

ISOMETRIC IFC - CHECK LIST

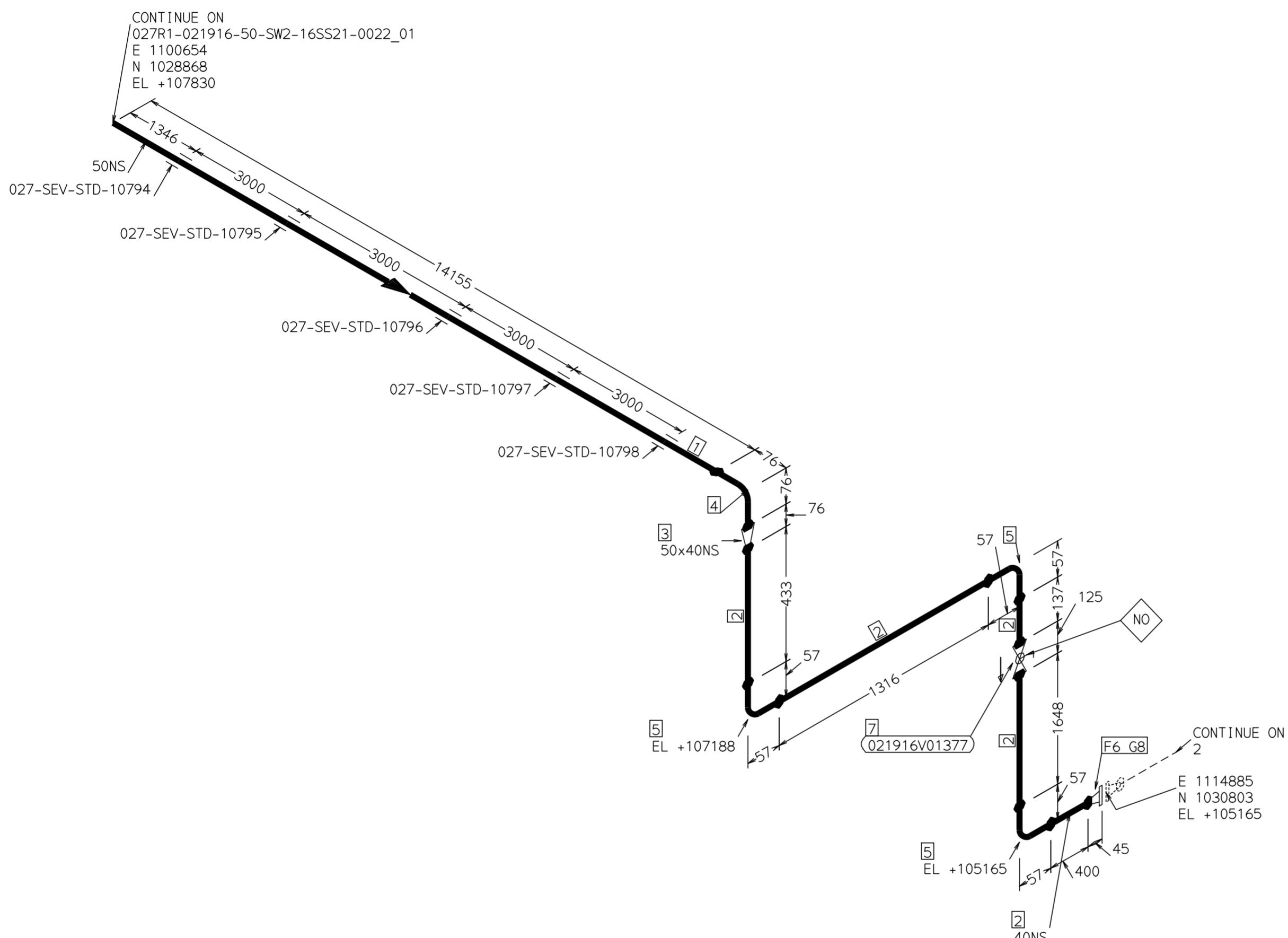
Line Number	021916SW20022	Stress CN / Level	Nº	Level:	 TechnipFMC – Butterfly Project																							
Isometric Number	027A1021916SW20022_01	Process Approval Required	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>																								
		Intrumentation Approval Required (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	554-1000-10/30-PIDS	Rev. 8	HOLDS <table border="1"> <thead> <tr> <th>Nº</th> <th>SHORT DESCRIPTION</th> <th>RESOLVED (✓)</th> </tr> </thead> <tbody> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </tbody> </table>		Nº	SHORT DESCRIPTION	RESOLVED (✓)																		
Nº	SHORT DESCRIPTION	RESOLVED (✓)																										
PID Modification Sheet:	YES <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	Nº	800124-029-PID-0031-043	Rev. 1IFC																							
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 <i>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</i>					" N/A " NO APPLICA / NOT APPLICABLE																							
Revision By : (D) Designer / (LDG) Design Leader						IFC	REV 0	REV 1	REV 2																			
Iso Information	Nº de línea según PID y lista de líneas / Line Nbr. according to PID and line list		✓	X ⁽¹⁾	1st-Chk ⁽²⁾	2nd-Chk ⁽³⁾																						
	Datos de la línea según lista de líneas / Line data according to line list		✓		✓																							
	Clase de tubería según PID y Lista de Lineas / Piping class according to PID and Line List		✓		✓																							
	Vínculo E3D con Diagramas (Process Unit, Temp Operación, Numeracion TODAS válvulas manuales) / Link between E3D and Diagrams (Process Unit, Op Temp, ALL manual valves Tagged)		✓		✓																							
	Diámetro de la línea indicado en número de línea en el cajetín / Line diameter indicated in the line number in the title block		✓		✓																							
Equipment	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 type="checkbox"/>		✓																									
	Nombre de tubuladuras según PID y plano Vendor / Name of nozzle according to PID and Vendor drawing		✓																									
	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		✓																									
	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)		✓		✓																							
	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 Lineas / 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		✓		✓																							
	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		✓		✓																							
	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		✓		✓																							
	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		✓																									
	Picajes según tabla de picajes correspondiente / Branch configuration according to correspondent branch table		✓		✓																							
	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		✓		✓																							
	Verificación de distancia mínima entre soldaduras / Check minimum distance between welds		✓		✓																							
Notas explicativas adicionales incorporadas / Additional clarification notes added		✓																										
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 excel 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 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		✓		✓																							
	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 Linea pertenece a alguna o varias categorías de Criticidad. La Linea está listada 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																									
	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 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)		N/A																									
	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)		✓																									
	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		✓																									
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		✓	X	✓	X																						
	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		✓																									
	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		✓																									
	Todos los comentarios se han revisado para ser 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)	RECEIVED By Ruth Herrero at 3:47 pm, Nov 30, 2020	SUPPORTS LEADER (LSP)	REVIEWED By jccanales at 10:20 am, Dec 01, 2020	ISSUER (CHK)	REVIEWED By oscar at 9:02 am, Dec 04, 2020
STRESS LEADER (LST)		MATERIALS (M)	REVIEWED By Jose G. Suarez at 4:21 pm, Dec 03, 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.


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,	C1KV256	14.2M
2	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	4.0M
3	50 x 40	Conc Reducer, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -, /2MM/2MM EN 10253-4 Gr.X2CrNi19-11, M.3D, Serie 2, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9VRA	1
4	50	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PL 1 M.3D, Serie 2, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PL	1
5	40	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PK 3 M.3D, Serie 2, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PK	3
6	40	WN Flg, EN 1092-1, RF/BW End, PN 40, -, /2.6MM EN 10222-5 C1KU0MMS 1 Gr.X2CrNi18-9,	C1KU0MMS	1
7	40	Bal BW,RB,SP,PN 63,BW Ends,Datasheet: 6006/2MM EN 10213 Gr.GX5CrNiMo19-11-2,	C3HDWU3X	1

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
8	40	NM Flat Gk, EN 1514-1, RF as per EN 1092-1, PN 40, IBC Type, Thk=3.2mm, Klingsil C-4430, TA-Luft & EC1935 (D.S. 5101)/ CNAF,	C1MSERAJ	1

PIPING DPT.
ISSUER
CHECKED

0	30/11/20	SMA	RHE	OMC	IFC-ISSUED FOR CONSTRUCTION
REV	DATE	DWN	CHK	APP	DESCRIPTION

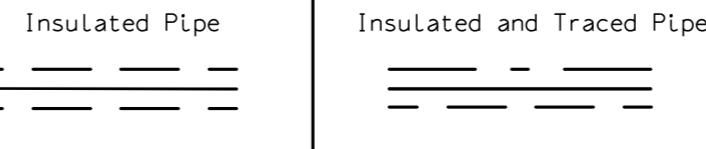
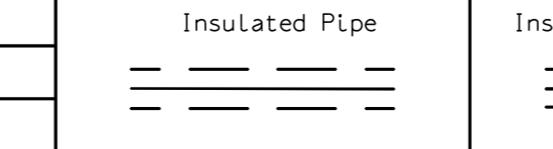
All dimensions to be checked in field prior to construction. Dimensions and routing shall be field adjusted, it is the piping contractors responsibility to check and verify all closing dimensions to equipment and make adjustments as required in field. All dimensions, elevations and coordinates are in 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.

NOTES:

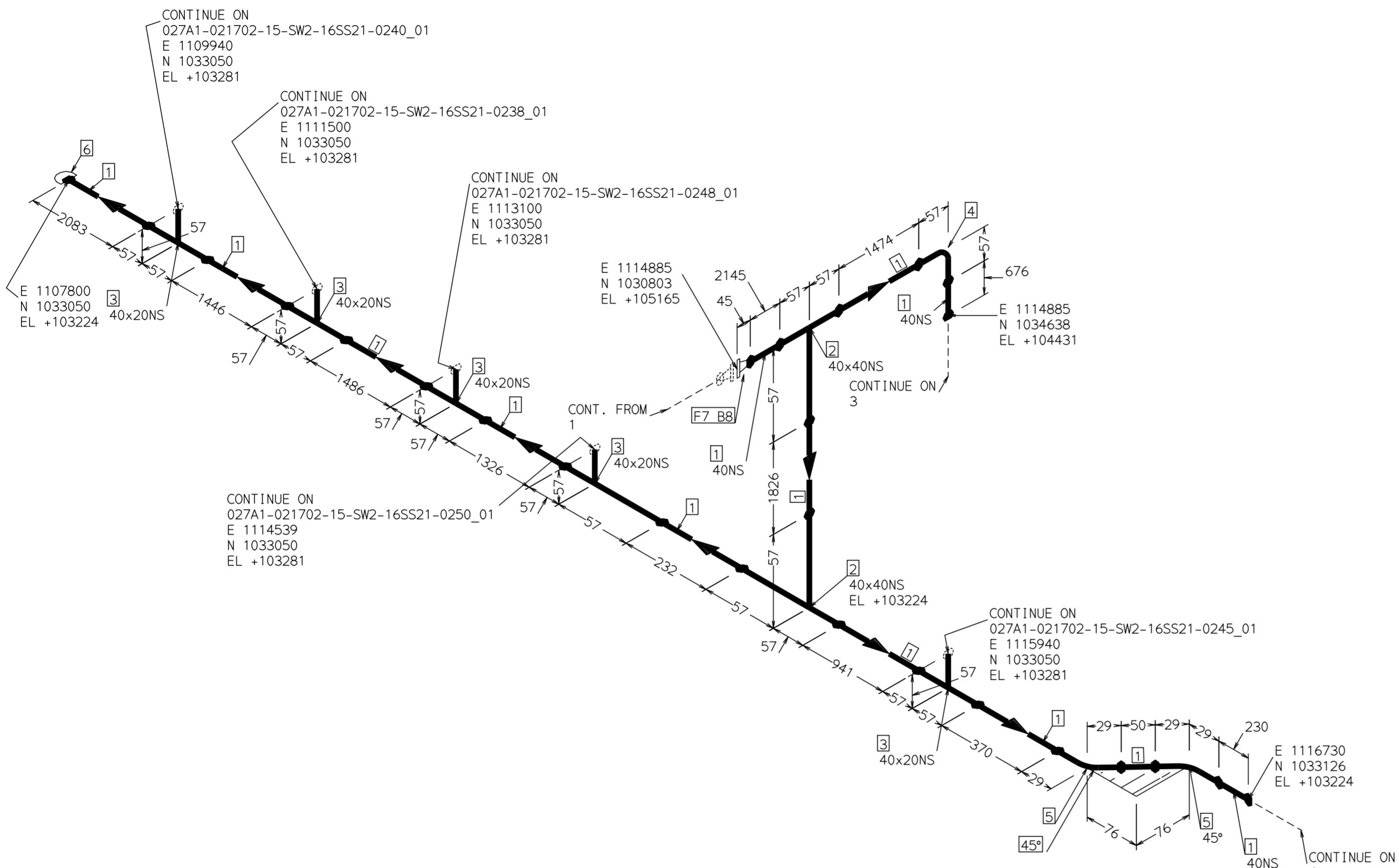
For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.

REFERENCES / DOCUMENTS

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

SPEC
SYMBOLS

PROJECT DESCRIPTION/LOCATION
BUTTERFLY PROJECT/KREFELD


PROCESS UNIT	DESIGN AREA	LINE NUMBER	TRAIN	SHEET	REV
027	027A1	021916-40-SW2-16SS21-0022	01	1 OF 4	0


MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	14.3M
2	40 x 40	Eq Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1MSER95	2
3	40 x 20	Red Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -, /2.6MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9WJE	5
4	40	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PK M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11,	1	
5	40	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PC M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11,	2	
6	40	EN 10253-4 Gr.X2CrNi19-11, WN Flg, EN 1092-1, RF/BW End, PN 40, -, /2.6MM EN 10222-5 Gr.X2CrNi18-9,	C1P0FV4R	1
7	40	WN Flg, EN 1092-1, RF/BW End, PN 40, -, /2.6MM EN 10222-5 Gr.X2CrNi18-9,	C1KU0MMS	1

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
8	16	90 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.	C3JHBDAS	4

PIPING DPT.
ISSUER
CHECKED

0	30/11/20	SMA	RHE	OMC	IFC-ISSUED FOR CONSTRUCTION
REV	DATE	DWN	CHK	APP	DESCRIPTION

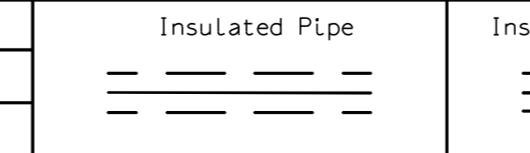
All dimensions to be checked in field prior to construction. Dimensions and routing shall be field adjusted, it is the piping contractors responsibility to check and verify all closing dimensions to equipment and make adjustments as required in field. All dimensions, elevations and coordinates are in 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.

NOTES:

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

REFERENCES / DOCUMENTS

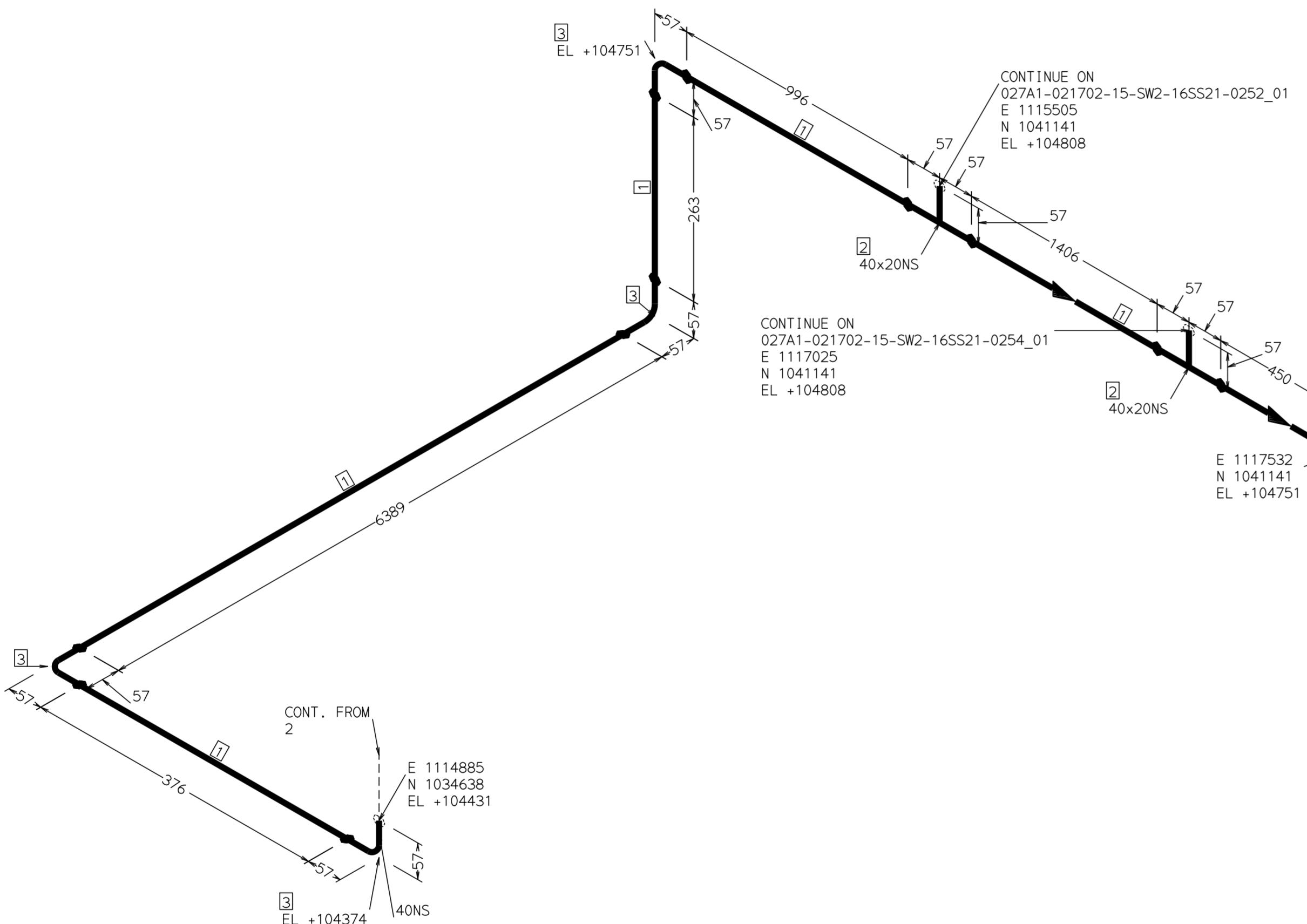
LINE LIST	30201-042-001000-001
ISOMETRIC INDEX	30303-042-001000-200
PIPING SUPPORT	30207-042-001000-001

SPEC
SYMBOLIC

PROJECT DESCRIPTION/LOCATION
BUTTERFLY PROJECT/KREFELD


PROCESS UNIT	DESIGN AREA	LINE NUMBER	TRAIN	sheet	REV
027	027A1	021916-40-SW2-16SS21-0022	01	2 OF 4	0

MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, -./2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	9.9M
2	40 x 20	Red Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -./2.6MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9WJE	2
3	40	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PK	4	
4	40	M.3D, Serie 2./2MM EN 10253-4 Gr.X2CrNi19-11, EN 10253-4 Gr.X2CrNi19-11,	C1P0FV4R	1



PIPING DPT.
ISSUER
CHECKED

0	30/11/20	SMA	RHE	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

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

SPEC

SYMBOLIC

16SS21

BUTTERFLY PROJECT/KREFELD

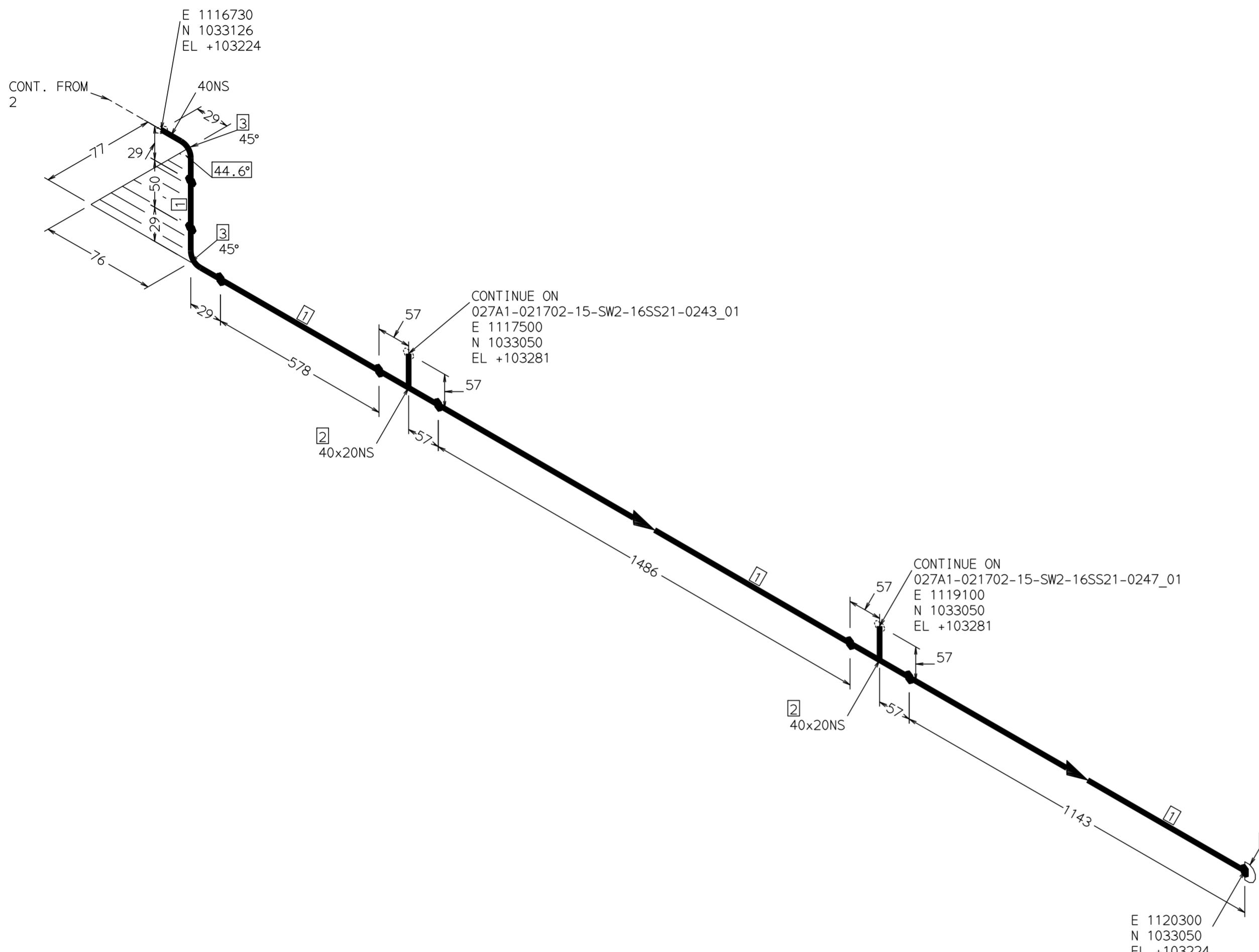
PROCESS UNIT	DESIGN AREA	LINE NUMBER	TRAIN	SHEET	REV
027	027A1	021916-40-SW2-16SS21-0022	01	3 OF 4	0



N

MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, -./2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	3.3M
2	40 x 20	Red Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -./2.6MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9WJE	2
3	40	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PC	2	
4	40	M.3D, Serie 2./2MM EN 10253-4 Gr.X2CrNi19-11, EN 10253-4 Gr.X2CrNi19-11,	C1P0FV4R	1



PIPING DPT.
ISSUER
CHECKED

0	30/11/20	SMA	RHE	OMC	IFC-ISSUED FOR CONSTRUCTION
REV	DATE	DWN	CHK	APP	DESCRIPTION

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

REFERENCES / DOCUMENTS

SPEC

16SS21

SYMBOLIC

LINE LIST 30201-042-001000-001

ISOMETRIC INDEX 30303-042-001000-200

PIPING SUPPORT 30207-042-001000-001

Insulated Pipe

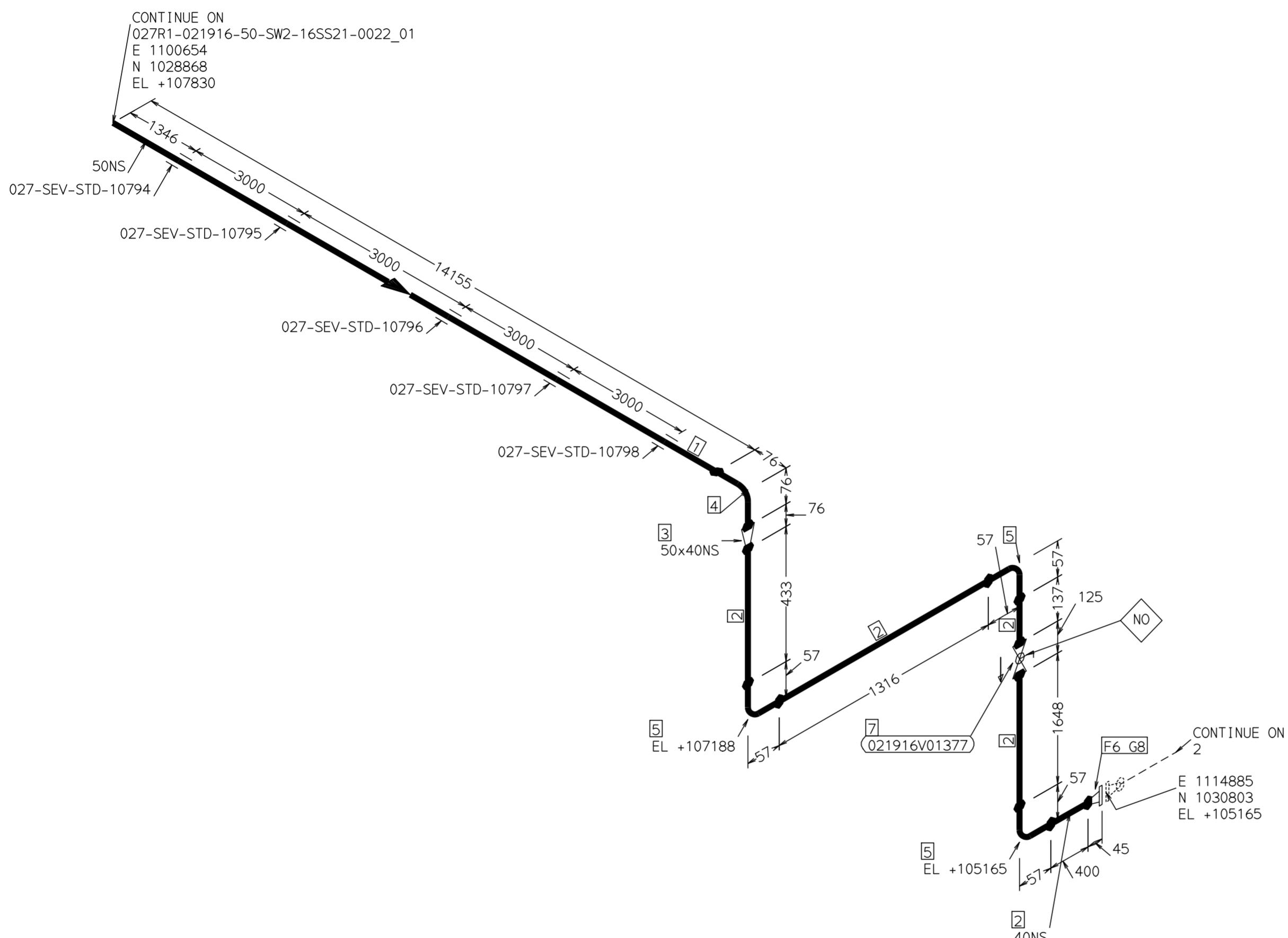
Insulated and Traced Pipe

PROJECT DESCRIPTION/LOCATION

BUTTERFLY PROJECT/KREFELD



PROCESS UNIT	DESIGN AREA	LINE NUMBER	TRAIN	SHEET	REV
027	027A1	021916-40-SW2-16SS21-0022	01	4 OF 4	0


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,	C1KV256	14.2M
2	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	4.0M
3	50 x 40	Conc Reducer, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -, /2MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9VRA	1
4	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,	C1P0J0PL	1
5	40	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PK M.3D, Serie 2, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PK	3
6	40	WN Flg, EN 1092-1, RF/BW End, PN 40, -, /2.6MM EN 10222-5 Gr.X2CrNi18-9,	C1KU0MMS	1
7	40	Bal BW,RB,SP,PN 63,BW Ends,Datasheet: 6006/2MM EN 10213 Gr.GX5CrNiMo19-11-2,	C3HDWU3X	1

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
8	40	NM Flat Gk, EN 1514-1, RF as per EN 1092-1, PN 40, IBC Type, Thk=3.2mm, Klingsil C-4430, TA-Luft & EC1935 (D.S. 5101)/ CNAF,	C1MSERAJ	1

**PIPING DPT.
MATERIALS
CHECKED**

By Jose G. Suarez at 4:21 pm, Dec 03, 2020

0	30/11/20	SMA	RHE	OMC	IFC-ISSUED FOR CONSTRUCTION
REV	DATE	DWN	CHK	APP	DESCRIPTION

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PROJECT DESCRIPTION/LOCATION


BUTTERFLY PROJECT/KREFELD

LINE LIST 30201-042-001000-001

ISOMETRIC INDEX 30303-042-001000-200

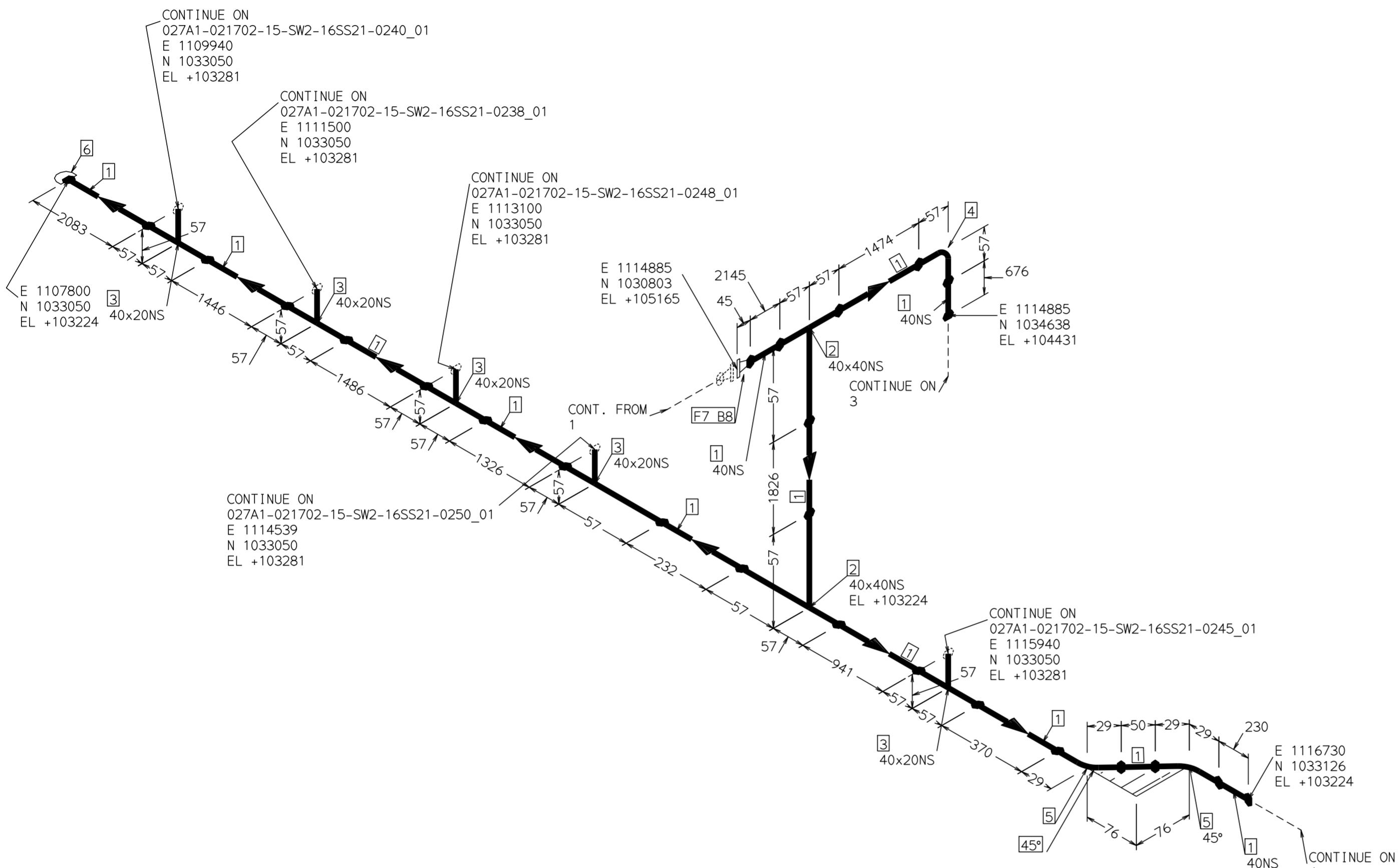
PIPING SUPPORT 30207-042-001000-001

Insulated Pipe

Insulated and Traced Pipe

PROCESS UNIT DESIGN AREA LINE NUMBER TRAIN SHEET REV

027 027A1 021916-40-SW2-16SS21-0022 01 1 OF 4 0


MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	14.3M
2	40 x 40	Eq Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1MSER95	2
3	40 x 20	Red Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -, /2.6MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9WJE	5
4	40	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PK M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11,	1	
5	40	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PC M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11,	2	
6	40	EN 10253-4 Gr.X2CrNi19-11, WN Flg, EN 1092-1, RF/BW End, PN 40, -, /2.6MM EN 10222-5 Gr.X2CrNi18-9,	C1P0FV4R	1
7	40	WN Flg, EN 1092-1, RF/BW End, PN 40, -, /2.6MM EN 10222-5 Gr.X2CrNi18-9,	C1KU0MMS	1

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
8	16	90 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.	C3JHBDAS	4

**PIPING DPT.
MATERIALS
CHECKED**

By Jose G. Suarez at 4:21 pm, Dec 03, 2020

0	30/11/20	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.

NOTES:

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

REFERENCES / DOCUMENTS

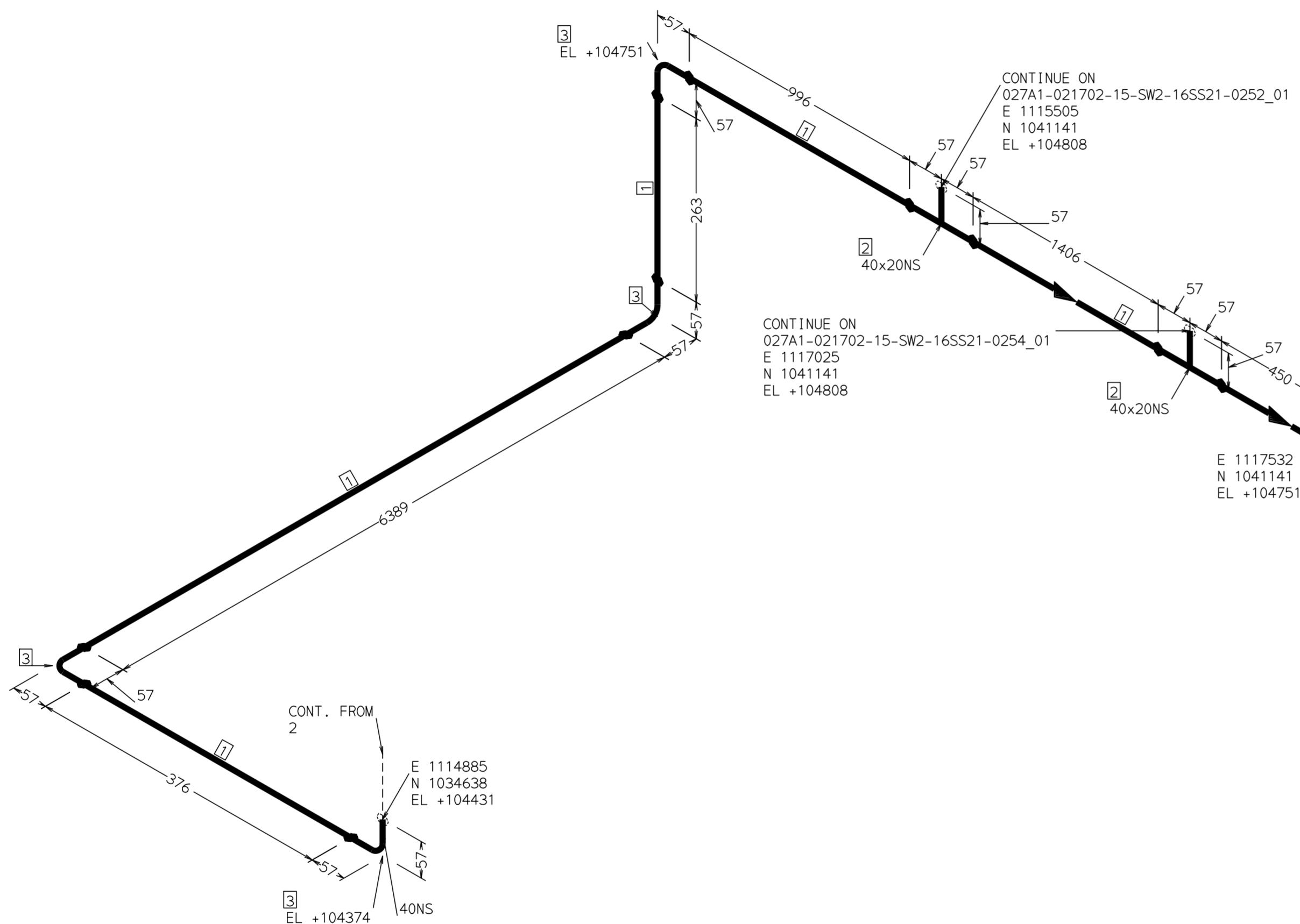
LINE LIST	30201-042-001000-001
ISOMETRIC INDEX	30303-042-001000-200
PIPING SUPPORT	30207-042-001000-001

SPEC
SYMBOLIC

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

PROJECT DESCRIPTION/LOCATION
BUTTERFLY PROJECT/KREFELD


PROCESS UNIT	DESIGN AREA	LINE NUMBER	TRAIN	sheet	REV
027	027A1	021916-40-SW2-16SS21-0022	01	2 OF 4	0



MATERIAL LIST - FABRICATION

<u>PT NO</u>	<u>N.S. (MM)</u>	<u>DESCRIPTION</u>	<u>IDENT</u>	<u>QTY</u>
1	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, - ,/2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	9.9M
2	40 x 20	Red Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, - ,/2.6MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9WJE	2
3	40	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PK	4
4	40	EN 10253-4 Gr.X2CrNi19-11,	C1P0FV4R	1

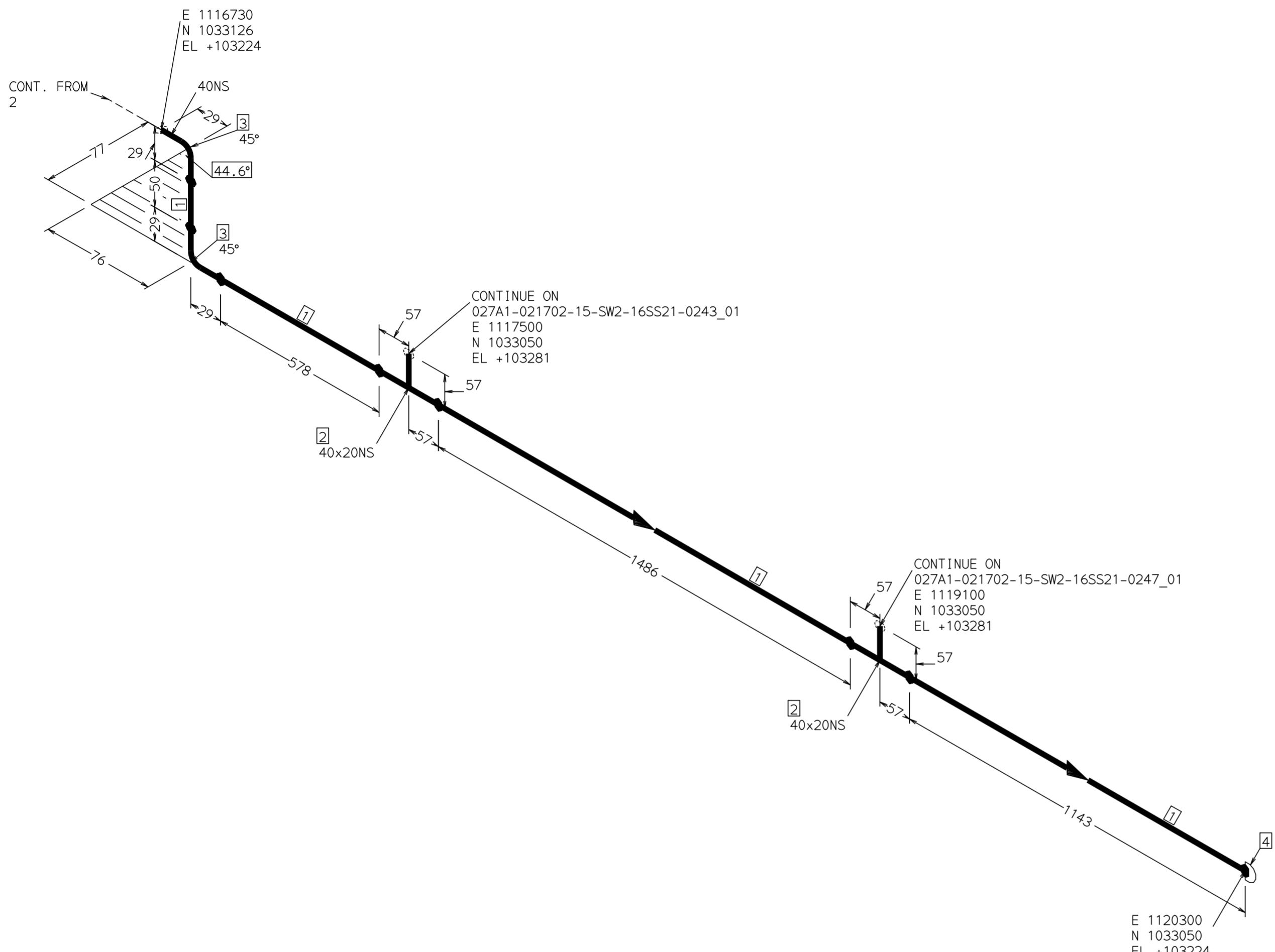
PIPING DPT.
MATERIALS
CHECKED

By: Jose G. Suarez at 4:31 pm, Dec 03, 2020

0	30/11/20	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.

NOTES: For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.										REFERENCES / DOCUMENTS						SPEC SYMBOLS		PROJECT DESCRIPTION/LOCATION BUTTERFLY PROJECT/KREFELD			horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.				
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								<u>—</u> — <u>—</u> —		<u>—</u> — <u>—</u> —		<u>—</u> — <u>—</u> —		027		027A1		021916-40-SW2-16SS21-0022			01	3 OF 4	0
PIPING SUPPORT		30207-042-001000-001																							



MATERIAL LIST - FABRICATION

<u>PT NO</u>	<u>N.S. (MM)</u>	<u>DESCRIPTION</u>	<u>IDENT</u>	<u>QTY</u>
1	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, - ,/2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	3.3M
2	40 x 20	Red Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, - ,/2.6MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9WJE	2
3	40	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PC	2
4	40	EN 10253-4 Gr.X2CrNi19-11,	C1P0FV4R	1

PIPING DPT.

MATERIALS

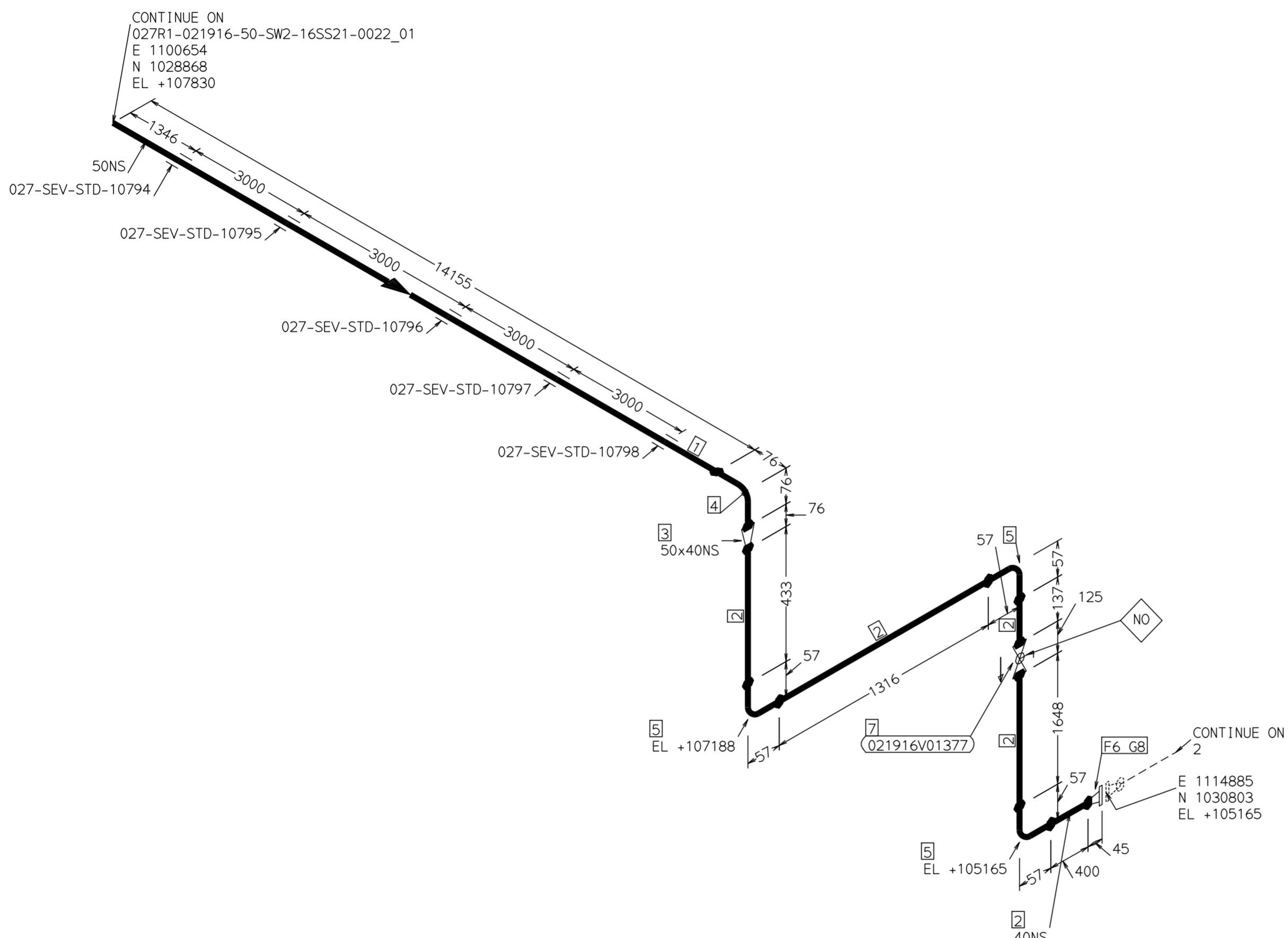
CHECKED

By: Jose G. Suarez at 4:31 pm, Dec 03, 2020

0	30/11/20	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.

NOTES:		REFERENCES / DOCUMENTS		SPEC	16SS21	PROJECT DESCRIPTION/LOCATION				horizontal and vertical centerline unless shown otherwise. Contractor will provide all necessary pipe supports.			
				SYMBOLS		BUTTERFLY PROJECT/KREFELD							
		LINE LIST	30201-042-001000-001	Insulated Pipe — — — —	Insulated and Traced Pipe — — — — —	LINE NUMBER		TRAIN	SHEET	REV			
		ISOMETRIC INDEX	30303-042-001000-200										
		PIPING SUPPORT	30207-042-001000-001										
For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.						027 027A1 021916-40-SW2-16SS21-0022		01	4 OF 4	0			


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,	C1KV256	14.2M
2	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, -./2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	4.0M
3	50 x 40	Conc Reducer, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -./2MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9VRA	1
4	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,	C1P0J0PL	1
5	40	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PK M.3D, Serie 2./2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PK	3
6	40	WN Flg, EN 1092-1, RF/BW End, PN 40, -./2.6MM EN 10222-5 Gr.X2CrNi18-9,	C1KU0MMS	1
7	40	Bal BW,RB,SP,PN 63,BW Ends,Datasheet: 6006/2MM EN 10213 Gr.GX5CrNiMo19-11-2,	C3HDWU3X	1

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
8	40	NM Flat Gk, EN 1514-1, RF as per EN 1092-1, PN 40, IBC Type, Thk=3.2mm, Klingsersil C-4430, TA-Luft & EC1935 (D.S. 5101)/ CNAF,	C1MSERAJ	1

**PIPING DPT.
SUPPORTED**
By jccanales at 9:26 am, Dec 01, 2020
**SUPPORTS
CHECKED**
By jccanales at 10:19 am, Dec 01, 2020

0	30/11/20	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.

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

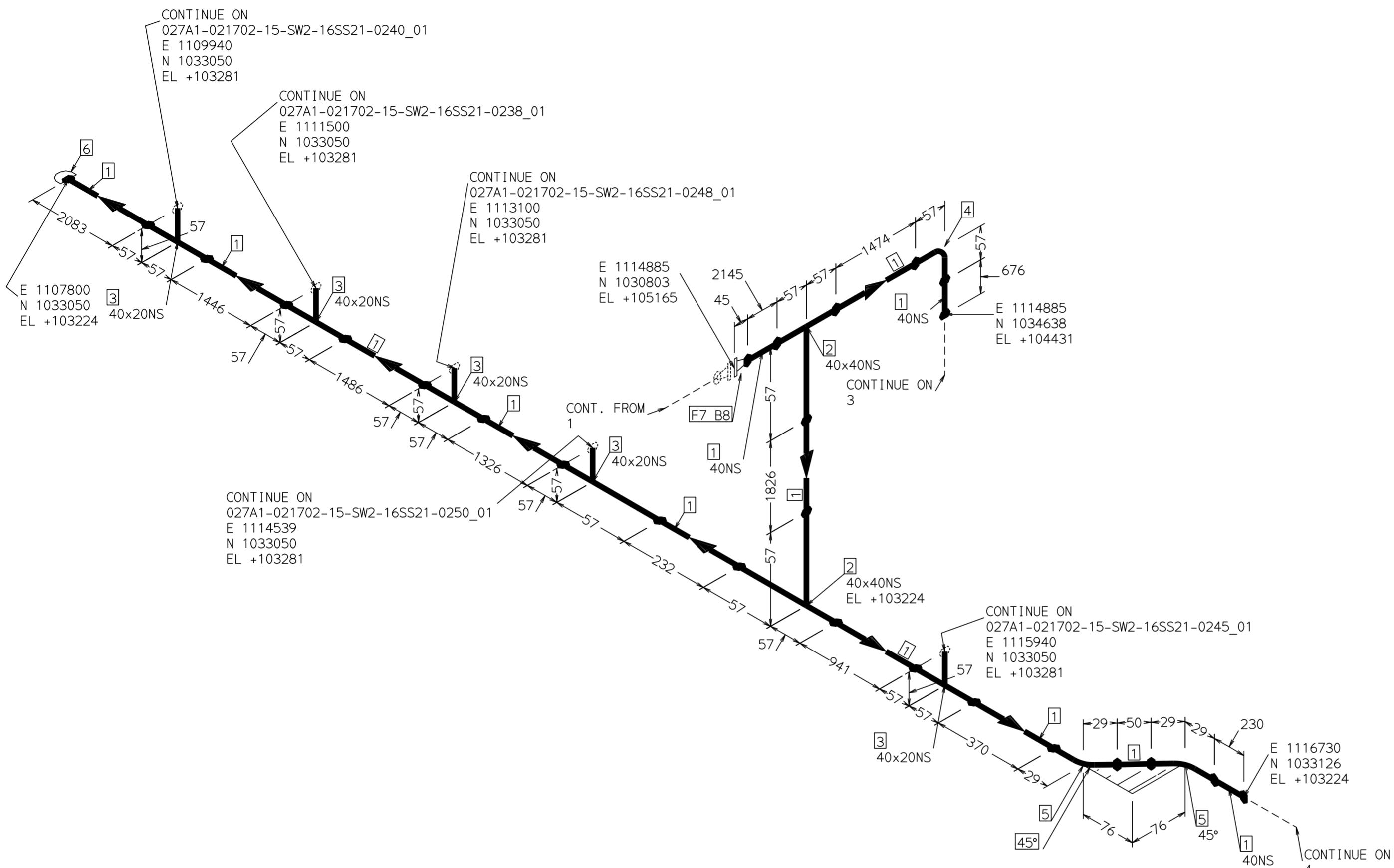
REFERENCES / DOCUMENTS

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

SPEC
SYMBOLS
16SS21
BUTTERFLY PROJECT/KREFELD

PROCESS UNIT	DESIGN AREA	LINE NUMBER	TRAIN	sheet	REV
027	027A1	021916-40-SW2-16SS21-0022	01	1 OF 4	0

TechnipFMC
Cargill


MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, -./2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	14.3M
2	40 x 40	Eq Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -./2MM EN 10253-4 Gr.X2CrNi19-11,	C1MSER95	2
3	40 x 20	Red Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -./2.6MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9WJE	5
4	40	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PK 1		
5	40	M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PC	2
6	40	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0FV4R 1		
7	40	EN 10253-4 Gr.X2CrNi19-11, WN Flg, EN 1092-1, RF/BW End, PN 40, -./2.6MM EN 10222-5 Gr.X2CrNi18-9,	C1KU0MMS	1

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
8	16	90 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.	C3JHBDAS	4

**PIPING DPT.
SUPPORTED**
By jccanales at 9:26 am, Dec 01, 2020

**PIPING DPT.
SUPPORTS
CHECKED**
By jccanales at 10:19 am, Dec 01, 2020

0	30/11/20	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
027	027A1	021916-40-SW2-16SS21-0022	LINE NUMBER	TRAIN	SHEET REV
01	2 OF 4	0			

NOTES:

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

REFERENCES / DOCUMENTS

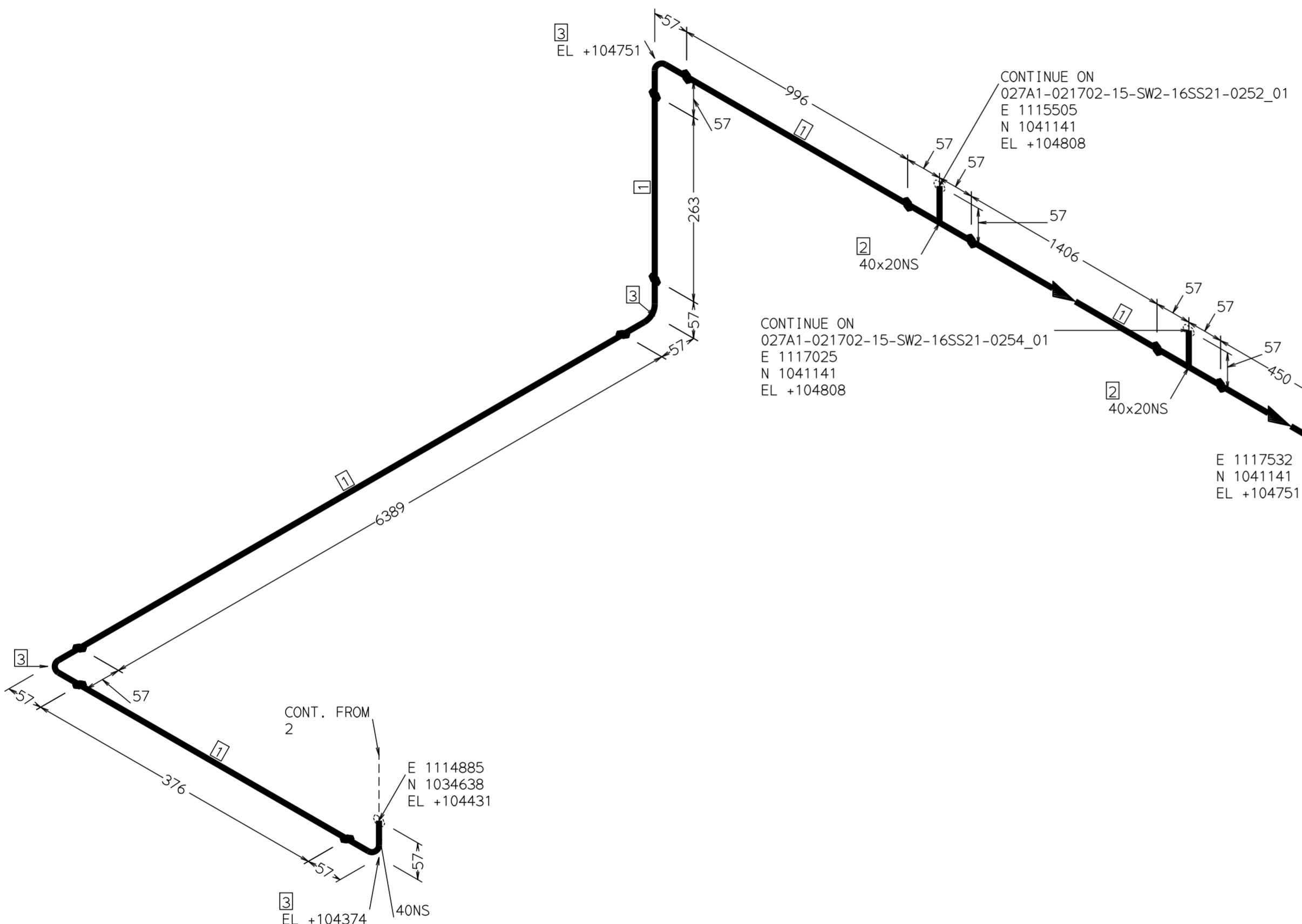
LINE LIST	30201-042-001000-001
ISOMETRIC INDEX	30303-042-001000-200
PIPING SUPPORT	30207-042-001000-001

SPEC
SYMBOLIC

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

MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, -./2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	9.9M
2	40 x 20	Red Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -./2.6MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9WJE	2
3	40	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PK	4	
4	40	M.3D, Serie 2./2MM EN 10253-4 Gr.X2CrNi19-11, EN 10253-4 Gr.X2CrNi19-11,	C1P0FV4R	1



PIPING DPT.
SUPPORTED
By jccanales at 9:26 am, Dec 01, 2020

PIPING DPT.
SUPPORTS CHECKED
By jccanales at 10:19 am, Dec 01, 2020

0	30/11/20	SMA	RHE	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

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

SPEC

SYMBOLIC

16SS21

BUTTERFLY PROJECT/KREFELD

PROCESS UNIT

DESIGN AREA

LINE NUMBER

TRAIN

SHEET

REV

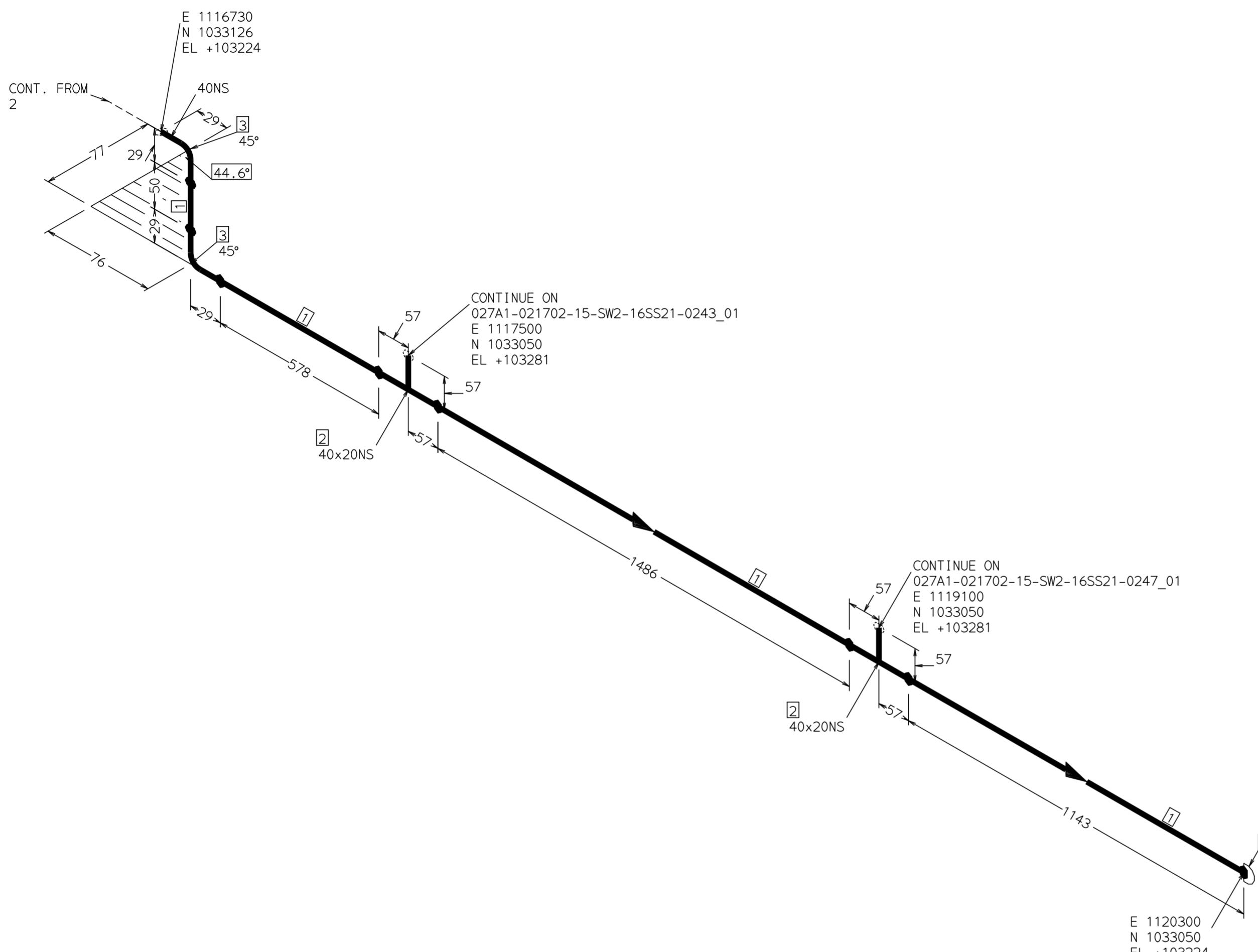


027	027A1	021916-40-SW2-16SS21-0022	01	3 OF 4	0
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N

MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, -./2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	3.3M
2	40 x 20	Red Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -./2.6MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9WJE	2
3	40	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PC	2	
4	40	M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11, EN 10253-4 Gr.X2CrNi19-11,	C1P0FV4R	1



PIPING DPT.
SUPPORTED

By jccanales at 9:26 am, Dec 01, 2020

PIPING DPT.
SUPPORTS CHECKED

By jccanales at 10:19 am, Dec 01, 2020

0	30/11/20	SMA	RHE	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

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

SPEC

SYMBOLIC

16SS21

BUTTERFLY PROJECT/KREFELD

PROCESS UNIT

DESIGN AREA

LINE NUMBER

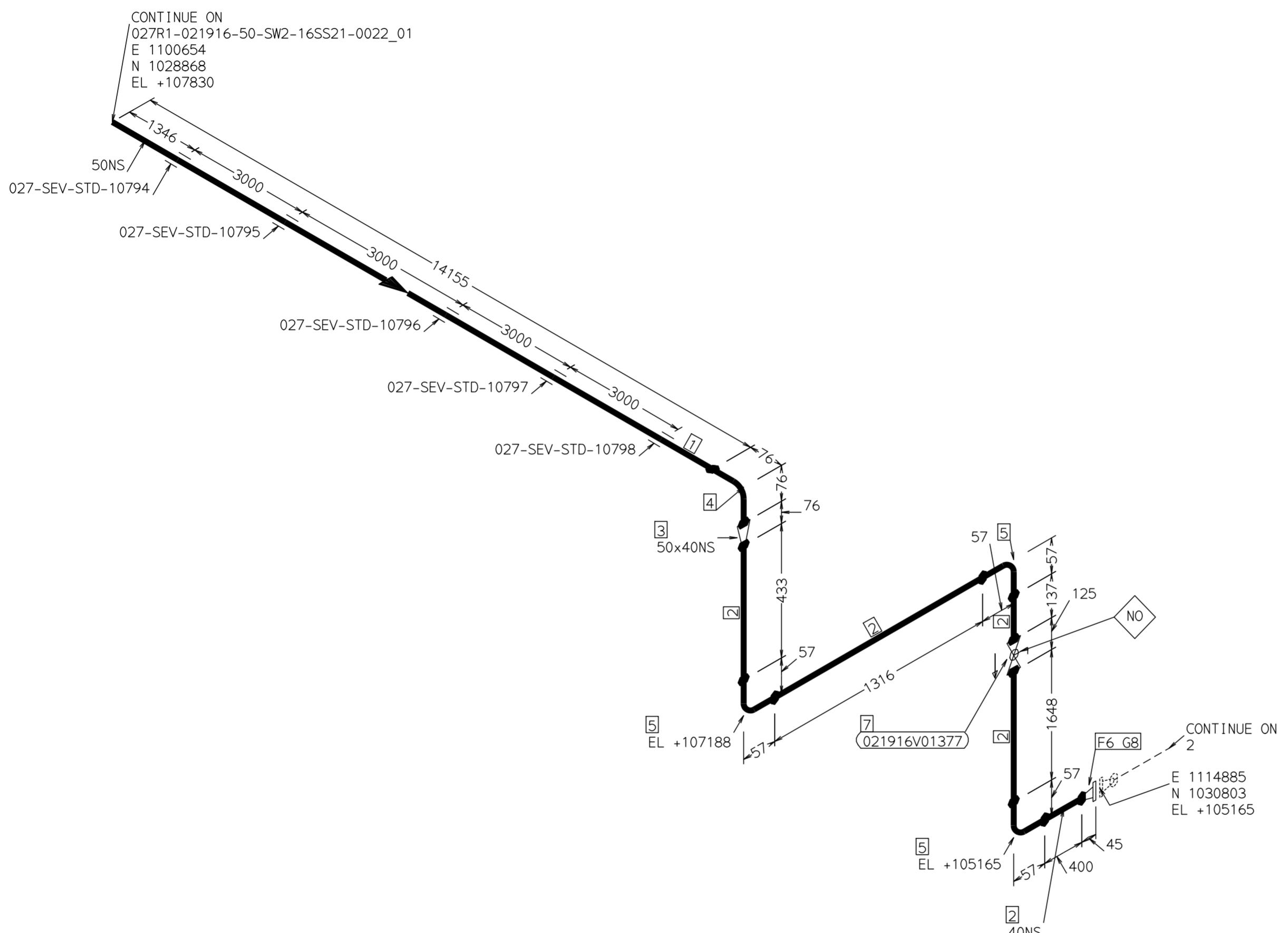
TRAIN

SHEET

REV

TechnipFMC Cargill

027 027A1 021916-40-SW2-16SS21-0022 01 4 OF 4 0


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	14.2M
2	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	4.0M
3	50 x 40	Conc Reducer, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -, /2MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9VRA	1
4	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,	C1P0J0PL	1
5	40	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PK M.3D, Serie 2, /2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PK	3
6	40	WN Flg, EN 1092-1, RF/BW End, PN 40, -, /2.6MM EN 10222-5 Gr.X2CrNi18-9,	C1KU0MMS	1
7	40	Bal BW,RB,SP,PN 63,BW Ends,Datasheet: 6006/2MM EN 10213 Gr.GX5CrNiMo19-11-2,	C3HDWU3X	1

MATERIAL LIST - ERECTION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
8	40	NM Flat Gk, EN 1514-1, RF as per EN 1092-1, PN 40, IBC Type, Thk=3.2mm, Klingsil C-4430, TA-Luft & EC1935 (D.S. 5101)/ CNAF,	C1MSERAJ	1

**PIPING DPT.
DESIGN
CHECKED**
By Ruth Herrero at 3:47 pm, Nov 30, 2020
**PIPING DPT.
DESIGNED**
By smartinez at 11:13 am, Nov 30, 2020

0	30/11/20	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
027	027A1	021916-40-SW2-16SS21-0022		01	1 OF 4
REV	01	01	01	01	01

NOTES:

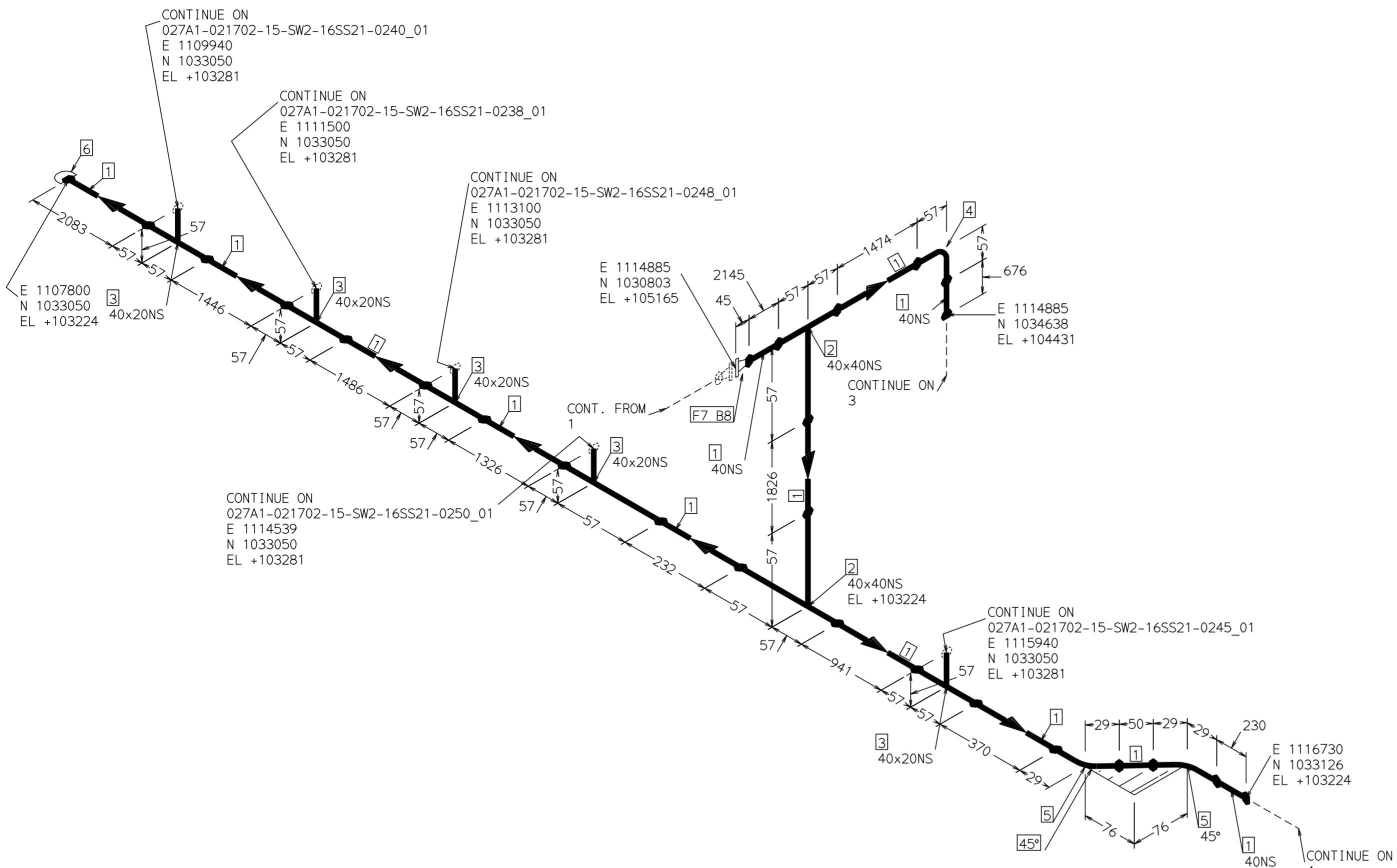
For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.

REFERENCES / DOCUMENTS

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

SPEC
SYMBOLIC
16SS21
SYMBOLIC

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



MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, - ,/2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	14.3M
2	40 x 40	Eq Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, - ,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1MSER95	2
3	40 x 20	Red Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, - ,/2.6MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9WJE	5
4	40	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PK	1
5	40	45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PC	2
6	40	EN 10253-4 Gr.X2CrNi19-11,	C1P0FV4R	1
7	40	WN Flg, EN 1092-1, RF/BW End, PN 40, - ,/2.6MM EN 10222-5 Gr.X2CrNi18-9,	C1KU0MMS	1

MATERIAL LIST - ERECTION

<u>PT NO</u>	<u>N.S. (MM)</u>	<u>DESCRIPTION</u>	<u>IDENT</u>	<u>QTY</u>
8	16	90 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,	C3JHBDAS	4

**PIPING DPT.
DESIGN
CHECKED**

By Ruth Herrero at 3:47 pm, Nov 30, 2020

**PIPING DPT.
DESIGNED**

By smartinez at 11:13 am, Nov 30, 2020

0	30/11/20	SMA	RHE	OMC	IFC-ISSUED FOR CONSTRUCTION
REV	DATE	DWN	CHK	APP	DESCRIPTION

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NOTES:

REFERENCES / DOCUMENTS

REFERENCES / DOCUMENTS

LINE LIST	30201-042-001000-001
ISOMETRIC INDEX	30203 042 001000 300

ISOMETRIC INDEX	SUSUS-042-001000-200
PIPING SUPPORT	30202_042_001000_001

SPEC 16SS21

SYMBOLS

Insulated Pipe Insulated and Traced Pipe

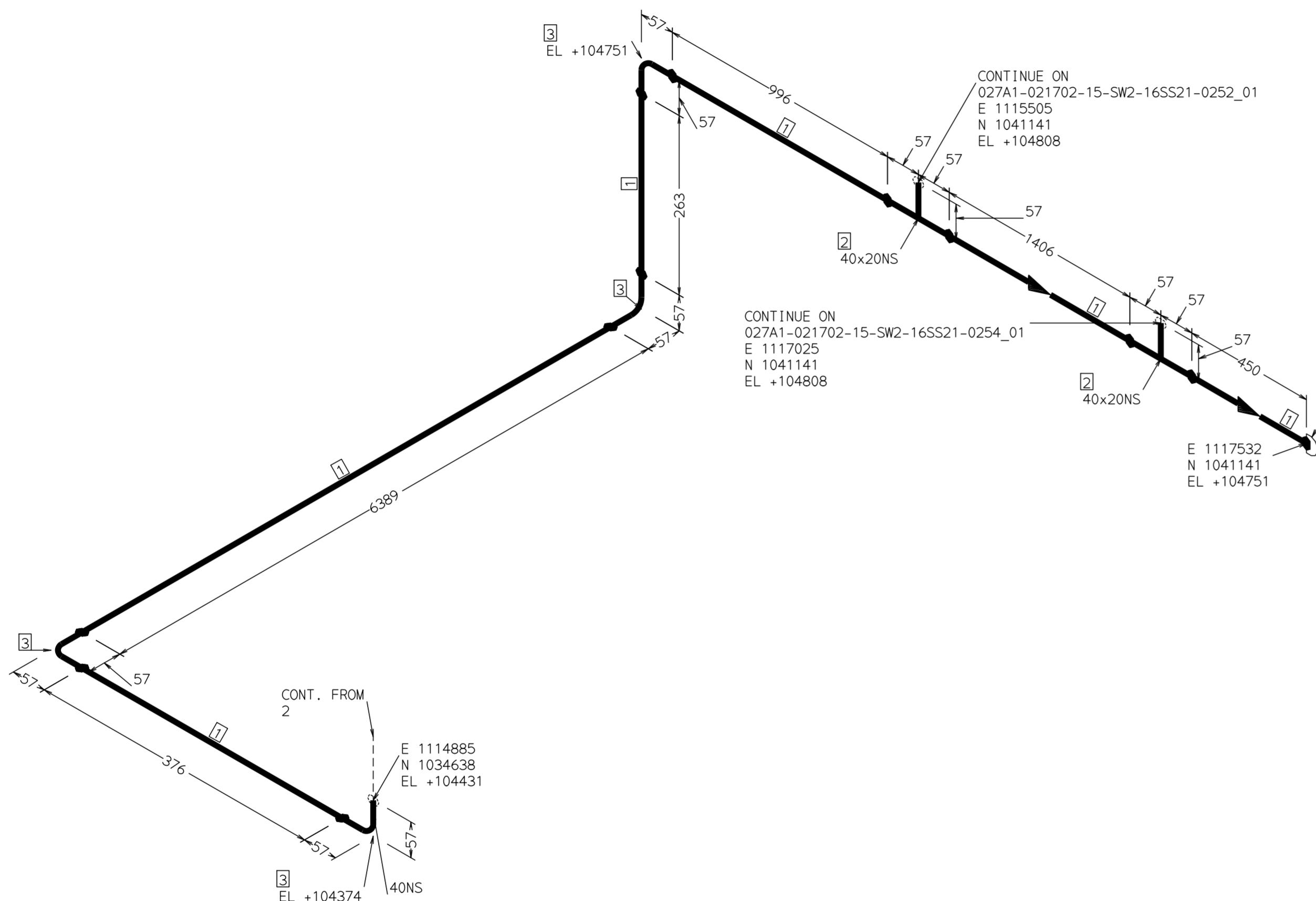
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PROJECT DESCRIPTION/LOCATION

BUTTERFLY PROJECT /KREFELD



BUTTERFLY PROJECT/KREFELD		Version	Drawing			
PROCESS UNIT	DESIGN AREA	LINE NUMBER		TRAIN	SHEET	REV
027	027A1	021916-40-SW2-16SS21-0022		01	2 OF 4	0



MATERIAL LIST - FABRICATION

<u>PT NO</u>	<u>N.S. (MM)</u>	<u>DESCRIPTION</u>	<u>IDENT</u>	<u>QTY</u>
1	40	Pipes (Length), EN 10220, PE, EFW + 100% RT, - ,/2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	9.9M
2	40 x 20	Red Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, - ,/2.6MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9WJE	2
3	40	90° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, M.3D, Serie 2,/2MM EN 10253-4 Gr.X2CrNi19-11,	C1P0J0PK	4
4	40	EN 10253-4 Gr.X2CrNi19-11,	C1P0FV4R	1

**PIPING DPT.
DESIGNED**

PIPING DPT.
DESIGN
CHECKED

0	30/11/20	SMA	RHE	OMC	IFC-ISSUED FOR CONSTRUCTION
REV	DATE	DWN	CHK	APP	DESCRIPTION

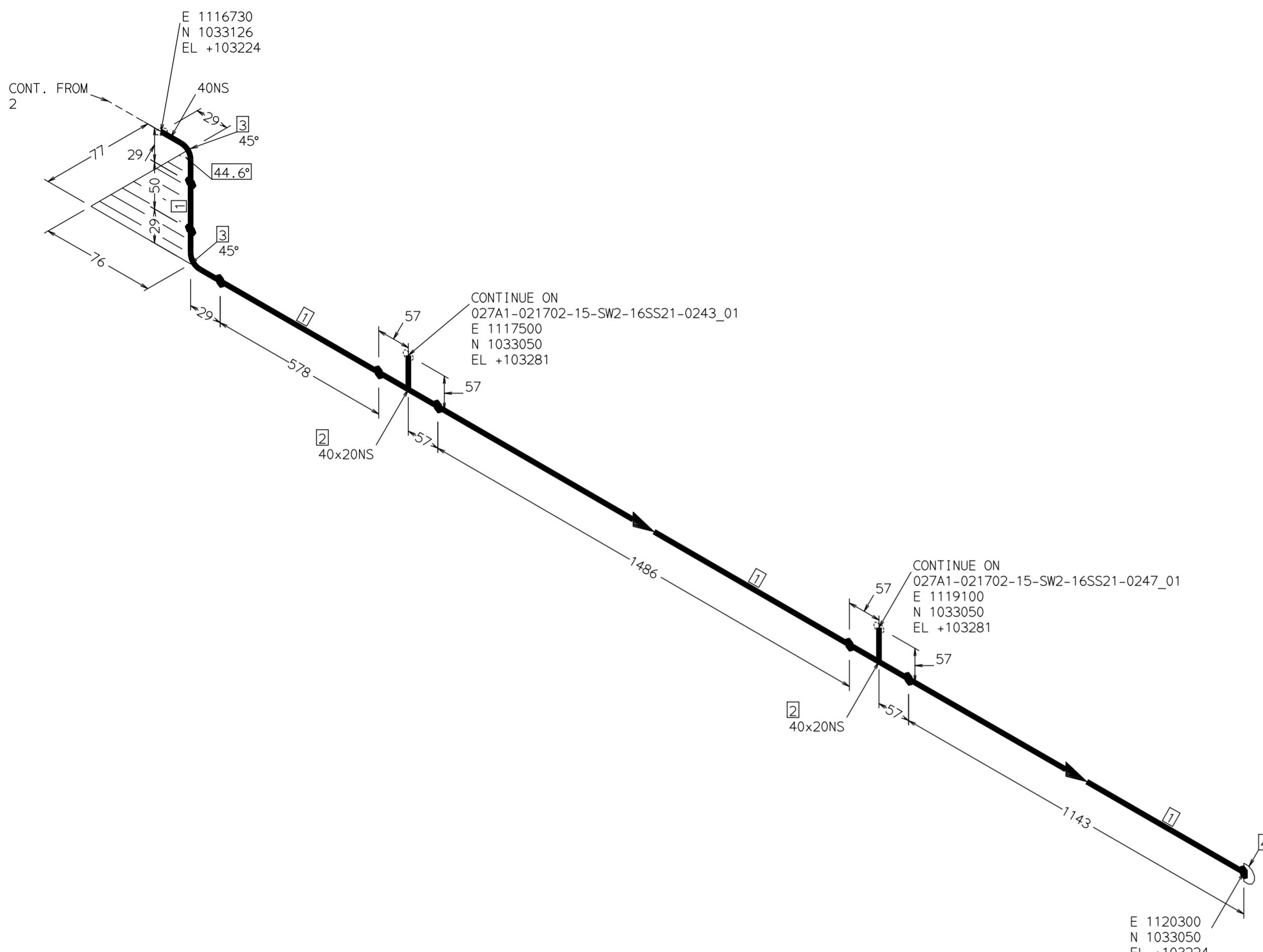
All dimensions to be checked in field prior to construction. Dimensions and routing shall be field adjusted, it is the piping contractors responsibility to check and verify all closing dimensions to equipment and make adjustments as required in field. All dimensions, elevations and coordinates are in 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.

NOTES:		REFERENCES / DOCUMENTS		SPEC	16SS21	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 <th>Insulated Pipe</th> <th>Insulated and Traced Pipe</th> <th>PROCESS UNIT</th> <th>DESIGN AREA</th> <th data-cs="2" data-kind="parent">LINE NUMBER</th> <th data-kind="ghost"></th> <th>TRAIN</th> <th>SHEET</th> <th>REV</th>	Insulated Pipe	Insulated and Traced Pipe	PROCESS UNIT	DESIGN AREA	LINE NUMBER		TRAIN	SHEET	REV
For pipes < dn50 supporting to be studied and defined by construction contractor before line fabrication and installation.		ISOMETRIC INDEX	30303-042-001000-200	— — — —	— — — —	027	027A1	021916-40-SW2-16SS21-0022		01	3 OF 4	0
		PIPING SUPPORT	30207-042-001000-001	— — — —	— — — —							

N

MATERIAL LIST - FABRICATION

PT NO	N.S. (MM)	DESCRIPTION	IDENT	QTY
1 40		Pipes (Length), EN 10220, PE, EFW + 100% RT, -, /2MM EN 10217-7 Gr.X2CrNi19-11,	C1KV250C	3.3M
2 40 x 20		Red Te, EN 10253-4 Type A, BW Ends, Welded + 100% RT, -, /2.6MM/2MM EN 10253-4 Gr.X2CrNi19-11,	C1NF9WJE	2
3 40		45° Elb LR, EN 10253-4 Type A, BW Ends, Welded + 100% RT, C1P0J0PC	2	
4 40		M.3D, Serie 2, /2MM EN 10253-4 Gr.X2CrNi19-11, EN 10253-4 Gr.X2CrNi19-11,	C1P0FV4R	1



PIPING DPT.
DESIGNED

By smartinez at 11:13 am, Nov 30, 2020

0	30/11/20	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.

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

SYMBOLIC

16SS21

BUTTERFLY PROJECT/KREFELD

PROCESS UNIT

DESIGN AREA

LINE NUMBER

TRAIN

SHEET

REV

027

027A1

021916-40-SW2-16SS21-0022

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