

INTERDEPARTMENTAL

MASSACHUSETTS INSTITUTE OF TECHNOLOGY CAMBRIDGE, MASS. 02139

from the office of

October 29, 1970

Mr. Morton Berlan
Telecommunications Office
E18-204

Dear Mort:

We have now accumulated almost a month of operational experience with 64 trunks on level 8 of the dataswitch. From the statistics accumulated, it appears that our customers are receiving busy signals at about the same rate that they were when we had only 48 trunks on level 8, although the number of simultaneous users on Multics has not increased appreciably. In looking over the grading sheets, the reason for the lack of improvement appears to me to be that most of the 16 additional trunks were added to the grading pattern in areas where previous statistics showed that traffic was very light, namely on shelves "A" through "L". Since most of the congestion has always occurred on shelves "N" through "U", it continues to occur as before.

Enclosed are two items:

1. A copy of the present grading sheet on which have been entered the number of calls received on each trunk. This set of statistics shows clearly the concentration of traffic on the lower shelves. Trunk 101, the overflow trunk which appears at the end of every shelf was in use 38 times, for a total of about 5 hours, in the first 25 days (16 working days) in October. If I presume that this activity was concentrated in the period between 10 a.m. and 5 p.m. on working days, I conclude that the last trunk was busy about 5% of the prime working hours.
2. A copy of the present grade sheet with a set of proposed changes marked in red. These changes are intended to split up the high traffic areas more finely, on the basis of the statistics from the month.

I would like to request that you propose these changes to the New England Telephone Company, to be installed as soon as possible. If their traffic department wishes to question the proposal, I would be

happy to discuss the matter with them.

Sincerely yours,



Jerome H. Saltzer
Associate Professor of
Electrical Engineering

P.S. Note that we have succeeded in explaining 3 anomalies which appear in the statistics:

1. The average length of a call received on trunk 101 (the last trunk on every shelf) is only 8 minutes, while the average over all trunks is about 40 minutes. This is because the overflow trunk is only used by late comers to a fully loaded system; there is an appreciable chance that the system will refuse to let them log in, so their connection time is frequently very short.
2. Trunk 143 received no calls despite its early position on a high traffic shelf. This trunk was originally shimmed out of service because its sleeve lead connection was open. Apparently there has been no action of fixing this, so we have now made another request for fix.
3. Trunk 139 received many more calls than its grading position warrants. In fact, after checking the login and connect time statistics, it appears that only 1 out of every 10 callers succeeded in logging in, and therefore there were very many short calls. This trunk is attached to a dataset which was giving a lot of trouble, but which is now claimed to be fixed.

JHS/mfw

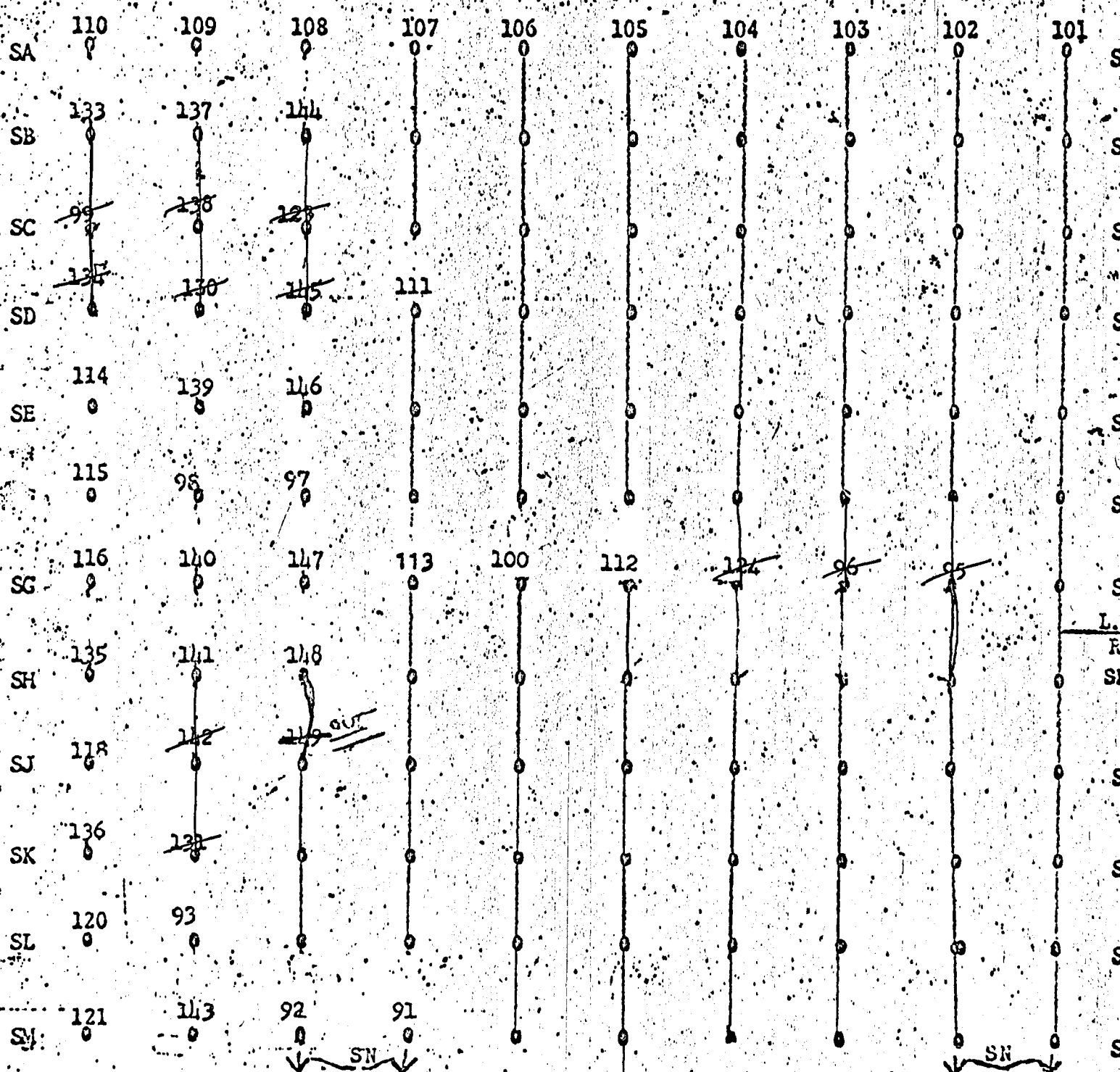
xc: F.J. Corbató
R.C. Daley
J.M. Grochow
W.J. Burner
T.H. VanVleck
C. Garman

Proposed change of grade - saltier, 10/28/70

M.I.T. - PROJECT MAC CAMBRIDGE
711-B

Sept 25, 1970

GRADED MULTIPLE ARRANGEMENT - 8th LEVEL TO I.B.N. 1050 MAC

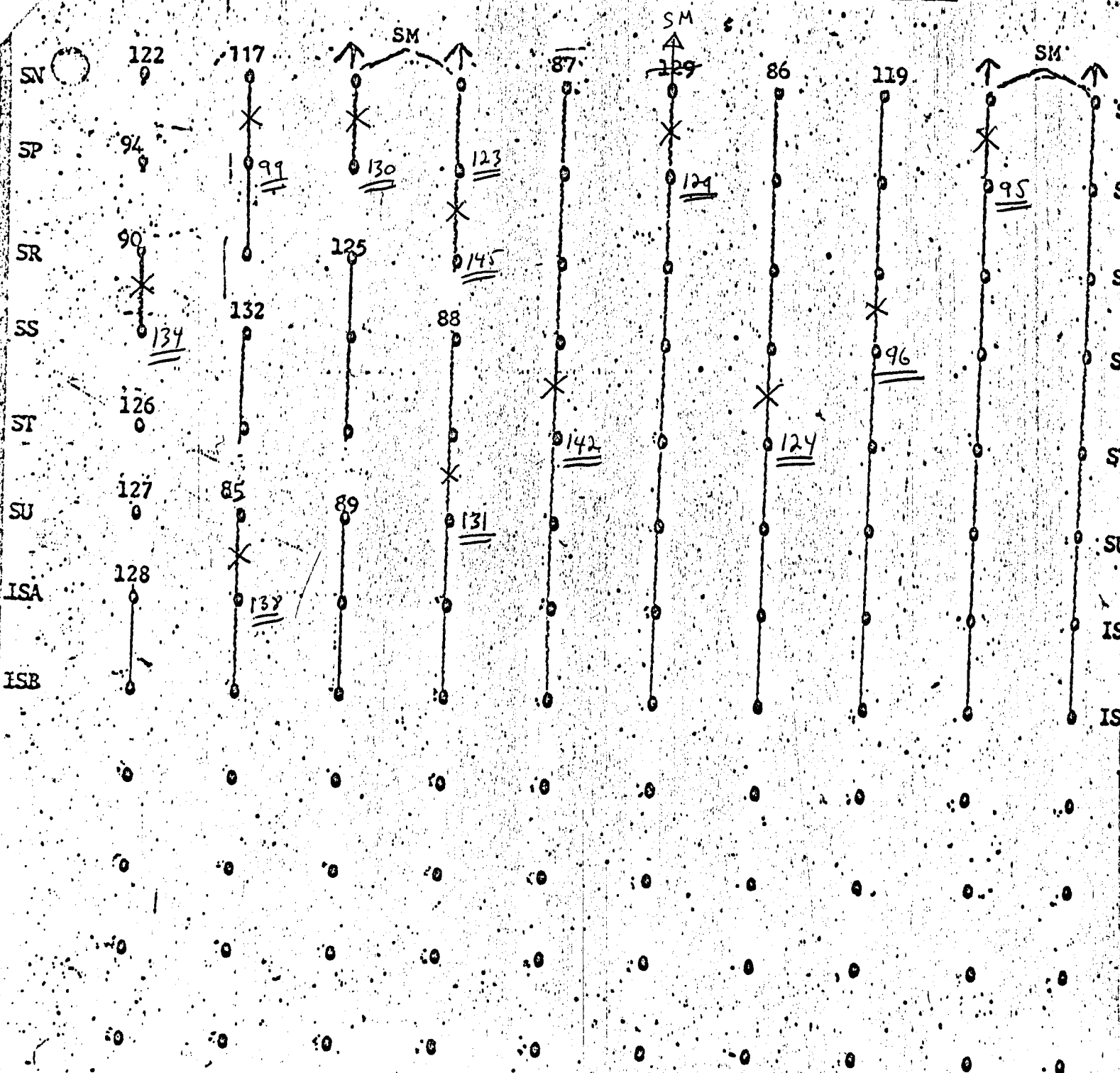


If it is necessary to change this grading, please notify GRADING CLERK ON 743-4470

M.I.T. - PROJECT MAC

711-B

GRADED MULTIPLE ARRANGEMENT - 8th LEVEL TO I.B.M. 1050 MAC



If it is necessary to change this grading, please notify GRADING CLERK ON 743-4470

MARCH 24, 1971
Jan. 27, 1971

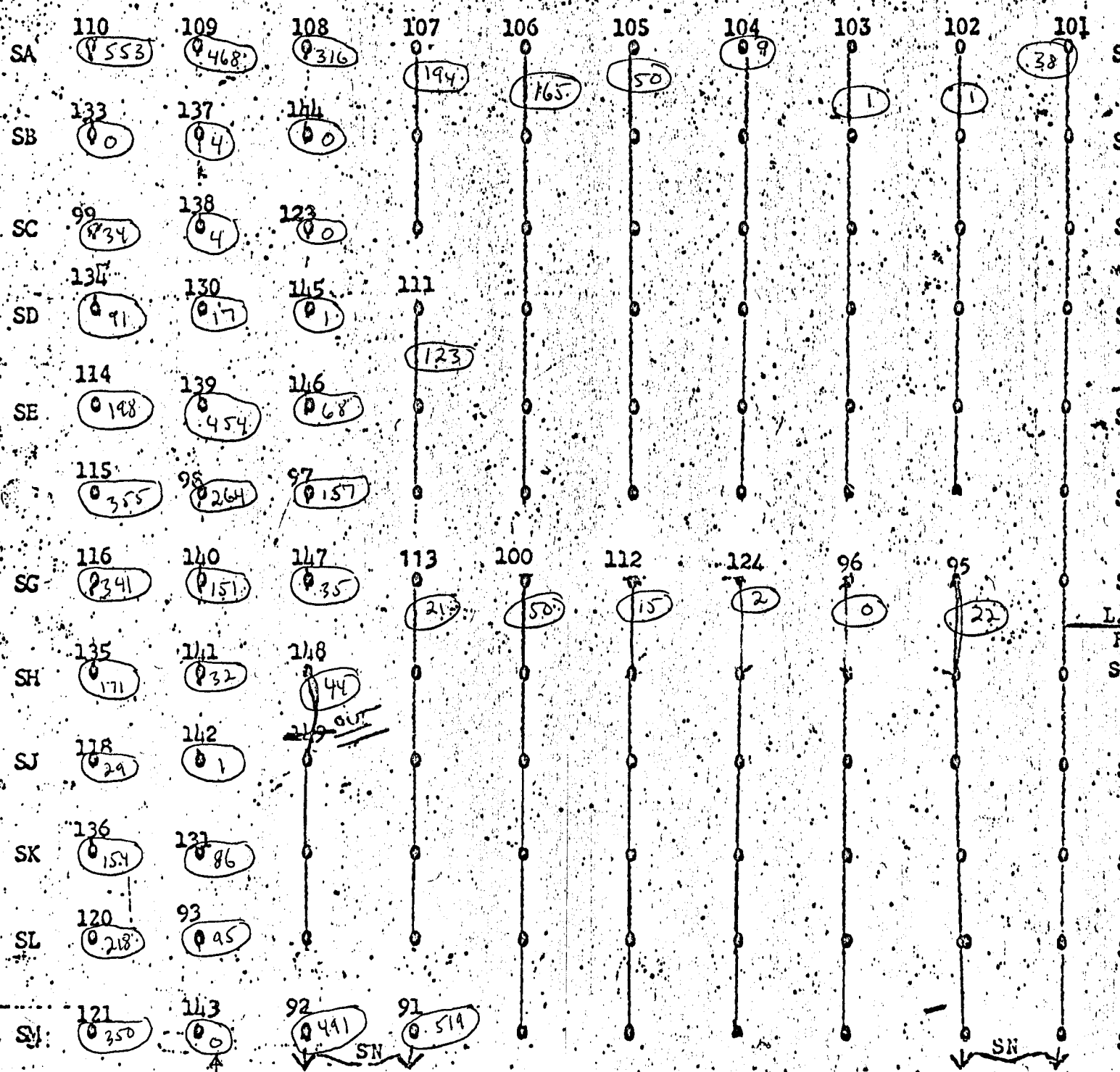
1 OF 2 SHEETS Calls received in October 1 - October 26, 1970

Sept 25, 1970

M.I.T. - PROJECT MAC CAMBRIDGE

711-B

GRADED MULTIPLE ARRANGEMENT - 8th LEVEL TO I.B.N. 1050 MAC



If it is necessary to change this grading, please notify GRADING CLERK ON 743-4470

Shimmed out of service at
D.V.

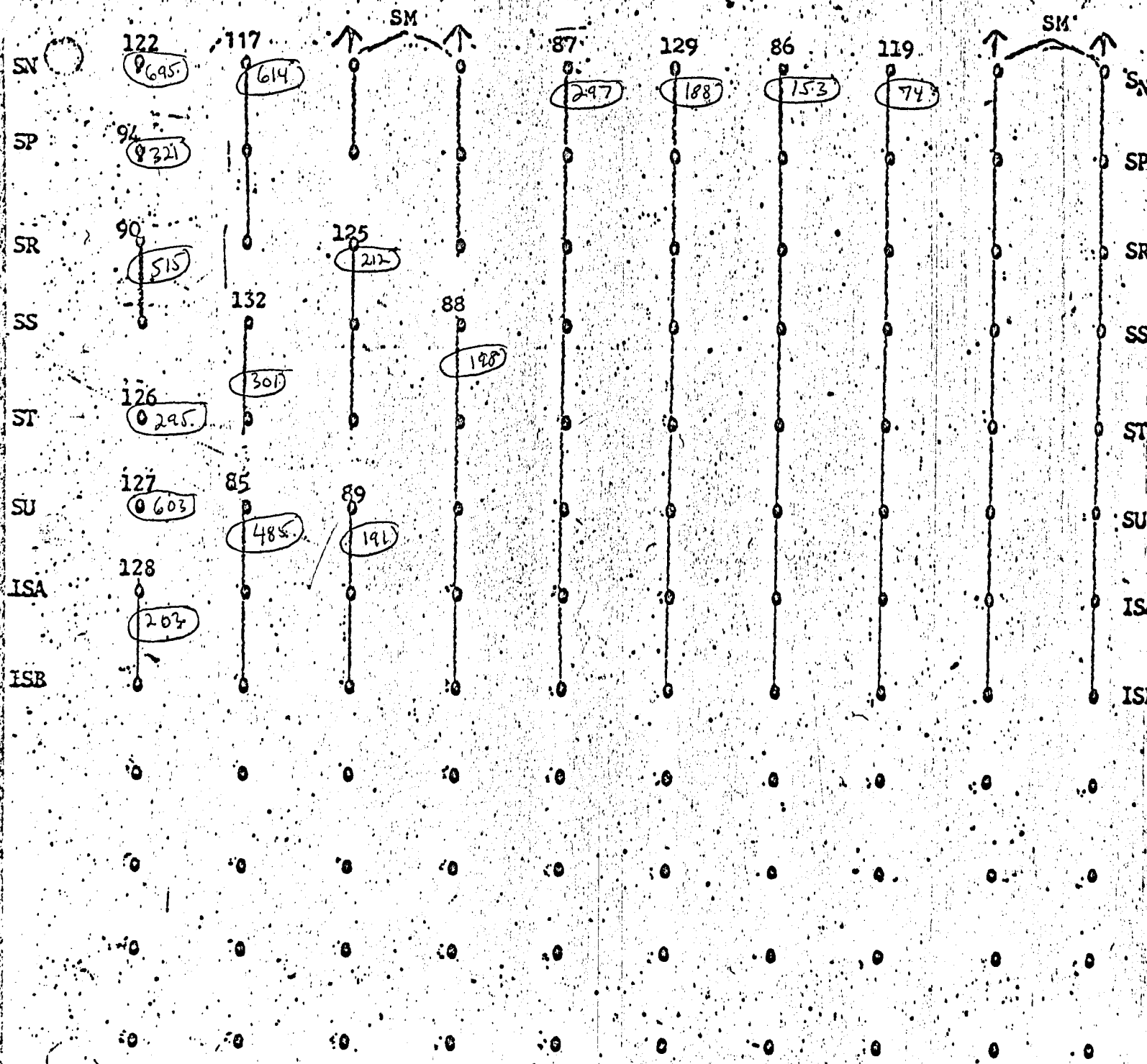
MARCH 21, 1970

Sept. 1, 1970

M.I.T. - PROJECT MAC

711-B

GRADED MULTIPLE ARRANGEMENT - 8th LEVEL TO I.B.M. 1050 MAC



If it is necessary to change this grading,
please notify GRADING CLERK ON 743-4470

MARCH 24, 1954
Jan 27, 1954