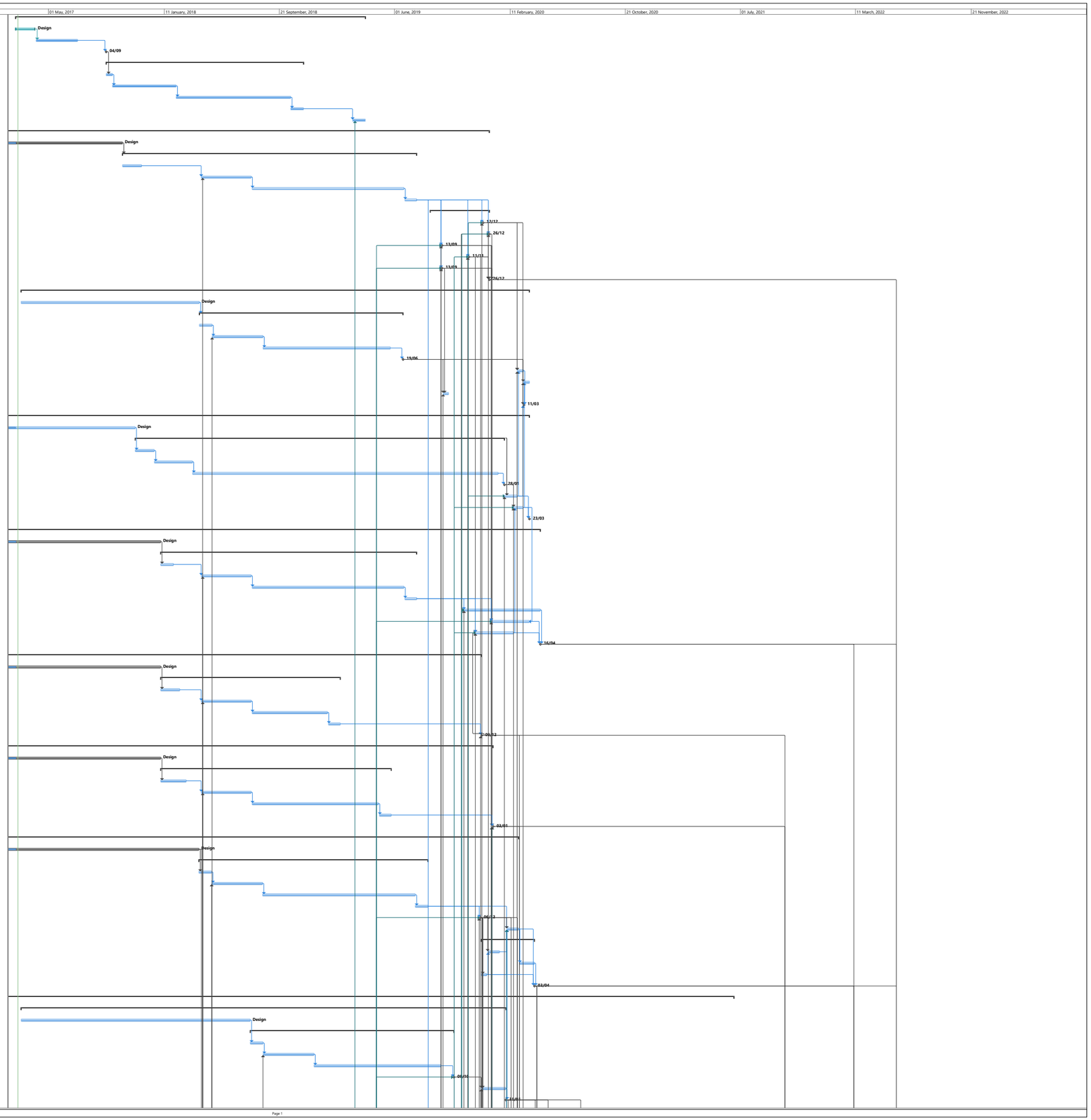
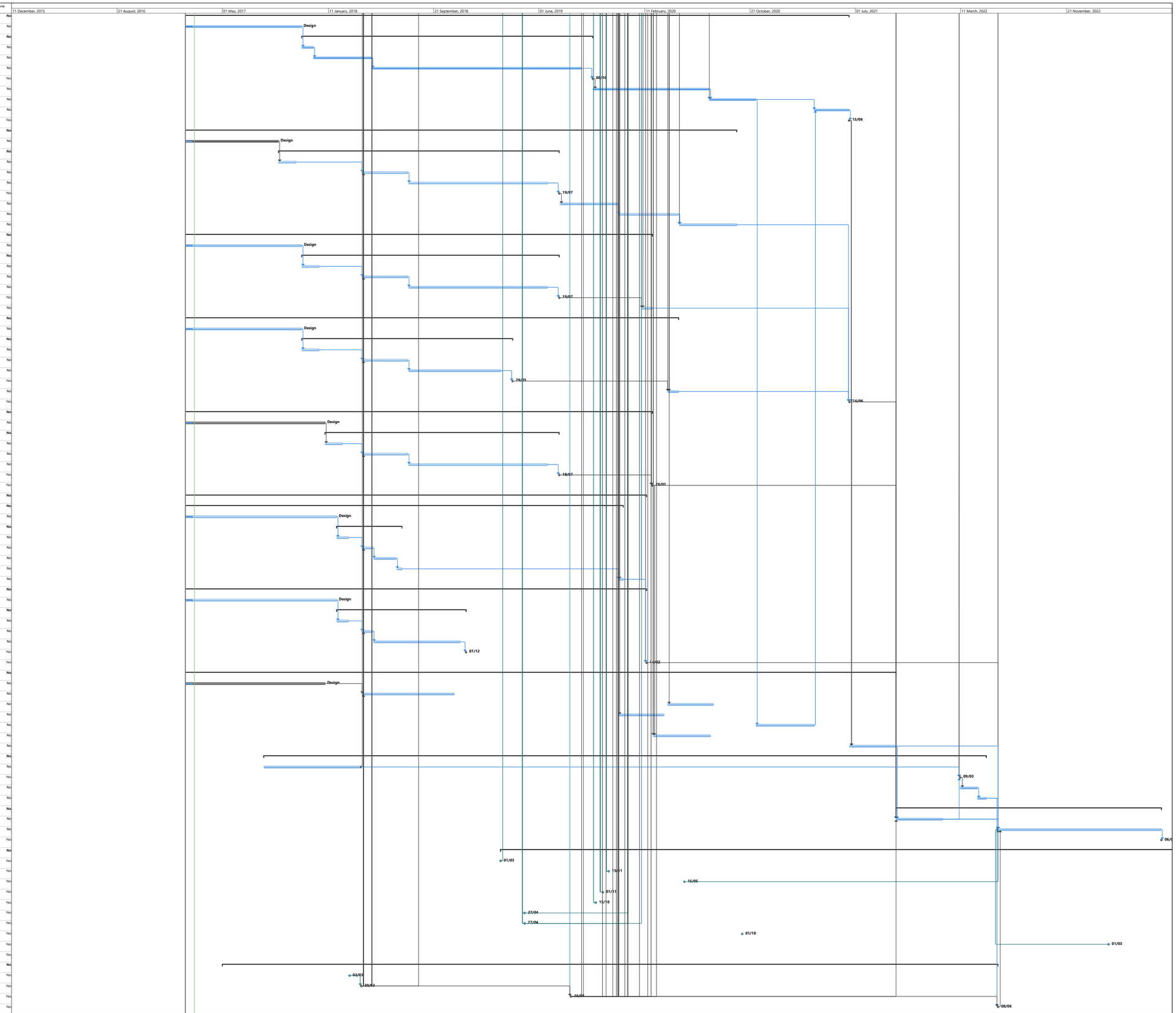
ID	Task Name	Duration	Start	Finish	Predecessors	Successors	Resource Names	Milestone
1	**Insert**	**109.8 wks**	**Sat 18/02/17**	**Thu 28/03/19**				**No**
2	Design Geometry & Coatings	1.55 mons	Sat 18/02/17	Fri 31/03/17		3	Design	No
3	ESS Insert Optics Freeze	13 wks	Tue 04/04/17	Mon 03/07/17	2	4		No
4	Optics Early Procurement TG3	9 wks	Tue 04/07/17	Mon 04/09/17	3	6		Yes
5	**Insert Procurement**	**62 wks**	**Tue 05/09/17**	**Mon 12/11/18**				**No**
6	Specifications	0.5 mons	Tue 05/09/17	Mon 18/09/17	4	7		No
7	Call for tenders	5 mons	Tue 19/09/17	Mon 05/02/18	6	8		No
8	Production	9 mons	Tue 06/02/18	Mon 15/10/18	7	9		No
9	Delivery	1 mon	Tue 16/10/18	Mon 12/11/18	8	10		No
10	Insert Installation	1 mon	Fri 01/03/19	Thu 28/03/19	178,9			No
11	**Guide**	**151.4 wks**	**Wed 01/02/17**	**Thu 26/12/19**				**No**
12	Guide Design	9 mons	Wed 01/02/17	Tue 10/10/17		13	Design	No
13	**Guide Procurement**	**92.6 wks**	**Wed 11/10/17**	**Fri 19/07/19**	**12**			**No**
14	Specifications	1.5 mons	Wed 11/10/17	Tue 21/11/17		15		No
15	Call for Tenders	4 mons	Mon 02/04/18	Fri 20/07/18	14,190	16		No
16	Production	12 mons	Mon 23/07/18	Fri 21/06/19	15	17		No
17	Delivery	1 mon	Mon 24/06/19	Fri 19/07/19	16	20,21,22,23,19,191		No
18	**Guide Installation**	**18.8 wks**	**Mon 19/08/19**	**Thu 26/12/19**				**No**
19	Bunker Guide Installation	1 mon	Fri 15/11/19	Thu 12/12/19	179SS,17,191	24,32,35		Yes
20	DO3 Guide Installation	8 wks	Fri 01/11/19	Thu 26/12/19	17,181SS,191	24,53SS-2 wks		Yes
21	EO2 Area 1 Guide Installation	4 wks	Mon 19/08/19	Fri 13/09/19	17,183SS,191	24,54,72		Yes
22	EO2 Guide Area 2 Installation	1 mon	Tue 15/10/19	Mon 11/11/19	182SS,17,191	24,55,64		Yes
23	EO1 Guide Installation	4 wks	Mon 19/08/19	Fri 13/09/19	184SS,17,191	24,72,34		Yes
24	Guide Fully Installed	0 mons	Thu 26/12/19	Thu 26/12/19	22,19,20,21,23	175		Yes
25	**Beam Monitors**	**159.6 wks**	**Thu 02/03/17**	**Mon 23/03/20**				**No**
26	Monitor Design	14 mons	Thu 02/03/17	Wed 28/03/18		27	Design	No
27	**Monitor Procurement**	**64 wks**	**Thu 29/03/18**	**Wed 19/06/19**	**26**			**No**
28	Specifications	1 mon	Thu 29/03/18	Wed 25/04/18		29		No
29	Call for Tenders	4 mons	Thu 26/04/18	Wed 15/08/18	28,190	30		No
30	Production	10 mons	Thu 16/08/18	Wed 22/05/19	29	31		No
31	Delivery	1 mon	Thu 23/05/19	Wed 19/06/19	30	32,33,34		Yes
32	Bunker Monitor Installed	2 wks	Wed 26/02/20	Tue 10/03/20	31,43,19,191	35		No
33	BWC Monitor Installed	2 wks	Tue 10/03/20	Mon 23/03/20	31,44,191			No
34	Sample Monitor Installed	2 wks	Mon 16/09/19	Fri 27/09/19	31,23,191			No
35	All Bunker Work Complete	0.2 wks	Wed 11/03/20	Wed 11/03/20	32,43,19			Yes
36	**Choppers**	**163.8 wks**	**Wed 01/02/17**	**Mon 23/03/20**				**No**
37	Chopper design	10 mons	Wed 01/02/17	Tue 07/11/17		39	Design	No
38	**Chopper procurement**	**116 wks**	**Wed 08/11/17**	**Tue 28/01/20**		**43**		**No**
39	Specifications	1.5 mons	Wed 08/11/17	Tue 19/12/17	37	40		No
40	Call for tenders	3 mons	Wed 20/12/17	Tue 13/03/18	39	41		No
41	Production	24 mons	Wed 14/03/18	Tue 14/01/20	40	42		No
42	Delivery	0.5 mons	Wed 15/01/20	Tue 28/01/20	41	44		Yes
43	Bunker Choppers Installation	1 mon	Wed 29/01/20	Tue 25/02/20	38,17995,191	45,32,35		No
44	BWC Installation	3 wks	Tue 18/02/20	Mon 09/03/20	42,182SS,SS,191	54FF+2 wks,33,45		No
45	Chopper Commissioning	0.5 mons	Tue 10/03/20	Mon 23/03/20	43,44			Yes
46	**Guide Shielding**	**167.4 wks**	**Wed 01/02/17**	**Thu 16/04/20**				**No**
47	Shielding Design	12 mons	Wed 01/02/17	Tue 02/01/18		49	Design	No
48	**Procurement of Steel, Lead and Concrete**	**80.6 wks**	**Wed 03/01/18**	**Fri 19/07/19**				**No**
49	Specifications	1 mon	Wed 03/01/18	Tue 30/01/18	47	50		No
50	Call for Tenders	4 mons	Mon 02/04/18	Fri 20/07/18	49,190	51		No
51	Production	12 mons	Mon 23/07/18	Fri 21/06/19	50	52		No
52	Delivery	1 mon	Mon 24/06/19	Fri 19/07/19	51	55,54,53		No
53	DO3 Shielding Installation	6 mons	Fri 01/11/19	Thu 16/04/20	181SS,191,52,205S-2	56		No
54	EO2 Area 1 Shielding Installation	3 mons	Tue 31/12/19	Mon 23/03/20	183SS,21,44FF+2 wks,191,52	56		No
55	EO2 Area 2 Shielding Installation	12 wks	Tue 26/11/19	Mon 17/02/20	52,182SS,22,64FS-2 wks,191	44,56		No
56	Guide Shielding Finished	0 mons	Thu 16/04/20	Thu 16/04/20	54,53,55	175,170		Yes
57	**Thermal Shutter**	**148.8 wks**	**Wed 01/02/17**	**Mon 09/12/19**				**No**
58	Design	12 mons	Wed 01/02/17	Tue 02/01/18		60	Design	No
59	**Thermal Shutter Procurement**	**56.6 wks**	**Wed 03/01/18**	**Fri 01/02/19**				**No**
60	Specifications	1.5 mons	Wed 03/01/18	Tue 13/02/18	58	61		No
61	Call for Tenders	4 mons	Mon 02/04/18	Fri 20/07/18	60,190	62		No
62	Production	6 mons	Mon 23/07/18	Fri 04/01/19	61	63		No
63	Delivery	1 mon	Mon 07/01/19	Fri 01/02/19	62	64		No
64	Installation	1 mon	Tue 12/11/19	Mon 09/12/19	63,22,191	166,174,55FS-2 wks		Yes
65	**Divergence Jaws**	**152.6 wks**	**Wed 01/02/17**	**Fri 03/01/20**				**No**
66	Design	12 mons	Wed 01/02/17	Tue 02/01/18		68	Design	No
67	**Divergence Jaws Procurement**	**72.6 wks**	**Wed 03/01/18**	**Fri 24/05/19**				**No**
68	Specifications	2 mons	Wed 03/01/18	Tue 27/02/18	66	69		No
69	Call for Tenders	4 mons	Mon 02/04/18	Fri 20/07/18	68,190	70		No
70	Production	10 mons	Mon 23/07/18	Fri 26/04/19	69	71		No
71	Delivery	1 mon	Mon 29/04/19	Fri 24/05/19	70	72		No
72	Installation	1 mon	Mon 09/12/19	Fri 03/01/20	71,80,183,184,21,23	166,174		Yes
73	**Cave Shielding**	**160.6 wks**	**Wed 01/02/17**	**Fri 28/02/20**				**No**
74	Cave Design	15 mons	Wed 01/02/17	Tue 27/03/18		169FF,76	Design	No
75	**Cave Shielding Procurement**	**72 wks**	**Wed 28/03/18**	**Tue 13/08/19**				**No**
76	Specifications	1 mon	Wed 28/03/18	Tue 24/04/18	74	77		No
77	Call for tenders	4 mons	Wed 25/04/18	Tue 14/08/18	76,190	78		No
78	Production	12 mons	Wed 15/08/18	Tue 16/07/19	77	79		No
79	Delivery	1 mon	Wed 17/07/19	Tue 13/08/19	78	80,81		No
80	Cave Installation	4 mons	Mon 19/08/19	Fri 06/12/19	184SS,79,191	95,83,142,151,159,72,2		Yes
81	Cave Roof Installation	4 wks	Mon 03/02/20	Fri 28/02/20	184,79,85,83,95,151,184,86			No
82	**Cave Infrastructure**	**17 wks**	**Mon 09/12/19**	**Fri 03/04/20**				**No**
83	False Floor Installation	4 wks	Mon 23/12/19	Fri 17/01/20	80,85	81		No
84	Retractable Roof Installation	5 wks	Mon 02/03/20	Fri 03/04/20	81	86		No
85	Crane Installation	2 wks	Mon 09/12/19	Fri 20/12/19	80	81,83,86		No
86	Cave Finish	0 mons	Fri 03/04/20	Fri 03/04/20	81,84,85	175,133,163,170		Yes
87	**Spetrometer Tank Assy**	**228.2 wks**	**Wed 01/02/17**	**Wed 16/06/21**				**No**
88	**Tank**	**152.4 wks**	**Thu 02/03/17**	**Fri 31/01/20**				**No**
89	Tank Design	18 mons	Thu 02/03/17	Wed 18/07/18		91	Design	No
90	**Tank Procurement**	**64 wks**	**Thu 19/07/18**	**Wed 09/10/19**				**No**
91	Specifications	1 mon	Thu 19/07/18	Wed 15/08/18	89	92		No
92	Call for Tenders	4 mons	Thu 16/08/18	Wed 05/12/18	91,190	93		No
93	Production	10 mons	Thu 06/12/18	Wed 11/09/19	92	94		No
94	Delivery	1 mon	Thu 12/09/19	Wed 09/10/19	93,184SS	95		Yes
95	Tank Installation	2 mons	Mon 09/12/19	Fri 31/01/20	80,94,191	96,81		No
96	Tank Installed	0 mons	Fri 31/01/20	Fri 31/01/20	95	105,117,125,133,142		Yes



ID		Task Mode	Task Name	Duration	Start	Finish	Predecessors	Successors	Resource Names	Milestone
97			**Detectors**	**228 wks**	**Wed 01/02/17**	**Tue 15/06/21**				**No**
98			Detector Design	10 mons	Wed 01/02/17	Tue 07/11/17		100	Design	No
99			**Detector procurement**	**100 wks**	**Wed 08/11/17**	**Tue 08/10/19**				**No**
100			Specifications	1 mon	Wed 08/11/17	Tue 05/12/17	98	101		No
101			Call for tenders	5 mons	Wed 06/12/17	Tue 24/04/18	100	102		No
102			Production	18 mons	Wed 25/04/18	Tue 10/09/19	101	103		No
103			Delivery	1 mon	Wed 11/09/19	Tue 08/10/19	102	104		Yes
104			Mobile Source Commissioning	10 mons	Wed 09/10/19	Tue 14/07/20	103	105		No
105			Detector Installation	4 mons	Wed 15/07/20	Tue 03/11/20	104,96	106,165		No
106			Detector Cold Commissioning	3 mons	Wed 24/03/21	Tue 15/06/21	105,165	107		No
107			Detector Complete	0 mons	Tue 15/06/21	Tue 15/06/21	106	167,134		Yes
108			**Graphite**	**189.6 wks**	**Wed 01/02/17**	**Fri 18/09/20**				**No**
109			Design	8 mons	Wed 01/02/17	Tue 12/09/17		111	Design	No
110			**Graphite Procurement**	**96.6 wks**	**Wed 13/09/17**	**Fri 19/07/19**				**No**
111			Specifications	1.5 mons	Wed 13/09/17	Tue 24/10/17	109	112		No
112			Call for Tenders	4 mons	Mon 02/04/18	Fri 20/07/18	111,190	113		No
113			Production	12 mons	Mon 23/07/18	Fri 21/06/19	112	114		No
114			Delivery	1 mon	Mon 24/06/19	Fri 19/07/19	113	115		Yes
115			Graphite Tests	5 mons	Mon 22/07/19	Fri 06/12/19	114	116		No
116			Offline Mouting	5.25 mons	Mon 09/12/19	Fri 01/05/20	115	117		No
117			In-tank Mounting	5 mons	Mon 04/05/20	Fri 18/09/20	116,96	134		No
118			**Be-filter**	**160.6 wks**	**Wed 01/02/17**	**Fri 28/02/20**				**No**
119			Design	10 mons	Wed 01/02/17	Tue 07/11/17		121	Design	No
120			**Filter Procurement**	**88.6 wks**	**Wed 08/11/17**	**Fri 19/07/19**				**No**
121			Specfications	1.5 mons	Wed 08/11/17	Tue 19/12/17	119	122		No
122			Call for tenders	4 mons	Mon 02/04/18	Fri 20/07/18	121,190	123		No
123			Production	12 mons	Mon 23/07/18	Fri 21/06/19	122	124		No
124			Delivery	1 mon	Mon 24/06/19	Fri 19/07/19	123	125		Yes
125			Installation	1 mon	Mon 03/02/20	Fri 28/02/20	124,96	134		No
126			**Radial collimator**	**169.6 wks**	**Wed 01/02/17**	**Fri 01/05/20**				**No**
127			Design	10 mons	Wed 01/02/17	Tue 07/11/17		129	Design	No
128			**Collimator Procurement**	**72.6 wks**	**Wed 08/11/17**	**Fri 29/03/19**				**No**
129			Specfications	1.5 mons	Wed 08/11/17	Tue 19/12/17	127	130		No
130			Call for Tenders	4 mons	Mon 02/04/18	Fri 20/07/18	129,190	131		No
131			Production	8 mons	Mon 23/07/18	Fri 01/03/19	130	132		No
132			Delivery	1 mon	Mon 04/03/19	Fri 29/03/19	131	133		Yes
133			Installation	1 mon	Mon 06/04/20	Fri 01/05/20	132,96,86	134		No
134			Spectrometer Assy Complete	0.2 wks	Wed 16/06/21	Wed 16/06/21	133,117,107,125	174,167		Yes
135			**Sample Table**	**160.6 wks**	**Wed 01/02/17**	**Fri 28/02/20**				**No**
136			Design	12 mons	Wed 01/02/17	Tue 02/01/18		138	Design	No
137			**Sample Table Procurement**	**80.6 wks**	**Wed 03/01/18**	**Fri 19/07/19**				**No**
138			Specfications	1.5 mons	Wed 03/01/18	Tue 13/02/18	136	139		No
139			Call for Tenders	4 mons	Mon 02/04/18	Fri 20/07/18	138,190	140		No
140			Production	12 mons	Mon 23/07/18	Fri 21/06/19	139	141		No
141			Delivery	1 mon	Mon 24/06/19	Fri 19/07/19	140	142		Yes
142			Installation	1 mon	Mon 03/02/20	Fri 28/02/20	141,96,80	166,174		Yes
143			**Post Sample Assembly**	**158.6 wks**	**Wed 01/02/17**	**Fri 14/02/20**				**No**
144			**Get Lost Tube**	**150.6 wks**	**Wed 01/02/17**	**Fri 20/12/19**				**No**
145			Design	52 wks	Wed 01/02/17	Tue 30/01/18		147	Design	No
146			**Procurement**	**22.6 wks**	**Wed 31/01/18**	**Fri 06/07/18**				**No**
147			Specification	4 wks	Wed 31/01/18	Tue 27/02/18	145	148		No
148			Tender	4 wks	Mon 02/04/18	Fri 27/04/18	147,190	149		No
149			Manufacture	8 wks	Mon 30/04/18	Fri 22/06/18	148	150		No
150			Delivery	2 wks	Mon 25/06/18	Fri 06/07/18	149	151		No
151			Get Lost Tube Installation	2 wks	Mon 09/12/19	Fri 20/12/19	150,80	81,159		No
152			**Beam Stop**	**158.6 wks**	**Wed 01/02/17**	**Fri 14/02/20**				**No**
153			Design	52 wks	Wed 01/02/17	Tue 30/01/18		155	Design	No
154			**Procurement**	**44.6 wks**	**Wed 31/01/18**	**Fri 07/12/18**				**No**
155			Specification	4 wks	Wed 31/01/18	Tue 27/02/18	153	156		No
156			Tender	4 wks	Mon 02/04/18	Fri 27/04/18	155,190	157		No
157			Manufacture	30 wks	Mon 30/04/18	Fri 23/11/18	156	158		No
158			Delivery	2 wks	Mon 26/11/18	Fri 07/12/18	157			Yes
159			Beam Stop Installation	8 wks	Mon 23/12/19	Fri 14/02/20	80,151	175		Yes
160			**Infrastructure**	**244.2 wks**	**Wed 01/02/17**	**Wed 06/10/21**				**No**
161			Design	12 mons	Wed 01/02/17	Tue 02/01/18		162	Design	No
162			Purchase	8 mons	Mon 02/04/18	Fri 09/11/18	161,190			No
163			Installation of Cave Infstruc.	4 mons	Mon 06/04/20	Fri 24/07/20	86			No
164			Installation of Control Hut	4 mons	Mon 09/12/19	Fri 27/03/20	80			No
165			Installation of detector/DAQ electronics	5 mons	Wed 04/11/20	Tue 23/03/21	105	106		No
166			Installation of MCS	5 mons	Mon 02/03/20	Fri 17/07/20	142,64,72			No
167			Setup of control software	4 mons	Thu 17/06/21	Wed 06/10/21	107,134	175,174		No
168			**Personnel Safety System**	**248.2 wks**	**Wed 09/08/17**	**Wed 11/05/22**				**No**
169			PSS Design	33 wks	Wed 09/08/17	Tue 27/03/18	74FF	170		No
170			PSS Installation	6 wks	Thu 27/01/22	Wed 09/03/22	86,169,56,174	171		Yes
171			PSS Testing & Commissioning	6 wks	Thu 10/03/22	Wed 20/04/22	170	172		No
172			PSS Validation	3 wks	Thu 21/04/22	Wed 11/05/22	171	175,192		No
173			**Beamline Commissioning**	**91.2 wks**	**Thu 07/10/21**	**Thu 06/07/23**				**No**
174			Cold Commissioning	16 wks	Thu 07/10/21	Wed 26/01/22	134,142,191,64,72,16	175,192,170		No
175			Hot Commissioning	14 mons	Thu 09/06/22	Wed 05/07/23	86,56,24,180,167,174	176		No
176			Beamline Ready For Users	0.2 wks	Thu 06/07/23	Thu 06/07/23	175			Yes
177			**ESS Infrastructure Milestones**	**235 wks**	**Fri 01/03/19**	**Thu 31/08/23**				**No**
178			Monolith Insert Installation	0 mons	Fri 01/03/19	Fri 01/03/19		10		Yes
179			Bifrost Access to Bunker	0.2 wks	Fri 15/11/19	Fri 15/11/19		43SS,19SS		Yes
180			Bunker Closed	0.2 wks	Fri 15/05/20	Fri 15/05/20		175		Yes
181			Bifrost Access to DO3	0.2 wks	Fri 01/11/19	Fri 01/11/19		20SS,53SS		Yes
182			Bifrost Access to EO2 Area 2	0.2 wks	Tue 15/10/19	Tue 15/10/19		22SS,44SS,55SS		Yes
183			Bifrost Access to EO2 Area 1	0.2 wks	Sat 27/04/19	Sat 27/04/19		21SS,54SS,72		Yes
184			Bifrost Access to EO1	0.2 wks	Sat 27/04/19	Sat 27/04/19		23SS,80SS,81,94SS,72		Yes
185			First Beam to Target	0.2 wks	Thu 01/10/20	Thu 01/10/20				Yes
186			Instrument Commissioning Beam	108.6 wks	Mon 01/02/21	Wed 01/03/23		175SS		Yes
187			Scheduled User Run Starts	0.2 wks	Thu 31/08/23	Thu 31/08/23				Yes
188			**Project Stages**	**266.6 wks**	**Mon 01/05/17**	**Wed 08/06/22**				**No**
189			Tollgate 2 - Start of Detailed Design	44 wks	Mon 01/05/17	Fri 02/03/18		190		Yes
190			Tollgate 3 - Procurement Permission	4 wks	Mon 05/03/18	Fri 30/03/18	189	191,15,50,61,69,77,92,		Yes
191			Tollgate 4 - Installation and Integratio	4 wks	Mon 22/07/19	Fri 16/08/19	190,17	192,174,19,20,21,22,2		Yes
192			Tollgate 5 - Hot Commissioning	4 wks	Thu 12/05/22	Wed 08/06/22	191,174,172	175		Yes