SuperB now with respect to one year ago at the Elba kickoff meeting

comparison

- Money
- Consortium
  - Governance model
  - team
- Milestones

2011

money starts to flow

- At the end of 2010 an initial sum of 19 MEuros has been allocated
- A sum of the order of 50 is expected for 2011 budget
- An early allocation of part of the 2011 budget is foreseable before summer

2012

money starts to flow

- At the end of 2010 an initial sum of 19 MEuros has been allocated
- A sum of 22 ME was allocated at the end of 2011 for 2011 budget
- An early allocation of the 2012 budget is foreseable before summer
- Part of 2010 cash available, in a month the whole 2010

2011

priorities

- A financial program agreement
- The site choice
- The governance model
- The WBS
- The final engineered TDR for the construction phase

2012

priorities

- A financial program agreement *still there*
- The site choice *done*
- The governance model *done*
- The *costing* WBS *almost done*
- The final engineered TDR for the construction phase *waiting*
- *Cost review*
- *Mou-s*
- *Finance committee assessment*
- *Preliminary project*

site

- The University of Roma Tor Vergata campus
- Agreement ongoing for surface rights on a suitably prepared (by University at Cabibbo lab expenses) site
- Signature before summer
- Works in preparation, start immediately after signature of the agreement

Meetings with Vianini S.p.A.

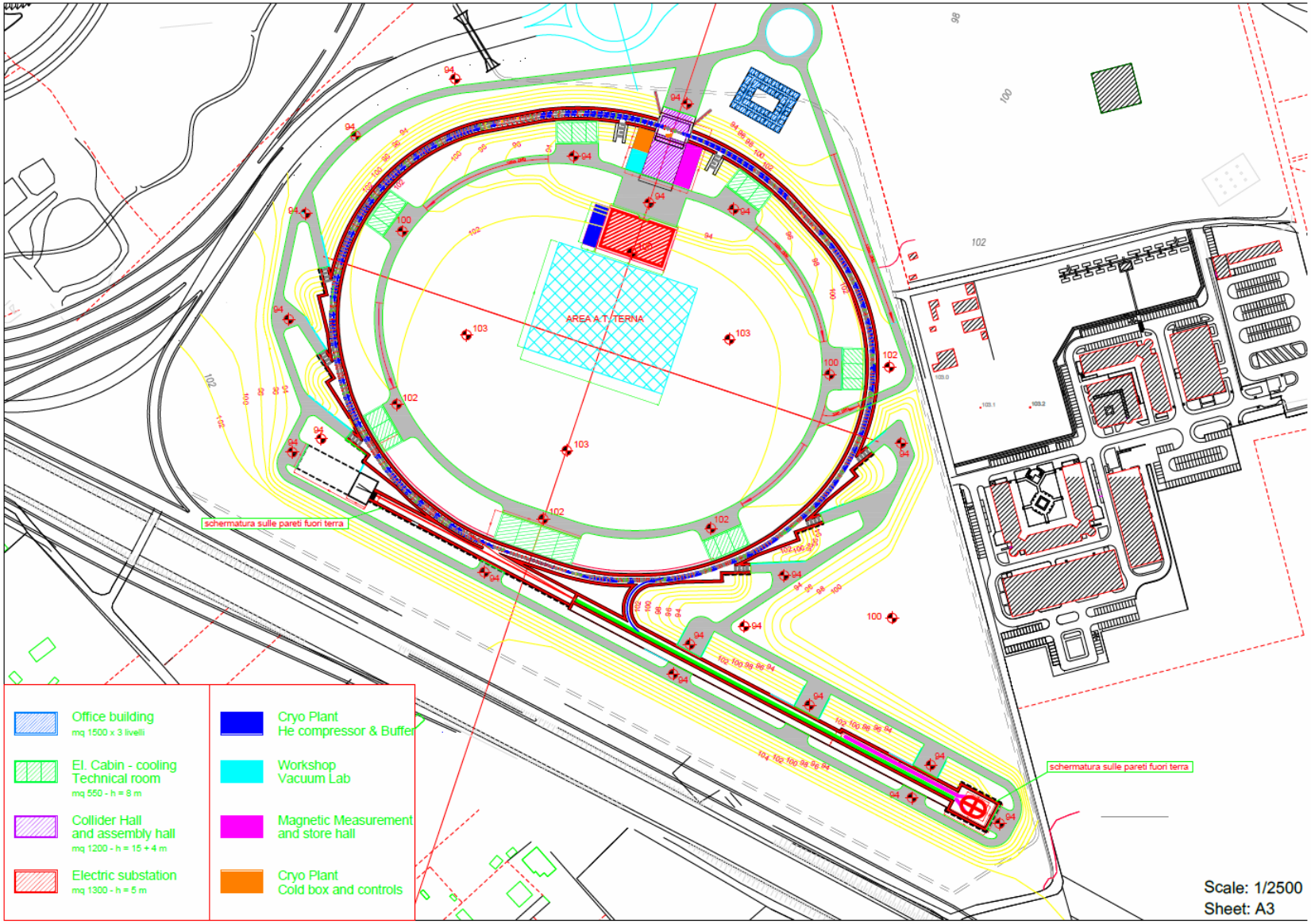
1 – April 17, 2012 (Sanelli, Schillaci, Tomassini)
2 – May 8, 2012 (Petronzio, Sanelli, Tomassini, Chiarucci)
3 – May 23, 2012 (Sanelli, Esposito, Vescovi, Chiarucci, Tomassini)

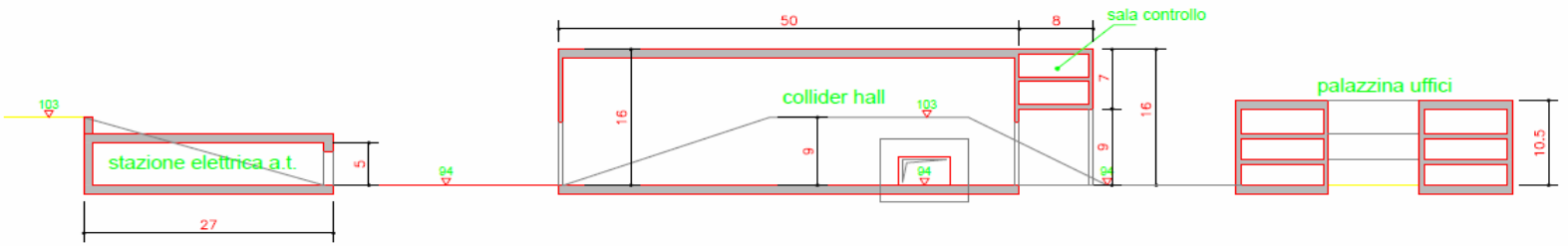
Preliminary cost evaluation for area make-up
Accelerator footprint refinement
Conventional Safety items (Emergency exits, fire protection, fire extinction, etc.)

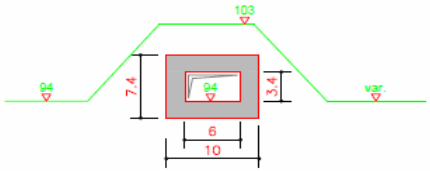
First Cost Evaluation
for
Preliminary External Area Make-up

- Wire Fencing and Roads - ok
- Booby Trap Reclamation - ok
- Ditch Deviation - tbd
- Artesian Well Sinking - ok
- Sewerage - tbd
- Geological Prospections - ok
- Utilities Connections – ok
- Archeological Survey - tbd

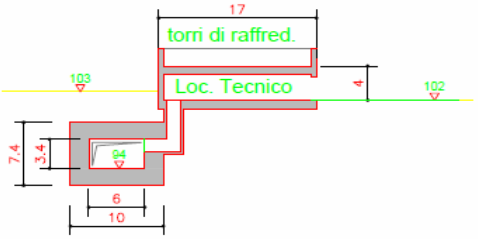
Present Layout







Sez. "Tipo" Tunnel



Palazzina Uffici
mq 1.200 x 3 livelli H.3,50m — Mc 12.600

Collider Hall
mq ~1200 - h = 16 m = — Mc 20.000

Sala Controllo
mq 200 x n. 2 livelli x 3.5 m H = — Mc 1.400

Locali tecnici
mq ~600 x 4 m H x n° 8 = — Mc 19.200

Stazione Elettrica A.T.
mq ~1600 - h = 5 m = — Mc 8.000

Tunnel SuperB
ml 1.260 x mq 18,70 = — Mc 24.000

Tunnel Linac esp. e impianti
ml ~ 520 x mq 57 = — Mc 30.000

Laboratorio Linac
mq ~ 320 h fuori terra = 8 m = — Mc 2.560

FUNZIONI PRINCIPALI

(Locali abitati: Uffici e Laboratori di ricerca)

Edificio	volumi fuori terra	volumi entro terra
Palazzina Uffici	12.600	
Sala Controllo	1.400	
Laboratorio Linac	2.600	
TOTALE VOLUMI mc	16.600	

TOTALE VOLUMI mc	16.600

Volumetria max edificabile: mc 19.531

FUNZIONI ACCESSORIE

(Locali senza permanenza di persone:
Centrali tecn., Collider Hall,Tunnel acceleratore, Tunnel impianti)

Edificio	volumi fuori terra	volumi entro terra
Collider Hall	20.000	
Locali tecnici	19.200	
Stazione Elettrica A.T.	8.000	
Tunnel SuperB		24.000
Tunnel Linac		30.000
TOTALE VOLUMI	47.200	54.000

TOTALE VOLUMI	101.200

Next Minor Modifications

- Damping Ring Hall Position and Dimensions (X-FEL Linac, see later)
- Adjustment in Linac Length and Positioning
- Linac – Collider Injection Area (e^+e^- TLs tbd)
- Collider (Lattice Modifications?)
- Infrastructure Plants Areas (PS, Cryogenics, Fluids, Workshops, Electric Substations, etc.)
- Emergency Exits

2011

governance

- Three phases
  - INFN: the past and present starting phase
  - Consortium: as soon as possible (less than a year) as an independent legal entity
    - Following main European infrastructures
    - More flexibility in the organisation
    - Can directly associate foreign partners (EGO like)
    - An “intermediate solution”
  - European consortium (ERIC): the final structure

2011

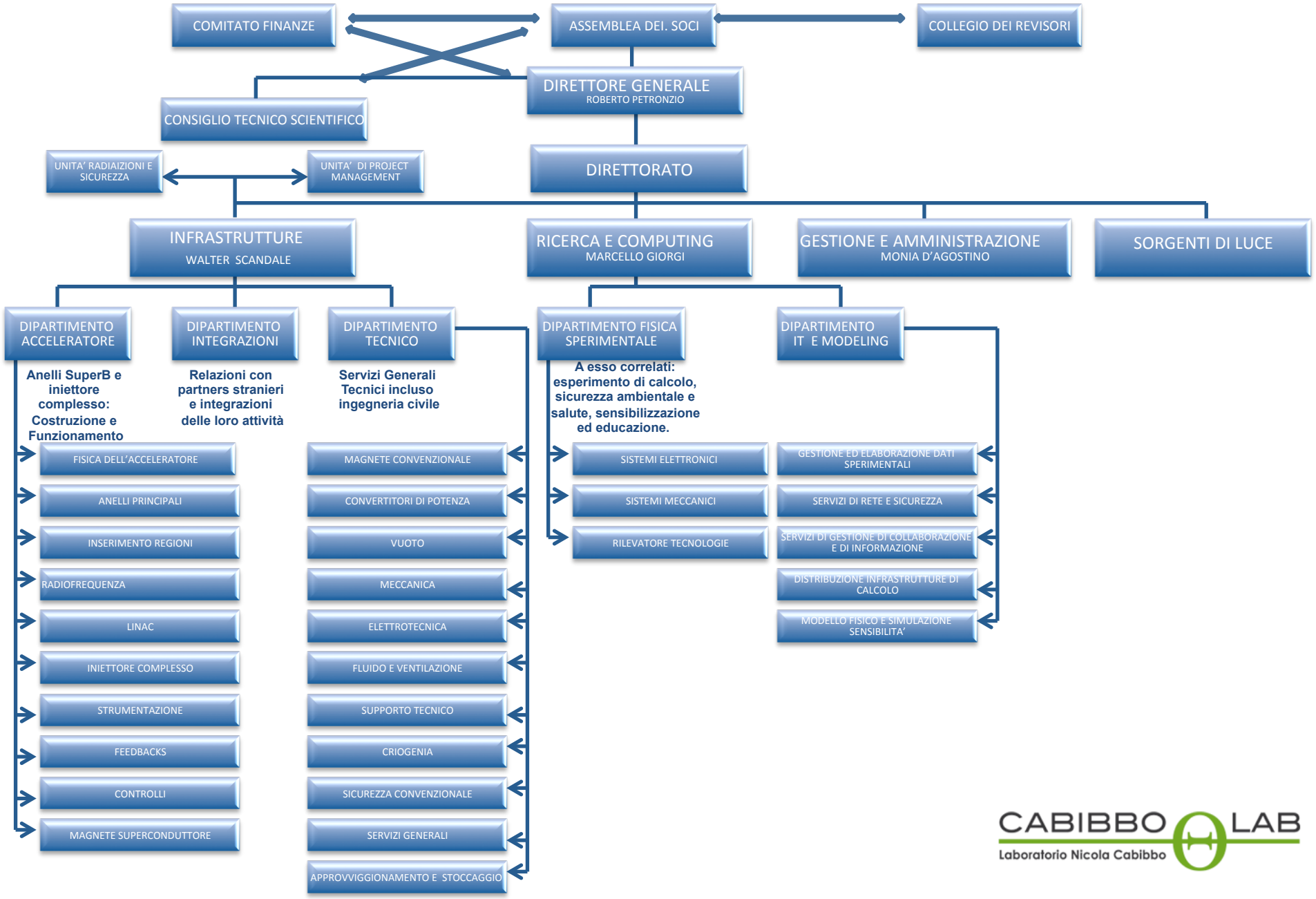
governance

- A Cern like management structure
  - A director general and a directorate
    - Departments under director's supervision
  - A scientific evaluation committee
    - Science
    - Machine
  - A finance evaluation committee
- A known and working scheme

2012

- The Consortium Cabibbo Lab was created on oct 7 2011

governance CABIBBO Lab



CABIBBO LAB
Laboratorio Nicola Cabibbo

2011

team

- Preliminary WBS
- Top responsibilities first
- The team recruitment
  - INFN
  - Foreign partners
  - University
  - New contracts (about 40 starting within less than a year period)

2012

team

- 2012 Milestones oriented
  - The costing WBS
  - Lattice completion

- Very competent and barely numerically adequate participation for current purposes
  Still missing the italian phase transition
- New contracts

2011 Accelerator WBS (Draft)

	RING DESIGN		RF SYSTEM	BEAM CONTROL SYSTEM		MECHANICAL SYSTEMS			
	Optics	•beam parameters	Klystrons	Feedbacks	•Transverse	Vacuum	•Design		
Physicists	4	•rings lattice design	1	1	•Longitudinal	1	•Pumps		
Engineers	0	•Spin rotators	1	1	•Orbit	1	•Collimators		
Technicians	0	•dynamic aperture	1	1	•Luminosity	2	•Valves		
		•low emittance tuning							
		•tolerances							
		•stabilization requirements							
	Beam Dynamics	•beam beam simulations	Power Supplies	Diagnostics	•Beam Position monitors	Cooling	•Air Conditioning		
Physicists	5	•backgrounds	0	2	•Beam size monitors	1	•Water Cooling		
Engineers	1	•collective effects	1	1	•Beam abort system	1			
Technicians	1	•impedance budget	1	2	•Emittance measurement	2			
		•high order modes calculations			•Current monitors				
	Interaction Region - Machine Detector Interface	•IR design	Cavities	Controls	•Design	Power Supplies			
		•IP quadrupoles design							
		•permanent magnets							
Physicists	2	•solenoid compensation	1	2		1			
Engineers	2	•IR vacuum chamber design	0	1		1			
Technicians	2	•SR & backgrounds	1	2		2			
		•collimetion system							
		•MDI							
	Luminosity Monitor		Low Level RF			Magnets	•Design		
Physicists	1		0			1	•Supports		
Engineers	0		1			1	•Alignments		
Technicians	1		1			2			
	Sinchrotron Light Beamlines	•layout	Synchronization & Timing			Kickers	•Design		
		•insertion devices							
Physicists	1		1			1			
Engineers	1		1			1			
Technicians	1		1			1			
						Cryogenics	•Detector Solenoid		
Physicists						1	•Compensating Solenoids		
Engineers						1	•IP Quads		
Technicians						2	•Spin Rotators Solenoids		
Physicists	13		3	5		6		27	Total
Engineers	4		4	3		6		17	Total
Technicians	5		5	5		11		26	Total
Total	22		12	13		23		70	Total

2011

Accelerator WBS (Draft)

	Final Focus System		INJECTION SYSTEM			
	FF	•lattice design	e- source	•polarized gun		
Physicists	2	•magnets	1			
Engineers	1	•tolerances	1			
Technicians	1	•stabilization requirements	1			
		•supports				
		•alignment				
		•power supplies				
		•diagnostics				
		•vacuum				
			e+ source	•target		
Physicists			1	•solenoids		
Engineers			1	•??		
Technicians			1			
			Linacs	•Low Energy design		
Physicists			1	•High Energy design		
Engineers			1	•Bunch compressor design		
Technicians			1	•diagnostics		
				•vacuum		
				•supports		
				•alignment		
				•tolerances		
				•power supplies		
				•klystrons		
				•magnets		
				•modulators		
			Damping Rings	•lattice design		
Physicists			1	•magnets		
Engineers			0	•tolerances		
Technicians			1	•supports		
				•alignment		
				•power supplies		
				•diagnostics		
				•vacuum		
			Transfer Lines	•Low Energy design		
Physicists			1	•High Energy design		
Engineers			0	•magnets		
Technicians			1	•diagnostics		
				•vacuum		
				•supports		
				•alignment		
				•tolerances		
				•power supplies		
Physicists	2		5		7	Tot
Engineers	1		3		4	Tot
Technicians	1		5		6	Tot
Total	4		13		17	Tot

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								DESCRIPTION
2	Ref.									
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
63	MG	1	1	2	2					INFRASTRUCTURE
64	MG	1	1	2	2	1				NETWORK 48 SWITCH
65	MG	1	1	2	2	2				NETWORK L2/L3 CORE SWITCH
66	MG	1	1	2	2	4				PLAGS & CABLIG
67	RR	1	1	3						ELECTRICAL SERVICES
68	RR	1	1	3	1					ELECTRICAL CABINET
69	RR	1	1	3	1	1				DISTRIBUTION PANELS
70	RR	1	1	3	1	2				POWER CABLES
71	MG	1	1	3	2					GEN PURPOSE SIG/CONT STATION
72	MG	1	1	3	2	1				TERMINAL BOX
73	MG	1	1	3	2	2				CABLES AND LUGS
74	CA	1	1	4						VACUUM SYSTEM
75	CA	1	1	4	1					VACUUM BEAM PIPE
76	CA	1	1	4	2					PUMPS & P.S.
77	CA	1	1	4	2	1				400 L/S TURBO PUMPS
78	CA	1	1	4	2	2				400 L/S TURBO PUMP POWER SUPPLIES
79	CA	1	1	4	2	3				400 L/S TURBO PUMP CABLES
80	CA	1	1	4	2	4				400 L/S TURBO PUMP HEATER
81	CA	1	1	4	2	5				130 SIP PUMPS
82	CA	1	1	4	2	6				130 SIP PUMP POWER SUPPLY
83	CA	1	1	4	2	7				130 SIP PUMP CABLES
84	CA	1	1	4	2	8				130 SIP PUMP HEATER
85	CA	1	1	4	2	9				50 SIP PUMPS
86	CA	1	1	4	2	10				50 SIP PUMP POWER SUPPLY
87	CA	1	1	4	2	11				50 SIP PUMP CABLES
88	CA	1	1	4	3					VACUUM DIAGNOSTIC
89	CA	1	1	4	3	1				ION GAUGE
90	CA	1	1	4	3	2				HEAD & CABLE
91	CA	1	1	4	3	3				CONTROL UNIT
92	CA	1	1	4	3	4				PIRANI GAUGE
93	CA	1	1	4	3	5				HEAD & CABLE
94	CA	1	1	4	3	6				CONTROL UNIT
95	CA	1	1	4	3	7				COMPUTER CONTROL
96	CA	1	1	4	4					VACUUM VALVES
97	CA	1	1	4	4	1				MANUAL VALVES
98	CA	1	1	4	4	2				AUTOMATIC VALVES
99	CA	1	1	4						AUTOMATIC VALVE COMM. & CONTR.
100	SG	1	1	5						COOLING WATER SYSTEM
101	SG	1	1	6						COMPRESSED AIR SYSTEM
102	TS	1	1	7						LINAC ALIGNMENT
103	TS	1	1	7	1					FIRST CAMPAIGN ALIGNMENT
104	TS	1	1	7	2					SECOND CAMPAIGN ALIGNMENT
105	TS	1	1	8						MECHANICAL SERVICES
106	TS	1	1	8	1					GIRDERS SUPPORT MANUFACTURING
107	TS	1	1	8	2					MECHANICAL INSTALLATION
108	RR	1	1	9						ELECTRONIC SHOP
109	GS	1	1	10						MISC. PARTS
110		1	1	11						DESIGN AND DOCUMENTATION
111	GS	1	2							LINAC - DAMPING RING TRANSFER LINE
112		1	2	1						MAGNETIC COMPONENTS
113		1	2	1	1					BENDERS
114		1	2	1	1	1				PULSED MAGNET (ENERGY ANAL.)
115		1	2	1	1	1	1			MAGNET ASSY
116		1	2	1	1	1	2			MAG. TO P.S. CABLES & TRAYS
117		1	2	1	1	1	3			MISC. PARTS
118		1	2	1	1	2				BENDER FOR SPECTROMETER
119		1	2	1	1	2	1			MAGNET ASSY
120		1	2	1	1	2	2			MAG. TO P.S. CABLES & TRAYS

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								DESCRIPTION
2	Ref.									
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
121		1	2	1	1	2	3			MISC. PARTS
122		1	2	1	1	3				BENDING DIPOLE
123		1	2	1	1	3	1			MAGNET ASSY Lm=1,35 m
124		1	2	1	1	3	2			MAG. TO P.S. CABLES & TRAYS
125		1	2	1	1	3	3			MISC. PARTS
126		1	2	1	2					QUADRUPOLES Gmax=7,3 T/m
127		1	2	1	2	1				MAGNET ASSEMBLY
128		1	2	1	2	2				MAG. TO P.S. CABLES & TRAYS
129		1	2	1	2	3				MISC. PARTS
130		1	2	1	3					V CORRECTORS
131		1	2	1	3	1				MAGNET ASSEMBLY
132		1	2	1	3	2				MAG. TO P.S. CABLES & TRAYS
133		1	2	1	3	3				MISC.PARTS
134		1	2	1	5					COMBINER MAGNET
135		1	2	1	5	1				MAGNET ASSEMBLY L=1,35 m
136		1	2	1	5	2				MAG. TO P.S. CABLES & TRAYS
137		1	2	1	5	3				MISC. PARTS
138		1	2	1	6					MAGNETIC SEPTUM
139		1	2	1	6	1				MAGNET ASSEMBLY Lm=2 m
140		1	2	1	6	2				MAG. TO P.S. CABLES & TRAYS
141		1	2	1	6	3				MISC.PARTS
142	SM	1	2	2						POWER SUPPLY SYSTEM
143	SM	1	2	2	1					BENDER POWER SUPPLY
144	SM	1	2	2	1	1				PULSED MAGNET P.S.
145	SM	1	2	2	1	1	1			POWER SUPPLY
146	SM	1	2	2	1	1	2			MAINS CONNECTION
147	SM	1	2	2	1	1	3			CABLES & TRAYS
148	SM	1	2	2	1	1	4			MISC. PARTS
149	SM	1	2	2	1	2				SPECTROMETER BENDER P.S.
150	SM	1	2	2	1	2	1			POWER SUPPLY
151	SM	1	2	2	1	2	2			MAINS CONNECTION
152	SM	1	2	2	1	2	3			CABLES & TRAYS
153	SM	1	2	2	1	2	4			MISC. PARTS
154	SM	1	2	2	1	3				BENDING DIPOLE POWER SUPPLY
155	SM	1	2	2	1	3	1			POWER SUPPLY
156	SM	1	2	2	1	3	2			MAINS CONNECTION
157	SM	1	2	2	1	3	3			CABLES &TRAYS
158	SM	1	2	2	1	3	4			MISC. PARTS
159	SM	1	2	2	2					QUADRUPOLES P.S.
160	SM	1	2	2	2	1				POWER SUPPLIES
161	SM	1	2	2	2	2				MAINS CONNECTION
162	SM	1	2	2	2	3				CABLES & TRAYS
163	SM	1	2	2	2	4				MISC.PARTS
164	SM	1	2	2	3					H/V CORRECTOR P.S.
165	SM	1	2	2	3	1				POWER SUPPLIES
166	SM	1	2	2	3	2				MAINS CONNECTION
167	SM	1	2	2	3	3				CABLES & TRAYS
168	SM	1	2	2	3	4				MISC. PARTS
169	SM	1	2	2	4					SWITCHING MAGNET P.S.
170	SM	1	2	2	4	1				POWER SUPPLY
171	SM	1	2	2	4	2				MAINS CONNECTION
172	SM	1	2	2	4	3				CABLES & TRAYS
173	SM	1	2	2	4	4				MISC. PARTS
174	SM	1	2	2	5					MAGNETIC SEPTUM P.S.
175	SM	1	2	2	5	1				POWER SUPPLY
176	SM	1	2	2	5	2				MAINS CONNECTION
177	SM	1	2	2	5	3				CABLES & TRAYS
178	SM	1	2	2	5	4				MISC. PARTS

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
179	CA	1	2	3						VACUUM SYSTEM
180	CA	1	2	3	1					VACUUM BEAM PIPE
181	CA	1	2	3	2					PUMPS & P.S.
182	CA	1	2	3	2	1				400 L/S TURBO PUMPS
183	CA	1	2	3	2	2				400 L/S TURBO PUMP POWER SUPPLIES
184	CA	1	2	3	2	3				400 L/S TURBO PUMP CABLES
185	CA	1	2	3	2	4				400 L/S TURBO PUMP HEATER
186	CA	1	2	3	2	5				130 SIP PUMPS
187	CA	1	2	3	2	6				130 SIP PUMP POWER SUPPLY
188	CA	1	2	3	2	7				130 SIP PUMP CABLES
189	CA	1	2	3	2	8				130 SIP PUMP HEATER
190	CA	1	2	3	2	9				50 SIP PUMPS
191	CA	1	2	3	2	10				50 SIP PUMP POWER SUPPLY
192	CA	1	2	3	2	11				50 SIP PUMP CABLES
193	CA	1	2	3	3					VACUUM DIAGNOSTIC
194	CA	1	2	3	3	1				ION GAUGE
195	CA	1	2	3	3	1	1			HEAD & CABLE
196	CA	1	2	3	3	1	2			CONTROL UNIT
197	CA	1	2	3	3	2				PIRANI GAUGE
198	CA	1	2	3	3	2	1			HEAD & CABLE
199	CA	1	2	3	3	2	2			CONTROL UNIT
200	CA	1	2	3	3	3				COMPUTER CONTROL
201	CA	1	2	3	4					VACUUM VALVES
202	CA	1	2	3	4	1				MANUAL VALVES
203	CA	1	2	3	4	2				AUTOMATIC VALVES
204	CA	1	2	3	4	2	1			AUTOMATIC VALVE COMM. & CONTR.
205	CA	1	2	3	4	2	2			A.V. CABLES
206	CA	1	2	3	4	2	3			A.V. HEAD & CONTROL UNIT
207	CA	1	2	3	5					BEAM PIPE SUPPORTS
208	CA	1	2	3	6					PUMP SUPPORTS
209	CA	1	2	3	7					VALVE SUPPORTS
210	CA	1	2	3	8					VACUUM PORTABLE EQUIPMENTS
211	CA	1	2	3	9					INSTALLATION
212	SEM	1	2	4						BEAM DIAGNOSTIC
213	SEM	1	2	4	1					FLUORESCENT SCREENS
214	SEM	1	2	4	1	1				HOUSING
215	SEM	1	2	4	1	2				ACTUATOR & CONTROL
216	SEM	1	2	4	1	3				SCREEN
217	SEM	1	2	4	1	4				CCD CAMERA
218	SEM	1	2	4	1	5				CABLE & MONITOR
219	SEM	1	2	4	1	6				MISC. PARTS
220	SEM	1	2	4	2					FARADAY CUP (Beam Stopper)
221	SEM	1	2	4	3					TOROIDAL CURRENT MONITOR 90 mm Diam
222	SEM	1	2	4	3	1				IN-FLANGE ICT BERGOZ
223	SEM	1	2	4	3	2				ELECTRONICS
224	SEM	1	2	4	3	3				MISC. PARTS
225	SEM	1	2	4	4					BPM-STRIP LINE
226	SEM	1	2	4	4	1				MECH. ASSEMBLY
227	SEM	1	2	4	4	2				VACUUM FEEDTHROUGHS
228	SEM	1	2	4	4	3				ELECTRONICS
229	SEM	1	2	4	4	4				MISC. PARTS
230	SEM	1	2	4	4	4	1			CONNECTOR STRAIN RELIEF
231	SEM	1	2	4	4	4	2			PEEK/REXOLITE PIGTAILS
232	SEM	1	2	4	4	4	3			PHASE MATCHED BUNDLE OF CABLES (5 Cables)
233	SEM	1	2	4	4	5				CALIBRATION
234	SEM	1	2	4	5					BEAM LOSS MONITOR-PLIC
235	SEM	1	2	4	5	1				PRESSURE STATION
236	SEM	1	2	4	5	2				PRESSURIZED CABLE/CONNECTORS

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
237	SEM	1	2	4	5	3				READOUT SCOPE
238	SEM	1	2	4	6					CABLES & TRAYS
239	MG	1	2	5						COMPUTER CONTROL
240	MG	1	2	5	1					FRONTEND
241	MG	1	2	5	1	1				HARDWARE
242	MG	1	2	5	1	2				CONTROLS CPUS
243	MG	1	2	5	2					INFRASTRUCTURE
244	MG	1	2	5	2	1				NETWORK 48 SWITCH
245	MG	1	2	5	2	2				PLAGS & CABLIG
246	RR	1	2	6						ELECTRICAL SERVICES
247	RR	1	2	6	1					STANDARD LINE VOLTAGE SOURCES
248	RR	1	2	6	1	1				MAIN POWER DIST. BOARD
249	RR	1	2	6	1	2				MED/LOW VOLTAGE TRANSFORMER
250	RR	1	2	6	1	3				MEDIUM VOLTAGE BREAKER
251	RR	1	2	6	1	4				CABLES & TRAYS
252	RR	1	2	6	1	5				ACTIVE POWER COMPENSATOR
253	RR	1	2	6	1	6				MISC. PARTS
254	RR	1	2	6	2					GENERAL PURPOSE SIG/CONT STAT.
255	RR	1	2	6	2	1				TERMINAL BOX
256	RR	1	2	6	2	2				CABLES AND LUGS
257	SG	1	2	7						MECHANICAL SERVICES
258	SG	1	2	7	1					PROCESS WATER DISTRIBUTION
259	SG	1	2	7	1	1				REGULATION VALVES
260	SG	1	2	7	1	2				PRESSURE METER
261	SG	1	2	7	1	3				FLOW METER
262	SG	1	2	7	1	4				HOSES
263	SG	1	2	7	1	5				MISC. PARTS
264	SG	1	2	8						COMPRESSED AIR SYSTEM
265	TS	1	2	9						T/L (to from DR) ALIGNMENT
266	TS	1	2	9	1					FIRST CAMPAIGN ALIGNMENT
267	TS	1	2	9	2					SECOND CAMPAIGN ALIGNMENT
268		1	2	10						THERMAL CONTROL SYSTEM
269		1	2	10	1					MAGNET THERMAL SWITCHES C. S.
270		1	2	10	1	1				PLC
271		1	2	10	1	2				CABLE LINK
272		1	2	10	1	3				SMART CONNECTIONS
273		1	2	10	1	4				TH.SWITCHES CABLES
274		1	2	10	1	5				MISC. PARTS
275		1	2	10	2					FLOW METER CONTROL SYSTEM
276		1	2	10	2	1				PLC
277		1	2	10	2	2				CABLE LINK
278		1	2	10	2	3				SMART CONNECTION
279		1	2	10	2	4				WATER FLOW METER CABLES
280		1	2	10	2	5				MISC. PARTS
281		1	2	10	3					PLC INTERCONNECTION
282		1	2	10	4					PLC TO P.S. CONNECTIONS
283	TS	1	2	11						T/L (to/from DR) MECHANICAL SERVICES
284	TS	1	2	11	1					GIRDERS SUPPORT MANUFACTURING
285	TS	1	2	11	2					MECHANICAL INSTALLATION
286	GS	1	3							DAMPING RING
287		1	3	1						MAGNETIC COMPONENTS
288		1	3	1	1					BENDERS
289		1	3	1	1	1				BENDING DIPOLE
290		1	3	1	1	1	1			MAGNET ASSY
291		1	3	1	1	1	2			MAG. TO P.S. CABLES & TRAYS
292		1	3	1	1	1	3			MISC. PARTS
293		1	3	1	2					QUADRUPOLES
294		1	3	1	2	1				MAGNET ASSEMBLY Lq0.3 m

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
295		1	3	1	2	2				MAGNET ASSEMBLY L=0.15 m
296		1	3	1	2	3				MAG. TO P.S. CABLES & TRAYS
297		1	3	1	2	4				MISC. PARTS
298		1	6	1	3					SEXTUPOLES
299		1	6	1	3	1				MAGNET ASSEMBLY L=0.1 m
300		1	6	1	3	2				MAG. TO P.S. CABLES & TRAYS
301		1	6	1	3	3				MISC. PARTS
302		1	3	1	4					H/V CORRECTORS
303		1	3	1	4	1				MAGNET ASSEMBLY
304		1	3	1	4	2				MAG. TO P.S. CABLES & TRAYS
305		1	3	1	4	3				MISC PARTS
306	SM	1	3	2						POWER SUPPLY SYSTEM
307	SM	1	3	2	1					BENDER POWER SUPPLY
308	SM	1	3	2	1	1				BENDING DIPOLE POWER SUPPLY
309	SM	1	3	2	1	1	1			POWER SUPPLY 230A/70V
310	SM	1	3	2	1	1	2			MAINS CONNECTION
311	SM	1	3	2	1	1	3			CABLES &TRAYS
312	SM	1	3	2	1	1	4			MISC. PARTS
313	SM	1	3	2	2					QUADRUPOLES P.S.
314	SM	1	3	2	2	1				POWER SUPPLIES 80A/175V
315	SM	1	3	2	2	1				POWER SUPPLIES 80A/520V
316	SM	1	3	2	2	1				POWER SUPPLIES 80A/135V
317	SM	1	3	2	2	2				MAINS CONNECTION
318	SM	1	3	2	2	3				CABLES & TRAYS
319	SM	1	3	2	2	4				MISC.PARTS
320	SM	1	3	2	3					SEXTUPOLES P.S.
321	SM	1	3	2	3	1				POWER SUPPLIES 115A/50V
322	SM	1	3	2	3	2				MAINS CONNECTION
323	SM	1	3	2	3	3				CABLES & TRAYS
324	SM	1	3	2	3	4				MISC.PARTS
325	SM	1	3	2	4					H/V CORRECTOR P.S.
326	SM	1	3	2	4	1				POWER SUPPLIES 18A/±50V
327	SM	1	3	2	4	2				MAINS CONNECTION
328	SM	1	3	2	4	3				CABLES & TRAYS
329	SM	1	3	2	4	4				MISC. PARTS
330	CA	1	3	3						VACUUM SYSTEM
331	CA	1	3	3	1					VACUUM BEAM PIPE
332	CA	1	3	3	2					PUMPS & P.S.
333	CA	1	3	3	2	1				400 L/S TURBO PUMPS
334	CA	1	3	3	2	2				400 L/S TURBO PUMP POWER SUPPLIES
335	CA	1	3	3	2	3				400 L/S TURBO PUMP CABLES
336	CA	1	3	3	2	4				400 L/S TURBO PUMP HEATER
337	CA	1	3	3	2	5				130 SIP PUMPS
338	CA	1	3	3	2	6				130 SIP PUMP POWER SUPPLY
339	CA	1	3	3	2	7				130 SIP PUMP CABLES
340	CA	1	3	3	2	8				130 SIP PUMP HEATER
341	CA	1	3	3	3					VACUUM DIAGNOSTIC
342	CA	1	3	3	3	1				VACUUM GAUGE
343	CA	1	3	3	3	1	1			UHV HEAD & CABLE
344	CA	1	3	3	3	1	2			LV HEAD AND CABLES
345	CA	1	3	3	3	1	3			CONTROL UNIT
346	CA	1	3	3	3	2				RESIDUAL GAS ANALYSER
347	CA	1	3	3	3	2	1			HEAD & CABLE
348	CA	1	3	3	3	2	2			CONTROL UNIT
349	CA	1	3	3	3	3				COMPUTER CONTROL
350	CA	1	3	3	4					VACUUM VALVES
351	CA	1	3	3	4	1				MANUAL VALVES
352	CA	1	3	3	4	2				AUTOMATIC VALVES

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
353	CA	1	3	3	4	2	1			VALVE
354	CA	1	3	3	4	2	2			A.V. CABLES
355	CA	1	3	3	4	2	3			A.V. CONTROL UNIT
356	CA	1	3	3	5					BEAM PIPE SUPPORTS
357	CA	1	3	3	6					PUMP SUPPORTS
358	CA	1	3	3	7					VALVE SUPPORTS
359	CA	1	3	3	8					VACUUM PORTABLE EQUIPMENTS
360	CA	1	3	3	9					BELLOWS
361	CA	1	3	3	10					INSTALLATION
362	SEM	1	3	4						BEAM DIAGNOSTIC
363	SEM	1	3	4	1					FLUORESCENT SCREENS
364	SEM	1	3	4	1	1				HOUSING
365	SEM	1	3	4	1	2				ACTUATOR & CONTROL
366	SEM	1	3	4	1	3				SCREEN
367	SEM	1	3	4	1	4				CCD CAMERA
368	SEM	1	3	4	1	5				CABLE & MONITOR
369	SEM	1	3	4	1	6				MISC. PARTS
370	SEM	1	3	4	2					SUITS
371	SEM	1	3	4	2	1				HOUSING
372	SEM	1	3	4	2	2				ACTUATOR & CONTROL
373	SEM	1	3	4	2	3				MISC. PARTS
374	SEM	1	3	4	3					WALL CURRENT MONITOR
375	SEM	1	3	4	3	1				CERAMIC GAP
376	SEM	1	3	4	3	2				MECH. ASSY AND SCREEN
377	SEM	1	2	4	3	3				ELECTRONICS
378	SEM	1	3	4	3	4				MISC. PARTS
379	SEM	1	3	4	4					DC CURRENT TRANSFORMER
380	SEM	1	3	4	4	1				IN-FLANGE TOROIDAL TRANSFORMER (96 mm Diam)
381	SEM	1	3	4	4	2				MECHANICAL ASSY AND SCREENS
382	SEM	1	3	4	4	3				ELECTRONICS (INCLUDED)
383	SEM	1	3	4	4	4				MISC. PARTS
384	SEM	1	3	4	5					TUNE MONITOR
385	SEM	1	3	4	5	1				STRIP-LINE PICK UP (H&V)
386	SEM	1	3	4	5	1	1			MECHANICAL ASSEMBLY
387	SEM	1	3	4	5	1	2			VACUUM FEEDTHROUGHS
388	SEM	1	3	4	5	2				STRIP-LINE KICKER
389	SEM	1	3	4	5	2	1			MECHANICAL ASSEMBLY
390	SEM	1	3	4	5	2	2			VACUUM FEEDTHROUGHS
391	SEM	1	3	4	5	3				POWER AMPLIFIER
392	SEM	1	3	4	5	4				RF SWITCHES
393	SEM	1	3	4	5	5				ELECTRICAL HARDWARE
394	SEM	1	3	4	5	6				ELECTRONICS
395	SEM	1	3	4	5	7				MISC. PARTS
396	SEM	1	3	4	6					BPM 4 BUTTON TYPE
397	SEM	1	3	4	6	1				MECHANICAL ASSEMBLY
398	SEM	1	3	4	6	2				VACUUM FEEDTHROUGHS
399	SEM	1	3	4	6	3				ELECTRONICS
400	SEM	1	3	4	6	4				MISC. PARTS
401	SEM	1	3	4	6	4	1			CONNECTOR STRAIN RELIEF
402	SEM	1	3	4	6	4	2			PEEK/REXOLITE PIGTAILS
403	SEM	1	3	4	6	4	3			PHASE MATCHED BUNDLE OF CABLES (5 Cables)
404	SEM	1	3	4	6	5				CALIBRATION
405	SEM	1	3	4	7					STREAK CAMERA SYSTEM
406	SEM	1	3	4	7	1				STREAK CAMERA
407	SEM	1	6	5	7	2				STREAK CAMERA MISC. PARTS (Sync, PC, etc)
408	SEM	1	3	4	8					SYNCROTRON RADIATION MONITOR
409	SEM	1	3	4	8	1				OPTICAL BENCH
410	SEM	1	3	4	8	2				OPTICAL INSTRUMENTATION

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
411	SEM	1	3	4	8	3				ADJUSTMENT DEVICE
412	SEM	1	3	4	8	4				CCD CAMERA
413	SEM	1	3	4	8	5				ELECTRONICS
414	SEM	1	3	4	8	6				MISC. PARTS
415	SEM	1	3	4	9					BEAM LOSS MONITOR-PLIC
416	SEM	1	3	4	10					PRESSURE STATION
417	SEM	1	3	4	10	1				PRESSURIZED CABLE/CONNECTORS
418	SEM	1	3	4	10	2				READOUT SCOPE
419	SEM	1	3	4	11					BEAM LOSS MONITOR-PIN DIODE
420	SEM	1	3	4	11	1				DETECTOR
421	SEM	1	3	4	11	2				ELECTRONICS
422	SEM	1	3	4	11	3				MISC. PARTS
423	SEM	1	3	4	12					CABLES & TRAYS
424	SA	1	3	5						RF SYSTEM
425	CA	1	3	5	1					RF CAVITY
426	CA	1	3	5	1	1				CAVITY BODY
427	SA	1	3	5	1	2				POWER INPUT COUPLER
428	CA	1	3	5	1	3				TUNING SYSTEM
429	CA	1	3	5	1	3	1			MECHANICS
430	SA	1	3	5	1	3	2			ELECTRONICS
431	CA	1	3	5	1	4				MODE SUPPRESSOR
432	CA	1	3	5	1	5				RF LINE
433	SA	1	3	5	1	5	1			COAX LINE
434	CA	1	3	5	1	5	2			PATCH PANEL
435	CA	1	3	5	1	5	3			COAX. DIRECTIONAL COUPLER
436	SA	1	3	5	1	5	4			WG DIRECTIONAL COUPLER
437	SA	1	3	5	1	5	5			WAVEGUIDE WR2100 modified
438	CA	1	3	5	1	5	6			COAX AND WG INNER COOLING FLOW
439	SA	1	3	5	1	5	7			COAX-TO-WG TRANSITION
440	SA	1	3	5	1	5	8			TEST DUMMY LOAD
441	CA	1	3	5	1	6				VACUUM SYSTEM
442	CA	1	3	5	1	6	1			VACUUM PUMPS AND P.S.
443	CA	1	3	5	1	6	2			VACUUM GAUGES
444	CA	1	3	5	1	6	3			MANUAL VACUUM VALVE
445	CA	1	3	5	1	6	4			BAKE OUT SYSTEM
446	SA	1	3	5	1	7				CAVITY TEMPERATURE CONTROL
447	CA	1	3	5	1	7	1			TEMPERATURE SENSORS
448	SA	1	3	5	1	7	2			MODULATING VALVE
449	SA	1	3	5	1	7	3			ELECTRONICS
450	CA	1	3	5	1	7	4			REMOTE CONTROL PANEL
451	TS	1	3	5	1	8				MECHANICAL SUPPORT
452	SA	1	3	5	2					RF POWER PLANT
453	CA	1	3	5	2	1				POWER SUPPLY AND SERVICES
454	CA	1	3	5	2	2				RF POWER TUBE
455	SA	1	3	5	3					RF CONTROLS
456	CA	1	3	5	3	1				LLRF
457	CA	1	3	5	3	1	1			DEVELOPMENT AND SOFTWARE
458	SA	1	3	5	3	1	2			HARDWARE
459	CA	1	3	5	3	2				INTERLOCK SYSTEM AND PLC
460	CA	1	3	5	3	2	1			SOFTWARE
461	SA	1	3	5	3	2	2			HARDWARE
462	SA	1	3	5	3	3				INTERCONNECTIONS AND CABLES
463	MG	1	3	6						COMPUTER CONTROL
464	MG	1	3	6	1					FRONTEND
465	MG	1	3	6	1	1				HARDWARE
466	MG	1	3	6	1	2				CONTROLS CPUS
467	MG	1	3	6	2					INFRASTRUCTURE
468	MG	1	3	6	2	1				NETWORK 48 SWITCH

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
469	MG	1	3	6	2	2				PLAGS & CABLIG
470	RR	1	3	7						ELECTRICAL SERVICES
471	RR	1	3	7	1					STANDARD LINE VOLTAGE SOURCES
472	RR	1	3	7	1	1				MAIN POWER DIST. BOARD
473	RR	1	3	7	1	2				MED/LOW VOLTAGE TRANSFORMER
474	RR	1	3	7	1	3				MEDIUM VOLTAGE BREAKER
475	RR	1	3	7	1	4				CABLES & TRAYS
476	RR	1	3	7	1	5				ACTIVE POWER COMPENSATOR
477	RR	1	3	7	1	6				MISC. PARTS
478	RR	1	3	7	2					GENERAL PURPOSE SIG/CONT STAT.
479	RR	1	3	7	2	1				TERMINAL BOX
480	RR	1	3	7	2	2				CABLES
481	RR	1	3	7	2	3				LUGS
482	SG	1	3	8						MECHANICAL SERVICES
483	SG	1	3	8	1					PROCESS WATER DISTRIBUTION
484	SG	1	3	8	1	1				REGULATION VALVES
485	SG	1	3	8	1	2				PRESSURE METER
486	SG	1	3	8	1	3				FLOW METER
487	SG	1	3	8	1	4				HOSES
488	SG	1	3	8	1	5				MISC. PARTS
489	SG	1	3	9						COMPRESSED AIR SYSTEM
490	TS	1	3	10						DAMPING RING ALIGNMENT
491	TS	1	3	10	1					FIRST CAMPAIGN DR-COMPONENT
492	TS	1	3	10	2					SECOND CAMPAIGN DR-COMPONENT
493		1	3	11						THERMAL CONTROL SYSTEM
494		1	3	11	1					MAGNET THERMAL SWITCHES C. S.
495		1	3	11	1	1				PLC
496		1	3	11	1	2				CABLE LINK
497		1	3	11	1	3				SMART CONNECTIONS
498		1	3	11	1	4				TH.SWITCHES CABLES
499		1	3	11	1	5				MISC. PARTS
500		1	3	11	2					FLOW METER CONTROL SYSTEM
501		1	3	11	2	1				PLC
502		1	3	11	2	2				CABLE LINK
503		1	3	11	2	3				SMART CONNECTION
504		1	3	11	2	4				WATER FLOW METER CABLES
505		1	3	11	2	5				MISC. PARTS
506		1	3	11	3					PLC INTERCONNECTION
507		1	3	11	4					PLC TO P.S. CONNECTIONS
508	TS	1	3	12						DAMPING RING MECHANICAL SERVICES
509	TS	1	3	12	1					DR-GIRDERS MANUFACTURING
510	TS	1	3	12	2					DR-GIRDERS MECHANICAL INSTALLATION
511	GS	1	4							ELECTRON BEAM TRANSFER LINE
512		1	4	1						MAGNETIC COMPONENTS
513		1	4	1	1					BENDERS
514		1	4	1	1	1				PULSED MAGNET (ENERGY ANAL.)
515		1	4	1	1	1	1			MAGNET ASSY
516		1	4	1	1	1	2			MAG. TO P.S. CABLES & TRAYS
517		1	4	1	1	1	3			MISC. PARTS
518		1	4	1	1	2				BENDER FOR SPECTROMETER
519		1	4	1	1	2	1			MAGNET ASSY
520		1	4	1	1	2	2			MAG. TO P.S. CABLES & TRAYS
521		1	4	1	1	2	3			MISC. PARTS
522		1	4	1	1	3				BENDING DIPOLE
523		1	4	1	1	3	1			MAGNET ASSY
524		1	4	1	1	3	2			MAG. TO P.S. CABLES & TRAYS
525		1	4	1	1	3	3			MISC. PARTS
526		1	4	1	2					QUADRUPOLES

	Ref.	WBS NUMBER								DESCRIPTION
		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
527		1	4	1	2	1				QUADRUPOLES TYPE A
528		1	4	1	2	1	1			MAGNET ASSEMBLY
529		1	4	1	2	1	2			MAG. TO P.S. CABLES & TRAYS
530		1	4	1	2	1	3			MISC. PARTS
531		1	4	1	3					HIV CORRECTORS
532		1	4	1	3	1				MAGNET ASSEMBLY
533		1	4	1	3	2				MAG. TO P.S. CABLES & TRAYS
534		1	4	1	3	3				MISC.PARTS
535		1	4	1	4					MAGNETIC SEPTUM
536		1	4	1	4	1				MAGNET ASSEMBLY
537		1	4	1	4	2				MAG. TO P.S. CABLES & TRAYS
538		1	4	1	4	3				MISC.PARTS
539	SM	1	4	2						POWER SUPPLY SYSTEM
540	SM	1	4	2	1					BENDER POWER SUPPLY
541	SM	1	4	2	1	1				PULSED MAGNET P.S.
542	SM	1	4	2	1	1	1			POWER SUPPLY
543	SM	1	4	2	1	1	2			MAINS CONNECTION
544	SM	1	4	2	1	1	3			CABLES & TRAYS
545	SM	1	4	2	1	1	4			MISC. PARTS
546	SM	1	4	2	1	2				SPECTROMETER BENDER P.S.
547	SM	1	4	2	1	2	1			POWER SUPPLY
548	SM	1	4	2	1	2	2			MAINS CONNECTION
549	SM	1	4	2	1	2	3			CABLES & TRAYS
550	SM	1	4	2	1	2	4			MISC. PARTS
551	SM	1	4	2	1	3				BENDING DIPOLE POWER SUPPLY
552	SM	1	4	2	1	3	1			POWER SUPPLY
553	SM	1	4	2	1	3	2			MAINS CONNECTION
554	SM	1	4	2	1	3	3			CABLES &TRAYS
555	SM	1	4	2	1	3	4			MISC. PARTS
556	SM	1	4	2	2					QUADRUPOLES P.S.
557	SM	1	4	2	2	1				POWER SUPPLIES
558	SM	1	4	2	2	2				MAINS CONNECTION
559	SM	1	4	2	2	3				CABLES & TRAYS
560	SM	1	4	2	2	4				MISC.PARTS
561	SM	1	4	2	3					HIV CORRECTOR P.S.
562	SM	1	4	2	3	1				POWER SUPPLIES
563	SM	1	4	2	3	2				MAINS CONNECTION
564	SM	1	4	2	3	3				CABLES & TRAYS
565	SM	1	4	2	3	4				MISC. PARTS
566	SM	1	4	2	4					MAGNETIC SEPTUM P.S.
567	SM	1	4	2	4	1				POWER SUPPLIES
568	SM	1	4	2	4	2				MAINS CONNECTION
569	SM	1	4	2	4	3				CABLES & TRAYS
570	SM	1	4	2	4	4				MISC. PARTS
571	CA	1	4	3						VACUUM SYSTEM
572	CA	1	4	3	1					VACUUM BEAM PIPE
573	CA	1	4	3	2					PUMPS & P.S.
574	CA	1	4	3	2	1				400 L/S TURBO PUMPS
575	CA	1	4	3	2	2				400 L/S TURBO PUMP POWER SUPPLIES
576	CA	1	4	3	2	3				400 L/S TURBO PUMP CABLES
577	CA	1	4	3	2	4				400 L/S TURBO PUMP HEATER
578	CA	1	4	3	2	5				130 S/P PUMPS
579	CA	1	4	3	2	6				130 S/P PUMP POWER SUPPLY
580	CA	1	4	3	2	7				130 S/P PUMP CABLES
581	CA	1	4	3	2	8				130 S/P PUMP HEATER
582	CA	1	4	3	3					VACUUM DIAGNOSTIC
583	CA	1	4	3	3	1				ION GAUGE
584	CA	1	4	3	3	1	1			HEAD & CABLE

	Ref.	WBS NUMBER								DESCRIPTION
		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
585	CA	1	4	3	3	1	2			CONTROL UNIT
586	CA	1	4	3	3	2				PIRANI GAUGE
587	CA	1	4	3	3	2	1			HEAD & CABLE
588	CA	1	4	3	3	2	2			CONTROL UNIT
589	CA	1	4	3	3	3				COMPUTER CONTROL
590	CA	1	4	3	4					VACUUM VALVES
591	CA	1	4	3	4	1				MANUAL VALVES
592	CA	1	4	3	4	2				AUTOMATIC VALVES
593	CA	1	4	3	4	2	1			AUTOMATIC VALVE COMM. & CONTR.
594	CA	1	4	3	4	2	2			A.V. CABLES
595	CA	1	4	3	4	2	3			A.V. HEAD & CONTROL UNIT
596	CA	1	4	3	5					BEAM PIPE SUPPORTS
597	CA	1	4	3	6					PUMP SUPPORTS
598	CA	1	4	3	7					VALVE SUPPORTS
599	CA	1	4	3	8					VACUUM PORTABLE EQUIPMENTS
600	CA	1	4	3	9					INSTALLATION
601	SEM	1	4	4						BEAM DIAGNOSTIC
602	SEM	1	4	4	1					FLUORESCENT SCREENS
603	SEM	1	4	4	1	1				HOUSING
604	SEM	1	4	4	1	2				ACTUATOR & CONTROL
605	SEM	1	4	4	1	3				SCREEN
606	SEM	1	4	4	1	4				CCD CAMERA
607	SEM	1	4	4	1	5				CABLE & MONITOR
608	SEM	1	4	4	1	6				MISC. PARTS
609	SEM	1	4	4	2					ENERGY DEFINING SLITS
610	SEM	1	4	4	2	1				HOUSING
611	SEM	1	4	4	2	2				ACTUATOR & CONTROL
612	SEM	1	4	4	2	3				MISC. PARTS
613	SEM	1	4	4	3					FARADAY CUPS (Beam Stopper)
614	SEM	1	4	4	4					TOROIDAL CURRENT MONITOR 90 mm Diam
615	SEM	1	4	4	4	1				IN-FLANGE ICT BERGOZ
616	SEM	1	4	4	4	2				ELECTRONICS
617	SEM	1	4	4	4	3				MISC. PARTS
618	SEM	1	4	4	5					BPM-STRIP LINE
619	SEM	1	4	4	5	1				HOUSING
620	SEM	1	4	4	5	2				MECH. ASSEMBLY
621	SEM	1	4	4	5	3				VACUUM FEEDTHROUGHS
622	SEM	1	4	4	5	4				ELECTRONICS
623	SEM	1	4	4	5	5				MISC. PARTS
624	SEM	1	4	4	5	5	1			CONNECTOR STRAIN RELIEF
625	SEM	1	4	4	5	5	2			PEEK/REXOLITE PIGTAILS
626	SEM	1	4	4	5	5	3			PHASE MATCHED BUNDLE OF CABLES (5 Cables)
627	SEM	1	4	4	5	6				CALIBRATION
628	SEM	1	4	4	6					BEAM LOSS MONITOR - PLIC
629	SEM	1	4	4	6	1				PRESSURE STATION
630	SEM	1	4	4	6	2				PRESSURIZED CABLE/CONNECTORS
631	SEM	1	4	4	6	3				READOUT SCOPE
632	SEM	1	4	4	7					CABLES & TRAYS
633	MS	1	4	5						COMPUTER CONTROL
634	MS	1	4	5	1					FRONTEND
635	MS	1	4	5	1	1				HARDWARE
636	MS	1	4	5	1	2				CONTROLS CPUS
637	MS	1	4	5	2					INFRASTRUCTURE
638	MS	1	4	5	2	1				NETWORK 48 SWITCH
639	MS	1	4	5	2	2				PLAGS & CABLIG
640	RR	1	4	6						ELECTRICAL SERVICES
641	RR	1	4	6	1					STANDARD LINE VOLTAGE SOURCES
642	RR	1	4	6	1	1				MAIN POWER DIST. BOARD

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
643	RR	1	4	6	1	2				MED/LOW VOLTAGE TRANSFORMER
644	RR	1	4	6	1	3				MEDIUM VOLTAGE BREAKER
645	RR	1	4	6	1	4				CABLES & TRAYS
646	RR	1	4	6	1	5				ACTIVE POWER COMPENSATOR
647	RR	1	4	6	1	6				MISC. PARTS
648	RR	1	4	6	2					GENERAL PURPOSE SIG/CONT STAT.
649	RR	1	4	6	2	1				TERMINAL BOX
650	RR	1	4	6	2	2				CABLES AND LUGS
651	SG	1	4	7						MECHANICAL SERVICES
652	SG	1	4	7	1					PROCESS WATER DISTRIBUTION
653	SG	1	4	7	1	1				REGULATION VALVES
654	SG	1	4	7	1	2				PRESSURE METER
655	SG	1	4	7	1	3				FLOW METER
656	SG	1	4	7	1	4				HOSES
657	SG	1	4	7	1	5				MISC. PARTS
658	SG	1	4	8						COMPRESSED AIR SYSTEM
659	TS	1	4	9						T/L E- ALIGNMENT
660	TS	1	4	9	1					FIRST E- T/L ALIGNMENT
661	TS	1	4	9	2					SECOND E- T/L ALIGNMENT
662		1	4	10						THERMAL CONTROL SYSTEM
663		1	4	10	1					MAGNET THERMAL SWITCHES C. S.
664		1	4	10	1	1				PLC
665		1	4	10	1	2				CABLE LINK
666		1	4	10	1	3				SMART CONNECTIONS
667		1	4	10	1	4				TH.SWITCHES CABLES
668		1	4	10	1	5				MISC. PARTS
669		1	4	10	2					FLOW METER CONTROL SYSTEM
670		1	4	10	2	1				PLC
671		1	4	10	2	2				CABLE LINK
672		1	4	10	2	3				SMART CONNECTION
673		1	4	10	2	4				WATER FLOW METER CABLES
674		1	4	10	2	5				MISC. PARTS
675		1	4	10	3					PLC INTERCONNECTION
676		1	4	10	4					PLC TO P.S. CONNECTIONS
677	TS	1	4	11						T/L E- MECHANICAL SERVICES
678	TS	1	4	11	1					GIRDERS E- T/L MANUFACTURING
679	TS	1	4	11	2					GIRDERS E- T/L INSTALLATION
680	TS	1	5							POSITRON BEAM TRANSFER LINE
681	GS	1	5	1						MAGNETIC COMPONENTS
682		1	5	1	1					BENDERS
683		1	5	1	1	1				PULSED MAGNET (ENERGY ANAL.)
684		1	5	1	1	1	1			MAGNET ASSY
685		1	5	1	1	1	2			MAG. TO P.S. CABLES & TRAYS
686		1	5	1	1	1	3			MISC. PARTS
687		1	5	1	1	2				BENDER FOR SPECTROMETER
688		1	5	1	1	2	1			MAGNET ASSY
689		1	5	1	1	2	2			MAG. TO P.S. CABLES & TRAYS
690		1	5	1	1	2	3			MISC. PARTS
691		1	5	1	1	3				BENDING DIPOLE
692		1	5	1	1	3	1			MAGNET ASSY
693		1	5	1	1	3	2			MAG. TO P.S. CABLES & TRAYS
694		1	5	1	1	3	3			MISC. PARTS
695		1	5	1	2					QUADRUPOLES
696		1	5	1	2	1				QUADRUPOLES TYPE A
697		1	5	1	2	1	1			MAGNET ASSEMBLY
698		1	5	1	2	1	2			MAG. TO P.S. CABLES & TRAYS
699		1	5	1	2	1	3			MISC. PARTS
700		1	5	1	3					H/V CORRECTORS

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
701		1	5	1	3	1				MAGNET ASSEMBLY
702		1	5	1	3	2				MAG. TO P.S. CABLES & TRAYS
703		1	5	1	3	3				MISC.PARTS
704		1	5	1	4					MAGNETIC SEPTUM
705		1	5	1	4	1				MAGNET ASSEMBLY
706		1	5	1	4	2				MAG. TO P.S. CABLES & TRAYS
707		1	5	1	4	3				MISC.PARTS
708	SM	1	5	2						POWER SUPPLY SYSTEM
709	SM	1	5	2	1					BENDER POWER SUPPLY
710	SM	1	5	2	1	1				PULSED MAGNET P.S.
711	SM	1	5	2	1	1	1			POWER SUPPLY
712	SM	1	5	2	1	1	2			MAINS CONNECTION
713	SM	1	5	2	1	1	3			CABLES & TRAYS
714	SM	1	5	2	1	1	4			MISC. PARTS
715	SM	1	5	2	1	2				SPECTROMETER BENDER P.S.
716	SM	1	5	2	1	2	1			POWER SUPPLY
717	SM	1	5	2	1	2	2			MAINS CONNECTION
718	SM	1	5	2	1	2	3			CABLES & TRAYS
719	SM	1	5	2	1	2	4			MISC. PARTS
720	SM	1	5	2	1	3				BENDING DIPOLE POWER SUPPLY
721	SM	1	5	2	1	3	1			POWER SUPPLY
722	SM	1	5	2	1	3	2			MAINS CONNECTION
723	SM	1	5	2	1	3	3			CABLES &TRAYS
724	SM	1	5	2	1	3	4			MISC. PARTS
725	SM	1	5	2	2					QUADRUPOLES P.S.
726	SM	1	5	2	2	1				POWER SUPPLIES
727	SM	1	5	2	2	2				MAINS CONNECTION
728	SM	1	5	2	2	3				CABLES & TRAYS
729	SM	1	5	2	2	4				MISC.PARTS
730	SM	1	5	2	3					H/V CORRECTOR P.S.
731	SM	1	5	2	3	1				POWER SUPPLIES
732	SM	1	5	2	3	2				MAINS CONNECTION
733	SM	1	5	2	3	3				CABLES & TRAYS
734	SM	1	5	2	3	4				MISC. PARTS
735	SM	1	5	2	4					MAGNETIC SEPTUM P.S.
736	SM	1	5	2	4	1				POWER SUPPLY
737	SM	1	5	2	4	2				MAINS CONNECTION
738	SM	1	5	2	4	3				CABLES & TRAYS
739	SM	1	5	2	4	4				MISC. PARTS
740	CA	1	5	3						VACUUM SYSTEM
741	CA	1	5	3	1					VACUUM BEAM PIPE
742	CA	1	5	3	2					PUMPS & P.S.
743	CA	1	5	3	2	1				400 L/S TURBO PUMPS
744	CA	1	5	3	2	2				400 L/S TURBO PUMP POWER SUPPLIES
745	CA	1	5	3	2	3				400 L/S TURBO PUMP CABLES
746	CA	1	5	3	2	4				400 L/S TURBO PUMP HEATER
747	CA	1	5	3	2	5				130 SIP PUMPS
748	CA	1	5	3	2	6				130 SIP PUMP POWER SUPPLY
749	CA	1	5	3	2	7				130 SIP PUMP CABLES
750	CA	1	5	3	2	8				130 SIP PUMP HEATER
751	CA	1	5	3	3					VACUUM DIAGNOSTIC
752	CA	1	5	3	3	1				ION GAUGE
753	CA	1	5	3	3	1	1			HEAD & CABLE
754	CA	1	5	3	3	1	2			CONTROL UNIT
755	CA	1	5	3	3	2				PIRANI GAUGE
756	CA	1	5	3	3	2	1			HEAD & CABLE
757	CA	1	5	3	3	2	2			CONTROL UNIT
758	CA	1	5	3	3	3				COMPUTER CONTROL

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
259	CA	1	5	3	4					VACUUM VALVES
260	CA	1	5	3	4	1				MANUAL VALVES
261	CA	1	5	3	4	2				AUTOMATIC VALVES
262	CA	1	5	3	4	2	1			AUTOMATIC VALVE COMM. & CONTR.
263	CA	1	5	3	4	2	2			A.V. CABLES
264	CA	1	5	3	4	2	3			A.V. HEAD & CONTROL UNIT
265	CA	1	5	3	5					BEAM PIPE SUPPORTS
266	CA	1	5	3	6					PUMP SUPPORTS
267	CA	1	5	3	7					VALVE SUPPORTS
268	CA	1	5	3	8					VACUUM PORTABLE EQUIPMENTS
269	CA	1	5	3	9					INSTALLATION
270	SEM	1	5	4						BEAM DIAGNOSTIC
271	SEM	1	5	4	1					FLUORESCENT SCREENS
272	SEM	1	5	4	1	1				HOUSING
273	SEM	1	5	4	1	2				ACTUATOR & CONTROL
274	SEM	1	5	4	1	3				SCREEN
275	SEM	1	5	4	1	4				CCD CAMERA
276	SEM	1	5	4	1	5				CABLE & MONITOR
277	SEM	1	5	4	1	6				MISC. PARTS
278	SEM	1	5	4	2					ENERGY DEFINING SLITS
279	SEM	1	5	4	2	1				HOUSING
280	SEM	1	5	4	2	2				ACTUATOR & CONTROL
281	SEM	1	5	4	2	3				MISC. PARTS
282	SEM	1	5	4	3					FARADAY CUPS (Beam Stopper)
283	SEM	1	5	4	4					TOROIDAL CURRENT MONITOR 90 mm Diam
284	SEM	1	5	4	4	1				IN FLANGE ICT BERGOZ
285	SEM	1	5	4	4	2				ELECTRONICS
286	SEM	1	5	4	4	3				MISC. PARTS
287	SEM	1	5	4	5					BPM-STRIP LINE
288	SEM	1	5	4	5	1				HOUSING
289	SEM	1	5	4	5	2				MECH. ASSEMBLY
290	SEM	1	5	4	5	3				VACUUM FEEDTHROUGHS
291	SEM	1	5	4	5	4				ELECTRONICS
292	SEM	1	5	4	5	5				MISC. PARTS
293	SEM	1	5	4	5	5	1			CONNECTOR STRAIN RELIEF
294	SEM	1	5	4	5	5	2			PEEK/REXOLITE PIGTAILS
295	SEM	1	5	4	5	5	3			PHASE MATCHED BUNDLE OF CABLES (5 Cables)
296	SEM	1	5	4	5	6				CALIBRATION
297	SEM	1	5	4	6					BEAM LOSS MONITOR - PLIC
298	SEM	1	5	4	6	1				PRESSURE STATION
299	SEM	1	5	4	6	2				PRESSURIZED CABLE/CONNECTORS
300	SEM	1	5	4	6	3				READOUT SCOPE
301	SEM	1	5	4	7					CABLES & TRAYS
302	MG	1	5	5						COMPUTER CONTROL
303	MG	1	5	5	1					FRONTEND
304	MG	1	5	5	1	1				HARDWARE
305	MG	1	5	5	1	2				CONTROLS CPUS
306	MG	1	5	5	2					INFRASTRUCTURE
307	MG	1	5	5	2	1				NETWORK 48 SWITCH
308	MG	1	5	5	2	2				PLAGS & CABLIG
309	RR	1	5	6						ELECTRICAL SERVICES
310	RR	1	5	6	1					STANDARD LINE VOLTAGE SOURCES
311	RR	1	5	6	1	1				MAIN POWER DIST. BOARD
312	RR	1	5	6	1	2				MED/LOW VOLTAGE TRANSFORMER
313	RR	1	5	6	1	3				MEDIUM VOLTAGE BREAKER
314	RR	1	5	6	1	4				CABLES & TRAYS
315	RR	1	5	6	1	5				ACTIVE POWER COMPENSATOR
316	RR	1	5	6	1	6				MISC. PARTS

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
317	RR	1	5	6	2					GENERAL PURPOSE SIG/CONT STAT.
318	RR	1	5	6	2	1				TERMINAL BOX
319	RR	1	5	6	2	2				CABLES AND LUGS
320	SG	1	5	7						MECHANICAL SERVICES
321	SG	1	5	7	1					PROCESS WATER DISTRIBUTION
322	SG	1	5	7	1	1				REGULATION VALVES
323	SG	1	5	7	1	2				PRESSURE METER
324	SG	1	5	7	1	3				FLOW METER
325	SG	1	5	7	1	4				HOSES
326	SG	1	5	7	1	5				MISC. PARTS
327	SG	1	5	8						COMPRESSED AIR SYSTEM
328	TS	1	5	9						T/L E+ ALIGNMENT
329	TS	1	5	9	1					FIRST E- T/L ALIGNMENT
330	TS	1	5	9	2					SECOND E- T/L ALIGNMENT
331		1	5	10						THERMAL CONTROL SYSTEM
332		1	5	10	1					MAGNET THERMAL SWITCHES C. S.
333		1	5	10	1	1				PLC
334		1	5	10	1	2				CABLE LINK
335		1	5	10	1	3				SMART CONNECTIONS
336		1	5	10	1	4				TH.SWITCHES CABLES
337		1	5	10	1	5				MISC. PARTS
338		1	5	10	2					FLOW METER CONTROL SYSTEM
339		1	5	10	2	1				PLC
340		1	5	10	2	2				CABLE LINK
341		1	5	10	2	3				SMART CONNECTION
342		1	5	10	2	4				WATER FLOW METER CABLES
343		1	5	10	2	5				MISC. PARTS
344		1	5	10	3					PLC INTERCONNECTION
345		1	5	10	4					PLC TO P.S. CONNECTIONS
346	TS	1	5	11						T/L E- MECHANICAL SERVICES
347	TS	1	5	11	1					GIRDERS E- T/L MANUFACTURING
348	TS	1	5	11	2					GIRDERS E- T/L INSTALLATION
349	SME	1	6							STORAGE RINGS
350		1	6	1						MAGNETIC COMPONENTS
351		1	6	1	1					DIPOLES
352		1	6	1	1	1				LER DIPOLES
353		1	6	1	1	1	1			MAGNET ASSEMBLY L=4.1 m
354		1	6	1	1	1	2			MAGNET ASSEMBLY L=3.65 m
355		1	6	1	1	1	3			MAGNET ASSEMBLY L=2.8 m
356		1	6	1	1	1	4			MAGNET ASSEMBLY L=0.81 m
357		1	6	1	1	1	5			MAGNET ASSEMBLY L=0.45 m
358		1	6	1	1	1	6			MAG. TO P.S. CABLES & TRAYS
359		1	6	1	1	1	7			MISC. PARTS
360		1	6	1	1	2				HER DIPOLES
361		1	6	1	1	2	1			MAGNET ASSEMBLY L=5.4 m
362		1	6	1	1	2	2			MAGNET ASSEMBLY L=4.27 m
363		1	6	1	1	2	2			MAGNET ASSEMBLY L=4.1 m
364		1	6	1	1	2	3			MAGNET ASSEMBLY L=3.65 m
365		1	6	1	1	2	4			MAGNET ASSEMBLY L=2.8 m
366		1	6	1	1	2	5			MAGNET ASSEMBLY L=1.7 m
367		1	6	1	1	2	6			MAGNET ASSEMBLY L=1.4 m
368		1	6	1	1	2	9			MAG. TO P.S. CABLES & TRAYS
369		1	6	1	1	2	10			MISC. PARTS
370		1	6	1	2					QUADRUPOLES
371		1	6	1	2	1				LER QUADRUPOLES (bore Radius = 0.03 m)
372		1	6	1	2	1	1			MAGNET ASSEMBLY L=0.58 m Low Gradient
373		1	6	1	2	1	2			MAGNET ASSEMBLY L=0.50 m Low Gradient
374		1	6	1	2	1	3			MAGNET ASSEMBLY L=0.43 m Low Gradient

	Ref.	WBS NUMBER								DESCRIPTION
		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
875		1	6	1	2	1	4			MAGNET ASSEMBLY L=0.37 m Low Gradient
876		1	6	1	2	1	5			MAGNET ASSEMBLY L=0.30 m Low Gradient
877		1	6	1	2	1	6			MAGNET ASSEMBLY L=0.15 m Low Gradient
878		1	6	1	2	1	7			MAGNET ASSEMBLY L=0.56 m High Gradient
879		1	6	1	2	1	8			MAGNET ASSEMBLY L=0.50 m High Gradient
880		1	6	1	2	1	9			MAGNET ASSEMBLY L=0.45 m High Gradient
881		1	6	1	2	1	10			MAGNET ASSEMBLY L=0.43 m High Gradient
882		1	6	1	2	1	11			MAGNET ASSEMBLY L=0.37 m High Gradient
883		1	6	1	2	1	12			MAGNET ASSEMBLY L=0.30 m High Gradient
884		1	6	1	2	1	13			MAGNET ASSEMBLY L=0.15 m High Gradient
885		1	6	1	2	1	14			MAG. TO P.S. CABLES &TRAYS
886		1	6	1	2	1	15			MISC. PARTS
887		1	6	1	2	2				HER QUADRUPOLES (bore Radius = 0.03 m)
888		1	6	1	2	2	1			MAGNET ASSEMBLY L=0.56 m Low Gradient
889		1	6	1	2	2	2			MAGNET ASSEMBLY L=0.50 m Low Gradient
890		1	6	1	2	2	3			MAGNET ASSEMBLY L=0.43 m Low Gradient
891		1	6	1	2	2	4			MAGNET ASSEMBLY L=0.37 m Low Gradient
892		1	6	1	2	2	5			MAGNET ASSEMBLY L=0.30 m Low Gradient
893		1	6	1	2	2	6			MAGNET ASSEMBLY L=0.15 m Low Gradient
894		1	6	1	2	2	7			MAGNET ASSEMBLY L=0.56 m High Gradient
895		1	6	1	2	2	8			MAGNET ASSEMBLY L=0.50 m High Gradient
896		1	6	1	2	2	9			MAGNET ASSEMBLY L=0.45 m High Gradient
897		1	6	1	2	2	10			MAGNET ASSEMBLY L=0.43 m High Gradient
898		1	6	1	2	2	11			MAGNET ASSEMBLY L=0.37 m High Gradient
899		1	6	1	2	2	12			MAGNET ASSEMBLY L=0.30 m High Gradient
900		1	6	1	2	2	13			MAGNET ASSEMBLY L=0.15 m High Gradient
901		1	6	1	2	2	13			MAG. TO P.S. CABLES &TRAYS
902		1	6	1	2	2	14			MISC. PARTS
903		1	6	1	3					SEXTUPOLES
904		1	6	1	3	1				MAGNET ASSEMBLY L=0.35 m
905		1	6	1	3	2				MAGNET ASSEMBLY L=0.3 m
906		1	6	1	3	3				MAGNET ASSEMBLY L=0.275 m
907		1	6	1	3	4				MAGNET ASSEMBLY L=0.25 m
908		1	6	1	3	5				MAGNET ASSEMBLY L=0.175 m
909		1	6	1	3	6				MAGNET ASSEMBLY L=0.15 m
910		1	6	1	3	7				MAG. TO P.S. CABLES & TRAYS
911		1	6	1	3	8				MISC. PARTS
912		1	6	1	4					OCTUPOLES
913		1	6	1	4	1				MAGNET ASSEMBLY L=0.2 m
914		1	6	1	4	2				MAG. TO P.S. CABLES & TRAYS
915		1	6	1	4	3				MISC. PARTS
916		1	6	1	5					HV CORRECTORS
917		1	6	1	5	1				L.E.R. MAGNET ASSEMBLY
918		1	6	1	5	2				H.E.R. MAGNET ASSEMBLY
919		1	6	1	5	3				MAG. TO P.S. CABLES &TRAYS
920		1	6	1	5	4				MISC.PARTS
921		1	6	1	6					DIPOLE STANDS
922		1	6	1	7					MULTIPOLE GIRDERS
923		1	6	1	8					DESIGN AND DOCUMENTATION
924	SM	1	6	2						POWER SUPPLY SYSTEM
925	SM	1	6	2	1					DIPOLE POWER SUPPLY
926	SM	1	6	2	1	1				L.E.R. POWER SUPPLY
927	SM	1	6	2	1	1	1			POWER SUPPLY 90A/55V
928	SM	1	6	2	1	1	2			POWER SUPPLY 90A/85V
929	SM	1	6	2	1	1	3			POWER SUPPLY 90A/75V
930	SM	1	6	2	1	1	4			POWER SUPPLY 90A/150V
931	SM	1	6	2	1	1	5			POWER SUPPLY 360A/75V
932	SM	1	6	2	1	1	6			POWER SUPPLY 360A/120V

	Ref.	WBS NUMBER								DESCRIPTION
		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
933	SM	1	6	2	1	1	7			POWER SUPPLY 360A/180V
934	SM	1	6	2	1	1	8			POWER SUPPLY 360A/320V
935	SM	1	6	2	1	1	9			POWER SUPPLY 360A/450V
936	SM	1	6	2	1	1	10			POWER SUPPLY 360A/500V
937	SM	1	6	2	1	1	11			LINE VOLTAGE CONNECTION
938	SM	1	6	2	1	1	12			MEDIUM VOLTAGE BREAKER
939	SM	1	6	2	1	1	13			MED/LOW VOLTAGE CABLES & TRAYS
940	SM	1	6	2	1	1	14			MISC. PARTS
941	SM	1	6	2	1	2				H.E.R. POWER SUPPLY
942	SM	1	6	2	1	2	1			POWER SUPPLY 145A/55V
943	SM	1	6	2	1	2	2			POWER SUPPLY 145A/72V
944	SM	1	6	2	1	2	3			POWER SUPPLY 145A/80V
945	SM	1	6	2	1	2	4			POWER SUPPLY 145A/330V
946	SM	1	6	2	1	2	5			POWER SUPPLY 145A/520V
947	SM	1	6	2	1	2	6			LINE VOLTAGE CONNECTION
948	SM	1	6	2	1	2	7			MEDIUM VOLTAGE BREAKER
949	SM	1	6	2	1	2	8			MED/LOW VOLTAGE CABLES & TRAYS
950	SM	1	6	2	1	2	9			MISC. PARTS
951	SM	1	6	2	2					QUADRUPOLE POWER SUPPLY
952	SM	1	6	2	2	1				L.E.R. POWER SUPPLY
953	SM	1	6	2	2	1	1			POWER SUPPLY 65A/18V
954	SM	1	6	2	2	1	2			POWER SUPPLY 65A/36V
955	SM	1	6	2	2	1	3			POWER SUPPLY 65A/60V
956	SM	1	6	2	2	1	4			POWER SUPPLY 65A/75V
957	SM	1	6	2	2	1	5			POWER SUPPLY 142A/18V
958	SM	1	6	2	2	1	6			POWER SUPPLY 142A/36V
959	SM	1	6	2	2	1	7			POWER SUPPLY 142A/45V
960	SM	1	6	2	2	1	8			POWER SUPPLY 142A/80V
961	SM	1	6	2	2	1	9			POWER SUPPLY 100A/18V
962	SM	1	6	2	2	1	10			POWER SUPPLY 100A/142V
963	SM	1	6	2	2	1	11			LINE VOLTAGE CONNECTION
964	SM	1	6	2	2	1	12			MED/LOW VOLTAGE CABLES & TRAYS
965	SM	1	6	2	2	1	13			MISC. PARTS
966	SM	1	6	2	2	2				H.E.R. POWER SUPPLY
967	SM	1	6	2	2	2	1			POWER SUPPLY 142A/18V
968	SM	1	6	2	2	2	2			POWER SUPPLY 142A/36V
969	SM	1	6	2	2	2	3			POWER SUPPLY 142A/80V
970	SM	1	6	2	2	2	4			POWER SUPPLY 65A/36V
971	SM	1	6	2	2	2	5			LINE VOLTAGE CONNECTION
972	SM	1	6	2	2	2	6			MED/LOW VOLTAGE CABLES & TRAYS
973	SM	1	6	2	2	2	7			MISC. PARTS
974	SM	1	6	2	3					SEXTUPOLE POWER SUPPLY
975	SM	1	6	2	3	1				L.E.R. POWER SUPPLIES
976	SM	1	6	2	3	1	1			POWER SUPPLY 12DA/5V
977	SM	1	6	2	3	1	2			LINE VOLTAGE CONNECTION
978	SM	1	6	2	3	1	3			MED/LOW VOLTAGE CABLES & TRAYS
979	SM	1	6	2	3	1	4			MISC. PARTS
980	SM	1	6	2	3	2				H.E.R. POWER SUPPLIES
981	SM	1	6	2	3	2	1			POWER SUPPLY 12DA/5V
982	SM	1	6	2	3	2	2			LINE VOLTAGE CONNECTION
983	SM	1	6	2	3	2	3			MED/LOW VOLTAGE CABLES & TRAYS
984	SM	1	6	2	3	2	4			MISC. PARTS
985	SM	1	6	2	4					OCTUPOLE POWER SUPPLY
986	SM	1	6	2	4	1				POWER SUPPLY
987	SM	1	6	2	4	2				LINE VOLTAGE CONNECTION
988	SM	1	6	2	4	3				MED/LOW VOLTAGE CABLES & TRAYS
989	SM	1	6	2	4	4				MISC. PARTS
990	SM	1	6	2	5					L.E.R. & H.E.R. HV CORRECTOR POWER SUPPLY

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
991	SM	1	6	2	5	1				POWER SUPPLY 12A/±50V
992	SM	1	6	2	5	2				LINE VOLTAGE CONNECTION
993	SM	1	6	2	5	3				MED/LOW VOLTAGE CABLES & TRAYS
994	SM	1	6	2	5	4				MISC. PARTS
995	GA	1	6	3						RF SYSTEM
996	GA	1	6	3	1					ON KIND RF CAVITY AND WG NETWORK
997	GA	1	6	3	1	1				CAVITY COMPLEX (body, input coupler, damping WGs, tuner, cooling pipes and collectors, mechanical support, ...)
998	GA	1	6	3	1	1	1			PACKAGING
999	GA	1	6	3	1	1	2			SHIPPING
1000	GA	1	6	3	1	1	3			STORING AND RECONDITIONING
1001	GA	1	6	3	1	1	4			INSTALLATION ON SITE
1002	GA	1	6	3	1	1	5			INPUT COUPLER MODIFICATION
1003	GA	1	6	3	1	2				WAVEGUIDE NETWORK
1004	GA	1	6	3	1	2	1			PACKAGING
1005	GA	1	6	3	1	2	2			SHIPPING
1006	GA	1	6	3	1	2	3			STORING AND RECONDITIONING
1007	GA	1	6	3	1	2	4			INSTALLATION ON SITE
1008	GA	1	6	3	1	2	5			WAVEGUIDE NETWORK COMPLETION
1009	GA	1	6	3	1	3				WAVEGUIDE NETWORK - EXTRA BRANCH
1010	CA	1	6	3	1	4				VACUUM SYSTEM
1011	CA	1	6	3	1	4	1			VACUUM PUMPS AND P.S.
1012	CA	1	6	3	1	4	2			VACUUM GAUGES
1013	CA	1	6	3	1	4	3			MANUAL VACUUM VALVE
1014	CA	1	6	3	1	4	4			BAKE OUT SYSTEM
1015	GA	1	6	3	1	5				CAVITY TEMPERATURE CONTROL
1016	GA	1	6	3	1	5	1			TEMPERATURE SENSORS
1017	GA	1	6	3	1	5	2			MODULATING VALVE
1018	GA	1	6	3	1	5	3			ELECTRONICS
1019	GA	1	6	3	1	5	4			REMOTE CONTROL PANEL
1020	GA	1	6	3	1	6				MECHANICAL INTEGRATION
1021	GA	1	6	3	2					RF POWER PLANTS (excluded KLYSTRONS)
1022	GA	1	6	3	3					ON KIND KLYSTRONS
1023	GA	1	6	3	3	1				PACKAGING
1024	GA	1	6	3	3	2				SHIPPING
1025	GA	1	6	3	3	3				RECONDITIONING
1026	GA	1	6	3	3	4				INSTALLATION
1027	GA	1	6	3	4					KLYSTRONS (brand new)
1028	GA	1	6	3	5					ON KIND FERRITE CIRCULATORS + DUMMY LOADS
1029	GA	1	6	3	5	1				PACKAGING
1030	GA	1	6	3	5	2				SHIPPING
1031	GA	1	6	3	5	3				RECONDITIONING
1032	GA	1	6	3	5	4				INSTALLATION
1033	GA	1	6	3	6					FERRITE CIRCULATORS (brand new)
1034	GA	1	6	3	7					DUMMY LOADS (1.2 MW, WR2100)
1035	GA	1	6	3	8					RF CONTROLS
1036	GA	1	6	3	8	1				LLRF
1037	GA	1	6	3	8	1	1			DEVELOPMENT AND SOFTWARE
1038	GA	1	6	3	8	1	2			HARDWARE
1039	GA	1	6	3	8	2				INTERLOCK SYSTEM AND PLC
1040	GA	1	6	3	8	2	1			DEVELOPMENT AND SOFTWARE (at System and Station le
1041	GA	1	6	3	8	2	2			HARDWARE (at system level, included cabling)
1042	GA	1	6	3	8	2	3			HARDWARE (at station level, included cabling)
1043	GA	1	6	3	8	3				INTERCONNECTIONS AND CABLES
1044	CA	1	6	4						VACUUM SYSTEM
1045	CA	1	6	4	1					DIPOLE CHAMBER
1046	CA	1	6	4	2					STRAIGHT SECTION CHAMBER
1047	CA	1	6	4	3					INJECTION VACUUM CHAMBER

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
1048	CA	1	6	4	4					CAVITY VACUUM CHAMBER
1049	CA	1	6	4	5					SINCROTRON RADIATION PORT
1050	CA	1	6	4	6					BELLOWS JOINTS
1051	CA	1	6	4	7					CHAMBER SUPPORTS
1052	CA	1	6	4	8					PUMPS AND P.S.
1053	CA	1	6	4	8	1				400 L/S TURBO PUMPS
1054	CA	1	6	4	8	2				400 L/S TURBO PUMP POWER SUPPLIES
1055	CA	1	6	4	8	3				400 L/S TURBO PUMP CABLES
1056	CA	1	6	4	8	4				400 L/S TURBO PUMP HEATER
1057	CA	1	6	4	8	5				230 SIP PUMPS
1058	CA	1	6	4	8	6				230 SIP PUMP POWER SUPPLY
1059	CA	1	6	4	8	7				230 SIP PUMP CABLES
1060	CA	1	6	4	8	8				230 SIP PUMP HEATER
1061	CA	1	6	4	8	9				DISTRIBUTED PUMPS
1062	CA	1	6	4	9					PORTABLE ROUGHING STATION
1063	CA	1	6	4	10					VACUUM DIAGNOSTIC
1064	CA	1	6	4	10	1				VACUUM GAUGE
1065	CA	1	6	4	10	1	1			UHV HEAD AND CABLE
1066	CA	1	6	4	10	1	2			LV HEAD AND CABLE
1067	CA	1	6	4	10	1	3			CONTROL UNIT
1068	CA	1	6	4	10	2				RGA
1069	CA	1	6	4	10	2	1			HEAD AND CABLE
1070	CA	1	6	4	10	2	2			CONTROL UNIT
1071	CA	1	6	4	11					VALVES
1072	CA	1	6	4	11	1				MANUAL VALVES
1073	CA	1	6	4	11	2				AUTOMATIC VALVES
1074	CA	1	6	4	11	3				FAST VALVES
1075	SEM	1	6	5						BEAM DIAGNOSTICS
1076	SEM	1	6	5	1					FLUORESCENT SCREENS
1077	SEM	1	6	5	1	1				HOUSING
1078	SEM	1	6	5	1	2				ACTUATOR AND CONTROL
1079	SEM	1	6	5	1	3				SCREEN
1080	SEM	1	6	5	1	4				CCD CAMERA
1081	SEM	1	6	5	1	5				CABLES
1082	SEM	1	6	5	1	6				MISC. PARTS
1083	SEM	1	6	5	2					SLIT/SCRAPER
1084	SEM	1	6	5	2	1				HOUSING
1085	SEM	1	6	5	2	2				ACTUATOR & CONTROL
1086	SEM	1	6	5	2	3				MISC. PARTS
1087	SEM	1	6	5	3					WALL CURRENT MONITORS
1088	SEM	1	6	5	3	1				CERAMIC GAP
1089	SEM	1	6	5	3	2				MECHANICAL ASSY AND SCREENS
1090	SEM	1	6	5	3	3				ELECTRONICS
1091	SEM	1	6	5	3	4				MISC. PARTS
1092	SEM	1	6	5	4					DC CURRENT TRANSFORMER
1093	SEM	1	6	5	4	1				IN-FLANGE TOROIDAL TRANSFORMER (96 mm Diam)
1094	SEM	1	6	5	4	3				MECHANICAL ASSY AND SCREENS
1095	SEM	1	6	5	4	4				ELECTRONICS (INCLUDED)
1096	SEM	1	6	5	4	5				MISC. PARTS
1097	SEM	1	6	5	5					BPM-4 BUTTON TYPE
1098	SEM	1	6	5	5	1				MECHANICAL ASSEMBLY
1099	SEM	1	6	5	5	2				VACUUM FEEDTHROUGHS
1100	SEM	1	6	5	5	3				ELECTRONICS
1101	SEM	1	6	5	5	4				MISC. PARTS
1102	SEM	1	6	5	5	4	1			CONNECTOR STRAIN RELIEF
1103	SEM	1	6	5	5	4	2			PEEK/REXOLITE PIGTAILS
1104	SEM	1	6	5	5	4	3			PHASE MATCHED BUNDLE OF CABLES (5 Cables)
1105	SEM	1	6	5	5	5				CALIBRATION

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
1104	SEM	1	6	5	6					STREAK CAMERA SYSTEM
1105	SEM	1	6	5	6	1				STREAK CAMERA
1106	SEM	1	6	5	6	2				STREAK CAMERA MISC. PARTS (Sync, PC, etc)
1109	SEM	1	6	5	7					SYNCROTRON RADIATION MONITOR
1110	SEM	1	6	5	7	1	1			COOLED MIRROR
1111	SEM	1	6	5	7	1	2			SAPPHIRE WINDOW
1112	SEM	1	6	5	7	1	3			OPTICAL BENCH
1113	SEM	1	6	5	7	1	4			OPTICAL INSTRUMENTATION
1114	SEM	1	6	5	7	1	5			ADJUSTMENT DEVICE
1115	SEM	1	6	5	7	1	7			CCD CAMERA
1116	SEM	1	6	5	7	1	8			ELECTRONICS
1117	SEM	1	6	5	7	1	9			MISC. PARTS
1118	SEM	1	6	5	8					X-RAY PINHOLE MONITOR
1119	SEM	1	6	5	8	1				AL WINDOW
1120	SEM	1	6	5	8	2				ADJUSTABLE ATTENUATOR - IN VACUO
1121	SEM	1	6	5	8	3				TUNGSTEN PINHOLE
1122	SEM	1	6	5	8	4				SCINTILLATOR SCREEN
1123	SEM	1	6	5	8	5				MIRROR
1124	SEM	1	6	5	8	6				ADJUSTMENT
1125	SEM	1	6	5	8	7				CCD CAMERA
1126	SEM	1	6	5	8	8				ELECTRONICS
1127	SEM	1	6	5	8	9				MISC. PARTS
1128	SEM	1	6	5	9					TUNE MONITOR
1129	SEM	1	6	5	9	1				STRIP-LINE PICK UP (H&V)
1130	SEM	1	6	5	9	1	1			MECHANICAL ASSEMBLY
1131	SEM	1	6	5	9	1	2			VACUUM FEEDTHROUGHS
1132	SEM	1	6	5	9	2				STRIP-LINE KICKER
1133	SEM	1	6	5	9	2	1			MECHANICAL ASSEMBLY
1134	SEM	1	6	5	9	2	2			VACUUM FEEDTHROUGHS
1135	SEM	1	6	5	9	3				POWER AMPLIFIER
1136	SEM	1	6	5	9	4				RF SWITCHES
1137	SEM	1	6	5	9	5				ELECTRICAL HARDWARE
1138	SEM	1	6	5	9	6				ELECTRONICS
1139	SEM	1	6	5	9	7				MISC. PARTS
1140	SEM	1	6	5	10					BEAM LOSS MONITOR-PUC
1141	SEM	1	6	5	10	1				PRESSURE STATION
1142	SEM	1	6	5	10	2				PRESSURIZED CABLE/CONNECTORS
1143	SEM	1	6	5	10	3				READOUT SCOPE
1144	SEM	1	6	5	11					BEAM LOSS MONITOR-PIN DIODE
1145	SEM	1	6	5	11	1				DETECTOR
1146	SEM	1	6	5	11	2				ELECTRONICS
1147	SEM	1	6	5	11	3				MISC. PARTS
1148	SEM	1	6	5	12					BPM CALIBRATION BENCH
1149	SEM	1	6	5	12	1				OPTICAL GRADE TRASLATION BENCH
1150	SEM	1	6	5	12	2				RF INSTRUMENTATION + PC
1151	SEM	1	6	5	12	3				ELECTRONICS
1152	SEM	1	6	5	12	4				MISC. PARTS
1153	SEM	1	6	5	13					CABLES AND TRAYS
1154	DA	1	6	6						BEAM CONTROL FEEDBACKS
1155	DA	1	6	6	1					HORIZONTAL FEEDBACK
1156	DA	1	6	6	1	1				BPM-8 BUTTON PICKUP
1157	DA	1	6	6	1	1	1			MECHANICAL ASSEMBLY
1158	DA	1	6	6	1	1	2			VACUUM FEEDTHROUGHS
1159	DA	1	6	6	1	1	3			MISC. PARTS
1160	DA	1	6	6	1	1	4			CALIBRATION
1161	DA	1	6	6	1	2				ANALOG FRONT END
1162	DA	1	6	6	1	3				DIGITAL PROCESSING UNIT
1163	DA	1	6	6	1	4				ANALOG BACK END

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								
2	Ref.									DESCRIPTION
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
1164	DA	1	6	6	1	4	1			POWER AMPLIFIER
1165	DA	1	6	6	1	4	2			STRIP-LINE KICKER
1166	DA	1	6	6	1	4	3			ABSORBER
1167	DA	1	6	6	1	4	4			LOAD
1168	DA	1	6	6	1	4	5			POWER ATTENUATOR
1169	DA	1	6	6	1	5				RACK
1170	DA	1	6	6	1	6				CABLING AND TRAYS
1171	DA	1	6	6	1	7				OSCILLOSCOPE 1GHZ 4-CH
1172	DA	1	6	6	1	8				SERVER
1173	DA	1	6	6	2					VERTICAL FEEDBACK
1174	DA	1	6	6	2	1				BPM-8 BUTTON PICKUP
1175	DA	1	6	6	2	1	1			MECHANICAL ASSEMBLY
1176	DA	1	6	6	2	1	2			VACUUM FEEDTHROUGHS
1177	DA	1	6	6	2	1	3			MISC. PARTS
1178	DA	1	6	6	2	1	4			CALIBRATION
1179	DA	1	6	6	2	2				ANALOG FRONT END
1180	DA	1	6	6	2	3				DIGITAL PROCESSING UNIT
1181	DA	1	6	6	2	4				ANALOG BACK END
1182	DA	1	6	6	2	4	1			POWER AMPLIFIER
1183	DA	1	6	6	2	4	2			STRIP-LINE KICKER
1184	DA	1	6	6	2	4	3			ABSORBER
1185	DA	1	6	6	2	4	4			LOAD
1186	DA	1	6	6	2	5				RACK
1187	DA	1	6	6	2	6				CABLING AND TRAYS
1188	DA	1	6	6	3					LONGITUDINAL FEEDBACK
1189	DA	1	6	6	3	1				BPM-8 BUTTON PICKUP
1190	DA	1	6	6	3	1	1			MECHANICAL ASSEMBLY
1191	DA	1	6	6	3	1	2			VACUUM FEEDTHROUGHS
1192	DA	1	6	6	3	1	3			MISC. PARTS
1193	DA	1	6	6	3	1	4			CALIBRATION
1194	DA	1	6	6	3	2				ANALOG FRONT END / BACK END
1195	DA	1	6	6	3	3				DIGITAL PROCESSING UNIT
1196	DA	1	6	6	3	3	1			POWER BACK END
1197	DA	1	6	6	3	3	2			POWER AMPLIFIER
1198	DA	1	6	6	3	3	3			CIRCULATOR
1199	DA	1	6	6	3	3	4			4-PORT CAVITY KICKER (WITH WATER COOLING)
1200	DA	1	6	6	3	3	5			LOAD
1201	DA	1	6	6	3	4				RACK
1202	DA	1	6	6	3	5				CABLING AND TRAYS
1203	DA	1	6	6	3	6				OSCILLOSCOPE 4GHZ 4-CH
1204	DA	1	6	6	3	7				SPECTRUM ANALYZER
1205	DA	1	6	6	4					IP FEEDBACKS
1206	DA	1	6	6	4	1				FAST IP FEEDBACK (H/V)
1207	DA	1	6	6	4	1	1			BPM-4 BUTTON PICKUP
1208	DA	1	6	6	4	1	2			PROCESSING UNIT
1209	DA	1	6	6	4	1	3			AIR COIL MAGNETS
1210	DA	1	6	6	4	2				DITHER FEEDBACK (H/V)
1211	DA	1	6	6	4	3				IP FEEDFORWARD
1212	DA	1	6	6	4	3	1			BPM-4 BUTTON PICKUP
1213	DA	1	6	6	4	3	2			ANALOG FRONT END
1214	DA	1	6	6	4	3	3			DIGITAL PROCESSING UNIT
1215	DA	1	6	6	4	3	4			ANALOG BACK END
1216	DA	1	6	6	4	3	5			POWER AMPLIFIER
1217	DA	1	6	6	4	3	6			STRIPLINE KICKER
1218	DA	1	6	6	4	4				CABLING AND TRAYS
1219	DA	1	6	6	4	5				OSCILLOSCOPE 12 BIT
1220	DA	1	6	6	4	6				ARBITRARY TRUE GENERATOR 16 BIT 4-CH
1221	DA	1	6	6	4	7				SERVER

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								DESCRIPTION
2	Ref.									
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
1220	DA	1	6	6	4	8				SOFTWARE
1221	DA	1	6	6	5					SYNCHRONIZATION (2PS RMS JITTER)
1224	DA	1	6	6	5	1				MAIN RF SYNTHESIS AND DISTRIBUTION
1225	DA	1	6	6	5	1	1			RF MASTER OSCILLATOR
1226	DA	1	6	6	5	1	2			10 MHZ OSCILLATOR
1227	DA	1	6	6	5	1	3			RF DISTRIBUTION BOX
1228	DA	1	6	6	5	1	4			RF PHASE SHIFTER
1229	DA	1	6	6	5	1	5			RF PHASE SHIFTER CONTROLLER
1230	DA	1	6	6	5	1	6			COMPENSATED OPTICAL FIBER TX-RX (@RF)
1231	DA	1	6	6	5	1	7			OPTICAL FIBER
1232	DA	1	6	6	5	1	8			CABLING AND TRAYS
1233	DA	1	6	6	5	1	9			RACKS
1234	DA	1	6	6	5	2				LOW FREQUENCY SYNTHESIS AND DISTRIBUTION
1235	DA	1	6	6	5	2	1			FIDUCIAL GENERATOR
1236	DA	1	6	6	5	2	2			DIVIDER-BY-N (LOCKED TO FIDUCIAL)
1237	DA	1	6	6	5	2	3			DIVIDER-BY-H (LOCKED TO FIDUCIAL)
1238	DA	1	6	6	5	2	4			NIM / ECL FANOUT
1239	DA	1	6	6	5	2	5			50 HZ PLL AND FANOUT
1240	DA	1	6	6	5	2	6			TTL/ECL SYNCHRONIZER AND FANOUT
1241	DA	1	6	6	5	2	7			CRATES
1242	DA	1	6	6	5	2	8			CABLING AND TRAYS
1243	DA	1	6	6	5	2	9			RACKS
1244	DA	1	6	6	5	2	10			OSCILLOSCOPE 1 GHZ 4-CH
1245	DA	1	6	6	5	3				EXRF SYNTHESIS AND DISTRIBUTION
1246	DA	1	6	6	5	3	1			EXRF GENERATOR
1247	DA	1	6	6	5	3	2			EXRF DISTRIBUTION BOX
1248	DA	1	6	6	5	3	3			EXRF PHASE SHIFTER
1249	DA	1	6	6	5	3	4			EXRF PHASE SHIFTER CONTROLLER
1250	DA	1	6	6	5	3	5			COMPENSATED OPTICAL FIBER TX-RX (@EXRF)
1251	DA	1	6	6	5	3	6			OPTICAL FIBER
1252	DA	1	6	6	5	3	7			CABLING AND TRAYS
1253	DA	1	6	6	5	3	8			RACKS
1254	DA	1	6	6	5	3	9			SIGNAL SOURCE ANALYZER
1255	DA	1	6	6	1	3	10			OSCILLOSCOPE 6 GHZ 4-CH
1256	MG	1	6	7						COMPUTER CONTROL
1257	MG	1	6	7	1					FRONTEND
1258	MG	1	6	7	1	1				HARDWARE
1259	MG	1	6	7	1	2				CONTROLS CPUS
1260	MG	1	6	7	2					INFRASTRUCTURE
1261	MG	1	6	7	2	1				NETWORK 48 SWITCH
1262	MG	1	6	7	2	2				NETWORK L2/L3 CORE SWITCH
1263	MG	1	6	7	2	4				PLASS & CABLIS
1264	RR	1	6	8						ELECTRICAL SERVICES
1265	RR	1	6	8	1					STANDARD LINE SOURCE
1266	RR	1	6	8	1	1				MAIN POWER DIST. BOARD
1267	RR	1	6	8	1	2				MED/LOW VOLT. TRANSFORMER
1268	RR	1	6	8	1	3				MEDIUM VOLT. BREAKER
1269	RR	1	6	8	1	4				CABLES AND TRAYS
1270	RR	1	6	8	1	5				MISC. PARTS
1271	MG	1	6	9						GEN. PURPOSE SIGICON STATIONS
1272	MG	1	6	9	1					TERMINAL BOX
1273	MG	1	6	9	2					CABLES
1274	MG	1	6	9	3					LUGS
1275	TS	1	6	10						STORAGE RINGS MECHANICAL SERVICES
1276	TS	1	6	10	1					SR GIRDERS MANUFACTURING
1277	TS	1	6	10	2					SR GIRDERS INSTALLATION
1278	TS	1	6	10	3					SR ALIGNMENT FIRST CAMPAIGN
1279	TS	1	6	10	4					SR ALIGNMENT SECOND CAMPAIGN (SMOOTHING)

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								DESCRIPTION
2	Ref.									
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
1280	SG	1	6	10	5					PROCESS WATER DISTRIBUTION
1281	SG	1	6	10	5	1				DIPOLES
1282	SG	1	6	10	5	1	1			FLOWMETER
1283	SG	1	6	10	5	1	2			SHUT-OFF VALVES
1284	SG	1	6	10	5	1	3			PRESSURE GAUGE
1285	SG	1	6	10	5	1	4			HOSES
1286	SG	1	6	10	5	1	5			MISC. PARTS
1287	SG	1	6	10	5	2				QPOLES, SEXTUPOLES AND OCTUPOLES
1288	SG	1	6	10	5	2	1			FLOWMETER
1289	SG	1	6	10	5	2	2			SHUT-OFF VALVES
1290	SG	1	6	10	5	2	3			PRESSURE GAUGE
1291	SG	1	6	10	5	2	4			HOSES
1292	SG	1	6	10	5	2	5			MISC. PARTS
1293	SG	1	6	10	5	3				RF CAVITY
1294	SG	1	6	10	5	3	1			FLOWMETER
1295	SG	1	6	10	5	3	2			SHUT-OFF VALVES
1296	SG	1	6	10	5	3	3			PRESSURE GAUGE
1297	SG	1	6	10	5	3	4			HOSES
1298	SG	1	6	10	5	3	5			MISC. PARTS
1299		1	6	11						THERMAL CONTROL SYSTEM
1300		1	6	11	1					MAGNET THERMAL SWITCHES C. S.
1301		1	6	11	1	1				PLC
1302		1	6	11	1	2				CABLE LINK
1303		1	6	11	1	3				SMART CONNECTIONS
1304		1	6	11	1	4				TH.SWITCHES CABLES
1305		1	6	11	1	5				MISC. PARTS
1306		1	6	11	2					FLOW METER CONTROL SYSTEM
1307		1	6	11	2	1				PLC
1308		1	6	11	2	2				CABLE LINK
1309		1	6	11	2	3				SMART CONNECTION
1310		1	6	11	2	4				WATER FLOW METER CABLES
1311		1	6	11	2	5				MISC. PARTS
1312		1	6	11	3					PLC INTERCONNECTION
1313		1	6	11	4					PLC TO P.S. CONNECTIONS
1314	BME	1	7							POLARIZATION
1315	FP	1	7	1						SPIN ROTATOR SOLENOIDS
1316	FP	1	7	1	1					MAGNET ASSEMBLY
1317	FP	1	7	1	2					DESIGN
1318	FP	1	7	1	3					COMMISSIONING
1319	FP	1	7	2						POWER SUPPLY
1320	FP	1	7	2	1					POWER SUPPLY, PROTECTION AND CONTROLS
1321	FP	1	7	2	2					MAINS CONNECTION
1322	FP	1	7	2	3					CABLES & TRAYS
1323	FP	1	7	2	4					MISC. PARTS
1324	CA	1	7	3						VACUUM ASSEMBLY
1325	CA	1	7	3	1					VACUUM CHAMBERS
1326	CA	1	7	3	2					PUMPS AND P.S.
1327	CA	1	7	3	3					SENSORS AND CONTROLS
1328	CA	1	7	3	4					SUPPORTS
1329	MG	1	7	4						CONTROL SYSTEM
1330	MG	1	7	4	1					FRONTEND
1331	MG	1	7	4	1	1				HARDWARE
1332	MG	1	7	4	1	2				CONTROLS CPUS
1333	MG	1	7	4	2					INFRASTRUCTURE
1334	MG	1	7	4	2	1				NETWORK 48 SWITCH
1335	MG	1	7	4	2	4				PLASS & CABLIS
1336	FP	1	7	5						AUXILARY SERVICES
1337	RR	1	7	5	1					ELECTRICAL CONNECTION

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								DESCRIPTION
2	Ref.									
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
1334	SG	1	7	5	2					WATER PROCESS SYSTEM
1335	SG	1	7	5	3					COMPRESSED AIR SYSTEM
1340	MG	1	7	5	4					COMPUTER CONTROLS
1341	TS	1	7	6						TRANSPORT AND INSTALLATION
1342		1	8							INTERACTION REGION
1343	CA	1	8	1						VACUUM CHAMBERS
1344		1	8	2						PM QDOP
1345	FP	1	8	3						FINAL FOCUS SUPERCONDUCTING MAGNETS (QD0, QD0H, CROSS TALK COMPENSATOR AND ANTISOLENOIDS)
1349	FP	1	8	3	1					COLD MASS AND CRYOSTATS
1345	FP	1	8	3	2					CRYOGENICS LINES
1348	FP	1	8	3	3					PROXIMITY CRYOGENICS
1349	FP	1	8	3	4					POWER SUPPLY AND CONTROLS
1350	FP	1	8	3	5					R&D, DESIGN AND TESTS
1351		1	8	3	6					HER QF1
1352		1	8	4	7					SKEW QUADRUPOLES
1353		1	8	5	8					BUCKING SOLENOIDS
1354		1	8	6	9					ORBIT CORRECTORS
1355	FP	1	8	7						EXPERIMENT SOLENOIDAL MAGNET
1356	FP	1	8	7	1					PACKING AND TRANSPORT
1357	FP	1	8	7	2					NEW CONTROL SYSTEM
1358	FP	1	8	7	3					NEW PUMPING SYSTEM
1359	FP	1	8	7	4					SENSOR REPLACEMENT
1360	FP	1	8	7	5					TESTS
1361	FP	1	8	7	6					TRAVELS
1362	TS	1	8	8						VIBRATION CONTROL FEEDBACK SYSTEM
1363	FP	1	8	9						CRYOSTATS
1364	TS	1	8	10						VIBRATION ABSORBERS
1365	TS	1	8	11						MECHANICS AND SUPPORTS
1366	TS	1	8	11	1					IR GIRDERS MANUFACTURING
1367	TS	1	8	11	2					IR GIRDERS INSTALLATION
1368	SEM	1	8	12						DIAGNOSTICS DEVICES
1369	MG	1	8	13						COMPUTER CONTROLS
1370	MG	1	8	13	1					FRONTEND
1371	MG	1	8	13	1	1				HARDWARE
1372	MG	1	8	13	1	2				CONTROLS CPUS
1373	MG	1	8	13	2					INFRASTRUCTURE
1374	MG	1	8	13	2	1				NETWORK 48 SWITCH
1375	MG	1	8	13	2	4				PLANS & CABLES
1376		1	8	14						AUXILIARY SERVICES
1377	TS	1	8	15						ALIGNMENT
1378	TS	1	8	15	1					IR ALIGNMENT FIRST CAMPAIGN
1379	TS	1	8	15	2					IR ALIGNMENT SECOND CAMPAIGN (SMOOTHING)
1380		1	9							SYNCHROTRON LIGHT SOURCES
1381		1	9	1						INSERTION DEVICES
1382		1	9	2						DUMPERS
1383		1	9	3						VACUUM CHAMBERS
1384		1	9	4						DIAGNOSTICS DEVICES
1385		1	9	4	1					ELECTRICAL CONNECTION
1386		1	9	4	2					WATER PROCESS SYSTEM
1387		1	9	4	3					COMPRESSED AIR SYSTEM
1388		1	9	4	4					COMPUTER CONTROLS
1389		1	9	4	5					HIGH POWER ELECTRONICS
1390		1	9	4	6					LOW POWER ELECTRONICS
1391		1	9	5						VACUUM SYSTEM
1392		1	9	6						MECHANICAL SERVICES
1393		1	9	6	1					SUPPORT

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								DESCRIPTION
2	Ref.									
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
1394		1	9	6	2					POSITIONING SYSTEM
1395		1	9	7						AUXILIARY SERVICES
1396		1	9	8						ALIGNMENT
1397		1	10							PHOTON LINES
1398		1	11							GENERAL FACILITIES
1399		1	11	1						MAGNETIC MEASUREMENT WORKSHOP
1400		1	11	1	1					MAG. MEASUREMENT BENCH
1401		1	11	1	2					MAG. MEAS. POWER SUPPLIES
1402	CA	1	11	2						VACUUM FACILITY WORKSHOP
1403	CA	1	11	2	1					CLEANING FACILITIES
1404	CA	1	11	2	2					WELDING FACILITIES
1405	CA	1	11	2	3					VACUUM FURNACE
1406	CA	1	11	2	4					LEAK DETECTION INSTRUMENTATION
1407	CA	1	11	2	5					CLEAN ROOM
1408	CA	1	11	2	6					LAMINAR FLOW UNIT
1409	CA	1	11	2	7					BAKE OUT PROVISIONS
1410	CA	1	11	2	8					VACUUM COMPONENTS AND DEVICES
1411	CA	1	11	2	9					THIN FILM DEPOSITION FACILITY
1412	GA	1	11	3						RF SYSTEM FACILITY WORKSHOP
1413	GA	1	11	3	1					CAVITY TESTING HALL
1414	GA	1	11	3	1	1				CONCRETE SHIELDING
1415	GA	1	11	3	1	2				RADIATION SAFETY SYSTEM
1416	CHA	1	11	3	1	3				FIRE PROTECTION
1417	SG	1	11	3	1	4				MECHANICAL SERVICES
1418	RR	1	11	3	1	5				ELECTRICAL SERVICES
1419	RR	1	11	3	1	6				MAINS POWER CONNECTION
1420	RR	1	11	3	1	6	1			DISTRIBUTION BOARD
1421	RR	1	11	3	1	6	2			CABLES & TRAYS
1422	SG	1	11	4						PROCESS WATER FACILITIES
1423	SG	1	11	4	1					LINAC/T-LINES/PHOTON LINES
1424	SG	1	11	4	1	1				PRIMARY LOOP
1425	SG	1	11	4	1	1	1			COOLING TOWER & ANC. EQUIPMENT
1426	SG	1	11	4	1	1	1	1		COOLING TOWER
1427	SG	1	11	4	1	1	1	2		MAIN SHUT-OFF VALVES
1428	SG	1	11	4	1	1	1	3		PURGE VALVE
1429	SG	1	11	4	1	1	1	4		MAKE-UP VALVE
1430	SG	1	11	4	1	1	1	5		LEVEL CONTROL
1431	SG	1	11	4	1	1	1	6		FILTER
1432	SG	1	11	4	1	1	2			PUMPS & ANC. EQUIPMENTS
1433	SG	1	11	4	1	1	2	1		PUMPS
1434	SG	1	11	4	1	1	2	2		MOTOR STARTERS
1435	SG	1	11	4	1	1	2	3		VIBRATION ISOLATION
1436	SG	1	11	4	1	1	2	4		CHECK VALVE
1437	SG	1	11	4	1	1	2	5		SHUT OFF VALVE
1438	SG	1	11	4	1	1	2	6		PRESSURE METER
1439	SG	1	11	4	1	1	2	7		VENTURIMETER & INTERLOCK
1440	SG	1	11	4	1	1	2	8		THERMOMETER
1441	SG	1	11	4	1	1	3			HEAT EXCHANGER & ANC. EQUIP.
1442	SG	1	11	4	1	1	3	1		HEAT EXCHANGER FOR LINAC
1443	SG	1	11	4	1	1	3	2		HEAT EXCHANGER FOR T/L
1444	SG	1	11	4	1	1	3	3		HEAT EXCHANGER FOR RINGS
1445	SG	1	11	4	1	1	3	4		HEAT EXCHANGER FOR EXPERIMENTS
1446	SG	1	11	4	1	1	3	5		HEAT EXCHANGER FOR CAVITY
1447	SG	1	11	4	1	1	4			PIPING
1448	SG	1	11	4	1	1	4	1		PIPING MATERIALS
1449	SG	1	11	4	1	1	4	2		FILTERS
1450	SG	1	11	4	1	1	4	3		EXPANSION JOINTS
1451	SG	1	11	4	1	1	4	4		FITTINGS

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								DESCRIPTION
2	Ref.									
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
1452	SG	1	11	4	1	2				SECONDARY LOOP
1453	SG	1	11	4	1	2	1			DE-IONIZATION UNIT
1454	SG	1	11	4	1	2	2			STORAGE TANK & ANC. EQUIPMENTS
1455	SG	1	11	4	1	2	2	1		TANKS
1456	SG	1	11	4	1	2	2	2		SHUT OFF VALVE
1457	SG	1	11	4	1	2	2	3		PURGE VALVE
1458	SG	1	11	4	1	2	2	4		MAKE UP VALVE
1459	SG	1	11	4	1	2	3			PUMPS & ANC. EQUIPMENTS
1460	SG	1	11	4	1	2	3	1		PUMPS
1461	SG	1	11	4	1	2	3	2		MOTOR STARTER
1462	SG	1	11	4	1	2	3	3		VIBRATION ISOLATION
1463	SG	1	11	4	1	2	3	4		CHECK VALVE
1464	SG	1	11	4	1	2	3	5		SHUT OFF VALVE
1465	SG	1	11	4	1	2	3	6		PRESSURE METER
1466	SG	1	11	4	1	2	4			PIPING & ANC. EQUIPMENTS
1467	SG	1	11	4	1	2	4	1		PIPING MATERIALS
1468	SG	1	11	4	1	2	4	2		FILTERS
1469	SG	1	11	4	1	2	4	3		EXPANSION JOINTS
1470	SG	1	11	4	1	2	4	4		FITTINGS
1471	MG	1	11	5						CONTROL SYSTEM
1472	MG	1	11	5	1					HIGH LEVEL SYSTEM
1473	MG	1	11	5	1	1				HARDWARE
1474	MG	1	11	5	1	1	1			WORKSTATION
1475	MG	1	11	5	1	1	2			TERMINALS & MONITORS
1476	MG	1	11	5	1	1	3			PRINTERS
1477	MG	1	11	5	1	1	4			NETWORK 48 SWITCH
1478	MG	1	11	5	1	1	6			STORAGE SYSTEM
1479	MG	1	11	5	1	2				SOFTWARE
1480	MG	1	11	5	1	2	1			DEVELOPMENT TOOLS
1481	MG	1	11	5	1	2	3			DATA BASE
1482	MG	1	11	5	1	2	4			SYSTEM
1483	MG	1	11	5	2					MEDIUM LEVEL
1484	MG	1	11	5	2	1				HARDWARE
1485	MG	1	11	5	2	1	1			VME CRATES
1486	MG	1	11	5	2	1	2			CPUS
1487	MG	1	11	5	3					LOW LEVEL
1488	MG	1	11	5	4					TIMING SYSTEM
1489	MG	1	11	5	5					GEN. SIG/CONT. STATION &CABLES
1490	SEM	1	11	6						BEAM DIAGNOSTIC WORKSHOP
1491	SEM	1	11	6	1					DIGITAL OSCILLOSCOPE
1492	SEM	1	11	6	2					LOGIC ANALYZER
1493	SEM	1	11	6	3					SPECTRUM ANALYZER
1494	SEM	1	11	6	4					NETWORK ANALYZER
1495	SEM	1	11	6	6					DIGITAL RECORDER
1496	SEM	1	11	6	7					TRANSIENT DIGITIZER
1497	TS	1	11	7						SURVEY & NETWORK
1498	TS	1	11	7	1					PRIMARY CONTROL NETWORK
1499	TS	1	11	7	1	1				GEODETIC REFERENCES MANUFACTURING
1500	TS	1	11	7	1	2				SIGHT-RISERS MANUFACTURING
1501	TS	1	11	7	1	3				GEODETIC-REFERENCES SURVEY
1502	TS	1	11	7	2					SECONDARY CONTROL NETWORK
1503	TS	1	11	7	2	1				WALL FLOOR TARGETS MANUFACTURING
1504	TS	1	11	7	2	2				WALL FLOOR TARGETS INSTALLATION
1505	TS	1	11	7	2	3				WALL FLOOR TARGETS SURVEY
1506	TS	1	11	7	3					ELEVATION CONTROL NETWORK
1507	TS	1	11	7	3	1				ELEVATION CONTROL NETWORK SURVEY
1508	TS	1	11	7	4					INSTRUMENTATION
1509	TS	1	11	7	4	1				LASER TRAKER

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								DESCRIPTION
2	Ref.									
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
1510	TS	1	11	7	4	2				ABSOLUTE TRAKER AT 401
1511	TS	1	11	7	4	3				MEKOMETER
1512	TS	1	11	7	4	4				ZENITH-NADIR PLUMMETS
1513	TS	1	11	7	4	5				DIGITAL LEVELS
1514	TS	1	11	7	4	6				TOTAL STATION
1515	TS	1	11	7	4	7				GPS RECEIVERS WITH ZEPHYR GEODETIC ANTENNA
1516	TS	1	11	7	4	8				SOFTWARE
1517	RR	1	12							ELECTRIC SERVICES
1518	RR	1	12	1						HV ELECTRIC STATION
1519	RR	1	12	1	1					HV CABLE LINES
1520	RR	1	12	1	2					HV OUTDOOR APPARATA
1521	RR	1	12	1	2	1				HV CONNECTORS
1522	RR	1	12	1	2	2				HV TV TRANSFORMERS
1523	RR	1	12	1	2	3				HV TA TRANSFORMERS
1524	RR	1	12	1	2	4				HV TRANSFORMERS
1525	RR	1	12	1	2	5				HV BREAKERS
1526	RR	1	12	1	3					MV CABLES LINES
1527	RR	1	12	1	4					MV INDOOR APPARATA
1528	RR	1	12	1	4	1				MV CONNECTORS
1529	RR	1	12	1	4	2				MV TV TRANSFORMERS
1530	RR	1	12	1	4	3				MV TA TRANSFORMERS
1531	RR	1	12	1	4	4				MV TRANSFORMERS
1532	RR	1	12	1	4	5				MV BREAKERS
1533	RR	1	12	1	5					LV CABLES LINES
1534	RR	1	12	1	6					LV INDOOR APPARATA
1535	RR	1	12	1	6	1				LV CONNECTORS
1536	RR	1	12	1	6	2				LV TV TRANSFORMERS
1537	RR	1	12	1	6	3				LV TA TRANSFORMERS
1538	RR	1	12	1	6	4				LV TRANSFORMERS
1539	RR	1	12	1	6	5				LV BREAKERS
1540	RR	1	12	1	7					REACTIVE POWER COMPENSATOR
1541	RR	1	12	1	8					ELECTRIC STATION CONTROL SYSTEM
1542	CHA	1	12	1	9					FIRE PROTECTION SYSTEM
1543	CHA	1	12	1	10					FIRE EXTINGUISHING SYSTEM
1544	RR	1	12	2						MV/LV DISTRIBUTION SYSTEM
1545	RR	1	12	2	1					MV/LV DISTRIBUTION STATIONS
1546	RR	1	12	2	1	1				MV DISTRIBUTION CABINET
1547	RR	1	12	2	1	2				MV/LV TRANSFORMERS
1548	RR	1	12	2	1	3				LV DISTRIBUTION CABINETS
1549	RR	1	12	2	2					LV REACTIVE POWER COMPENSATORS
1550	RR	1	12	2	3					PLC CONTROL SYSTEM
1551	CHA	1	12	2	4					FIRE PROTECTION SYSTEM
1552	CHA	1	12	2	5					FIRE EXTINGUISHING SYSTEM
1553	LC	1	13							CRYOGENICS
1554	LC	1	13	1						CRYOGENIC PLANT
1555	LC	1	13	1	1					COLD BOX
1556	LC	1	13	1	2					COMPRESSOR
1557	LC	1	13	1	3					VALVE BOX
1558	LC	1	13	1	4					PIPING
1559	LC	1	13	1	5					COMPRESSED HELIUM TANK
1560	LC	1	13	1	6					CONTROL SYSTEM
1561	LC	1	13	1	7					HELIUM RECOVERY SYSTEM
1562	LC	1	13	1	8					HELIUM GAS BALLOON
1563	LC	1	13	1	9					OIL ANALYZER
1564	LC	1	13	2						VACUUM SYSTEM
1565	LC	1	13	2	1					VACUUM PUMPS FOR THE DETECTOR
1566	LC	1	13	2	2					VACUUM PUMPS FOR THE FF CRYOSTATS
1567	LC	1	13	2	3					VACUUM PUMPS FOR CRYOGENIC LAB

	A	B	C	D	E	F	G	H	I	J
1		WBS NUMBER								DESCRIPTION
2	Ref.									
3		1	2	3	4	5	6	7	8	
4		1								SUPER-B PROJECT
1564	LC	1	13	3						QUENCH DETECTOR SYSTEM
1569	LC	1	13	4						REMOTE CONTROL SYSTEM
1570	LC	1	13	4	1					PC FOR CRYOGENICS REMOTE CONTROL
1571	LC	1	13	5						LAB EQUIPMENT
1572	LC	1	13	5	1					SPARE THERMOMETERS
1573	LC	1	13	5	2					ELECTONICS FOR THERMOMETERS
1574	LC	1	13	5	3					VACUUM GAUGES + ELECTRONICS
1575	LC	1	13	5	4					LIQUID HELIUM DEWARS
1576	LC	1	13	5	5					LIQUID NITROGEN DEWARS
1577	LC	1	13	5	6					LEAK DETECTOR
1578	LC	1	13	5	7					HELIUM SNIFFER
1579	LC	1	13	5	8					LAB GENERAL EQUIPMENT
1580		1	14							CIVIL ENGINEERING
1581		1	14	1						DETECTOR HALL BUILDING
1582		1	14	2						LINAC/DAMPING RING/RING TUNNEL BUILDING
1583		1	14	3						TRANSFER LINE CONSTRUCTION
1584		1	14	4						TECHNICAL BUILDINGS BUILDING
1585		1	14	5						OFFICES AND ANCILLARY BUILDINGS
1586		1	14	6						BUILDING LIGHTING
1587		1	14	7						BUILDING EMERGENCY LIGHTING
1588		1	14	8						BUILDING POWER DISTRIBUTION
1589		1	15							ARCHEOLOGICAL DIGGING AND VERIFICATION
1590		1	16							GEOLOGICAL PROSPECTION
1591		1	17							GAS PIPELINE CONNECTION
1592		1	18							WATER DUCT CONNECTION
1593	RR	1	19							ELECTRIC DISTRIBUTOR CONNECTION
1594	CHA	1	20							FIRE PROTECTION SYSTEM
1595	CHA	1	21							FIRE EXTINGUISHING SYSTEM
1596	TS	1	22							CRANE & LIFTING SYSTEM
1597	EA	1	23							RADIATIOON PROTECTION
1598	EA	1	23	1						RADIATION PROTECTION SYSTEM
1599	EA	1	23	2						RADIATION MEASUREMENT SYSTEM
1600	EA	1	23	3						RADIATION SHIELDING
1601	EA	1	23	4						RADIATION PROTECTION LABORATORY EQUIPMENTS
1602	EA	1	23	5						ENVIROMENTAL AND PERSONNEL DOSIMETRY
1603	EA	1	23	6						RADIOACTIVE SOURCES
1604	EA	1	23	7						AREA FOR ACTIVATED MATERIAL STORAGE
1605	EA	1	23	8						AREA FOR RADIOACTIVE WASTE
1606	EA	1	23	9						ADDITIONAL RADIATION PROTECTION LAB EQUIP.
1607	CHA	1	24							CONVENTIONAL SAFETY SYSTEM
1608	CHA	1	24	1						AREA SURVEILLANCE CAMERA
1609		1	25							PRELIMINARY EXTERNAL AREA MAKE-UP
1610		1	25	1						WIRE FENCING AND ROAD
1611		1	25	2						BOOBY-TRAP RECLAMATION
1612		1	25	3						DITCH DEVIATION
1613		1	25	4						ARTESIAN WELL SINKING
1614		1	25	5						SEWERAGE
1615		1	26							FINAL EXTERNAL AREA MAKE-UP

costing

- WBS for costing filled at 83%
- Beginning of July the costing document will be sent to the finance Committee, the “ Fioni Committee”
- Report expected by end of November with an intermediate iteration

first expenses

- Integrating the team: enrolment of new people
- Civil engineering projects
- Preliminary site related works

www.cabibbolab.it

News

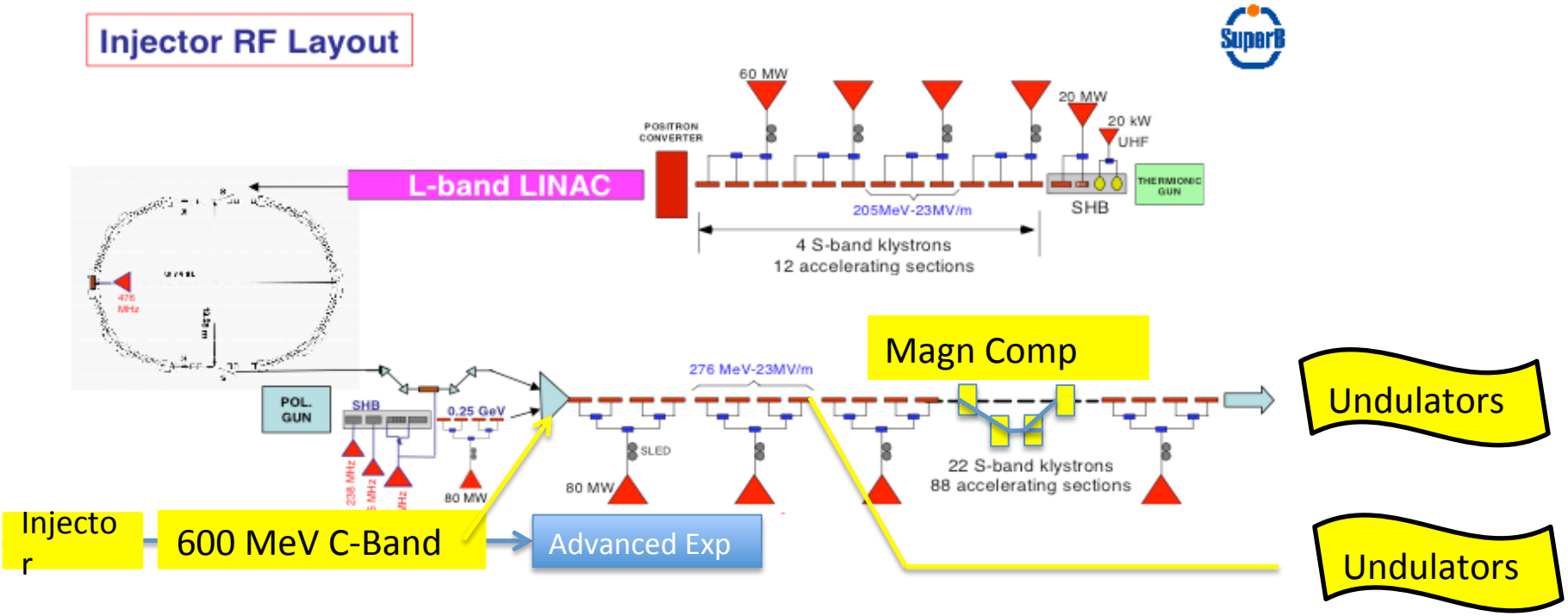
- The Cabibbo Laboratory opens the doors to new physicists, engineers and technicians

- FEL, a super laser for SuperB

Superb as a light source

- Within the high energy physics mode a limited number of beam lines can be accomodated
- The FEL option

A hard X-ray FEL with the SuperB linac



The costing for the X-FEL extra accelerator components will be quoted separately in the costing, anyway of the order of a few tens of ME compared to the few hundreds of a similar ad hoc facility

- Superb can maintain his promise of a hybrid facility

New physics could strengthen the superb case

2011

- CDF results may point to a new weak sector
- MEG may open the pandora box of flavour changing neutral currents

Absence of

2012……

New physics could strengthen the superb case

2011

The computing grid network

- Size similar to one of the main LHC experiments
- Three-four main centres
- Available also for community oriented services
- Money for the computing centres will come from a separate source (estimated a few tens Meuro)

2012

The computing grid network

- Size similar to one of the main LHC experiments
- four main centres
- Available also for community oriented services
- Money for the computing centres did come from a separate source (about 16 ME)

The MOU-s

- The agreements with Consortium Institutions
  - University
  - INFN

    before summer
- SLAC
- BINP
- CERN (cooperation agreement)
- France
- UK

  before fall

2011 summary

- Project Approved
- Site decided
- Governance identified

2012 summary

- The Cabibbo lab started to operate
- Costing and lattice completion the priority
  - Government Commitment on most of costing profile possible after ° Fioni Committee° evaluation (if positive..)
  - Need to consolidate late this year all civil engineering related aspects