


ISOMETRIC IFC - CHECK LIST

Line Number	021921PNW0132	Stress CN / Level	Nº	Level:	<div></div> <div>TechnipFMC – Butterfly Project</div>				
Isometric Number	027A1021921PNW0132_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:					HOLDS				
Master Copy of PID:	YES <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	Nº	800124-029-PID-0031-010	Rev.	1 IFC	Nº	SHORT DESCRIPTION	RESOLVED (✓)
PID Modification Sheet:	YES <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	Nº		Rev.				
Equipment Vendor Dwg. :	YES <input type="checkbox"/>	N/A <input checked="" 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:				

A VERIFICAR / TO BE CHECKED					" N/A " NO APLICA / NOT APPLICABLE	IFC	REV 0 <input checked="" type="checkbox"/>	REV 1 <input type="checkbox"/>	REV 2 <input type="checkbox"/>
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						✓	X ⁽¹⁾	1st-Chk ⁽²⁾	2nd-Chk ⁽³⁾
Revision By : (D) Designer / (LDG) Design Leader						By: D		By: LDG	
Iso Information	Nº de línea según PID y lista de líneas / Line Nbr. according to PID and line list					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
	Datos de la línea según lista de líneas / Line data according to line list					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
	Clase de tubería según PID y Lista de Líneas / Piping class according to PID and Line List					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
	Vínculo E3D con Diagrams (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 checked="" type="checkbox"/>	
	Diámetro de la línea indicado en número de línea en el cajetín / Line diameter indicated in the line number in the title block					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Equipment	Equipo modelado según plano Vendor válido para generar isométrica IFC / Equipment modelled according Vendor drawing valid for Isometric IFC generation					<input checked="" type="checkbox"/>			
	Código / Code: 2 <input type="checkbox"/> 3 <input type="checkbox"/>					<input checked="" type="checkbox"/>			
	Nombre de tubuladuras según PID y plano Vendor / Name of nozzle according to PID and Vendor drawing					<input checked="" type="checkbox"/>			
	Rating y diámetro de tubuladuras según plano Vendor / Rating and diameter of nozzles according to vendor drawing					<input checked="" type="checkbox"/>			
	Posición y elevación de tubuladuras según plano Vendor / Position and elevation of nozzles according to Vendor drawing					<input checked="" 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 checked="" 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"/>			
	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 línea 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 checked="" type="checkbox"/>	
	Verificación contra P&ID / Check Iso vs P&ID : Elementos en línea 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 checked="" 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 checked="" 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"/>			
	Verificación contra Planos de Vendor o Hook-up Instrumentacion / 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"/>			
	Picajes según tabla de picajes correspondiente / Branch configuration according to correspondent branch table					<input checked="" type="checkbox"/>			
	Venteos 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 checked="" type="checkbox"/>	
	Verificación de distancia mínima entre soldaduras / Check minimum distance between welds					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
	Notas explicativas adicionales incorporadas / Additional clarification notes added					<input checked="" 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								
	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		By: LSP	
Supports	La línea está soportada por completo y la lista de soportes está actualizada en el exel extraído 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								
	Requerimientos de soportes estan 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								
	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			
Revision By : (M) Materials						By: M			
Materials	La Línea pertenece a alguna o varias categorías de Criticidad. La Línea está listada en la Lista de Líneas Críticas de Materiales. Sus isometricas requieren Verificacion exahustiva / The Line belongs to some or several categories of Criticality. The Line is listed in the Critical Material Lines List. The isometrics require exahustive verification					N/A			
	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"/>			
	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"/>			
	Nº de identificación de válvulas manuales (según PID)/ Identification number of manual valve (according to PID)					<input checked="" 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)					N/A			
	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 an Piping Class					<input checked="" type="checkbox"/>			
Revision By : (CHK) Issuer						By: CHK			
Final Check							1st-Chk ⁽²⁾	2nd-Chk ⁽³⁾	
						<input checked="" type="checkbox"/>	X	<input checked="" type="checkbox"/>	X
	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"/>			
	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"/>			
	Las notas a mano están incorporadas en las isométricas / The hand-made annotation is included					<input checked="" 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"/>			
	El número de revisión y la fecha son correctos / The revision number and the date are correct					<input checked="" 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"/>			
	Holds resueltos o en su defecto By-Pass aprobado / Holds resolved or instead By-Pass approved					<input checked="" type="checkbox"/>			

SIGNATURES (Name and date)					
DESIGN LEADER (LD)	REVIEWED By Ruth Herrero at 2:22 pm, Dec 11, 2020	SUPPORTS LEADER (LSP)		ISSUER (CHK)	REVIEWED By oscar at 10:08 am, Dec 18, 2020
STRESS LEADER (LST)		MATERIALS (M)	REVIEWED By Jose G. Suarez at 11:45 am, Dec 14, 2020	DISCIPLINE LEAD (L)	

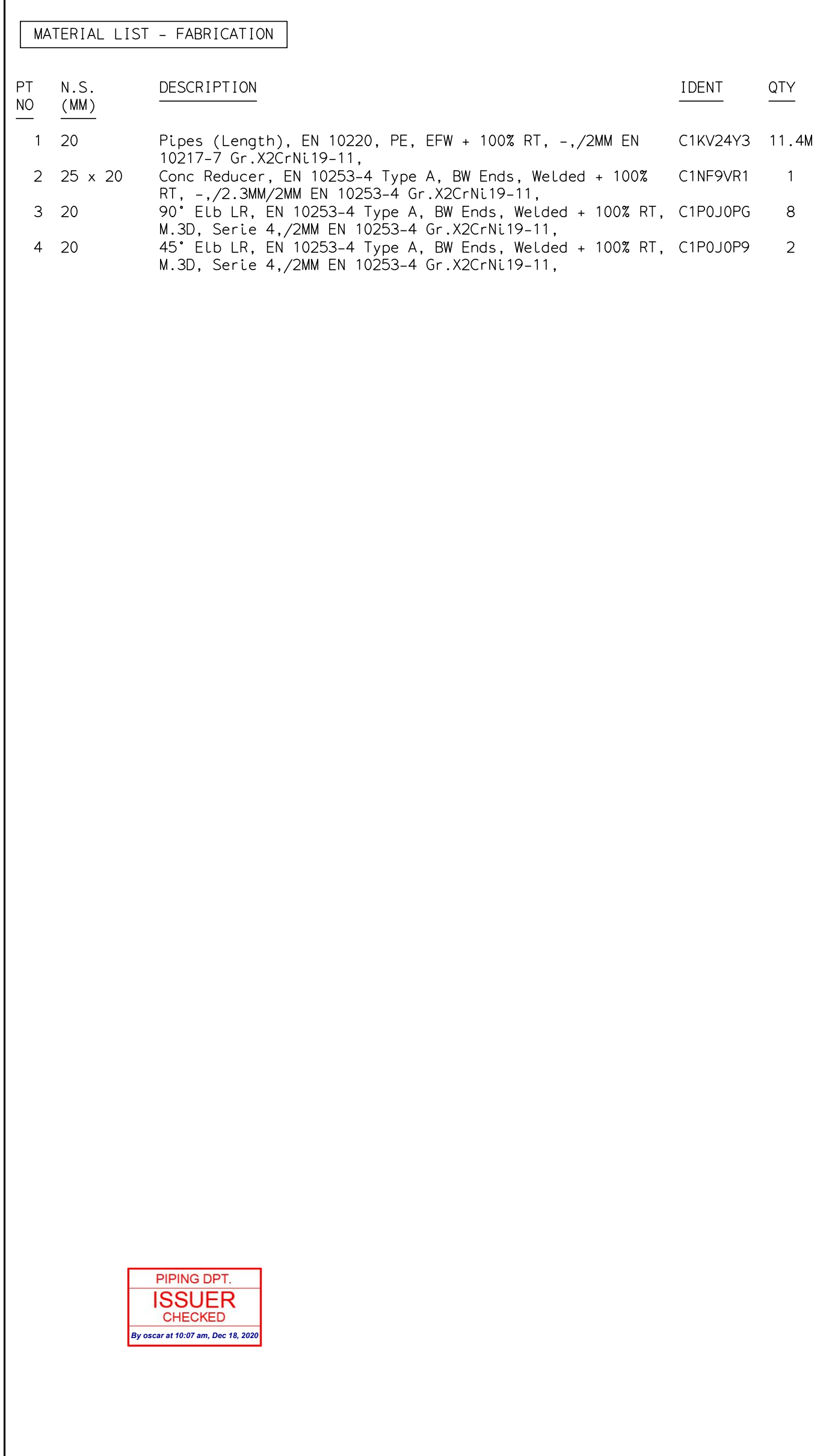
NOTES:



[1] If "X" marked, 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.





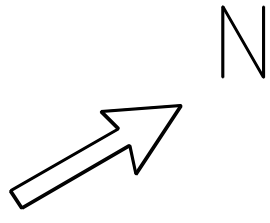
0	11/12/20	SMA	RHE	OMC	IFC-ISSUED FOR CONSTRUCTION		
REV	DATE	DWN	CHK	APP	DESCRIPTION		
ALL dimensions to be checked in field prior to construction. Dimensions and routing shall be field adjusted, it is the piping contractors responsibility to check and verify all closing dimensions to equipment and 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				 TechnipFMC			
PROCESS UNIT	DESIGN AREA	LINE NUMBER			TRAIN	SHEET	REV
029	027A1	021921-20-PNW-10SS21-0132-ET			01	1 OF 2	0

NOTES:

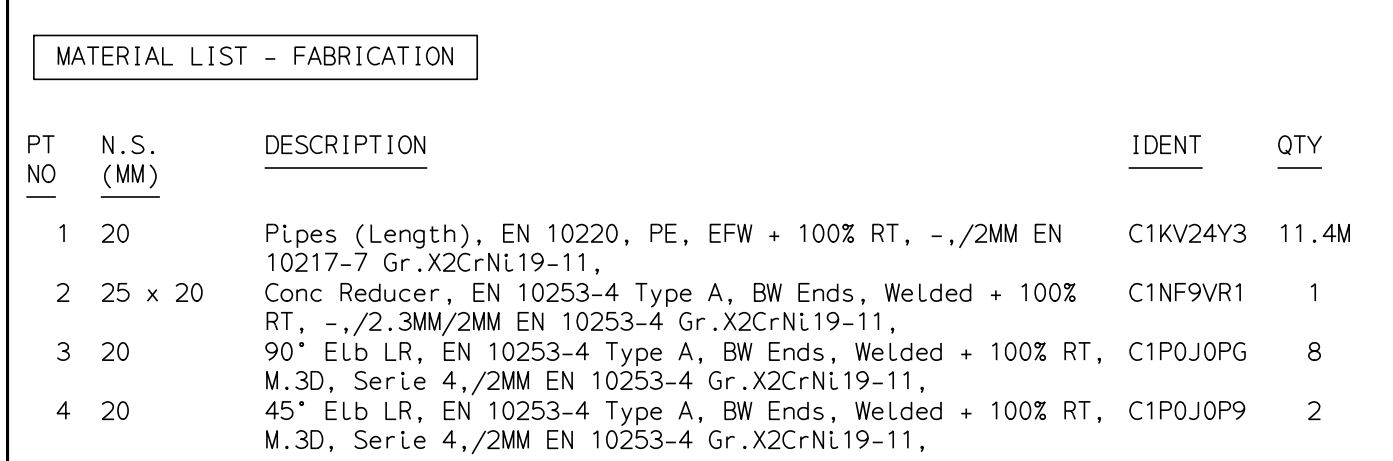
For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.



REFERENCES / DOCUMENTS	
LINE LIST	30201-042-001000-001
ISOMETRIC INDEX	30303-042-001000-200
PIPING SUPPORT	30207-042-001000-001





SPEC	10SS21
SYMBOLGY	
Insulated Pipe	Insulated and Traced Pipe
	

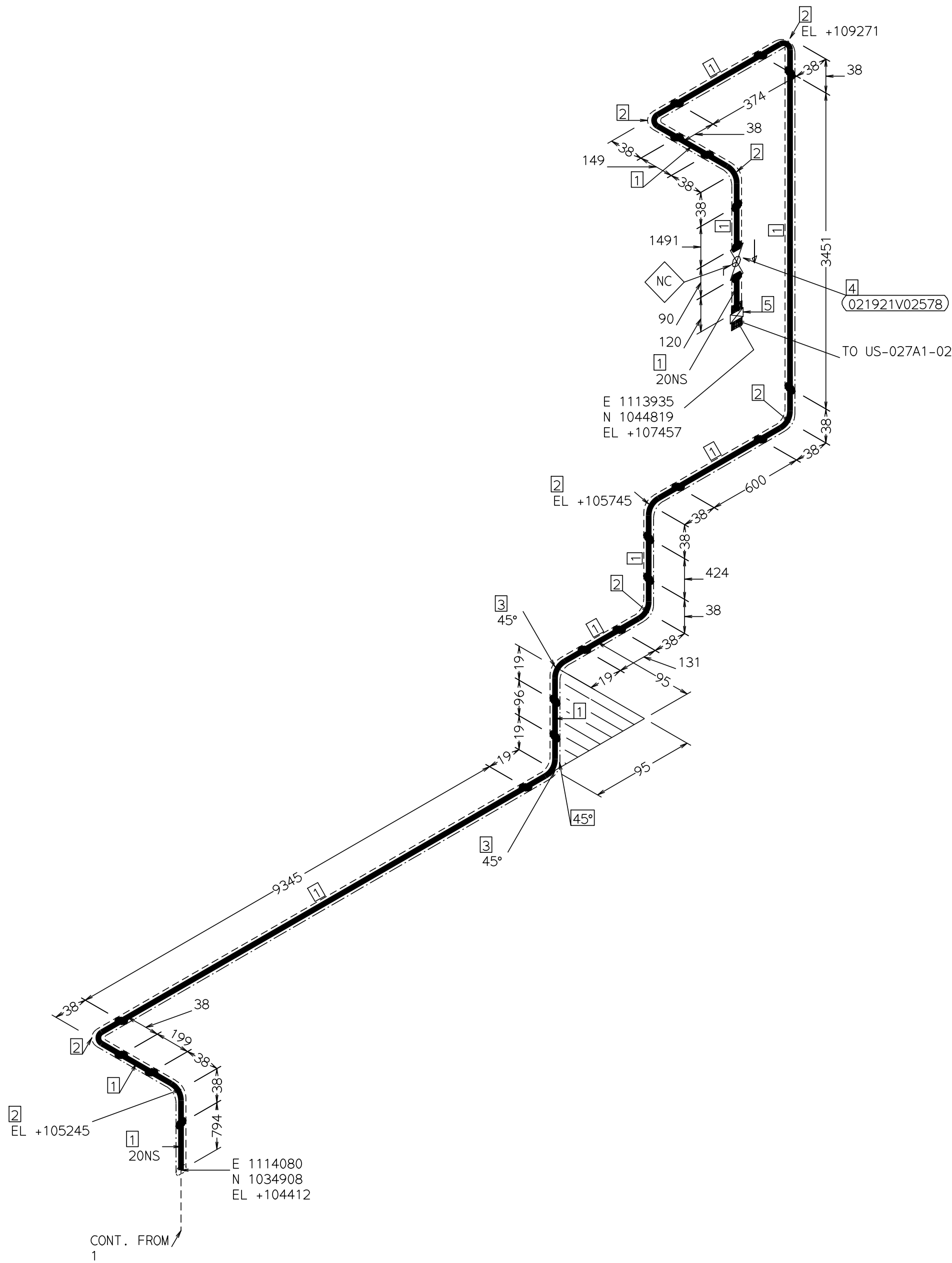


EXTRACTION DAY 11 DEC 2020 E3D NAME027A1-021921-20-PNW-10SS21-0132-ET_01



0	11/12/20	SMA	RHE	OMC	IFC-ISSUED FOR CONSTRUCTION		
REV	DATE	DWN	CHK	APP	DESCRIPTION		
<p>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.</p>							
PROJECT DESCRIPTION/LOCATION BUTTERFLY PROJECT/KREFELD				 TechnipFMC			
PROCESS UNIT	DESIGN AREA	LINE NUMBER			TRAIN	SHEET	REV
029	027A1	021921-20-PNW-10SS21-0132-ET			01	1 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
			SYMBOLGY	
	LINE LIST	30201-042-001000-001	Insulated Pipe	Insulated and Traced Pipe
	ISOMETRIC INDEX	30303-042-001000-200		
	PIPING SUPPORT	30207-042-001000-001		





MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	20	Pipes (Length), EN 10220, PE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV24Y3	17.2M
2	20	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 4, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PG	8
3	20	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 4, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0P9	2
4	20	Bal BW,RB,SP,PN 63,BW Ends,Datasheet: 6006/2MM EN 10213 Gr.GX5CrNiMo19-11-2,	C3HDWU3R	1

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
5	20	021921A245 Hose Connection as per 30205-042-001000-001	C4102FN7	1

PIPING DPT.
**MATERIALS
CHECKED**
By Jose G. Suarez at 11:46 am, Dec 14, 2020

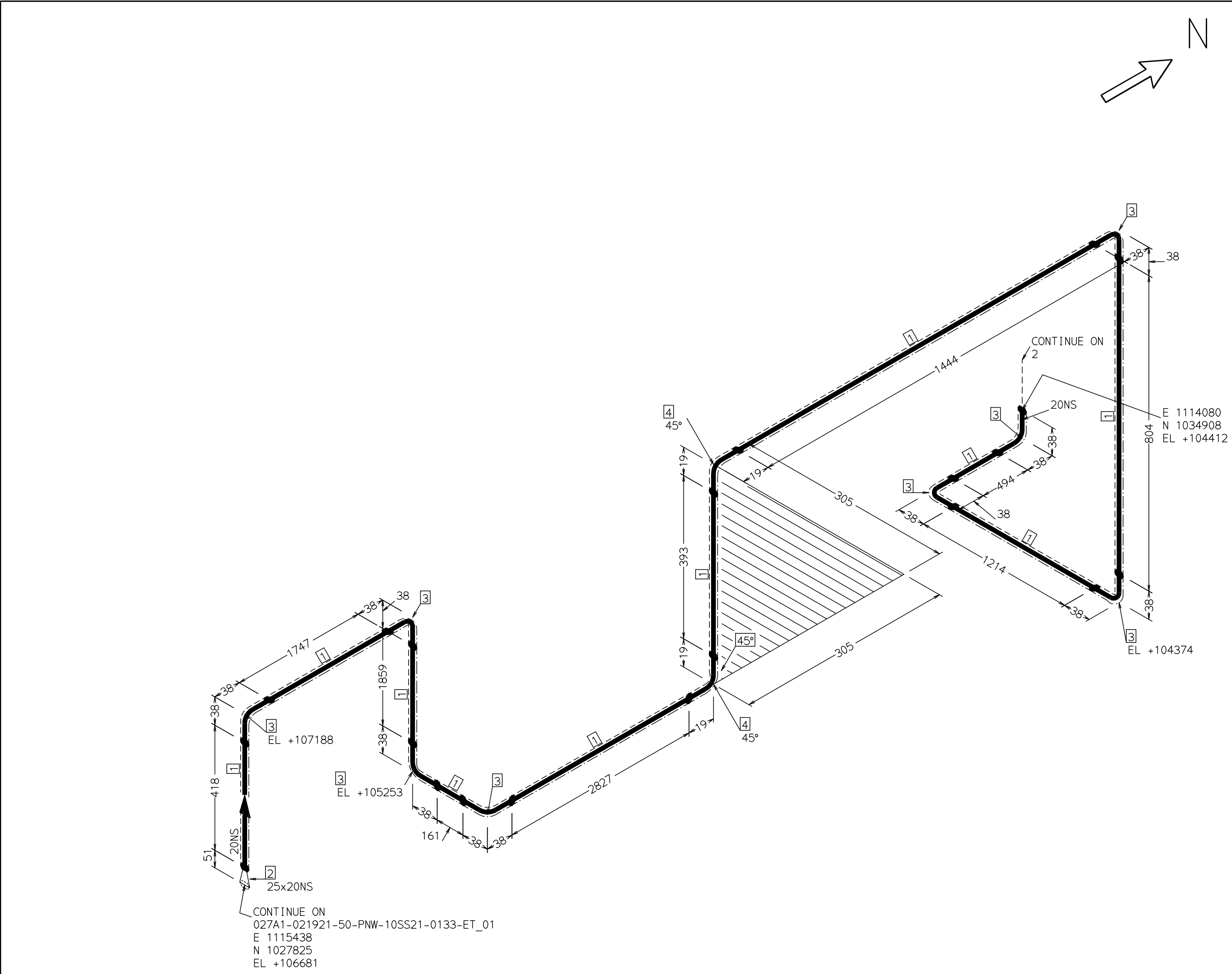
0	11/12/20	SMA	RHE	OMC	IFC-ISSUED FOR CONSTRUCTION		
REV	DATE	DWN	CHK	APP	DESCRIPTION		
All dimensions to be checked in field prior to construction. Dimensions and routing shall be field adjusted, it is the piping contractors responsibility to check and verify all closing dimensions to equipment and 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				 TechnipFMC			
BUTTERFLY PROJECT/KREFELD							
PROCESS UNIT	DESIGN AREA	LINE NUMBER			TRAIN	SHEET	REV
029	027A1	021921-20-PNW-10SS21-0132-ET			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	
LINE LIST	30201-042-001000-001
ISOMETRIC INDEX	30303-042-001000-200
PIPING SUPPORT	30207-042-001000-001

SPEC	10SS21
SYMBOLOLOGY	
Insulated Pipe	Insulated and Traced Pipe
— — — — —	— — — — —





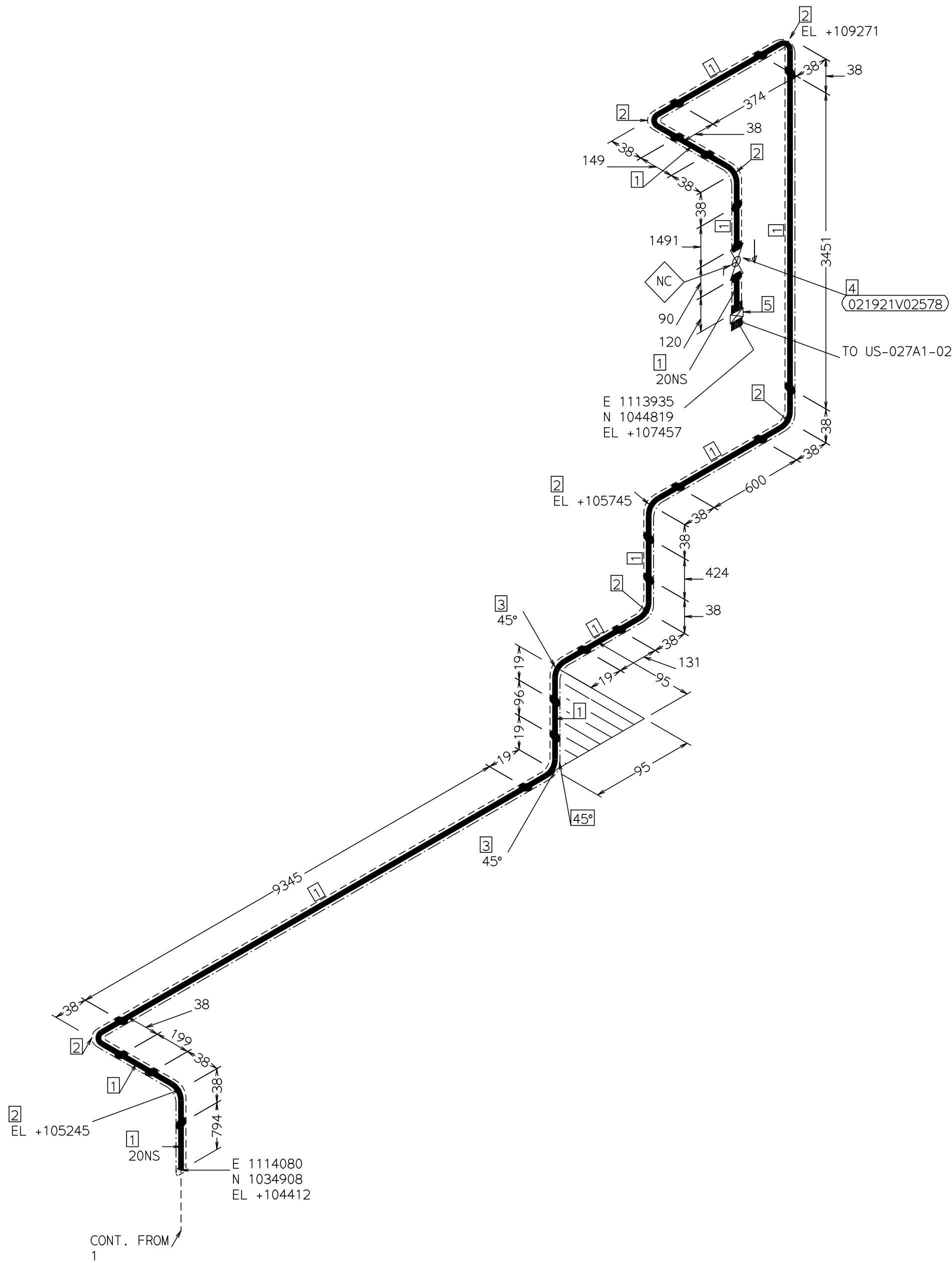
MATERIAL LIST - FABRICATION						
PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY		
1	20	Pipes (Length), EN 10220, PE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV24Y3	11.4M		
2	25 x 20	Conc Reducer, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -, /2.3MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9VR1	1		
3	20	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 4, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PG	8		
4	20	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 4, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0P9	2		

PIPING DPT.
DESIGN
CHECKED
By Ruth Herrero at 2:22 pm, Dec 11, 2020

PIPING DPT.
DESIGNED
By smartinez at 1:30 pm, Dec 11, 2020

0	11/12/20	SMA	RHE	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							
PROCESS UNIT	DESIGN AREA	LINE NUMBER			TRAIN	SHEET	REV
029	027A1	021921-20-PNW-10SS21-0132-ET			01	1 OF 2	0



MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	20	Pipes (Length), EN 10220, PE, EFW + 100% RT, -,/2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV24Y3	17.2M
2	20	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 4,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PG	8
3	20	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 4,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0P9	2
4	20	Bal BW,RB,SP,PN 63,BW Ends,Datasheet: 6006/2MM EN 10213 Gr.GX5CrNiMo19-11-2,	C3HDWU3R	1

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
5	20	021921A245 Hose Connection as per 30205-042-001000-001	C4102FN7	1

PIPING DPT.
**DESIGN
CHECKED**
By Ruth Herrero at 2:27 pm, Dec 11, 2020

PIPING DPT.
DESIGNED
By smartinez at 1:30 pm, Dec 11, 2020

0	11/12/20	SMA	RHE	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			TechnipFMC Cargill		
BUTTERFLY PROJECT/KREFELD					
PROCESS UNIT	DESIGN AREA	LINE NUMBER			TRAIN SHEET REV
029	027A1	021921-20-PNW-10SS21-0132-ET			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

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

SPEC

10SS21

SYMBOLOLOGY

Insulated Pipe

Insulated and Traced Pipe