

March 6th, 1984

MEMORANDUM

To : Proton Synchrotron and Synchro-Cyclotron Committee
Copy to: D.J. Simon and Spokesmen of Experiments PS 170, 172, 173,
178 and 182
From : F. Bradamante, University of Trieste
Re : Proposal to add a third splitter in the LEAR Experimental Area

In the past months some thoughts have been given to the possibility of adding a third splitter in the LEAR Experimental Area. Specifically, this possibility has been envisaged for the line C₀, which is switched either to C1 (Experiments PS 170 and 182) or to C2 (Experiments PS 172, 173 and 178), and could help in releasing somewhat the pressure which at present is very high in that branch. While it is important to consider also other solutions, three arguments push for splitting the C-line:

i) the special design of the C2 beam offers a long section which could physically house the required beam elements;

ii) on that line are installed two of the three experiments which are expected to continue after 1984 and which can not be moved easily to a different area;

iii) the work would not interfere with the remaining installations in the South Hall.

The main problem is caused by the fact that, with the present beam allocations, experiment PS 172 will need the existing special layout of the C2 beam both in 1984 and 1985. In particular before changing this beam, we must

1) have finished the measurement of σ_{tot} (which needs the degraded beam);

2) have finished the measurement of the analyzing power of hydrogen and Carbon at small angles (which requires the use of the scattered beam);

3) be assured that 50 MeV/c changes of LEAR momentum are fast, so that in 1985 we can measure the two-body scattering at 13 momenta without using the degrader (as it is now foreseen).

On the other hand, there exist no spare splitters to-day, so there is an intrinsic delay of about one year (the time required to manufacture the splitter itself, private communication from D.J. Simon) between the (eventual) decision to add a new splitter in the area and the actual possibility of installing it. Since the cost involved is not very high, I would like to urge the Committee to recommend the construction of a splitter anyway, as soon as possible.

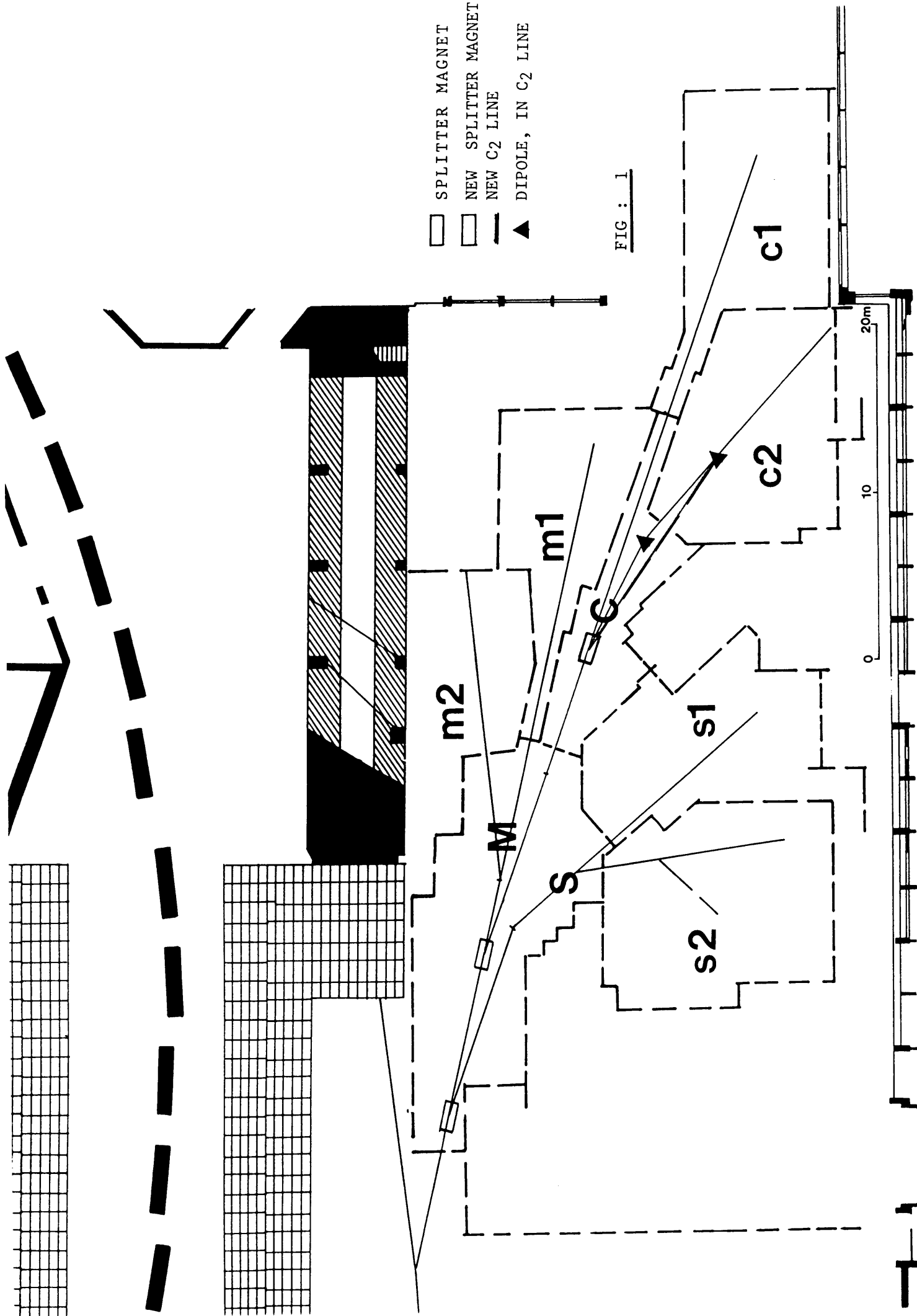


FIG : 1