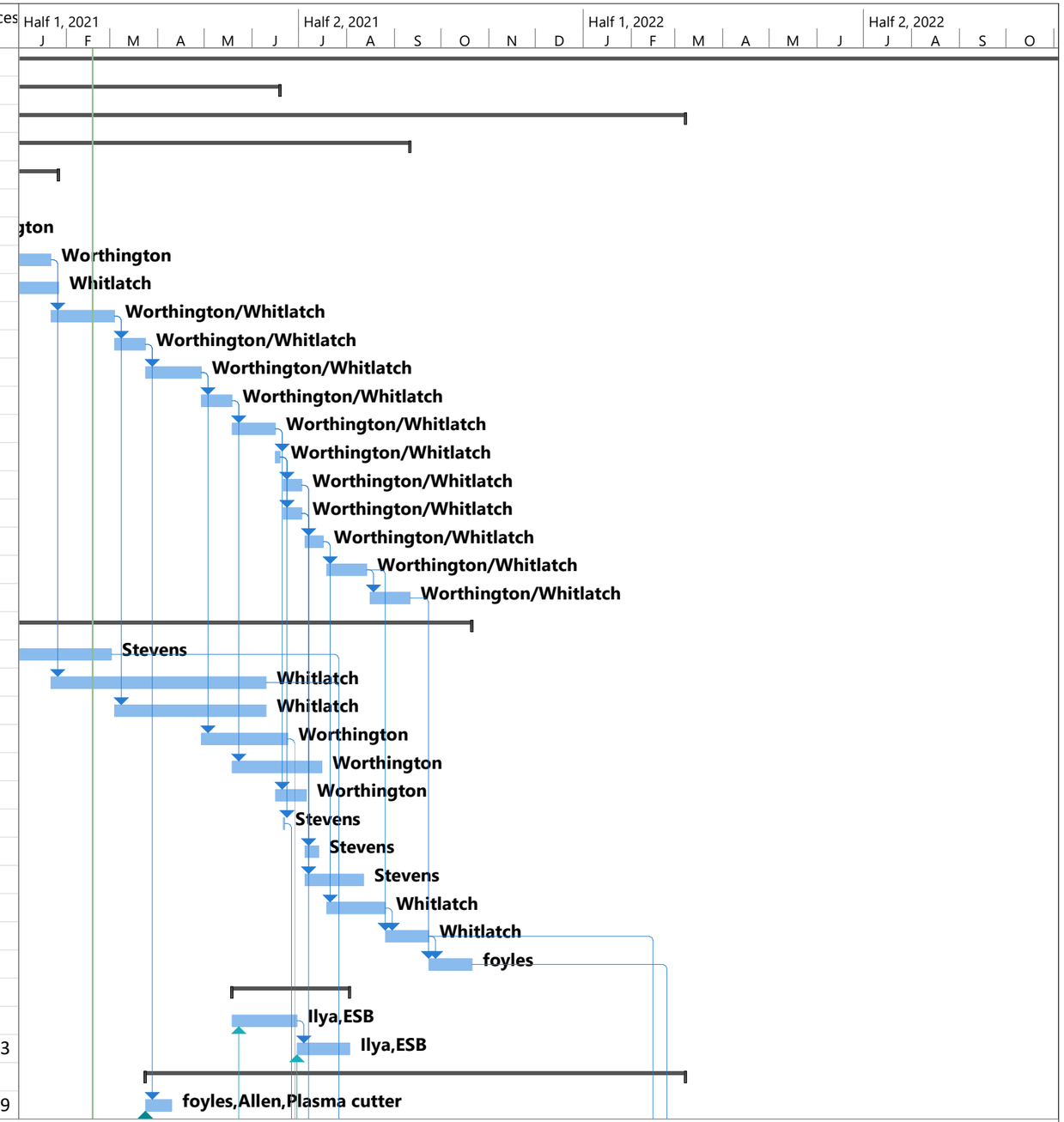
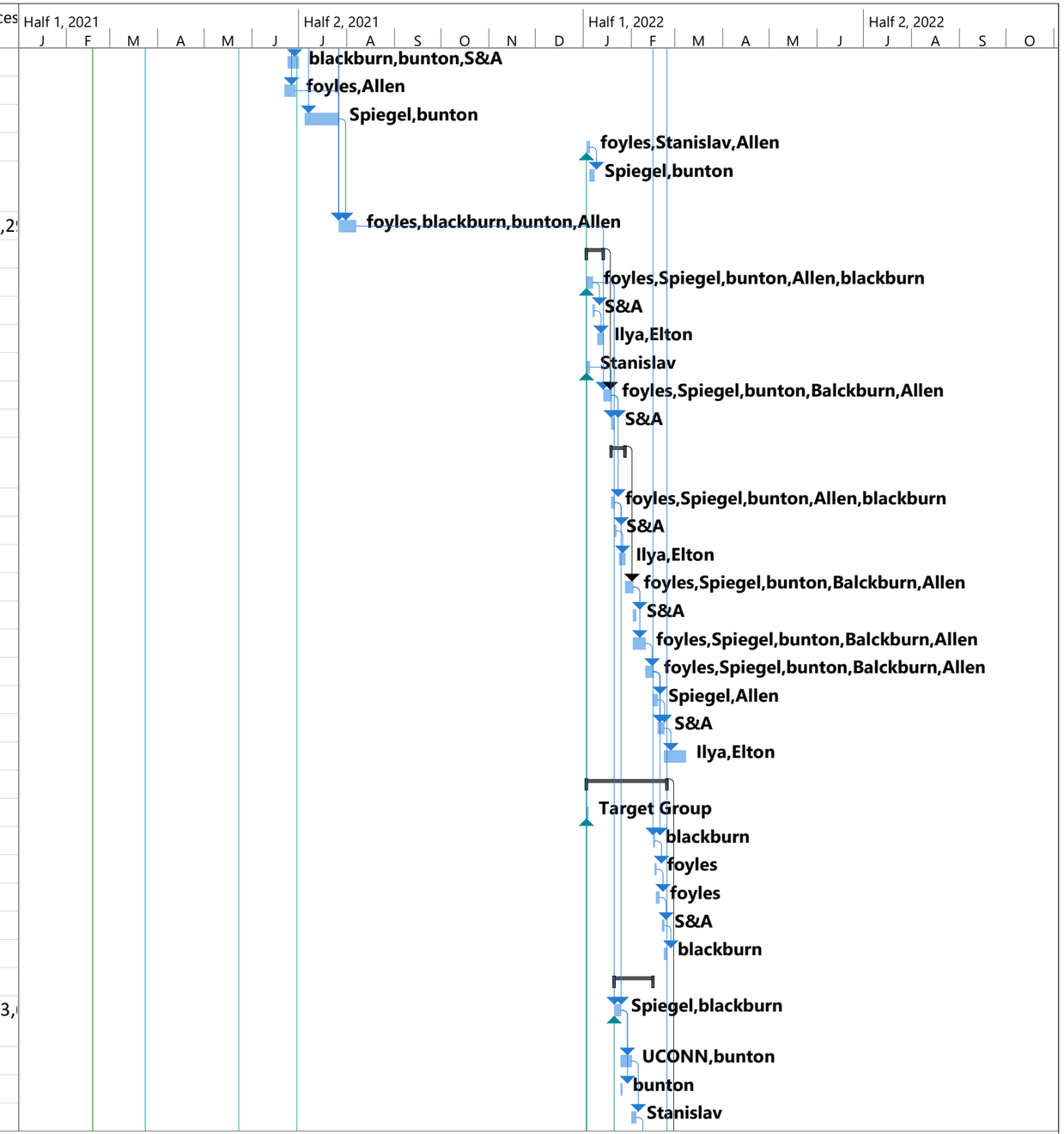
ID	Task Mode	Task Name	Duration	Start	Finish	Predeces
1		**Hall D Installation**	**748 days**	**Mon 9/21/20**	**Fri 8/25/23**	
2		**SAD 2020-2021**	**187 days**	**Mon 9/21/20**	**Fri 6/18/21**	
10		**CPP Install**	**364 days**	**Mon 9/21/20**	**Mon 3/7/22**	
11		**Component Design**	**247 days**	**Mon 9/21/20**	**Fri 9/10/21**	
12		**support stand**	**84 days**	**Mon 9/21/20**	**Tue 1/26/21**	
13		Finalize requirements	25 days	Mon 9/21/20	Fri 10/23/20	
14		Complete 3D model	10 days	Mon 10/26/20	Fri 11/6/20	13
15		Complete drawings	46 days	Mon 11/9/20	Thu 1/21/21	14
16		Complete Analysis	49 days	Mon 11/9/20	Tue 1/26/21	14
17		Steel Absorbers	29 days	Fri 1/22/21	Wed 3/3/21	15
18		FCAL platform mods	14 days	Thu 3/4/21	Tue 3/23/21	17
19		Ground rail syst.	26 days	Wed 3/24/21	Wed 4/28/21	18
20		Alignment system	14 days	Thu 4/29/21	Tue 5/18/21	19
21		Static lead Absorber	20 days	Wed 5/19/21	Tue 6/15/21	20
22		FCAL Platform Stairs mod	3 days	Wed 6/16/21	Fri 6/18/21	21
23		Dark room Mod	10 days	Mon 6/21/21	Fri 7/2/21	22
24		FCAL Platform attachment	10 days	Mon 6/21/21	Fri 7/2/21	22
25		adjustable lead absorber	10 days	Mon 7/5/21	Fri 7/16/21	24
26		Solid Lead Target	20 days	Mon 7/19/21	Fri 8/13/21	25
27		Beamline	20 days	Mon 8/16/21	Fri 9/10/21	26
28		**Component Procurements**	**240 days**	**Mon 11/9/20**	**Wed 10/20/21**	
29		Off the shelf components	73 days	Mon 11/9/20	Mon 3/1/21	14
30		Support Stand	99 days	Fri 1/22/21	Wed 6/9/21	15
31		Steel Absorbers	70 days	Thu 3/4/21	Wed 6/9/21	17
32		Ground rail syst.	40 days	Thu 4/29/21	Wed 6/23/21	19
33		Alignment system	42 days	Wed 5/19/21	Thu 7/15/21	20
34		Static lead Absorber	14 days	Wed 6/16/21	Mon 7/5/21	21
35		FCAL Platform stairs mod	1 day	Mon 6/21/21	Mon 6/21/21	22
36		Dark room Mod	7 days	Mon 7/5/21	Tue 7/13/21	23
37		FCAL Platform attachment	28 days	Mon 7/5/21	Wed 8/11/21	24
38		adjustable lead absorber	28 days	Mon 7/19/21	Wed 8/25/21	25
39		Solid Lead Target components	20 days	Thu 8/26/21	Wed 9/22/21	38,26
40		Beamline	20 days	Thu 9/23/21	Wed 10/20/21	39,27
41		**Muon Chambers**	**54 days**	**Wed 5/19/21**	**Mon 8/2/21**	
42		Test 1st 4 chambers in ESB	30 days	Wed 5/19/21	Tue 6/29/21	142
43		Test 2nd 4 chambers in ESB	24 days	Wed 6/30/21	Mon 8/2/21	42,143
44		**Installation**	**240 days**	**Wed 3/24/21**	**Mon 3/7/22**	
45		Modify FCAL Platform	13 days	Wed 3/24/21	Fri 4/9/21	18,139



Project: CPP-extended_SAD_v2
Date: Thu 2/18/21

Task		Project Summary		Manual Task		Start-only		Deadline	
Split		Inactive Task		Duration-only		Finish-only		Progress	
Milestone		Inactive Milestone		Manual Summary Rollup		External Tasks		Manual Progress	
Summary		Inactive Summary		Manual Summary		External Milestone			

ID		Task Mode	Task Name	Duration	Start	Finish	Predeces
46			install floor rails	5 days	Thu 6/24/21	Wed 6/30/21	32
47			Install FCAL platform stairs mod	5 days	Tue 6/22/21	Mon 6/28/21	35
48			Modify Dark room	16 days	Mon 7/5/21	Mon 7/26/21	23
49			Remove ComCal	2 days	Mon 1/3/22	Tue 1/4/22	138
50			Remove vertical cable managers & trim cable tray	3 days	Wed 1/5/22	Fri 1/7/22	49
51			install support stand	9 days	Tue 7/27/21	Fri 8/6/21	30,47,2
52			**Assemble 1st section of detector on floor**	**9 days**	**Mon 1/3/22**	**Thu 1/13/22**	
53			Assemble	4 days	Mon 1/3/22	Thu 1/6/22	138
54			Fiducialize	1 day	Fri 1/7/22	Fri 1/7/22	53
55			Test all systems	4 days	Mon 1/10/22	Thu 1/13/22	54
56			Move Electronics to Temp Racks	2 days	Mon 1/3/22	Tue 1/4/22	138
57			Install 1st section of detector	3 days	Fri 1/14/22	Tue 1/18/22	52,51
58			Align Stand w/detector	2 days	Wed 1/19/22	Thu 1/20/22	56,57
59			**Assemble 2nd section of detector on floor**	**7 days**	**Wed 1/19/22**	**Thu 1/27/22**	
60			Assemble	2 days	Wed 1/19/22	Thu 1/20/22	57
61			Fiducialize	1 day	Fri 1/21/22	Fri 1/21/22	60
62			Test all systems	4 days	Mon 1/24/22	Thu 1/27/22	61
63			Install 2nd section of detector	3 days	Fri 1/28/22	Tue 2/1/22	59
64			Alignment check/adjustment	2 days	Wed 2/2/22	Thu 2/3/22	63
65			Assemble 3rd section of detector on floor	6 days	Wed 2/2/22	Wed 2/9/22	63
66			Install 3rd section of detector	3 days	Thu 2/10/22	Mon 2/14/22	65
67			Hook Up Gas system	3 days	Tue 2/15/22	Thu 2/17/22	66
68			Final Survey	2 days	Fri 2/18/22	Mon 2/21/22	66,67
69			Test all systems	10 days	Tue 2/22/22	Mon 3/7/22	68
70			**Solid Pb Target**	**38 days**	**Mon 1/3/22**	**Wed 2/23/22**	
71			Secure H target for removal	1 day	Mon 1/3/22	Mon 1/3/22	138
72			Remove Beamline	1 day	Tue 2/15/22	Tue 2/15/22	39,66
73			Crane Target to floor	1 day	Wed 2/16/22	Wed 2/16/22	72
74			Install Target cart and target	2 days	Thu 2/17/22	Fri 2/18/22	73
75			Align/fiducialize target	1 day	Mon 2/21/22	Mon 2/21/22	74
76			Install Beamline	2 days	Tue 2/22/22	Wed 2/23/22	75
77			**Move Microscope**	**17 days**	**Fri 1/21/22**	**Mon 2/14/22**	
78			Unstack shielding ang move away from Hodo	2 days	Fri 1/21/22	Mon 1/24/22	138,53,
79			modify Micro	5 days	Tue 1/25/22	Mon 1/31/22	78
80			Remove Hodoscope modules	1 day	Tue 1/25/22	Tue 1/25/22	78
81			Recable	3 days	Tue 2/1/22	Thu 2/3/22	79



Project: CPP-extended_SAD_v2
Date: Thu 2/18/21

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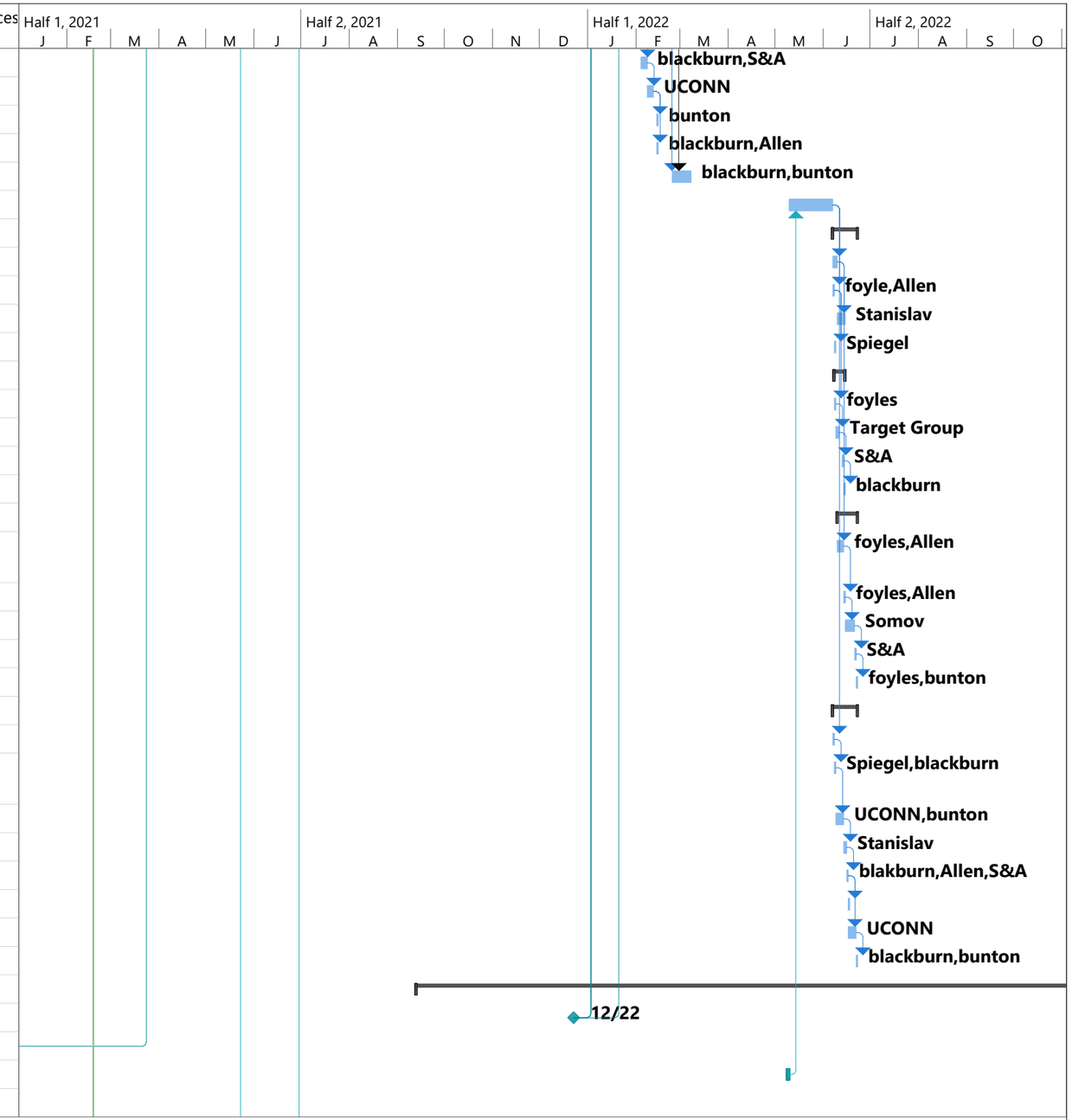
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	

ID		Task Mode	Task Name	Duration	Start	Finish	Predeces
82			Move to location and S&A	2 days	Fri 2/4/22	Mon 2/7/22	81
83			Test all systems	4 days	Tue 2/8/22	Fri 2/11/22	82
84			Reinstall Hodo paddles	1 day	Mon 2/14/22	Mon 2/14/22	83
85			Re-stack shielding	1 day	Mon 2/14/22	Mon 2/14/22	83
86			Beamline	8 days	Thu 2/24/22	Mon 3/7/22	40,70
87			Run CPP Experiment	20 days	Tue 5/10/22	Mon 6/6/22	140
88			**Reinstall Primex**	**12 days**	**Tue 6/7/22**	**Wed 6/22/22**	
89			Remove CPP Detector	3 days	Tue 6/7/22	Thu 6/9/22	87
90			Remove PB target and beamline	1 day	Tue 6/7/22	Tue 6/7/22	87
91			Hook up CDC electronics	3 days	Fri 6/10/22	Tue 6/14/22	89
92			Hook up CDC Gas	1 day	Wed 6/8/22	Wed 6/8/22	90
93			**Install Primex target**	**5 days**	**Wed 6/8/22**	**Tue 6/14/22**	
94			crane target on to platform	1 day	Wed 6/8/22	Wed 6/8/22	90
95			prepare target for cryogenics	2 days	Thu 6/9/22	Fri 6/10/22	94
96			Align target	1 day	Mon 6/13/22	Mon 6/13/22	95
97			Install beamline	1 day	Tue 6/14/22	Tue 6/14/22	96
98			**Install ComCal**	**9 days**	**Fri 6/10/22**	**Wed 6/22/22**	
99			Install Stand and crane Detector onto stand	2 days	Fri 6/10/22	Mon 6/13/22	89
100			Hook up chiller	1 day	Tue 6/14/22	Tue 6/14/22	99
101			Cable ant test Comcal	4 days	Wed 6/15/22	Mon 6/20/22	100
102			Survey and Align	1 day	Tue 6/21/22	Tue 6/21/22	101
103			install Vacuum pipe	1 day	Wed 6/22/22	Wed 6/22/22	102
104			**Move Microscope**	**12 days**	**Tue 6/7/22**	**Wed 6/22/22**	
105			Remove Hodo paddles	1 day	Tue 6/7/22	Tue 6/7/22	87
106			Unstack shielding ang move away from Hodo	1 day	Wed 6/8/22	Wed 6/8/22	105
107			modify Micro	3 days	Thu 6/9/22	Mon 6/13/22	106
108			Recable	2 days	Tue 6/14/22	Wed 6/15/22	107
109			Move to location and S&A	1 day	Thu 6/16/22	Thu 6/16/22	108
110			Reinstall Hodo Paddles	1 day	Fri 6/17/22	Fri 6/17/22	109
111			Test all systems	3 days	Fri 6/17/22	Tue 6/21/22	109
112			Re-stack shielding	1 day	Wed 6/22/22	Wed 6/22/22	111
113			**FCAL II Install**	**501 days**	**Mon 9/13/21**	**Fri 8/25/23**	
138			Hall Opens 2021	1 day	Wed 12/22/21	Wed 12/22/21	
139			Hall Opens 2020	1 day	Mon 9/21/20	Mon 9/21/20	
140			Beam Starts 2022	1 day	Mon 5/9/22	Mon 5/9/22	
141			Hall Opens 2022	1 day	Wed 12/21/22	Wed 12/21/22	



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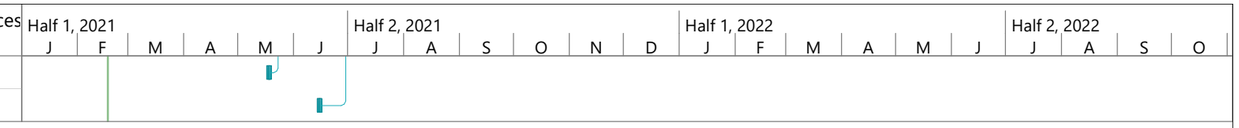
Summary	Inactive Summary	Manual Summary	External Milestone	

ID		Task Mode	Task Name	Duration	Start	Finish	Predeces
142			Receive 1st 4 Muon Chambers from UMASS	1 day	Tue 5/18/21	Tue 5/18/21	
143			Receive 2nd 4 Muon Chambers from UMASS	1 day	Tue 6/15/21	Tue 6/15/21	



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