NO. 28 FEB COMMISSIONING STUDY THURS. MAY 17, 1973

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Scheduled: 0001-0800 Actual: 0200-0800

Objective: Measure horizontal profiles of FEB

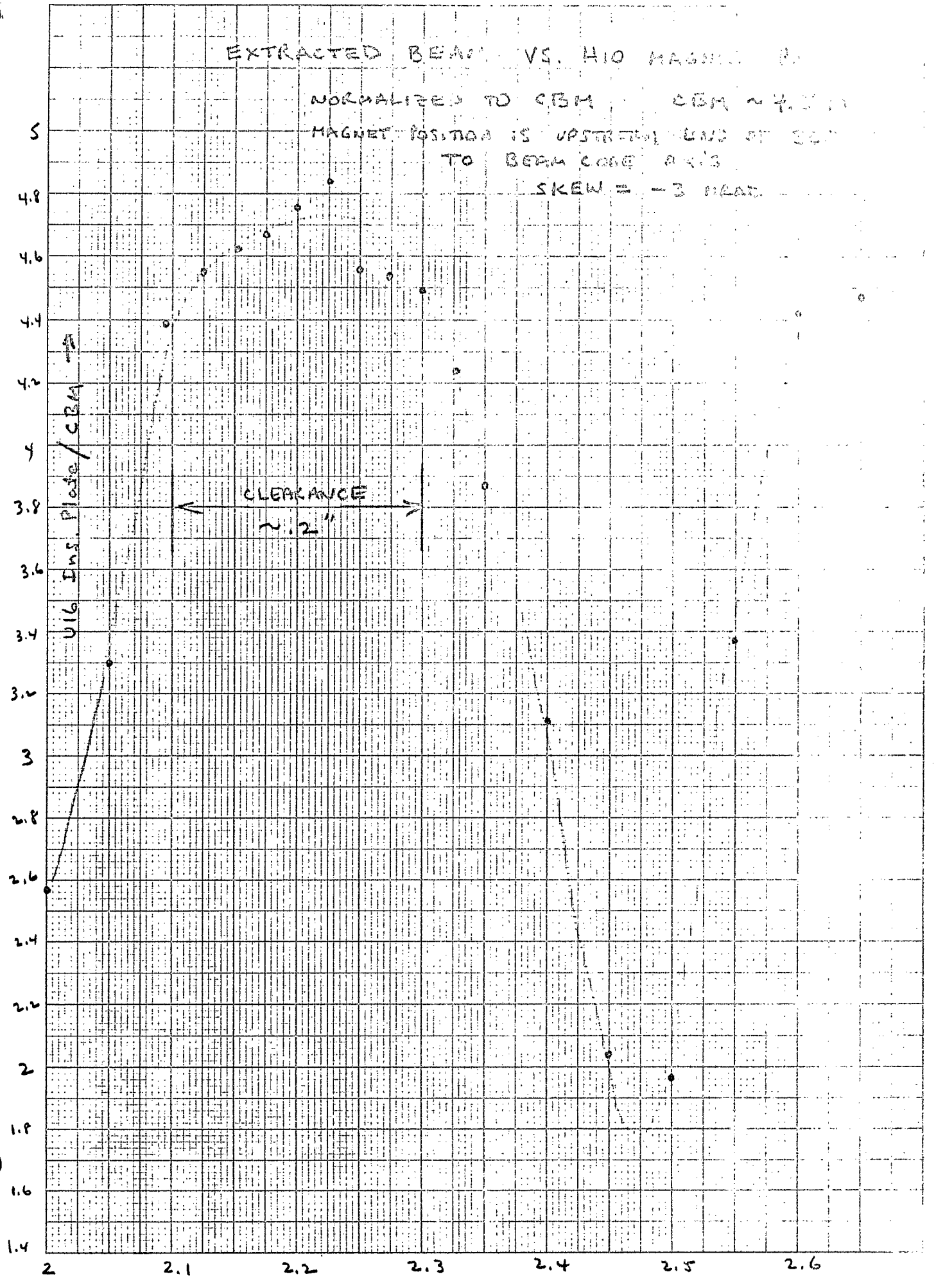
Result: Obtained numerous profiles at each of 22 settings of quadrupole UQ1. The horizontal width went through a minimum at quad settings quite close to the predicted values. Peaks are asymmetric — certainly non-Gaussian — and will probably require hand analysis for widths. This result is expected since, of the 7 bunches which appear on output of external current transformer, none appeared to be totally extracted — a consequence of the large internal beam width at the $\sim 5 \times 10^{12}$ ppp used in this run. The extracted beam is thus horizontally shaved and the resulting profile is truncated. We should repeat this data when we have the capability in the C15 + E15 kickers to do total extraction.

The H10 magnet position was varied to determine the amount of separation between the circulating and kicked beam at high circulating beam intensity. The result, on attached graph, shows .2" of clearance. This value will decrease when we extract a de-bunched beam because of additional momentum spread and will further decrease when the AGS attains $10^{13}$ ppp. It is therefore unlikely that an ejector septum significantly thicker than the present .09" will be possible.

An effort to optimize the skew angle of the E10 septum, presently set at the computed −4.7 mrad, was not successful due to instability in the CBM. The beam size was probably varying as a result.

The post-FEB intermittant instability is still with us. When complete beam loss occurred, a second spot was observed on external U16 flag about 1/4" below the main spot.

We noted that output of U16 insulated plate varied with current in quadrupole UQ1 which is adjacent to instrument box. Probably stray field affects electron collection.

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