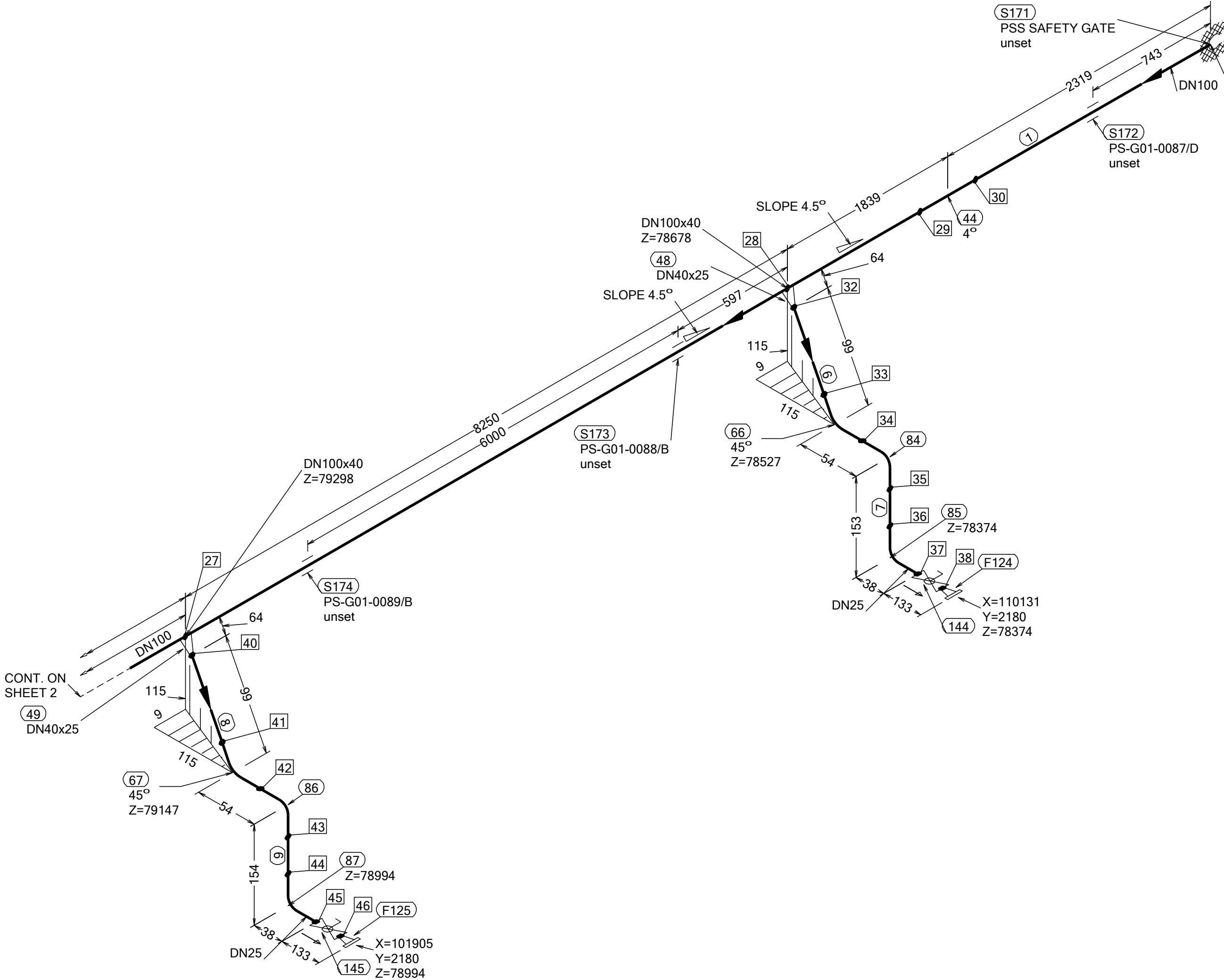


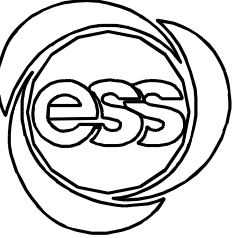
N (Y)



WELD	WPS
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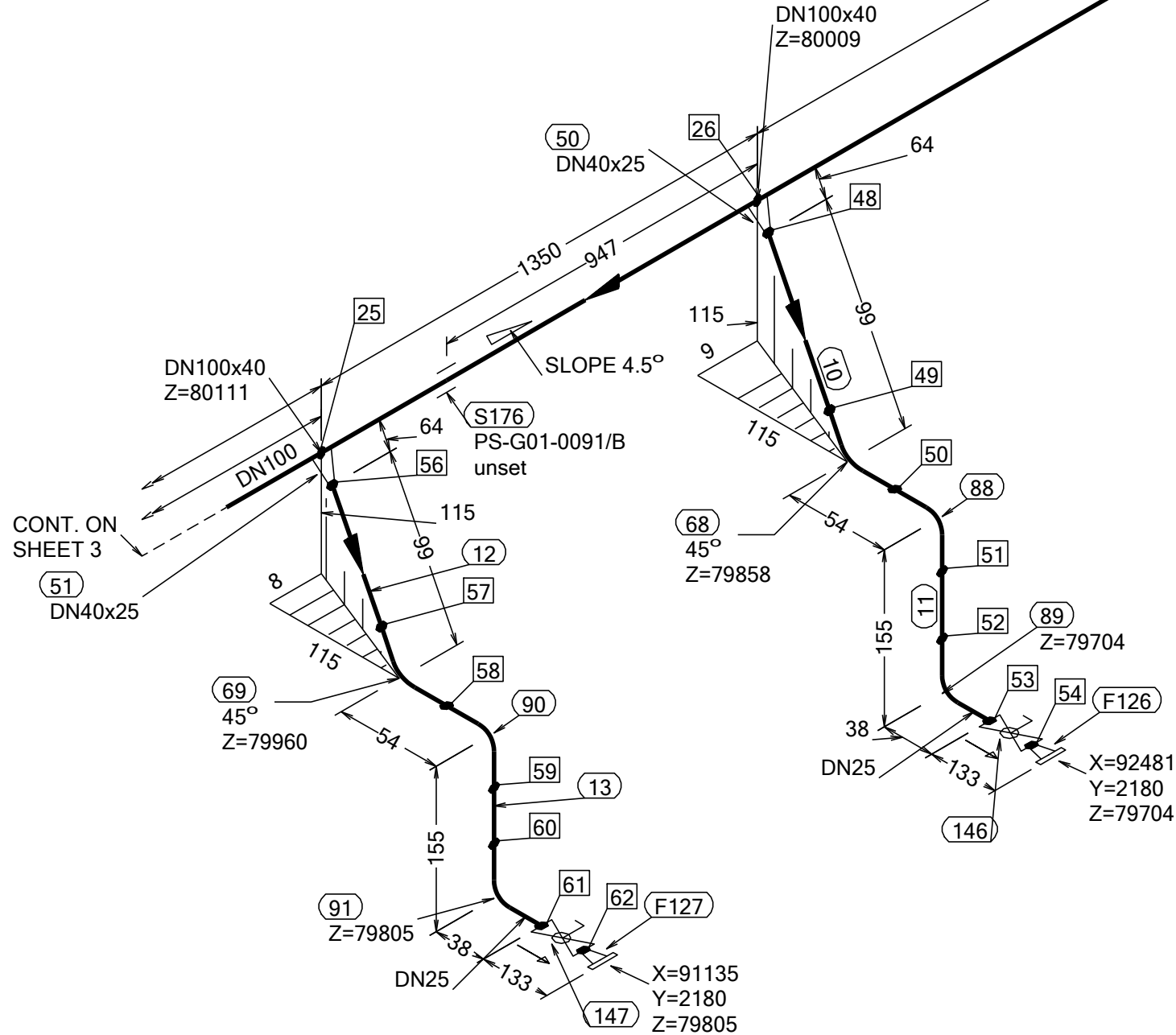
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
PIPE					
1	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	2313	SETON TEE
2	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	10084	
6	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	83	
7	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	77	
8	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	83	
9	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	78	
FITTINGS					
44	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 114.3x2.0	100	EN 1.4404	1	
48	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
49	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
66	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
67	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	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	
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	
FLANGES					
124	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
125	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
VALVES / IN-LINE ITEMS					
144	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	
145	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	

PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
SUPPORTS					
171	PENETRATION ATTA	100		1	
172	ESS Atta	100		1	
173	ESS Atta	100		1	
174	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.WP0002		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					1 of 11
	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		

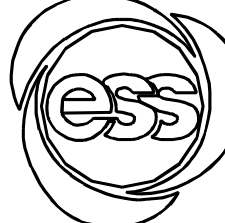
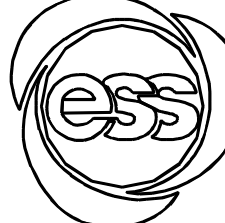
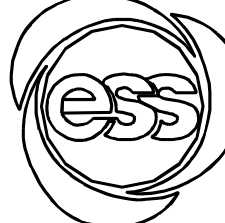
N (Y)



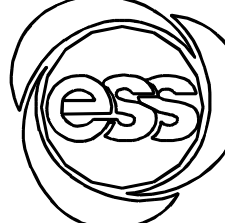
WELD	WPS
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FABRICATION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
	PIPE				
2	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	10800	SETON TEE
10	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	83	
11	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	79	
12	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	83	
13	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	79	
	FITTINGS				
50	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
51	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
68	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
69	ELBOW 45, 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	
90	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
91	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
	FLANGES				
126	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
127	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
	VALVES / IN-LINE ITEMS				
146	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	
147	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					
175	ESS Atta	100		1	
176	ESS Atta	100		1	

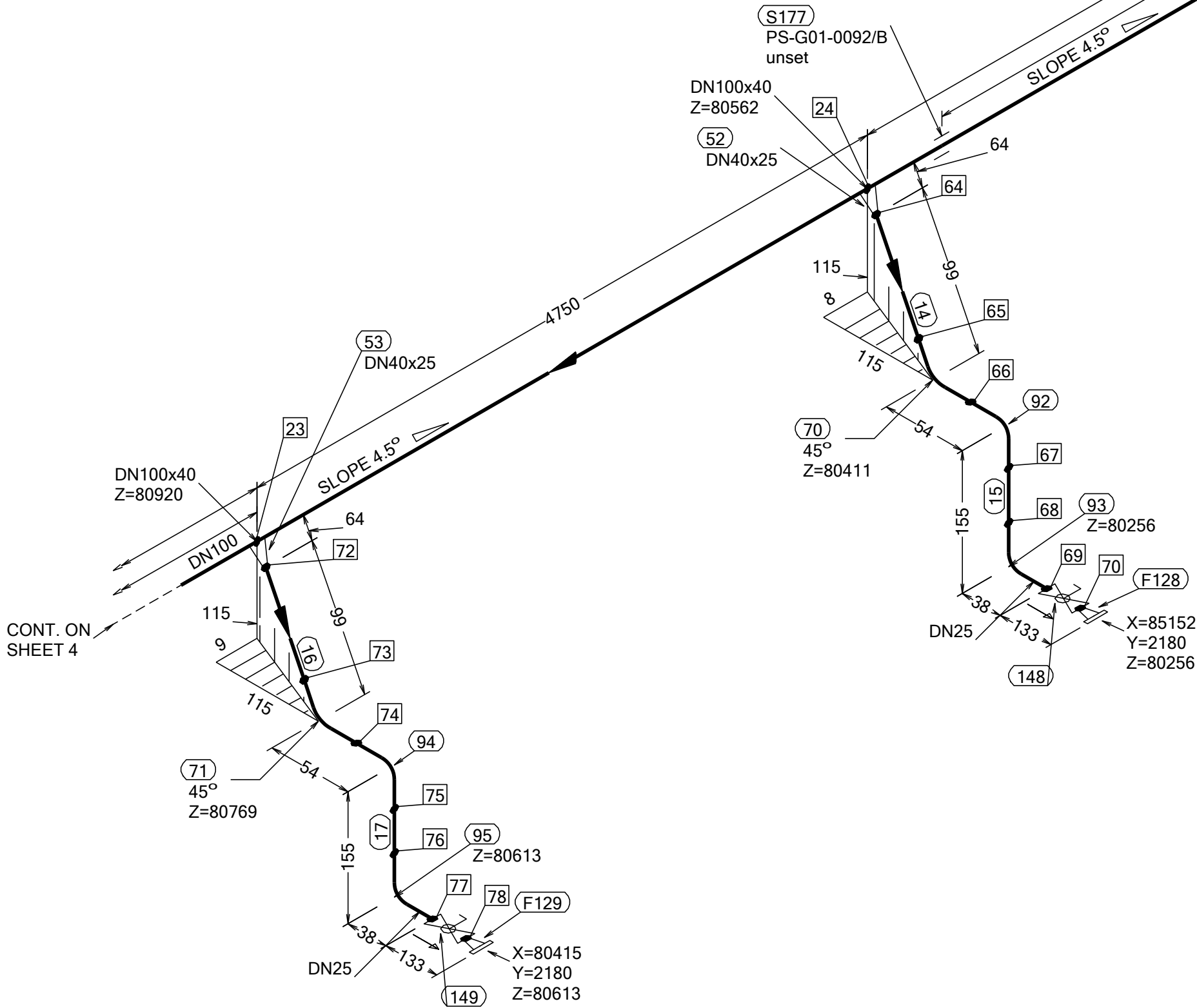
WPS See Weldlist	Design Temperature	Tightening Torque For Flange Joints	P&ID Drawing Number	General Layout Drawing Number	Calculation Report	Inspection Plan	Area Code
TBN	50degC	TBN	ESS-0059673	TBN	ESS-0058702	TBN	G01-DL
Quality Level For Weldign Acc To	Design Pressure	Bend Radius	Bending Procedure	Coupling 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					2 of 11
	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.WP0002
Document Number
ESS-XXXXX62



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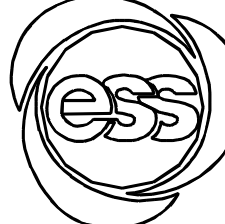
N (Y)



WELD	WPS
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FABRICATION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
	<u>PIPE</u>				
2	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	10750	SETON TEE
14	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	83	
15	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	79	
16	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	83	
17	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	79	
	<u>FITTINGS</u>				
52	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
53	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
70	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
71	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
92	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
93	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	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	
	<u>FLANGES</u>				
128	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
129	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
	<u>VALVES / IN-LINE ITEMS</u>				
148	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	
149	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	

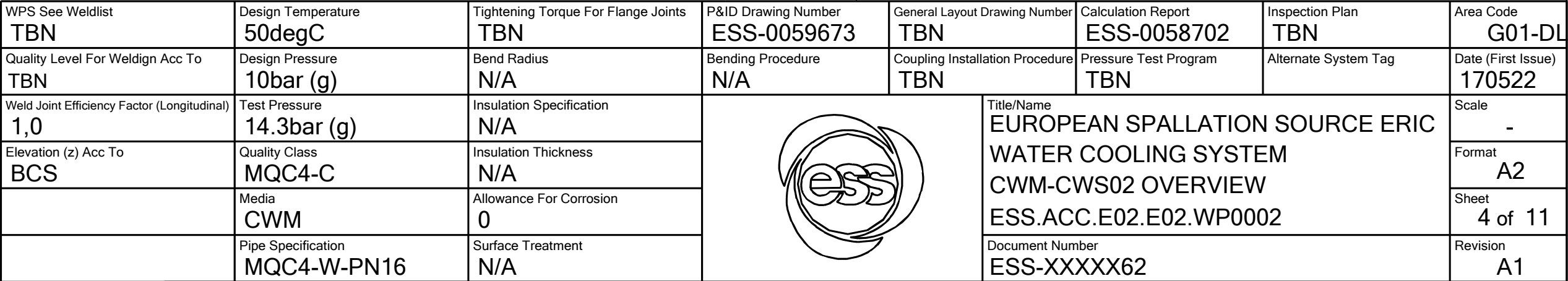
ERECTION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
SUPPORTS					
177	ESS Atta	100		1	

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.WP0002		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-XXXXX62		Sheet
	CWM	0					3 of 11
	Pipe Specification	Surface Treatment					Revision
	MQC4-W-PN16	N/A					A1

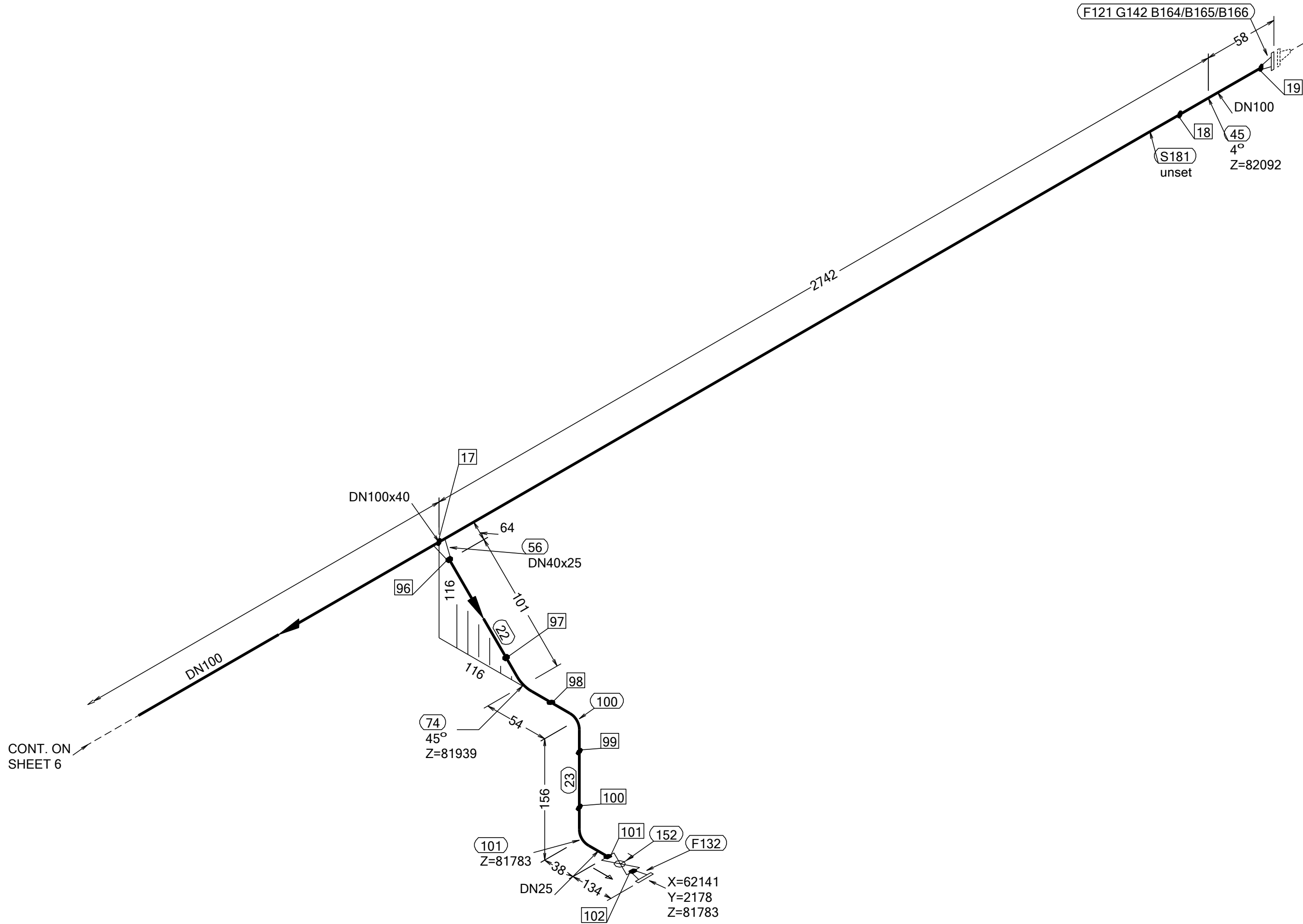
Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
	<u>PIPE</u>				
2	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	15470	SETON TEE
18	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	83	
19	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	79	
20	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	83	
21	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
	<u>FITTINGS</u>				
54	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
55	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
72	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
73	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
90	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	
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	
	<u>FLANGES</u>				
120	FLANGE WN, SS-EN 1092-1, TYPE 11, PN16	100		1	
130	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
131	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
	<u>VALVES / IN-LINE ITEMS</u>				
150	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	
151	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	

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



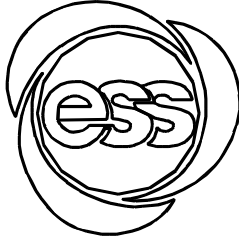
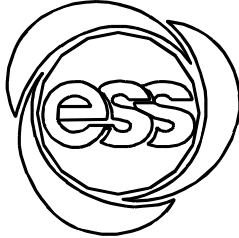
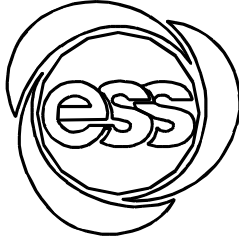
N (Y)



WELD	WPS
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FABRICATION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
	<u>PIPE</u>				
3	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	3641	SETON TEE
22	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
23	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
	<u>FITTINGS</u>				
45	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 114.3x2.0	100	EN 1.4404	1	
56	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
74	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
100	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
101	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
	<u>FLANGES</u>				
121	FLANGE WN, SS-EN 1092-1, TYPE 11, PN16	100		1	
132	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
	<u>GASKETS</u>				
142	GASKET, EN 1514-1, TYPE XXX, T=1,5mm	100	EXPANDED GRAPHITE	1	
	<u>VALVES / IN-LINE ITEMS</u>				
152	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	

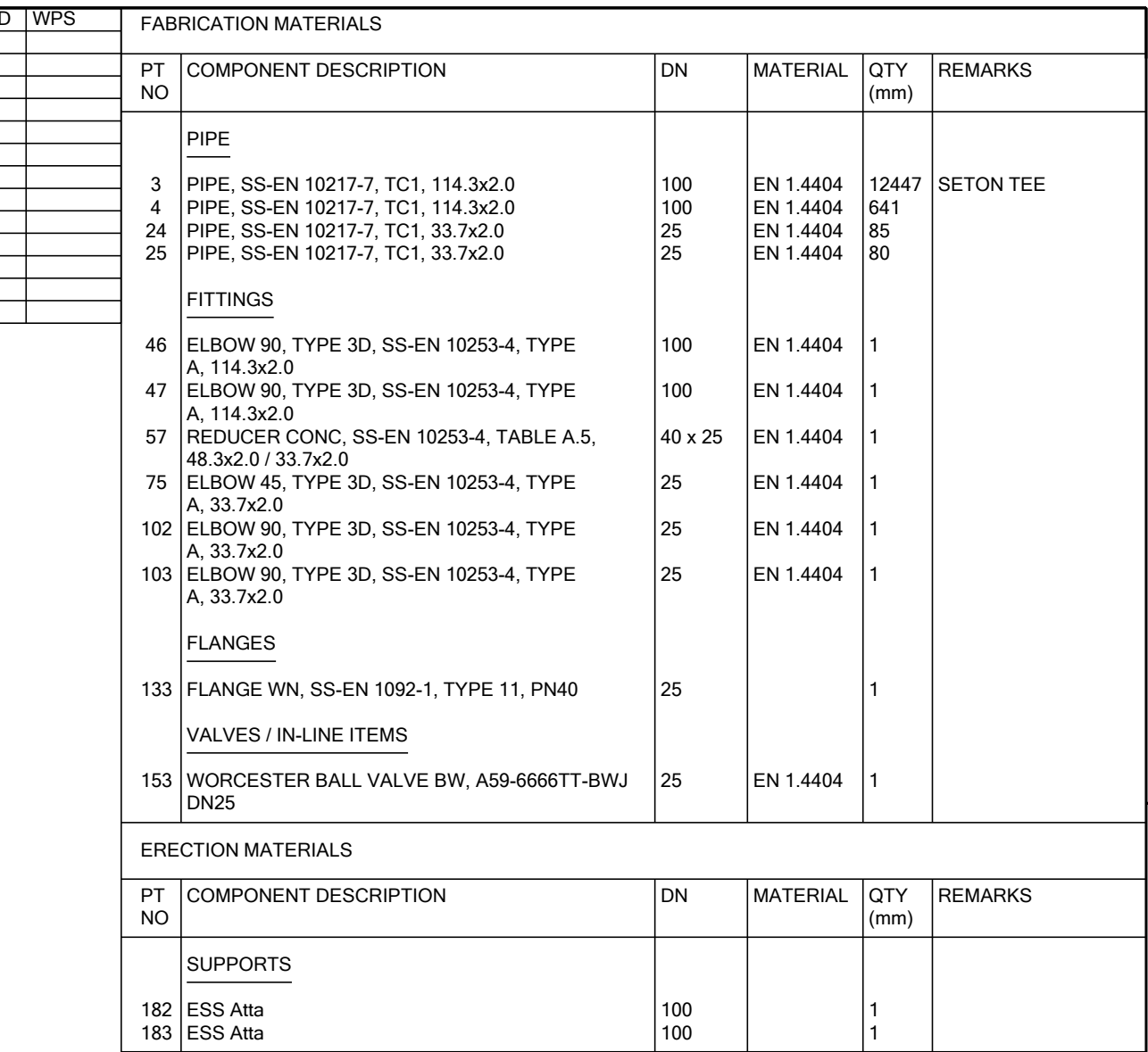
ERECTION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
BOLTS					
164	HEXAGONAL NUT, M6M, ISO 4032	16	EN 1515-4, A4	8	
165	WASHER, BRB, ISO 7089	16	A4, HV≥250	16	
166	70 mm HEXAGONAL BOLT, M6S, ISO 4017	16	EN 1515-4, A4-70	8	
SUPPORTS					
181	ESS Atta	100		1	

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					5 of 11
	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.WP0002
Document Number
ESS-XXXXX62

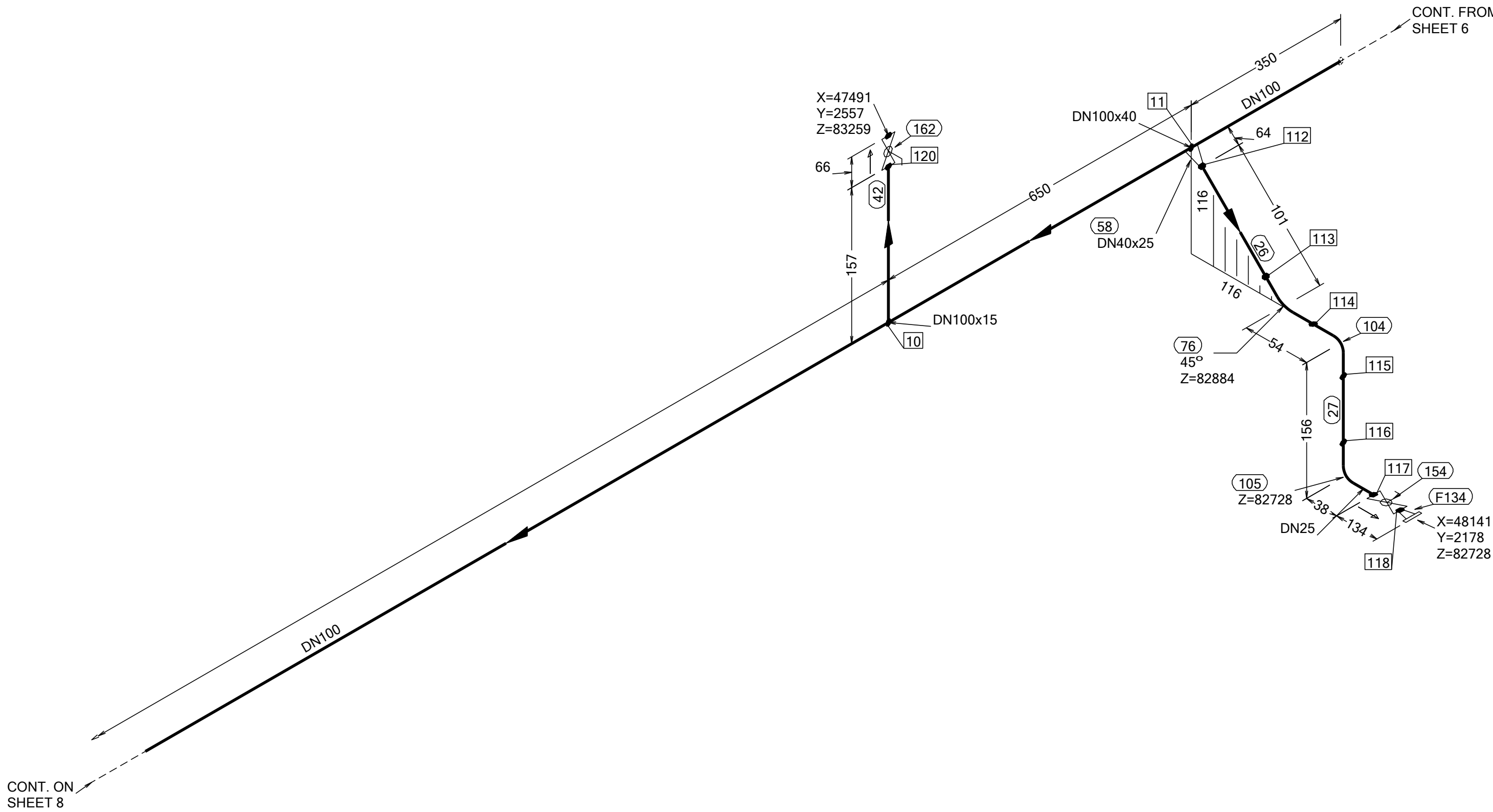
Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

Printed: 23 MAY 2017

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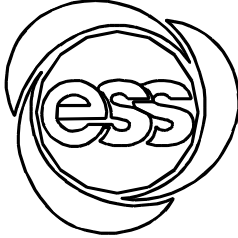
Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

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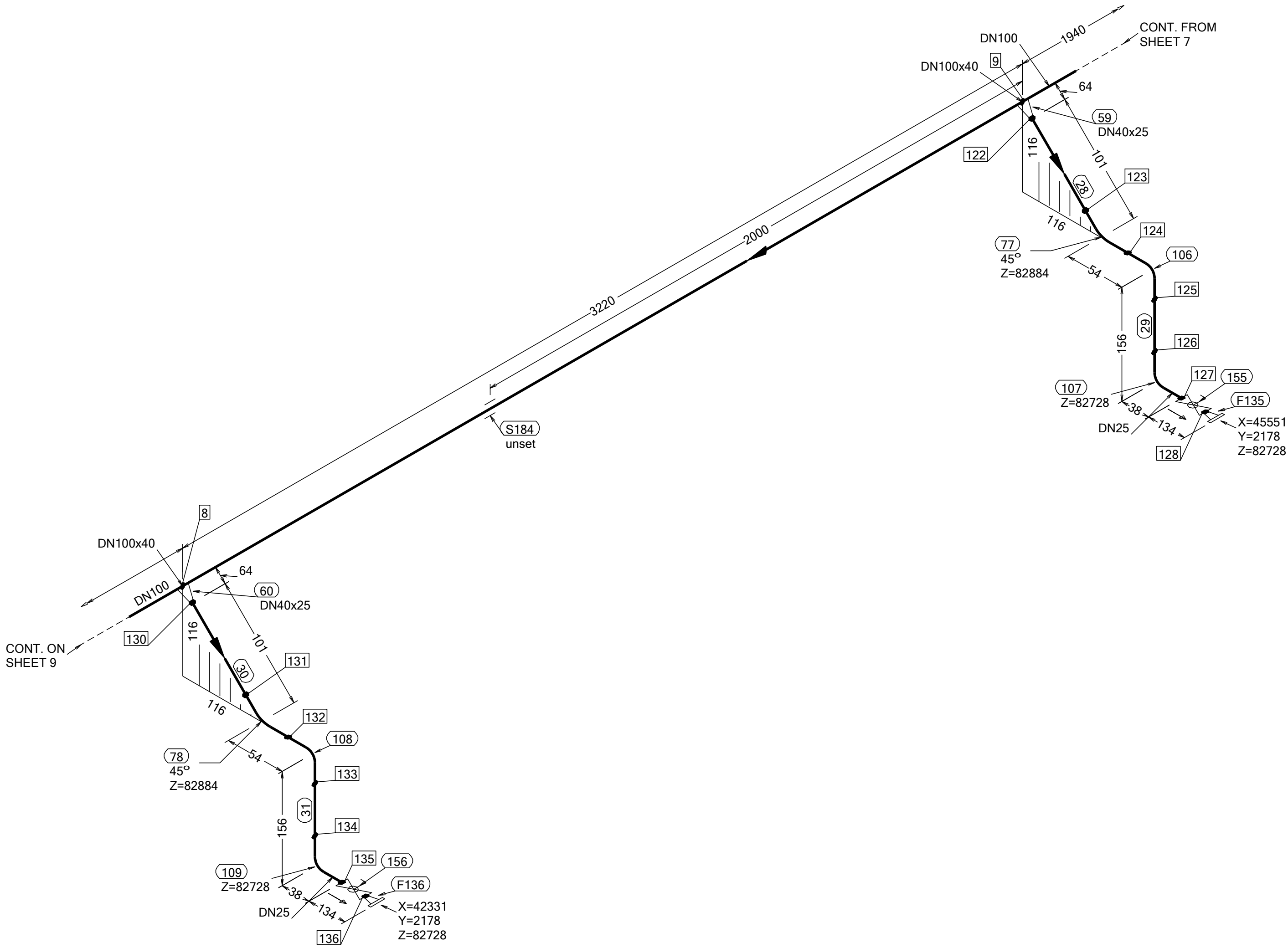


WELD	WPS	FABRICATION MATERIALS					
10		PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
11							
111							
112							
113							
114							
115							
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117							
118							
119							
120							
<u>PIPE</u>							
5		5	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	2939	SETON TEE
26		26	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
27		27	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
42		42	PIPE, SS-EN 10217-7, TC1, 21.3x2.0	15	EN 1.4404	101	
<u>FITTINGS</u>							
58		58	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
76		76	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
104		104	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
105		105	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
<u>FLANGES</u>							
134		134	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
<u>VALVES / IN-LINE ITEMS</u>							
154		154	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	
162		162	BALL VALVE, WORCESTER A44, SHORT, BW	15		1	

Printed: 23 MAY 2017

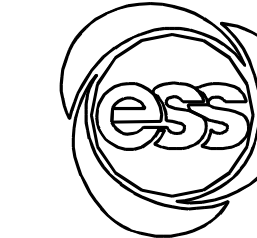
Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved	WPS See Weldlist	Design Temperature	Tightening Torque For Flange Joints	P&ID Drawing Number	General Layout Drawing Number	Calculation Report	Inspection Plan	Area Code
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU			TBN	50degC	TBN	ESS-0059673	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.WP0002		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-XXXXX62		Sheet
										CWM	0					7 of 11
										Pipe Specification	Surface Treatment					Revision
										MQC4-W-PN16	N/A					A1

N (Y)



WELD	WPS	FABRICATION MATERIALS					
8		PT	COMPONENT DESCRIPTION	DN	MATERIAL	QTY	REMARKS
9		NO				(mm)	
121							
122							
123							
124							
125							
126		5	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	3222	SETON TEE
127		28	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
128		29	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
129		30	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
130		31	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
131							
132							
133							
134							
135							
136							

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

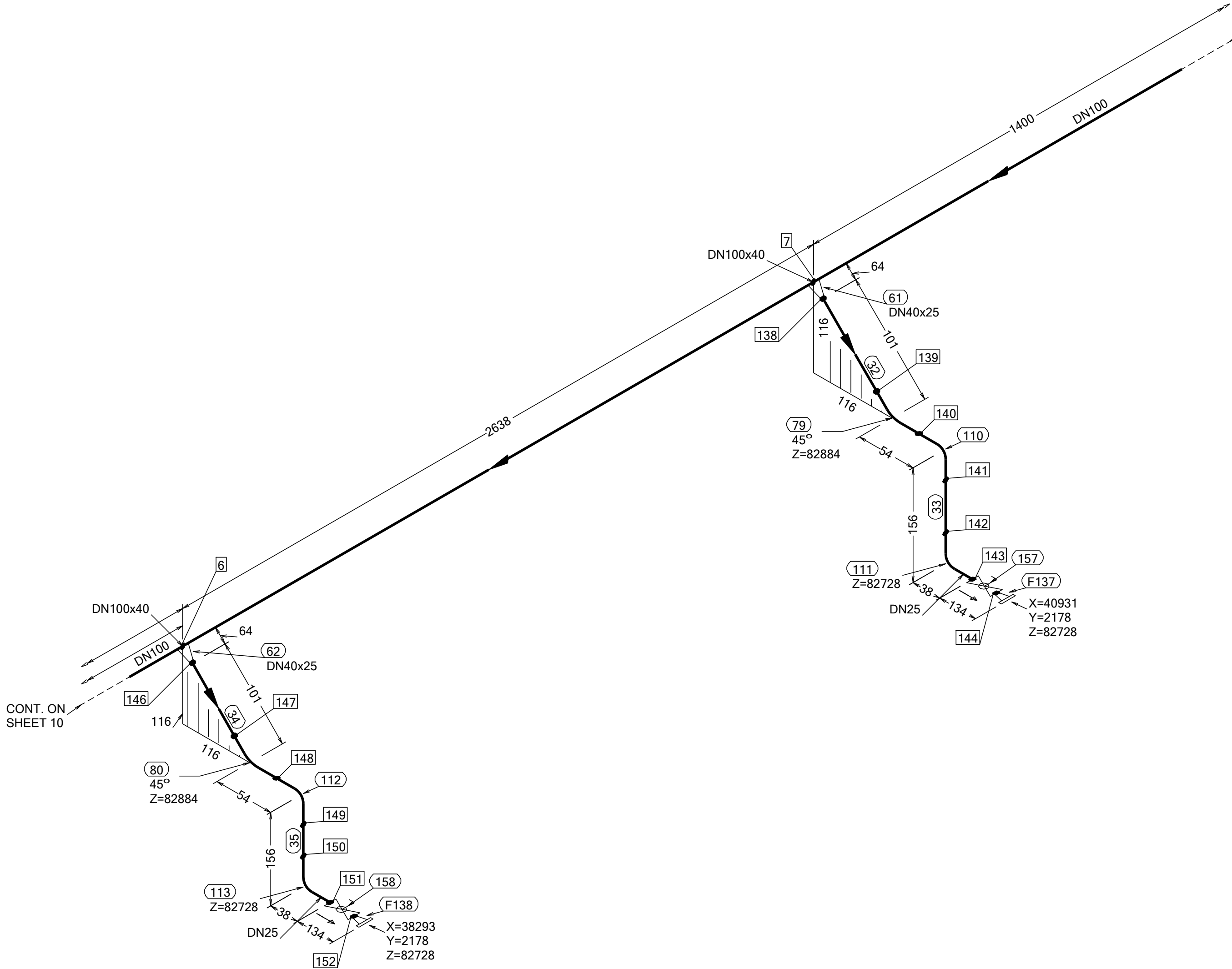
WPS See Weldlist TBN	Design Temperature 50degC	Tightening Torque For Flange Joints TBN	P&ID Drawing Number ESS-0059673	General Layout Drawing Number TBN	Calculation Report ESS-0058702	Inspection Plan TBN	Area Code G01-DL
Quality Level For Weldign Acc To TBN	Design Pressure 10bar (g)	Bend Radius N/A	Bending 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.WP0002 Document Number ESS-XXXXX62</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 8 of 11
	Pipe Specification MQC4-W-PN16	Surface Treatment N/A					Revision A1

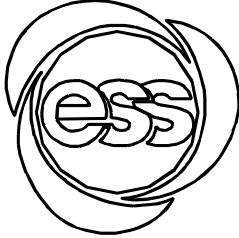
Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

N (Y)

WELD	WPS
6	
7	
137	
138	
140	
141	
142	
143	
144	
145	
146	
147	
148	
149	
150	
151	
152	

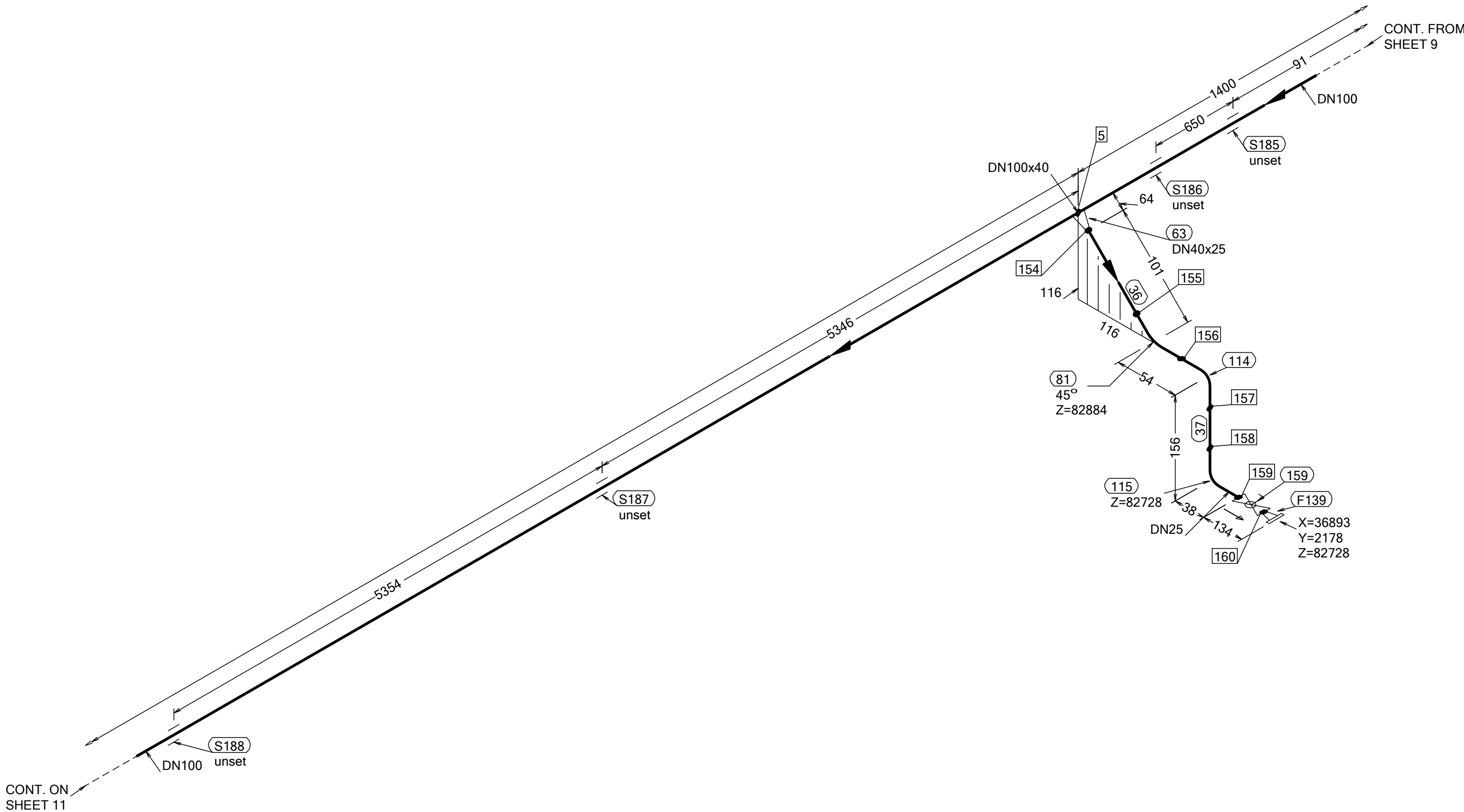
FABRICATION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
	PIPE				
5	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	4038	SETON TEE
32	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
33	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
34	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
35	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
	FITTINGS				
61	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
62	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
79	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
80	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	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	
	FLANGES				
137	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
138	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
	VALVES / IN-LINE ITEMS				
157	WORCESTER BALL VALVE BW, A59-6666TT-BWJ DN25	25	EN 1.4404	1	
158	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			Title/Name EUROPEAN SPALLATION SOURCE ERIC WATER COOLING SYSTEM CWM-CWS02 OVERVIEW ESS.ACC.E02.E02.WP0002		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-XXXXX62		Sheet
	CWM	0					9 of 11
	Pipe Specification	Surface Treatment					Revision
	MQC4-W-PN16	N/A					A1

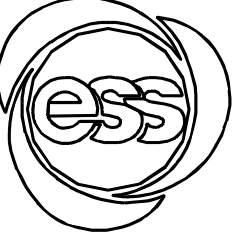
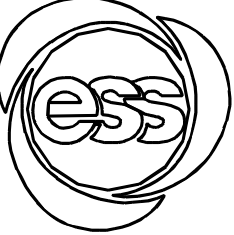
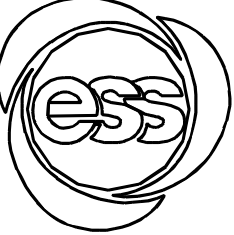
Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

N (Y)

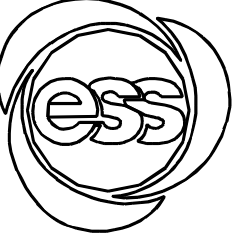


WELD		WPS		FABRICATION MATERIALS					
5				PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
153									
154									
155									
156									
157									
158									
159									
160									
					PIPE				
				5	PIPE, SS-EN 10217-7, TC1, 114.3x2.0	100	EN 1.4404	12220	SETON TEE
				36	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	85	
				37	PIPE, SS-EN 10217-7, TC1, 33.7x2.0	25	EN 1.4404	80	
					<u>FITTINGS</u>				
				63	REDUCER CONC, SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
				81	ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
				114	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
				115	ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
					<u>FLANGES</u>				
				139	FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
					<u>VALVES / IN-LINE ITEMS</u>				
				159	WORCESTER BALL VALVE BW, A59-666TT-BWJ DN25	25	EN 1.4404	1	

ERECTION MATERIALS					
PT NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
SUPPORTS					
185	ESS Atta	100		1	
186	ESS Atta	100		1	
187	ESS Atta	100		1	
188	ESS Atta	100		1	

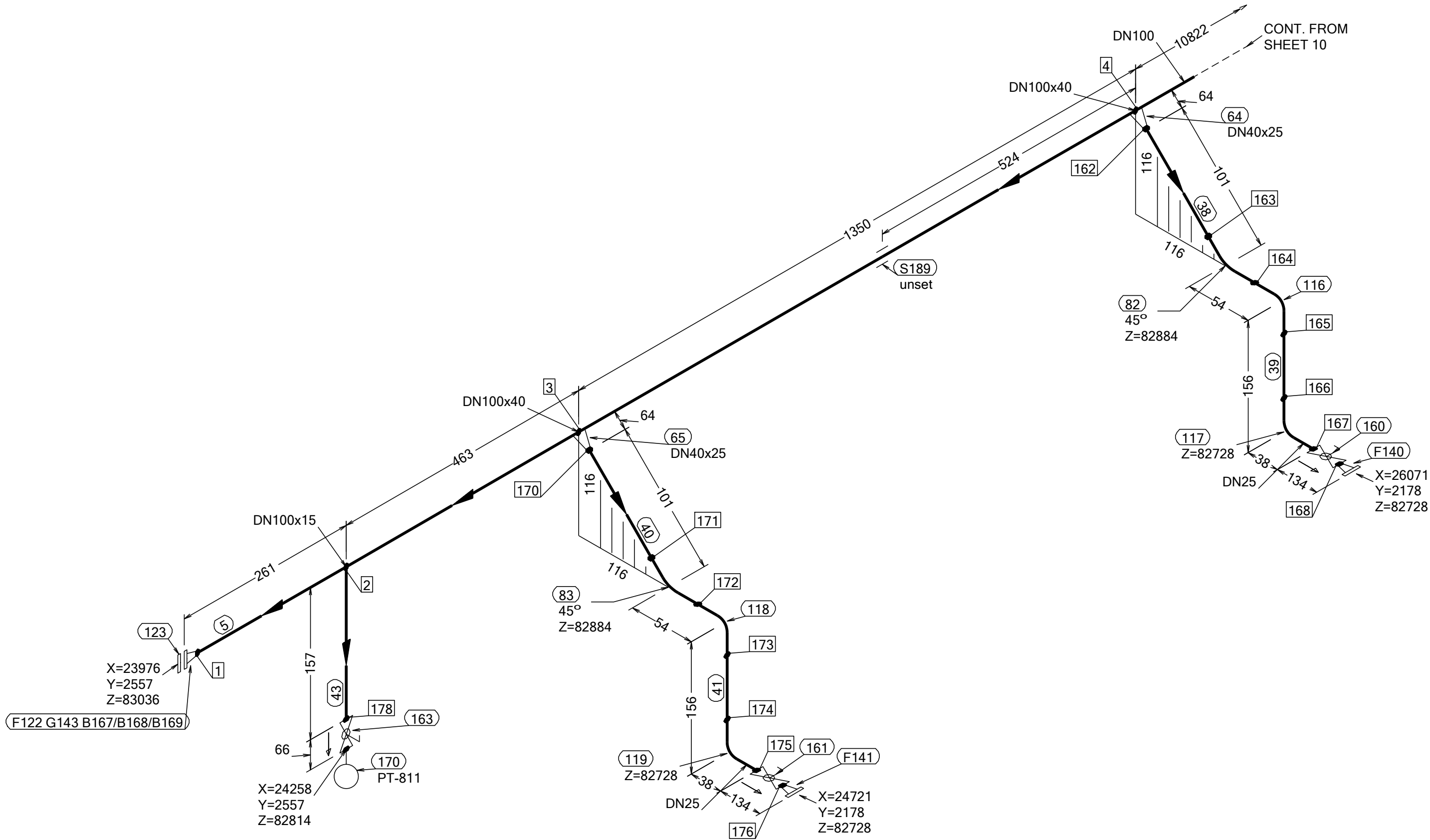
WPS See Weldlist	Design Temperature	Tightening Torque For Flange Joints	P&ID Drawing Number	General Layout Drawing Number	Calculation Report	Inspection Plan	Area Code
TBN	50degC	TBN	ESS-0059673	TBN	ESS-0058702	TBN	G01-DL
Quality Level For Weldign Acc To	Design Pressure	Bend Radius	Bending Procedure	Coupling 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					10 of 11
	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.WP0002
Document Number
ESS-XXXXX62



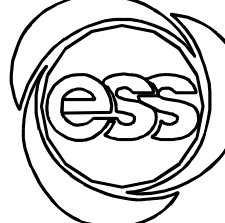
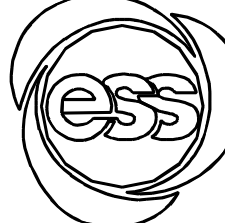
Rev	Description	Date	Drawn	Designed	Reviewed	Verified	Quality	Approved
A1	ISSUED FOR CDR	170522	FRPE	FRPE	AKCO	ANLU		

N (Y)



WELD	WPS	FABRICATION MATERIALS				
PT	NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
161		PIPE				
162						
163						
164						
165						
166						
167						
168						
169						
170						
171						
172						
173						
174						
175						
176						
177						
178						
64		REDUCER CONC. SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
65		REDUCER CONC. SS-EN 10253-4, TABLE A.5, 48.3x2.0 / 33.7x2.0	40 x 25	EN 1.4404	1	
82		ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
83		ELBOW 45, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
116		ELBOW 90, TYPE 3D, SS-EN 10253-4, TYPE A, 33.7x2.0	25	EN 1.4404	1	
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	
FLANGES						
122		FLANGE WN, SS-EN 1092-1, TYPE 11, PN16	100		1	
123		FLANGE BLIND, SS-EN 1092-1, TYPE 05, PN16	100		1	
140		FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
141		FLANGE WN, SS-EN 1092-1, TYPE 11, PN40	25		1	
GASKETS						
143		GASKET, EN 1514-1, TYPE XXX, T=1,5mm	100	EXPANDED GRAPHITE	1	
VALVES / IN-LINE ITEMS						
160		WORCESTER BALL VALVE BW, A59-666TT-BWJ DN25	25	EN 1.4404	1	
161		WORCESTER BALL VALVE BW, A59-666TT-BWJ DN25	25	EN 1.4404	1	
163		BALL VALVE, WORCESTER A44, SHORT, BW	15		1	

PT	NO	COMPONENT DESCRIPTION	DN	MATERIAL	QTY (mm)	REMARKS
ERECTION MATERIALS						
BOLTS						
167		HEXAGONAL NUT, M6M, ISO 4032	16	EN 1515-4, A4	8	
168		WASHER, BRB, ISO 7089	16	A4, HV≥250	16	
169		70 mm HEXAGONAL BOLT, M6S, ISO 4017	16	EN 1515-4, A4-70	8	
INSTRUMENTS						
170		PT-811 PT-811	15		1	
SUPPORTS						
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.WP0002		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-XXXXX62		Sheet	
	CWM	0				1 of 11	
	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		