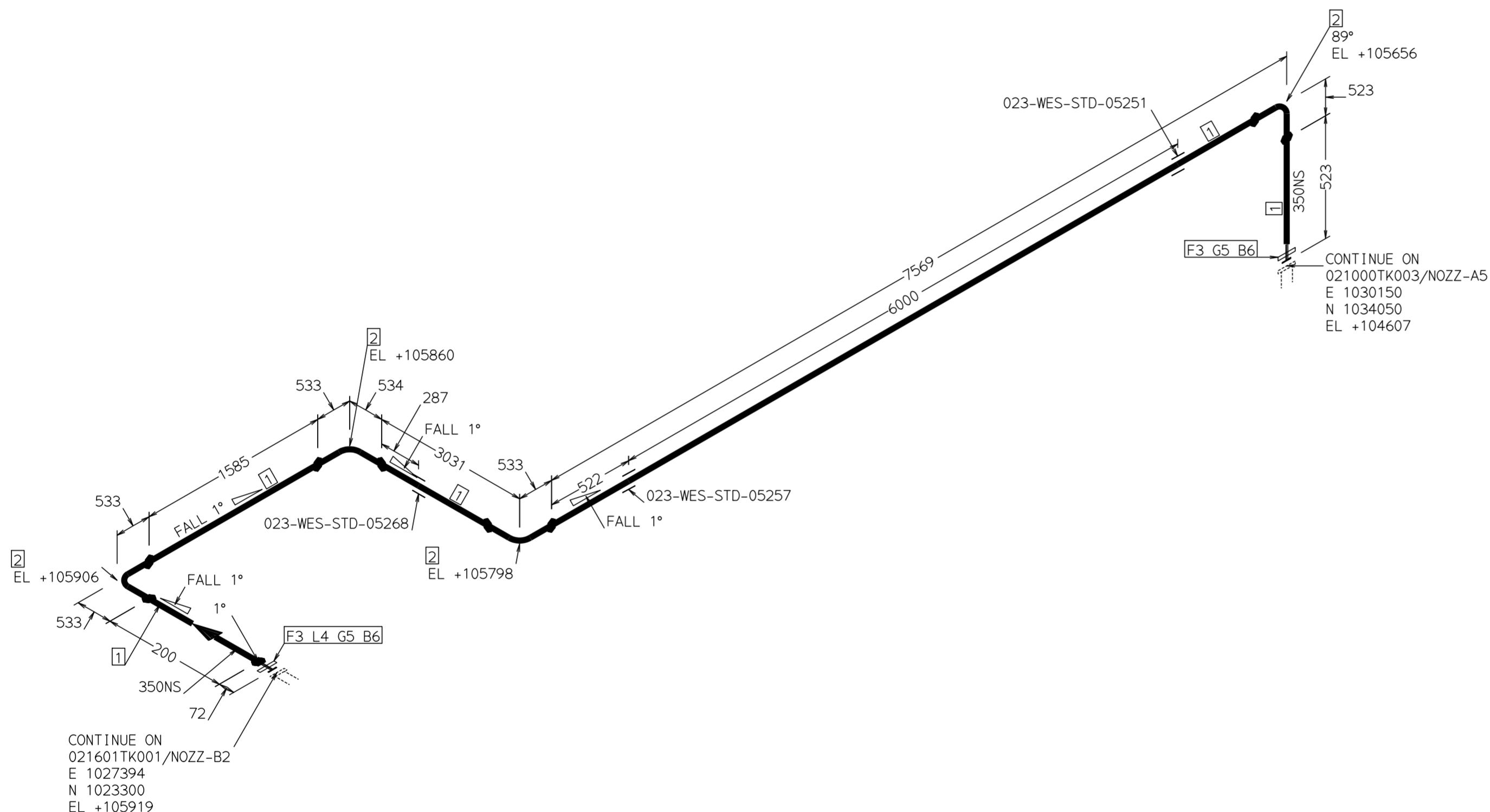
N

MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	350	Pipes (Length), EN 10220, BE, EFW + 100% RT, -, /2.6MM EN 10217-7 Gr. X2CrNi19-11,	C1P0FP3V	11.9M
2	350	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKEK7	4	
3	350	M.3D, Serie 1, /2.6MM EN 10253-4 Gr.X2CrNi19-11,	C1KXSGY3	2
4	350	LJ Flg, EN 1092-1 Type 02, FF, PN 10, -, / EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C3J5USZA	1
		Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN10 Flgs./3.2MM EN 10216-5 Gr.X2CrNi19-11,		

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
5	350	NM Flat Gk, EN 1514-1, RF as per EN 1092-1, PN 10, IBC Type, Thk=3.2mm, KLingersil C-4430, TA-Luft & EC1935 (D.S. 5101)/ CNAF,	C1MSERAU	2
6	20	150 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,	C3JHBDB4	32



PIPING DPT.
ISSUER
CHECKED

By oscar at 11:55 am, Feb 12, 2021

0	05/02/21	XFO	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.

PROCESS UNIT	DESIGN AREA	LINE NUMBER			TRAIN	SHEET	REV
		026	023A1	021601-350-WSS-10SS21-0003			

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

Insulated Pipe	Insulated and Traced Pipe
— — — —	— — — —

PROJECT DESCRIPTION/LOCATION

BUTTERFLY PROJECT/KREFELD



N

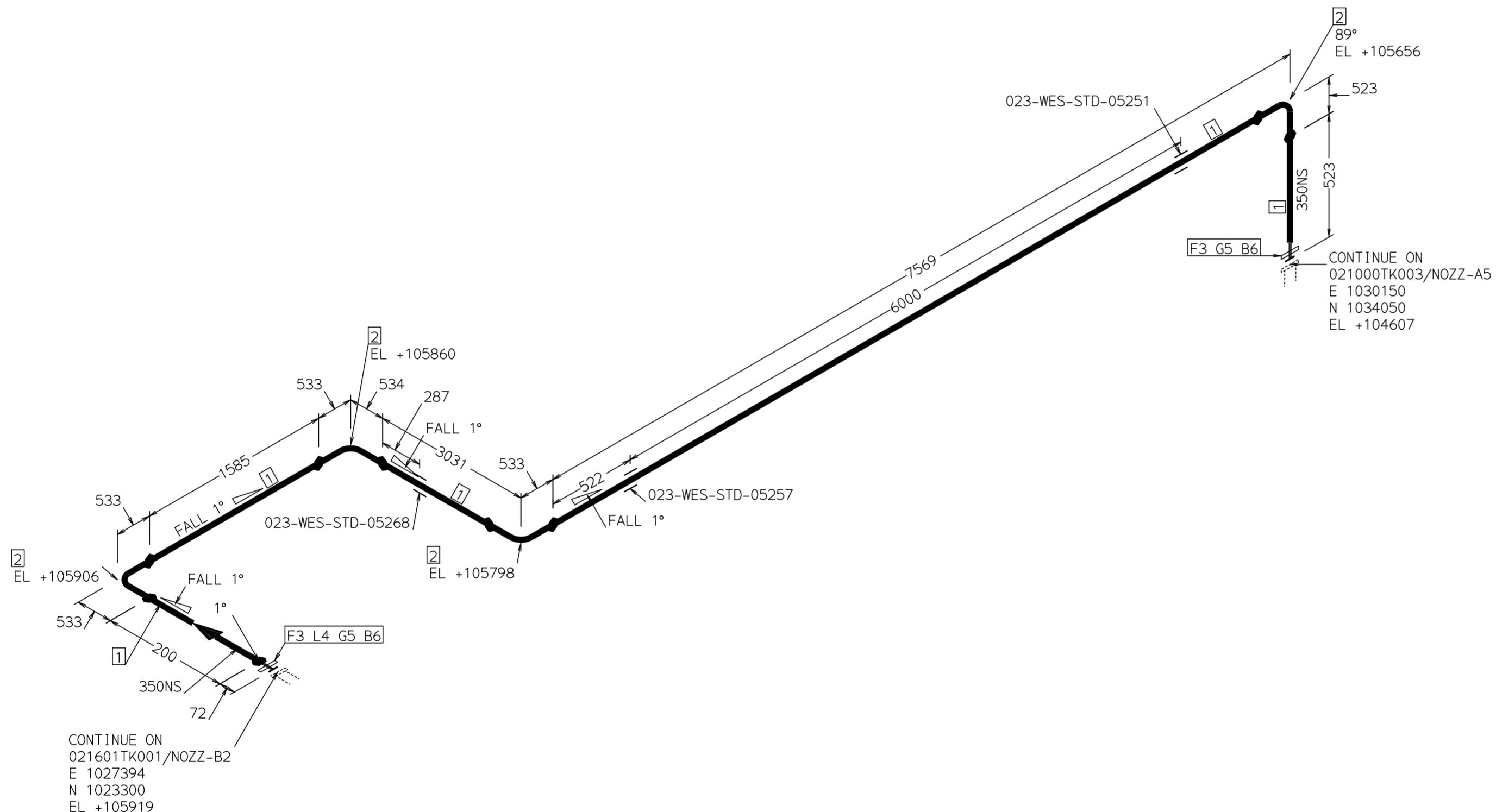


MATERIAL LIST - FABRICATION

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2	350	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKEK7	4	
3	350	M.3D, Serie 1, /2.6MM EN 10253-4 Gr.X2CrNi19-11,	C1KXSGY3	2
4	350	LJ Flg, EN 1092-1 Type 02, FF, PN 10, -, / EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C3J5USZA	1
		Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN10 Flgs./3.2MM EN 10216-5 Gr.X2CrNi19-11,		

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
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6	20	150 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,	C3JHBDB4	32



**PIPING DPT.
MATERIALS
CHECKED**

By Jose G. Suarez at 9:57 am, Feb 10, 2021

0	05/02/21	XFO	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	PROCESS UNIT	DESIGN AREA	LINE NUMBER			TRAIN	SHEET	REV
			BUTTERFLY PROJECT/KREFELD					
TechnipFMC						026	023A1	021601-350-WSS-10SS21-0003

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

SYMBOLIC

N

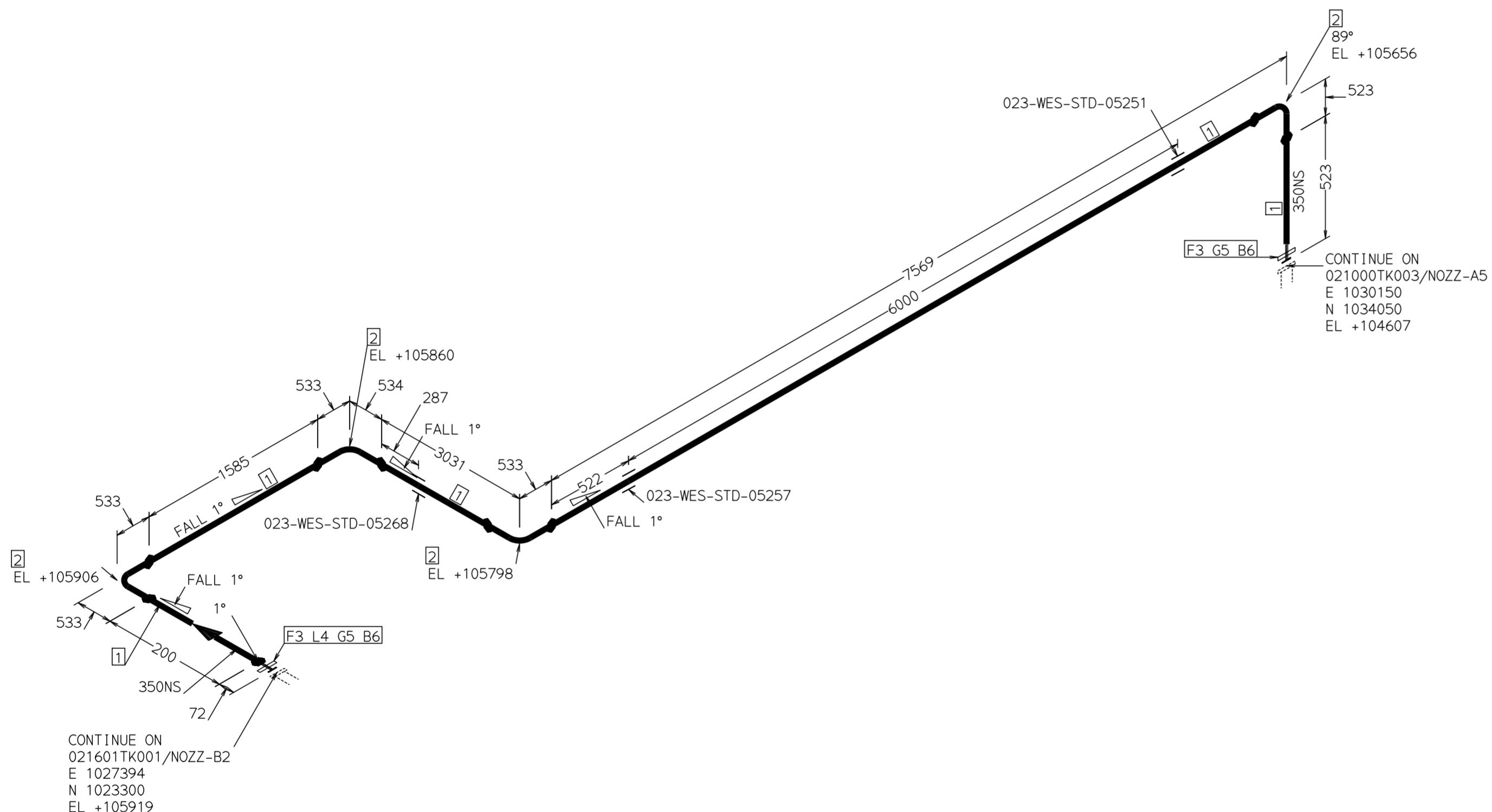


MATERIAL LIST - FABRICATION

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2	350	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1KXKEK7	4	
3	350	M.3D, Serie 1, /2.6MM EN 10253-4 Gr.X2CrNi19-11,	C1KXSGY3	2
4	350	LJ Flg, EN 1092-1 Type 02, FF, PN 10, -, / EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C3J5USZA	1
		Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN10 Flgs., /3.2MM EN 10216-5 Gr.X2CrNi19-11,		

MATERIAL LIST - ERECTION

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6	20	150 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,	C3JHBDB4	32



PIPING DPT.
**STRESS
CHECKED**

By J. LL at 5:23 pm, Feb 09, 2021

PIPING DPT.
SUPPORTED

By mfernandez1 at 12:39 pm, Feb 08, 2021

PIPING DPT.
**SUPPORTS
CHECKED**

By Sergio Zamora at 4:26 pm, Feb 08, 2021

0	05/02/21	XFO	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.

PROCESS UNIT	DESIGN AREA	LINE NUMBER			TRAIN	SHEET	REV
		026	023A1	021601-350-WSS-10SS21-0003			

NOTES:

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

REFERENCES / DOCUMENTS

SPEC

10SS21

SYMBOLIC

PROJECT DESCRIPTION/LOCATION

BUTTERFLY PROJECT/KREFELD

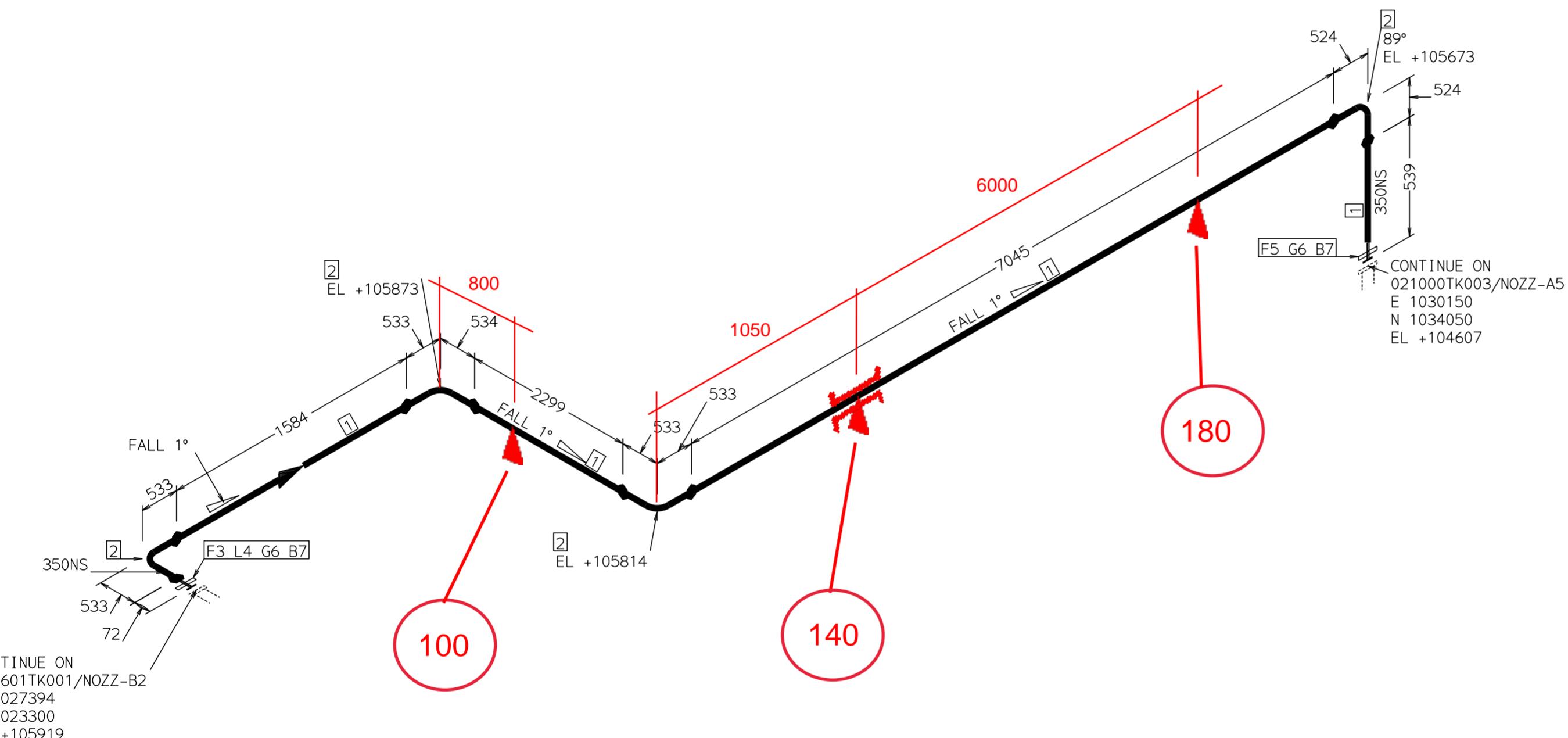
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MATERIAL LIST - FABRICATION

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3	350	M.3D, Serie 1, /2.6MM EN 10253-4 Gr.X2CrNi19-11,	C1KXSGY3	1
4	350	LJ Flg, EN 1092-1 Type 02, FF, PN 10, -, / EN 10222-2 Gr. P245GH Galv. as per EN 10240,	C3J5USZA	1
		Stub LP, EN 1092-1 Type 36, BW Ends, Seamless, PN10 Flgs, /3.2MM EN 10216-5 Gr.X2CrNi19-11,		

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7	20	150 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.	C3JHBDB4	32



PIPING DPT.

**STRESS
MASTER**

By jcaloca at 1:01 pm, Feb 05, 2021

0	05/02/21	XFO	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

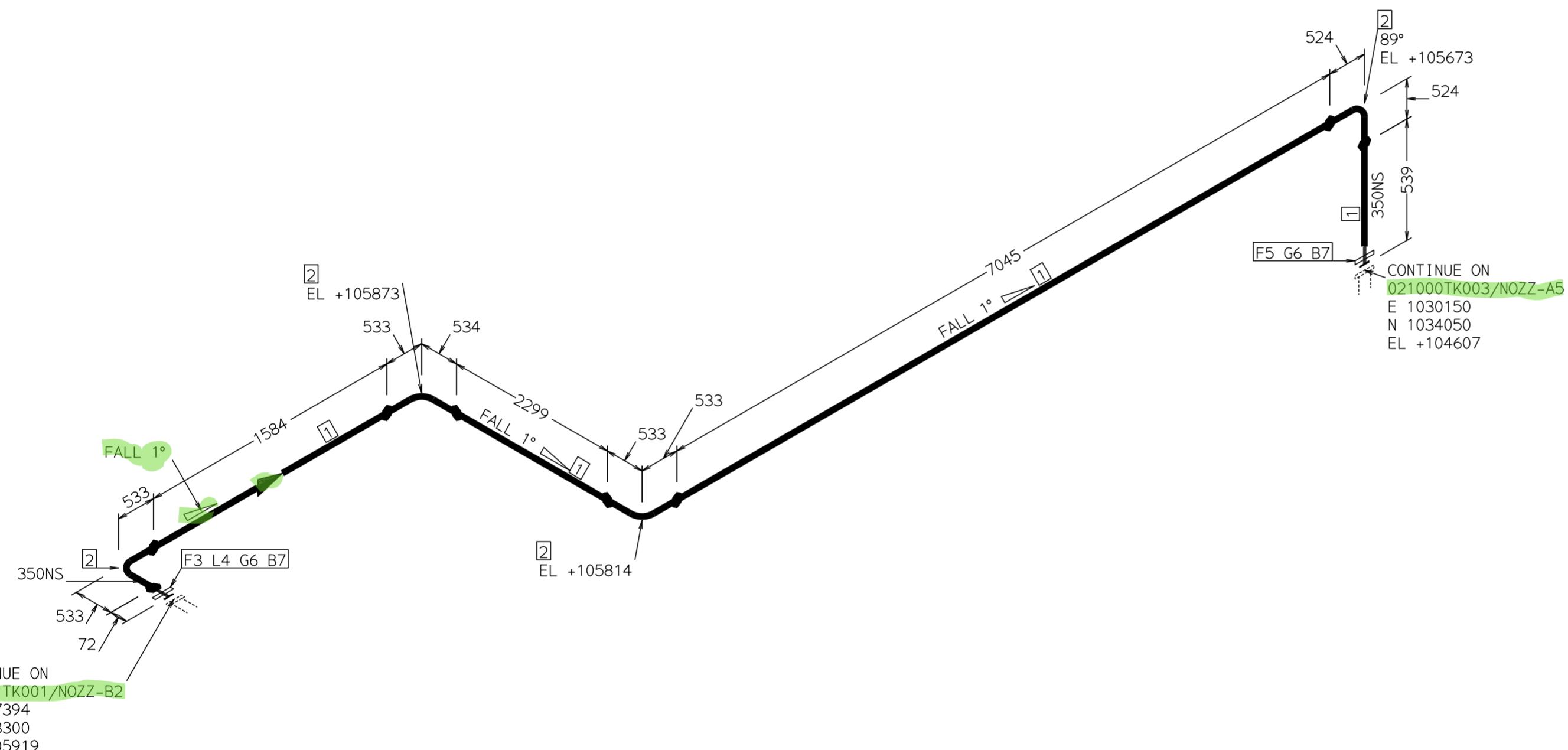
Insulated and Traced Pipe

PROJECT DESCRIPTION/LOCATION

BUTTERFLY PROJECT/KREFELD



PROCESS UNIT	DESIGN AREA	LINE NUMBER	TRAIN	SHEET	REV
026	023A1	021601-350-WSS-10SS21-0003	01	1 OF 1	0


MATERIAL LIST - FABRICATION

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MATERIAL LIST - ERECTION

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7	20	150 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,	C3JHBDB4	32

PIPING DPT.
DESIGNED
By xavier foz at 8:48 am, Feb 02, 2021

PIPING DPT.
DESIGN CHECKED
By rvasquezhu at 3:12 pm, Feb 02, 2021

VOID

PROJECT DESCRIPTION/LOCATION								
BUTTERFLY PROJECT/KREFELD								
PROCESS UNIT	DESIGN AREA	LINE NUMBER				TRAIN	SHEET	REV
026	023A1	021601-350-WSS-10SS21-0003	01	1 OF 1	0			

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

Insulated Pipe

Insulated and Traced Pipe

ISOMETRIC INDEX 30303-042-023000-200

PIPING SUPPORT 30207-042-021300-001