

ISOMETRIC IFC - CHECK LIST

Line Number	021921PNW0168_01		Stress CN / Level	Nº	Level:
Isometric Number	027A1021921PNW0168_01		Process Approval Required	YES <input type="checkbox"/>	NO <input type="checkbox"/>
			Intrumentation Approval Required (N/A)	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Information to be attached:					
Master Copy of PID:	YES <input type="checkbox"/>	N/A <input type="checkbox"/>	Nº 800124-029-PID-0031-010	Rev.	1 IFC
PID Modification Sheet:	YES <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	Nº 800124-029-PMS-SPO-001		
Equipment Vendor Dwg. :	YES <input type="checkbox"/>	N/A <input type="checkbox"/>	Nº		Rev.
Instrument Dwg. :	YES <input type="checkbox"/>	N/A <input type="checkbox"/>	Nº		Rev.
Project By-Pass ^(*) :	YES <input type="checkbox"/>	N/A <input type="checkbox"/>	Nº		Rev.
SPO Approved Isometric:	YES <input type="checkbox"/>	N/A <input type="checkbox"/>	Rev.	Extraction Date:	
SIT Approved Isometric:	YES <input type="checkbox"/>	N/A <input type="checkbox"/>	Rev.	Extraction Date:	


TechnipFMC – Butterfly Project

HOLDS								
		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								
Revision By : (D) Designer / (LDG) Design Leader								
Iso Information	Nº de linea según PID y lista de líneas / Line Nbr. according to PID and line list			* N/A = NO APPLICABLE NOT APPLICABLE				
	Datos de la linea según lista de líneas / Line data according to line list			No existe en lista de líneas				
Equipment	Clase de tubería según PID y Lista de Líneas / Piping class according to PID and Line List							
	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)							
Line Design	Diámetro de la linea indicado en número de linea en el cajetín / Line diameter indicated in the line number in the title block							
	Equipo modelado según plano Vendor válido para generar isométrica IFC / Equipment modelled according Vendor drawing valid for Isometric IFC generation			✓				
Stress	Código / Code: 2 <input type="checkbox"/> 3 <input type="checkbox"/>							
	Nombre de tubuladuras según PID y plano Vendor / Name of nozzle according to PID and Vendor drawing			✓				
Supports	Rating y diámetro de tubuladuras según plano Vendor / Rating and diameter of nozzles according to vendor drawing			✓				
	Posición y elevación de tubuladuras según plano Vendor / Position and elevation of nozzles according to Vendor drawing			✓				
Materials	Revision By : (D) Designer / (LDG) Design Leader							
	Linea sin colisión (verificación incluyendo la nube de puntos) / Line is clash free (checked including points cloud)							
Final Check	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			✓				
	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							
Final Check	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 sequences, slope, flow direction, instrument numbering, pipe class breaks, notes accomplishment							
	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			✓				
Final Check	Comentarios de SIT a recibidos e implementados antes de extracción final para emisión / Instrumentation comments received and implemented before final extraction for issuance			✓				
	Verificación contra Planos de Vendor o Hook-up Instrumentación / 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			✓				
Final Check	Picajes según tabla de picajes correspondiente / Branch configuration according to correspondent branch table			✓				
	Ventanas 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			✓				
Final Check	Verificación de distancia mínima entre soldaduras / Check minimum distance between welds			✓				
	Notas explicativas adicionadas incorporadas / Additional clarification notes added			✓				
Final Check	Revision By : (ST) Stress Specialist / (LST) Stress Leader			By: ST				
	El cálculo de stress disponible no está pendiente de revisión en curso / Available stress calculation is not awaiting for revision							
Final Check	Los requisitos según el cálculo de stress están incorporados (si son aplicables) / Stress calculation requirements have been added (if applicable)							
	Revision By : (SP) Supports Specialist / (LSP) Supports leader			By: SP				
Final Check	La linea está soportada por completo y la lista de soportes está actualizada en el excel extraido del E3D / Line is completely supported and support list updated according file from E3D			✓				
	Concepto de soporte y separación máxima entre soportes / Support concept and support spans			✓				
Final Check	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			✓				
	Numeración correcta de los soportes / Supports correctly numbered			✓				
Final Check	Código de soportes correctamente indicados (STD - SPC - COM - MRS - PRF) / Support code correctly indicated (STD - SPC - COM - MRS - PRF)			✓				
	Marcado de elementos soldados de los soportes en Iso Spool preliminar correspondiente / Mark-up of welded supports components in the correspondent preliminary Iso Spool			N/A				
Final Check	Revision By : (M) Materials			By: M				
	La Linea pertenece a alguna o varias categorías de Criticidad. La Linea está lista en la Lista de Lineas Críticas de Materiales. Sus isometrías 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			N/A				
Final Check	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			✓				
	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 aplicable) / 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)			✓				
Final Check	Nº de identificación de válvulas manuales (según PID) / Identification number of manual valve (according to PID)			✓				
	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)			N/A				
Final Check	Extensión de volante de válvula modelada y reflejada en lista de materiales de la isométrica / Valves axis extension modelled and reflected in Isometric BOM			N/A				
	Válvulas colocadas según PID y Piping Class / Valves placed according PID in Piping Class			✓				
Final Check	Revision By : (CHK) Issuer			By: CHK				
	La isométrica verificada por Procesos (SPO) se corresponde a la última revisión / The isometric verified by Process (SPO) corresponds to its last revision			✓				
Final Check	La isométrica verificada por Instrumentación (SIT) se corresponde a la última revisión / The isometric verified by Instrumentation (SIT) corresponds to its last revision			✓				
	Las notas a mano están incorporadas en las isométricas / The hand-made annotation is included			✓				
Final Check	La revisión de los documentos para la verificación siguen siendo las actuales / Current revision of documents for checking are still the latest available			✓				
	El número de revisión y la fecha son correctos / The revision number and the date are correct			✓				
Final Check	Todos los comentarios se han revisado para se incluidos o descartados / All comments have been checked to be included or discarded			✓				
	Holds resueltos o en su defecto By-Pass aprobado / Holds resolved or instead By-Pass approved			✓				

SIGNATURES (Name and date)

DESIGN LEADER (LD)	REVIEWED By Ruth Herrero at 12:06 pm, Dec 18, 2020	SUPPORTS LEADER (LSP)	REVIEWED By jcanales at 1:34 pm, Dec 18, 2020	ISSUER (CHK)	REVIEWED By Laura Parra at 4:06 pm, Dec 22, 2020
STRESS LEADER (LST)		MATERIALS (M)	REVIEWED By Jesus G. Suarez at 4:47 pm, Dec 18, 2020	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 (✓) or 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.

PIPING DPT.
MASTER
IFC
By Laura Parra at 4:29 pm, Dec 22, 2020

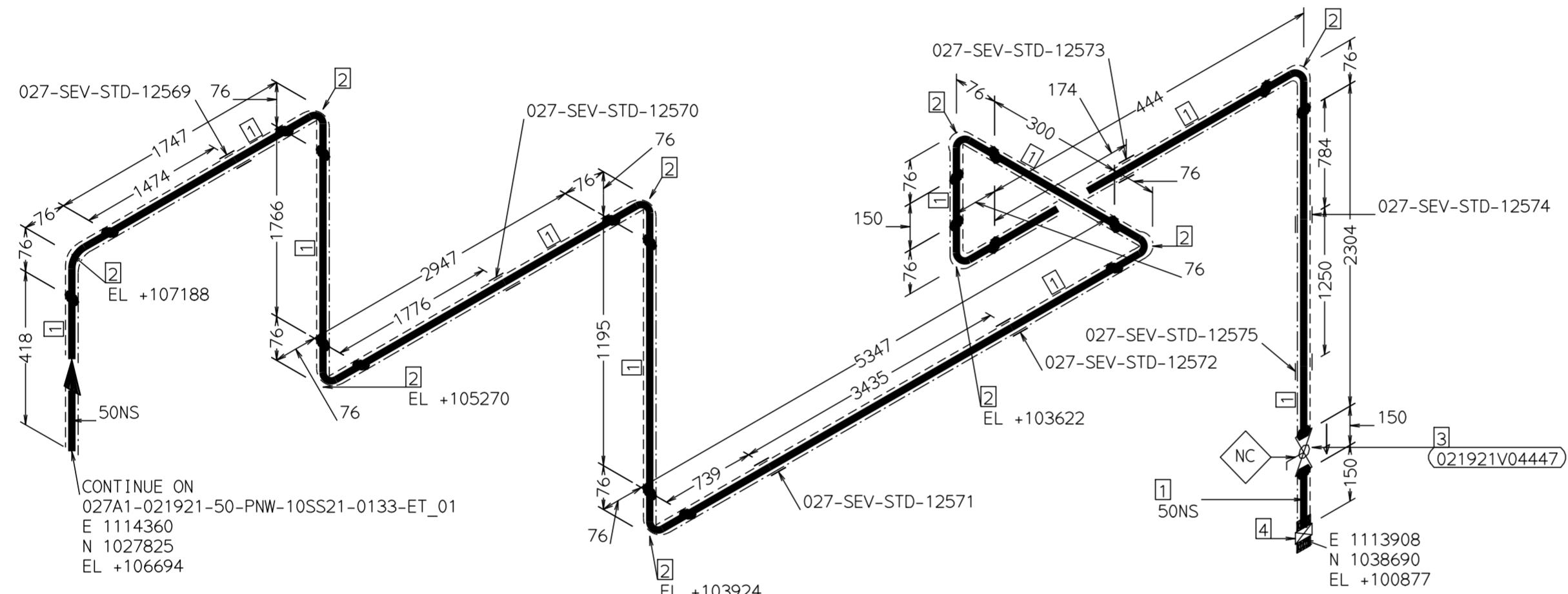
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MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	50	Pipes (Length), EN 10220, BE, EFW + 100% RT, -, /2MM EN 10217-7 Gr. X2CrNi19-11, 90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PL	C1KV256V	16.6M
2	50	M.3D, Serie 2, /2MM EN 10253-4 Gr.X2CrNi19-11, Bal BW,RB,SP,PN 63,BW Ends,Datasheet: 6006/2MM EN 10213 Gr.GX5CrNiMo19-11-2,	C1P0J0PL	9
3	50		C3HDWU3Z	1

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
4	50	021921A270 Hose Connection as per 30205-042-001000-001	C479HV50	1



PIPING DPT.
MASTER
IFC
By Laura Parra at 4:29 pm, Dec 22, 2020

0	18/12/20	RHE	SMA	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
SYMBOLIC

PROJECT DESCRIPTION/LOCATION
BUTTERFLY PROJECT/KREFELD

TechnipFMC

Cargill

LINE LIST 30201-042-001000-001

Insulated Pipe

Insulated and Traced Pipe

PROCESS UNIT DESIGN AREA LINE NUMBER TRAIN SHEET REV

ISOMETRIC INDEX 30303-042-001000-200

— — — —

— — — —

PIPING SUPPORT 30207-042-001000-001

— — — —

029 027A1 021921-50-PNW-10SS21-0168-ET 01 1 OF 1 0

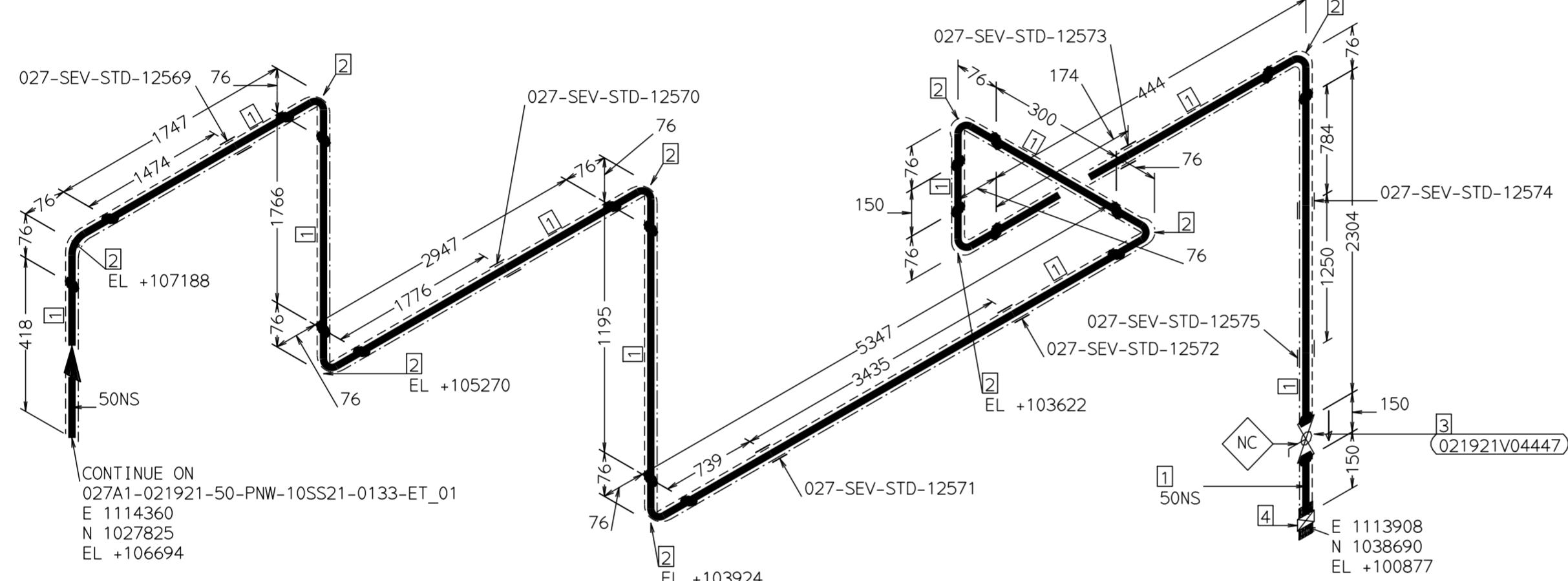
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MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	50	Pipes (Length), EN 10220, BE, EFW + 100% RT, -, /2MM EN 10217-7 Gr. X2CrNi19-11,	C1KV256V	16.6M
2	50	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PL	9	
3	50	M.3D, Serie 2, /2MM EN 10253-4 Gr.X2CrNi19-11, Bal BW,RB,SP,PN 63,BW Ends,Datasheet: 6006/2MM EN 10213 Gr.GX5CrNiMo19-11-2,	C3HDWU3Z	1

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
4	50	021921A270 Hose Connection as per 30205-042-001000-001	C479HV50	1



PIPING DPT.
MATERIALS CHECKED

By Jose G. Suarez at 4:47 pm, Dec 18, 2020

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

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REFERENCES / DOCUMENTS

SPEC

10SS21

SYMBOLIC

LINE LIST 30201-042-001000-001

ISOMETRIC INDEX 30303-042-001000-200

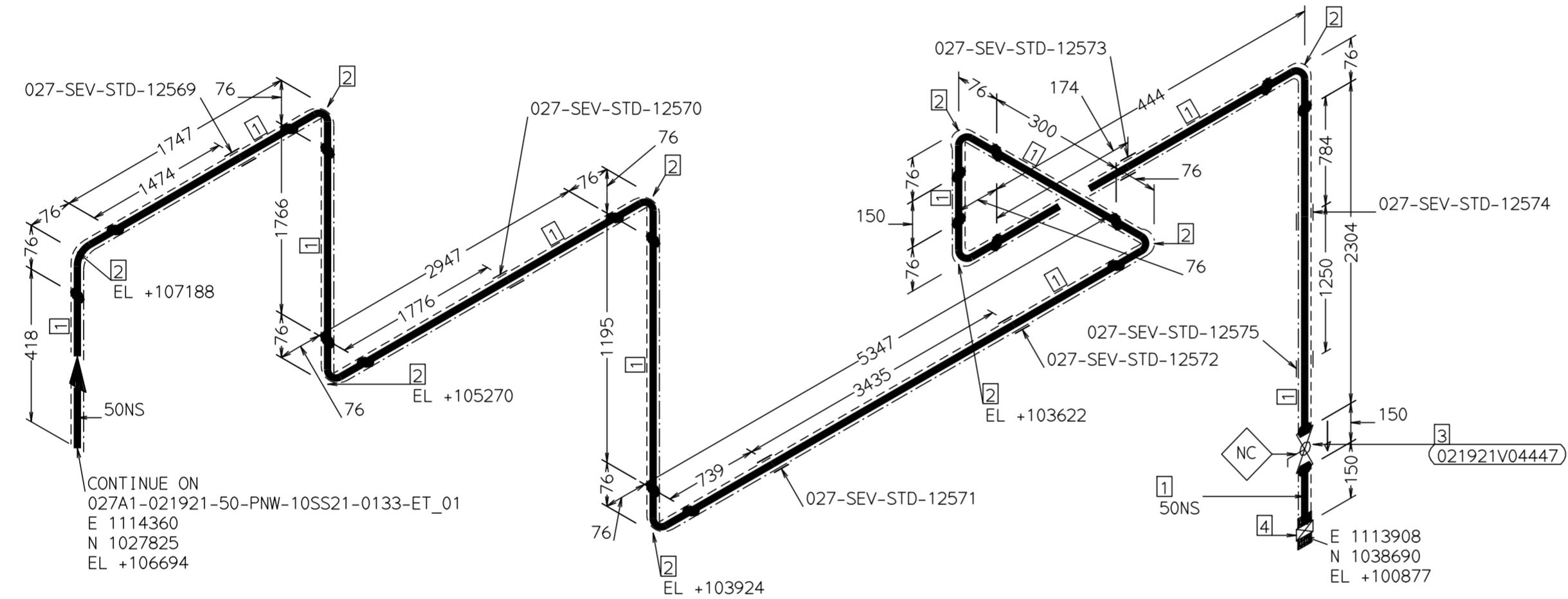
PIPING SUPPORT 30207-042-001000-001

Insulated Pipe

Insulated and Traced Pipe

PROJECT DESCRIPTION/LOCATION
BUTTERFLY PROJECT/KREFELD

PROCESS UNIT	DESIGN AREA	LINE NUMBER	TRAIN	SHEET	REV
027	027A1	021921-50-PNW-10SS21-0168-ET	01	1 OF 1	0



MATERIAL LIST - FABRICATION

<u>PT NO</u>	<u>N.S. (MM)</u>	<u>DESCRIPTION</u>	<u>IDENT</u>	<u>QTY</u>
1	50	Pipes (Length), EN 10220, BE, EFW + 100% RT, - ,/2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV256V	16.6M
2	50	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PL	9
3	50	Bal BW,RB,SP,PN 63,BW Ends,Datasheet: 6006/2MM EN 10213 Gr.GX5CrNiMo19-11-2,	C3HDWU3Z	1

MATERIAL LIST - ERECTION

<u>PT NO</u>	<u>N.S. (MM)</u>	<u>DESCRIPTION</u>	<u>IDENT</u>	<u>QTY</u>
4	50	021921A270 Hose Connection as per 30205-042-001000-001	C479HV50	1

**PIPING DPT.
SUPPORTED**

By jccanapols at 1:29 pm, Dec 18, 2020

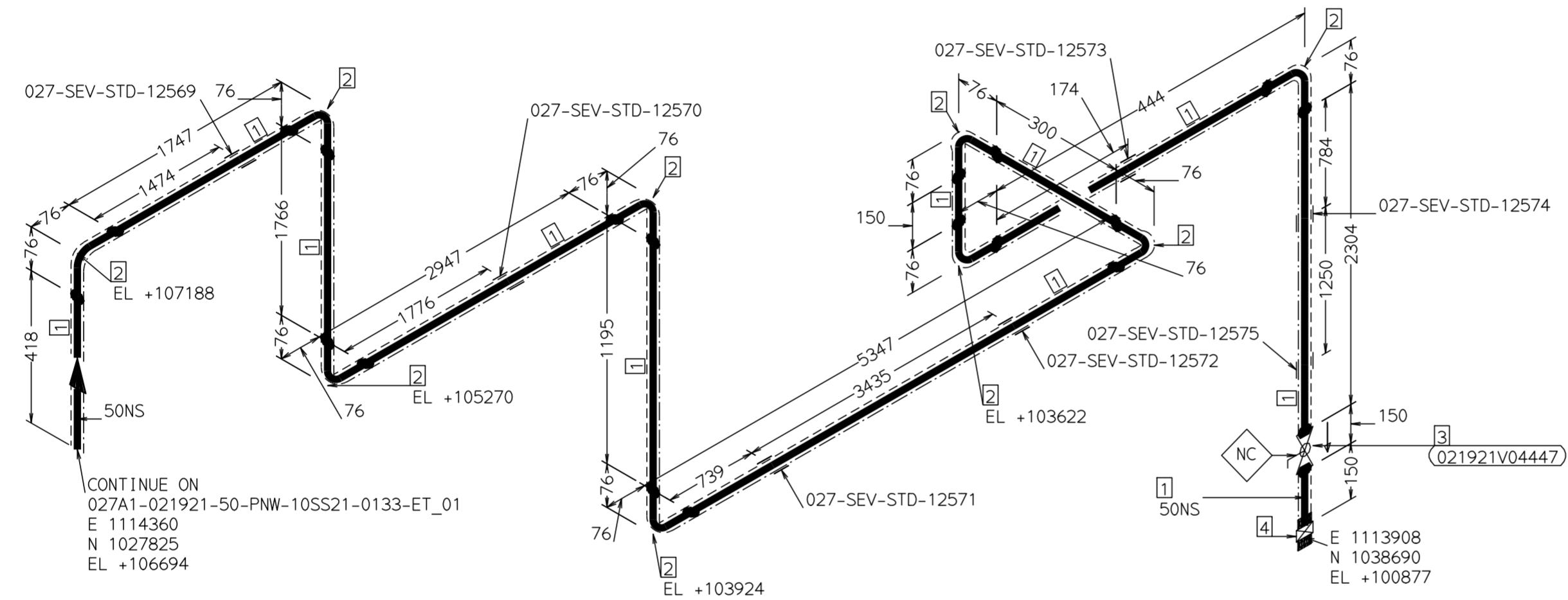
PIPING DPT.
SUPPORTS
CHECKED

By iccpanes at 1:34 pm, Dec 18, 2020

REVISION HISTORY					
REV	DATE	DWN	CHK	APP	DESCRIPTION
0	18/12/20	RHE	SMA	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.

NOTES:		REFERENCES / DOCUMENTS		SPEC	10SS21	horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.	
				SYMBOLS		PROJECT DESCRIPTION/LOCATION	
						BUTTERFLY PROJECT/KREFELD	
For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.		LINE LIST	30201-042-001000-001	Insulated Pipe	Insulated and Traced Pipe	PROCESS UNIT	DESIGN AREA
		ISOMETRIC INDEX	30303-042-001000-200	— — — —	— — — —	LINE NUMBER	
		PIPING SUPPORT	30207-042-001000-001	— — — —	— — — —	TRAIN	SHEET
						027	01
						027A1	1 OF 1
						021921-50-PNW-10SS21-0168-ET	0

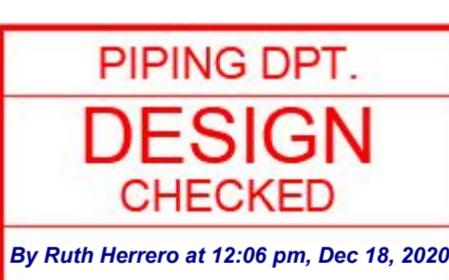


MATERIAL LIST – FABRICATION

<u>PT NO</u>	<u>N.S. (MM)</u>	<u>DESCRIPTION</u>	<u>IDENT</u>	<u>QTY</u>
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2	50	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PL M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11,		9
3	50	Bal BW,RB,SP,PN 63,BW Ends,Datasheet: 6006/2MM EN 10213 Gr.GX5CrNiMo19-11-2,	C3HDWU3Z	1

MATERIAL LIST - ERECTION

<u>PT NO</u>	<u>N.S. (MM)</u>	<u>DESCRIPTION</u>	<u>IDENT</u>	<u>QTY</u>
4	50	021921A270 Hose Connection as per 30205-042-001000-001	C479HV50	1



0	18/12/20	RHE	SMA	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	PROJECT DESCRIPTION/LOCATION				horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.				
	SYMBOLS				BUTTERFLY PROJECT/KREFELD				 TechnipFMC	 Cargill			
	LINE LIST		30201-042-001000-001				LINE NUMBER						
	ISOMETRIC INDEX		30303-042-001000-200				PROCESS UNIT	DESIGN AREA	TRAIN	SHEET	REV		
	PIPING SUPPORT		30207-042-001000-001				027	027A1	021921-50-PNW-10SS21-0168-ET	01	1 OF 1	0	