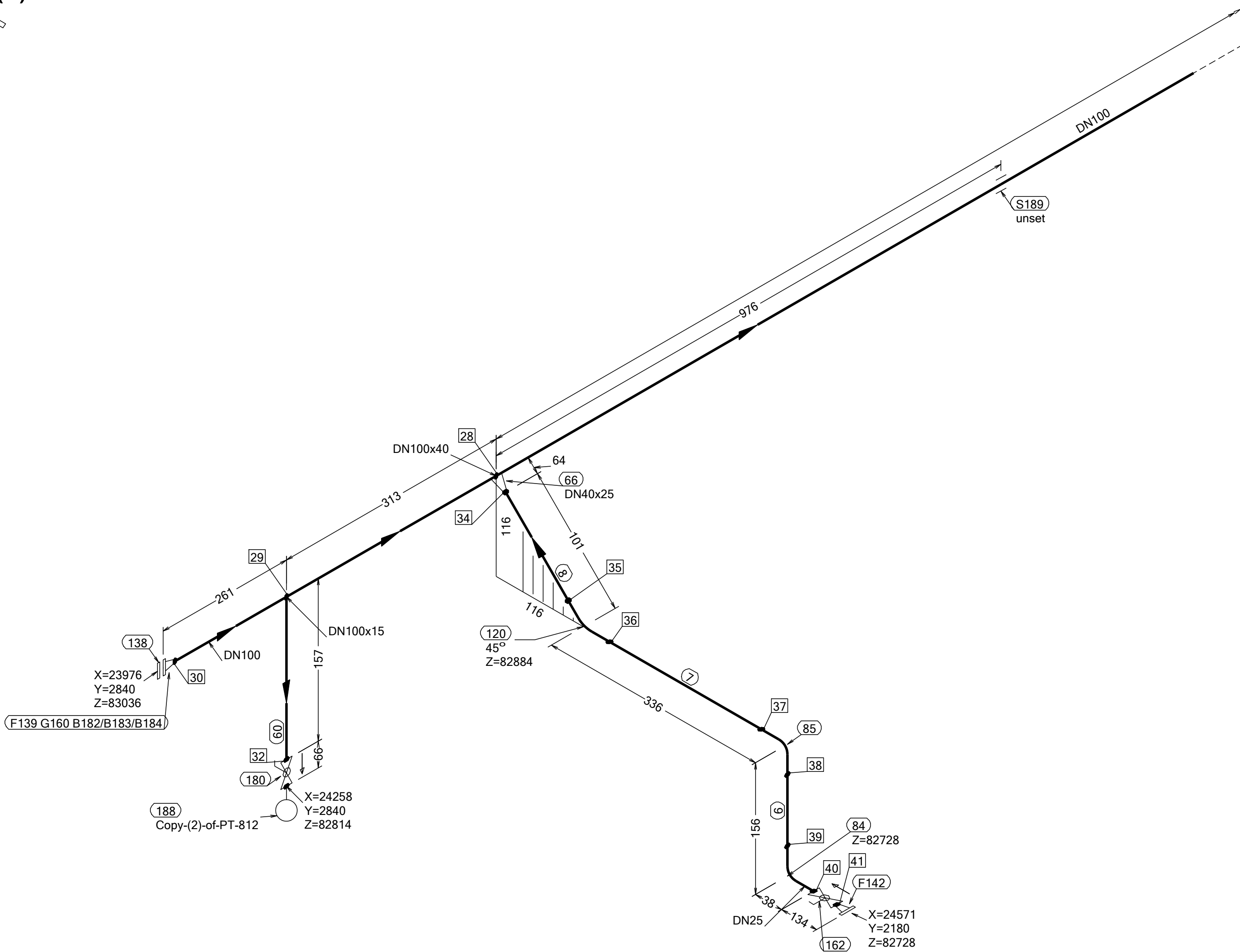


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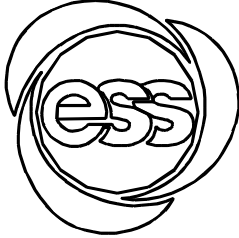


WELD	WPS
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CONT ON
SHEET 2

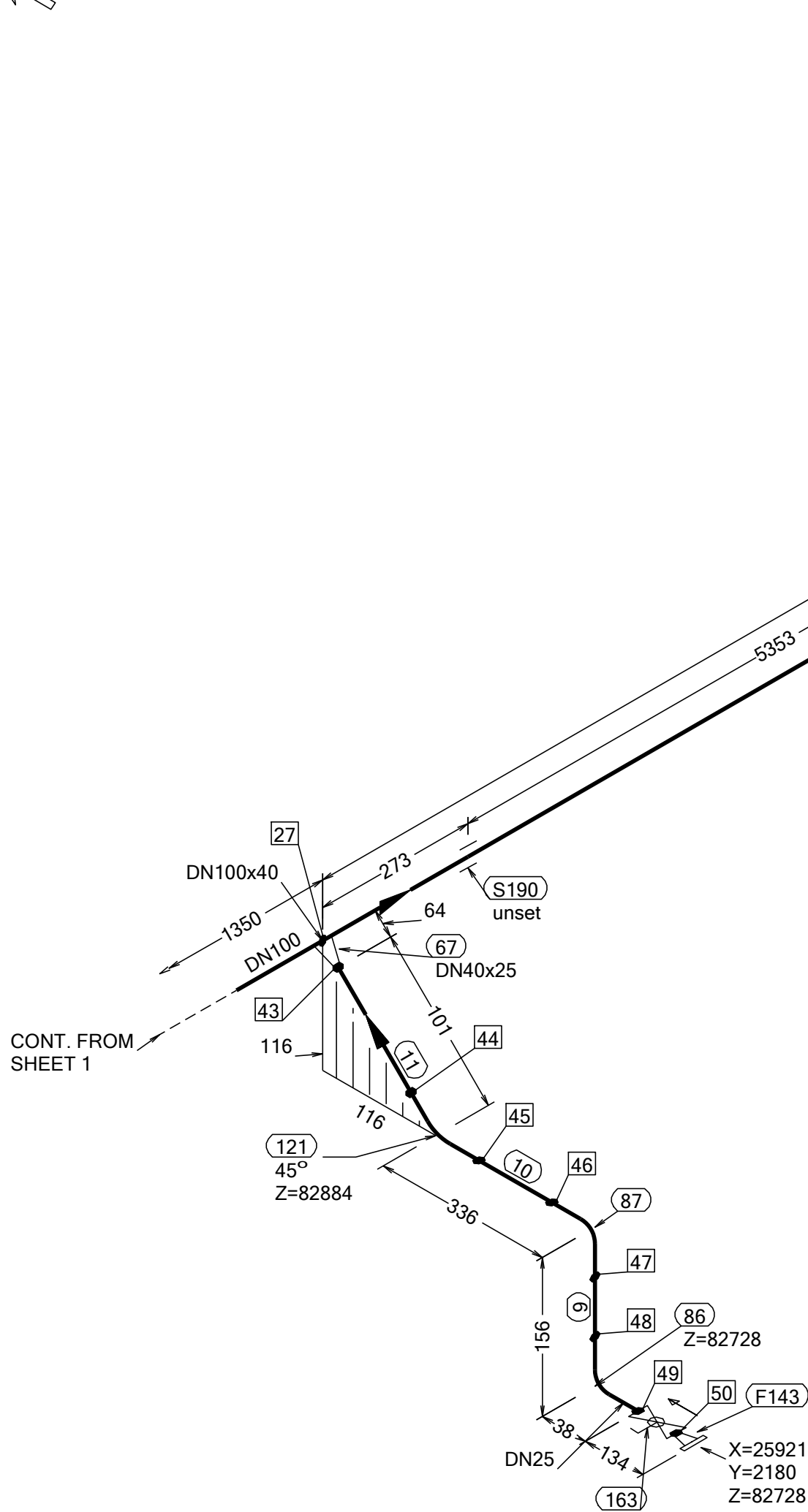
FABRICATION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
	<u>PIPE</u>				
1	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	1871	SETON TEE
6	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
7	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	282	
8	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
60	PIPE, SS-EN 10217-7, TC1, 21.3x2.0	15	EN 1.4404	101	
	<u>FITTINGS</u>				
66	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
84	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
85	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
120	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
	<u>FLANGES</u>				
138	FLANGE BLIND, SS-EN 1092-1, TYPE 05, PN16	100		1	
139	FLANGE WN, SS-EN 1092-1, TYPE 11, PN16	100		1	
142	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
	<u>GASKETS</u>				
160	GASKET, EN 1514-1, TYPE XXX, T=1,5mm	100	EXPANDED GRAPHITE	1	
	<u>VALVES / IN-LINE ITEMS</u>				
162	WORCESTER BALL VALVE BW, A59-666TT-BWJ DN25	25	EN 1.4404	1	
180	BALL VALVE, WORCESTER A44, SHORT, BW	15		1	

ERECTION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
	<u>BOLTS</u>				
182	HEXAGONAL NUT, M6M, ISO 4032	16	EN 1515-4, A4 HV≥250 EN 1515-4, A4-70	8	
183	WASHER, BRB, ISO 7089	16		16	
184	70 mm HEXAGONAL BOLT, M6S, ISO 4017	16		8	
	<u>INSTRUMENTS</u>				
188	Copy-(2)-of-PT-812 Copy-(2)-of-PT-812	15		1	
	<u>SUPPORTS</u>				
189	ESS Atta	100		1	

WPS See Weldlist	Design Temperature	Tightening Torque For Flange Joints	P&ID Drawing Number	General Layout Drawing Number	Calculation Report	Inspection Plan	Area Code
TBN	50degC	TBN	ESS-0059673	TBN	ESS-0058702	TBN	G01-DL
Quality Level For Weldign Acc To	Design Pressure	Bend Radius	Bending Procedure	Coupling Installation Procedure	Pressure Test Program	Alternate System Tag	Date (First Issue)
TBN	10bar (g)	N/A	N/A	TBN	TBN		170522
Weld Joint Efficiency Factor (Longitudinal)	Test Pressure	Insulation Specification			Title/Name EUROPEAN SPALLATION SOURCE ERIC WATER COOLING SYSTEM CWM-CWS02 OVERVIEW ESS.ACC.E02.E02.WP0004		Scale
1,0	14.3bar (g)	N/A					-
Elevation (z) Acc To	Quality Class	Insulation Thickness					Format
BCS	MQC4-C	N/A					A2
	Media	Allowance For Corrosion			Document Number ESS-XXXXX63		Sheet
	CWM	0					1 of 12
	Pipe Specification	Surface Treatment					Revision
	MQC4-W-PN16	N/A					A1

Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

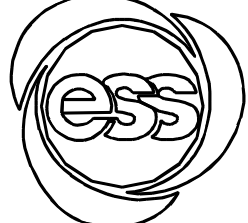
N (Y)



WELD	WPS
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FABRICATION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
	PIPE				
1	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	10824	SETON TEE
9	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
10	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	282	
11	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
12	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
13	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	282	
14	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
	FITTINGS				
67	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
68	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
86	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
87	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
88	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
89	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
121	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
122	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
	FLANGES				
143	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
144	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
	VALVES / IN-LINE ITEMS				
163	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	
164	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	

ERECTION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
SUPPORTS					
190	ESS Atta	100		1	
191	ESS Atta	100		1	

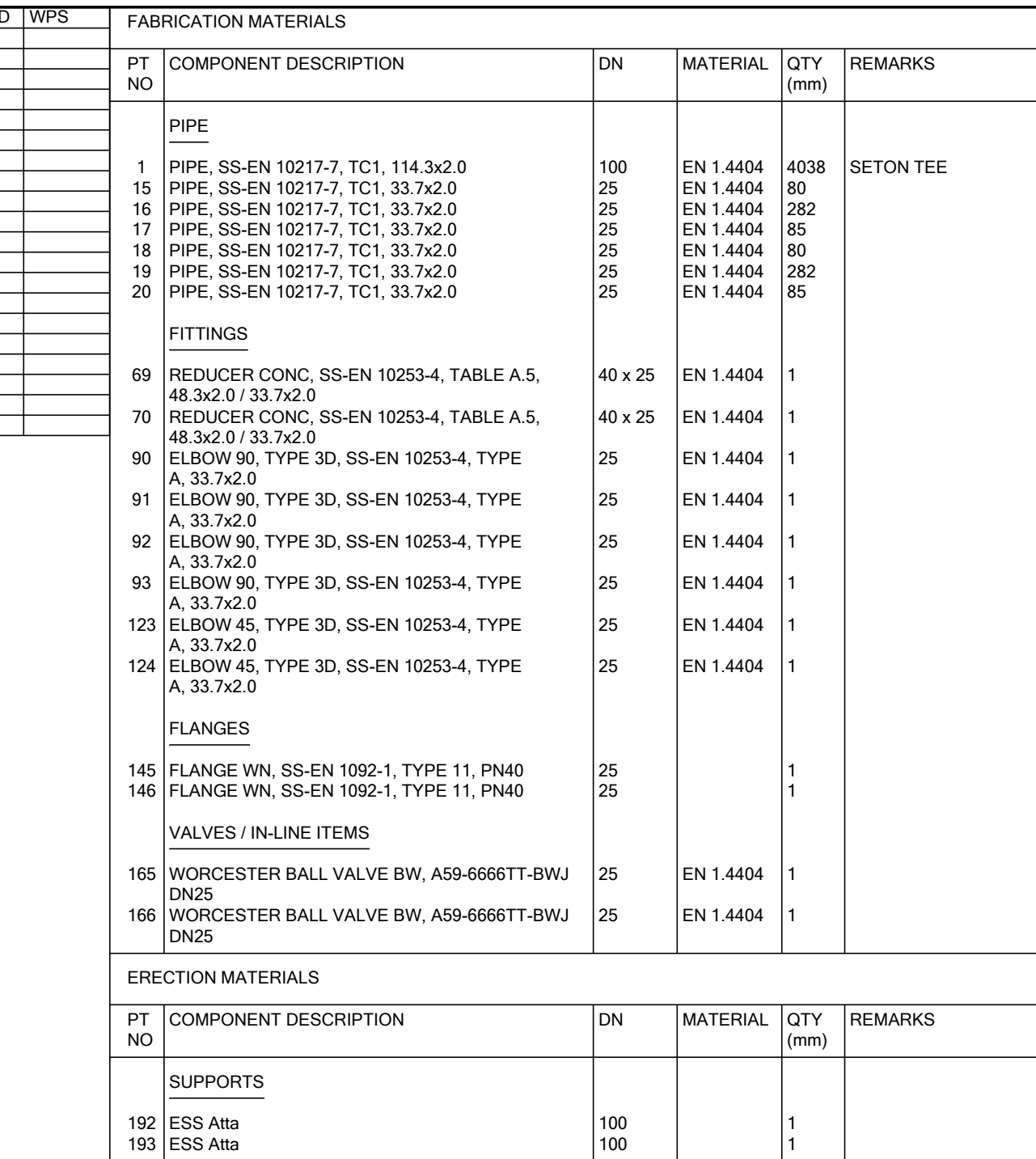
WPS See Weldlist	Design Temperature	Tightening Torque For Flange Joints	P&ID Drawing Number	General Layout Drawing Number	Calculation Report	Inspection Plan	Area Code
TBN	50degC	TBN	ESS-0059673	TBN	ESS-0058702	TBN	G01-DL
Quality Level For Weldign Acc To	Design Pressure	Bend Radius	Bending Procedure	Coupling Installation Procedure	Pressure Test Program	Alternate System Tag	Date (First Issue)
TBN	10bar (g)	N/A	N/A	TBN	TBN		170522
Weld Joint Efficiency Factor (Longitudinal)	Test Pressure	Insulation Specification			Title/Name EUROPEAN SPALLATION SOURCE ERIC WATER COOLING SYSTEM CWM-CWS02 OVERVIEW ESS.ACC.E02.E02.WP0004		Scale
1,0	14.3bar (g)	N/A					-
Elevation (z) Acc To	Quality Class	Insulation Thickness					Format
BCS	MQC4-C	N/A					A2
	Media	Allowance For Corrosion					Sheet
	CWM	0					2 of 12
	Pipe Specification	Surface Treatment					Revision
	MQC4-W-PN16	N/A					A1



EUROPEAN SPALLATION SOURCE ERIC
WATER COOLING SYSTEM
CWM-CWS02 OVERVIEW
ESS.ACC.E02.E02.WP0004

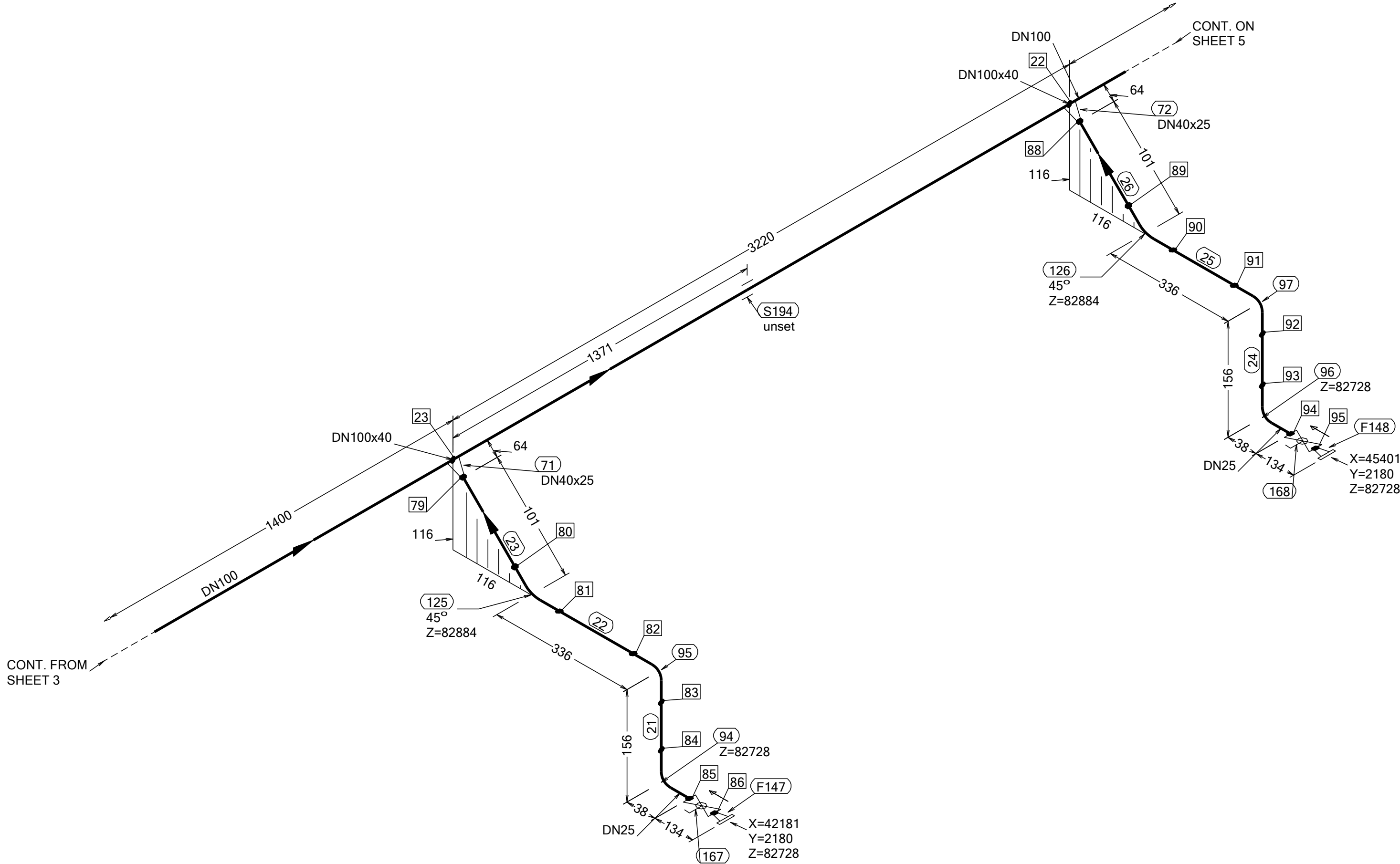
Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

Printed: 23 MAY 2017



Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
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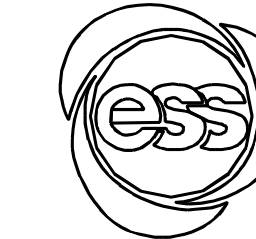
N (Y)



WELD	WPS
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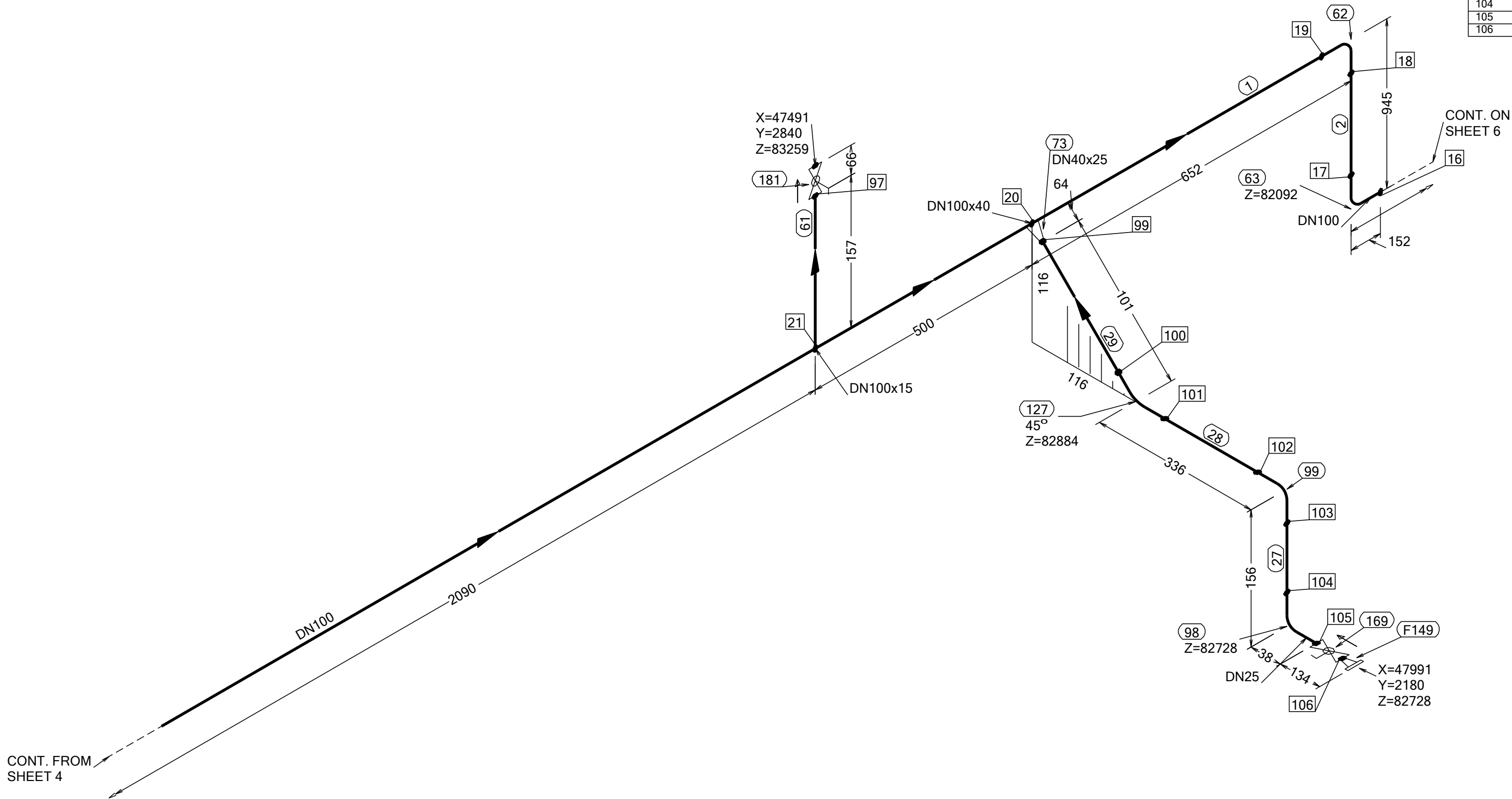
FABRICATION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
PIPE					
1	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	4620	SETON TEE
21	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
22	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	282	
23	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
24	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
25	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	282	
26	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
FITTINGS					
71	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
72	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
94	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
95	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
96	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
97	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
125	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
126	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
FLANGES					
147	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
148	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
VALVES / IN-LINE ITEMS					
167	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	
168	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	

ERECTION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
SUPPORTS					
194	ESS Atta	100		1	

WPS See Weldlist TBN	Design Temperature 50degC	Tightening Torque For Flange Joints TBN	P&ID Drawing Number ESS-0059673	General Layout Drawing Number TBN	Calculation Report ESS-0058702	Inspection Plan TBN	Area Code G01-DL
Quality Level For Weldign Acc To TBN	Design Pressure 10bar (g)	Bend Radius N/A	Bending Procedure N/A	Coupling Installation Procedure TBN	Pressure Test Program TBN	Alternate System Tag	Date (First Issue) 170522
Weld Joint Efficiency Factor (Longitudinal) 1,0	Test Pressure 14.3bar (g)	Insulation Specification N/A	<div><div>Title/Name EUROPEAN SPALLATION SOURCE ERIC WATER COOLING SYSTEM CWM-CWS02 OVERVIEW ESS.ACC.E02.E02.WP0004 Document Number ESS-XXXXX63</div></div>				Scale -
Elevation (z) Acc To BCS	Quality Class MQC4-C	Insulation Thickness N/A					Format A2
	Media CWM	Allowance For Corrosion 0					Sheet 4 of 12
	Pipe Specification MQC4-W-PN16	Surface Treatment N/A					Revision A1

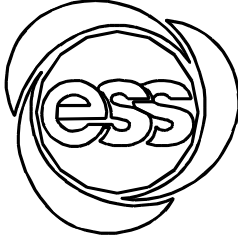
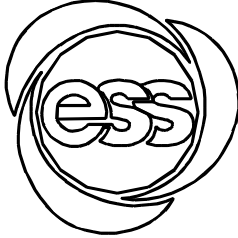
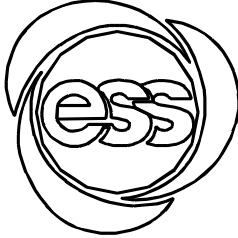
Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

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WELD	WPS
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FABRICATION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
	<u>PIPE</u>				
1	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	3089	SETON TEE
2	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	641	
27	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
28	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	282	
29	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
61	PIPE, SS-EN 10217-7, TC1, 21.3x2.0	15	EN 1.4404	101	
	<u>FITTINGS</u>				
62	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 114.3x2.0	100	EN 1.4404	1	
63	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 114.3x2.0	100	EN 1.4404	1	
73	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
98	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
99	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
127	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
	<u>FLANGES</u>				
149	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
	<u>VALVES / IN-LINE ITEMS</u>				
169	WORCESTER BALL VALVE BW, A59-666TT-BWJ DN25	25	EN 1.4404	1	
181	BALL VALVE, WORCESTER A44, SHORT, BW	15		1	

WPS See Weldlist	Design Temperature	Tightening Torque For Flange Joints	P&ID Drawing Number	General Layout Drawing Number	Calculation Report	Inspection Plan	Area Code
TBN	50degC	TBN	ESS-0059673	TBN	ESS-0058702	TBN	G01-DL
Quality Level For Weldign Acc To	Design Pressure	Bend Radius	Bending Procedure	Coupling Installation Procedure	Pressure Test Program	Alternate System Tag	Date (First Issue)
TBN	10bar (g)	N/A	N/A	TBN	TBN		170522
Weld Joint Efficiency Factor (Longitudinal)	Test Pressure	Insulation Specification	<div></div>				Scale
1,0	14.3bar (g)	N/A					-
Elevation (z) Acc To	Quality Class	Insulation Thickness					Format
BCS	MQC4-C	N/A					A2
	Media	Allowance For Corrosion	<div></div>				Sheet
	CWM	0					5 of 12
	Pipe Specification	Surface Treatment	<div></div>				Revision
	MQC4-W-PN16	N/A					A1

Title/Name

EUROPEAN SPALLATION SOURCE ERIC

WATER COOLING SYSTEM

CWM-CWS02 OVERVIEW

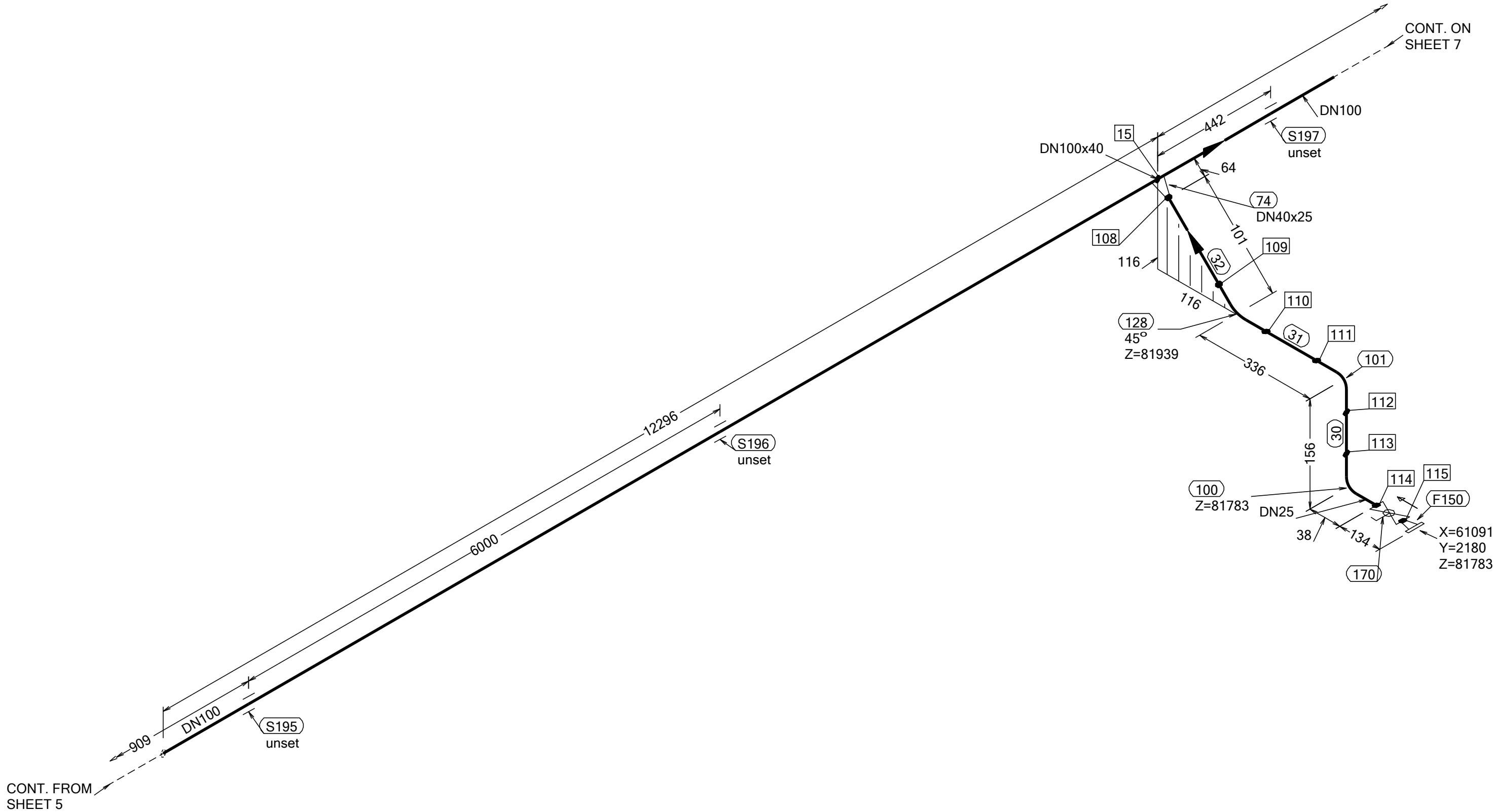
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Document Number

ESS-XXXXX63

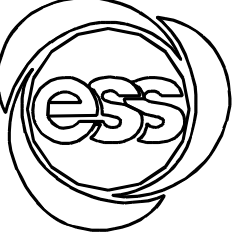
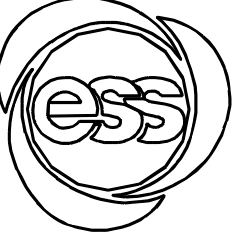
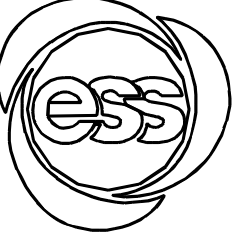
Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

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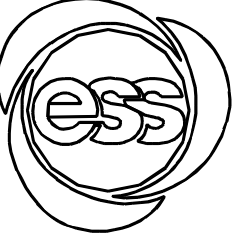


WELD	WPS	FABRICATION MATERIALS					
15		PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
107			PIPE				
108		3	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	13195	SETON TEE
109		30	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
110		31	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	282	
111		32	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
112		FITTINGS					
113		74	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
114		100	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
115		101	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		128	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		FLANGES					
		150	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
		VALVES / IN-LINE ITEMS					
		170	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	

PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
ERECTION MATERIALS					
SUPPORTS					
195	ESS Atta	100		1	
196	ESS Atta	100		1	
197	ESS Atta	100		1	

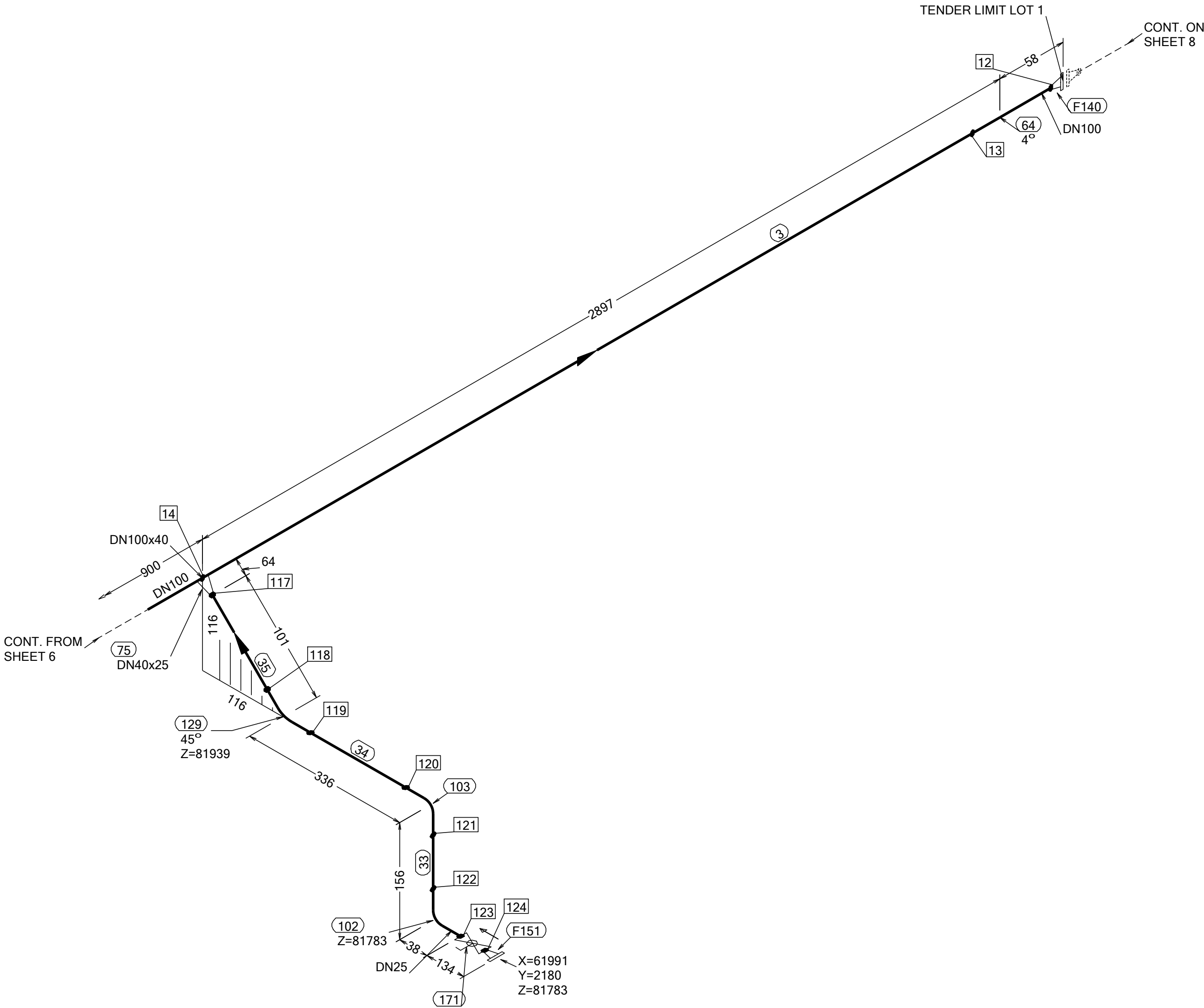
WPS See Weldlist	Design Temperature	Tightening Torque For Flange Joints	P&ID Drawing Number	General Layout Drawing Number	Calculation Report	Inspection Plan	Area Code
TBN	50degC	TBN	ESS-0059673	TBN	ESS-0058702	TBN	G01-DL
Quality Level For Weldign Acc To	Design Pressure	Bend Radius	Bending Procedure	Coupling Installation Procedure	Pressure Test Program	Alternate System Tag	Date (First Issue)
TBN	10bar (g)	N/A	N/A	TBN	TBN		170522
Weld Joint Efficiency Factor (Longitudinal)	Test Pressure	Insulation Specification					Scale
1,0	14.3bar (g)	N/A					-
Elevation (z) Acc To	Quality Class	Insulation Thickness					Format
BCS	MQC4-C	N/A					A2
	Media	Allowance For Corrosion					Sheet
	CWM	0					6 of 12
	Pipe Specification	Surface Treatment					Revision
	MQC4-W-PN16	N/A					A1

Title/Name
EUROPEAN SPALLATION SOURCE ERIC
WATER COOLING SYSTEM
CWM-CWS02 OVERVIEW
ESS.ACC.E02.E02.WP0004
Document Number
ESS-XXXXX63

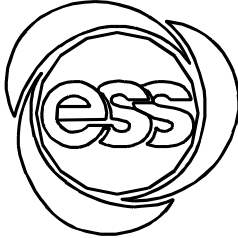
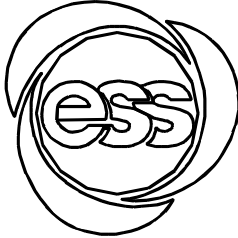
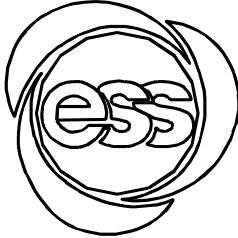


Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
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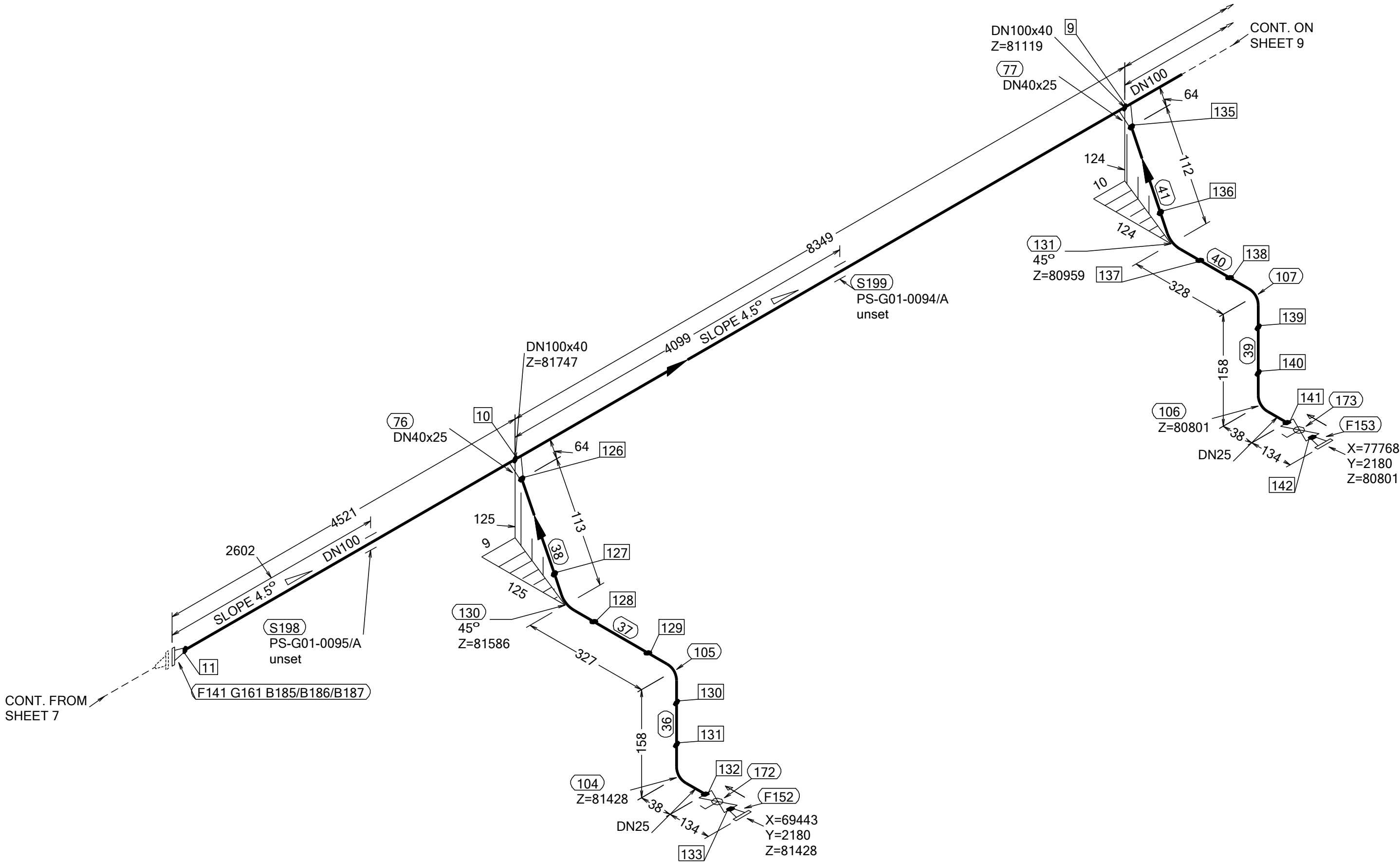
WELD	WPS	FABRICATION MATERIALS					
12		PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
13							
14							
116							
117			PIPE				
118							
119		3	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	2893	SETON TEE
120		33	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
121		34	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	282	
122		35	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
123							
124			FITTINGS				
		64	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 114.3x2.0	100	EN 1.4404	1	
		75	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
		102	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		103	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		129	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
			FLANGES				
		140	FLANGE WN, SS-EN 1092-1, TYPE 11, PN16	100		1	
		151	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
			VALVES / IN-LINE ITEMS				
		171	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	

WPS See Weldlist	Design Temperature	Tightening Torque For Flange Joints	P&ID Drawing Number	General Layout Drawing Number	Calculation Report	Inspection Plan	Area Code
TBN	50degC	TBN	ESS-0059673	TBN	ESS-0058702	TBN	G01-DL
Quality Level For Weldign Acc To	Design Pressure	Bend Radius	Bending Procedure	Coupling Installation Procedure	Pressure Test Program	Alternate System Tag	Date (First Issue)
TBN	10bar (g)	N/A	N/A	TBN	TBN		170522
Weld Joint Efficiency Factor (Longitudinal)	Test Pressure	Insulation Specification					Scale
1,0	14.3bar (g)	N/A					-
Elevation (z) Acc To	Quality Class	Insulation Thickness					Format
BCS	MQC4-C	N/A					A2
	Media	Allowance For Corrosion					Sheet
	CWM	0					7 of 12
	Pipe Specification	Surface Treatment					Revision
	MQC4-W-PN16	N/A					A1

EUROPEAN SPALLATION SOURCE ERIC
WATER COOLING SYSTEM
CWM-CWS02 OVERVIEW
ESS.ACC.E02.E02.WP0004
Document Number
ESS-XXXXX63

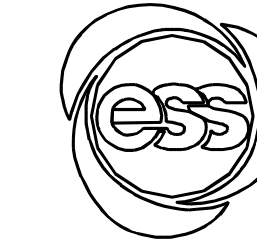
Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

N (Y)



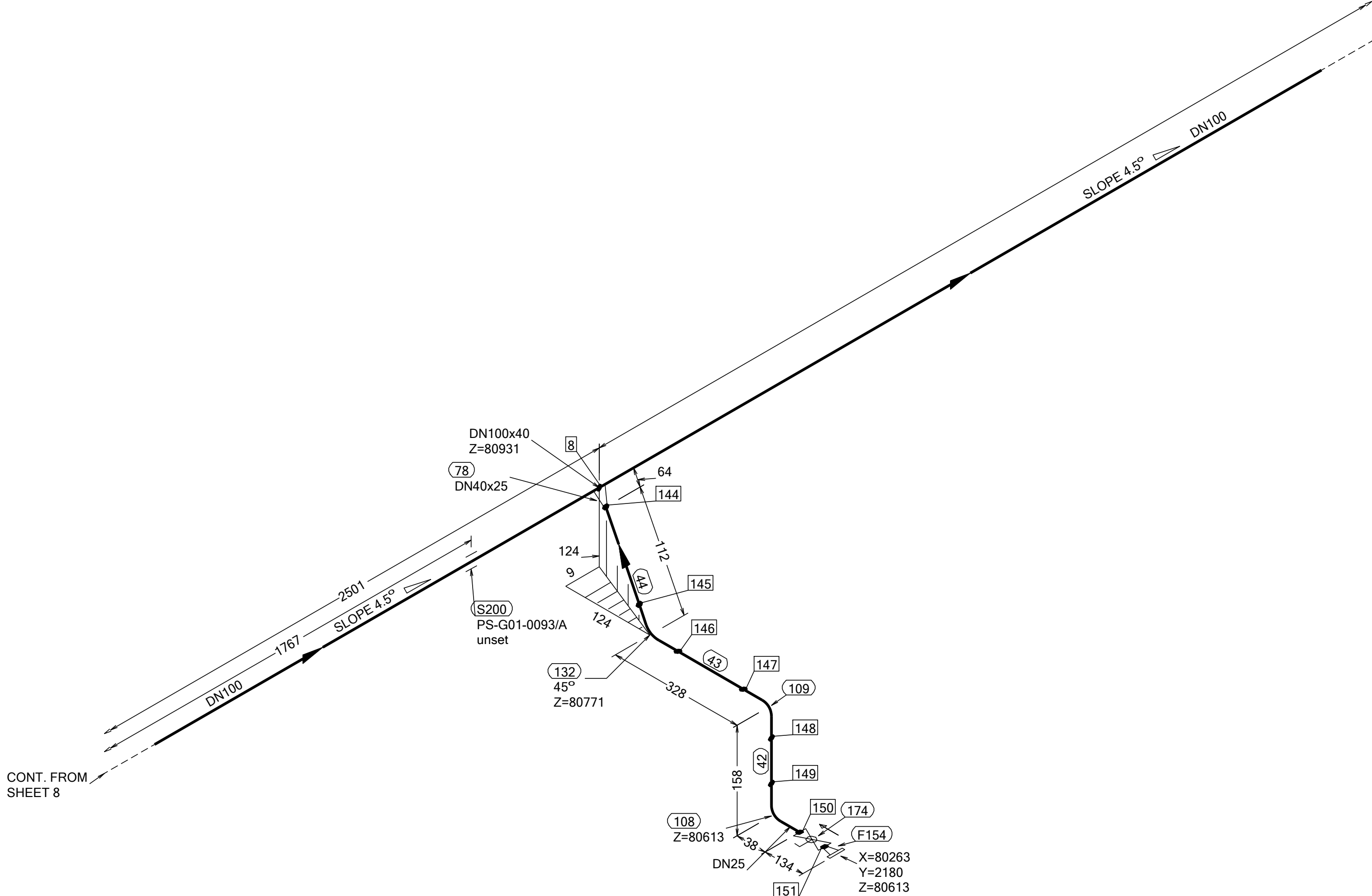
WELD NO	WPS	FABRICATION MATERIALS					
9		PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
10							
11							
125							
126			PIPE				
127							
128							
129		4	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	12819	SETON TEE
130		36	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	82	
131		37	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	274	
132		38	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	97	
133		39	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	82	
134		40	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	274	
135		41	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	96	
136							
137			FITTINGS				
138							
139		76	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
140							
141		77	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
142							
		104	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		105	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		106	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		107	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		130	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		131	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
			FLANGES				
		141	FLANGE WN, SS-EN 1092-1, TYPE 11, PN16	100		1	
		152	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
		153	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
			GASKETS				
		161	GASKET, EN 1514-1, TYPE XXX, T=1,5mm	100	EXPANDED GRAPHITE	1	
			VALVES / IN-LINE ITEMS				
		172	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	
		173	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	

PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
BOLTS					
185	HEXAGONAL NUT, M6M, ISO 4032	16	EN 1515-4, A4	8	
186	WASHER, BRB, ISO 7089	16	A4, HV≥250	16	
187	70 mm HEXAGONAL BOLT, M6S, ISO 4017	16	EN 1515-4, A4-70	8	
SUPPORTS					
198	ESS Atta	100		1	
199	ESS Atta	100		1	

WPS See Weldlist TBN	Design Temperature 50degC	Tightening Torque For Flange Joints TBN	P&ID Drawing Number ESS-0059673	General Layout Drawing Number TBN	Calculation Report ESS-0058702	Inspection Plan TBN	Area Code G01-DL
Quality Level For Weldign Acc To TBN	Design Pressure 10bar (g)	Bend Radius N/A	Bending Procedure N/A	Coupling Installation Procedure TBN	Pressure Test Program TBN	Alternate System Tag	Date (First Issue) 170522
Weld Joint Efficiency Factor (Longitudinal) 1,0	Test Pressure 14.3bar (g)	Insulation Specification N/A		Title/Name EUROPEAN SPALLATION SOURCE ERIC WATER COOLING SYSTEM CWM-CWS02 OVERVIEW ESS.ACC.E02.E02.WP0004	Scale -	Scale	
Elevation (z) Acc To BCS	Quality Class MQC4-C	Insulation Thickness N/A				Format A2	
	Media CWM	Allowance For Corrosion 0				Sheet 8 of 12	
	Pipe Specification MQC4-W-PN16	Surface Treatment N/A				Revision A1	

Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

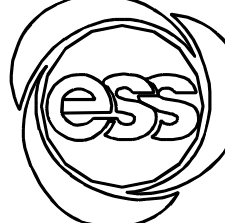
N (Y)



WELD	WPS
8	
143	
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145	
146	
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148	
149	
150	

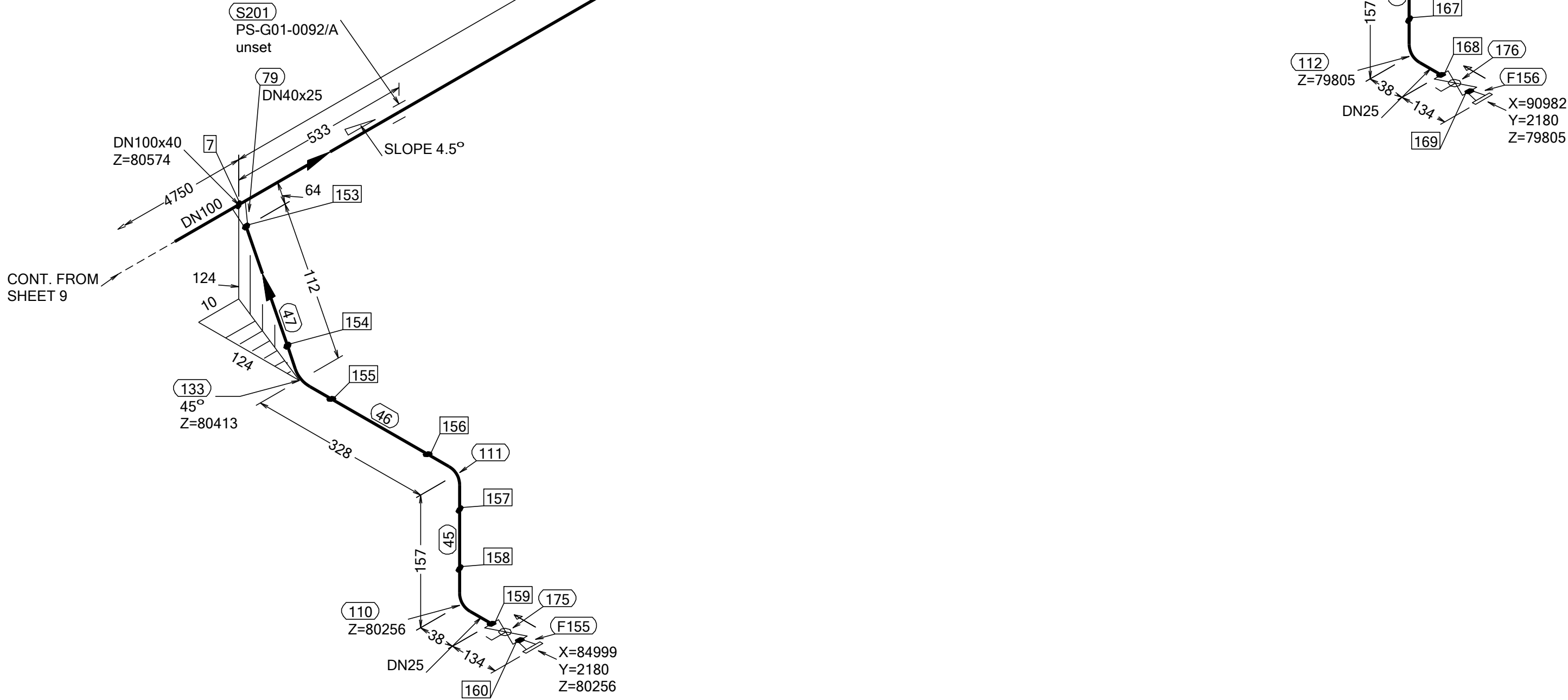
FABRICATION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
	<u>PIPE</u>				
4	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	7249	SETON TEE
42	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	82	
43	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	274	
44	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	96	
	<u>FITTINGS</u>				
78	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
108	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
109	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
132	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
	<u>FLANGES</u>				
154	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
	<u>VALVES / IN-LINE ITEMS</u>				
174	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	

ERECTION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
SUPPORTS					
200	ESS Atta	100		1	

WPS See Weldlist	Design Temperature	Tightening Torque For Flange Joints	P&ID Drawing Number	General Layout Drawing Number	Calculation Report	Inspection Plan	Area Code
TBN	50degC	TBN	ESS-0059673	TBN	ESS-0058702	TBN	G01-DL
Quality Level For Weldign Acc To	Design Pressure	Bend Radius	Bending Procedure	Coupling Installation Procedure	Pressure Test Program	Alternate System Tag	Date (First Issue)
TBN	10bar (g)	N/A	N/A	TBN	TBN		170522
Weld Joint Efficiency Factor (Longitudinal)	Test Pressure	Insulation Specification			Title/Name EUROPEAN SPALLATION SOURCE ERIC WATER COOLING SYSTEM CWM-CWS02 OVERVIEW ESS.ACC.E02.E02.WP0004		Scale
1,0	14.3bar (g)	N/A					-
Elevation (z) Acc To	Quality Class	Insulation Thickness					Format
BCS	MQC4-C	N/A					A2
	Media	Allowance For Corrosion			Document Number ESS-XXXXX63		Sheet
	CWM	0					9 of 12
	Pipe Specification	Surface Treatment					Revision
	MQC4-W-PN16	N/A					A1

Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

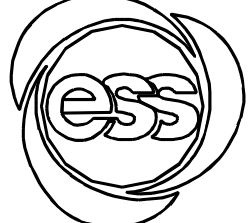
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WELD	WPS
6	
7	
152	
153	
154	
155	
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158	
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162	
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168	
169	

PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
PIPE					
4	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	6002	SETON TEE
45	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	82	
46	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	274	
47	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	96	
48	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	81	
49	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	274	
50	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	96	
FITTINGS					
79	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
80	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
110	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
111	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
112	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
113	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
133	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
134	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
FLANGES					
155	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
156	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
VALVES / IN-LINE ITEMS					
175	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	
176	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	

PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
SUPPORTS					
201	ESS Atta	100		1	


WPS See Weldlist	Design Temperature	Tightening Torque For Flange Joints	P&ID Drawing Number	General Layout Drawing Number	Calculation Report	Inspection Plan	Area Code
TBN	50degC	TBN	ESS-0059673	TBN	ESS-0058702	TBN	G01-DL
Quality Level For Weldign Acc To	Design Pressure	Bend Radius	Bending Procedure	Coupling Installation Procedure	Pressure Test Program	Alternate System Tag	Date (First Issue)
TBN	10bar (g)	N/A	N/A	TBN	TBN		170522
Weld Joint Efficiency Factor (Longitudinal)	Test Pressure	Insulation Specification			Title/Name EUROPEAN SPALLATION SOURCE ERIC WATER COOLING SYSTEM CWM-CWS02 OVERVIEW ESS.ACC.E02.E02.WP0004		Scale
1,0	14.3bar (g)	N/A					-
Elevation (z) Acc To	Quality Class	Insulation Thickness					Format
BCS	MQC4-C	N/A					A2
	Media	Allowance For Corrosion			Document Number ESS-XXXXX63		Sheet
	CWM	0					10 of 12
	Pipe Specification	Surface Treatment					Revision
	MQC4-W-PN16	N/A					A1

Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

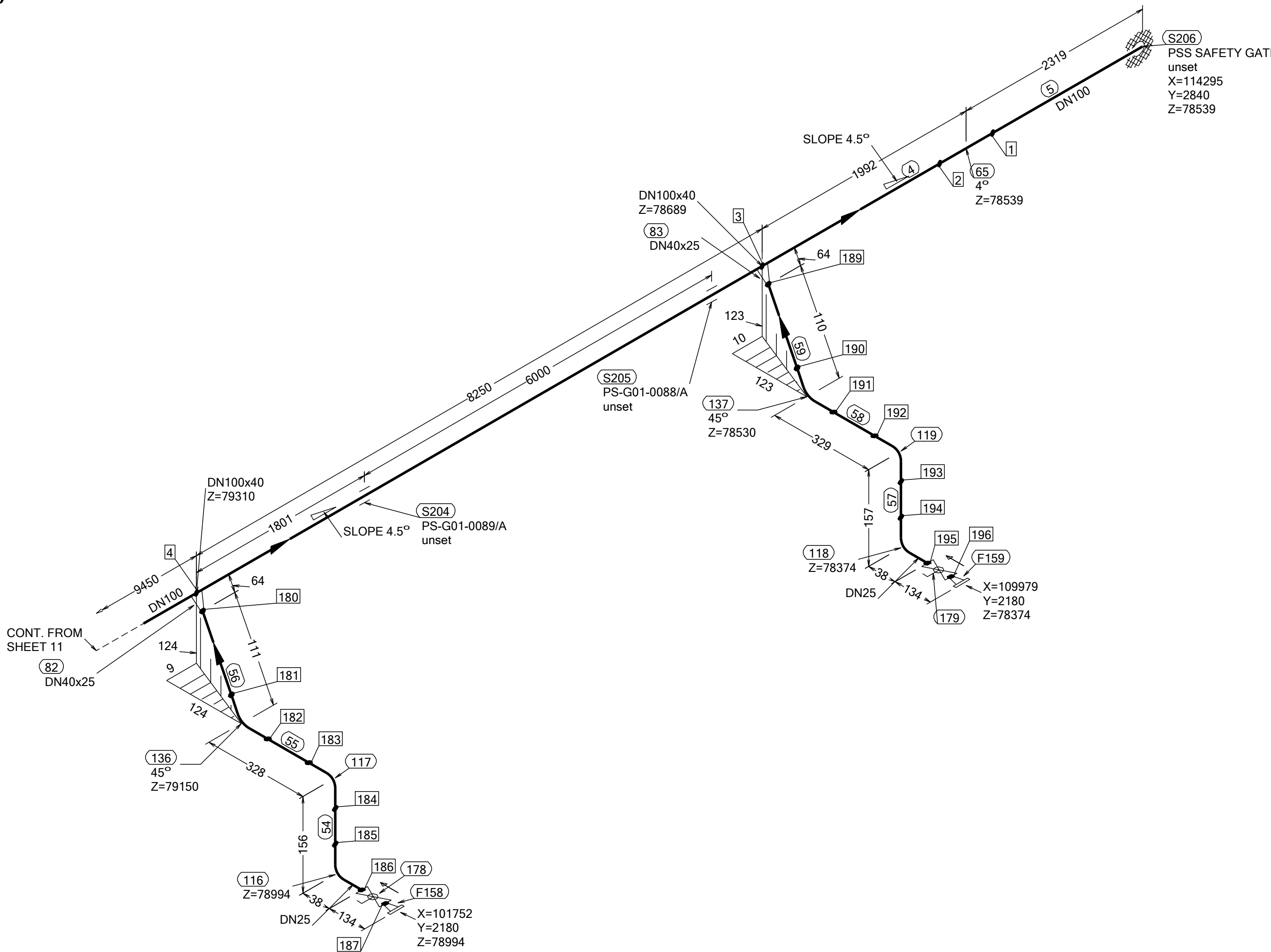
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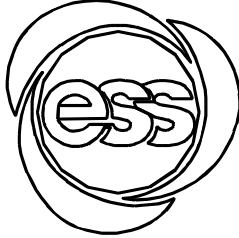
ERECTION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
	<u>SUPPORTS</u>				
202	ESS Atta	100		1	
203	ESS Atta	100		1	



N (Y)



WELD	WPS	FABRICATION MATERIALS					
1		PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
2							
3							
4							
179			PIPE				
180							
181		4	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	10237	SETON TEE
182		5	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	2313	
183		54	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
184		55	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	275	
185		56	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	95	
186		57	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	81	
187		58	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	275	
188		59	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	94	
189			FITTINGS				
190							
191							
192		65	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 114.3x2.0	100	EN 1.4404	1	
193		82	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
194		83	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
195		116	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
196		117	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		118	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		119	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		136	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
		137	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
			FLANGES				
		158	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
		159	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
			VALVES / IN-LINE ITEMS				
		178	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	
		179	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	
ERECTION MATERIALS							
		PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
			SUPPORTS				
		204	ESS Atta	100		1	
		205	ESS Atta	100		1	
		206	PENETRATION ATTA	100		1	

WPS See Weldlist	Design Temperature	Tightening Torque For Flange Joints	P&ID Drawing Number	General Layout Drawing Number	Calculation Report	Inspection Plan	Area Code
TBN	50degC	TBN	ESS-0059673	TBN	ESS-0058702	TBN	G01-DL
Quality Level For Weldign Acc To	Design Pressure	Bend Radius	Bending Procedure	Coupling Installation Procedure	Pressure Test Program	Alternate System Tag	Date (First Issue)
TBN	10bar (g)	N/A	N/A	TBN	TBN		170522
Weld Joint Efficiency Factor (Longitudinal)	Test Pressure	Insulation Specification			Title/Name EUROPEAN SPALLATION SOURCE ERIC WATER COOLING SYSTEM CWM-CWS02 OVERVIEW ESS.ACC.E02.E02.WP0004		Scale
1,0	14.3bar (g)	N/A					-
Elevation (z) Acc To	Quality Class	Insulation Thickness					Format
BCS	MQC4-C	N/A					A2
	Media	Allowance For Corrosion			Document Number ESS-XXXXX63		Sheet
	CWM	0					12 of 12
	Pipe Specification	Surface Treatment					Revision
	MQC4-W-PN16	N/A					A1

Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		