

DO Upgrade Schedule
Installation Tasks

ID	Task Name	Duration	Start	Finish	Predecessors	Constraint	WBS	Resource Names
0	DO Upgrade Schedule	2029 d	2/2/93	2/16/01		As Soon As		
1	Rollout/disassembly	64 w	2/27/96	6/6/97		Start No Ear		
2	PLATFORM PREPARATION	50.8 w	2/3/97	2/11/98		As Soon As		
3	Remove obsolete equipment/cables	32 w	2/3/97	9/17/97		Start No Ear		MTF100[3]
4	Enlarge CF cable notches	4 w	6/2/97	6/27/97		Start No Ear		MTF100[0.3]
5	Refurbish platform	30 w	6/30/97	2/11/98	4	As Soon As f		MTF100,ETF100
7	SOLENOID SYSTEM	180.2 w	10/3/94	4/28/98		As Soon As		
8	Cryo System Development	168 w	10/3/94	2/2/98		As Soon As		
9	Building addition construction	52 w	7/3/95	7/8/96		Must Start O		MEF310[0.2],DesF310[0.2]
10	Cryo system design	114.4 w	10/3/94	1/2/97		Start No Ear		MEF310[1.1],DesF310,MTF310[0.5]
11	Cryo system fab/installation	47 w	6/19/96	5/30/97	10FS-26 w	As Soon As f		MEF310,DesF310[0.5],MTF310[4]
12	Develop control system	46 w	7/1/96	6/4/97		Start No Ear		MTF310[0.5]
13	Fab/install control dewar platforms	13.6 w	10/15/97	2/2/98		Start No Ear		MTF310[3],MEF310[0.1]
14	Refrigeration system test	4 w	6/9/97	7/7/97	11	Start No Ear		MEF310[2],MTF310[3]
15	Power/quench protection development	90 w	1/15/96	10/27/97		Start No Ear		MEF310[0.1],EEF310[0.7],MTF310[0.5],ETF310[0.75],DesF310[0.5]
16	Cryo/electrical system documentation	16 w	1/7/98	4/28/98		Start No Ear		PhysF310,MEF310[0.2],EEF310[0.2]
17	Magnet fabrication	111 w	3/8/95	5/15/97		Finish No Ea		MEF310[0.8],PhysF310[2]
18	M1-Solenoid Delivered to Fermilab	0 w	5/12/97	5/12/97	17	As Soon As		
19	Magnet preparation	4 w	5/12/97	6/9/97	18	As Soon As f		MEF310[0.25],MTF310[0.5]
21	CENTRAL PRESHOWER	222.2 w	11/6/95	5/2/00		As Soon As		
67	Install Central Preshower	29.2 w	10/15/97	5/21/98		As Soon As		
68	Procure lead pre-radiator	7 w	10/15/97	12/4/97		Start No Ear	1.1.3.9.2	k\$[0.02]
69	Fabricate mounting hardware	4.6 w	3/1/98	4/1/98		Start No Ear	1.1.3.9.1	MEF113[0.1],MTF113[0.1],k\$[0.04]
70	Install mounting hardware and lead	5.6 w	4/2/98	5/11/98	68,69	As Soon As f		MEF113[0.1],MTF113
71	Install detector modules	1.6 w	5/12/98	5/21/98	70,60FS-2 w	As Soon As f		MEF113[0.1],MTF113,PhysU113[0.5]
72	M2-Central Preshower Installed on Solenoid	0 w	5/21/98	5/21/98	71	As Soon As		
74	SOLENOID INSTALLATION AND TEST	100.2 w	9/22/97	10/1/99		As Soon As		
75	Design magnet installation eqpt.	18.8 w	9/22/97	2/13/98		Start No Ear		MEF310[0.5],DesF310[0.7]
76	Fab installation equipment	12 w	11/17/97	2/23/98		Start No Ear		MEF310[0.2],MTF310[2]
77	Install, hookup, and test magnet	70.6 w	5/1/98	10/1/99		As Soon As		
78	Pre-install Installation Fixturing and Support Feet	2 w	5/22/98	6/5/98	72,76	As Soon As f		MTF310
79	Insert Solenoid into CC and Survey	3 w	6/8/98	6/26/98	78	As Soon As f		MTF310,MEF310[0.2]
80	Prefit Chimney and SS Vacuum Pipe	1 w	6/29/98	7/6/98	79	As Soon As f		MTF310,MEF310[0.5]
81	Fix Chimney Position	1 w	7/7/98	7/13/98	80	As Soon As f		MEF310[0.2],MTF310[0.5]
82	Begin Installation	0 w	7/13/98	7/13/98	81	As Soon As		
83	Splice Leads, Re-insulate Vacuum, Close Up	3 w	7/14/98	8/3/98	82	As Soon As f		MEF310[0.2],MTF310[0.2]
84	Perform Leak Checks	2 w	8/4/98	8/17/98	83	As Soon As f		MTF310[2]
85	Cooldown Refrigerator	3 d	8/25/98	8/27/98	84	As Soon As f		MEF310,MTF310[1.5]
86	Safety Review and Approval	8.2 w	7/14/98	9/9/98	83FF	As Soon As f		MEF310[0.1]
87	Controls	9.5 w	5/27/98	8/3/98		As Soon As		
88	Install Controls Rack in Platform (electrical power)	2 w	5/27/98	6/10/98	92SS+50 %	As Soon As f		MTF310[0.5]
89	Run Cable to Instrumentation Port	5 w	6/29/98	8/3/98	79	As Soon As f		MTF310[0.5]
90	Install Control Lines to Control Dewar	6 w	6/22/98	8/3/98	88	As Soon As f		MTF310[0.5]
91	Control Dewar, Cryo and Vacuum	12.8 w	5/1/98	7/31/98		As Soon As		
92	Install VLPC Transfer Line and Vacuum Work	7 w	5/1/98	6/19/98		Start No Ear		
93	Solenoid U Tubes	5 w	5/1/98	6/5/98		Start No Ear		MTF310
94	Drafting for Lead Flow Jumpers	2 w	5/28/98	6/10/98		Start No Ear		DesF310,MEF310[0.2]
95	Procure Lead Flow Jumper Parts	6 w	5/21/98	7/2/98		Start No Ear		
96	Fabricate and Install Lead Flow Jumper; Modify Frost-proof E	3 w	7/6/98	7/24/98	94,95	As Soon As f		MTF310[1.2]
97	Toshiba Checkout of Control Dewar	1 w	7/27/98	7/31/98	96	As Soon As f		MEF310[0.2],PhysF310[0.5]
98	Electrical	4 w	6/1/98	6/26/98		As Soon As		
99	Buss Extension; Flexible Jumpers	4 w	6/1/98	6/26/98		Start No Ear		EEF310[0.2]
100	Perform Cold Test	1.2 w	9/1/98	9/9/98	85,86,89,90,93,97,99	As Soon As f		MEF310,MTF310[0.25],PhysF310[0.2]
101	Cold Test Completed	0 w	9/9/98	9/9/98	100	As Soon As		
102	Install ICD Iron	4.8 w	6/21/99	7/23/99		Start No Ear		MTF310[2]
103	Install B-Field Measuring Apparatus	3 w	1/4/99	1/22/99	102,1460	As Soon As f		MTF310,PhysF310
104	Close Central Iron	3 w	1/25/99	2/12/99	102,103	As Soon As f		MTF310[0.5]
105	Begin Commissioning	0 w	9/9/98	9/9/98	101,104	As Soon As		
106	High Current Testing	3 w	9/10/98	9/30/98	105	As Soon As f		PhysF310,EEF310[0.5],ETF310
107	M1-Solenoid Installed and Tested	0 w	9/30/98	9/30/98	106	As Soon As		
108	Perform Field Mapping	38.4 w	1/4/99	10/1/99	107	Start No Ear		PhysF310,ETF310[0.2],MTF310[0.2]
109	Field Mapping Complete	0 w	10/1/99	10/1/99	108	As Soon As		
111	FIBER TRACKER FABRICATION	258.4 w	7/3/95	9/11/00		As Soon As		
387	Install calibration system electronics	4 w	8/14/00	9/11/00	384,386	As Soon As f		PhysU112[0.5]
406	Tracker Assembly	20.8 w	1/4/00	5/26/00		As Soon As		
426	M2-Fiber Tracker Assembly Complete	0 w	5/26/00	5/26/00	423	As Soon As		
432	VLPC CASSETTE MANUFACTURE	256.6 w	9/15/95	11/13/00		As Soon As		
442	CASSETTE MANUFACTURE	254.4 w	9/15/95	10/27/00		As Soon As		
460	HISTE VI Cassette Procurement	254.4 w	9/15/95	10/27/00		As Soon As		
499	Cassette Assembly and Test	40 w	1/19/00	10/27/00		As Soon As		
503	M3-VLPC Cassette Assembly 50% Complete	0 w	6/5/00	6/5/00	501SS+50 %	As Soon As		
504	M3-VLPC Cassette Assembly Complete	0 w	10/13/00	10/13/00	501	As Soon As		

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506	CRYOGENIC SYSTEM	201.6 w	5/28/96	6/26/00		As Soon As		
513	LN2/Lhe Transfer Line/Boxes Design	19.2 w	11/3/97	3/31/98		Start No Ear		MEF112[0.5],DesF112[0.5]
514	LN2/Lhe Transfer Line/Boxes Fabrication	42 w	11/17/97	9/24/98	512,513SS+2 w	As Soon As f	1.1.2.5.3(0.1)	MEF112[0.1],MTF112[0.5],k\$(0.05)
515	LN2/Lhe Transfer Line/Boxes Installation	8 w	9/25/98	11/19/98	514	As Soon As f		MEF112[0.2],MTF112[2]
518	Fabricate east cryostat	28 w	11/4/99	6/5/00	516,517	As Soon As f	1.1.2.5.2(.44)	MTF112[2],MEF112[0.2],k\$(0.96),k\$(0.1)
519	Begin East Cryostat Fabrication	0 w	11/4/99	11/4/99	518SS	As Soon As		
520	Installation Equipment Design	2 w	3/27/00	4/7/00	518FS-10 w	Start No Ear		MEF112[0.5],DesF112[0.75]
521	Fab Installation Equipment	4 w	4/10/00	5/5/00	520	As Soon As f		MEF112[0.3],MTF112
523	Fabricate west cryostat	29 w	11/4/99	6/12/00	518SS	As Soon As f	1.1.2.5.2(.44)	MTF112[2],MEF112[0.1],k\$(0.96),k\$(0.1)
524	Cryostat Installation/Hookup	3 w	6/6/00	6/26/00	518,521,523FF+1.6 w	As Soon As f	1.1.2.5.4	MTF112[2],MEF112[0.1],k\$(0.1),k\$(0.01),Platform[0.25]
525	M3-East VLPC Cryostat Installed	0 w	6/12/00	6/12/00	524SS+1 w	As Soon As		
526	System Installation/Test	2 w	6/13/00	6/26/00	515,524SS+1 w	As Soon As f		MEF112[1.5],MTF112[2]
527	M3-VLPC Cryo System Operational	0 w	6/26/00	6/26/00	526	As Soon As		
528	Install VLPC cassettes in cryostats	14 w	8/7/00	11/13/00	505SS+30 %,526FS+1 w,2139F	As Soon As f		PhysU112[0.2],MTF112[0.2],ETF112[0.5],PhysF112[0.2],Platfor
530	SILICON TRACKER FABRICATION	393.2 w	2/2/93	11/13/00		As Soon As		
636	SILICON TRACKER CONSTRUCTION	314 w	8/10/94	11/13/00		As Soon As		
837	Assembly and Installation	66.4 w	7/15/99	11/13/00		As Soon As		
838	10% test	52.8 w	8/16/99	9/8/00		As Soon As		
844	Support cylinder	42 w	8/16/99	6/22/00		As Soon As		
845	Complete design of cylinder, mount, and beam tube su	5 w	8/16/99	9/20/99		Start No Ear		MEF111,PhysF111,DesF111
846	Manufacture support structure and mounts	16 w	8/16/99	12/8/99	602,845SS	As Soon As f	1.1.1.6.1	MTF111[0.5],MEF111[0.5],k\$(0.15),k\$(0.03)
847	Align cylinder in Sci-Fi barrel 1	2.6 w	5/30/00	6/15/00	846,426	As Soon As		MTF112[2],PhysF111,CMM112
848	Move cylinder to Sci Det, align on LK	1 w	6/16/00	6/22/00	847	As Soon As f		CMM111,MTF111,PhysF111
849	Barrel/Disk Module assemblies	21.4 w	5/30/00	10/27/00		As Soon As		
851	M2-First Silicon Tracker Barrel/Disk Module Complete	0 w	6/28/00	6/28/00	850	As Soon As		
854	Three Barrel/Disk Modules Complete	0 w	7/11/00	7/11/00	853	As Soon As		
861	All Barrel /Disk Modules Complete	0 w	10/4/00	10/4/00	860	As Soon As		
865	M3-All Silicon Tracker Barrels/Disks Complete	0 w	10/27/00	10/27/00	862,864	As Soon As		
866	Mechanical systems and DAB Preparation	57.8 w	7/15/99	9/13/00		As Soon As		
867	Plumbing and cooling system	46 w	7/15/99	6/20/00	598FS+24 w	Start No Ear	1.1.1.6.3	MTF111[0.25],MEF111[0.25],k\$(0.16),k\$(0.03),DAB_Gas_Plum
868	Alignment System	34 w	1/3/00	8/29/00		Start No Ear	1.1.1.6.2	MTF111,ETF111,PhysU111[0.5],MEF111[0.5],PhysF111[0.5],k\$
869	Monitoring systems	30 w	10/1/99	5/15/00		Start No Ear	1.1.1.6.5	ETF111[0.5],EEF111[0.25],MTF111[0.5],PhysU111[2],PhysF111
870	Air System	23 w	4/3/00	9/13/00		Start No Ear	1.1.1.6.4	MTF111[0.25],MEF111[0.25],k\$(0.15),k\$(0.03),DAB_Gas_Plum
871	Produce installation fixtures	20 w	1/17/00	6/5/00		Start No Ear		MTF111[0.25]
872	South H-Disks Ready to Move to DAB	0 w	8/4/00	8/4/00	793FS+2 w	As Soon As		
873	North H-Disks Ready to Move to DAB	0 w	11/13/00	11/13/00	799FS+2 w	As Soon As		
874	South Half-Cylinder Complete and Ready to Move to DAB	0 w	8/10/00	8/10/00	857,855	As Soon As		
875	North Half-Cylinder Complete and Ready to Move to DAB	0 w	10/27/00	10/27/00	862,864	As Soon As		
876	M1-Central Silicon Complete	0 w	10/27/00	10/27/00	874,875	As Soon As		
878	TRACKING ELECTRONICS FABRICATION	291.4 w	10/3/94	7/28/00		As Soon As		
909	Support Services (racks, power supplies, tests, etc.)	131 w	5/1/97	1/4/00		Start No Ear	1.1.1.5.9	EEF115,ETF115
910	System Install and Test	34 w	11/16/99	7/28/00	901FS-4 w,903	As Soon As f		EEF115,PhysU115[2],PhysF115,ETF115[2],MCH1[0.1]
911	Final Electronics Installed	0 w	7/28/00	7/28/00	910	As Soon As		
912	First Readout Crate Installed & Working	0 w	11/16/99	11/16/99	910SS	As Soon As		
914	FIBER TRIGGER ELECTRONICS FABRICATION	318.2 w	10/3/94	2/12/01		As Soon As		
925	FE Analog Boards	318.2 w	10/3/94	2/12/01		As Soon As		
943	8-chip Board Production	40.4 w	1/26/00	11/8/00		As Soon As		
946	Ten 8-chip Analog Boards Available	0 w	7/3/00	7/3/00	945	As Soon As		
949	8-chip Analog Boards Ready	0 w	11/8/00	11/8/00	948	As Soon As		
950	12-chip Board Production	14 w	10/27/00	2/12/01		As Soon As		
953	Ten 12-chip Analog Boards Available	0 w	12/12/00	12/12/00	952	As Soon As		
956	12-chip Analog Boards Ready	0 w	2/12/01	2/12/01	955	As Soon As		
957	CFT Digital Boards	192.25 w	11/12/96	10/6/00		As Soon As		
980	10 Digital Boards Available	0 w	7/13/00	7/13/00	979	As Soon As		
983	CFT Digital Boards Ready	0 w	10/6/00	10/6/00	982	As Soon As		
984	Mixer Boards	80.8 w	4/1/99	11/10/00		As Soon As		
992	Mixer Boards Ordered	0 w	9/15/00	9/15/00	990,991	As Soon As	1.1.5.3.8	k\$[1.27],k\$(0.26)
994	Mixer Boards Ready	0 w	11/10/00	11/10/00	993	As Soon As		
995	Support Hardware	69.4 w	5/17/99	10/6/00		As Soon As		
1002	Rack Prep in Movable Counting House	30 w	5/1/97	12/3/97		Start No Ear		EEF115[0.2],ETF115
1003	Install cable ways and fiber tracker electrical cables	10 w	5/8/00	7/18/00	524SS-4 w	As Soon As f		MTF115[2],Platform
1004	Installation & System Test	12 w	11/13/00	2/12/01	948,982SS+50 %,993,955FF	As Soon As f		EEF115[3],PhysU115[2],PhysF115,ETF115,Platform[0.7],MCH1
1005	First Crate Operational	0 w	8/15/00	8/15/00	947	As Soon As		
1007	Design, fabricate tracker installation fixture	8 w	3/23/00	5/18/00	1008SF-4 w	As Soon As f		MEF112[2],MTF112[2],Welder_Day
1008	Install/align fiber tracker in solenoid	2 w	6/16/00	6/29/00	847	As Soon As		MEF112[2],MTF112[4],Align_Day,ICR_North,ICR_South
1009	Hookup fiber tracker -South	4 w	8/16/00	9/13/00	1008,373,2144	As Soon As		MTF112[4],PhysU112[2],PhysF112,ICR_South,Platform[0.5]
1010	Hookup fiber tracker - North	4 w	9/14/00	10/11/00	374FF,1009,2152	As Soon As f		MTF112[4],PhysU112[2],PhysF112,ICR_North,Platform[0.5]
1011	Beam Pipe Inserted Into Fiber Tracker	0 w	6/30/00	6/30/00	1008FS+1 d	As Soon As		
1012	Insert south adapter card and support ring	1 w	9/14/00	9/20/00	1009	As Soon As f		
1013	Install adapter end of silicon high mass cables - South	1 w	9/21/00	9/27/00	1012	As Soon As f		MTF111[2],ETF111[2],EEF111[0.5],PhysF111[0.5],PhysU111[0.!
1014	Insert north adapter card and support ring	1 w	10/12/00	10/18/00	1010	As Soon As f		
1015	Install adapter end of silicon high mass cables - North	1 w	10/19/00	10/25/00	1014	As Soon As f		MTF111[2],ETF111[2],EEF111[0.5],PhysF111[0.5],PhysU111[0.!

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1016	Commission fiber tracker	16 w	9/28/00	1/25/01	1010SS+2 w,1005,528SS+1 w	As Soon As f		PhysU112[3],PhysF112[3]
1017	Install south half of central silicon in fiber tracker	2 w	9/21/00	10/4/00	874,2144,1012	As Soon As f		MTF111[4],PhysF111[2],Align_Day[0.2],ICR_South
1018	Hookup south half of central silicon	3 w	10/5/00	10/25/00	1017,1012	As Soon As f		MTF111[4],PhysU111[2],PhysF111,EEF115,ETF115,ICR_South
1019	Checkout south half of silicon detector	5 w	10/5/00	11/8/00	1018SS	As Soon As f		PhysU111[3],PhysF111[3],EEF115,ETF115,ICR_South[0.3]
1020	Install/hookup silicon H-disk south	1 w	10/26/00	11/1/00	1018,872FS+1 w	As Soon As f		MTF111[3],PhysU111[2],PhysF111,Align_Day[0.2],ICR_South
1021	South Silicon Hooked Up and Checked Out	0 w	11/1/00	11/1/00	1020	As Soon As		
1022	Install north half of central silicon in fiber tracker	2 w	11/2/00	11/15/00	875,2152,1010,1021	As Soon As f		MTF111[4],PhysF111[2],Align_Day[0.2],ICR_North
1023	Hookup north half of central silicon	3 w	11/16/00	12/8/00	1022,1014	As Soon As f		MTF111[4],PhysU111[2],PhysF111,EEF115,ETF115,ICR_North
1024	Checkout north half of silicon detector	5 w	11/16/00	12/26/00	1023SS	As Soon As f		PhysU111[3],PhysF111[3],EEF115,ETF115,ICR_North[0.3]
1025	Install/hookup silicon H-disk north	1 w	12/1/00	12/15/00	873FS+1 w,1023	As Soon As f		MTF111[3],PhysU111[2],PhysF111,Align_Day[0.2],ICR_North
1026	North Silicon Hooked Up And Checked Out	0 w	12/15/00	12/15/00	1025	As Soon As		
1027	Final hookup and survey beam pipe	1 w	12/18/00	12/26/00	1026	As Soon As f		MTF100,MEF111[0.25],PhysF111[0.25],Align_Day,ICR_North,IC
1028	M2-Silicon Tracker Installed in Solenoid/Fiber Tracker	0 w	12/15/00	12/15/00	1022,1025	As Soon As		
1029	Silicon And Beam Pipe Installed And Surveyed	0 w	12/26/00	12/26/00	1027	As Soon As		
1031	CALORIMETER FRONT-END ELECTRONICS	377.6 w	8/5/93	2/5/01		As Soon As		
1181	BLS Power Supply Construction	35 w	12/17/99	9/5/00		As Soon As		
1192	Install BLS power supplies	16 w	5/12/00	9/5/00	1191	As Soon As f		ETF121[2],EEF121[0.1],Liston,Minor,Huffman[0.1],Platform
1193	BLS Power Supplies Installed	0 w	9/5/00	9/5/00	1192	As Soon As		
1194	Calibration system construction	160 w	4/1/97	6/26/00		As Soon As		
1204	Installation of Calibration System Started	0 w	11/11/99	11/11/99	1205SS	As Soon As		
1205	Installation/debugging	30 w	11/11/99	6/26/00	1203SS+13 w	As Soon As f		EEU121,PhysU121[2],Lebbolo[0.5],DelaTaille[0.5],Olivier,Bassle
1206	Calibration system Installed & Debugged	0 w	6/26/00	6/26/00	1205	As Soon As		
1207	Timing & Control System construction	101.4 w	9/4/98	9/26/00		As Soon As		
1219	In house timing system tests	2 w	9/5/00	9/18/00	1218	As Soon As f		EEU121[0.5],PhysU121[0.3],Manziona[0.5],Schamberger[0.05],L
1220	Timing System Installed	0 w	9/18/00	9/18/00	1219	As Soon As		
1221	Install Feedthrough Cables	18 w	5/29/96	10/3/96		As Soon As		
1226	Installation	52 w	1/26/00	2/5/01		As Soon As		
1227	Install CC, ECN Preamps	24 w	1/26/00	7/13/00	1087SS+2 w,1089SS+2 w,1205	As Soon As f		ETF121[2],PhysU121[2.5],Liston,Groer,Gao,Tuts[0.5],Minor,PP_
1228	Preamp Installation Started	0 w	1/26/00	1/26/00	1227SS	As Soon As		
1229	Checkout CC, ECN Preamp system	23 w	2/9/00	7/20/00	1209SS+25 w,1227SS+2 w	As Soon As f		EEF121[0.5],ETF121[0.5],PhysU121[2.5],Huffman[0.5],Liston[0.1]
1230	M3-Calorimeter CC,ECN Preamp Installation Complete	0 w	7/20/00	7/20/00	1229	As Soon As		
1231	Install BLS system	6 w	12/6/00	1/22/01	1179SS+2 w,1190SS+2 w,1214	As Soon As f		ETF121[2],PhysU121[0.2],EEF121[0.1],Liston,Minor,Huffman[0.1]
1232	Check Argon Purity	0 w	7/3/00	7/3/00		Start No Ear		
1233	Ready To Fill Cryostat	0 w	9/1/00	9/1/00	1232,2140	Start No Ear		
1234	Cosmic Ray Start with CC	0 w	12/19/00	12/19/00	1231SS+33 %,1227SS+33 %	As Soon As		
1235	Checkout BLS system	5 w	12/20/00	1/29/01	1219,1231SS+2 w	As Soon As f		EEF121[0.5],ETF121[0.5],PhysU121[2],Huffman[0.5],Liston[0.5],
1236	Final checkout	1 w	1/30/01	2/5/01	1229,1235	As Soon As f		PhysU121[3.2],EEF121[0.1],UnknownPhysU121,Groer,Gao,Tuts
1237	M3-CC, ECN Calorimeter System Checked Out	0 w	2/5/01	2/5/01	1229,1236	As Soon As		
1238	Recable ECS Calorimeter	3 w	10/5/00	10/25/00	1017,2135	As Soon As f		MTF121[2],PhysU121[2.5],ETU121,Liston,Minor,Groer[0.25],Gao
1239	Install ECS Preamps	5 w	10/16/00	11/20/00	1227,1238SS+50 %	As Soon As f		ETF121,PhysU121,Liston[0.5],Gao[0.8],Groer[0.2],Minor[0.5],PP
1240	Checkout ECS Preamp system	4.8 w	10/30/00	12/5/00	1239SS+2 w,1170	As Soon As f		EEF121[0.5],ETF121[0.5],PhysU121[3],Huffman[0.5],Liston[0.5],
1241	Calorimeter Ready to Roll In	0 w	2/5/01	2/5/01	1192,1237	As Soon As		
1242	Checkout of Calorimeter Electronics Complete	0 w	2/5/01	2/5/01	1237,1240	As Soon As		
1244	ICD FABRICATION	267 w	6/1/95	10/10/00		As Soon As		
1287	M2-ICD Modules Arrive at Fermilab	0 w	4/24/00	4/24/00	1286	As Soon As		
1307	Install Supports for Backplanes/Crates	1 w	9/13/00	9/19/00	1306FS-1 w	As Soon As f		MTF122[0.25],Platform[0.3]
1308	Install Backplanes/Crates	1 w	9/20/00	9/26/00	1306,1307	As Soon As f		MTF122[0.3],UnknownMTF122[0.3],Platform[0.3]
1326	Install Drawers	2 w	9/27/00	10/10/00	1308,1325	As Soon As f	1.2.2.10.2(5)	k\$[0.02],PhysU122[0.5],StoneA[0.5],CF_Wikway_E[0.5],CF_Wik
1327	LED Calib Fab	37.4 w	12/1/99	9/5/00		As Soon As		
1330	Install LMBs in Backplanes	4 w	6/12/00	7/10/00	1303SS,1329	As Soon As f		MTU122[0.2],Li[0.2]
1332	Platform/Cable Routing	82.8 w	10/13/98	6/21/00		As Soon As		
1338	Install Platform Electronics	1 w	6/15/00	6/21/00	1334	As Soon As f		ETF122[0.5],UnknownETF122[0.5],Platform[0.3]
1339	Install ICD North	1 d	5/4/00	5/4/00	1285,1404	Start No Ear		MTF122[3],PhysU122[3],MTU122,Welder_Day,Crane_Day[0.1],W
1340	Install ICD South	1 d	5/5/00	5/5/00	1287,1402,1339	Start No Ear	1.2.2.10.2(5)	MTF122[3],PhysU122[3],MTU122,k\$(0.02),Welder_Day,Crane_D
1341	M3-InterCryostat Detectors Installed	0 w	5/5/00	5/5/00	1339,1340	As Soon As		
1342	Hookup ICD-North	2 w	9/27/00	10/10/00	1339,1293,1308	As Soon As f		MTF122[3],PhysU122[3],MTU122,ICR_North[0.5],CF_Wikway_E
1343	Hookup ICD-South	1 w	10/11/00	10/17/00	1342,1293,2135,1017	As Soon As f		MTF122[3],PhysU122[3],MTU122,ICR_South[0.5],CF_Wikway_E
1344	Commission ICD	15 w	10/11/00	1/31/01	1342	As Soon As f	1.2.2.11	PhysU122[2],k\$(0.05),ICR_North[0.1],ICR_South[0.1],CF_Wikwa
1346	FORWARD PRESHOWER FABRICATION	218.6 w	4/4/96	9/1/00		As Soon As		
1402	Install FPS-South	1.4 w	4/18/00	4/26/00	1397	As Soon As f		MTF114[2],PhysU114[2],Welder_Day,Crane_Day[0.1],ICR_Sout
1403	M3-Forward Preshower-South Installed	0 w	4/26/00	4/26/00	1402	As Soon As		
1404	Install FPS-North	0.4 w	4/27/00	4/28/00	1401,1402	As Soon As f		MTF114[2],PhysU114[2],Welder_Day,Crane_Day[0.1],ICR_Nort
1405	Hookup FPS-North	3 w	8/28/00	9/18/00	1364SS+50 %,1404,2150	As Soon As f		MTF114[2],PhysU114[2],ICR_North,Platform[0.5]
1406	Hookup FPS-South	3 w	10/5/00	10/25/00	1405,1364,2135,1017	As Soon As f		MTF114[2],PhysU114[2],ICR_South,Platform[0.5]
1407	Commission FPS	18 w	9/19/00	1/30/01	1405	As Soon As f		PhysU114[2],ICR_North[0.1],ICR_South[0.1],Platform[0.1]
1409	LEVEL Ø FABRICATION	188.8 w	4/2/97	1/25/01		Start No Ear		
1411	Luminosity Monitor Detectors	147.4 w	4/2/97	3/29/00		As Soon As		
1421	Detectors ready	0 w	3/29/00	3/29/00	1420	As Soon As		
1422	Luminosity Monitor Electronics	188.8 w	4/2/97	1/25/01		As Soon As		
1430	Install Cables Between Detector and Electronics	4 w	8/28/00	9/25/00	1429,2150	As Soon As f		MTF142[0.5]
1432	Luminosity Monitor Electronics Ready	0 w	1/25/01	1/25/01	1422	As Soon As		
1433	Monitoring, Calibration, Database, and Accelerator Interface	123.6 w	4/1/98	9/27/00		As Soon As		

DO Upgrade Schedule
Installation Tasks

ID	Task Name	Duration	Start	Finish	Predecessors	Constraint	WBS	Resource Names
1438	Install Level Ø-South	1 d	5/8/00	5/8/00	1411,1340	As Soon As f		MTF142[3],PhysU142[2],ICR_South[0.2]
1439	Install Level Ø-North	1 d	5/8/00	5/8/00	1411,1339	As Soon As f		MTF142[3],PhysU142[2],ICR_North[0.2]
1440	M3-Level Ø-South Installed	0 w	5/8/00	5/8/00	1438	As Soon As		
1441	Hookup Level Ø-North	1 w	9/19/00	9/25/00	1405,1439,1430FF	As Soon As f		MTF142[3],PhysU142[2],ICR_North[0.2],Platform[0.2]
1442	Hookup Level Ø-South	1 w	10/26/00	11/1/00	1406,1438,2135,1017,1430FF	As Soon As f		MTF142[3],PhysU142[2],ICR_South[0.2],Platform[0.2]
1443	Commission Level Ø	17 w	9/26/00	1/30/01	1441	As Soon As f		PhysU142[2],ICR_North[0.1],ICR_South[0.1],Platform[0.1]
1445	MUON CENTRAL DETECTOR UPGRADE	248.2 w	11/27/95	11/22/00		As Soon As		
1447	WAMUS CHAMBER MODIFICATION/COMMISSIONING	225.4 w	4/1/96	10/17/00		As Soon As		
1459	Install 3-deck A PDT's	2.8 w	12/1/98	12/23/98	1453,1458,1520	As Soon As f		MTF132[0.5]
1460	Install 4-deck A PDT's	1.6 w	12/9/98	12/18/98	1457,1520	As Soon As f		MTF132[3]
1461	Prepare EFB Bottom	8 d	1/11/99	1/20/99		Start No Earl		MTF132[1.5]
1462	Prepare CFB Bottom	3 d	1/21/99	1/25/99	1461	As Soon As f		MTF132[1.5]
1463	Prepare CFC Bottom (includes welding)	4 w	1/18/99	2/12/99	1461FS-3 d	As Soon As f		MTF132,Welder_Day
1469	Install EFB Bottom	1 w	3/25/99	3/31/99	1464FS+8 w	As Soon As f		MTF132[2]
1470	Install CFB Bottom	1 w	2/4/99	2/10/99	1465	As Soon As f		MTF132[2]
1471	Install CFC Bottom	1 w	2/18/99	2/24/99	1466	As Soon As f		ETF132[2]
1472	Modify/Test Counting House HV	25.4 w	5/17/99	11/12/99		Start No Earl		MTF132[0.5],PhysU132[0.25]
1474	Install Service Cards/Delay Boards	72.2 w	2/4/98	7/16/99	1473SS+20 w	As Soon As f		PhysU132[0.1]
1480	Modify EF Vertical Trusses	55 w	5/3/99	6/12/00		Start No Earl		MTF132[0.5],Welder_Day[0.2]
1482	Prepare PDT's for Electronics Mounts	16 w	12/14/98	4/16/99	1481FS-14 w	As Soon As f	1.3.2.4.3(0.46)	MTF132[0.25],PhysF132[0.25],k\$[0.15],k\$c[0.02]
1483	Install electronics mounts	40 w	8/16/99	6/8/00	1482	Start No Earl		MTF132[0.25]
1485	Install On-Detector Gas System Hardware	30 w	11/17/99	6/30/00	1484	As Soon As f		MTF132[0.5]
1487	Install new WAMUS gas room hardware - Stage 1	4 w	6/13/00	7/11/00	1486	As Soon As f	1.3.2.4.7	MTF132[0.75]
1489	Install recirculating system	2 w	8/9/00	8/22/00	1488FS+4 w,1487	As Soon As f		MTF132,Barger
1490	Begin/Check PDT Gas Flow	2 w	7/3/00	7/17/00	1485	As Soon As f		PhysF132[0.25]
1491	Connect to gas room hardware and check flow	1 w	7/18/00	7/24/00	1487,1490	As Soon As f		MTF132[0.5]
1492	Fabricate 10% Front End Cables	2 w	3/15/99	3/26/99		Start No Earl		MTF132[0.5]
1493	Fabricate 90% Front End Cables	20 w	6/14/99	11/2/99	1492	Start No Earl		MTF132[0.5]
1494	Test and connect cable plant	40 w	9/7/99	6/29/00		Start No Earl		PhysU132[0.1],PhysF132[0.1],MTF132
1495	Dress/Cleanup LVPS on Truss	2 w	1/4/99	1/15/99		Start No Earl		ETF132
1499	Install modified LVPS-CF Truss	12 w	6/8/99	8/31/99	1498	As Soon As f		ETF132[0.5],PhysF132[0.1]
1500	Install modified LVPS-EF Trusses	3 w	9/13/99	10/1/99	1499	Start No Earl		
1501	Modify MCH3 Crates	10 w	6/14/99	8/23/99		Start No Earl		ETF132[0.25]
1502	Commission 2% of PDT's	9.4 w	8/24/99	10/28/99	1501,1908SS	As Soon As f		PhysU132,PhysF132
1503	M3-2% of Muon PDT's Commissioned	0 w	10/28/99	10/28/99	1502	As Soon As		
1504	Relocate East C-layer Vertical PDT's	2 w	5/20/98	6/3/98	1647	As Soon As f		MTF132
1505	West Side PDT Phase 2 Alignment - Part 1	1 w	10/11/99	10/15/99	1459,1460	Start No Earl		PhysF132,MTF132[0.25],Welder_Day[0.25]
1506	West Side PDT Phase 2 Alignment - Part 2	3 w	11/8/99	11/30/99	1505	Start No Earl		MTF132[2],PhysF132
1507	East Side PDT Phase 2 Alignment	7 w	3/27/00	5/12/00	1506	Start No Earl		PhysF132
1508	Modify EFB PDT Bottom Mounts	2.4 w	2/21/00	3/7/00		Start No Earl		MTF132[2]
1509	Modify PDT 247 mounting hardware	1 w	6/5/00	6/9/00	1508	Start No Earl		MTF132,Welder_Day[0.5]
1510	North PDT Phase 2 Alignment	3 w	6/5/00	6/23/00	1507,1508	Start No Earl		PhysF132
1511	South PDT Phase 2 alignment	3 w	6/26/00	7/17/00	1509,1510	As Soon As f		
1512	Refurbish Cable Plant-FY98	8 w	8/3/98	9/28/98		Start No Earl	1.3.2.4.1,1.3.2.4.2(07),1.3.2.4.3	MTF135,PhysF132[0.2],k\$[0.52],k\$c[0.05]
1513	Refurbish Cable Plant-FY99	49 w	10/1/98	9/29/99		Start No Earl	1.3.2.4.2(93),1.3.2.4.4(2)	MTF132[0.25],PhysF132[0.1],k\$[0.42],k\$c[0.08]
1514	Install LVPS Harness and Hookups	31 w	10/4/99	5/23/00	1499,1500	Start No Earl		EEF135[0.1],ETF132[0.5],PhysF132[0.1]
1515	Commission Remainder of PDT's	13 w	7/18/00	10/17/00	1490,1501,1514,1914SS	As Soon As f		PhysU132[2],PhysF132[2],MTF132[2],ETF132
1516	PDT Commissioning Complete	0 w	10/17/00	10/17/00	1515	As Soon As		
1517	A-LAYER SCINTILLATION COUNTERS	209 w	9/3/96	11/22/00		As Soon As		
1546	CFA Installation	160.6 w	9/16/96	12/14/99		As Soon As		
1548	Modify Access Platforms	3 w	5/10/99	5/31/99	1547	As Soon As f		MTF132[2]
1556	Install HV Fanouts	4 w	5/3/99	5/31/99		Start No Earl		MTF132[0.5]
1559	Install A Layer Top Mounts	2 w	3/1/99	3/12/99	1549	Start No Earl		MTF132[3],PhysF132[0.1]
1560	Install A Layer Top 1 Row	1 w	3/15/99	3/19/99	1533,1545SS+10 %,1559	As Soon As f		MTF132,PhysF132[0.25]
1561	Install A Layer Top Remainder	2 w	5/13/99	5/27/99	1545,1557,1558,1560	As Soon As f		MTF132[2],PhysU132[0.5]
1562	Install A Layer Side Mounts-10%	1 w	1/6/99	1/12/99	1549	As Soon As f		MTF132
1563	Install A Layer Side Counters-10%	4 w	1/6/99	2/3/99	1562SS+10 %	As Soon As f		MTF132[0.5]
1564	Install A-Layer Side Mounts-Remainder	3 w	3/22/99	4/9/99	1560	As Soon As f		MTF132,PhysF132[0.25]
1565	Install A Layer Side Counters Remainder	4 w	5/28/99	6/24/99	1545,1561,1564	As Soon As f		MTF132[2],PhysU132[0.5]
1567	Install A-Layer floor	4.4 w	10/14/99	11/12/99	1566	As Soon As f		MTF132[2]
1568	Install A Layer Bottom Mounts	2.2 w	11/15/99	12/1/99	1549,1562,1567	As Soon As f		MTF132
1569	Install A Layer Bottom Counters	1 w	12/2/99	12/8/99	1545,1568	As Soon As f		MTF132[2],PhysU132[0.5]
1571	Fabricate and Install Remaining Side and Top Cables	8 w	6/15/99	8/10/99	1570	As Soon As f		PhysU132,MTF132[4]
1572	Fabricate and Install Bottom Counter Cables	0.8 w	12/9/99	12/14/99	1569	As Soon As f		MTF132[2]
1573	M3-Muon CFA Installation Complete	0 w	12/14/99	12/14/99	1571,1572	As Soon As		
1574	CALIBRATION SYSTEM	136.8 w	8/1/97	5/12/00		As Soon As		
1579	Install Calibration System	18 w	1/10/00	5/12/00	1578	As Soon As f		MTF132[0.25],PhysU132[0.25]
1580	COMMISSION A-LAYER SCINTILLATION COUNTERS	31 w	4/17/00	11/22/00		As Soon As		
1582	10% of CFA Commissioned	0 w	7/3/00	7/3/00	1581	As Soon As		
1584	CFA Commissioning Complete	0 w	11/22/00	11/22/00	1583	As Soon As		
1585	B- AND C-LAYER SCINTILLATION COUNTERS	229.2 w	11/27/95	7/11/00		As Soon As		
1586	BOTTOM COUNTERS	225.4 w	11/27/95	6/13/00		As Soon As		

ID	Task Name	Duration	Start	Finish	Predecessors	Constraint	WBS	Resource Names
1587	CFB Counters	169.4 w	11/27/95	4/26/99		As Soon As		
1595	Install West CFB Counters	1 w	3/1/99	3/5/99	1470,1594FS+8 w	Start No Ear		MTF132[2]
1596	Install East CFB Counters	1 w	3/8/99	3/12/99	1470,1595	As Soon As f		MTF132[2]
1599	Install 6 Front End Crates	2 w	3/30/99	4/12/99	1598	As Soon As f		MTF132
1600	Install CFB Cables	2 w	4/13/99	4/26/99	1595,1599	As Soon As f		MTF132,ETF132
1601	EFB and CFC Counters	157.6 w	8/1/96	10/7/99		As Soon As		
1625	Install EFB Counters	1 w	4/1/99	4/7/99	1469,1594,1624	As Soon As f		MTF132[2]
1626	Install Cables	2 w	4/13/99	4/26/99	1599,1625	As Soon As f		MTF132,ETF132
1627	Side B Counters	116.6 w	2/5/98	6/13/00		As Soon As		
1633	Modify Truss for Side B Counters	6 d	1/15/99	1/22/99		Start No Ear		MTF132
1634	Install 90% of Side B Counters	2 w	3/18/99	3/31/99	1632,1633	As Soon As f		MTF132[0.4]
1635	Install 90% of Side B Cables	1 w	10/18/99	10/22/99	1599,1634	As Soon As f		MTF132,ETF132
1636	Install Remaining 10% of Side B Counters and Cables	0.2 w	6/13/00	6/13/00	1480,1509	As Soon As f		
1637	Hole Counters	18 w	2/22/99	6/28/99		As Soon As		
1643	Install Hole Counters and Cables	1 w	6/22/99	6/28/99	1642	As Soon As f		MTF132[0.25],PhysF132[0.25]
1644	B- AND C- LAYER CALIBRATION SYSTEM	182 w	10/1/96	6/12/00		As Soon As		
1649	Fab/Test/Install Calibration System	55 w	5/3/99	6/12/00	1648	Start No Ear		MTF132[0.75],PhysU132[1.25]
1651	Install counters and cables for PDT 247	0.2 w	7/11/00	7/11/00	1509,2135	As Soon As f		MTF132,PhysF132
1652	Commission B/C Counters	12 w	4/10/00	7/3/00	1973FS+8 w,1994SS	As Soon As f		PhysU132[2],PhysF132,MTF132,ETF132[0.5]
1654	MUON FORWARD TRACKING DETECTORS	218.2 w	8/1/96	1/3/01		As Soon As		
1676	FABRICATION OF MDT OCTANTS	162.2 w	6/2/97	9/12/00		As Soon As		
1714	A-Layer Octants Assembled	0 w	1/21/00	1/21/00	1713SS+33 %	As Soon As		
1715	C-Layer Octants Assembled	0 w	7/3/00	7/3/00	1713SS+80 %	As Soon As		
1716	B-Layer Octants Assembled	0 w	9/1/00	9/1/00	1713	As Soon As		
1717	All MDT Octants Assembled	0 w	9/1/00	9/1/00	1713	As Soon As		
1718	INSTALLATION AND HOOKUP	63 w	9/22/99	1/3/01		As Soon As		
1719	Design and Prepare Drawings for Octant Installation Fixtures	20 w	9/22/99	2/24/00	1689	As Soon As f		MEF134[0.5],DesF134[0.75]
1720	Fabricate and Test A-Layer Installation Fixtures	6 w	2/25/00	4/6/00	1719	As Soon As f		MTF134
1721	Install Gas System	26 w	3/13/00	9/13/00	1710SS+12 w	Start No Ear		MTF134[0.5],DAB_Gas_Plumbing[0.5]
1722	Mount A-Layer North MDT Octants Onto Supports	4 w	5/4/00	6/1/00	1697SS+50 %,1712SS+16 %,17	Start No Ear		MTF134[2],PhysU134[0.25],MEF134,DesF134[0.5],Crane_Day,C
1723	Connect to HV System	4 w	5/11/00	6/8/00	1705,1706,1722SS+1 w	As Soon As f		PhysU134[0.25],MTF134[0.4],DAB_Pit
1724	Connect to Front End Electronics	4 w	5/11/00	6/8/00	1703,1722SS+1 w	As Soon As f		PhysU134[0.25],MTF134[0.4]
1725	Survey A-Layer North MDT Planes	4 w	5/11/00	6/8/00	1722SS+1 w	As Soon As f		PhysF134[0.1],Align_Day,MEF134[0.1],DAB_Pit
1726	Mount A-Layer South MDT Octants Onto Supports	4 w	5/11/00	6/8/00	1697,1712SS+33 %,1722SS+1 w	As Soon As f		MTF134[2],PhysU134[0.25],MEF134,DesF134,Crane_Day,DAB_
1727	Connect to HV System	4 w	5/18/00	6/15/00	1705,1706,1726SS+1 w	As Soon As f		PhysU134[0.25],MTF134[0.1]
1728	Connect to Front End Electronics	4 w	5/18/00	6/15/00	1703,1726SS+1 w	As Soon As f		PhysU134[0.25],MTF134[0.1]
1729	Survey A-Layer South MDT Planes	4 w	5/18/00	6/15/00	1726SS+1 w	As Soon As f		PhysF134[0.1],Align_Day,MEF134[0.1],DAB_Pit
1730	M3-Muon Forward Tracker A-Layer Planes Installed	0 w	6/15/00	6/15/00	1725,1729	As Soon As		
1731	Mount C-Layer North MDT Octants Onto Supports	1.4 w	9/13/00	9/21/00	1712SS+50 %,1726,2149,1699,2	As Soon As f		MTF134[2],PhysU134[0.25],MEF134,DesF134,Crane_Day,DAB_
1732	Connect to HV system	1 w	9/20/00	9/26/00	1731SS+1 w	As Soon As f		PhysU134[0.25],MTF134[0.1]
1733	Connect to Front End Electronics	1 w	9/20/00	9/26/00	1731SS+1 w	As Soon As f		PhysU134[0.25],MTF134[0.1]
1734	Survey C-Layer North MDT Planes	1 w	9/20/00	9/26/00	1731SS+1 w	As Soon As f		PhysF134[0.1],Align_Day,MEF134[0.1],DAB_HiBay[0.5]
1735	Mount C-Layer South MDT Octants Onto Supports	1.4 w	9/28/00	10/6/00	1712SS+67 %,1731,2144,1699,2	As Soon As		MTF134[2],PhysU134[0.25],MEF134,DesF134,Crane_Day,DAF
1736	Connect to HV system	1 w	10/5/00	10/11/00	1735SS+1 w	As Soon As f		PhysU134[0.25],MTF134[0.1]
1737	Connect to Front End Electronics	1 w	10/5/00	10/11/00	1735SS+1 w	As Soon As f		PhysU134[0.25],MTF134[0.1]
1738	Survey C-Layer South MDT Planes	1 w	10/5/00	10/11/00	1735SS+1 w	As Soon As f		PhysF134[0.1],Align_Day,MEF134[0.1],DAB_Pit,Sidewalk_North
1739	M3-Muon Forward Tracker C-Layer Planes Installed	0 w	10/11/00	10/11/00	1738,1734	As Soon As		
1740	Mount B-Layer North MDT Octants Onto Supports	1.4 w	11/6/00	11/14/00	1712SS+83 %,1701,1856	Start No Ear		MTF134[2],PhysU134[0.25],MEF134,DesF134,Crane_Day,Sidi
1741	Connect to HV system	1 w	11/13/00	11/17/00	1740SS+1 w	As Soon As f		PhysU134[0.25],MTF134[0.1]
1742	Connect to Front End Electronics	1 w	11/13/00	11/17/00	1740SS+1 w	As Soon As f		PhysU134[0.25],MTF134[0.1]
1743	Survey B-Layer North MDT Planes	1 w	11/13/00	11/17/00	1740SS+1 w	As Soon As f		PhysF134[0.1],Align_Day,MEF134[0.1],Sidewalk_South
1744	Mount B-Layer South MDT Octants Onto Supports	1.4 w	11/15/00	11/27/00	1712,1701,1740	As Soon As		MTF134[2],PhysU134[0.25],MEF134,DesF134,Crane_Day,Sidi
1745	Connect to HV system	1 w	11/22/00	11/30/00	1744SS+1 w	As Soon As f		PhysU134[0.25],MTF134[0.1]
1746	Connect to Front End Electronics	1 w	11/22/00	11/30/00	1744SS+1 w	As Soon As f		PhysU134[0.25],MTF134[0.1]
1747	Survey B-Layer South MDT Planes	1 w	11/22/00	11/30/00	1744SS+1 w	As Soon As f		PhysF134[0.1],Align_Day[3],MEF134[0.1],Sidewalk_North
1748	Muon Forward Tracker B-Layer Planes Installed	0 w	11/30/00	11/30/00	1747,1743	As Soon As		
1749	All MDT Planes Installed	0 w	11/30/00	11/30/00	1730,1739,1748	As Soon As		
1750	Commission using cosmic rays	14 w	9/20/00	1/3/01	1730,1749FF+4 w	As Soon As f		PhysU134[2],PhysF134
1751	MDT Commissioning Complete	0 w	1/3/01	1/3/01	1750	As Soon As		
1757	MUON FORWARD TRIGGER DETECTORS	223 w	8/1/96	2/6/01		As Soon As		
1793	FABRICATE COUNTER PLANES	201.4 w	8/1/96	8/29/00		As Soon As		
1813	M3-Muon Forward Trigger Detector Octant Assembly Begun	0 w	5/27/99	5/27/99	1812SS	As Soon As		
1814	A-Layer Pixel Octants Assembled	0 w	9/2/99	9/2/99	1812SS+33 %	As Soon As		
1815	C-Layer Pixel Octants Assembled	0 w	12/13/99	12/13/99	1812SS+66 %	As Soon As		
1816	B-Layer Pixel Octants Assembled	0 w	2/23/00	2/23/00	1812	As Soon As		
1817	All Pixel Octants Assembled	0 w	2/23/00	2/23/00	1814,1815,1816	As Soon As		
1836	INSTALLATION AND HOOKUP	34.2 w	6/1/00	2/6/01		As Soon As		
1837	Assemble A-Layer North pixel plane on shield wall	4 w	6/1/00	6/28/00		Start No Ear		
1838	Install/load test north A-Layer pixel mounts	1 w	8/29/00	9/5/00	1820,2151	As Soon As f		
1839	Mount A-Layer North pixel plane onto supports	1 w	9/6/00	9/12/00	1818SS+16 %,1725FS+1 w,213	As Soon As f		MTF133[2],PhysU133[0.25],MEF133,DesF133,Crane_Day,DAB_
1840	Connect to HV system	2 w	9/13/00	9/26/00	1839SS+1 w	As Soon As f		PhysU133[0.25],MTF133[0.1]
1841	Connect to Front End Electronics	2 w	9/13/00	9/26/00	1839SS+1 w,1988SS,1984SS	As Soon As f		PhysU133[0.25],MTF133[0.1]

ID	Task Name	Duration	Start	Finish	Predecessors	Constraint	WBS	Resource Names
1842	Survey A-layer North pixel plane	1 w	9/13/00	9/19/00	1839	As Soon As f		PhysF133[0.1],MEF133[0.1],Align_Day,DAB_Pit
1843	Assemble A-layer South pixel plane on shield wall	1 w	9/13/00	9/19/00	1839	As Soon As f		
1845	Mount A-Layer South pixel plane onto supports	1 w	9/21/00	9/27/00	1818SS+33 %1729FS+1 w,184	As Soon As		MTF133[2],MEF133,DesF133,PhysU133[0.25],Crane_Day,DAE
1846	Connect to HV system	2 w	9/28/00	10/11/00	1845SS+1 w	As Soon As f		PhysU133[0.25],MTF133[0.1]
1847	Connect to Front End Electronics	2 w	9/28/00	10/11/00	1845SS+1 w	As Soon As f		PhysU133[0.25],MTF133[0.1]
1848	Survey A-layer South Pixel Plane	1 w	9/28/00	10/4/00	1845	As Soon As f		PhysF133[0.1],MEF133[0.1],Align_Day,DAB_Pit
1849	M3-Muon Forward Trigger Detector A-Layer Planes Installed	0 w	10/4/00	10/4/00	1842, 1848	As Soon As		
1850	Assemble C-layer North pixel plane on shield wall	1.4 w	10/9/00	10/17/00	1845,1735	As Soon As		
1851	Mount C-layer North pixel plane onto supports	1 w	10/18/00	10/24/00	1818SS+50 %1734FS+1 w,182	As Soon As		MTF133[2],PhysU133[0.25],MEF133,DesF133,Crane_Day,DAE
1852	Connect to HV system	1 w	10/25/00	10/31/00	1851SS+1 w	As Soon As f		PhysU133[0.25],MTF133[0.1]
1853	Connect to Front End Electronics	1 w	10/25/00	10/31/00	1851SS+1 w	As Soon As f		PhysU133[0.25],MTF133[0.1]
1854	Survey C-Layer North pixel plane	1 w	10/25/00	10/31/00	1851SS+1 w	As Soon As f		PhysF133[0.1],MEF133[0.1],Align_Day,DAB_HiBay[0.5]
1855	Assemble C-layer South pixel plane on shield wall	1 w	10/25/00	10/31/00	1851	As Soon As		
1856	Mount C-Layer South pixel plane onto supports	0.6 w	11/1/00	11/3/00	1818SS+67 %1738FS+1 w,182	As Soon As		MTF133[2],PhysU133[0.25],MEF133,DesF133,Crane_Day,DAE
1857	Connect to HV system	1 w	11/8/00	11/14/00	1856SS+1 w	As Soon As f		PhysU133[0.25],MTF133[0.1]
1858	Connect to Front End Electronics	1 w	11/8/00	11/14/00	1856SS+1 w	As Soon As f		PhysU133[0.25],MTF133[0.1]
1859	Survey C-Layer South pixel plane	1 w	11/6/00	11/10/00	1856	As Soon As f		PhysF133[0.1],MEF133[0.1],Align_Day,DAB_Pit,Sidewalk_North
1860	M3-Muon Forward Trigger Detector C-Layer Planes Installed	0 w	11/10/00	11/10/00	1859, 1854	As Soon As		
1861	Assemble B-layer North pixel plane on shield wall	1.4 w	11/28/00	12/6/00	1856,1744,2159	As Soon As		
1862	Mount B-Layer North pixel octants onto supports	1 w	12/7/00	12/13/00	1818SS+83 %1743FS+1 w,182	As Soon As		MTF133[2],PhysU133[0.25],MEF133,DesF133,Crane_Day,Sid
1863	Connect to HV system	1 w	12/14/00	12/20/00	1862SS+1 w	As Soon As f		PhysU133[0.25],MTF133[0.1]
1864	Connect to Front End Electronics	1 w	12/14/00	12/20/00	1862SS+1 w	As Soon As f		PhysU133[0.25],MTF133[0.1]
1865	Survey B-Layer North pixel plane	1 w	12/14/00	12/20/00	1862	As Soon As f		PhysF133[0.1],MEF133[0.1],Align_Day,Sidewalk_South
1866	Assemble B-layer South pixel plane on shield wall	1 w	12/14/00	12/20/00	1862	As Soon As		
1867	Mount B-Layer South pixel octants onto supports	1 w	12/21/00	1/2/01	1818,1747FS+1 w,1826,1866	As Soon As		MTF133[2],PhysU133[0.25],MEF133,DesF133,Crane_Day,Sid
1868	Connect to HV system	1 w	1/3/01	1/9/01	1867SS+1 w	As Soon As f		PhysU133[0.25],MTF133[0.1]
1869	Connect to Front End Electronics	1 w	1/3/01	1/9/01	1867SS+1 w	As Soon As f		PhysU133[0.25],MTF133[0.1]
1870	Survey B-Layer South pixel plane	1 w	1/3/01	1/9/01	1867	As Soon As		PhysF133[0.1],MEF133[0.1],Align_Day,Sidewalk_North
1871	M3- Muon Forward Trigger Detector B-Layer Planes Installed	0 w	1/9/01	1/9/01	1865, 1870	As Soon As		
1872	All Muon Forward Trigger Detector Planes Installed	0 w	1/9/01	1/9/01	1849, 1860, 1871	As Soon As		
1873	Commission using cosmic rays	15 w	10/17/00	2/6/01	1849,1872FF+4 w	As Soon As f		PhysU133[2],PhysF133
1874	Pixel Commissioning Complete	0 w	2/6/01	2/6/01	1873	As Soon As		
1880	MUON ELECTRONICS	264.4 w	9/4/95	1/2/01		As Soon As		
1882	WAMUS Front End Electronics	239 w	9/4/95	6/27/00		As Soon As		
1906	10% CB Electronics Fabricated	0 w	11/30/98	11/30/98	1905	As Soon As		
1912	FEB, CB Production Complete	0 w	4/10/00	4/10/00	1911	As Soon As		
1914	Install Production FEB, CB	26 w	12/14/99	6/27/00	1913SS+2 w	As Soon As f		PhysU135[2],EEF135[0.1],PhysF135,ETF135[0.5]
1916	MDT FRONT END ELECTRONICS	246.2 w	9/4/95	8/17/00		As Soon As		
1917	MDT ADB	240.4 w	9/4/95	7/7/00		As Soon As		
1930	Install 10% MDT ADB	8 w	2/26/99	4/22/99	1929SS+4 w	As Soon As f		PhysU135,EEU135[0.1],ETF135[0.5]
1936	Install production MDT ADB	36 w	10/12/99	7/7/00	1935SS+4 w,1708SS	As Soon As f		PhysU135,EEU135[0.1],ETF135[0.5]
1937	MDT MDC/MDRC Cards	246.2 w	9/4/95	8/17/00		As Soon As		
1953	Install 10% MDC, MDRC	4 w	9/17/99	10/14/99	1952SS+2 w	As Soon As f		PhysU135,ETU135,EEF135[0.1],ETF135[0.5]
1962	Install production MDC, MDRC	13 w	5/17/00	8/17/00	1958SS+4 w,1961SS+4 w	As Soon As f		PhysU135[2],ETU135,EEF135[0.1],PhysF135,ETF135[0.5]
1964	Scintillator Electronics: SFE/SRC Cards	197 w	8/1/96	7/28/00		As Soon As		
1988	Install 10% SFE, SRC	9 w	11/12/99	1/31/00	1987SS+8 w	As Soon As f		PhysU135,EEF135[0.1],PhysF135,ETF135[0.5]
1994	Install production SFE,SRC	15 w	3/28/00	7/12/00	1993SS+2 w	As Soon As f		PhysU135,EEF135[0.1],PhysF135,ETF135[0.5]
1996	Readout Electronics: MRC/MFC Cards	264.4 w	9/4/95	1/2/01		As Soon As		
2035	Install and Commission Production MRC, MFC	12 w	10/3/00	1/2/01	2008SS+4 w,2021SS+4 w,2028	As Soon As f		PhysU135[2],EEF135[0.1],ETF135[0.5]
2038	FORWARD SHIELDING	148.6 w	8/1/97	8/7/00		As Soon As		
2069	Shielding Box Ass'y	26 w	12/2/99	6/15/00		As Soon As		
2080	Assemble and Install N&S EF Plug	21.2 w	11/12/99	4/25/00		As Soon As		
2083	Install Boxes on Cores	6 d	12/10/99	12/17/99	2071,2082	As Soon As f		MTF130,Welder_Day
2084	Prepare Magnet Hole	1 d	2/28/00	2/28/00	2083	Start No Earl		MTF130[2],Welder_Day
2085	Rework Plugs	2 w	4/10/00	4/21/00	2084	Start No Earl		
2086	Install Plug w/ SAMUS Lifting Fixture	2 d	4/24/00	4/25/00	2085	As Soon As f		MTF130[2]
2087	Assemble/Test N EMC Bottom Truss & Shield	21.4 w	1/17/00	6/14/00		As Soon As		
2088	Install Rollers & Housings on EMC Truss Rails	6 d	2/16/00	2/23/00	2067SS+50 %	As Soon As f		MEF130[0.2],MTF130[0.5]
2089	Move N Middle and Clamshell Cores to DAB	1 d	1/17/00	1/17/00	2072,2074	Start No Earl		
2090	Install Bottom Box on Bottom Middle Core Section	3 d	1/18/00	1/20/00	2072,2089	As Soon As f		MEF130[0.1],MTF130,Welder_Day
2091	Install Bottom Middle Ass'y Onto EMC Truss	1 d	6/8/00	6/8/00	2059,2088,2090,2097	As Soon As f		MEF130,MTF130[2],Crane_Day[0.1]
2092	Secure Side Boxes on Middle Core Section	2 d	1/18/00	1/19/00	2072,2089	As Soon As f		MEF130[0.1],MTF130,Welder_Day,Crane_Day[0.1]
2093	Install Top Box on Top Middle Core Section	2 d	1/20/00	1/21/00	2089,2092	As Soon As f		MEF130[0.1],MTF130,Welder_Day,Crane_Day[0.1]
2094	Install Top Middle Ass'y Onto Bottom Ass'y	1 d	1/24/00	1/24/00	2093	As Soon As f		MEF130,MTF130[2],Crane_Day[0.1]
2095	Install Clamshell Boxes onto Clamshell Cores	5 d	1/24/00	1/28/00	2074,2089	As Soon As f		MEF130[0.1],MTF130,Welder_Day
2096	Rework Middle Piece Shielding - North	6 w	4/17/00	5/26/00		Start No Earl		
2097	Install N Clamshells Onto EMC Truss	3 d	6/5/00	6/7/00	2088,2077	As Soon As f		MEF130[0.5],MTF130[2],Crane_Day[0.1]
2098	Test/survey Middle Section Movement	3 d	6/8/00	6/12/00	2094,2097	As Soon As f		MEF130[0.5],MTF130[2]
2099	Test Clamshell Section Movements	2 d	6/13/00	6/14/00	2098	As Soon As f		MEF130[0.5],MTF130[2]
2100	North Truss Testing Complete	0 w	6/14/00	6/14/00	2087	As Soon As		
2101	Assemble/Test S EMC Bottom Truss & Shield	24 w	1/17/00	7/3/00		As Soon As		
2102	Install Rollers & Housings on EMC Truss Rails	3 d	6/15/00	6/19/00	2068,2099	As Soon As f		MEF130[0.2],MTF130,Crane_Day[0.1]

ID	Task Name	Duration	Start	Finish	Predecessors	Constraint	WBS	Resource Names
2103	Move S Middle and Clamshell Cores to DAB	1 d	1/17/00	1/17/00	2073,2075,2087	As Soon As f		
2104	Install Bottom Box on Bottom Middle Core Sections	3 d	1/18/00	1/20/00	2073,2103	As Soon As f		MEF130[0.1],MTF130,Welder_Day
2105	Install Bottom Middle Ass'y Onto EMC Truss	1 d	6/23/00	6/23/00	2102,2104,2111,2079	As Soon As f		MEF130,MTF130[2],Crane_Day[0.1]
2106	Secure Side Boxes on Middle Core Section	2 d	1/21/00	1/24/00	2104	As Soon As f		MEF130[0.1],MTF130,Welder_Day,Crane_Day[0.1]
2107	Install Top Box on Top Middle Core Section	2 d	1/18/00	1/19/00	2073,2103	As Soon As f		MEF130[0.1],MTF130,Welder_Day,Crane_Day[0.1]
2108	Install Top Middle Ass'y Onto Bottom Ass'y	1 d	6/26/00	6/26/00	2105,2079	As Soon As f		MEF130,MTF130[2],Crane_Day[0.1]
2109	Install Clamshell Boxes Onto Clamshell Cores	4 d	1/21/00	1/26/00	2075,2103	As Soon As f		MEF130[0.1],MTF130,Welder_Day,Crane_Day[0.1]
2110	Rework Middle Piece Shielding - South	7 w	4/17/00	6/5/00	2109	Start No Ear		
2111	Install S Clamshells Onto EMC Truss	3 d	6/20/00	6/22/00	2102,2110	As Soon As f		MEF130[0.5],MTF130[2],Crane_Day[0.1]
2112	Test/survey Middle Section Movement	3 d	6/27/00	6/29/00	2108,2111	As Soon As f		MEF130[0.5],MTF130[2]
2113	Test Clamshell Section Movements	2 d	6/30/00	7/3/00	2112	As Soon As f		MEF130[0.5],MTF130[2]
2114	South Truss Testing Complete	0 w	7/3/00	7/3/00	2101	As Soon As		
2115	Final Assembly of S EMC Truss	2.4 w	7/5/00	7/20/00		As Soon As		
2116	Install Octant Supports	3 d	7/18/00	7/20/00	1699,2114	As Soon As f		MTF130[2],Welder_Day,Crane_Day[0.1]
2117	Install Readout & VME Crates	3 d	7/5/00	7/7/00	2114	As Soon As f		MTF130,Welder_Day[0.2]
2118	Install MDT Gas Lines	3 d	7/10/00	7/12/00	2117	As Soon As f		MTF130[2],Welder_Day,DAB_Gas_Plumbing
2119	Install Power and Lights	3 d	7/13/00	7/17/00	2118	As Soon As f		MTF130[2],ETF130[0.75],Elect[2.5],Welder_Day
2120	Install Gas/Fire Protection Instrumentation	3 d	7/18/00	7/20/00	2119	As Soon As f		MTF130[2],Welder_Day
2121	Final Assembly of N EMC Truss	3 w	7/18/00	8/7/00		As Soon As		
2122	Install Octant Supports	3 d	7/18/00	7/20/00	1699,2100	As Soon As f		MTF130[2],Welder_Day,Crane_Day[0.1]
2123	Install Readout & VME Crates	3 d	7/21/00	7/25/00	2100,2120	As Soon As f		MTF130,Welder_Day[0.2]
2124	Install MDT Gas Lines	3 d	7/26/00	7/28/00	2123	As Soon As f		MTF130[2],Welder_Day,DAB_Gas_Plumbing
2125	Install Power and Lights	3 d	7/31/00	8/2/00	2124	As Soon As f		MTF130[2],ETF130[0.75],Elect[2.5],Welder_Day
2126	Install Gas/Fire Protection Instrumentation	3 d	8/3/00	8/7/00	2125	As Soon As f		MTF130[2],Welder_Day
2127	EMC Lifting Fixture	20.2 w	11/3/99	4/7/00		As Soon As		
2128	Evaluate EMC Lifting Fixture	4 d	11/3/99	11/8/99		Start No Ear		MEF130
2129	Redesign EMC Lifting Fixture Yoke & EMC Hooks	3 w	1/17/00	2/4/00		Start No Ear		MEF130[0.5]
2130	Obtain New Material	6 w	2/7/00	3/17/00	2129	As Soon As f		
2131	Modifications to Lifting Fixture	3 w	3/20/00	4/7/00	2130	As Soon As f		MTF130,MEF130[0.2],Welder_Day[0.25]
2133	TRUSS MOVEMENT- Late truss installation	11.2 w	6/26/00	9/13/00		As Soon As		
2134	Prepare platform for move	1 w	6/26/00	7/3/00	2135SF	As Soon As f		MTF100[2]
2135	Move ECS calorimeter onto platform	1 w	7/3/00	7/10/00	1011,1008	As Soon As		MTF100[4],Platform,Sidewalk_South,DAB_Pit,ICR_South,ICI
2136	Move platform west	0.6 w	7/11/00	7/13/00	2135	As Soon As		MTF100[5],MEF100,DAB_Pit,Platform,ICR_North,ICR_South,
2137	Move north and south EF's onto platform	1.6 w	7/14/00	7/25/00	2136	As Soon As		MTF100[4],DAB_Pit,Platform,ICR_North,ICR_South,CF_Wlkw
2138	M2-Muon End Toroids Installed on Platform	0 w	7/25/00	7/25/00	2137	As Soon As		
2139	Move platform east	0.6 w	7/26/00	7/28/00	2138	As Soon As		MTF100[4],DAB_Pit,Platform,ICR_North,ICR_South,CF_Wlkw
2140	Reconnect platform services	2 w	7/31/00	8/11/00	2139	As Soon As f		
2141	Disassemble south EMC truss for move	1 w	7/31/00	8/4/00	2139,2114	As Soon As		MTF100[2],Crane_Day[0.5]
2142	Assemble south EMC on south sidewalk	1 w	8/7/00	8/11/00	2127,2141	As Soon As		MTF100[3],Crane_Day,Sidewalk_South
2143	South EMC Truss Assembled on South Sidewalk	0 w	8/11/00	8/11/00	2142	As Soon As		
2144	Open South EF and Calorimeter for cabling	0.4 w	8/14/00	8/15/00	2143	As Soon As		
2145	Accelerator Engineering Run Ends	0 w	8/1/00	8/1/00		Start No Ear		
2146	Accelerator Shutdown	2 w	8/1/00	8/14/00	2145	As Soon As f		
2147	Accelerator Commissioning Run Begins	0 w	8/14/00	8/14/00	2146	As Soon As		
2148	Disassemble north EMC truss for move	1 w	8/14/00	8/18/00	2121,2139,2142,2100	As Soon As f		Crane_Day[0.5]
2149	Assemble north EMC on north sidewalk	1 w	8/21/00	8/25/00	2148,2127	As Soon As f		MTF100[3],Crane_Day,Sidewalk_North
2150	North EMC Truss Assembled on North Sidewalk	0 w	8/25/00	8/25/00	2149	As Soon As		
2151	Open north EF for A-layer north pixel installation	0.2 w	8/28/00	8/28/00	2150	As Soon As f		
2152	Open north calorimeter for cabling	0.2 w	9/13/00	9/13/00	1839	As Soon As f		
2153	Complete preparation of trusses for octant installation	2 w	8/28/00	9/11/00	2150	As Soon As f		
2155	ROLL-IN	14.4 w	11/1/00	2/16/01		As Soon As		
2156	Tevatron Commissioning Run Ends	0 w	11/1/00	11/1/00		Start No Ear		
2157	M1-Begin Shield Wall Removal/Ready to Roll-in	0 w	11/13/00	11/13/00	2158SS	Start No Ear		
2158	Remove shielding wall, disconnect HVAC	0.6 w	11/13/00	11/15/00	1860	As Soon As f		MTF100[6],ETF100[2],Crane_Day,DAB_Pit,Sidewalk_North,Side
2159	Restack center of shield wall for B-layer pixel staging	0.4 w	11/16/00	11/17/00	2158	As Soon As f		
2160	Prepare collision hall/low beta quads for roll-in	4 w	11/1/00	11/30/00	2156	As Soon As f		MTF100[4],Collision_Hall
2161	Install and align north EMC in collision hall	1 w	11/20/00	11/28/00	2160SS+2 w,1854,2159	As Soon As f		MTF100[4],PhysU133[2],PhysF133,Align_Day,Collision_Hall[0.5]
2162	Survey north EMC	0.4 w	11/29/00	11/30/00	2161	As Soon As f		Align_Day[3],Collision_Hall[0.5]
2163	North EMC Installed and Surveyed	0 w	11/30/00	11/30/00	2162	As Soon As		
2164	Install and align south EMC truss in collision hall	1 w	12/1/00	12/7/00	1859,2162	As Soon As f		MTF100[4],PhysU133[2],PhysF133,Align_Day,Sidewalk_South,I
2165	Survey south EMC	0.4 w	12/8/00	12/11/00	2164	As Soon As f		Align_Day[3],Collision_Hall[0.5]
2166	South EMC Installed and Surveyed	0 w	12/11/00	12/11/00	2165	As Soon As		
2167	Close calorimeters and end irons for roll-in	0.6 w	1/10/01	1/12/01	1029,1870	As Soon As		MTF100[4],Platform,DAB_Pit,ICR_North,ICR_South,CF_Wlkw
2168	Roll detector into collision hall	1 w	1/15/01	1/19/01	1445,1880,1406,1442,1343,203E	As Soon As		MTF100[6],MEF100,Platform,DAB_Pit,ICR_North,ICR_South,
2169	Position detector	2 w	2/5/01	2/16/01	2168FS+2 w	As Soon As		
2170	Build first 5 tiers of shielding wall	1 w	1/22/01	1/26/01	2168	As Soon As f		MTF100[4],Crane_Day
2171	Hookup utilities, shield cable bridge	0.6 w	1/22/01	1/24/01	2168	As Soon As f		MTF100[4]
2172	Open iron, calorimeters	0.6 w	1/22/01	1/24/01	2168	As Soon As f		MTF100[4],Platform,ICR_North,ICR_South,CF_Wlkway_E,CF_V
2173	Install/hookup air handlers	1 w	1/29/01	2/2/01	2170	As Soon As f		MTF100[4],ETF100[2]
2174	Build wall to 10 tiers	0.4 w	2/5/01	2/6/01	2173	As Soon As f		MTF100[4],Crane_Day
2175	Install helium U-tubes	0.6 w	2/7/01	2/9/01	2174	As Soon As f		MTF100[4],MEF100,Welder_Day
2176	Finish shielding wall	0.2 w	2/12/01	2/12/01	2175	As Soon As f		MTF100[4],Crane_Day

ID	Task Name	Duration	Start	Finish	Predecessors	Constraint	WBS	Resource Names
2177	<i>MT-Detector Rolled-in and Hooked Up</i>	0 w	2/16/01	2/16/01	2176,2169	As Soon As		
2179	TRIGGER SYSTEM	265.2 w	10/2/95	2/5/01		As Soon As		
2180	Framework	202 w	1/2/96	2/2/00		As Soon As		
2192	<i>L1 Framework Delivered to Fermilab</i>	0 w	12/16/98	12/16/98	2191	As Soon As		
2193	Commission L1 Framework for First User	5.6 w	9/16/99	10/25/99	2188,2189,2192	As Soon As f		
2198	<i>L2 Framework Delivered to Fermilab</i>	0 w	2/2/00	2/197	2197	As Soon As		
2206	Level 1 Calorimeter Trigger	210.4 w	10/1/96	1/8/01		As Soon As		
2216	Commission L1 Cal Trigger	11 w	10/16/00	1/8/01	2215,2209,2212,2213,2214	As Soon As f	1.4.3.1.2	PhysU143[0.5],EEU143[0.5],k\$[0.65],k\$c[0.16]
2217	<i>M3-Calorimeter Level 1 Trigger Commissioned</i>	0 w	1/8/01	1/8/01	2216,2212,2213	As Soon As		
2218	Muon Level 1 Trigger	252.8 w	1/2/96	2/5/01		As Soon As		
2235	CRATES	159 w	9/2/97	11/17/00		As Soon As		
2254	POWER SUPPLIES	120 w	6/18/98	11/17/00		As Soon As		
2260	Test and install production power supply	8 w	9/25/00	11/17/00	2259	As Soon As f		ETF143[0.5]
2261	MUON TRIGGER CARD-MTCXX	163.8 w	7/28/97	11/16/00		As Soon As		
2274	<i>Production MTCxx, MTFB, and MTCM Complete</i>	0 w	9/21/00	9/21/00	2273,2286,2299	As Soon As		
2275	Test, Install, and Commission MTCxx	8 w	9/22/00	11/16/00	2274	As Soon As f		EEU143[0.1],ETU143[0.1],PhysU143[0.5]
2276	MUON TRIGGER FLAVOR BOARD-MTFB	163.8 w	7/28/97	11/16/00		As Soon As		
2287	Test, Install, and Commission MTFB	8 w	9/22/00	11/16/00	2286	As Soon As f		EEU143[0.1],ETU143[0.1],PhysU143[0.5]
2288	MUON TRIGGER CRATE MANAGER-MTCM	223.6 w	3/18/96	9/20/00		As Soon As		
2300	Test, Install, and Commission MTCM	8 w	7/26/00	9/20/00	2299	As Soon As f		EEU143[0.05],ETU143[0.05],PhysU143[0.5]
2311	MDT CENTROID FINDER-MCEN	198.6 w	12/1/96	12/8/00		As Soon As		
2322	Test, Install, and Commission MCEN	8 w	10/12/00	12/8/00	2321	As Soon As f		EEU143[0.1],ETU143[0.25],PhysU143[0.5]
2323	CENTROID PHYSICS BOARD-MCPB	193.6 w	2/20/97	1/18/01		As Soon As		
2332	Test, Install, and Commission MCPB	8 w	11/16/00	1/18/01	2331	As Soon As f		
2333	CENTROID FINDER MANAGER-MCCM	152 w	1/14/98	2/5/01		As Soon As		
2346	Test, Install, and Commission MCCM	6 w	12/20/00	2/5/01	2344	As Soon As f		EEU143[0.1],ETU143[0.25],PhysU143[0.5]
2347	SOFTWARE	226.2 w	1/2/96	7/24/00		As Soon As		
2348	Trigger Simulator	220 w	1/2/96	6/8/00		Start No Ear		PhysU143[0.1]
2349	Control Software	104 w	6/15/98	7/24/00		Start No Ear		PhysU143[0.1]
2355	Level 1 Central Fiber Tracker	160.2 w	11/3/97	2/5/01		As Soon As		
2363	Assemble Commission CTT System	11 w	11/13/00	2/5/01	949,983,994	Start No Ear		PhysF143[2],PhysU143[2]
2364	<i>M3-CTT Level 1 Trigger Commissioned</i>	0 w	2/5/01	2/5/01	2363	As Soon As		
2365	<i>M3-L1 Commissioned</i>	0 w	2/5/01	2/5/01	2206,2218,2355	As Soon As		
2366	Level 2 Trigger	265 w	10/2/95	2/2/01		As Soon As		
2380	Manufacture Components	238 w	3/1/96	12/18/00		As Soon As		
2381	Build Processor	238 w	3/1/96	12/18/00		As Soon As		
2392	Processor Development/Production	167.8 w	7/28/97	12/18/00		As Soon As		
2398	<i>Alpha Cards Received</i>	0 w	12/18/00	12/18/00	2397	Start No Ear		
2399	Build Magic Bus Transceiver	214.6 w	3/1/96	6/30/00		As Soon As		
2407	<i>MBTs Received</i>	0 w	6/30/00	6/30/00	2406	As Soon As		
2427	Build Global Processor System	175.6 w	6/2/97	12/18/00		As Soon As		
2450	Build/Commission Final System	8 w	7/13/00	9/7/00		As Soon As		
2451	Assemble	4 w	7/13/00	8/9/00	2396,2406	As Soon As f	1.4.4.2.9(0.05)	PhysU144,EEU144,k\$[0.02]
2452	Installation at FNAL	4 w	8/10/00	9/7/00	2195,2451	As Soon As f		PhysU144,ETF144
2453	<i>Global Installation Complete</i>	0 w	9/7/00	9/7/00	2452	Start No Ear		
2454	Build Calorimeter Preprocessors	197.8 w	10/30/96	11/1/00		As Soon As		
2474	Build/Commission Final System	8 w	7/13/00	9/7/00		As Soon As		
2477	<i>L2 Cal Installation Complete</i>	0 w	9/7/00	9/7/00	2476	Start No Ear		
2478	Build Muon Preprocessor	190.6 w	2/1/97	12/5/00		As Soon As		
2488	Assemble Final System	10 w	7/13/00	9/21/00		As Soon As		
2489	Assemble Central Crate	6 w	7/13/00	8/23/00	2396,2406,2414,2421	As Soon As f	1.4.4.5.1(0.33),1.4.4.2.9(0.60)	PhysU144,EEU144,k\$[0.3],k\$c[0.06]
2490	Installation at FNAL	4 w	8/24/00	9/21/00	2421,2489	As Soon As f		PhysU144,ETF144
2491	Assemble Forward Crate	6 w	7/13/00	8/23/00	2489SS	As Soon As f		PhysU144
2492	Installation at FNAL	4 w	8/24/00	9/21/00	2491	As Soon As f	1.4.4.5.1(.33)	PhysU144,ETF144,k\$[0.03],k\$c[0.01]
2493	<i>L2 Muon Installation Complete</i>	0 w	9/21/00	9/21/00	2490,2492	As Soon As		
2494	Develop Processor Algorithm	189.4 w	2/3/97	11/27/00		As Soon As		
2507	Build Simulator	103.2 w	10/30/98	12/5/00		As Soon As		
2511	Build CTT Preprocessor	161.6 w	6/1/97	9/7/00		As Soon As		
2517	Build Final System	8 w	7/13/00	9/7/00		As Soon As		
2518	Assemble Crate	4 w	7/13/00	8/9/00	2396,2406,2425	As Soon As f	1.4.4.6(0.5),1.4.4.2.9(0.05)	PhysU144[0.5],EEU144[0.5],k\$[0.08],k\$c[0.02]
2519	Installation at FNAL	4 w	8/10/00	9/7/00	2518	As Soon As f		PhysU144,ETF144
2520	<i>L2 CTT Installation Complete</i>	0 w	9/7/00	9/7/00	2519	As Soon As		
2521	Build Algorithm/Simulator	150 w	6/1/97	6/15/00		As Soon As		
2524	Build PS Preprocessor	168 w	6/2/97	10/23/00		As Soon As		
2530	Build Final System	8 w	7/13/00	9/7/00		As Soon As		
2531	Assemble Crate	4 w	7/13/00	8/9/00	2396,2406,2425	As Soon As f	1.4.4.7,1.4.4.2.9(0.25)	PhysU144[0.5],EEU144[0.5],k\$[0.17],k\$c[0.03]
2532	Installation at FNAL	4 w	8/10/00	9/7/00	2531	As Soon As f		PhysU144,ETF144
2533	<i>L2 PS Installation Complete</i>	0 w	9/7/00	9/7/00	2532	As Soon As		
2534	Build Algorithm/Simulator	168 w	6/2/97	10/23/00		As Soon As		
2537	Integrate L2 System	99.2 w	2/6/99	2/2/01		As Soon As		
2539	Commission Global/Calpp Combination	4 w	12/19/00	1/19/01	2446,2452,2473,2476,2443,2464	Start No Ear		PhysU144[0.8],EEU144[0.4],ETF144
2540	Commission L2 Muon	6 w	12/19/00	2/2/01	2493,2505,2443,2502	As Soon As f		PhysU144[2],ETF144

DO Upgrade Schedule
Installation Tasks

ID	Task Name	Duration	Start	Finish	Predecessors	Constraint	WBS	Resource Names
2541	Commission L2 with CTT, PS	6 w	12/19/00	2/2/01	2520,2533,2443,2522,2535	As Soon As f		
2542	<i>M3-Trigger Level 2 Commissioned</i>	0 w	2/2/01	2/2/01	2539,2540,2541	As Soon As		
2543	Level 3 Trigger	231.2 w	6/3/96	2/5/01		As Soon As		
2552	Develop/Install Readout Control	224.2 w	6/3/96	12/12/00		As Soon As		
2556	Readout Control R&D	178 w	11/15/96	6/29/00		As Soon As		
2566	First Hardware System Test at D0	9 w	3/30/00	6/1/00	2565	As Soon As f		PhysU145[0.5],EEF145[0.1]
2567	Second Hardware Test (one full chain)	4 w	6/2/00	6/29/00	2566	As Soon As f		
2568	<i>M3-L3 Operational (One Full Chain)</i>	0 w	6/29/00	6/29/00	2567	As Soon As		
2569	Install Full System	6 w	10/30/00	12/12/00	2567,2576,2544	As Soon As f		PhysU145[0.5],EEF145[0.5]
2570	Develop Operation Software	181 w	6/3/96	2/7/00		As Soon As		
2576	<i>M3-L3 Online Software Complete</i>	0 w	11/18/99	11/18/99	2571,2572,2573,2574	As Soon As		
2577	Level 3 Filtering Software	198.6 w	2/3/97	2/5/01		As Soon As		
2599	Provide Executables	83.2 w	6/2/99	2/5/01		As Soon As		
2601	<i>M3-First Downloadable Executable Available</i>	0 w	7/14/99	7/14/99	2600	As Soon As		
2602	Cosmic Ray Executable Available	12 w	2/1/00	4/24/00	2579,2585,2600	As Soon As f		PhysU145[1.5]
2603	Runtime Executable Available	4 w	1/9/01	2/5/01	2582,2597,2602	As Soon As f		PhysU145[1.5]
2604	L1/L2/L3 Simulator	100 w	10/15/98	10/25/00		As Soon As		
2615	ONLINE SYSTEM	148 w	9/19/97	9/20/00		As Soon As		
2653	<i>DAQ Components Operational</i>	0 w	9/1/99	9/1/99		Start No Ear		
2654	Integration Activities - Single Detector / Single Stream	9.4 w	9/1/99	11/5/99		As Soon As		
2662	<i>Expert Mode - Integrated DAQ</i>	0 w	11/19/99	11/19/99	2654	As Soon As		
2663	Integration Activities - Multi Detector / Multi Stream	12.4 w	11/19/99	3/1/00		As Soon As		
2671	<i>User Mode - Integrated DAQ</i>	0 w	3/1/00	3/1/00	2663	As Soon As		
2672	DAQ Startup Activities	2.4 w	3/2/00	3/17/00		As Soon As		
2680	<i>Steady DAQ Running</i>	0 w	3/17/00	3/17/00	2672	As Soon As		
2684	<i>Full DAQ Rate Achieved</i>	0 w	5/31/00	5/31/00	2681	As Soon As		
2685	Commissioning Activities	26 w	3/20/00	9/20/00		As Soon As		
2690	Accelerator Operations	26 w	3/20/00	9/20/00		As Soon As		
2691	Accelerator interface	26 w	3/20/00	9/20/00	2680	As Soon As f		PhysU150,Begel