

## ELECTRONIC ANALYTICAL CONTROL UNIT

TYPE 704 - VOLUME 4

## TABLE OF CONTENTS

| INDEX NO          | DESCRIPTION  | PART NO | ENG CHG |
|-------------------|--|---------|---------|
| 1 SYSTEM DIAGRAMS |  |         |         |
| 9.0               | SH 1 POWER SUPPLY INDEX  | 503908  | 241159  |
| 9.0               | SH 2 POWER SUPPLY INDEX  | 503909  | 242108  |
| 9.0               | SH 3 POWER SUPPLY INDEX  | 503910  | 242108  |
| 9.01              | COORDINATE & TERM DWGS INDEX   | 323294  | 241159  |
| 9.01.01           | COORDINATE DWG PWR FR. #1  | 503911  | 241159  |
| 9.01.02           | COORDINATE DWG PWR FR. #2  | 503912  | 241159  |
| 9.01.03           | COORDINATE DWG PWR DIST FR.  | 503913  | 241159  |
| 9.01.04           | SH 1 PDF INTER PWR FRAME CABLE TERMS                                 | 503914  | 241344  |
| 9.01.04           | SH 2 PDF INTER PWR FRAME CABLE TERMS                                 | 503915  | 241848  |
| 9.01.05           | PDF INTERMACHINE TERMS TB 159  | 503916  | 242108  |
| 9.01.06           | PWR FR #1 RECT TERM PANELS   | 503917  | 241159  |
| 9.01.07           | PWR FR #2 RECT TERM PANELS   | 503918  | 241159  |
| 9.01.08           | PWR FR #1 MISC AC & SEQ CKT TERMS                                    | 503919  | 241159  |
| 9.01.09           | PWR FR #2 MISC AC & SEQ CKT TERMS                                    | 503920  | 241159  |
| 9.02              | SH 1 SEQUENCING CKTS   | 503921  | 241856  |
| 9.02              | SH 2 SEQUENCING CKTS   | 503922  | 242108  |
| 9.02              | SH 3 SEQUENCING CKTS   | 503923  | 241159  |
| 9.02              | SH 4 SEQUENCING CKTS   | 503924  | 241344  |
| 9.02              | SH 5 SEQUENCING CKTS   | 512700  | 242108  |
| 9.02              | SH 6 SEQUENCING CKTS   | 512701  | 241159  |
| 9.02              | SH 7 SEQUENCING CKTS   | 512702  | 241159  |
| 9.03              | RECT FOR PLUS 150RY 3A PWR SUPPLY                                    | 323304  | 241856  |
| 9.04.01           | RECT FOR PLUS 150VDC 60A PWR SPLY                                    | 323305  | 241159  |
| 9.04.02           | VOLTAGE CTRL CKTS FOR PLUS 150 &<br>MINUS 100V DC PWR SPLYS 3 SHEETS | 323306  | 241159  |
| 9.04.03           | RIPPLE SUPP FOR PLUS 150V 60A DC PWR SUPPLY                          | 323307  | 241159  |
| 9.05.01           | RECT FOR MINUS 250V 10A DC PWR SPLY                                  | 323308  | 241159  |
| 9.05.02           | SH 1 VOLTAGE CTRL FOR MINUS 250 &<br>PLUS 220 DC PWR SUPPLIES        | 512703  | 241159  |
| 9.05.02           | SH 2 VOLTAGE CTRL FOR MINUS 250 &<br>PLUS 220 DC PWR SUPPLIES        | 512704  | 241159  |
| 9.05.03           | RIPPLE SUPP FOR MINUS 250V DC PWR SUPPLY                             | 323310  | 241159  |
| 9.06.01           | RECT FOR MINUS 130 3A PWR SUPPLY                                     | 512705  | 241856  |
| 9.06.02           | VOLTAGE CTRL FOR MINUS 130V 3A DC PWR SUPPLY                         | 512706  | 241159  |
| 9.07.01           | RECT FOR MINUS 100V 60A DC PWR SPLY                                  | 323314  | 241159  |
| 9.07.03           | RIPPLE SUPPRESSOR FOR MINUS 100V DC<br>PWR SUPPLY                    | 323316  | 241159  |
| 9.07.04           | MINUS 100V DC DELAY CKT  | 512707  | 241344  |
| 9.08.01           | RECT FOR PLUS 220V 16A DC PWR SPLY                                   | 323317  | 241159  |
| 9.08.03           | RIPPLE SUPPRESSOR FOR PLUS 220V DC<br>PWR SUPPLY                     | 323319  | 241159  |
| 9.09.01           | RECT FOR PLUS 15V 70A DC PWR SPLY                                    | 323320  | 241856  |
| 9.09.02           | VOLTAGE CTRL UNIT FOR PLUS 15 DC &<br>MINUS 30V DC PWR SPLY 2 SHEETS | 323321  | 242247  |
| 9.10.02           | VOLTAGE CTRL UNIT FOR PLUS 15 DC &<br>MINUS 30V DC PWR SPLY 2 SHEETS | 323321  | 242247  |
| 9.10.01           | RECT FOR MINUS 30V 40A DC PWR SPLY                                   | 323322  | 241856  |
| 9.11.01           | AC LINE REG L1, L2, & L3   | 323324  | 241856  |
| 9.12.01           | AC LINE REG L1, L2, & L3   | 323324  | 241856  |
| 9.13.01           | AC LINE REG L1, L2, & L3   | 323324  | 241856  |
| 9.11.02           | AC LINE REG FOR LINES 1, 2 & 3                                       | 323325  | 241159  |
| 9.12.02           | AC LINE REG FOR LINES 1, 2 & 3                                       | 323325  | 241159  |
| 9.13.02           | AC LINE REG FOR LINES 1, 2 & 3                                       | 323325  | 241159  |
| 9.14              | BLOWER MOTORS IN PWR FR. #1  | 323330  | 241159  |
| 9.15              | BLOWER MOTORS IN PWR FR. #2  | 323331  | 241159  |
| 9.16.01           | AC VOLTMETER CKT   | 323332  | 241159  |
| 9.16.02           | SH 1 DC METERING   | 512708  | 241344  |
| 9.16.02           | SH 2 DC METERING   | 512709  | 241159  |
| 9.17              | SH 1 DC FUSING   | 512710  | 241454  |

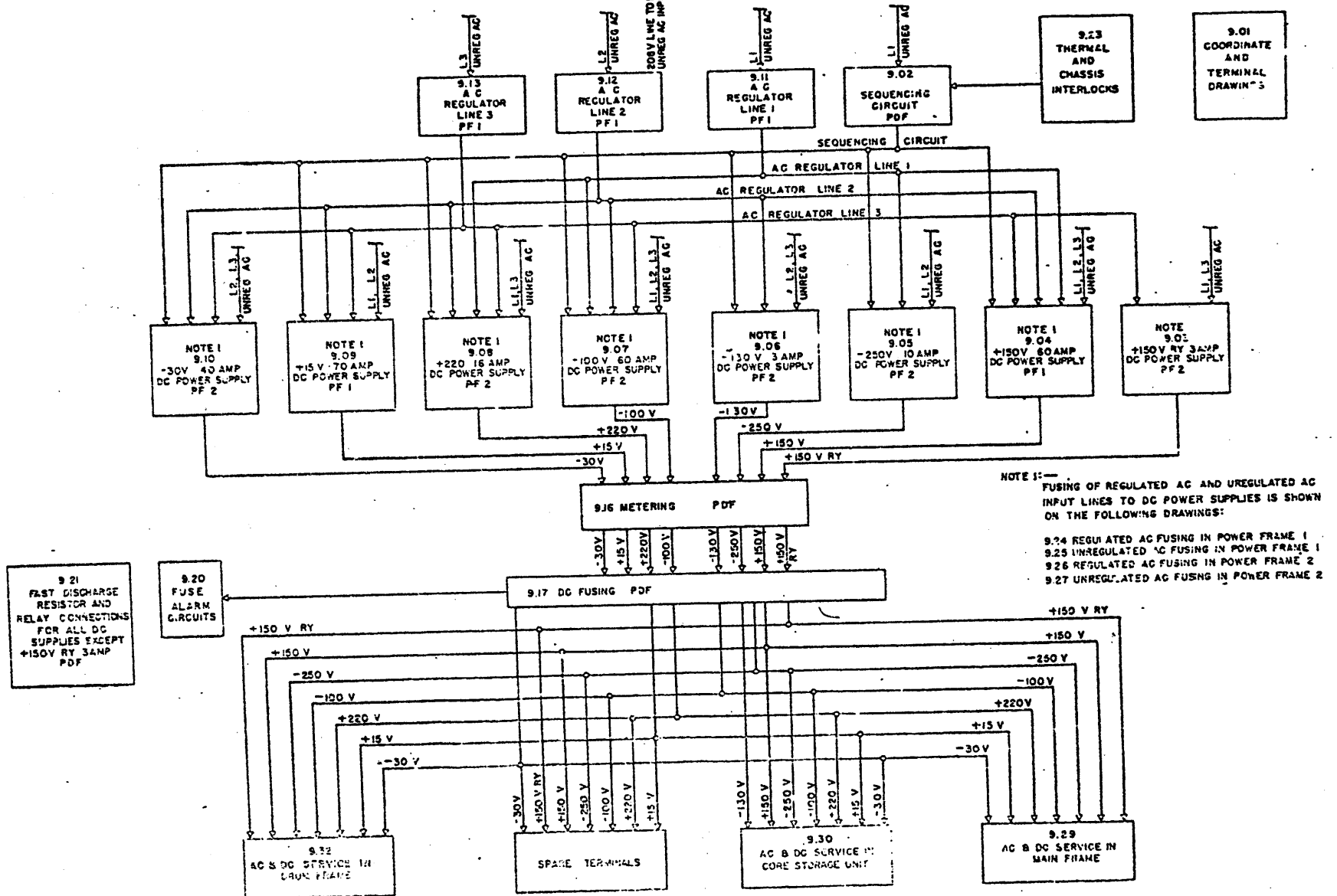
| INDEX NO | DESCRIPTION                                      | PART NO | ENG CHG |
|----------|--|---------|---------|
| 9.17     | SH 2 DC FUSING                                   | 512711  | 241454  |
| 9.17     | SH 3 DC FUSING                                   | 512712  | 241454  |
| 9.17     | SH 4 DC FUSING                                   | 512713  | 241454  |
| 9.17     | SH 5 DC FUSING                                   | 512714  | 241159  |
| 9.17     | SH 6 DC FUSING                                   | 512715  | 241454  |
| 9.17.01  | DC FUSE LOCATION CHART                           | 512716  | 242496  |
| 9.18     | SH 1 REG AC FUSING                               | 512717  | 241666  |
| 9.18     | SH 2 REG AC FUSING                               | 512718  | 241666  |
| 9.18     | SH 3 REG AC FUSING                               | 512719  | 241666  |
| 9.18     | SH 4 REG AC FUSING                               | 512720  | 241666  |
| 9.18     | SH 5 REG AC FUSING                               | 512721  | 241666  |
| 9.18     | SH 6 REG AC FUSING                               | 512722  | 241159  |
| 9.18.01  | REG AC FUSE LOCATION CHART                       | 512723  | 242270  |
| 9.19     | SH 1 UNREG AC FUSING                             | 512724  | 241666  |
| 9.19     | SH 2 UNREG AC FUSING                             | 512725  | 241666  |
| 9.19     | SH 3 UNREG AC FUSING                             | 512726  | 241666  |
| 9.19     | SH 4 UNREG AC FUSING                             | 512727  | 241666  |
| 9.19     | SH 5 UNREG AC FUSING                             | 512728  | 241666  |
| 9.19     | SH 6 UNREG AC FUSING                             | 512729  | 241771  |
| 9.19.01  | UNREG AC FUSE LOCATION                           | 512730  | 242496  |
| 9.20     | SH 1 FUSE ALARM CKT FRMS 1 & 2 & PDF             | 512731  | 241159  |
| 9.20     | SH 2 FUSE ALARM CKT FRMS 1 & 2 & PDF             | 512732  | 241159  |
| 9.21     | FAST DISCHARGE RES & RELAY CONN                  | 512733  | 241159  |
| 9.23     | NORMAL OFF & DC OFF INTK CIRCUITS                | 512734  | 242504  |
| 9.23.01  | PHASE PROT. INTLOCK                              | 503666  | 241848  |
| 9.24     | REG AC FUSING FRAME #1                           | 512735  | 241159  |
| 9.25     | UNREG AC FUSING FRAME #1                         | 512736  | 241159  |
| 9.26     | REG AC FUSING FRAME #2                           | 512737  | 241159  |
| 9.27     | UNREG AC FUSING FRAME #2                         | 512738  | 241159  |
| 9.28     | AC OUTLET CKT                                    | 512739  | 241159  |
| 9.29     | SH 1 WIRING DIAGRAM-MAIN FRAME SERVICE           | 512740  | 241159  |
| 9.29     | SH 2 WIRING DIAGRAM-MAIN FRAME SERVICE           | 512741  | 242921  |
| 9.29     | SH 3 WIRING DIAGRAM-MAIN FRAME SERVICE           | 512742  | 242496  |
| 9.29     | SH 4 WIRING DIAGRAM-MAIN FRAME SERVICE           | 512743  | 241159  |
| 9.29     | SH 5 TERMINALS ON SERVICE PNL ON MAIN FRAME      | 512744  | 241159  |
| 9.29.05  | PLUGGABLE UNIT LOCN CHART                        | 503625  | 242760  |
| 9.30.01  | INTERNAL AC SERVICE WIRING                       | 509115  | 241771  |
| 9.30.02  | INTERNAL DC SERVICE WIRING                       | 509116  | 241944  |
| 9.30.03  | TERMINAL BOARD ASSIGNMENTS                       | 509117  | 241771  |
| 9.32     | SH 1 WD-DRUM FRAME                               | 512749  | 241159  |
| 9.32     | SH 2 WD-DRUM FRAME                               | 512750  | 241159  |
| 9.32     | SH 3 WD-DRUM FRAME                               | 512751  | 241159  |
| 9.32     | SH 4 WD-DRUM FRAME                               | 512752  | 241159  |
| 9.32     | SH 5 WD-DRUM FRAME                               | 512753  | 241159  |
| 9.32     | SH 6 WD-DRUM FRAME                               | 512754  | 241159  |
| 10.5     | WD & TIMING CHART CARD READER-711 6 SHEETS       | 323702  | 241644  |
| 10.5     | WD & TIMING CHART CARD READER-711 MOD 2 6 SHEETS | 513305  | 242084  |
| 11.6     | WD & TIMING CHART CARD RECORDER 4 SHEETS         | 513305  | 242084  |
| 12.7     | WD & TIMING CHART PRINTER 12 SHEETS              | 322930  | 242759  |
|          |  | 321448  | 241767  |

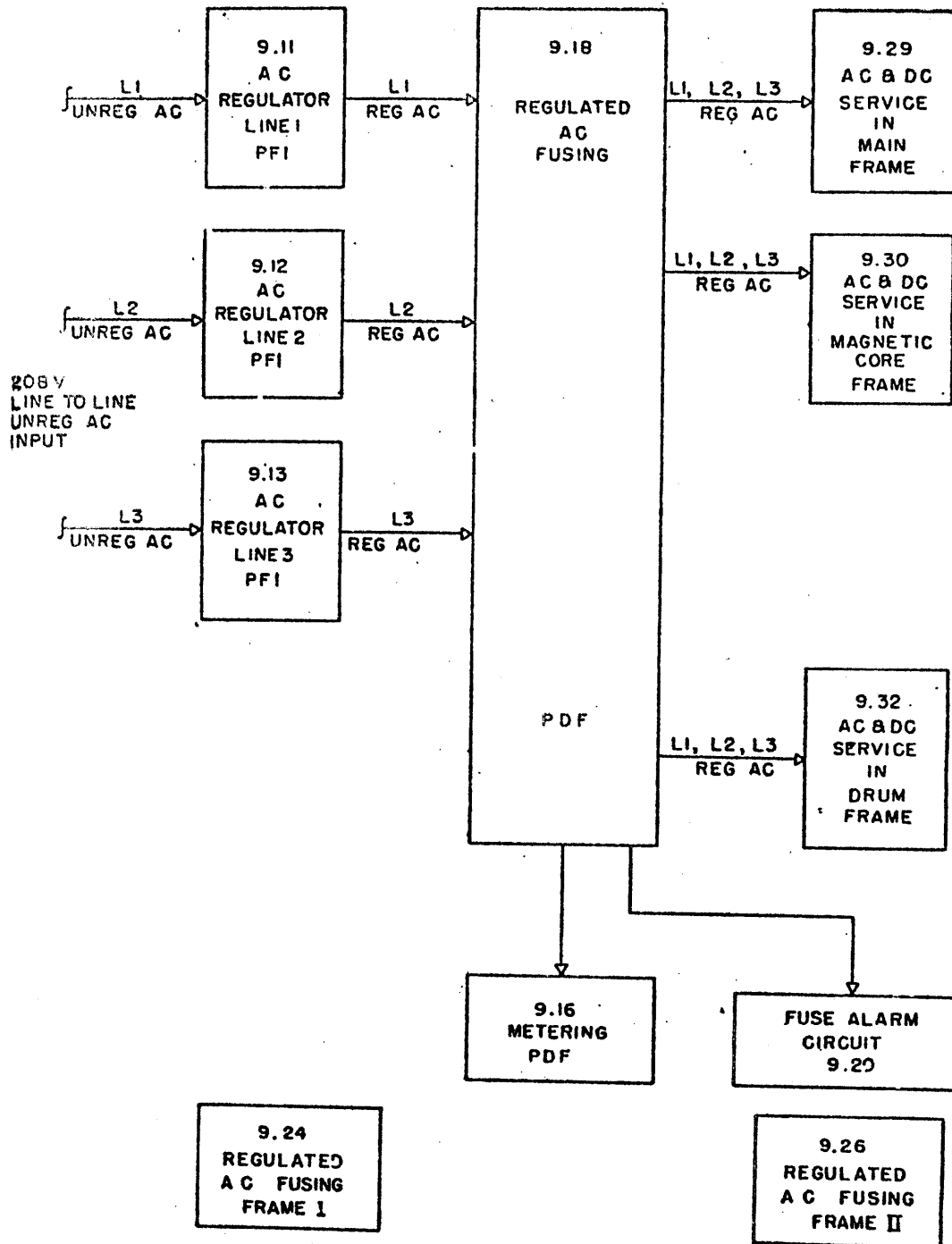
2 PREVIOUS ENG CHGS.

|          |        |
|----------|--------|
| 09/29/55 | 241842 |
| 10/27/55 | 241955 |
| 01/16/56 | 242328 |
| 05/23/56 | 242877 |
| 08/02/56 | 243096 |

END

POWER SUPPLY

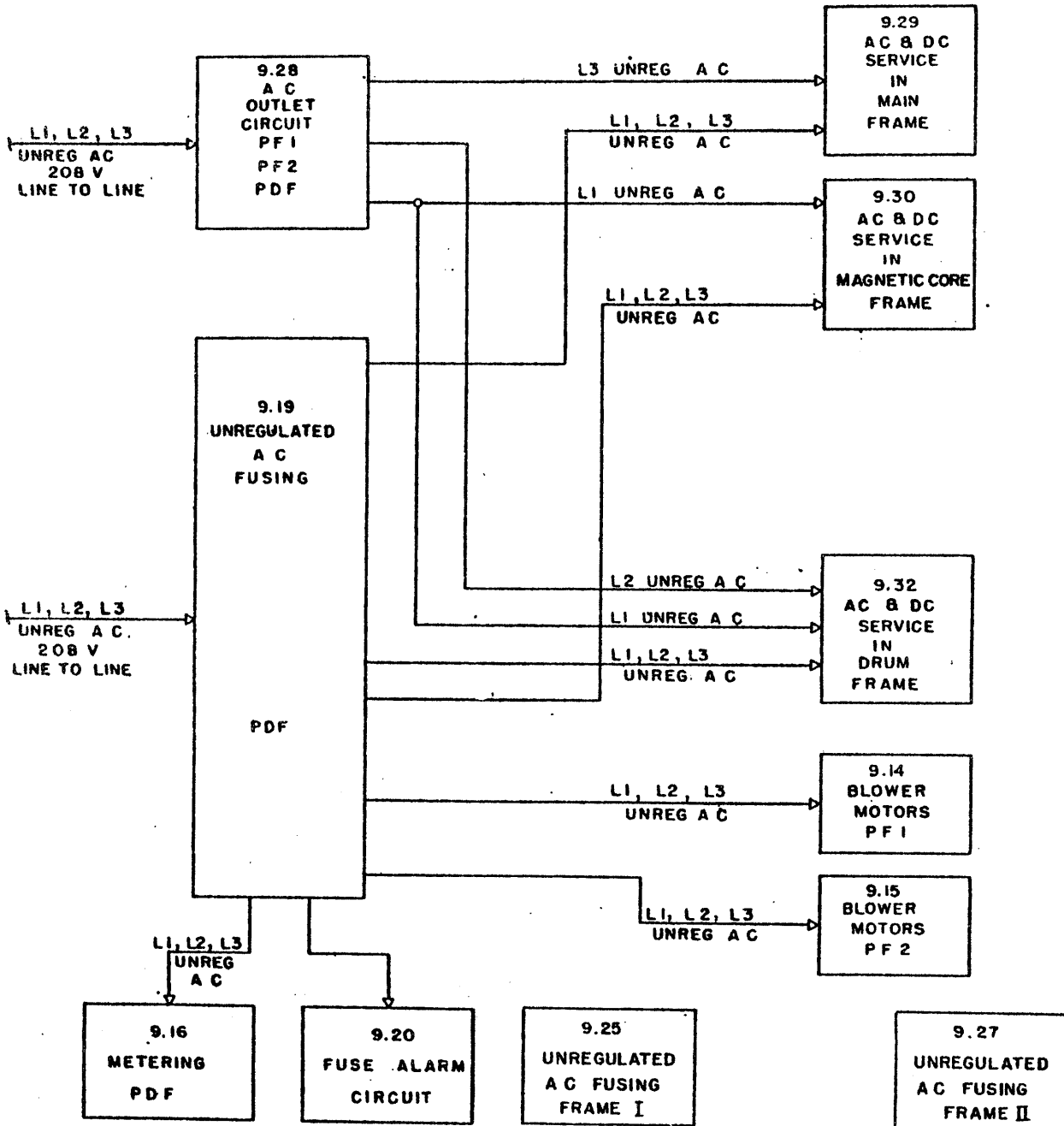




POWER SUPPLY

9.0

SHEET 3 OF 3



9.01.01  
COORDINATE  
DRAWING OF  
POWER FRAME 1

9.01.06  
POWER FRAME 1  
RECTIFIER  
TERMINALS

9.01.02  
COORDINATE  
DRAWING OF  
POWER FRAME 2

9.01.07  
POWER FRAME 2  
RECTIFIER  
TERMINALS

9.01.03  
COORDINATE  
DRAWING OF  
POWER  
DISTRIBUTION  
FRAME

9.01.08  
POWER FRAME 1  
MISCELLANEOUS  
A C AND  
SEQUENCING  
CIRCUIT TERMINALS

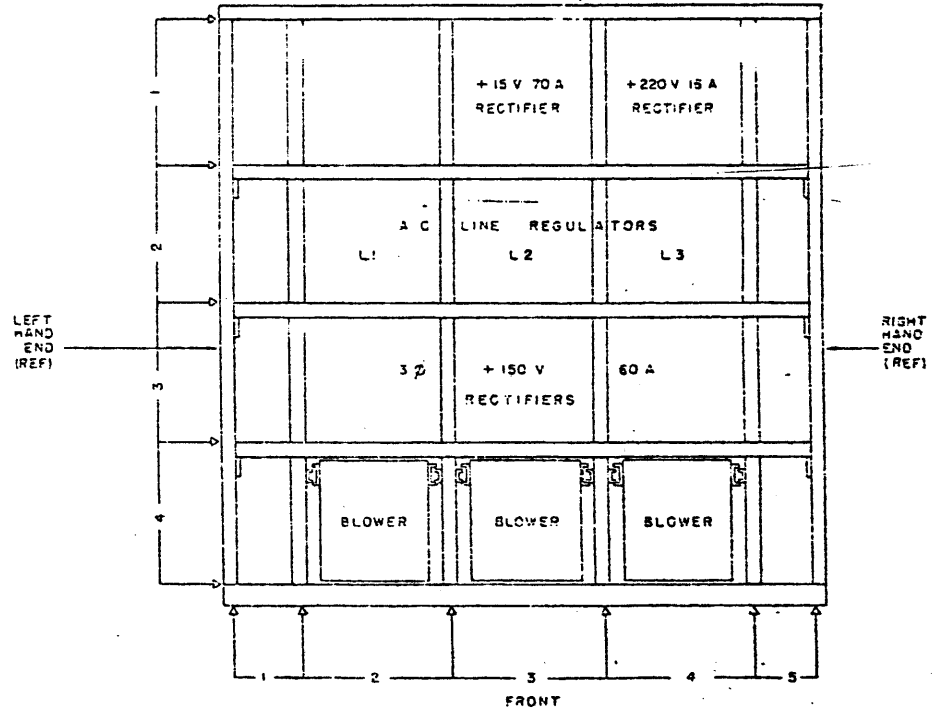
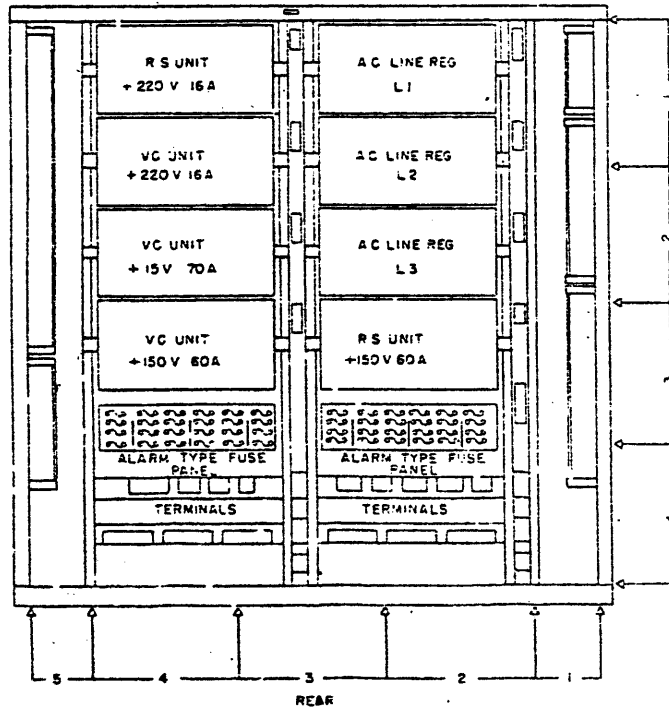
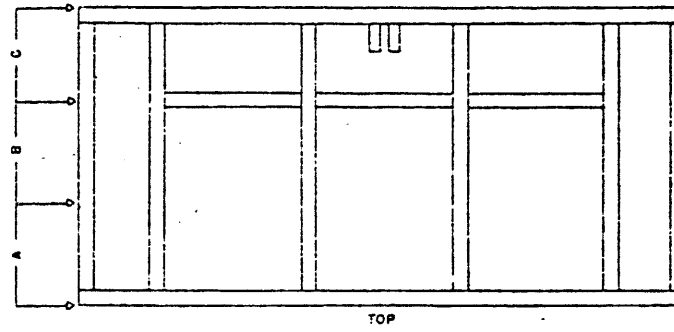
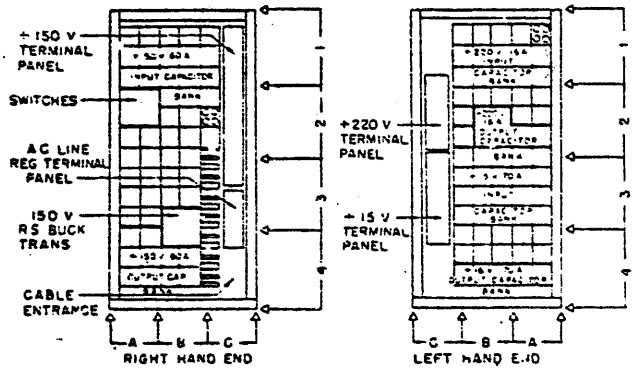
9.01.04  
POWER DIST FR  
INTERPOWER FRAME  
CABLE  
TERMINALS

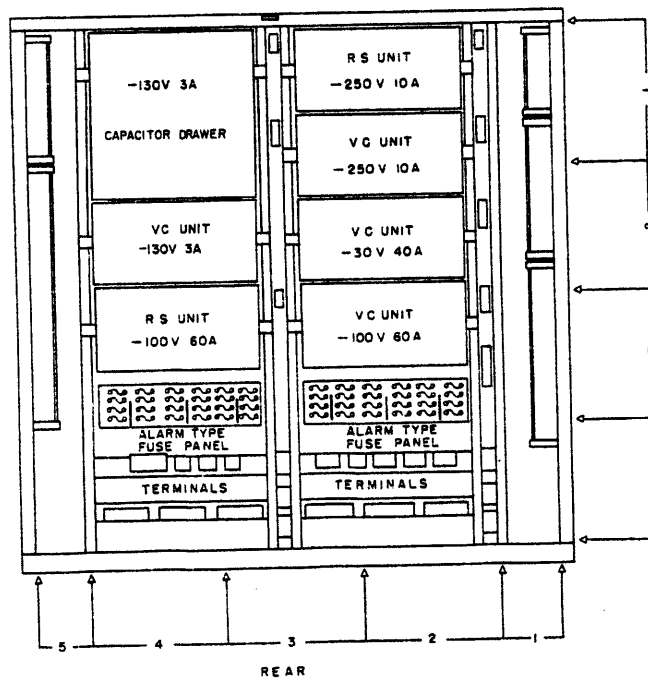
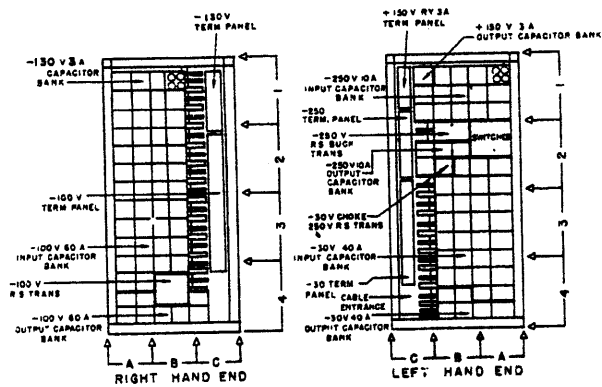
9.01.09  
POWER FRAME 2  
MISCELLANEOUS  
A C AND  
SEQUENCING  
CIRCUIT TERMINALS

9.01.05  
POWER DIST FR  
INTERMACHINE  
FRAME CABLE  
TERMINALS

POWER FRAME #1  
COORDINATE DRAWING

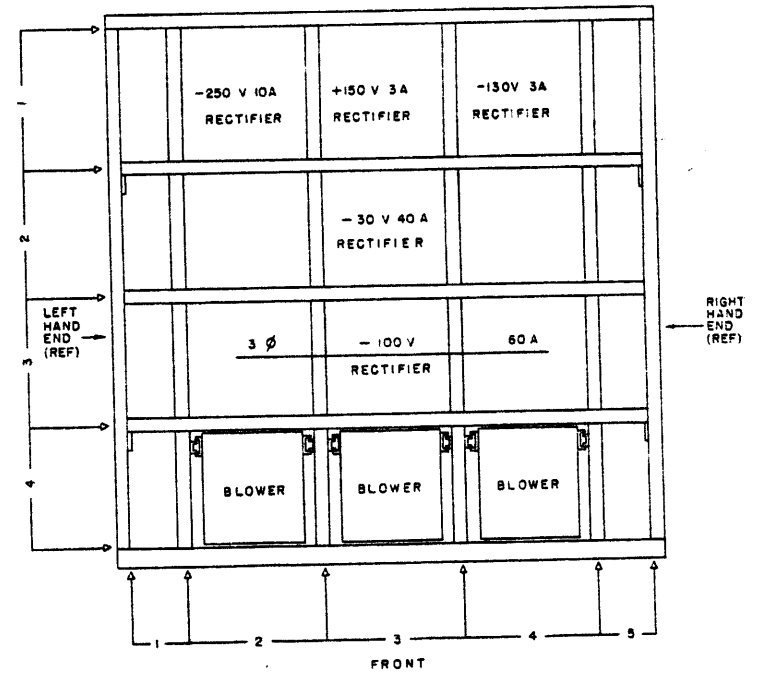
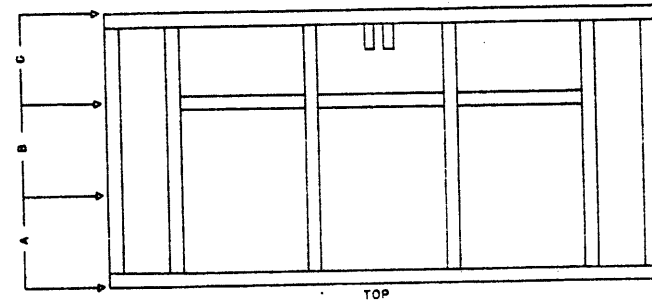
9.0101





POWER FRAME # 2  
COORDINATE DRAWING

9.01.02



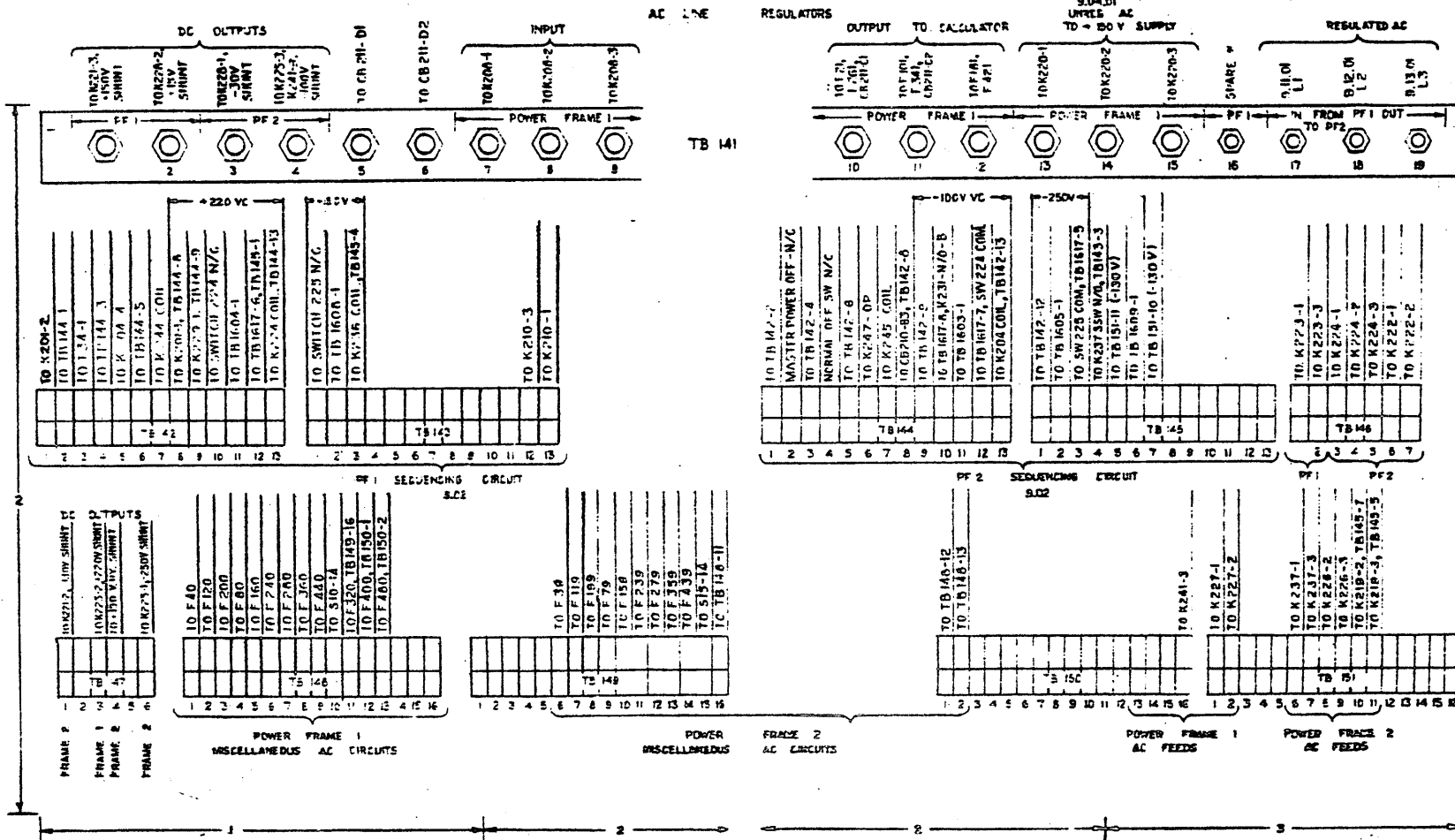


POWER DISTRIBUTION FRAME  
 INTER POWER FRAME CABLE TERMINALS  
 VIEW "B"

9.01.04

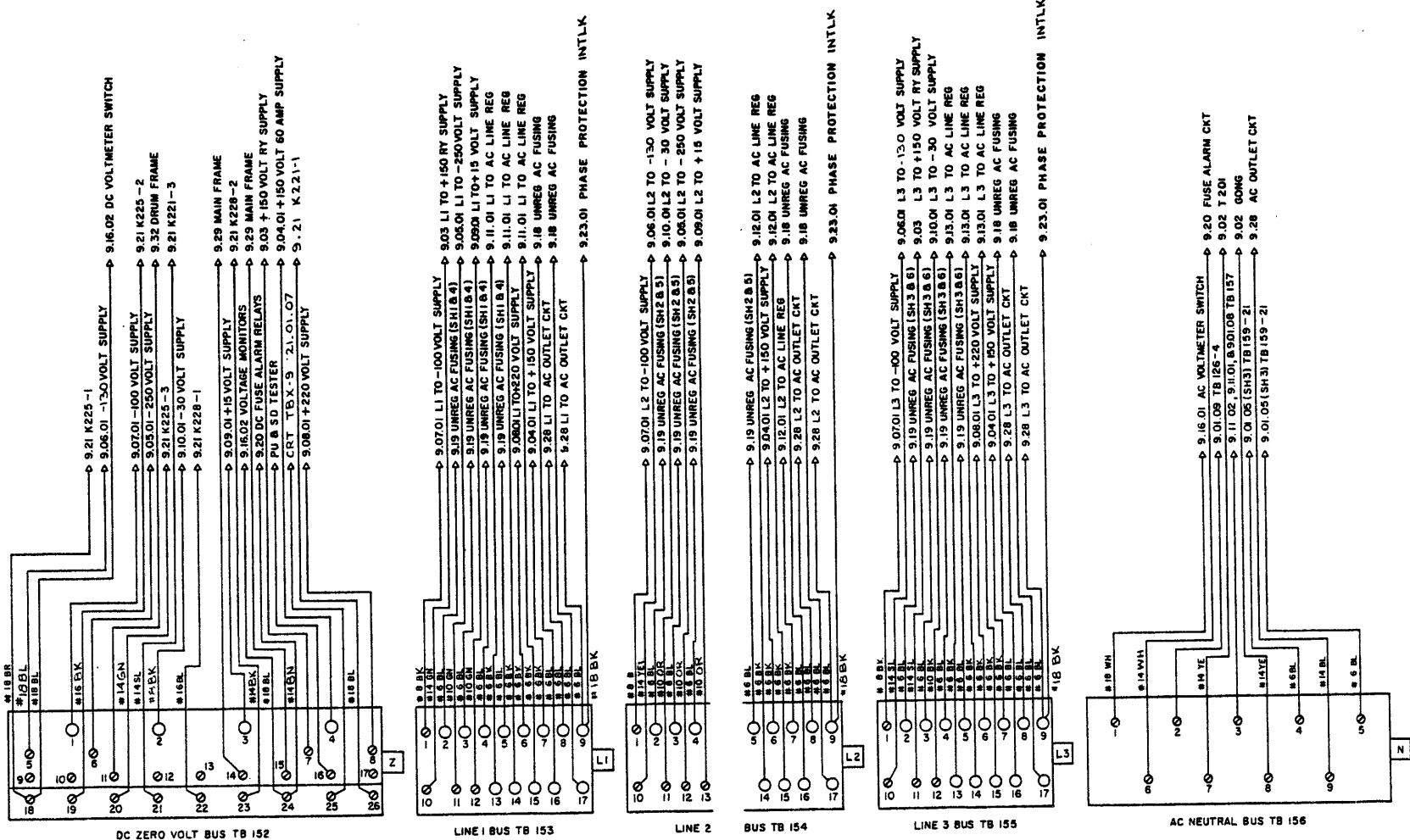
SHEET 1 OF 2

\* CONNECTS ONLY TO TB 105-4  
 PF 1 - 53C  
 (NEUTRAL OF AC REGULATOR)



INTER POWER FRAME CABLE TERMINALS

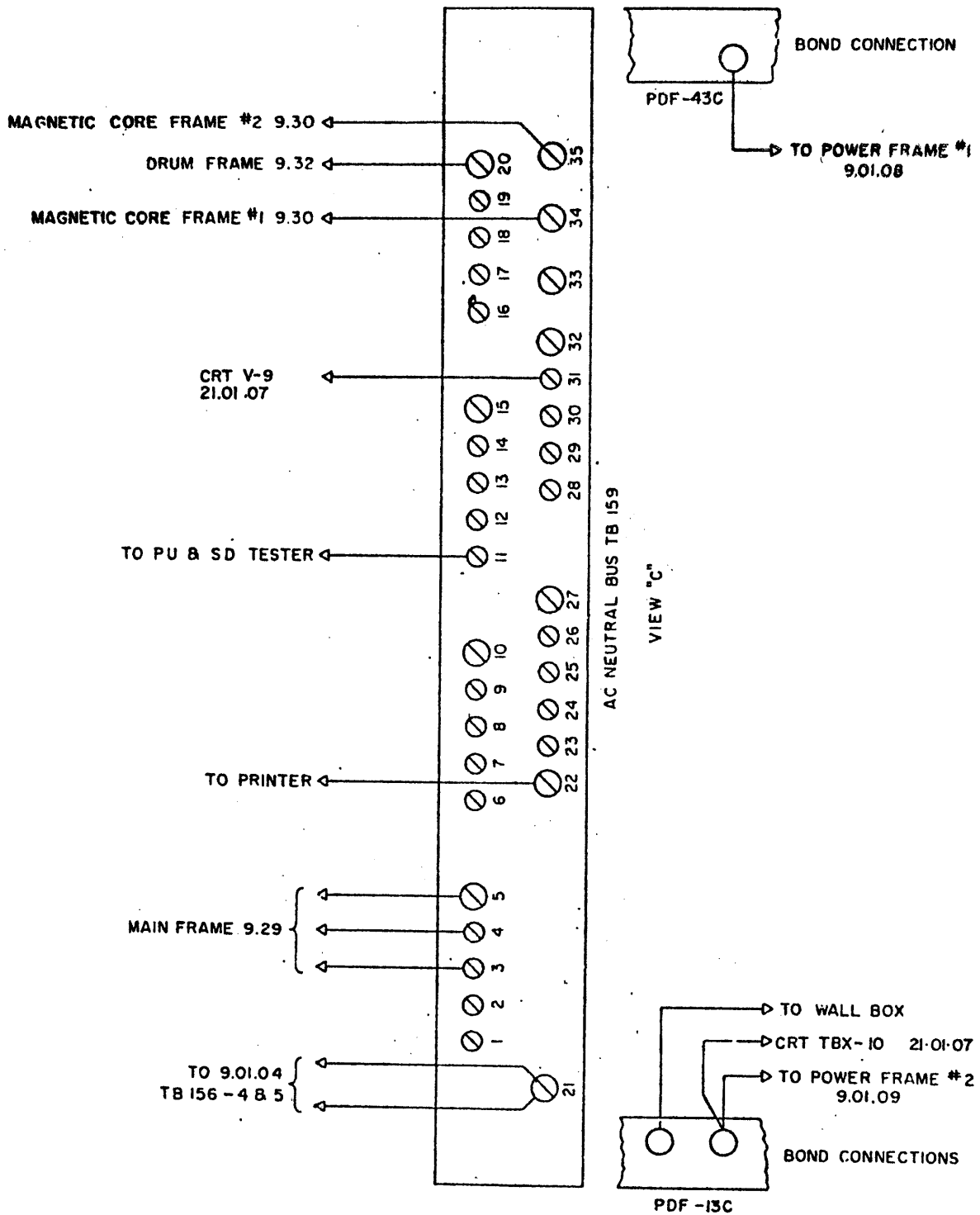
9.01.04  
SHEET 2 OF 2



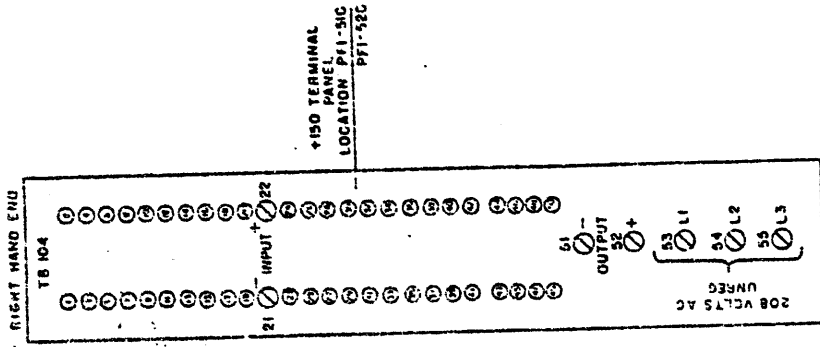
VIEW B

PDF INTERMACHINE TERMINALS  
(TB 159)

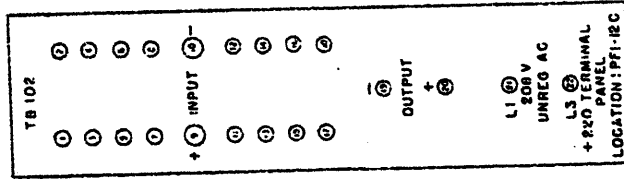
9.01.05



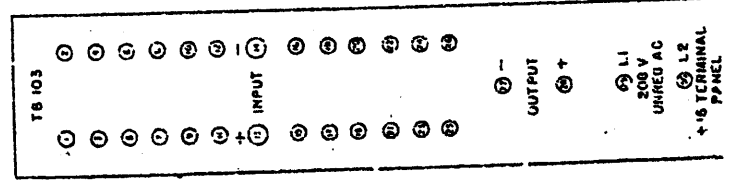
TOP



+150 TERMINAL  
PANEL  
LOCATION: PFI-51C  
PFI-52C

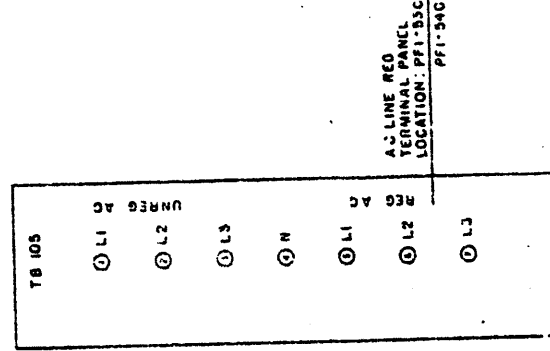


+220 TERMINAL  
PANEL  
LOCATION: PFI-12C



+16 TERMINAL  
PANEL

POWER FRAME #1  
RECTIFIER TERMINAL PANELS



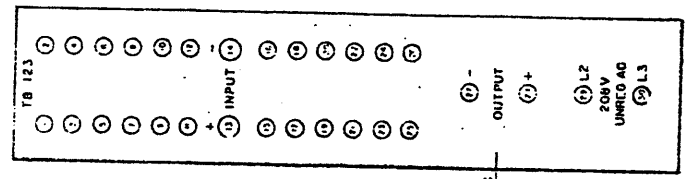
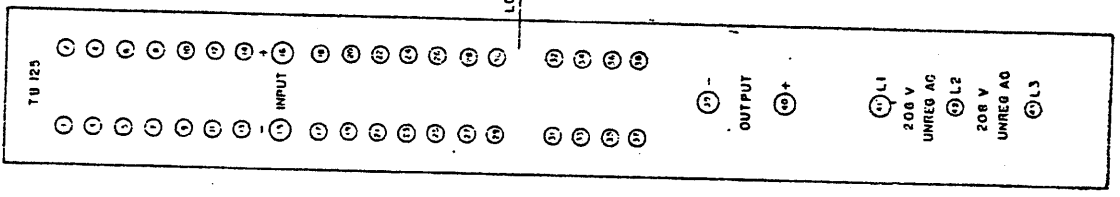
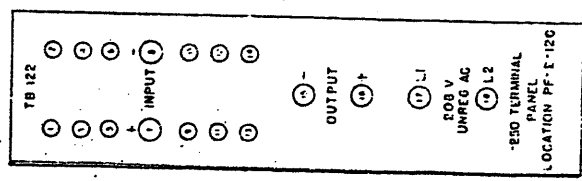
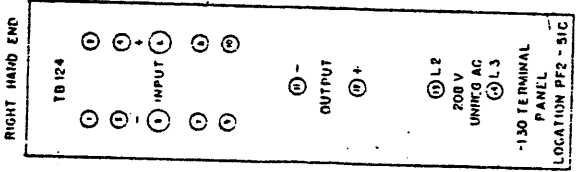
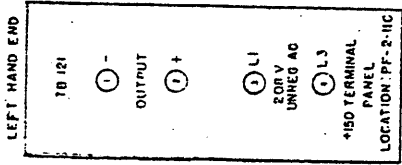
A.C. LINE REG  
TERMINAL PANEL  
LOCATION: PFI-35C  
PFI-34C

POWER FRAME NO 2 RECTIFIER TERMINAL PANELS

901.07

TOP

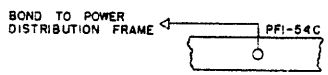
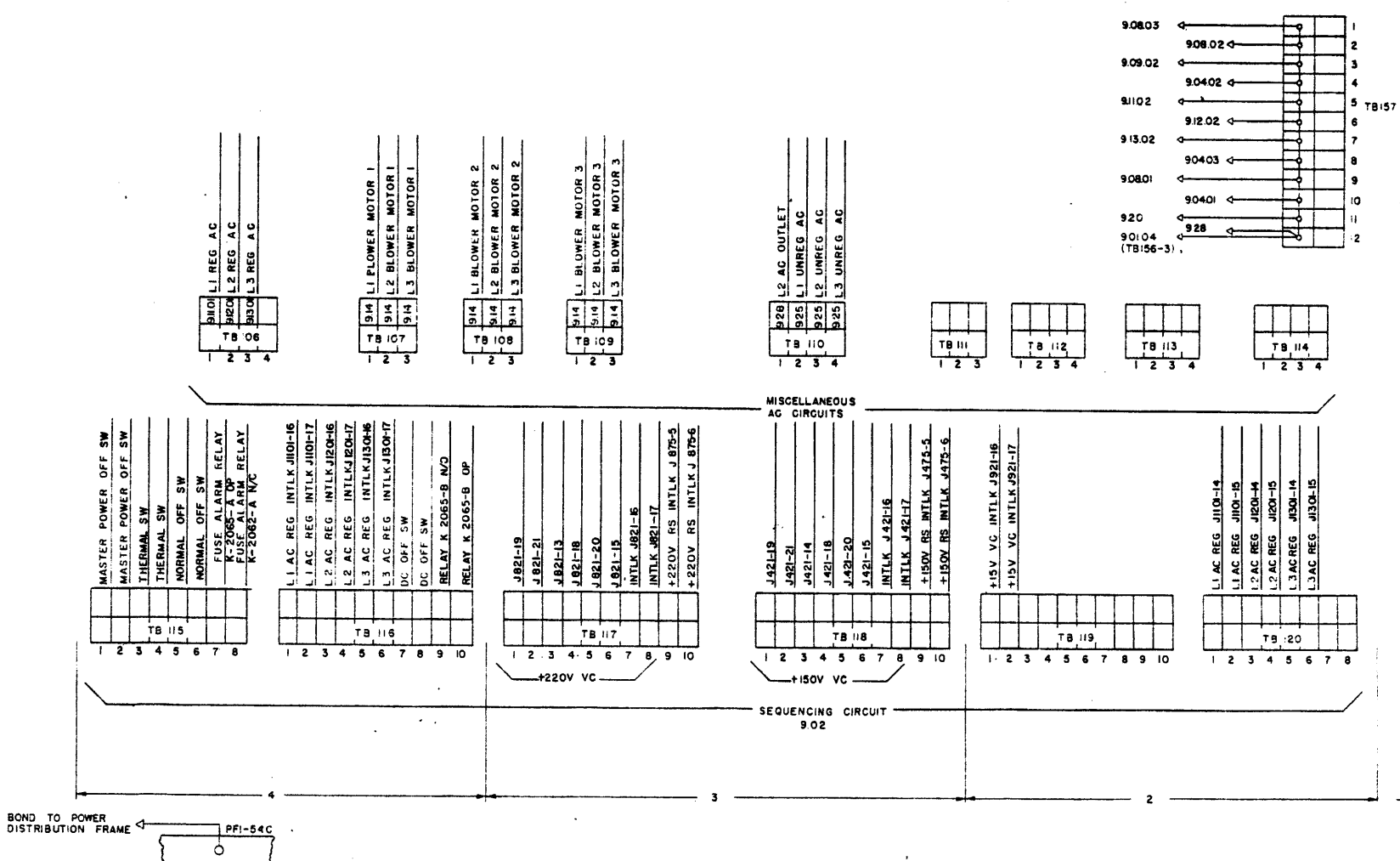
BOTTOM



503918 EC 241159  
503518 EC 241159

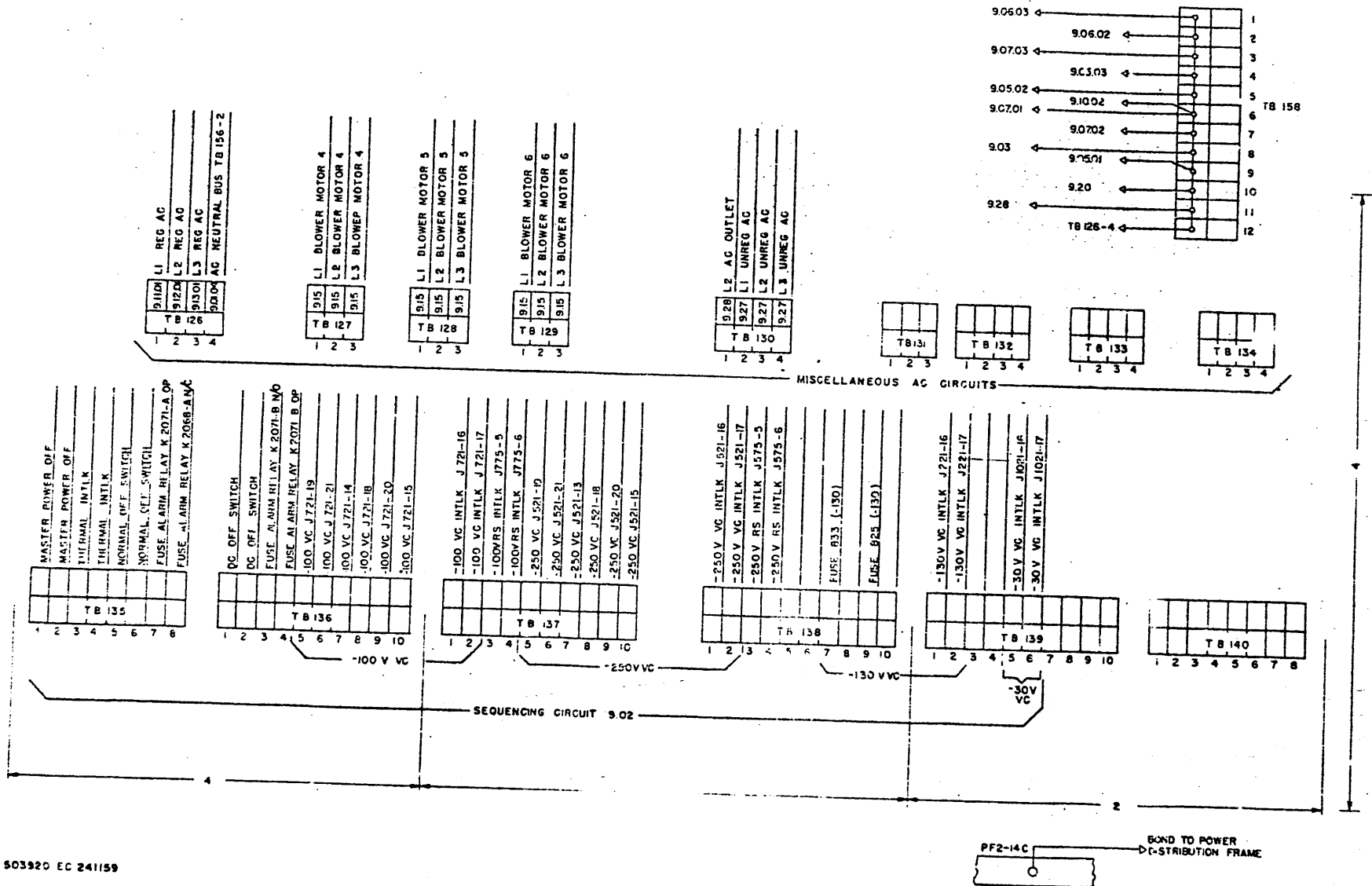
POWER FRAME NO1 (VIEW C) MISCELLANEOUS A.C. AND SEQUENCING CIRCUIT TERMINALS

9.01.08

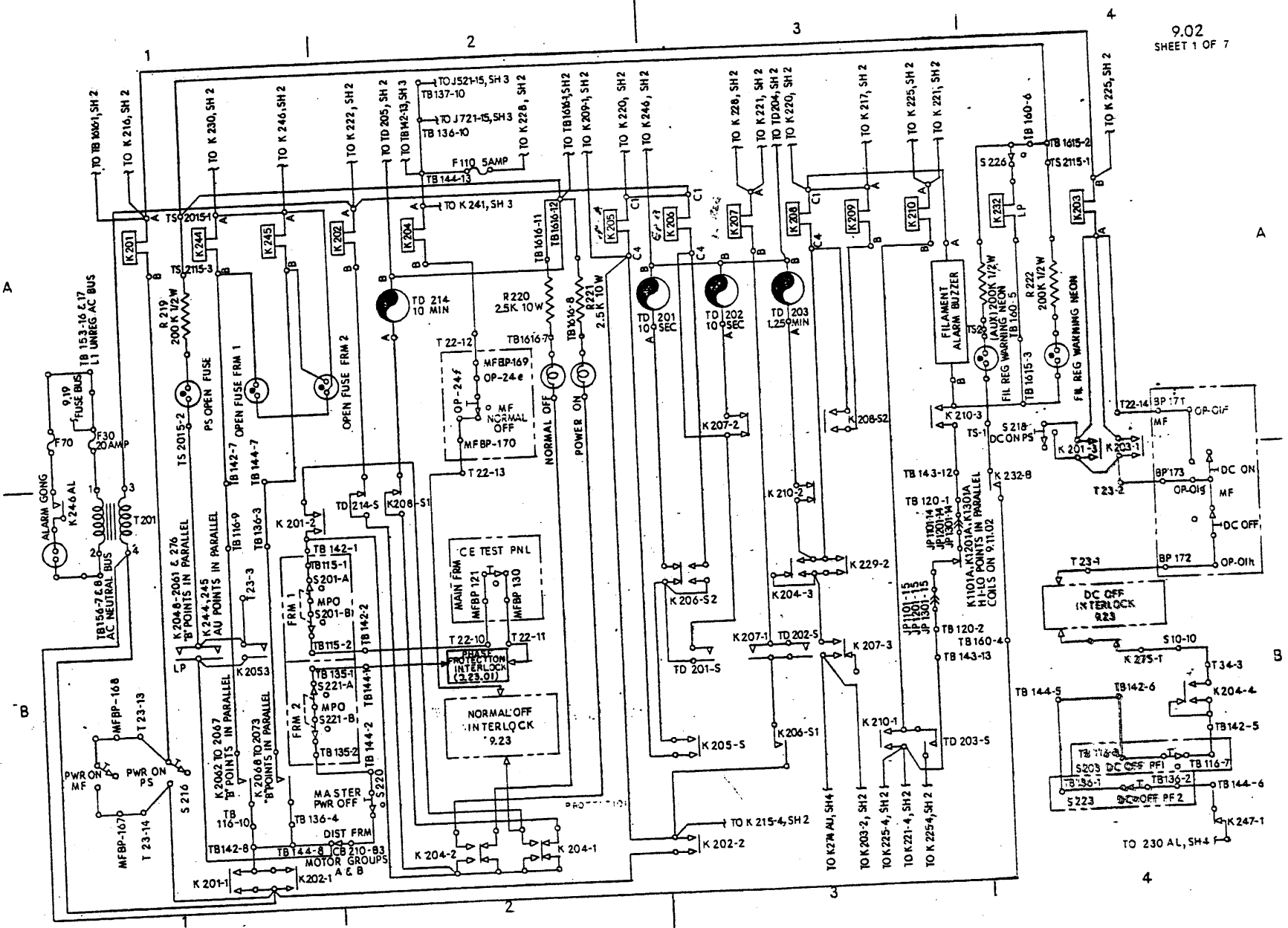


POWER FRAME NO 2 (VIEW "C") MISCELLANEOUS AC & SEQUENCING CIRCUIT TERMINALS

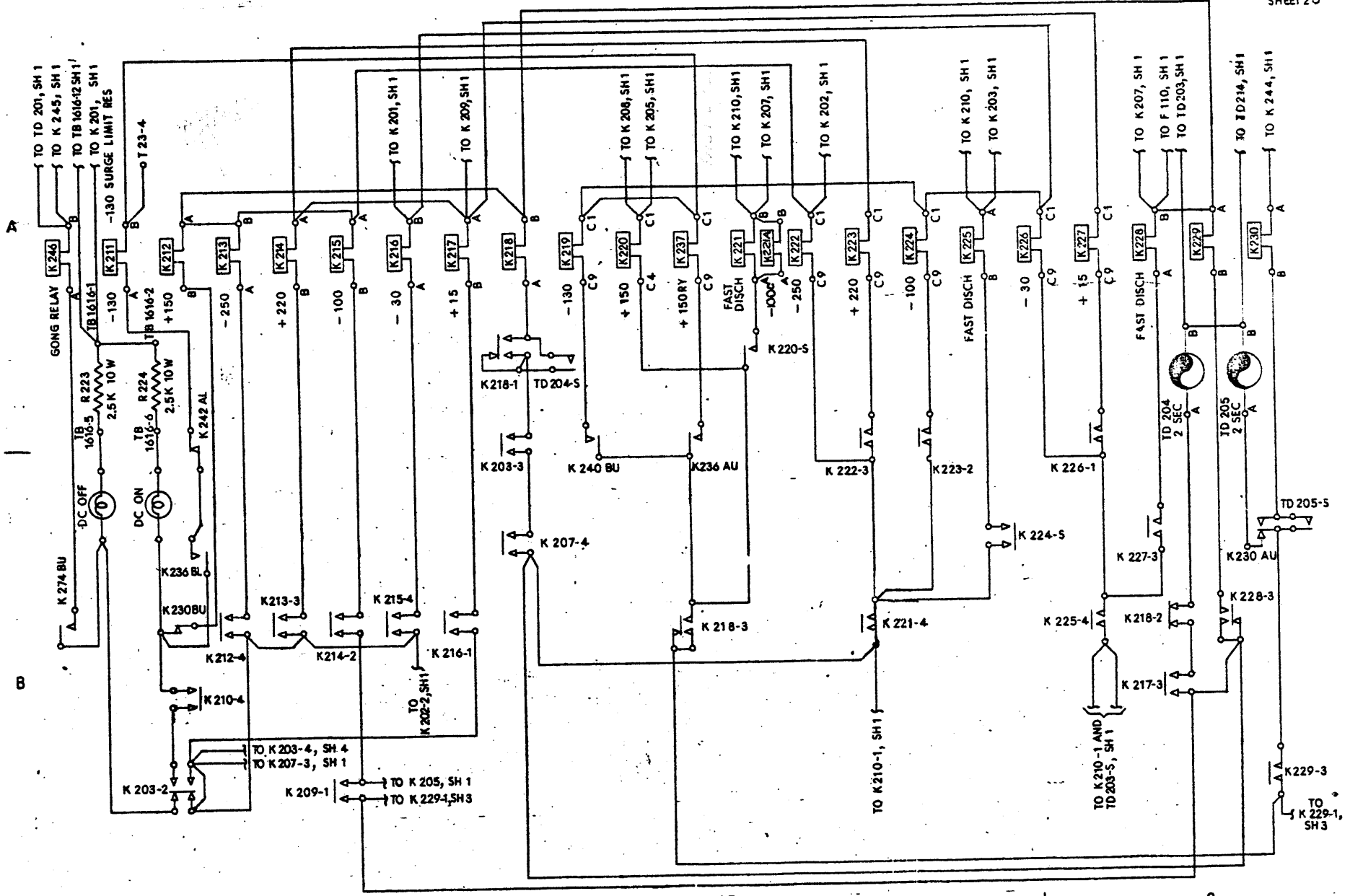
9.0109

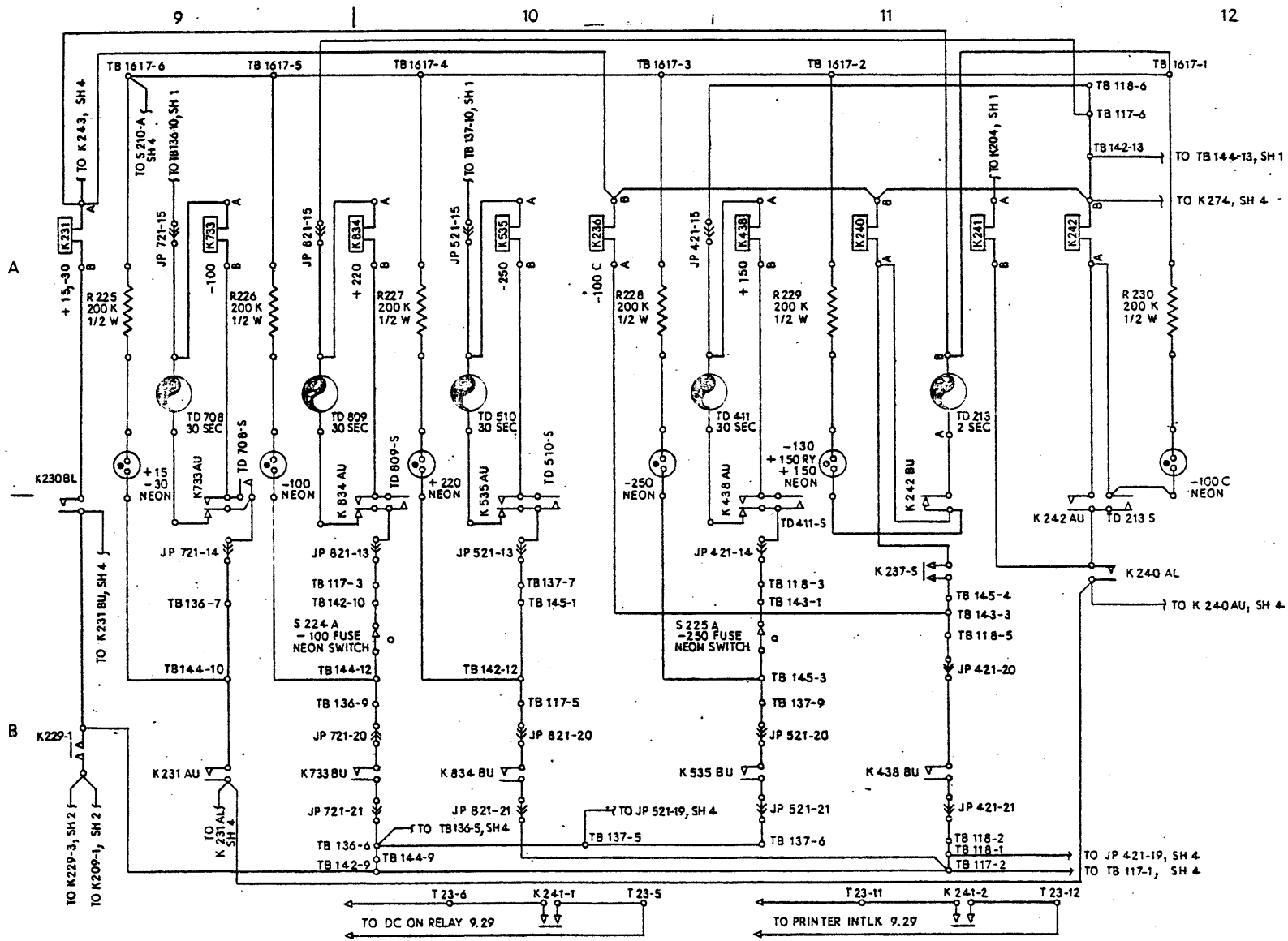


958113 22 126605



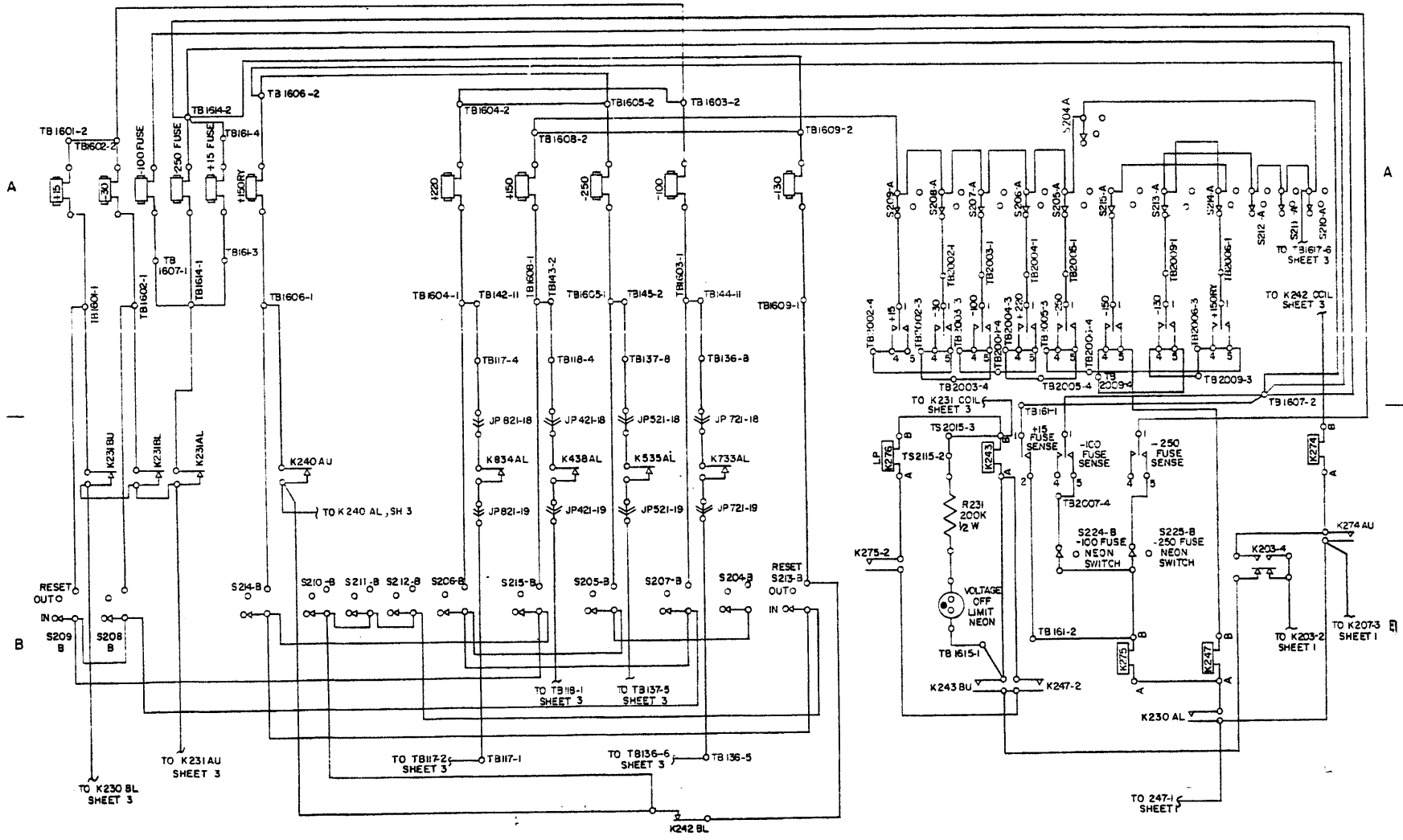




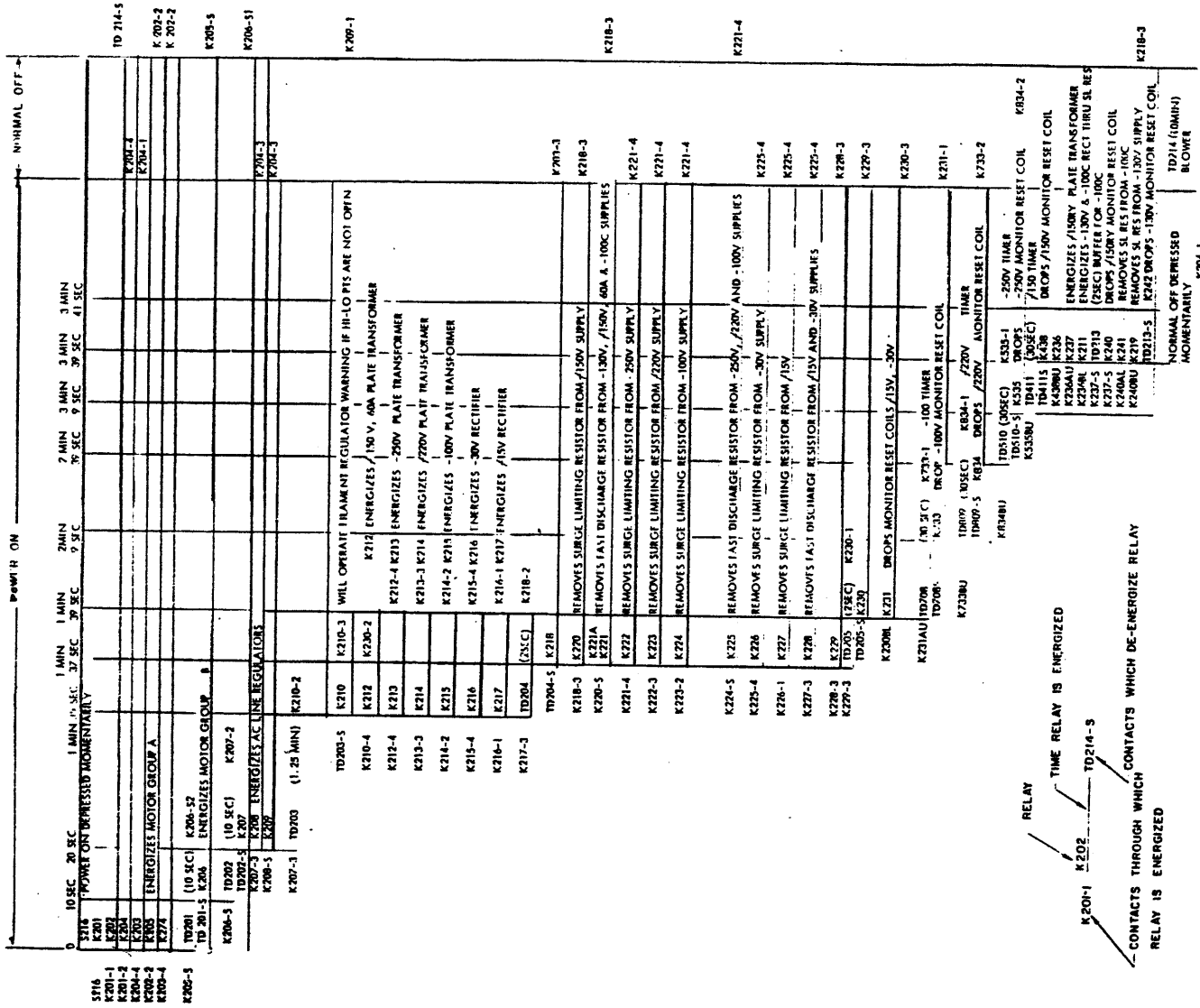


MONITOR RESET COILS

VOLTAGE MONITOR POINTS



TIMING CHART FOR SEQUENCING CIRCUIT

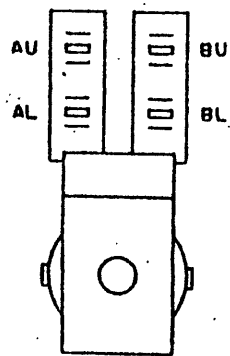
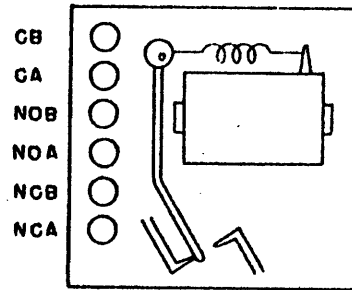
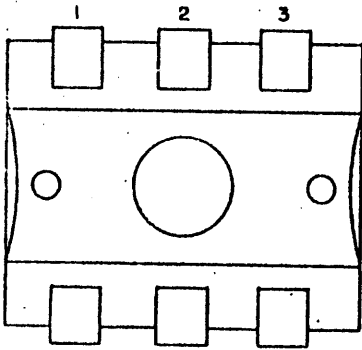
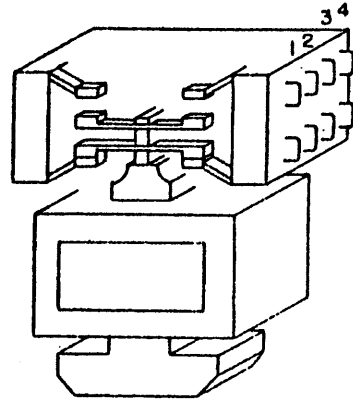
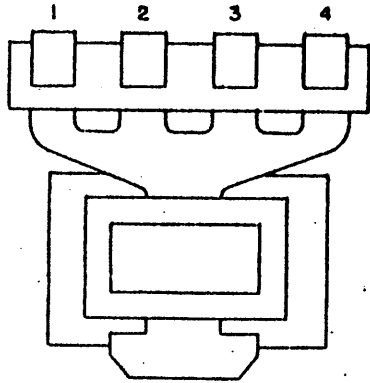


512700 EC 242108

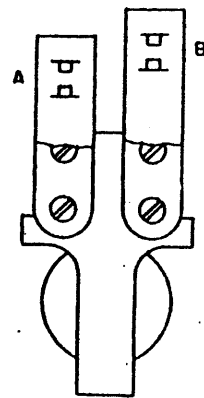


# RELAY AND CONTACTOR POINT DESIGNATIONS

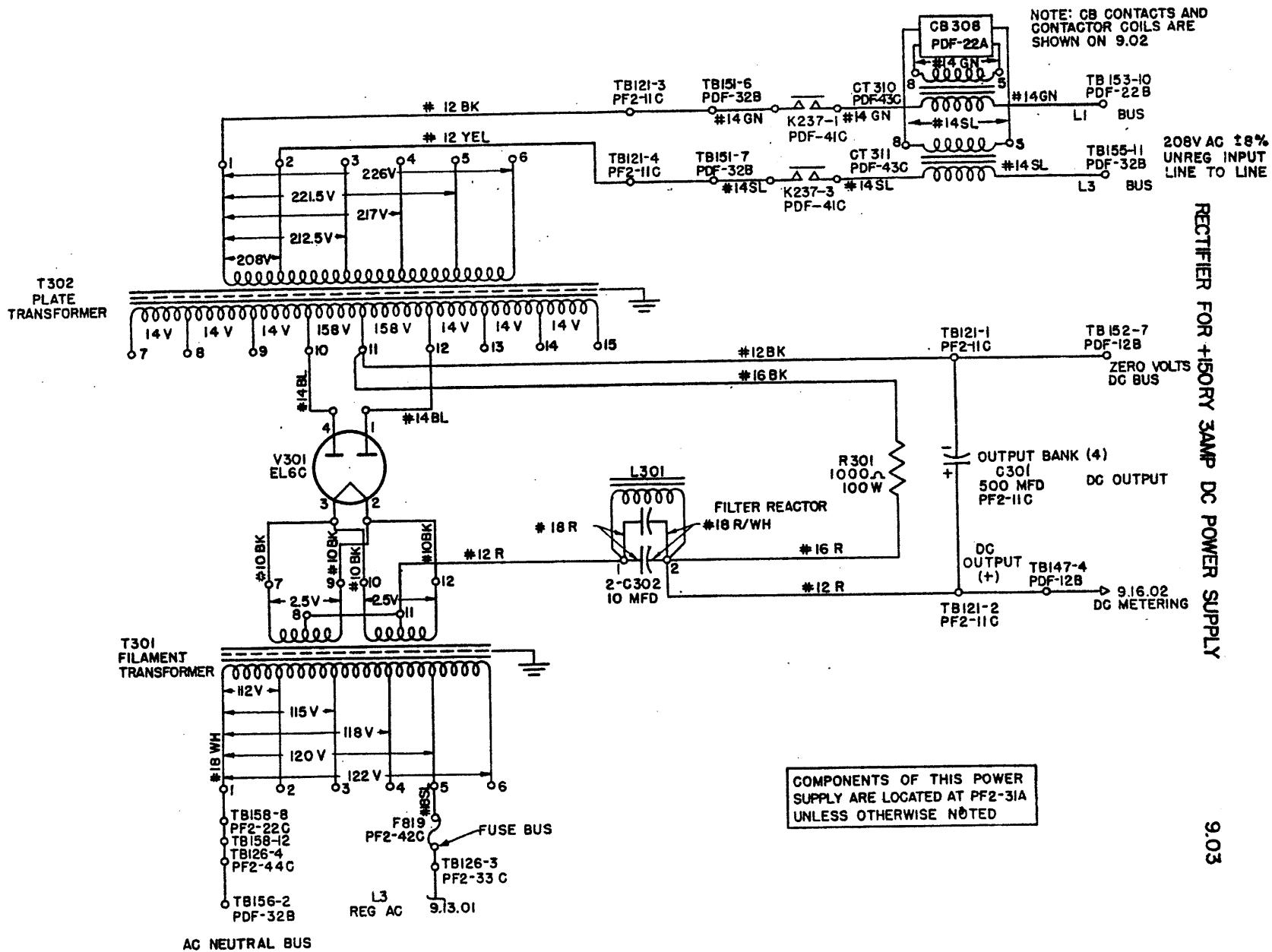
9.02  
SHEET 7 OF 7



CONTACT END



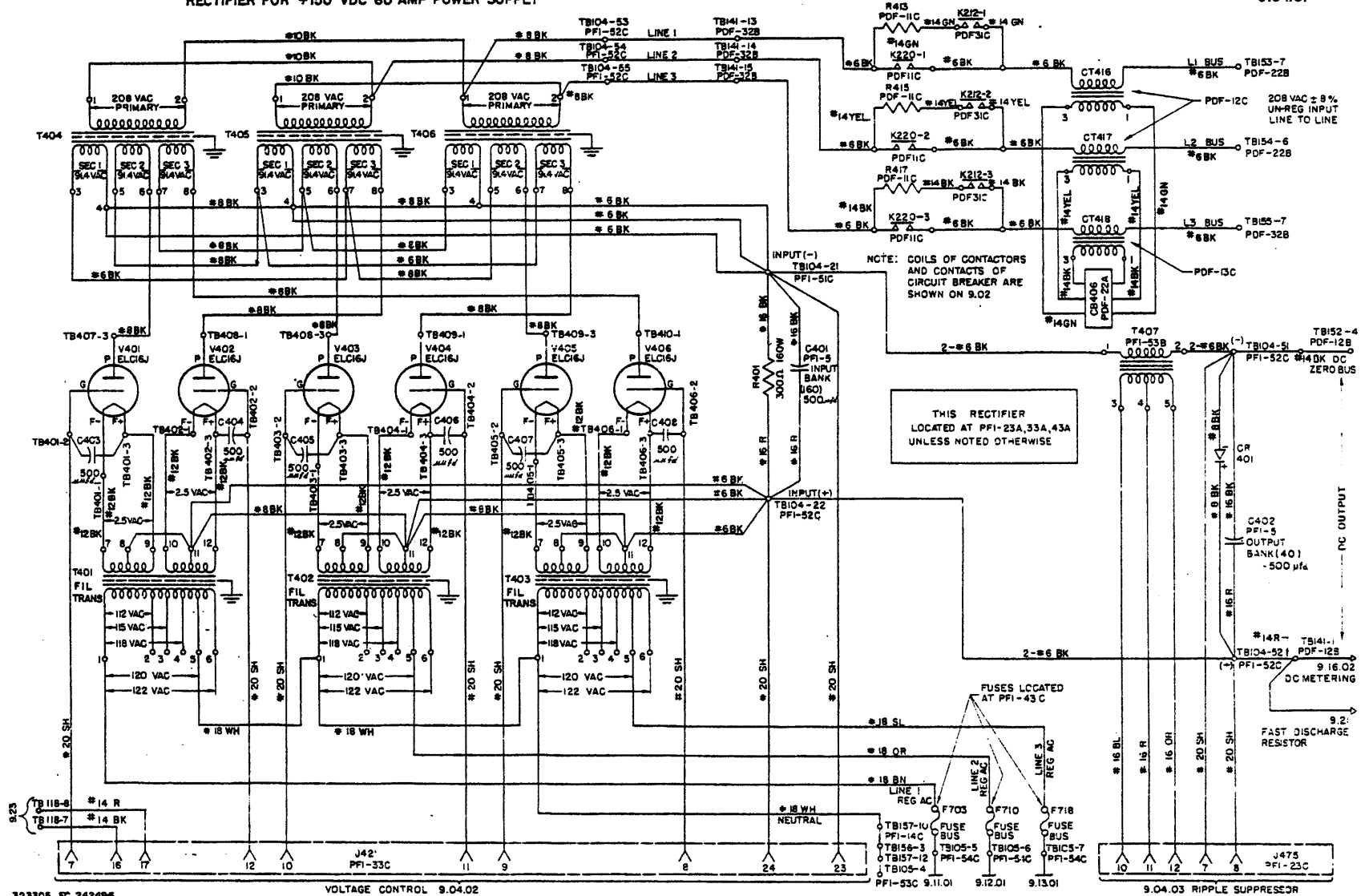
CONTACT END



AC NEUTRAL BUS

RECTIFIER FOR +150 VDC 60 AMP POWER SUPPLY

9.04.01



323305 EC 242496

VOLTAGE CONTROL 9.04.02

FUSES LOCATED AT PFI-43 C

9.04.03 RIPPLE SUPPRESSOR

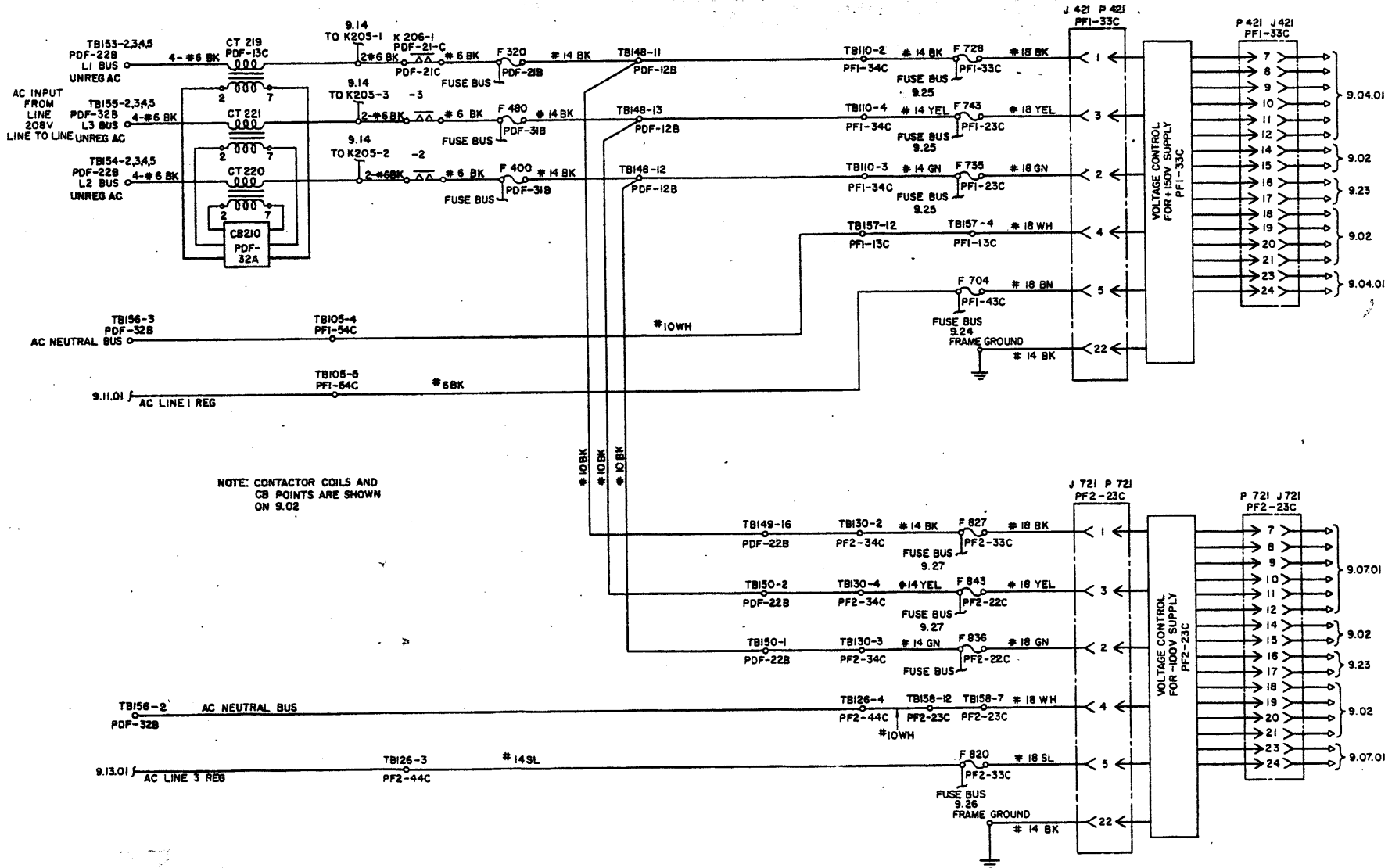


VOLTAGE CONTROL CIRCUITS  
FOR +150V & -100V DC  
POWER SUPPLIES

9.07.02

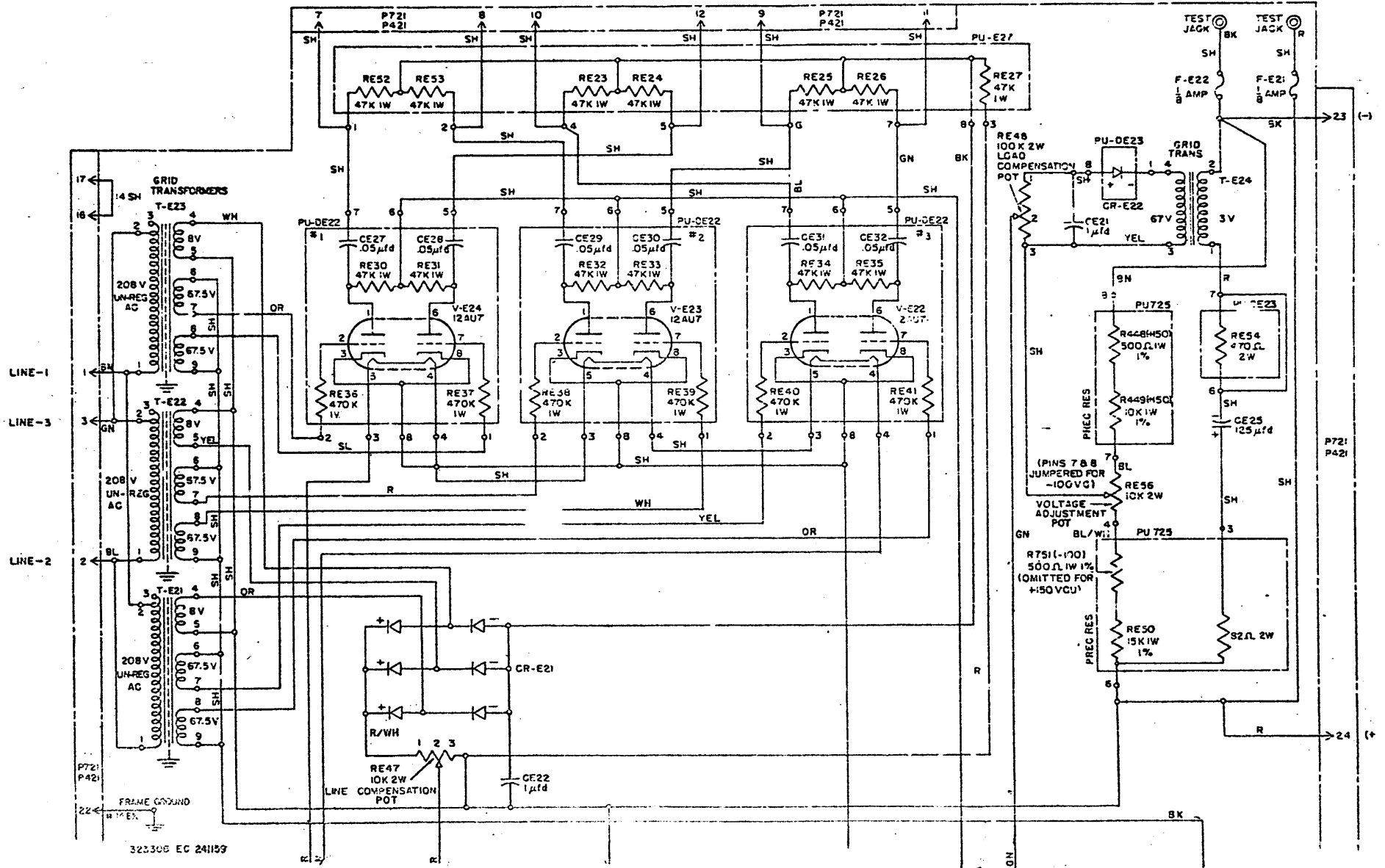
9.04.02

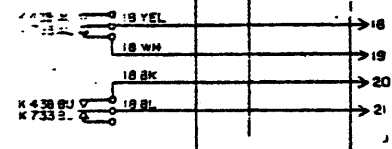
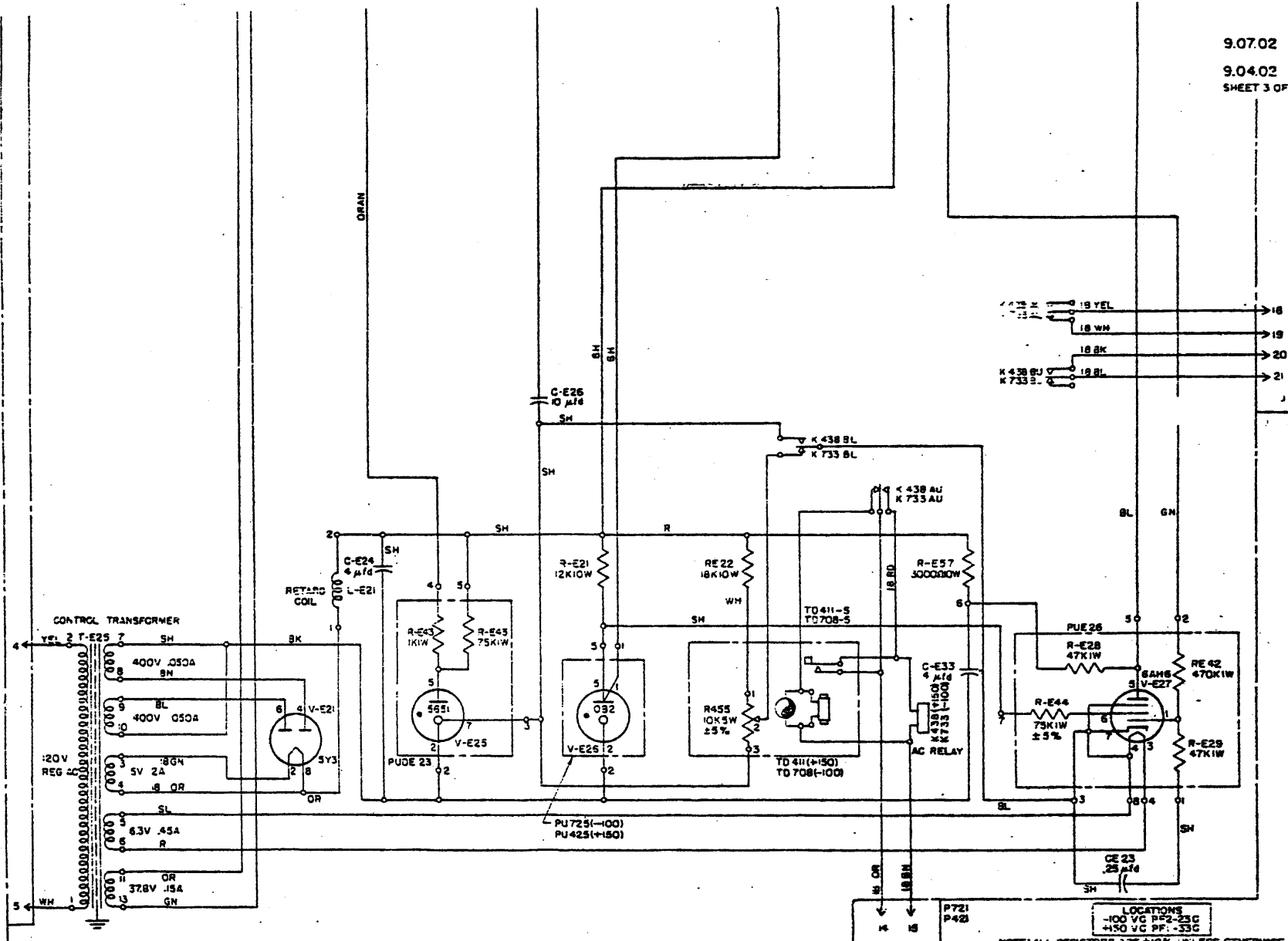
SHEET 1 OF 3



# VOLTAGE CONTROL FOR -100, +150 (60 A) DC POWER SUPPLIES

NOTE: -100 V AND +150 V VOLTAGE CONTROL CHASSIS ARE INTERCHANGEABLE  
PLUGGABLE UNITS IDENTIFIED BY THE SAME NUMBER ARE INTERCHANGEABLE



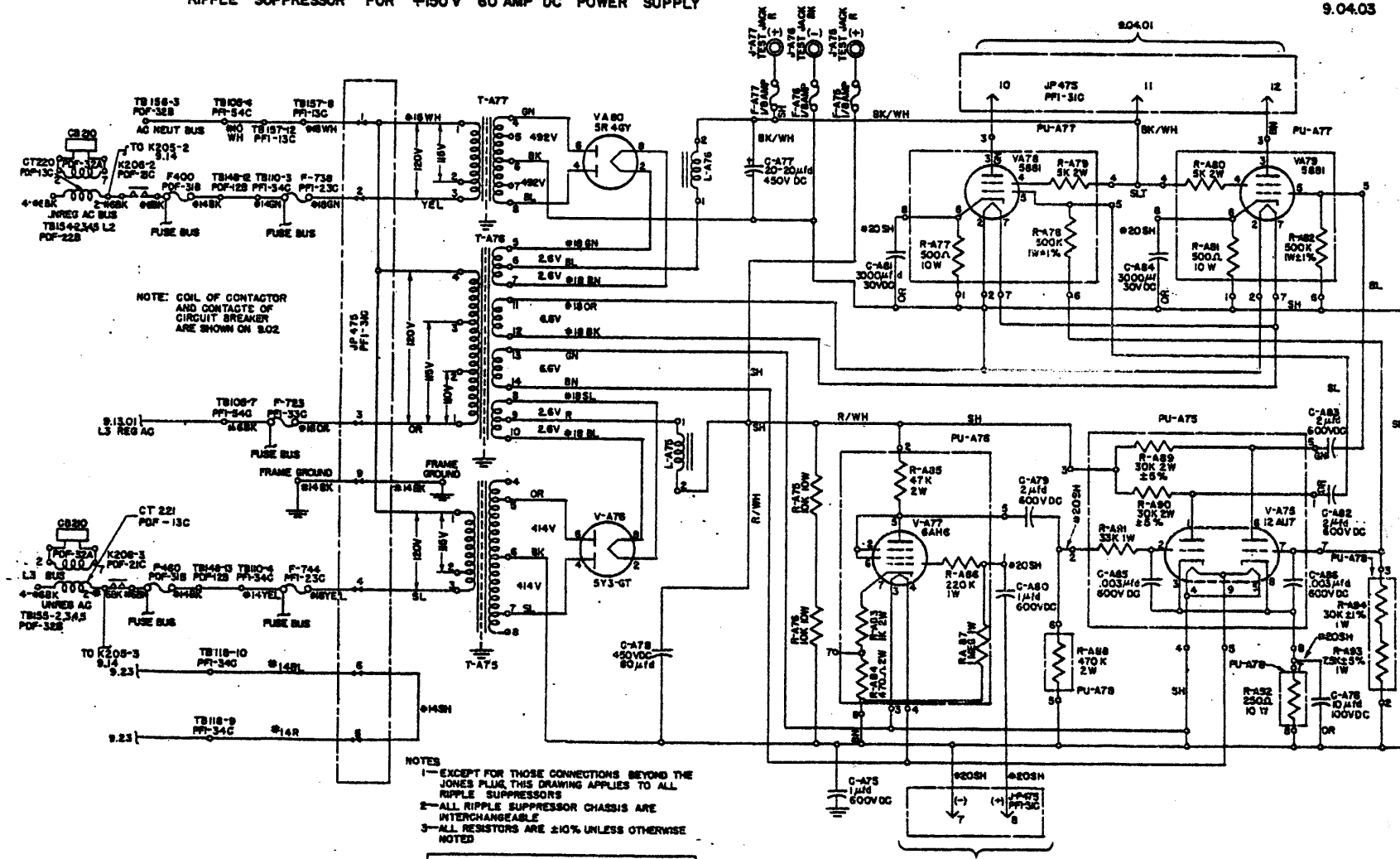


LOCATIONS  
 -100 VC PF-2-25C  
 +150 VC PF-33C

NOTE: ALL RESISTORS ARE ±10% UNLESS OTHERWISE NO

RIPPLE SUPPRESSOR FOR +150V 60 AMP DC POWER SUPPLY

9.04.03



NOTE: COIL OF CONTACTOR AND CONTACTS OF CIRCUIT BREAKER ARE SHOWN ON 9.02

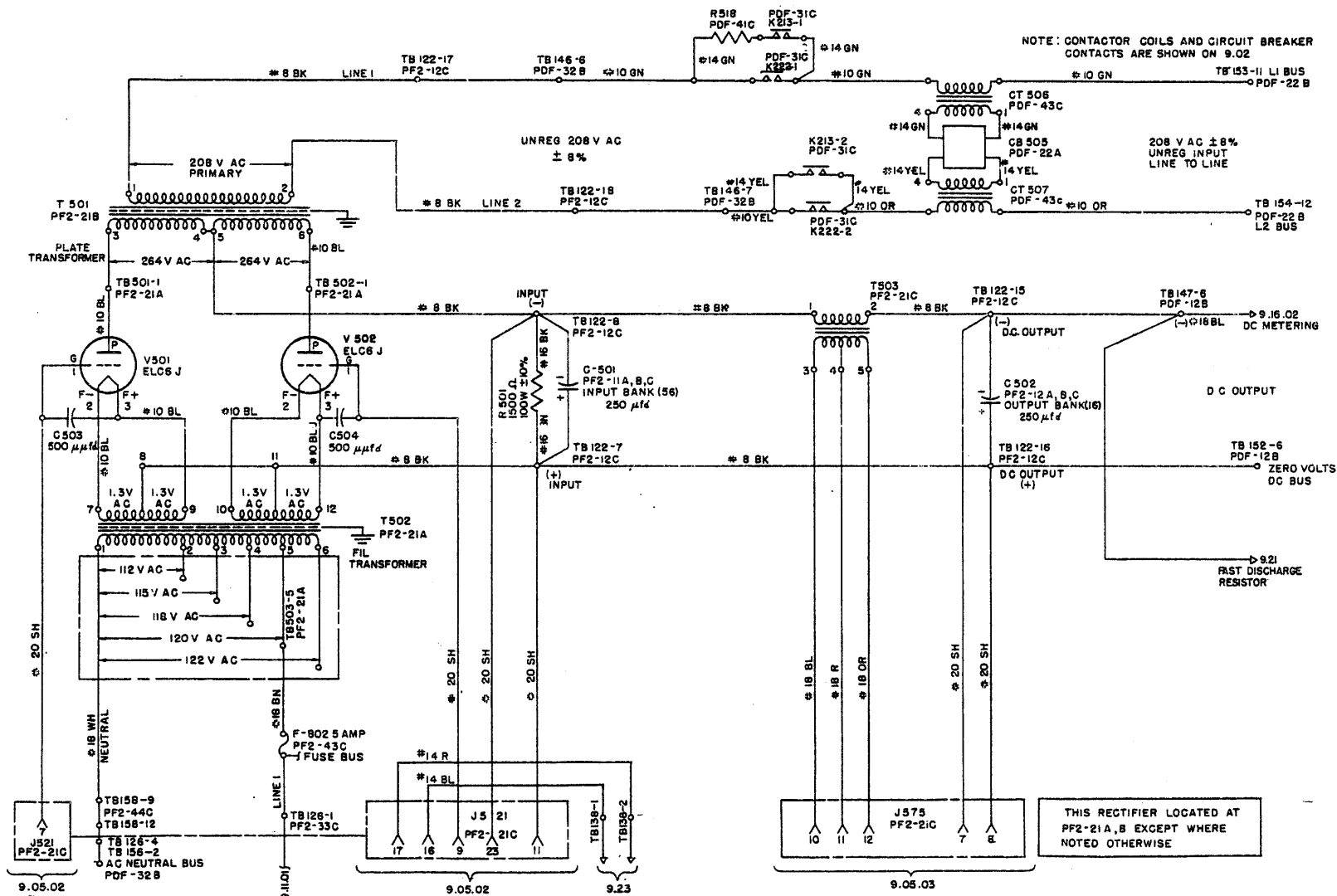
- NOTES
- EXCEPT FOR THOSE CONNECTIONS BEYOND THE JONES PLUS THIS DRAWING APPLIES TO ALL RIPPLE SUPPRESSORS
  - ALL RIPPLE SUPPRESSOR CHASSIS ARE INTERCHANGEABLE
  - ALL RESISTORS ARE ±10% UNLESS OTHERWISE NOTED

THE RIPPLE SUPPRESSOR FOR THE +150V DC, 60AMP DC POWER SUPPLY IS LOCATED AT PFI-23C

← PLUGGABLE UNITS IDENTIFIED BY THE SAME NUMBER ARE INTERCHANGEABLE

RECTIFIER FOR - 250 V, 10 AMP DC POWER SUPPLY

9.05.01



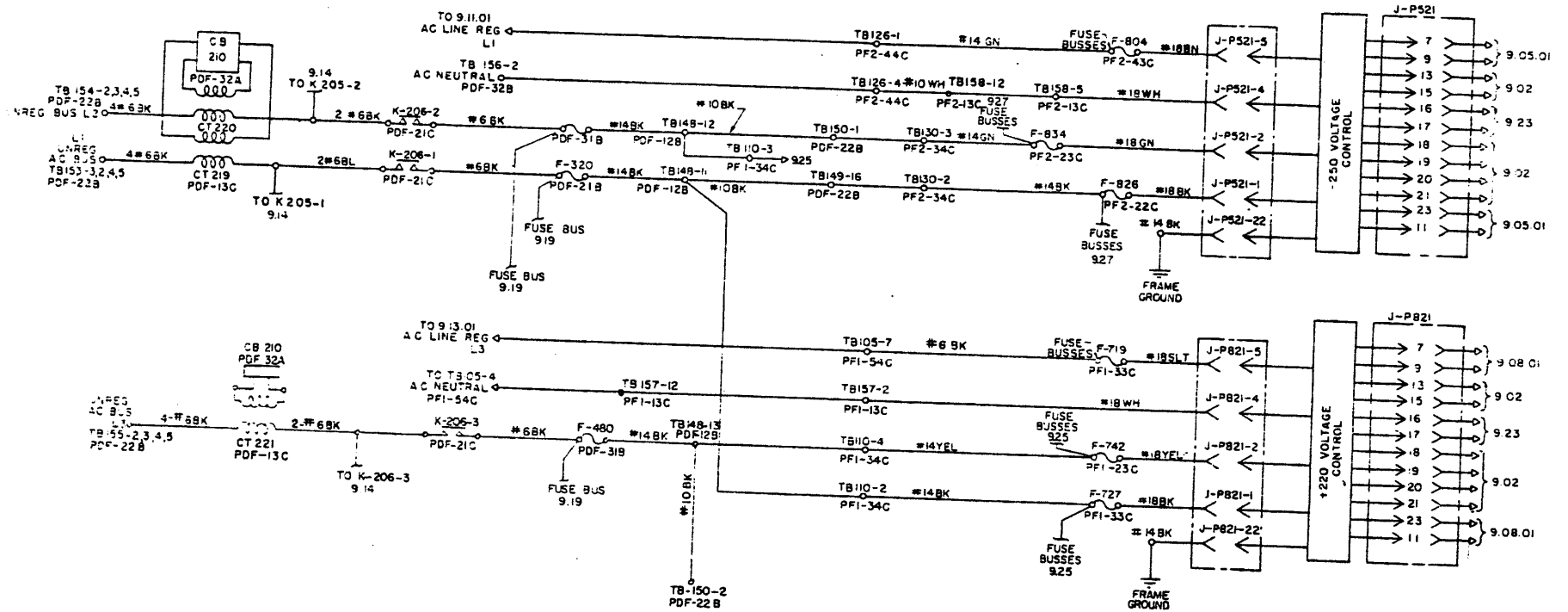
VOLTAGE CONTROLS FOR -250, -220 DC POWER SUPPLIES

9.05.02

9.08.02

SHEET 1 OF 2

NOTE COILS OF CONTACTOR AND CONTACTS OF CIRCUIT BREAKER ARE SHOWN ON 9.02

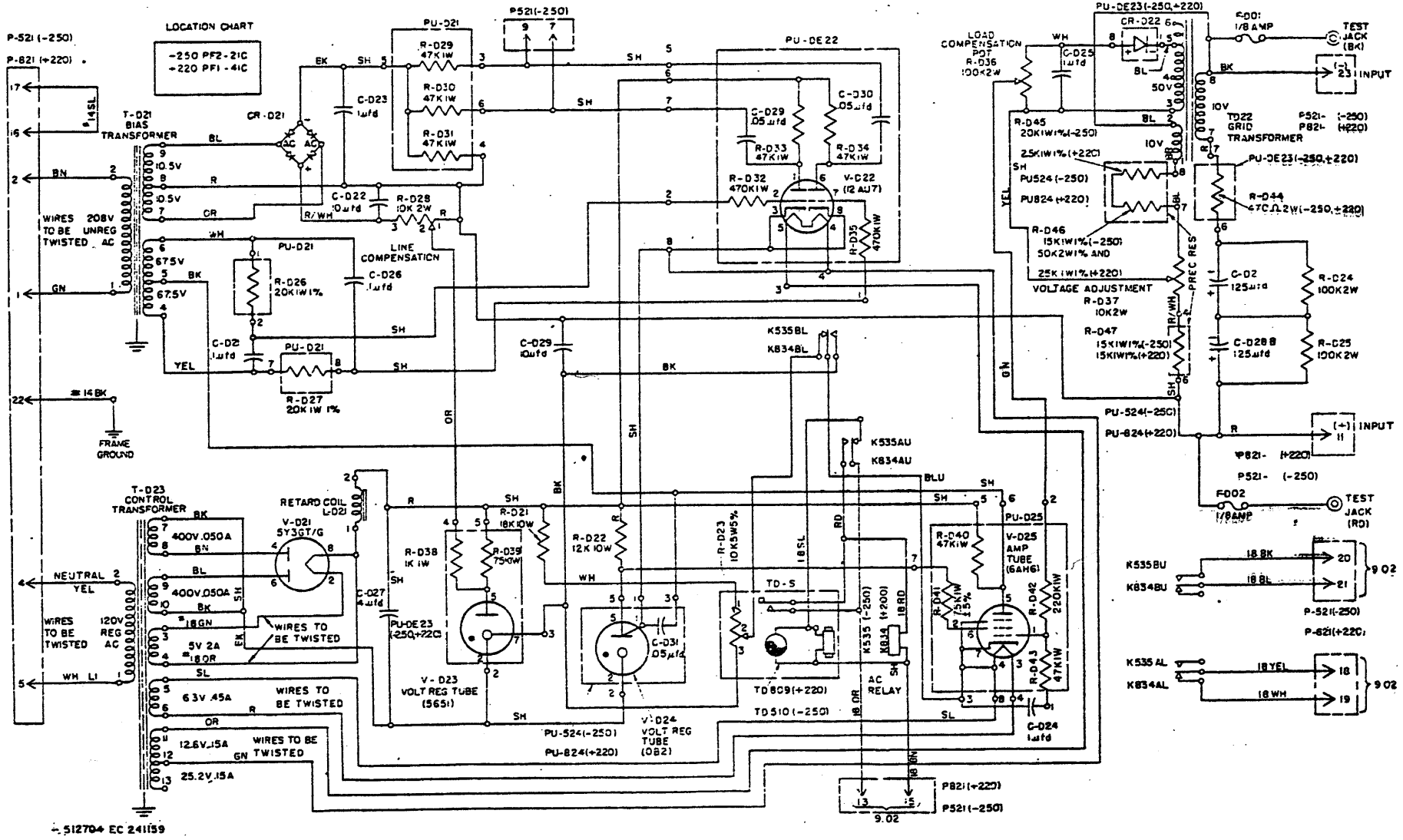


VOLTAGE CONTROL CIRCUIT FOR -250V, +220V DC POWER SUPPLIES

9.05.02

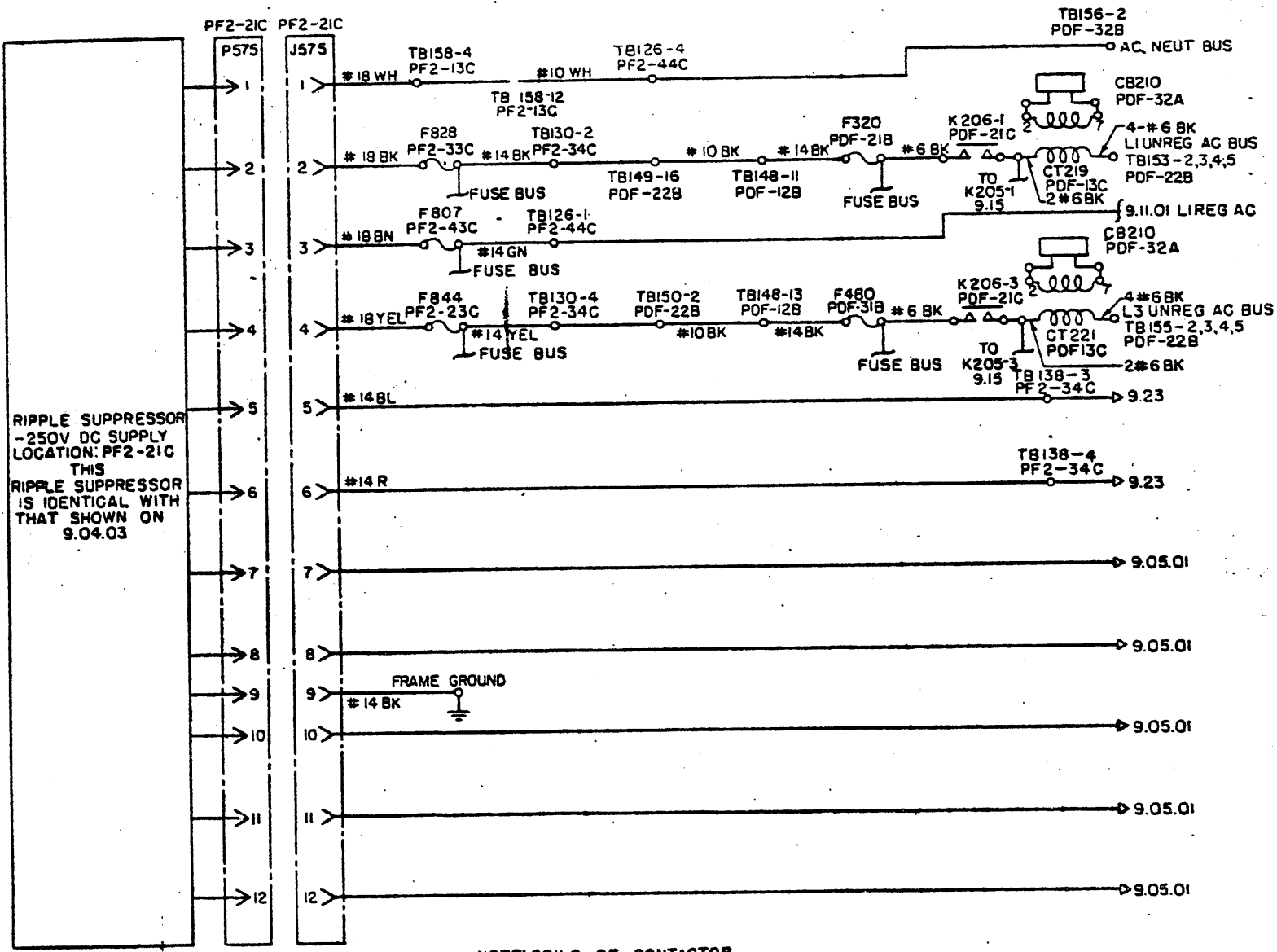
NOTE. -250V, +220V VOLTAGE CONTROL  
CHASSIS ARE INTERCHANGEABLE  
PLUGGABLE UNITS IDENTIFIED BY THE SAME  
NUMBER ARE INTERCHANGEABLE  
ALL RESISTORS ARE ± 10% UNLESS NOTED OTHERWISE  
ALL WIRES ARE 20 GAGE UNLESS NOTED OTHERWISE. P82(+220)

9.08.02  
SHEET 2 OF 2



512704 EC 241159

32310 EC 241159



RIPPLE SUPPRESSOR  
 -250V DC SUPPLY  
 LOCATION: PF2-21C  
 THIS  
 RIPPLE SUPPRESSOR  
 IS IDENTICAL WITH  
 THAT SHOWN ON  
 9.04.03

NOTE: COILS OF CONTACTOR  
 AND CONTACTS OF CIRCUIT  
 BREAKER ARE SHOWN ON 9.02

NOTE: ALL RIPPLE SUPPRESSOR  
 CHASSIS ARE INTERCHANGEABLE &  
 PLUGGABLE UNITS IDENTIFIED BY  
 THE  
 SAME NUMBER ARE INTERCHANGEABLE

RIPPLE SUPPRESSOR FOR -250V DC POWER SUPPLY

9.05.03



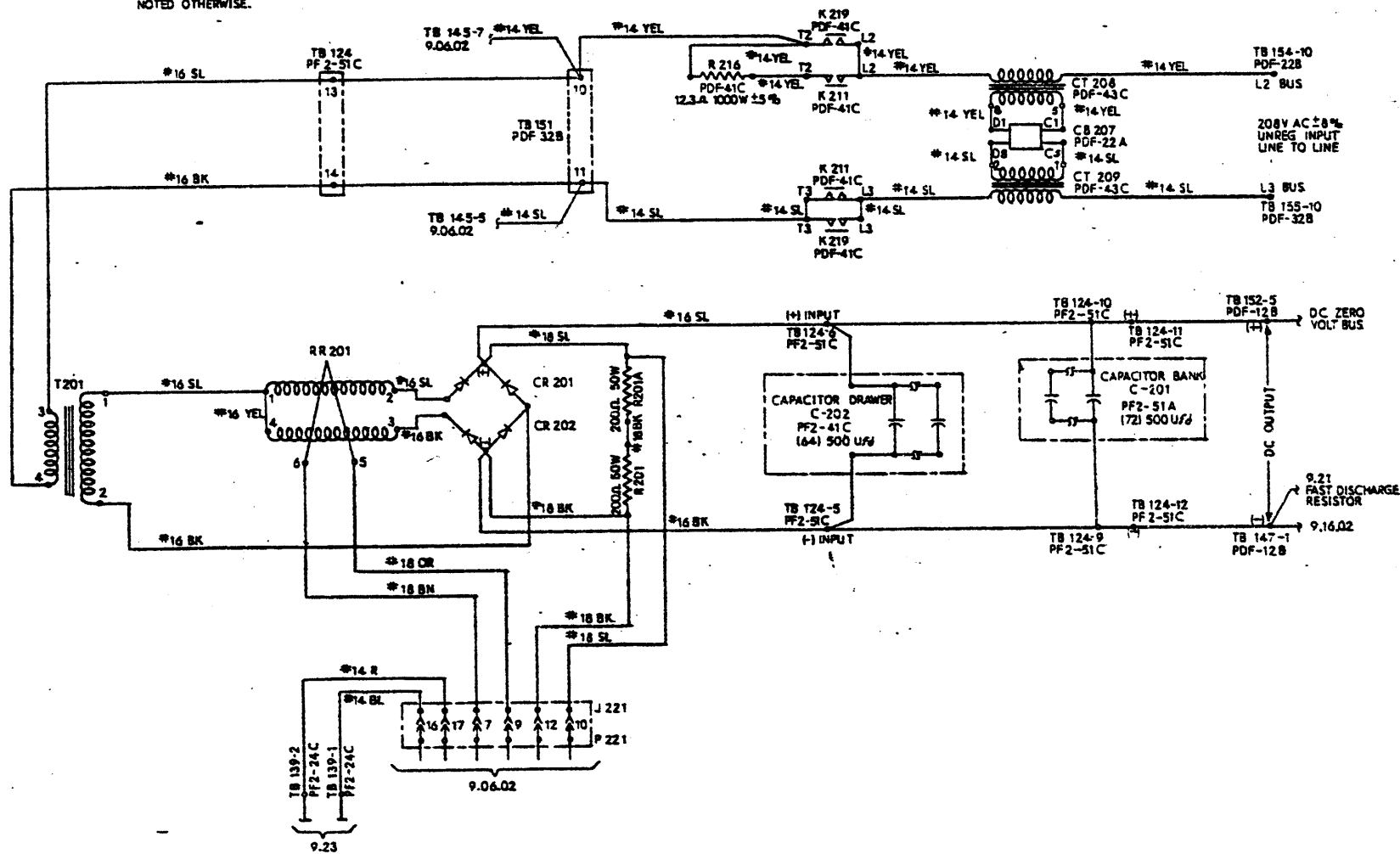
RECT FOR -130 VOLT 3 AMP D C POWER SUPPLY

9.06.01

ALL COMPONENTS IN THIS RECT LOCATED AT PF2-41A UNLESS OTHERWISE NOTED.

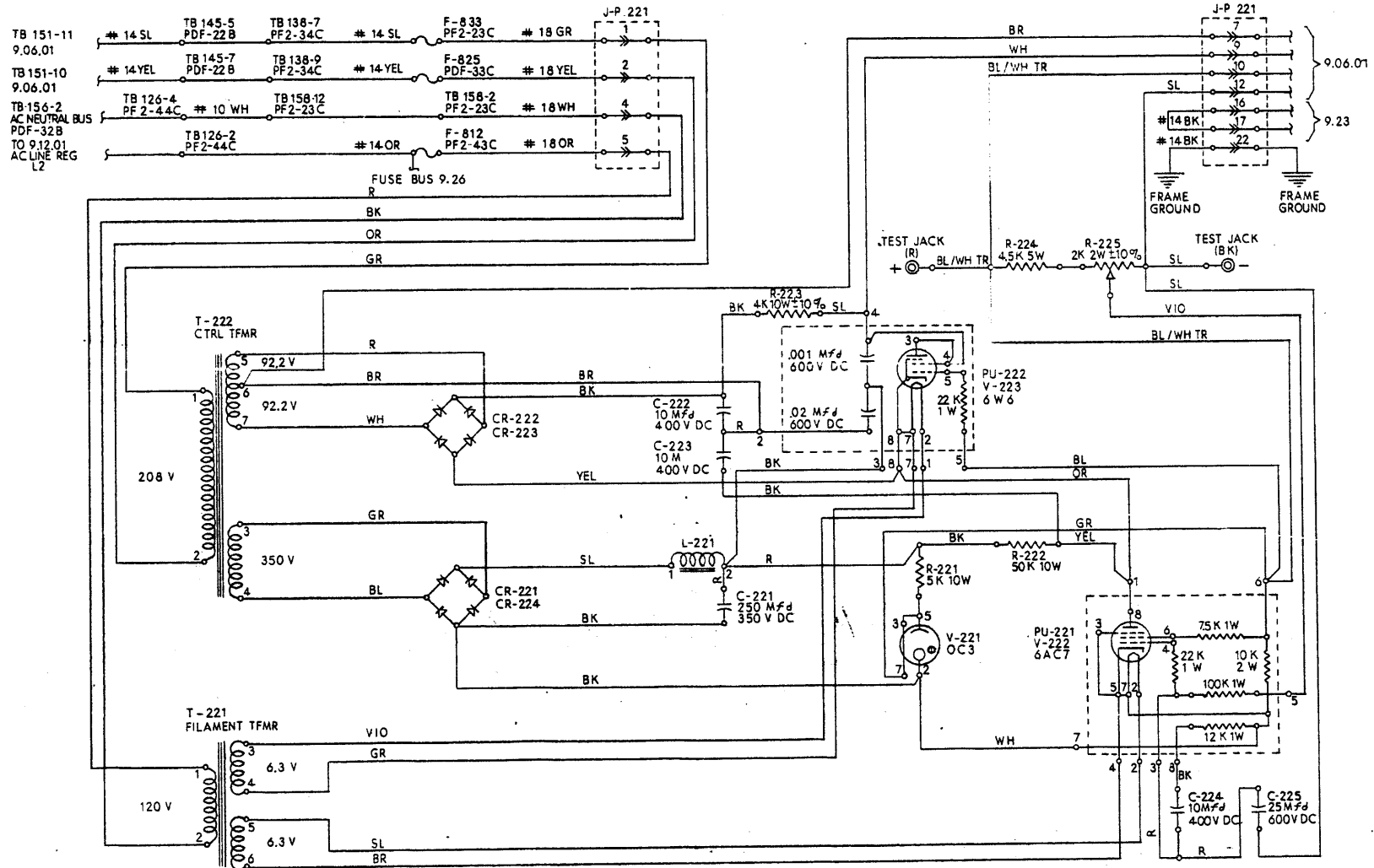
ALL RESISTORS ARE  $\pm 10\%$  UNLESS NOTED OTHERWISE.

NOTE: CONTACTOR COILS AND CIRCUIT BREAKER CONTACTS ARE SHOWN ON 9.02.



VOLTAGE CONTROL FOR -130 VOLT 3 AMP DC POWER SUPPLY

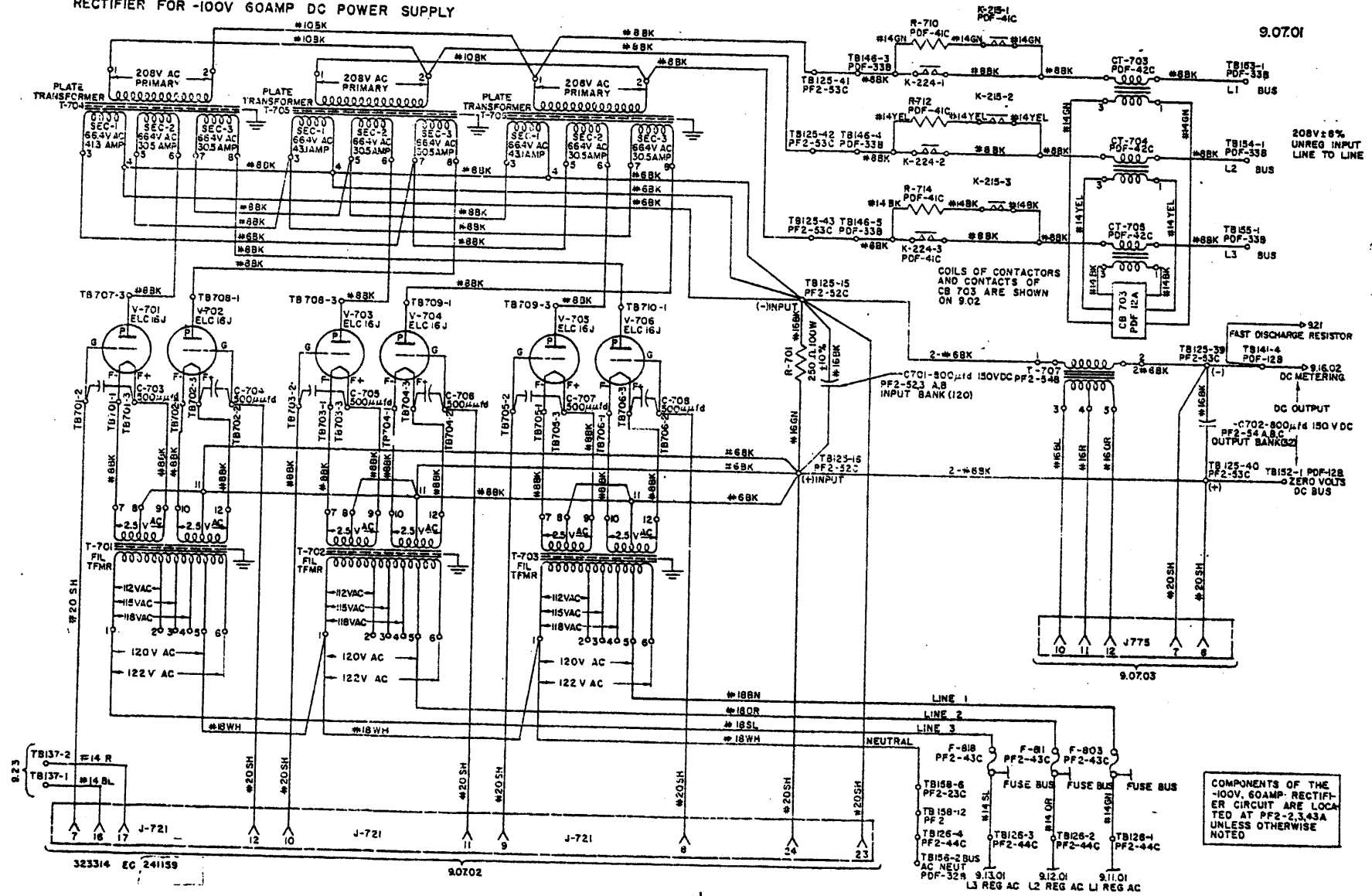
9.06.02



- NOTES:
- ALL COMPONENTS IN THIS CHASSIS LOCATED AT PF2-42C UNLESS OTHERWISE NOTED
  - ALL WIRES ARE # 20 GAUGE UNLESS OTHERWISE NOTED.
  - ALL RESISTORS ARE ± 5% UNLESS OTHERWISE NOTED.

# RECTIFIER FOR -100V 60AMP DC POWER SUPPLY

9.0701



COMPONENTS OF THE  
-100V 60AMP RECTIFIER  
CIRCUIT ARE LOCATED  
AT PF2-2,3,43A  
UNLESS OTHERWISE  
NOTED

323314 EC 241139

9.0702

9.0703

208V ± 8%  
UNREG INPUT  
LINE TO LINE

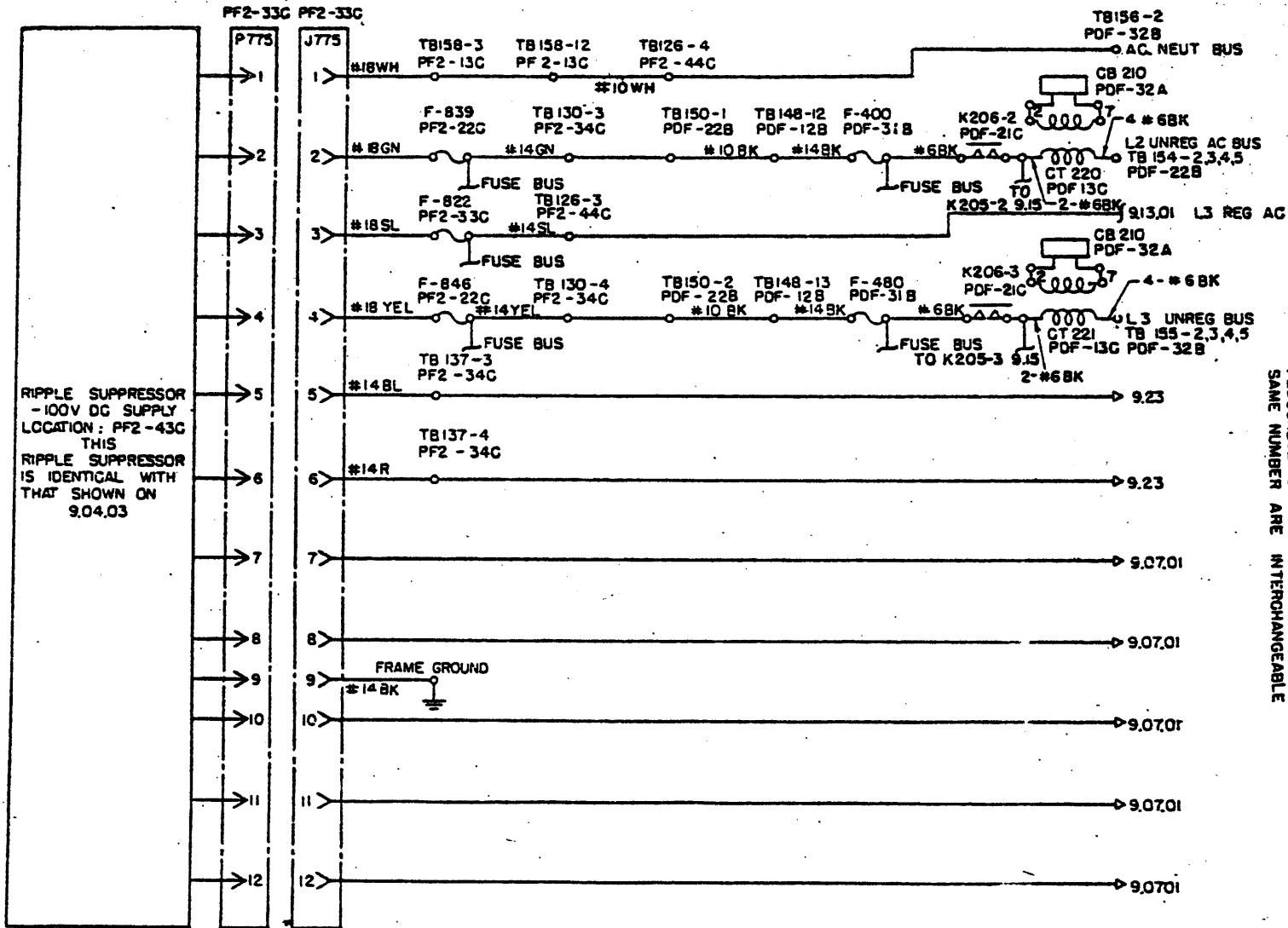
FAST DISCHARGE RESISTOR  
9.21

DC OUTPUT  
-C702-800µfd 150VDC  
PF2-54 A.B.C.  
OUTPUT BANKS  
9.1602

DC METERING  
9.1602

LINE 1  
LINE 2  
LINE 3  
NEUTRAL  
FUSE BUS  
F-801 PF2-43C  
F-802 PF2-43C  
F-803 PF2-43C  
TB158-6 PF2-23C  
TB158-2 PF2  
TB126-4 PF2-44C  
TB126-3 PF2-44C  
TB126-2 PF2-44C  
TB126-1 PF2-44C  
AC NEUT  
9.1301 L3 REG AC  
9.1201 L2 REG AC  
9.1101 L1 REG AC

323318 EC 241159



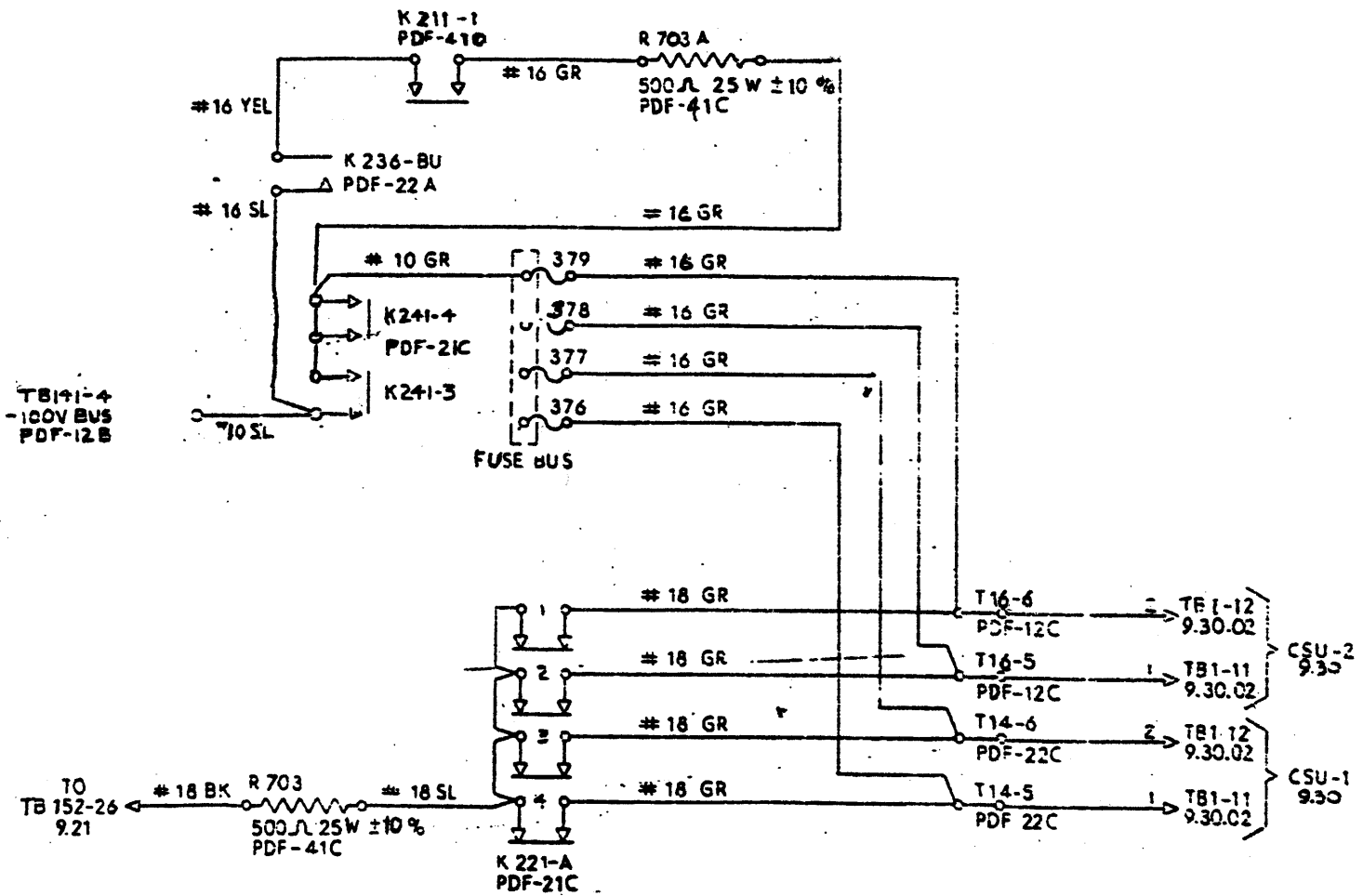
RIPLLE SUPPRESSOR  
-100V DC SUPPLY  
LOCATION: PF2-43C  
THIS  
RIPLLE SUPPRESSOR  
IS IDENTICAL WITH  
THAT SHOWN ON  
9,04.03

NOTE: ALL RIPLLE SUPPRESSOR  
CHASSIS ARE INTERCHANGABLE  
PLUGGABLE UNITS IDENTIFIED BY THE  
SAME NUMBER ARE INTERCHANGABLE

RIPLLE SUPPRESSOR FOR -100V DC POWER SUPPLY

9,07.03

512707 E.C. 24:344

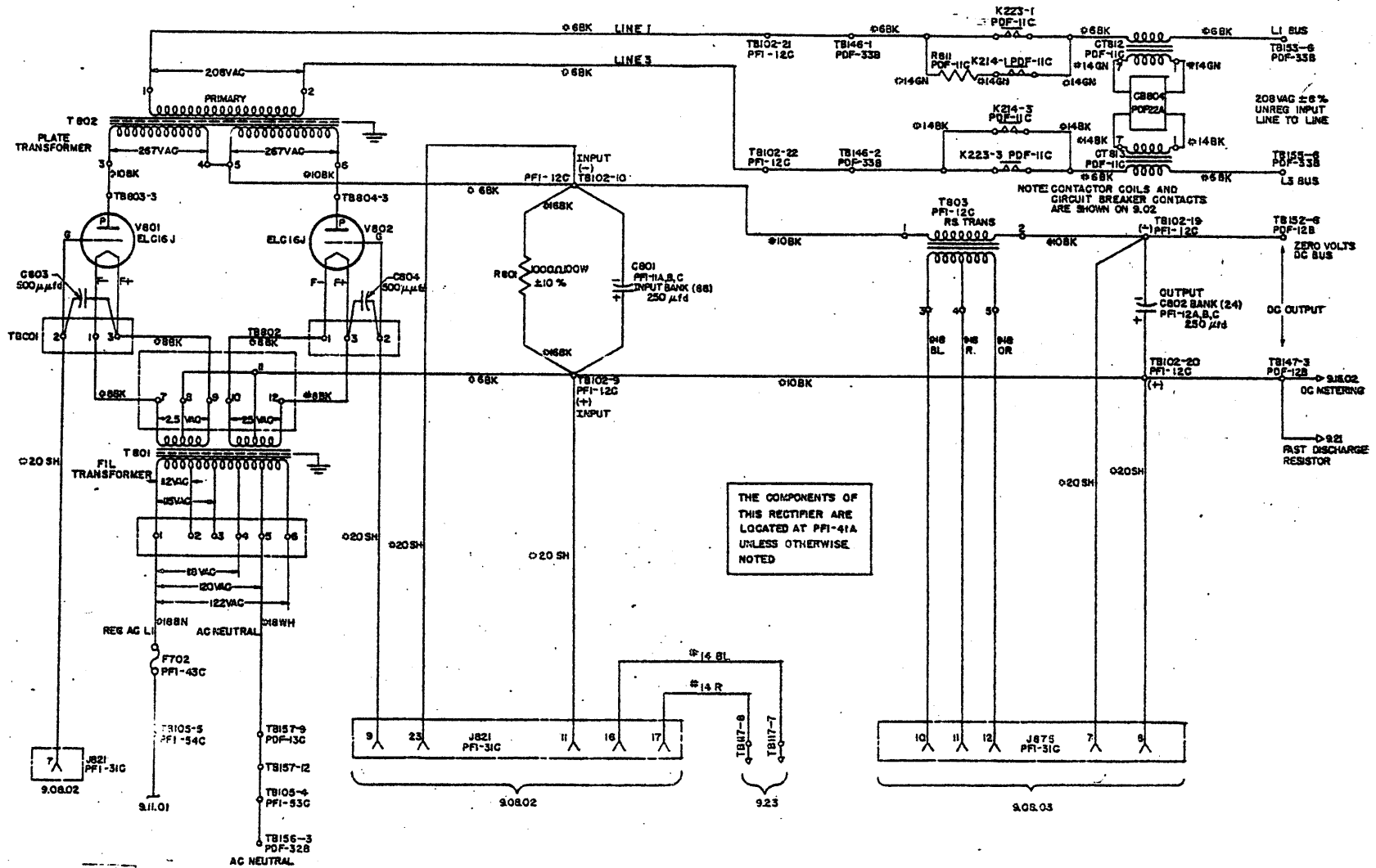


- 100 VOLT DC DELAY CIRCUIT

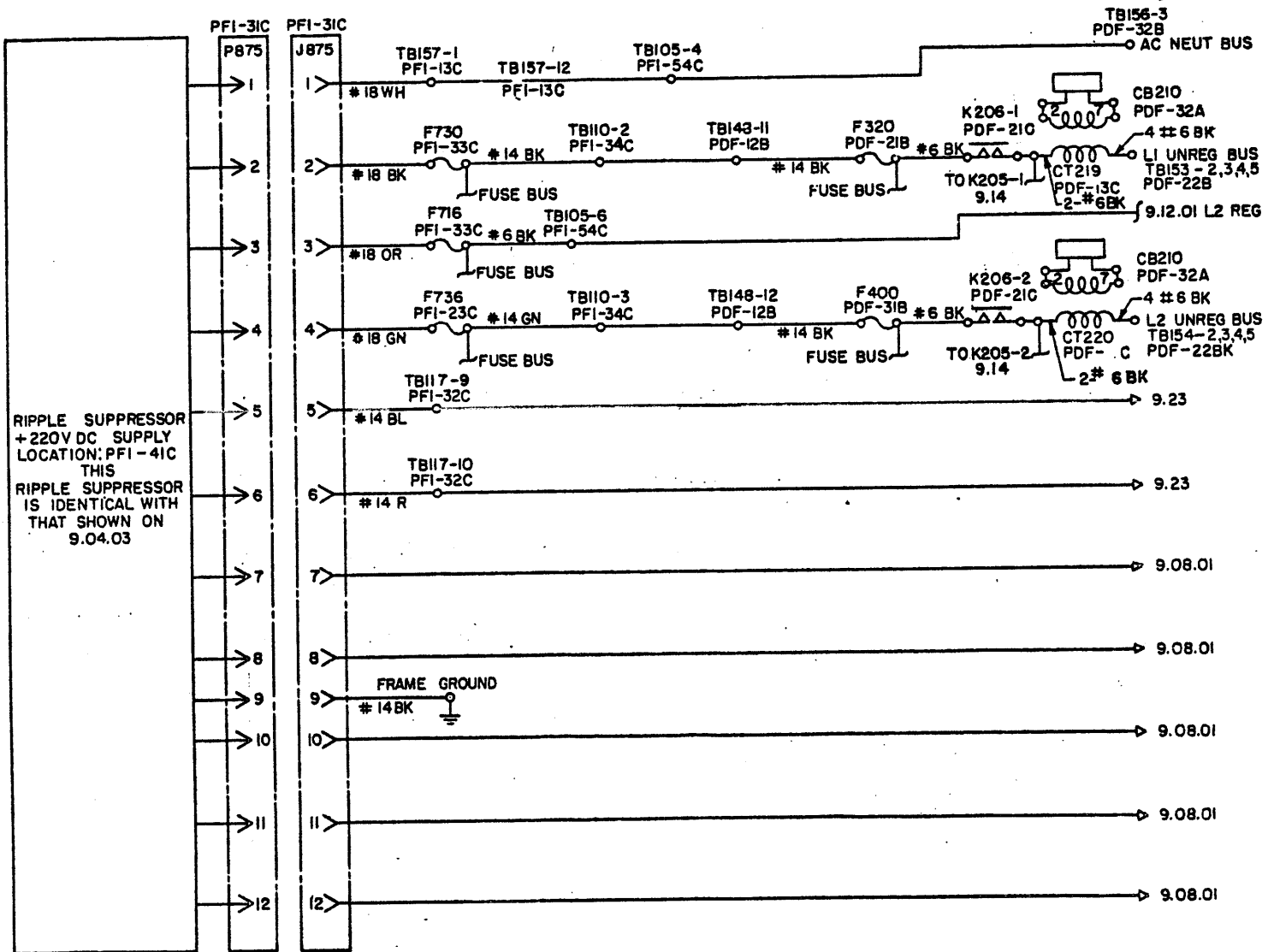
9.07.04

RECTIFIER FOR +220V 16 AMP DC POWER SUPPLY

9.08.01



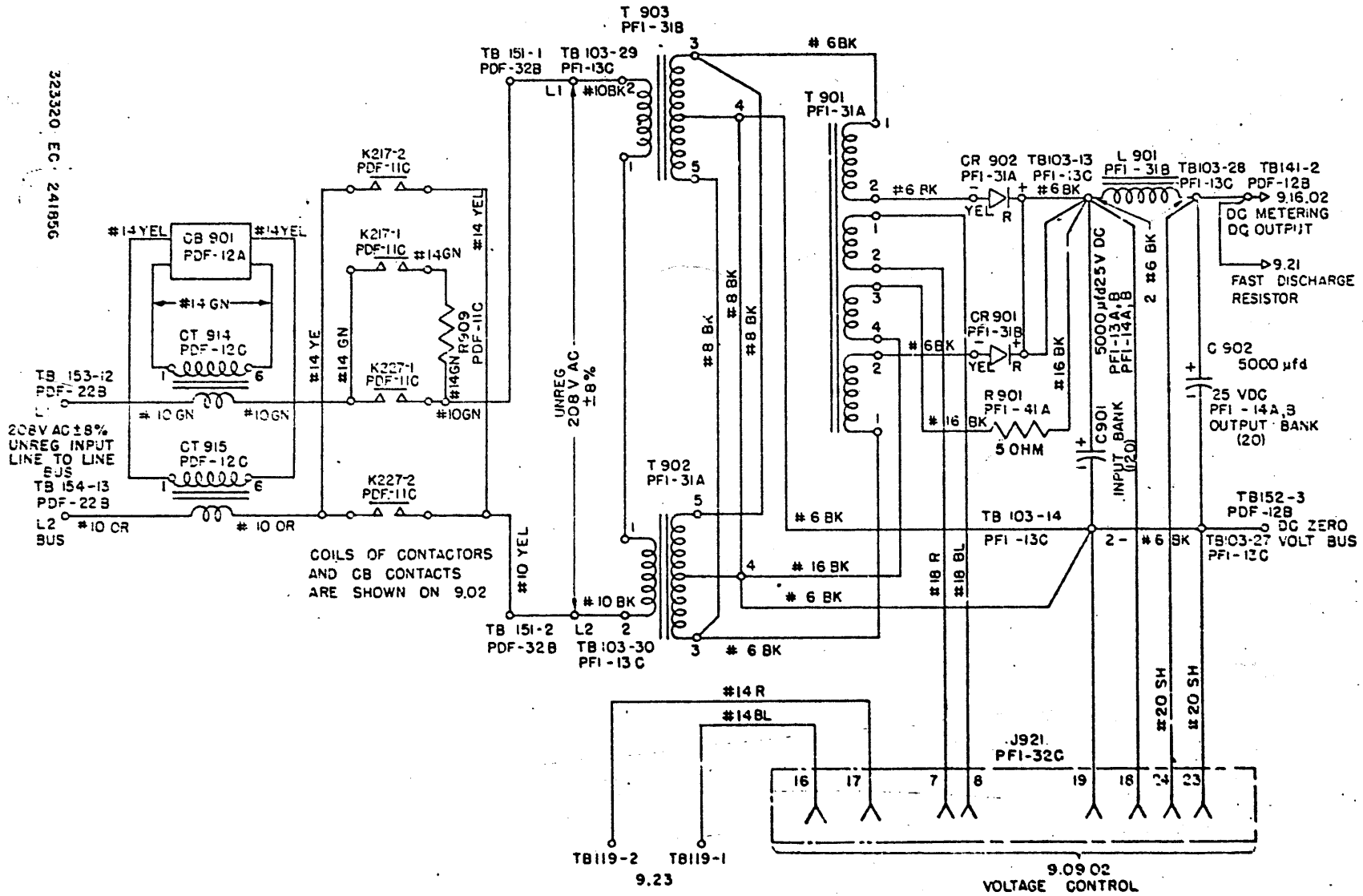
323319 EG-241159



NOTE: ALL RIPPLE SUPPRESSOR  
 CHASSIS ARE INTER-CHANGEABLE  
 RIPPLE SUPPRESSOR FOR +220V DC POWER SUPPLY

9.08.03

323320 EC 241856



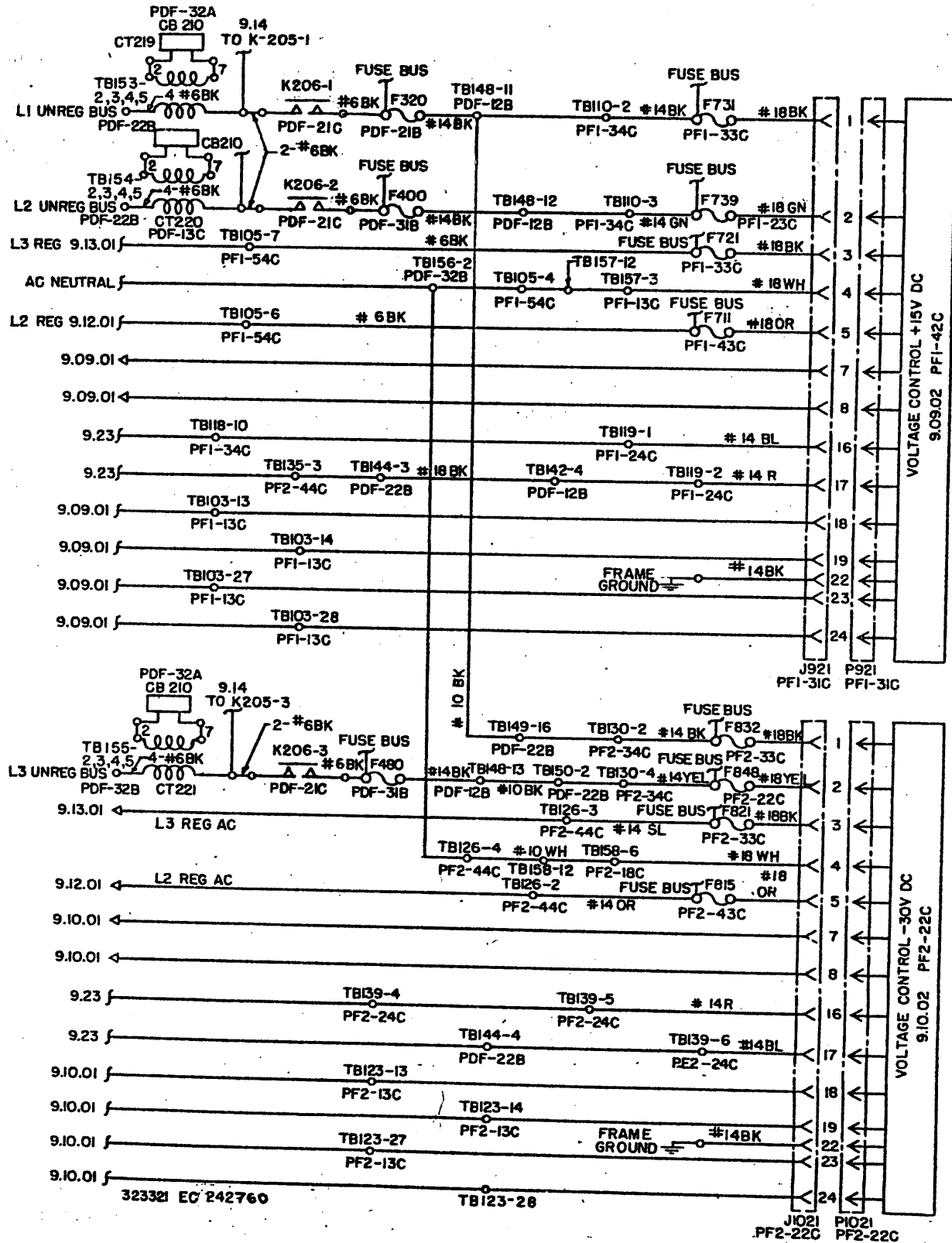
RECTIFIER FOR +15V 70 AMP DC SUPPLY

9.09.01



# VOLTAGE CONTROL CIRCUIT FOR +15V DC & -30V DC

9.09.02  
9.10.02  
SHEET 1 OF 2



323321 EC 242760

J1021 P1021  
PF2-22C PF2-22C

VOLTAGE CONTROL FOR +15V 70 AMP AND -30V 40 AMP DC SUPPLIES

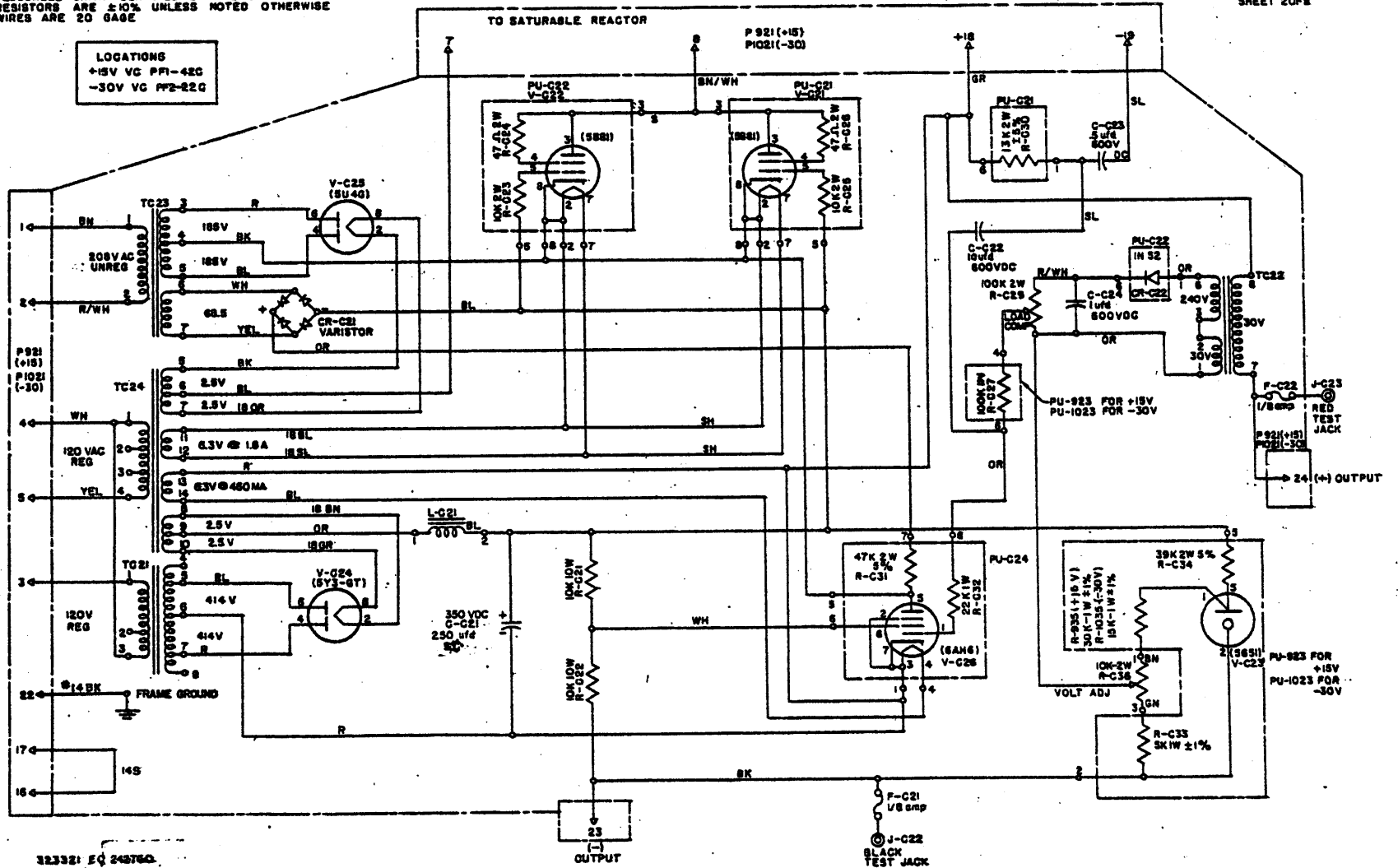
9.09.02

9.10.02

SHEET 20F8

NOTE +15V AND -30V VOLTAGE CONTROL CHASSIS ARE INTERCHANGEABLE  
 PLUGGABLE UNITS IDENTIFIED BY THE SAME NUMBER ARE INTERCHANGEABLE  
 RESISTORS ARE ±10% UNLESS NOTED OTHERWISE  
 WIRES ARE 20 GAGE

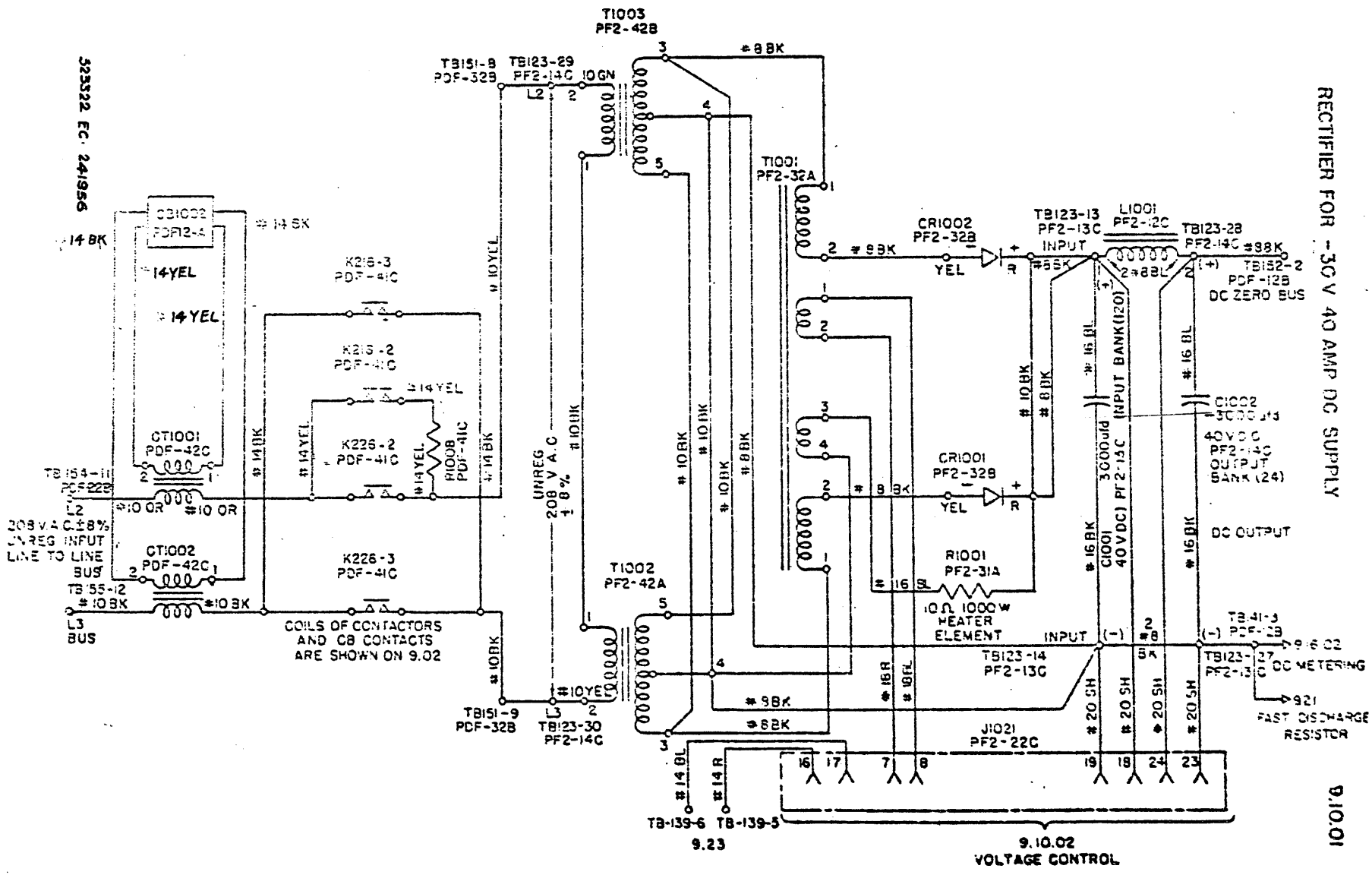
LOCATIONS  
 +15V VC PF1-42C  
 -30V VC PF2-22C



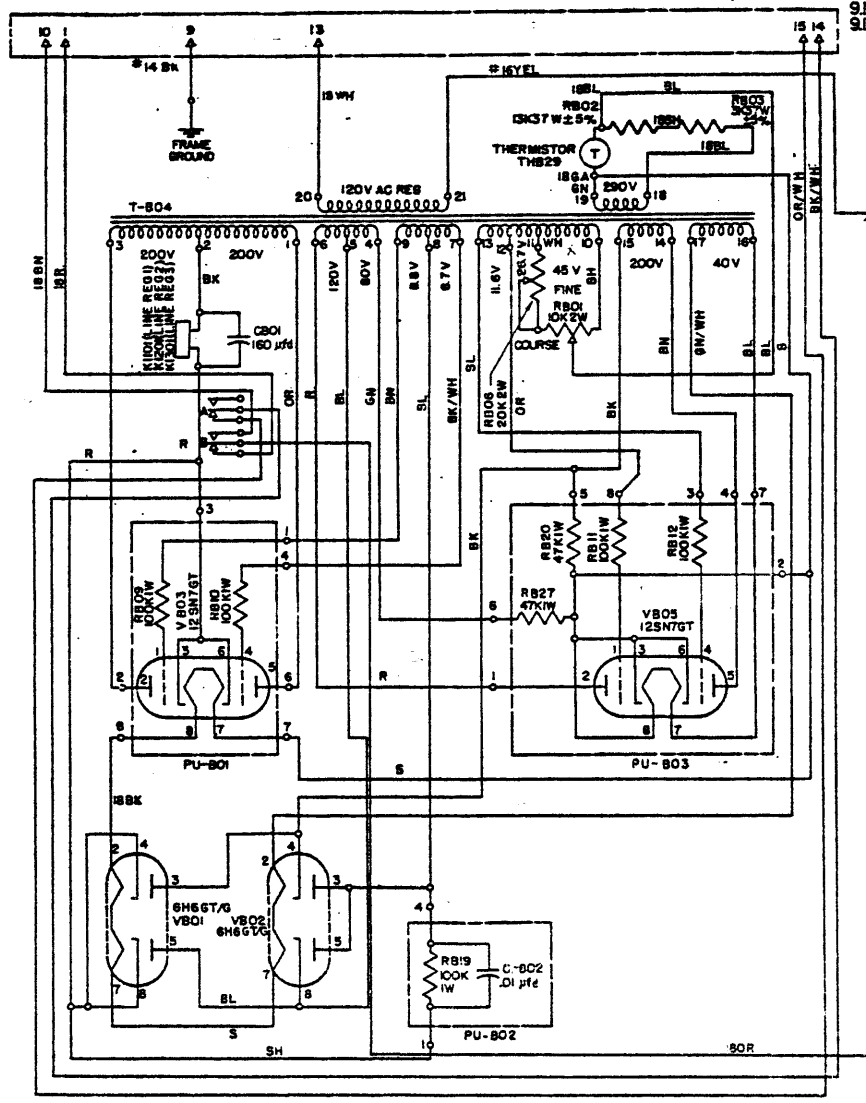
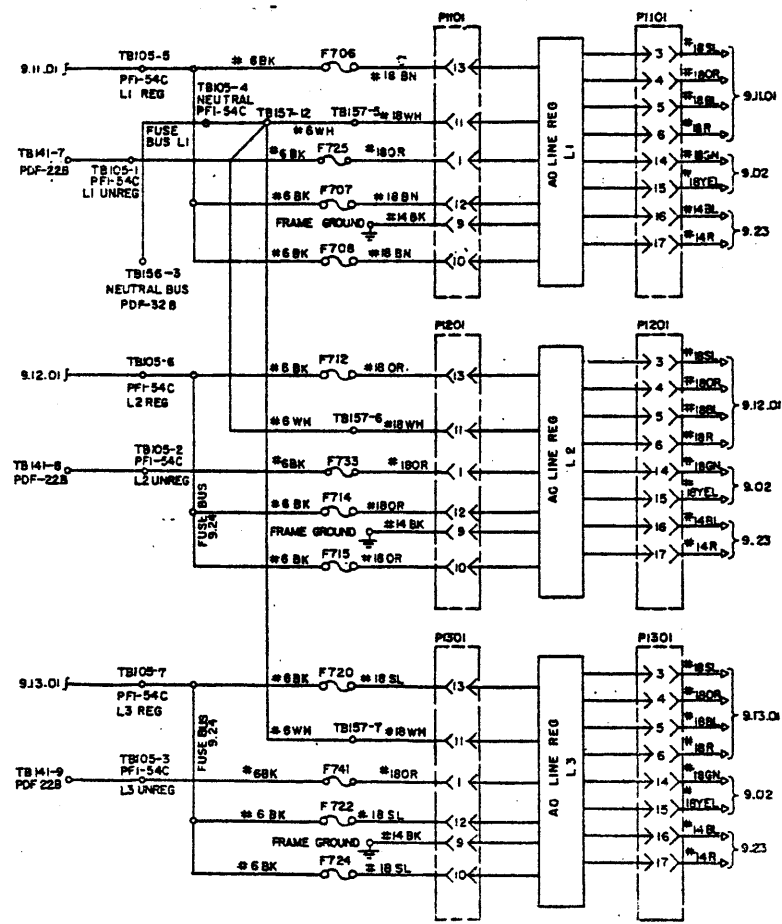
323321 EQ 248760

RECTIFIER FOR -30V 40 AMP DC SUPPLY

9.10.01



AC LINE REGULATOR FOR LINES 1, 2 & 3  
ALL WIRES 20 GA UNLESS OTHERWISE NOTED



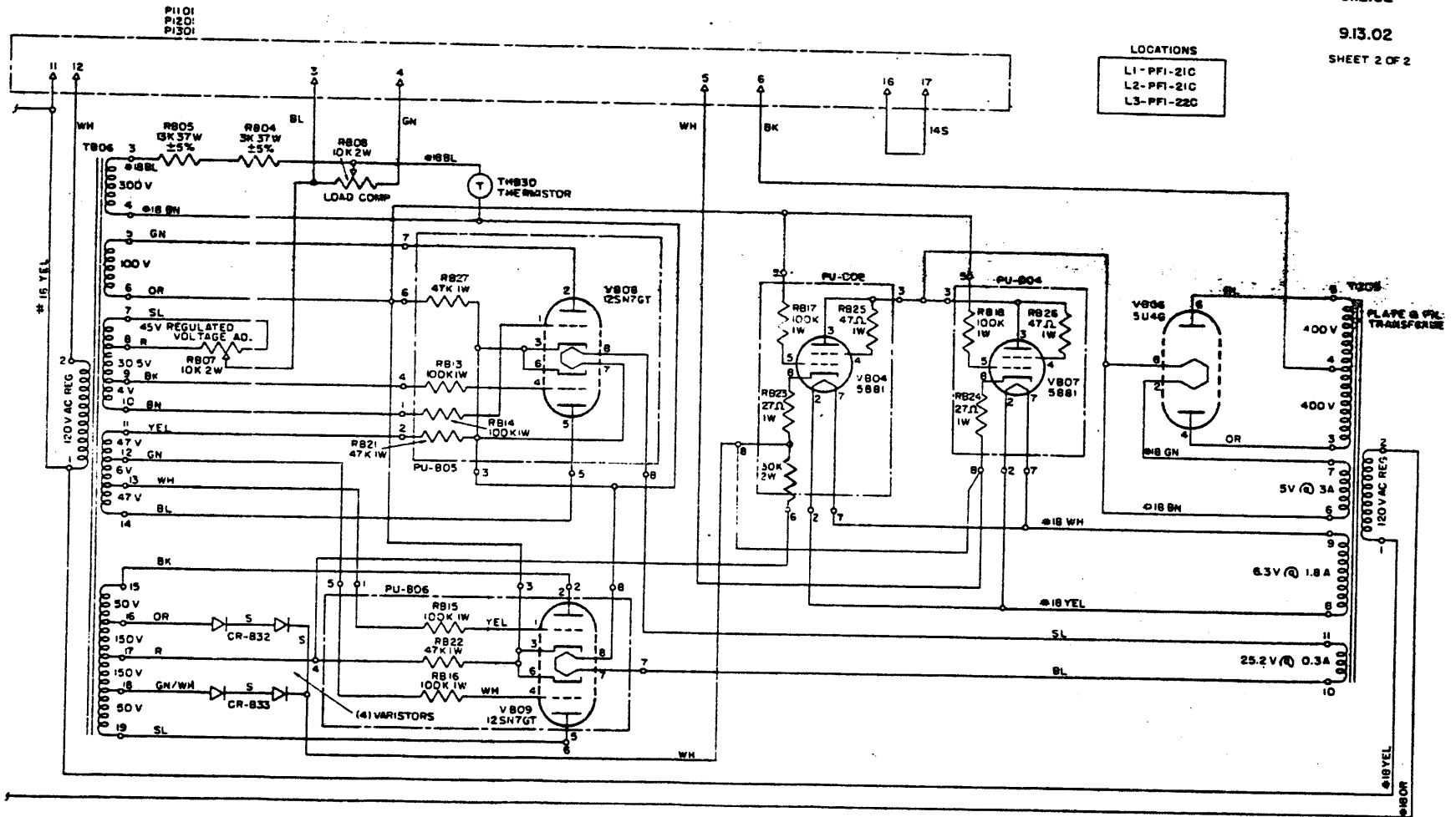
AC LINE REGULATOR FOR LINES 1, 2 & 3  
 ALL WIRES 20 GA UNLESS OTHERWISE NOTED

9.11.02

9.12.02

9.13.02

SHEET 2 OF 2



LOCATIONS  
 L1-PF1-21C  
 L2-PF1-21C  
 L3-PF1-22C

FLAME & VFL TRANSFORMER

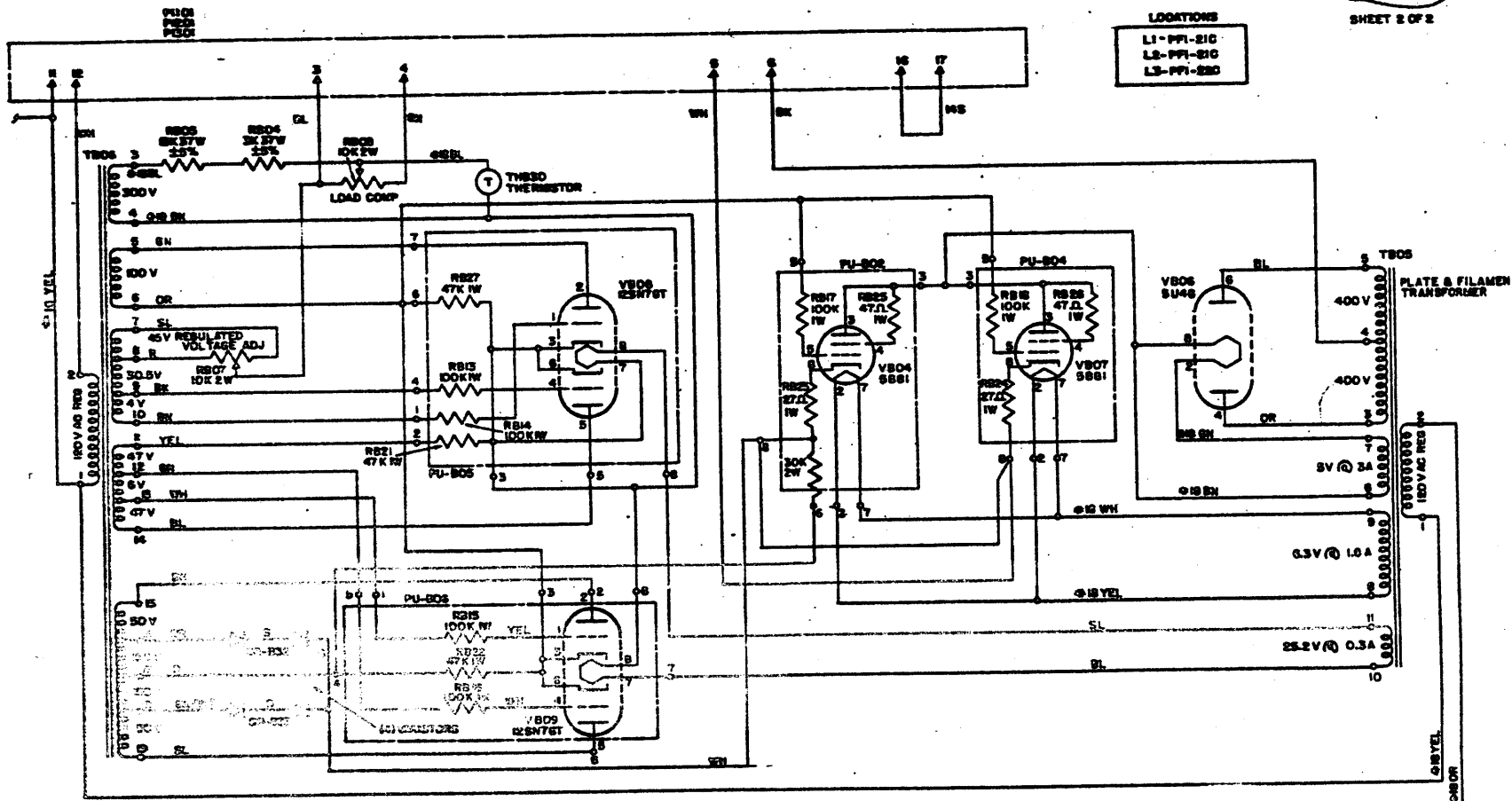
**AC LINE REGULATOR FOR LINES 1, 2 & 3**  
 ALL Wires 20 GA UNLESS OTHERWISE NOTED

9.11.02

9.12.02

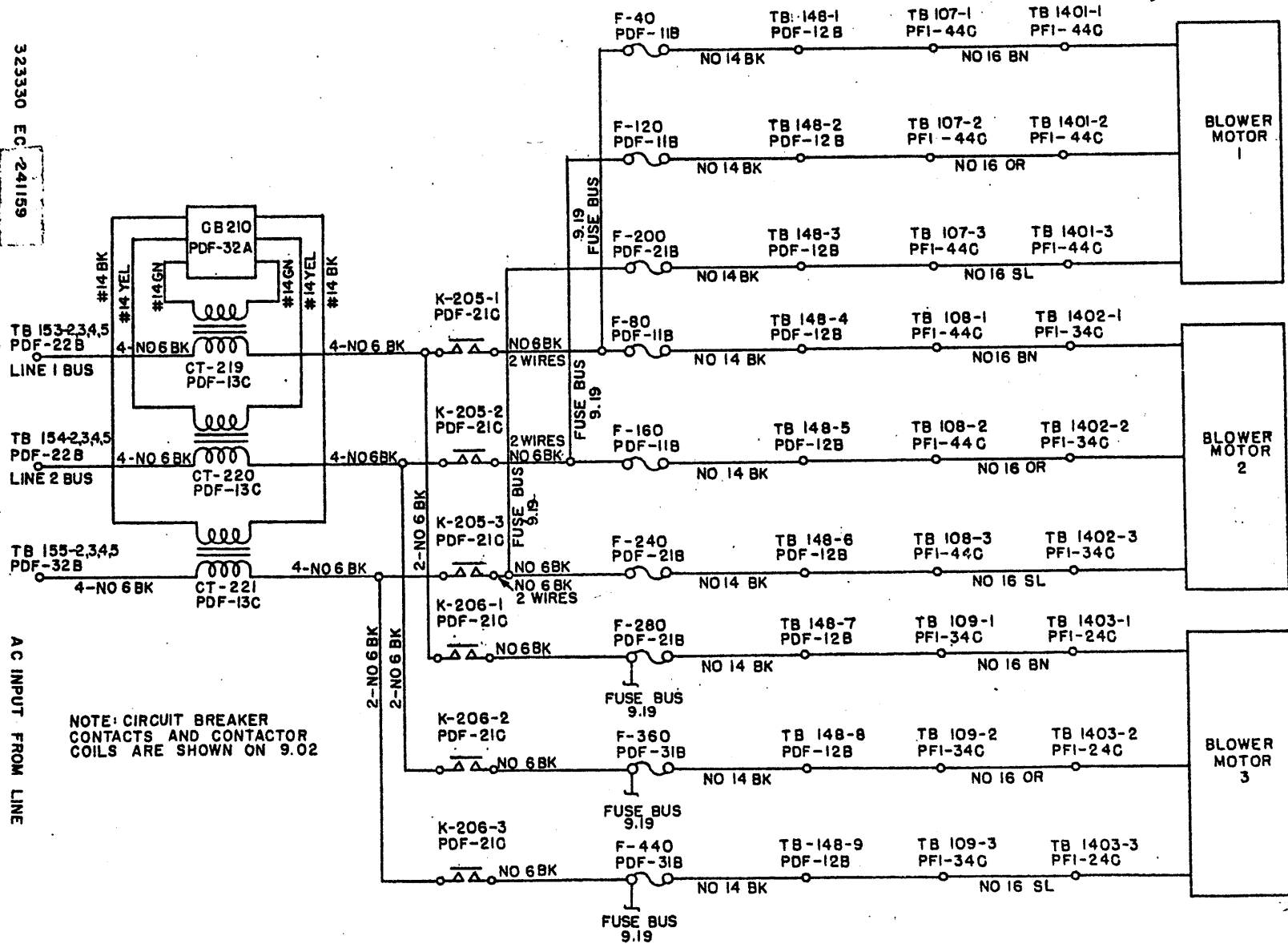
9.13.02

SHEET 2 OF 2



**LOCATIONS**  
 L1-PF1-210  
 L2-PF1-210  
 L3-PF1-220

323330 EC-241159



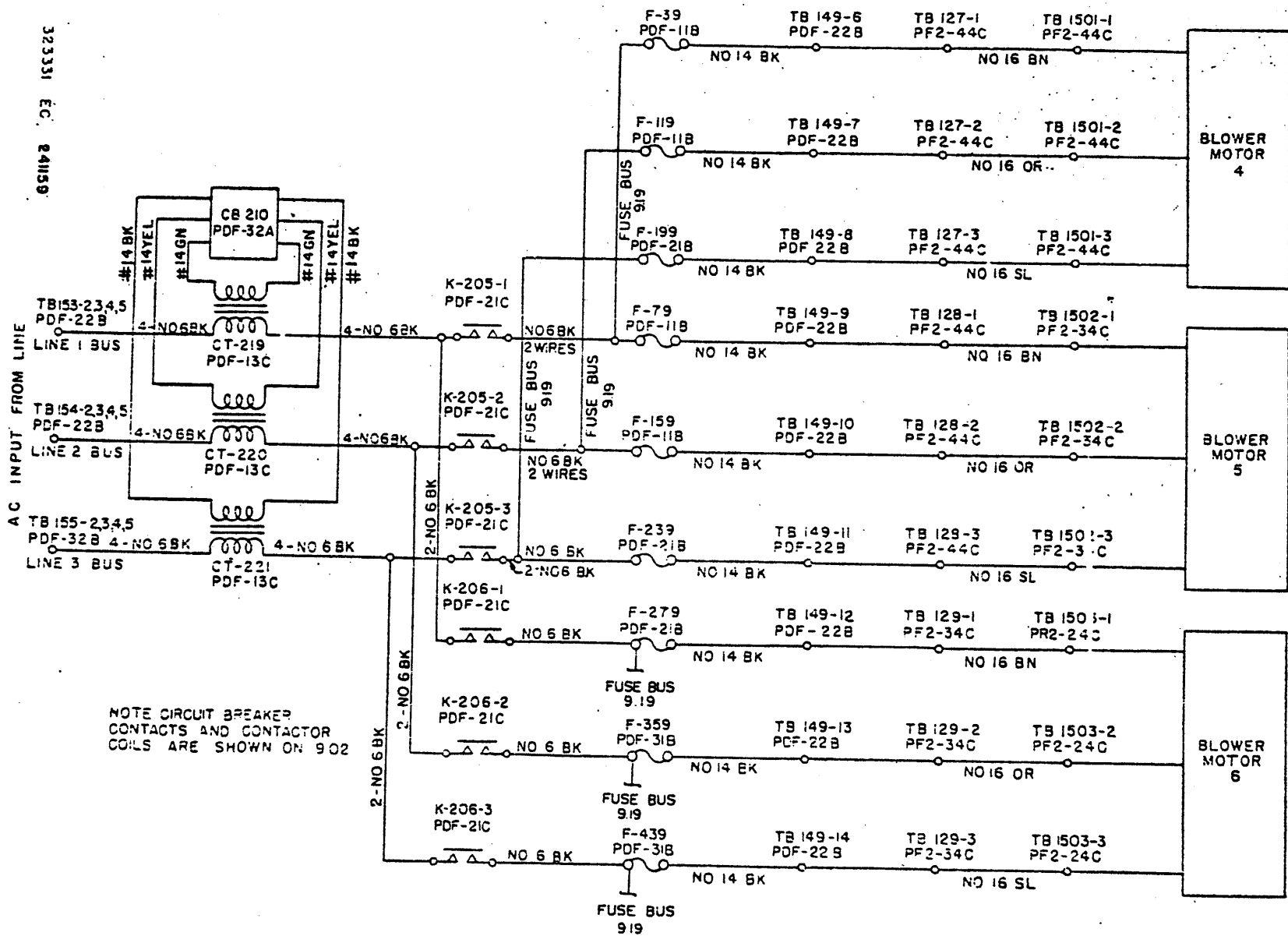
NOTE: CIRCUIT BREAKER CONTACTS AND CONTACTOR COILS ARE SHOWN ON 9.02

AC INPUT FROM LINE

BLOWER MOTORS IN POWER FRAME 1

9.14

323331 EC 24159

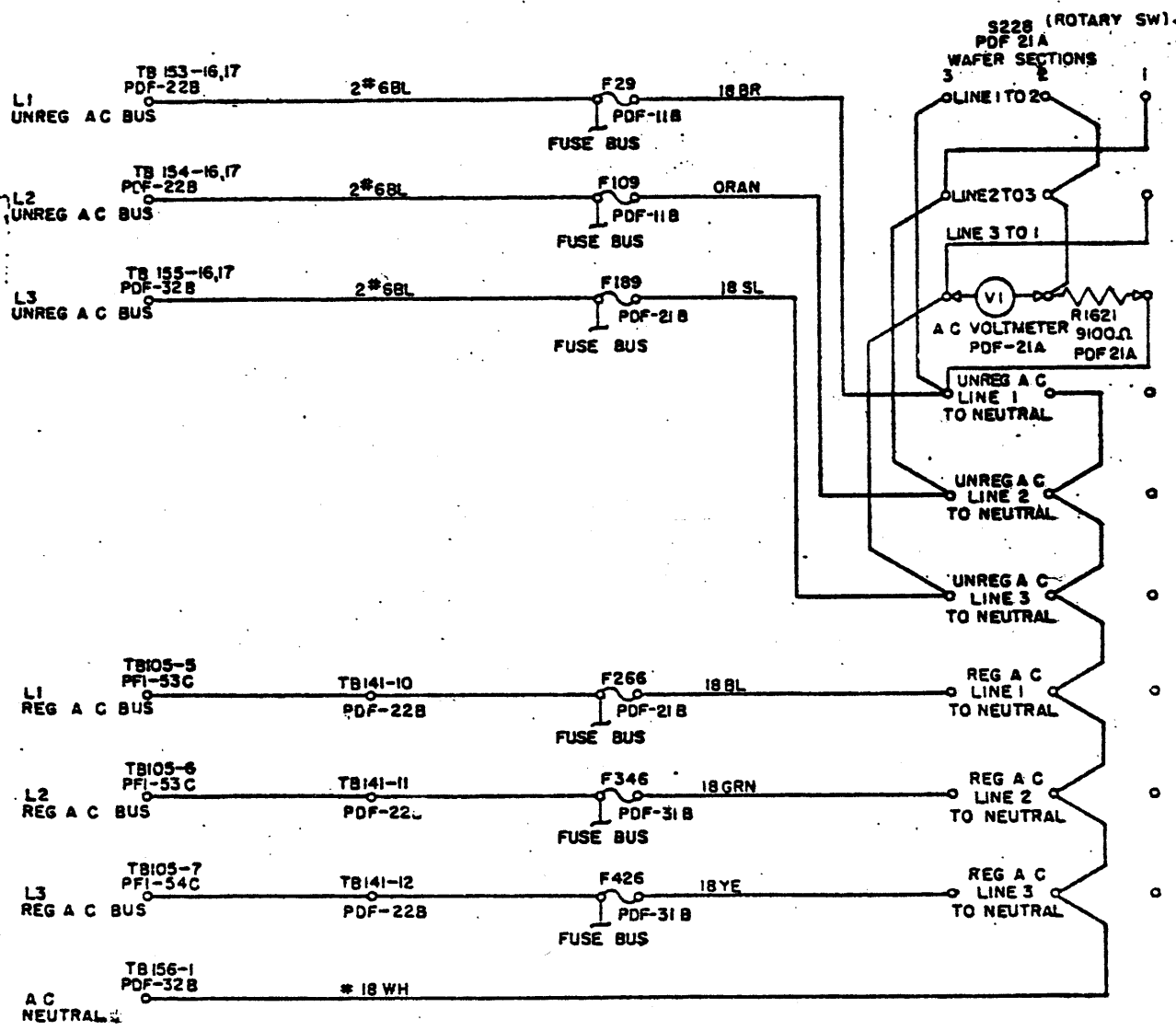


NOTE CIRCUIT BREAKER CONTACTS AND CONTACTOR COILS ARE SHOWN ON 902

BLOWER MOTORS IN POWER FRAME 2



32332 E C 24118



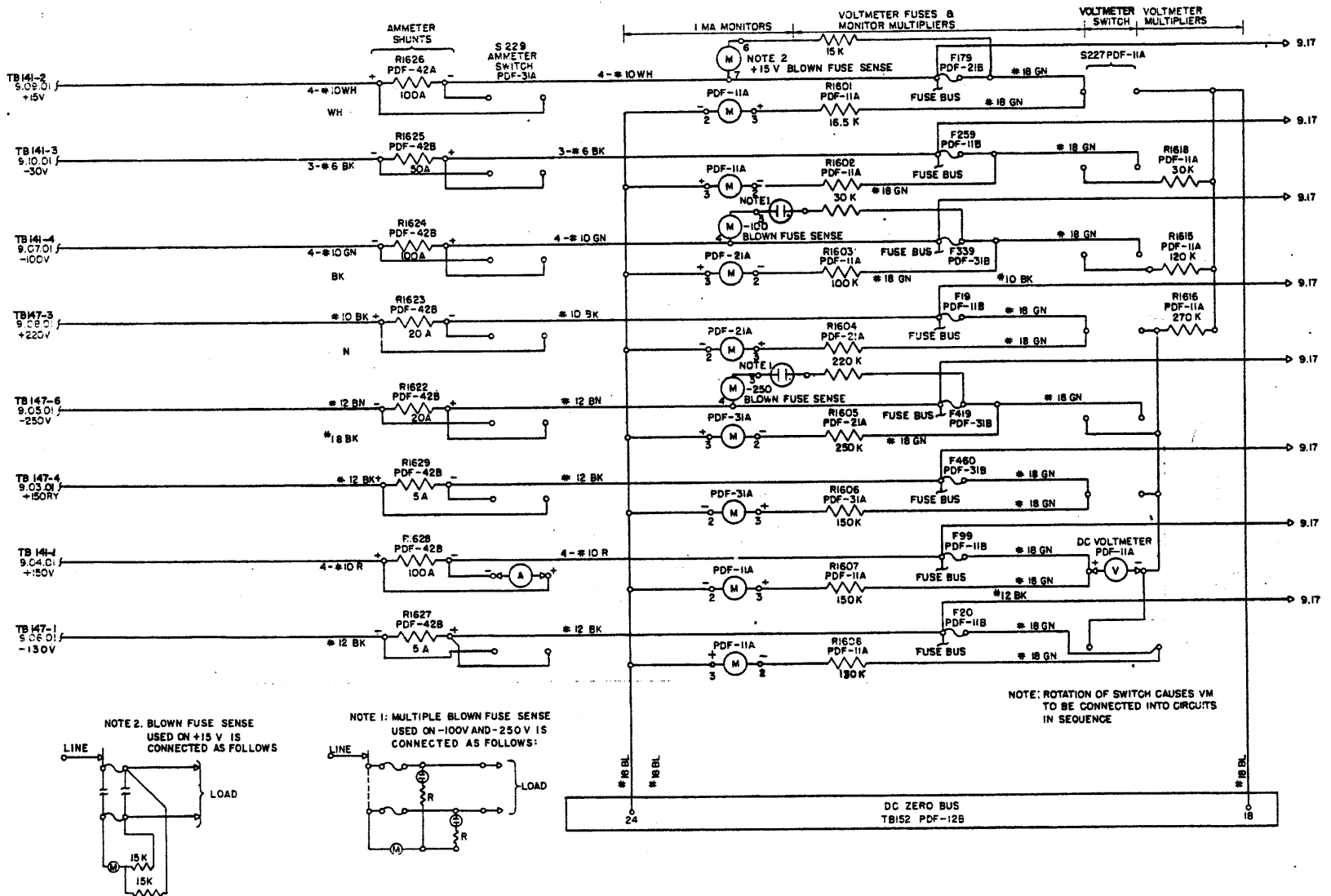
ROTATION OF SWITCH CAUSES VM AND MULTIPLIER (R1621) TO BE PLACED INTO CKTS IN SEQUENCE

A C VOLT METER CIRCUIT

9.16.01

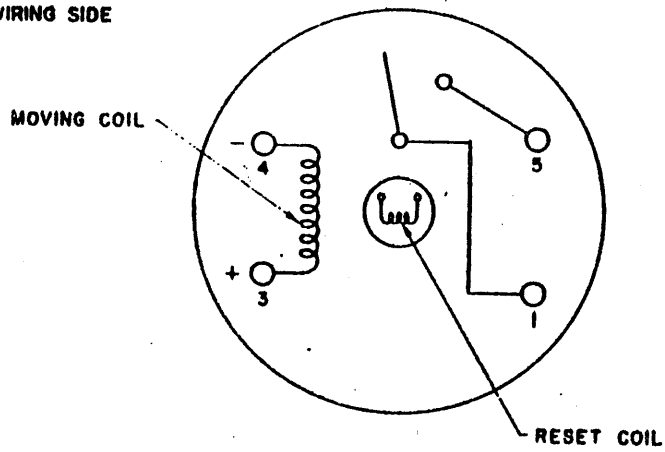
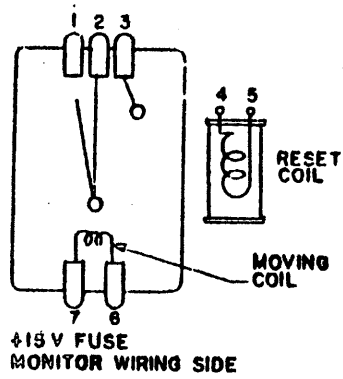
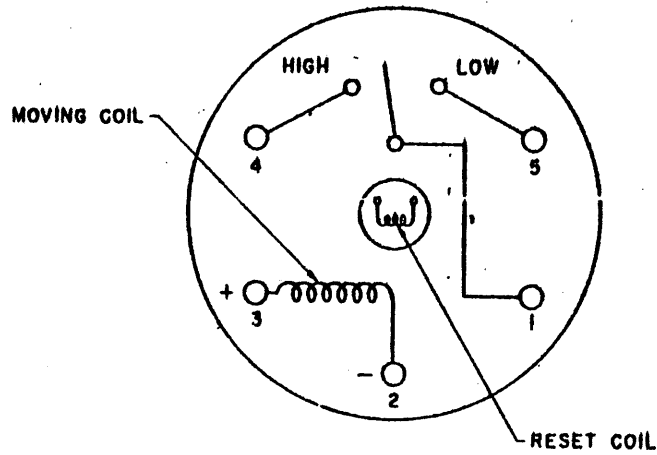
DC METERING

9.16.02



# DC VOLTMETER AND MONITOR CIRCUIT

9.16.02  
SHEET 2 OF 2



-100 V AND -250 V  
BIAS VOLTAGE FUSE MONITOR - WIRING SIDE

DC FUSE LOCATION CHART

| FUSE NO. | AMPS | PART NO. |
|----------|------|----------|
| 1        | 1    | 322891   |
| 2        | 1    | 322891   |
| 3        | 1    | 322891   |
| 4        | 1    | 322891   |
| 5        | 1    | 322891   |
| 6        | 1    | 322891   |
| 7        | 1    | 322891   |
| 8        | 1    | 322891   |
| 9        | 1    | 322891   |
| 10       | 1    | 322891   |
| 11       | 1    | 322891   |
| 12       | 1    | 322891   |
| 13       | 1    | 322891   |
| 14       | 1    | 322891   |
| 15       | 1    | 322891   |
| 16       |      | *        |
| 17       |      | *        |
| 18       |      | *        |
| 19       | 1    | 322891   |
| 20       | 1    | 322891   |
| 41       | 2    | 322892   |
| 42       | 2    | 322892   |
| 43       |      | *        |
| 44       |      | *        |
| 45       | 1    | 322891   |
| 46       | 1    | 322891   |
| 47       | 2    | 322892   |
| 48       |      | *        |
| 49       |      | *        |
| 50       |      | *        |
| 51       |      | *        |
| 52       |      | *        |
| 53       |      | *        |
| 54       |      | *        |
| 55       |      | *        |
| 56       |      | *        |
| 57       |      | *        |
| 58       |      | *        |
| 59       |      | *        |
| 60       | 3    | 322893   |
| 81       | 2    | 322892   |
| 82       | 3    | 322893   |
| 83       | 3    | 322893   |
| 84       | 3    | 322893   |
| 85       | 3    | 322893   |
| 86       | 3    | 322893   |
| 87       | 3    | 322893   |
| 88       | 2    | 322892   |
| 89       | 3    | 322893   |
| 90       | 3    | 322893   |
| 91       | 2    | 322892   |
| 92       | 2    | 322892   |
| 93       | 2    | 322892   |
| 94       | 1    | 322891   |
| 95       | 5    | 322894   |
| 96       |      | *        |
| 97       |      | *        |
| 98       |      | *        |
| 99       |      | *        |
| 100      |      | *        |

| FUSE NO. | AMPS  | PART NO. |
|----------|-------|----------|
| 121      | 3     | 322893   |
| 122      | 3     | 322893   |
| 123      |       | *        |
| 124      |       | *        |
| 125      | 3     | 322893   |
| 126      | 3     | 322893   |
| 127      | 1     | 322891   |
| 128      |       | *        |
| 129      |       | *        |
| 130      |       | *        |
| 131      |       | *        |
| 132      |       | *        |
| 133      |       | *        |
| 134      |       | *        |
| 135      |       | *        |
| 136      |       | *        |
| 137      |       | *        |
| 138      |       | *        |
| 139      |       | *        |
| 140      | SPARE | *        |
| 161      | 5     | 322894   |
| 162      | 5     | 322894   |
| 163      | 5     | 322894   |
| 164      | 5     | 322894   |
| 165      | 3     | 322893   |
| 166      | 3     | 322893   |
| 167      | 2     | 322892   |
| 168      | 5     | 322894   |
| 169      | 5     | 322894   |
| 170      | 5     | 322894   |
| 171      | 3     | 322893   |
| 172      | 3     | 322893   |
| 173      | 5     | 322894   |
| 174      | 2     | 322892   |
| 175      | 5     | 322894   |
| 176      | 2     | 322892   |
| 177      |       | *        |
| 178      |       | *        |
| 179      | 1     | 322891   |
| 180      |       | *        |
| 201      | 1     | 322891   |
| 202      | 1     | 322891   |
| 203      |       | *        |
| 204      |       | *        |
| 205      | 5     | 322894   |
| 206      | 5     | 322894   |
| 207      | 5     | 322894   |
| 208      |       | *        |
| 209      |       | *        |
| 210      |       | *        |
| 211      |       | *        |
| 212      |       | *        |
| 213      |       | *        |
| 214      |       | *        |
| 215      |       | *        |
| 216      |       | *        |
| 217      |       | *        |
| 218      |       | *        |
| 219      |       | *        |

| FUSE NO. | AMPS | PART NO. |
|----------|------|----------|
| 220      |      | *        |
| 241      | 2    | 322892   |
| 242      | 5    | 322894   |
| 243      | 5    | 322893   |
| 244      | 2    | 322892   |
| 245      | 2    | 322892   |
| 246      | 2    | 322892   |
| 247      | 2    | 322892   |
| 248      | 2    | 322892   |
| 249      | 2    | 322892   |
| 250      | 2    | 322892   |
| 251      | 1    | 322891   |
| 252      | 1    | 322891   |
| 253      | 1    | 322891   |
| 254      | 1    | 322891   |
| 255      | 3    | 322893   |
| 256      |      | *        |
| 257      |      | *        |
| 258      |      | *        |
| 259      | 1    | 322891   |
| 260      |      | *        |
| 281      | 1    | 322891   |
| 282      | 1    | 322891   |
| 283      |      | *        |
| 284      |      | *        |
| 285      | 2    | 322892   |
| 286      | 2    | 322892   |
| 287      | 1    | 322891   |
| 288      |      | *        |
| 289      |      | *        |
| 290      |      | *        |
| 291      |      | *        |
| 292      |      | *        |
| 293      |      | *        |
| 294      |      | *        |
| 295      |      | *        |
| 296      |      | *        |
| 297      |      | *        |
| 298      |      | *        |
| 299      |      | *        |
| 300      |      | *        |
| 321      | 2    | 322892   |
| 322      | 3    | 322893   |
| 323      | 3    | 322893   |
| 324      | 3    | 322893   |
| 325      | 3    | 322893   |
| 326      | 3    | 322893   |
| 327      | 3    | 322893   |
| 328      | 2    | 322892   |
| 329      | 2    | 322892   |
| 330      | 3    | 322893   |
| 331      | 2    | 322892   |
| 332      | 2    | 322892   |
| 333      | 2    | 322892   |
| 334      | 1    | 322891   |
| 335      | 5    | 322894   |
| 336      |      | *        |
| 337      |      | *        |
| 338      |      | *        |

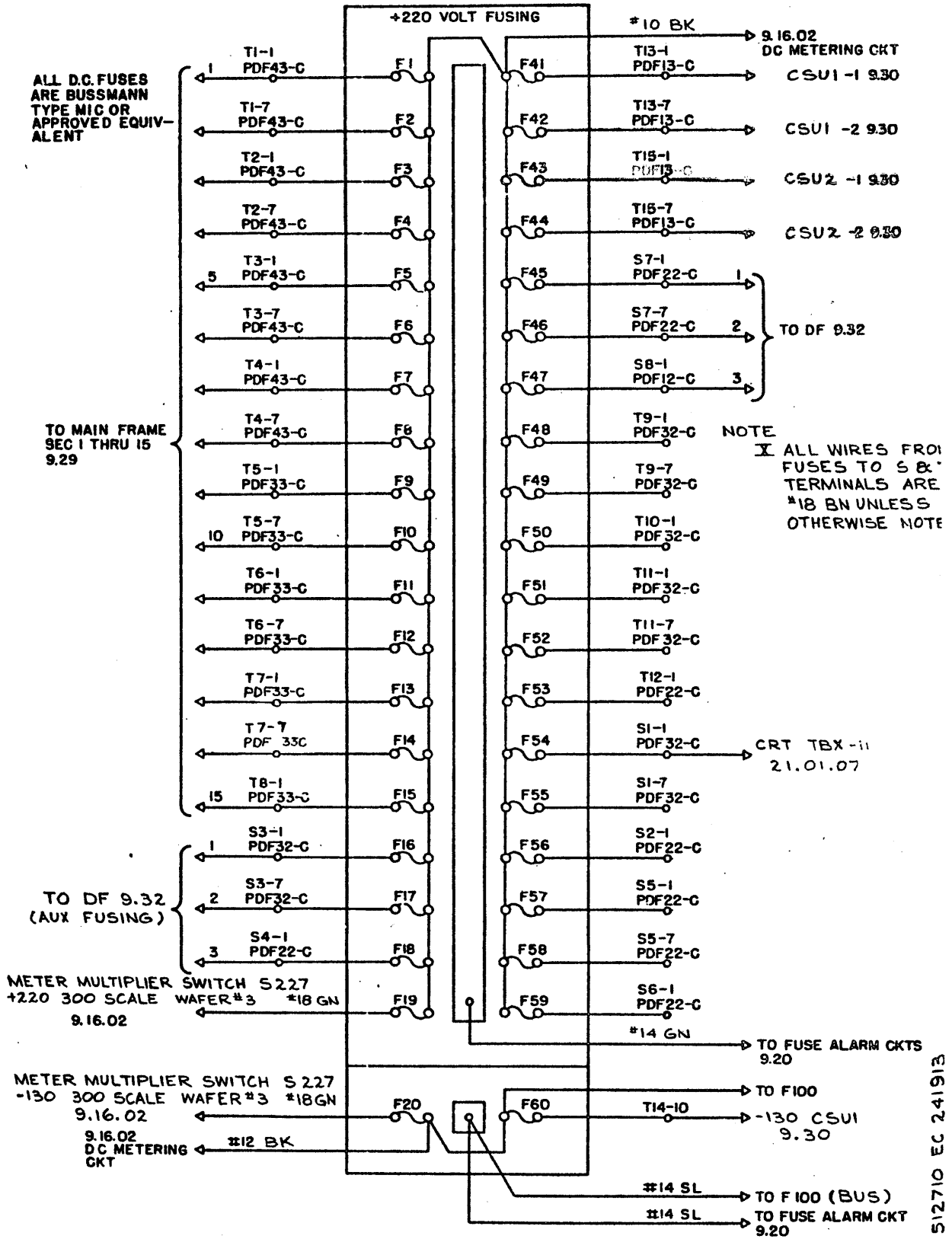
| FUSE NO. | AMPS | PART NO. |
|----------|------|----------|
| 339      | 1    | 322891   |
| 340      | 1    | 322891   |
| 361      | 3    | 322893   |
| 362      | 3    | 322893   |
| 363      |      | *        |
| 364      |      | *        |
| 365      | 3    | 322893   |
| 366      | 2    | 322892   |
| 367      | 1    | 322891   |
| 368      |      | *        |
| 369      |      | *        |
| 370      |      | *        |
| 371      |      | *        |
| 372      |      | *        |
| 373      |      | *        |
| 374      |      | *        |
| 375      |      | *        |
| 376      | 5    | 322894   |
| 377      | 5    | 322894   |
| 378      |      | *        |
| 379      |      | *        |
| 380      | 1    | 322891   |
| 401      | 1    | 322891   |
| 402      | 1    | 322891   |
| 403      | 1    | 322891   |
| 404      | 1    | 322891   |
| 405      | 1    | 322891   |
| 406      | 1    | 322891   |
| 407      | 1    | 322891   |
| 408      | 1    | 322891   |
| 409      | 1    | 322891   |
| 410      | 1    | 322891   |
| 411      | 1    | 322891   |
| 412      | 1    | 322891   |
| 413      | 1    | 322891   |
| 414      | 1    | 322891   |
| 415      | 1    | 322891   |
| 416      |      | *        |
| 417      |      | *        |
| 418      |      | *        |
| 419      | 1    | 322891   |
| 420      | 1    | 322891   |
| 441      | 2    | 322892   |
| 442      | 2    | 322892   |
| 443      |      | *        |
| 444      |      | *        |
| 445      | 1    | 322891   |
| 446      | 1    | 322891   |
| 447      | 1    | 322891   |
| 448      |      | *        |
| 449      |      | *        |
| 450      |      | *        |
| 451      |      | *        |
| 452      |      | *        |
| 453      |      | *        |
| 454      |      | *        |
| 455      |      | *        |
| 456      |      | *        |
| 457      |      | *        |
| 458      |      | *        |
| 459      |      | *        |
| 460      | 1    | 322891   |

\* 322088(107) DUMMY FUSE.

+ 220 VOLT DC FUSING

9.17

SHEET 1 OF 6



512710 EC 241913

**+150 VOLT DC FUSING**

9.17

SHEET 2 OF 6

ALL D.C. FUSES ARE  
BUSSMANN TYPE MIC  
OR APPROVED EQUIV-  
ALENT

TO MAIN FRAME  
SEC I THRU 15  
9.29

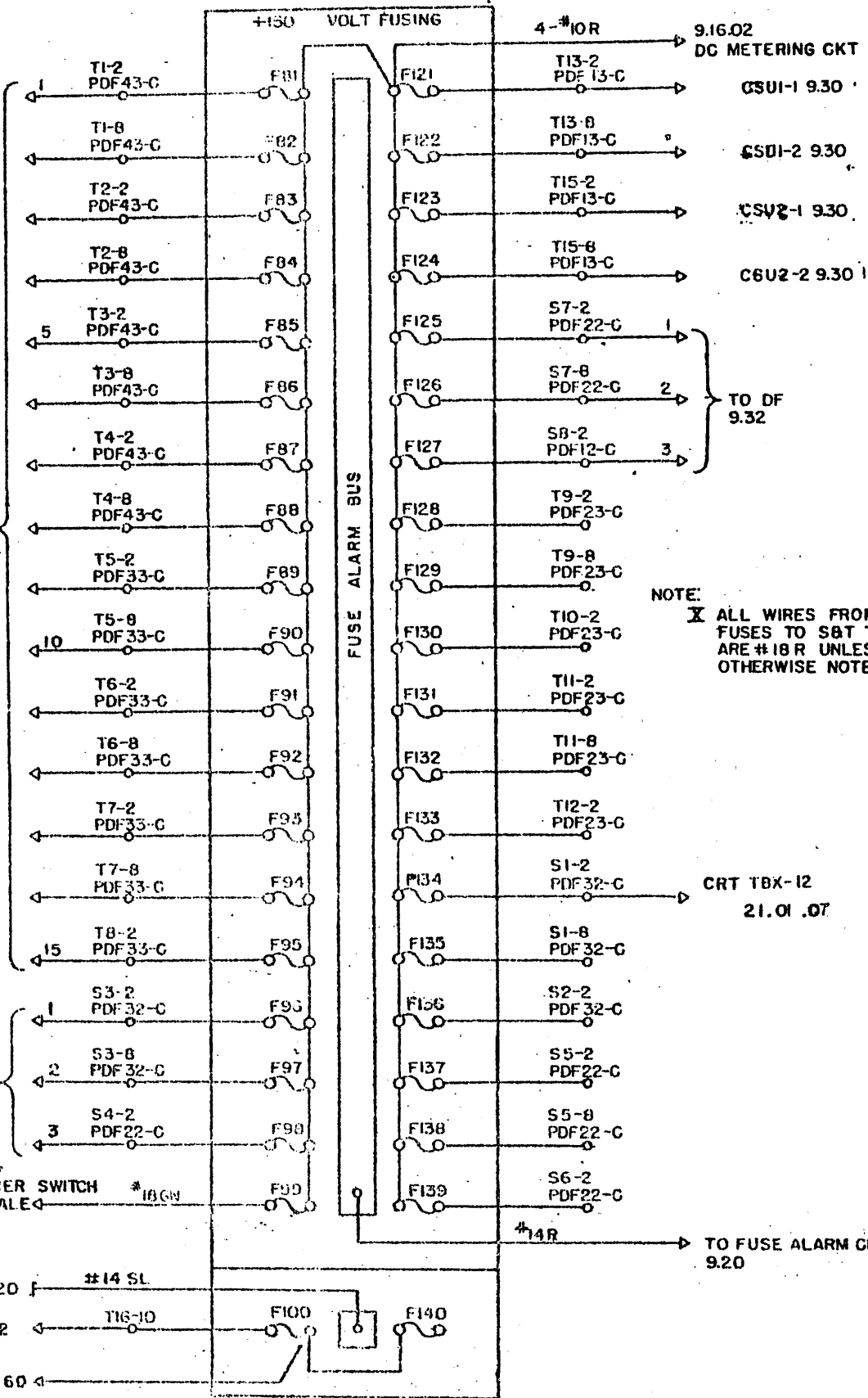
TO DF 9.32  
(AUX. FUSING)

S227  
METER MULTIPLIER SWITCH #18GW  
+150 300 SCALE  
WAFER #3  
9.16.02

(BUS) E20 #14 SL

-150 CSU2 #30

TO F60



NOTE:  
X ALL WIRES FROM  
FUSES TO S&T TERM  
ARE #18R UNLESS  
OTHERWISE NOTED

|          |          |              |        |
|----------|----------|--------------|--------|
| STANDARD | RELEASED | REV.         | 512712 |
| NONE     | 503029   |              |        |
| DATE     | BY       | REVISION NO. |        |
| 5-3-51   | 24113    |              |        |
| 1-9-51   | 24124    |              |        |
| 0-31-51  | 24118    |              |        |
| 2-25-51  | 24129    |              |        |

WAS.704-3554

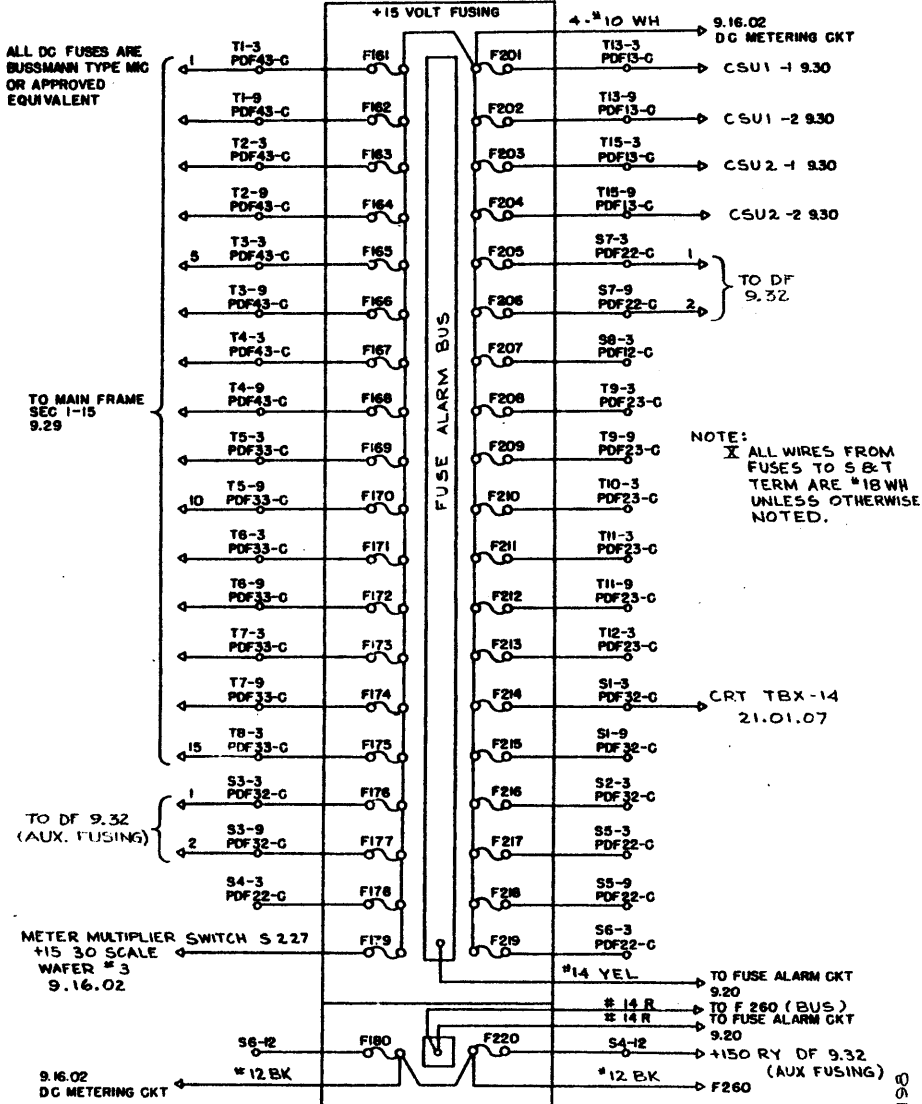
512712

+ 15 VOLT DC FUSING

9.17

SHEET 3 OF 6

ALL DC FUSES ARE  
BUSSMANN TYPE MIC  
OR APPROVED  
EQUIVALENT



NOTE:  
X PRINT TO ENG SPEC  
895291.

|                                       |                    |
|---------------------------------------|--------------------|
| INTERNATIONAL BUSINESS MACHINES CORP. |                    |
| DEPT. 1                               | POWER DISTRIBUTION |
| DEPT. 2                               | UNIT MODEL 7461002 |
| DEPT. 3                               | SYSTEMS DIAGRAM    |
| DEPT. 4                               | 9.17               |
| DEPT. 5                               | RET 12.16.54       |
| DEPT. 6                               | DATE 11.12.93      |
| DEPT. 7                               | BY 52333           |
| DEPT. 8                               | CHKD 11.12.93      |
| DEPT. 9                               | DATE 11.12.93      |
| DEPT. 10                              | BY 243198          |
| DEPT. 11                              | CHKD 11.12.93      |
| DEPT. 12                              | DATE 11.12.93      |
| DEPT. 13                              | BY 243198          |
| DEPT. 14                              | CHKD 11.12.93      |
| DEPT. 15                              | DATE 11.12.93      |
| DEPT. 16                              | BY 243198          |
| DEPT. 17                              | CHKD 11.12.93      |
| DEPT. 18                              | DATE 11.12.93      |
| DEPT. 19                              | BY 243198          |
| DEPT. 20                              | CHKD 11.12.93      |
| DEPT. 21                              | DATE 11.12.93      |
| DEPT. 22                              | BY 243198          |
| DEPT. 23                              | CHKD 11.12.93      |
| DEPT. 24                              | DATE 11.12.93      |
| DEPT. 25                              | BY 243198          |
| DEPT. 26                              | CHKD 11.12.93      |
| DEPT. 27                              | DATE 11.12.93      |
| DEPT. 28                              | BY 243198          |
| DEPT. 29                              | CHKD 11.12.93      |
| DEPT. 30                              | DATE 11.12.93      |
| DEPT. 31                              | BY 243198          |
| DEPT. 32                              | CHKD 11.12.93      |
| DEPT. 33                              | DATE 11.12.93      |
| DEPT. 34                              | BY 243198          |
| DEPT. 35                              | CHKD 11.12.93      |
| DEPT. 36                              | DATE 11.12.93      |
| DEPT. 37                              | BY 243198          |
| DEPT. 38                              | CHKD 11.12.93      |
| DEPT. 39                              | DATE 11.12.93      |
| DEPT. 40                              | BY 243198          |
| DEPT. 41                              | CHKD 11.12.93      |
| DEPT. 42                              | DATE 11.12.93      |
| DEPT. 43                              | BY 243198          |
| DEPT. 44                              | CHKD 11.12.93      |
| DEPT. 45                              | DATE 11.12.93      |
| DEPT. 46                              | BY 243198          |
| DEPT. 47                              | CHKD 11.12.93      |
| DEPT. 48                              | DATE 11.12.93      |
| DEPT. 49                              | BY 243198          |
| DEPT. 50                              | CHKD 11.12.93      |

512712  
EC 243198

512712

|          |        |            |
|----------|--------|------------|
| STANDARD | DATE   | CHANGE NO. |
| NONE     | 503629 |            |
| 512713   |        |            |
| 6-10-55  | 241153 |            |
| 7-15-55  | 241454 |            |
| 10-21-55 | 241913 |            |
| 5-24-56  | 248198 |            |

WAS 704-3554

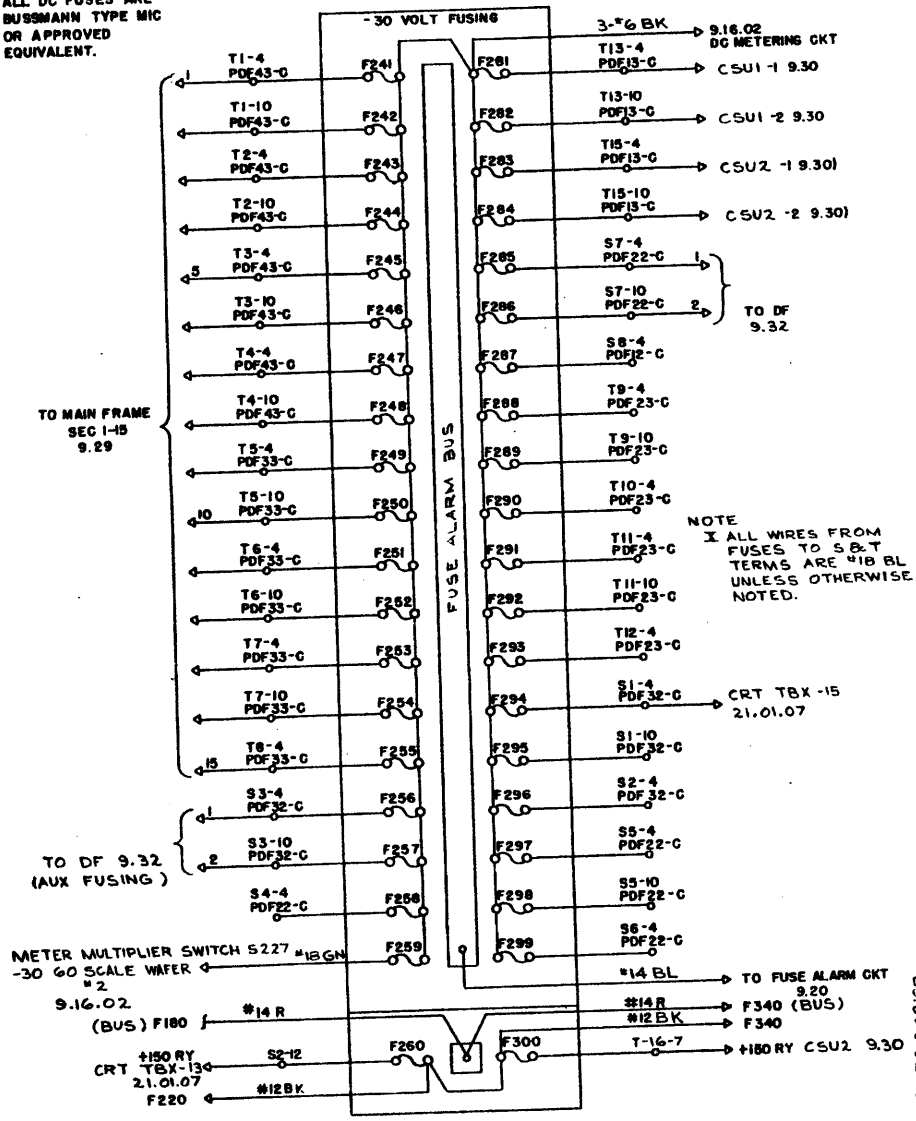
512713

NOTE PRINT TO ENG SPEC  
II 895291.

ALL DC FUSES ARE  
BUSSMANN TYPE MIC  
OR APPROVED  
EQUIVALENT.

- 30 VOLT DC FUSING

9.17  
SHEET 4 OF 6



|         |                                       |
|---------|---------------------------------------|
| NOTE 1  | INTERNATIONAL BUSINESS MACHINES CORP. |
| NOTE 2  | POWER DISTRIBUTION UNIT               |
| NOTE 3  | 746 MOD 2                             |
| NOTE 4  | SYSTEMS DIAGRAM                       |
| NOTE 5  | 9.17                                  |
| NOTE 6  | NONE                                  |
| NOTE 7  | NONE                                  |
| NOTE 8  | NONE                                  |
| NOTE 9  | NONE                                  |
| NOTE 10 | NONE                                  |

512713 EC 24915B

512713

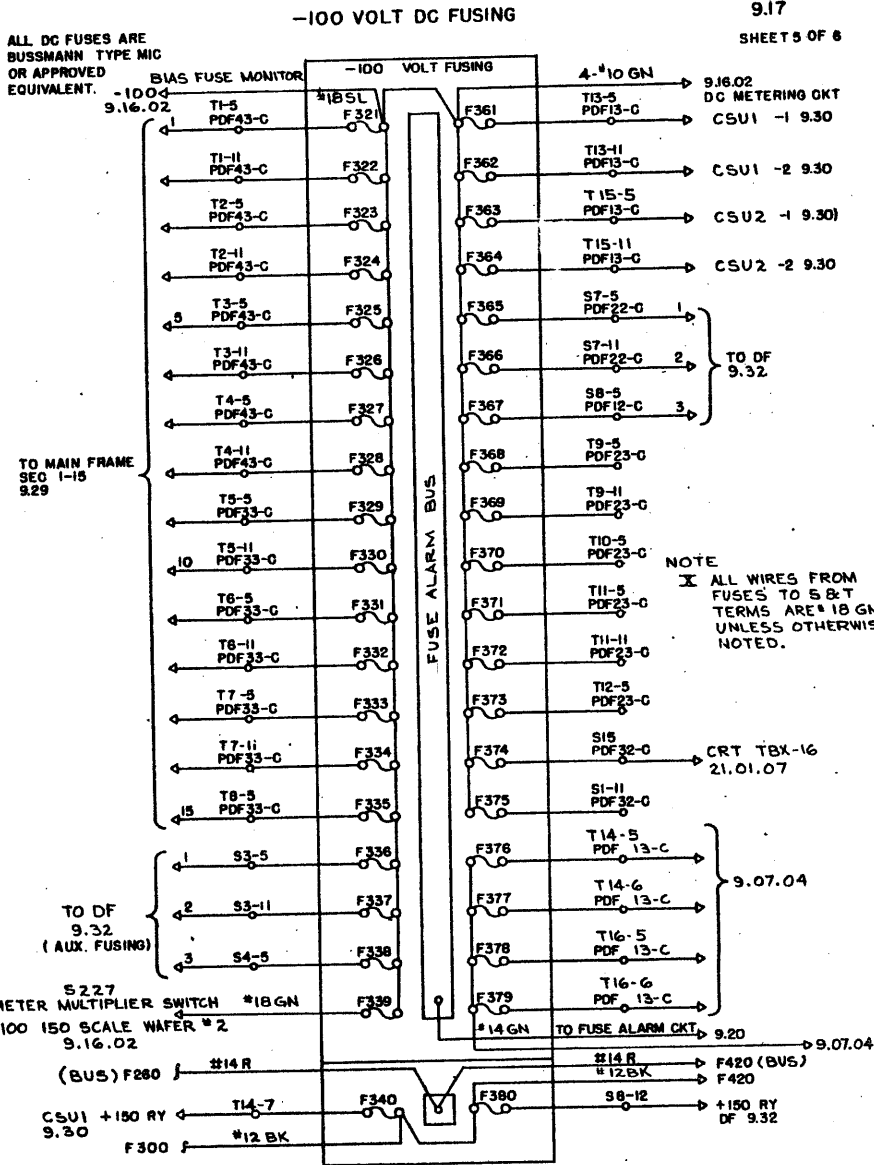


|              |              |      |        |
|--------------|--------------|------|--------|
| REV. CONTROL | REV. CONTROL | QTY. | 512714 |
| NONE         | 503623       |      |        |
| DATE         | CHANGE NO.   |      |        |
| 6-22-55      | 24159        |      |        |
| 10-31-55     | 24915        |      |        |
|              |              |      |        |
|              |              |      |        |

WAS 704-3554

512714

NOTE  
II PRINT TO ENG  
SPEC 895291.



512714 EC 24913

|                                       |                    |                    |                    |                    |                    |                    |                    |                    |                    |
|---------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| INTERNATIONAL BUSINESS MACHINES CORP. | ALBERT WITHE       | ALBERT WITHE       | ALBERT WITHE       | ALBERT WITHE       | ALBERT WITHE       | ALBERT WITHE       | ALBERT WITHE       | ALBERT WITHE       | ALBERT WITHE       |
| POWER DISTRIBUTION                    | POWER DISTRIBUTION | POWER DISTRIBUTION | POWER DISTRIBUTION | POWER DISTRIBUTION | POWER DISTRIBUTION | POWER DISTRIBUTION | POWER DISTRIBUTION | POWER DISTRIBUTION | POWER DISTRIBUTION |
| UNIT                                  | UNIT               | UNIT               | UNIT               | UNIT               | UNIT               | UNIT               | UNIT               | UNIT               | UNIT               |
| SYSTEMS DIAGRAM                       | SYSTEMS DIAGRAM    | SYSTEMS DIAGRAM    | SYSTEMS DIAGRAM    | SYSTEMS DIAGRAM    | SYSTEMS DIAGRAM    | SYSTEMS DIAGRAM    | SYSTEMS DIAGRAM    | SYSTEMS DIAGRAM    | SYSTEMS DIAGRAM    |
| 9.17                                  | 9.17               | 9.17               | 9.17               | 9.17               | 9.17               | 9.17               | 9.17               | 9.17               | 9.17               |
| DATE                                  | DATE               | DATE               | DATE               | DATE               | DATE               | DATE               | DATE               | DATE               | DATE               |
| 12-10-55                              | 12-10-55           | 12-10-55           | 12-10-55           | 12-10-55           | 12-10-55           | 12-10-55           | 12-10-55           | 12-10-55           | 12-10-55           |
| BY                                    | BY                 | BY                 | BY                 | BY                 | BY                 | BY                 | BY                 | BY                 | BY                 |
| BY                                    | BY                 | BY                 | BY                 | BY                 | BY                 | BY                 | BY                 | BY                 | BY                 |

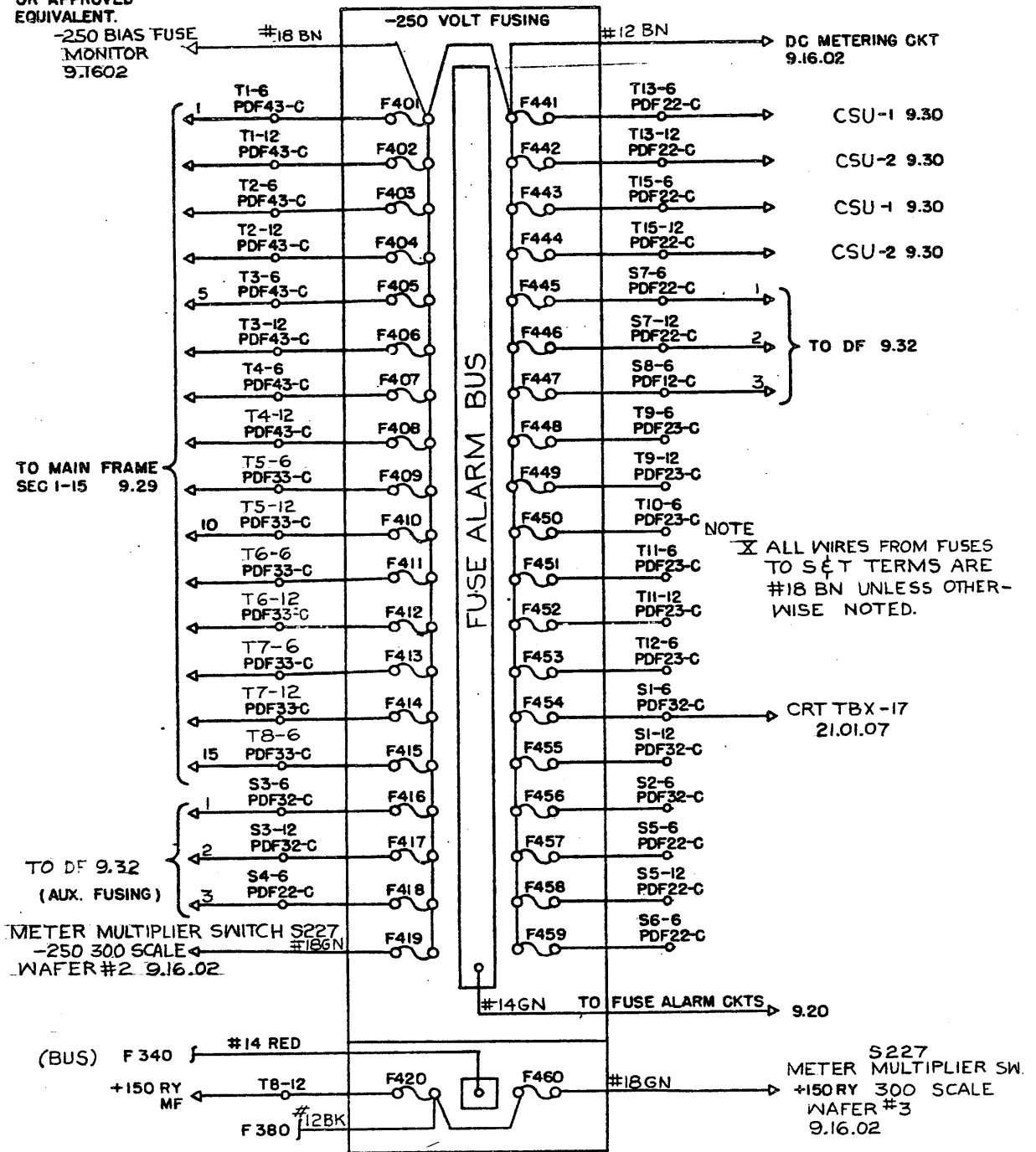
512714

-250 VOLT DC FUSING

9.17

SHEET 6 OF 6

ALL DC FUSES ARE  
BUSSMANN TYPE MIC  
OR APPROVED  
EQUIVALENT.

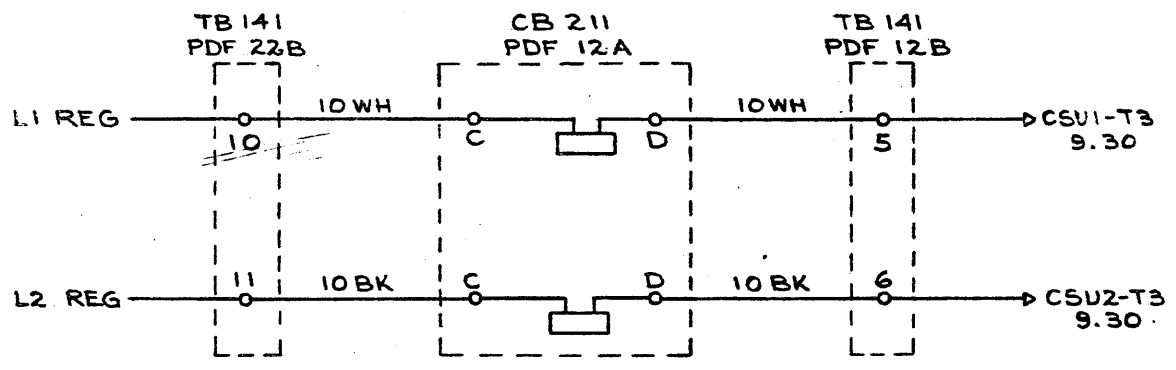
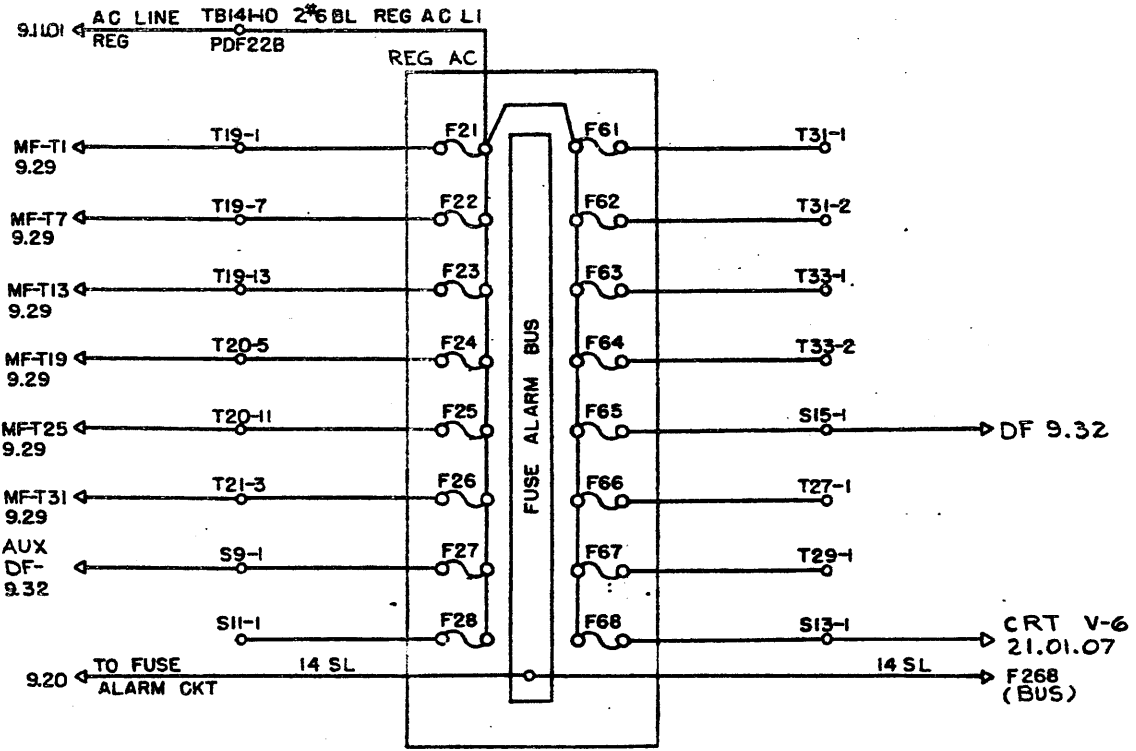


512715 EC 241913



REG AC FUSING LI

9.10  
 SHEET 1 OF 6

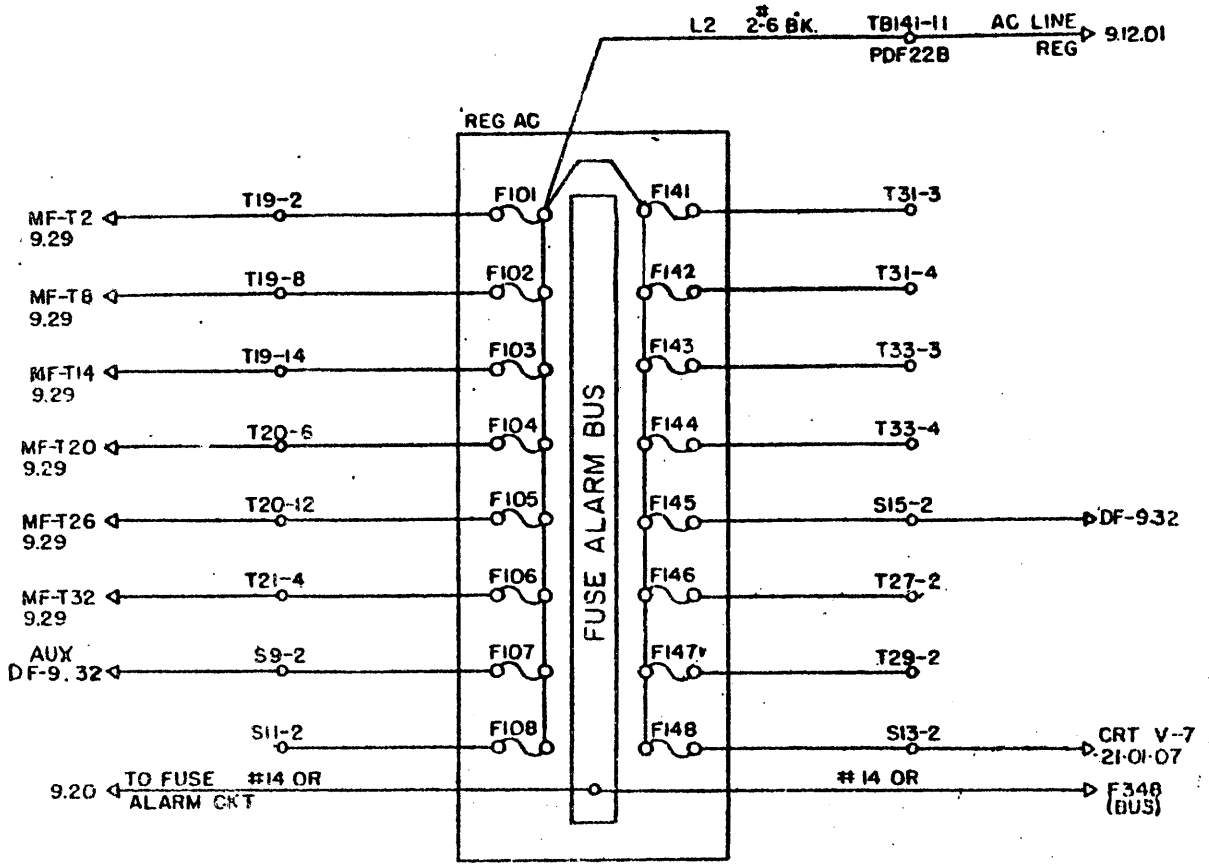


NOTE  
 X CONTACTS OF CB 211 SHOWN ON 9.23  
 XI ALL WIRES FROM FUSES TO S&T TERMINALS ARE #18 YEL UNLESS OTHERWISE NOTED.

512717 EC 241913

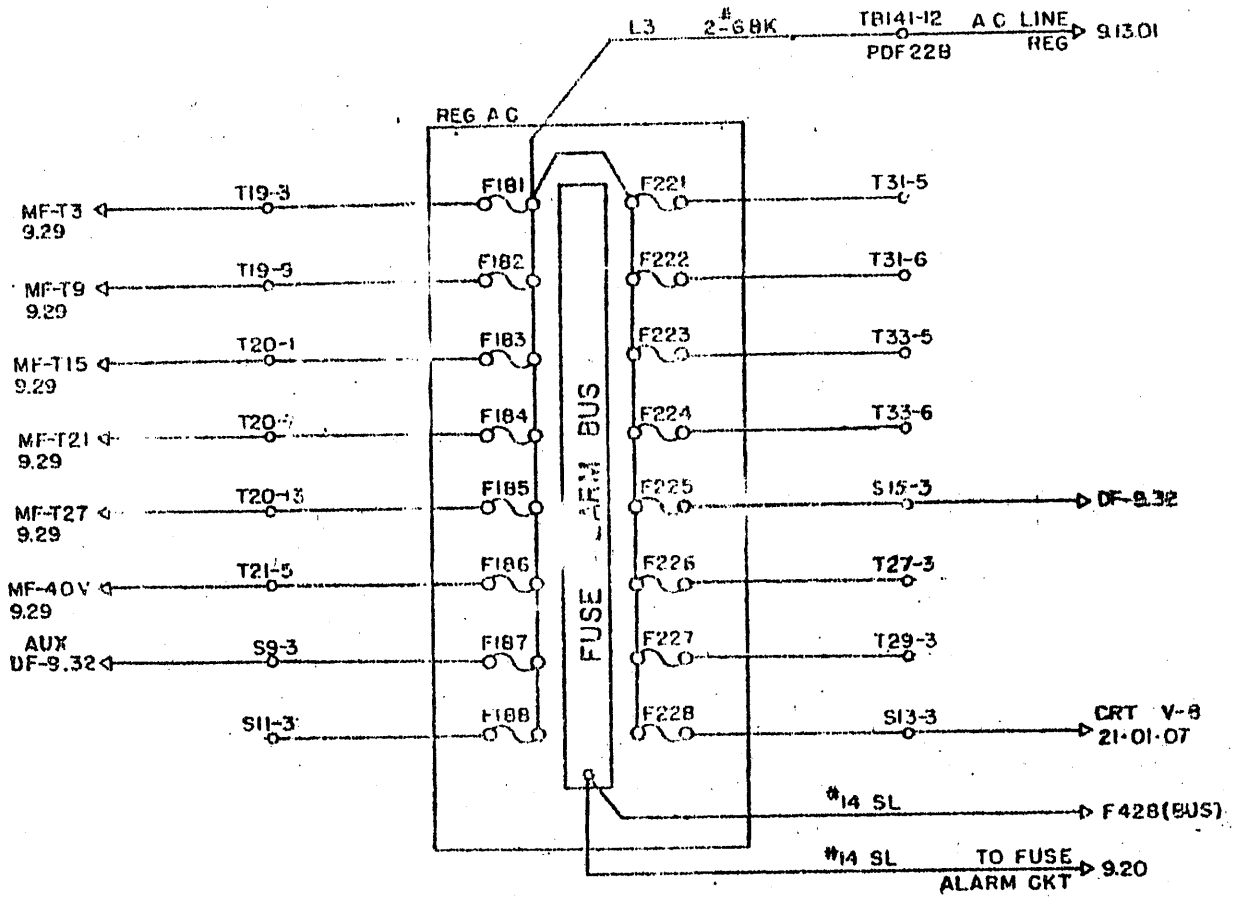
REG AC FUSING L2

9.18  
SHEET 2 OF 6



NOTE

X ALL WIRES FROM FUSES TO S&T TERMINALS ARE #16SL UNLESS OTHERWISE NOTED



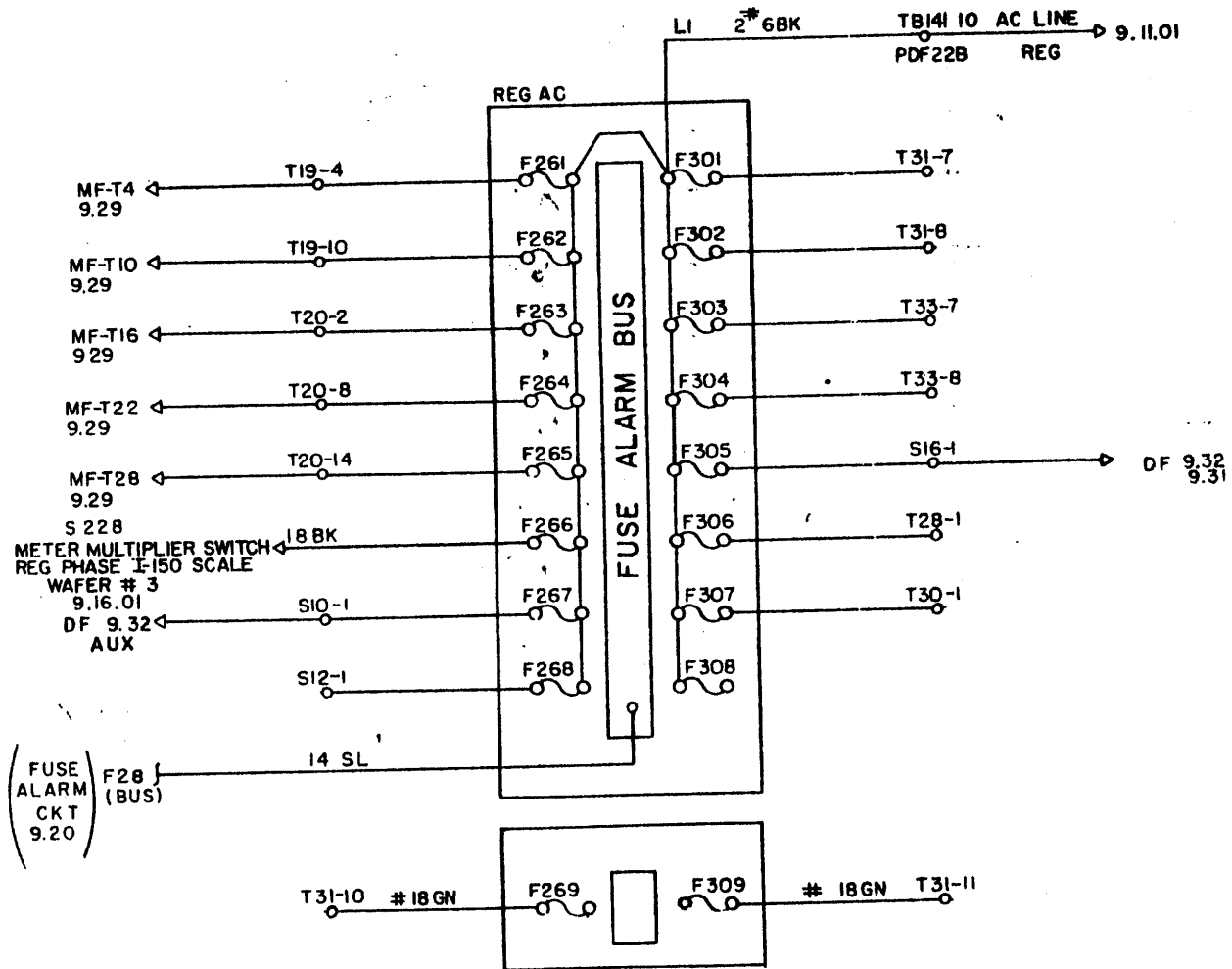
NOTE:

ALL WIRES FROM FUSES TO S&T  
TERMINALS ARE #18 OR UNLESS  
OTHERWISE NOTED

REG AC FUSING LI

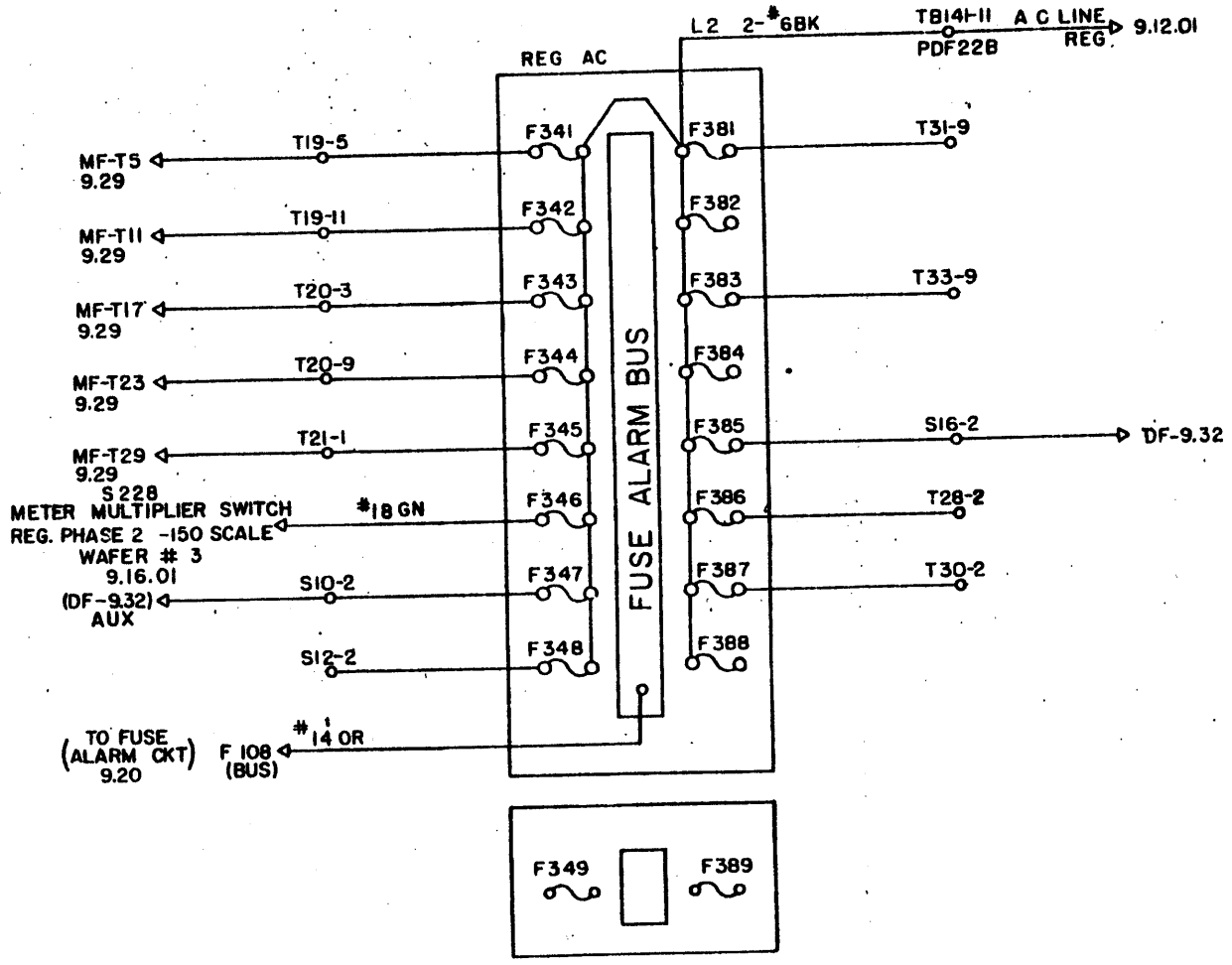
9.18

SHEET 4 OF 6



NOTE:  
 X ALL WIRES FROM FUSES TO S&T TERM  
 ARE #18 BN UNLESS OTHERWISE NOTED

REG AC FUSING L2



NOTE:  
X ALL WIRES FROM FUSES  
TO S & T TERMINALS ARE #18 YEL  
UNLESS OTHERWISE NOTED

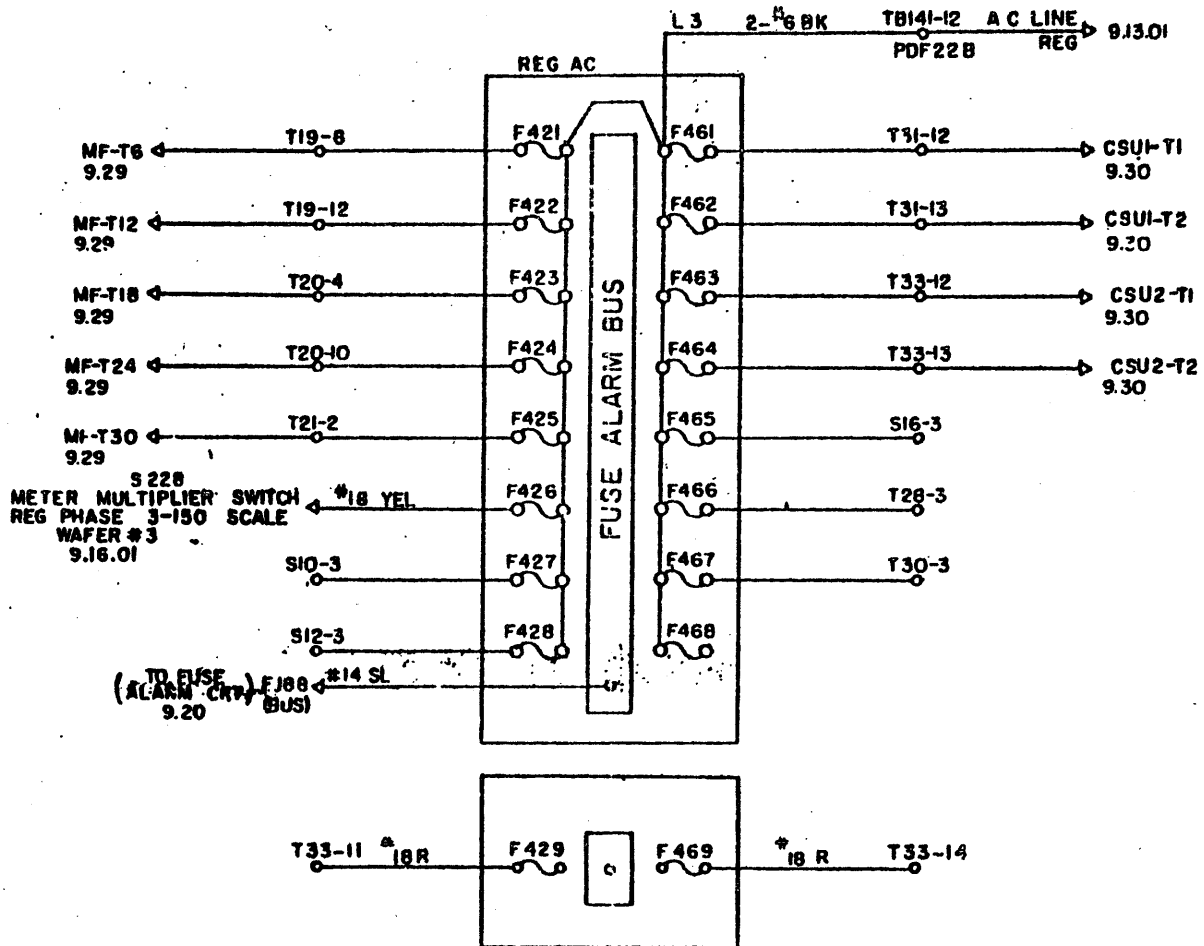
512721 E.C. 27/666



REG AC FUSING L3

9.18

SHEET 6 OF 8



NOTE:  
 X ALL WIRES FROM FUSES TO  
 S&T TERMINALS ARE #18 SL  
 UNLESS OTHERWISE NOTED

VAS 704-3347

|               |                       |     |        |
|---------------|-----------------------|-----|--------|
| STANDARD CODE | RELEASED FOR ASSEMBLY | QTY | 512730 |
| NONE          | 303320                |     |        |
| DATE          | CHANGE NO.            |     |        |
| 2-9-55        | 241153                |     |        |
| 7-6-55        | 241350                |     |        |
| 3-12-55       | 241600                |     |        |
| 3-26-55       | 241771                |     |        |
| 1-6-56        | 242270                |     |        |
| 3-22-56       | 242426                |     |        |
| 3-22-56       | 242772                |     |        |

| FUSE NO. | AMPS. | PART NO. |
|----------|-------|----------|
| 29       | 1     | 322895   |
| 30       | 15    | 107670   |
| 31       |       | *        |
| 32       |       | *        |
| 33       |       | *        |
| 34       |       | *        |
| 35       | 3.2   | 322898   |
| 36       |       | *        |
| 37       | 1     | 322895   |
| 38       | 3.2   | 322898   |
| 39       | 1.6   | 322896   |
| 40       | 1.6   | 322896   |
| 43       | SPARE | *        |
| 70       | 1.6   | 322896   |
| 71       |       | *        |
| 72       |       | *        |
| 73       |       | *        |
| 74       |       | *        |
| 75       | 3.2   | 322898   |
| 76       |       | *        |
| 77       |       | 322895   |
| 78       | 3.2   | 322898   |
| 79       | 1.6   | 322896   |
| 80       | 1.6   | 322896   |
| 89       |       | 322898   |
| 90       | 5     | 322890   |
| 91       |       | *        |
| 92       |       | *        |
| 93       |       | *        |
| 104      |       | *        |
| 108      | 3.2   | 322898   |
| 109      |       | *        |
| 117      |       | 322895   |
| 118      | 3.2   | 322898   |
| 119      | 1.6   | 322896   |
| 120      | 1.6   | 322896   |
| 129      | SPARE | *        |
| 130      | SPARE | *        |
| 131      |       | *        |
| 132      |       | *        |
| 133      |       | *        |
| 134      |       | *        |
| 135      | 3.2   | 322898   |
| 136      |       | *        |
| 137      |       | 322895   |
| 138      | 3.2   | 322898   |
| 139      | 1.6   | 322896   |
| 140      | 1.6   | 322896   |
| 149      | SPARE | *        |
| 150      | SPARE | *        |
| 151      |       | *        |
| 152      |       | *        |
| 153      |       | *        |
| 154      |       | *        |
| 155      | 3.2   | 322898   |
| 156      |       | *        |
| 157      |       | 322895   |
| 158      | 3.2   | 322898   |

| FUSE NO. | AMPS. | PART NO. |
|----------|-------|----------|
| 159      | 1.6   | 322896   |
| 160      | 1.6   | 322896   |
| 189      |       | 322896   |
| 190      | SPARE | *        |
| 191      |       | *        |
| 192      |       | *        |
| 193      |       | *        |
| 194      |       | *        |
| 195      | 3.2   | 322898   |
| 196      |       | *        |
| 197      | 1     | 322895   |
| 198      | 3.2   | 322898   |
| 199      | 1.6   | 322896   |
| 200      | 1.6   | 322896   |
| 229      | SPARE | *        |
| 230      | SPARE | *        |
| 231      |       | *        |
| 232      |       | *        |
| 233      |       | *        |
| 234      |       | *        |
| 235      | 3.2   | 322898   |
| 236      |       | *        |
| 237      | 1     | 322895   |
| 238      | 3.2   | 322898   |
| 239      | 1.6   | 322896   |
| 240      | 1.6   | 322896   |
| 270      |       | *        |
| 271      |       | *        |
| 272      |       | *        |
| 273      |       | *        |
| 274      |       | *        |
| 275      | 3     | 322890   |
| 276      |       | *        |
| 277      | 2/10  | 322780   |
| 278      | 3.2   | 322898   |
| 279      | 1.6   | 322896   |
| 280      | 1.6   | 322896   |
| 310      |       | *        |
| 311      |       | *        |
| 312      |       | *        |
| 313      |       | *        |
| 314      |       | *        |
| 315      | 5     | 322890   |
| 316      | SPARE | *        |
| 317      | SPARE | *        |
| 318      | 3.2   | 322898   |

| FUSE NO. | AMPS. | PART NO. |
|----------|-------|----------|
| 319      | 15    | 115971   |
| 320      | 10    | 322890   |
| 330      |       | *        |
| 351      |       | *        |
| 352      |       | *        |
| 353      |       | *        |
| 354      |       | *        |
| 355      | 3     | 322890   |
| 356      |       | 322895   |
| 357      |       | 322895   |
| 358      | 3.2   | 322898   |
| 359      | 1.6   | 322896   |
| 360      | 1.6   | 322896   |
| 390      |       | *        |
| 391      |       | *        |
| 392      |       | *        |
| 393      |       | *        |
| 394      |       | *        |
| 395      | 5     | 322890   |
| 396      | SPARE | *        |
| 397      | SPARE | *        |
| 398      | 1.6   | 322896   |
| 399      | 15    | 115971   |
| 400      | 10    | 322890   |
| 430      |       | *        |
| 431      |       | *        |
| 432      |       | *        |
| 433      |       | *        |
| 434      |       | *        |
| 435      | 5     | 322890   |
| 436      | SPARE | *        |
| 437      | 2/10  | 322780   |
| 438      | 3.2   | 322898   |
| 439      | 1.6   | 322896   |
| 440      | 1.6   | 322896   |
| 470      | 5     | 322890   |
| 471      |       | *        |
| 472      |       | *        |
| 473      |       | *        |
| 474      |       | *        |
| 475      | 5     | 322890   |
| 476      | SPARE | *        |
| 477      | SPARE | *        |
| 478      | 3.2   | 322898   |
| 479      | 15    | 115971   |
| 480      | 10    | 322890   |

\* 322088 (73) DUMMY FUSE

AL. UNREGULATED FUSE LOCATION CHART

512730

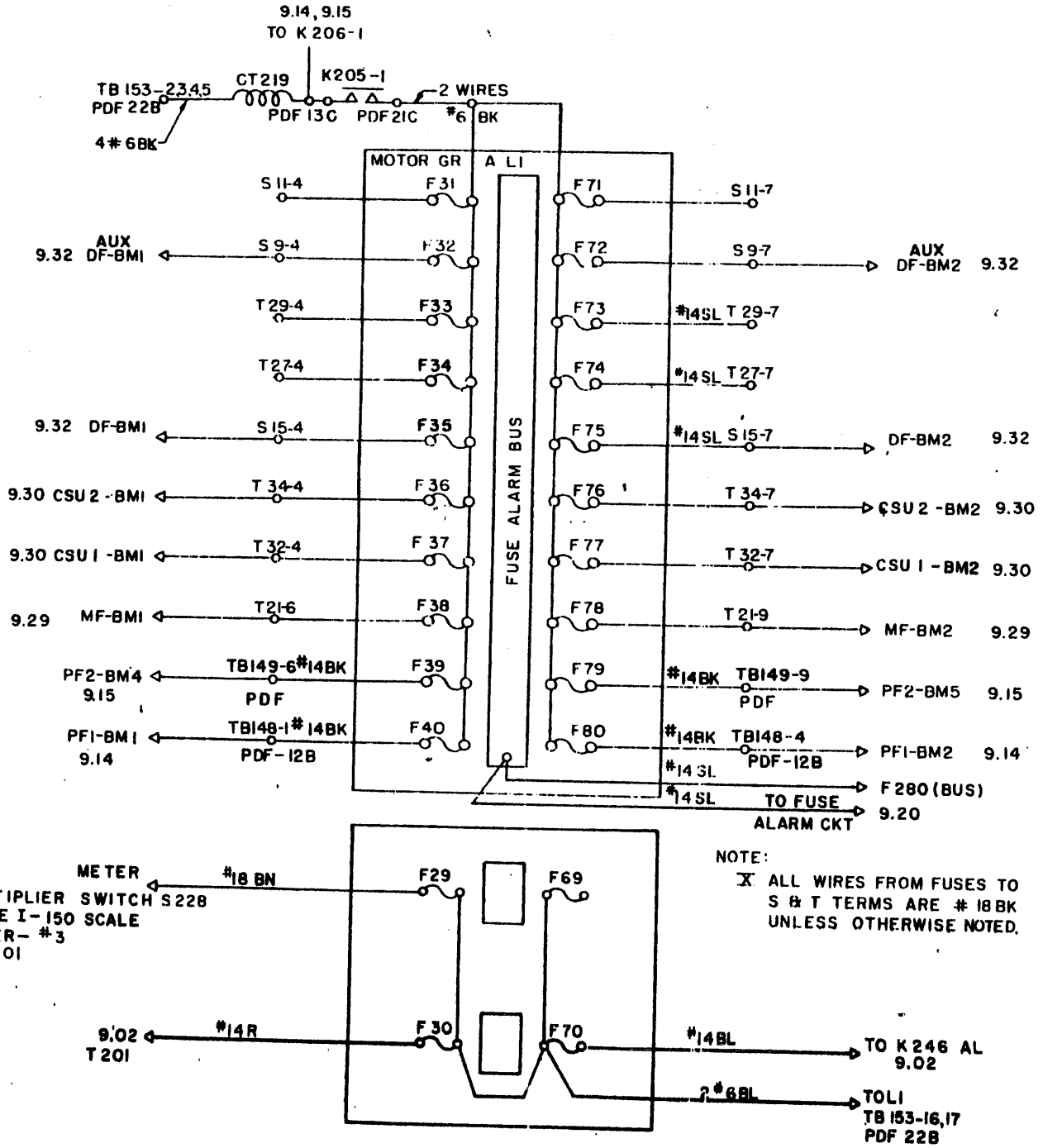
NOTE: PRINT TO ENG SPEC 855291

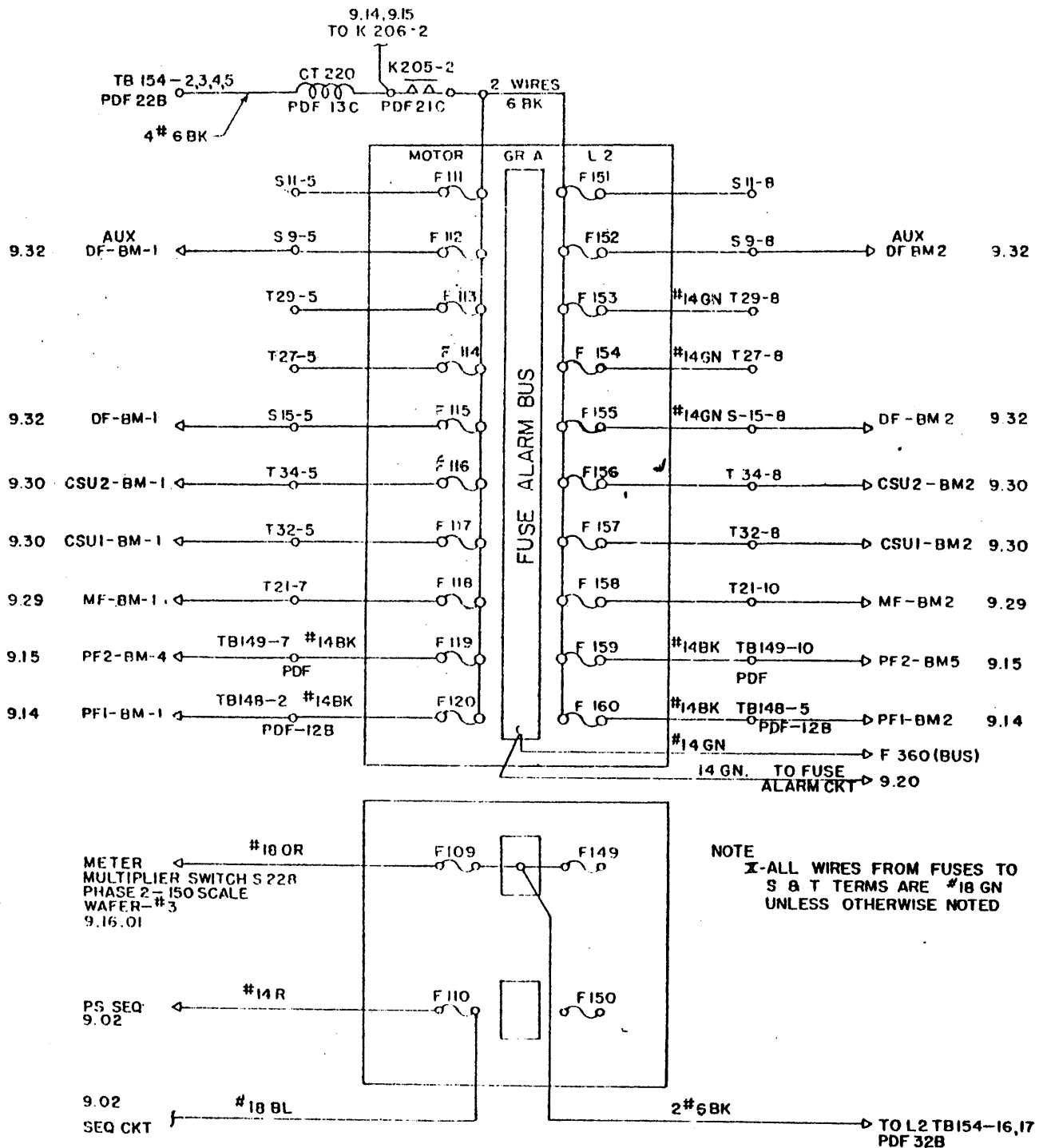
9.19.71

REFER TO S.F.I.

|                           |                                   |                   |   |
|---------------------------|-----------------------------------|-------------------|---|
| MATERIAL SPECIFICATION NO | TOLERANCES UNLESS OTHERWISE NOTED | ALIGNMENT WITHIN  | NOTE I INTERNATIONAL BUSINESS MACHINES CORP         |
|                           | DECIMALS ± .005                   | CONCENTRIC WITHIN | NOTE II MACH POWER DISTR. MOD. FRAME MODEL 746 MOD. |
| CASE DEPTH                | FRACTIONS ± 1/64                  | PLAT WITHIN       | NOTE III NAME AND FUSE LOCATION                     |
| HARDNESS                  | ANGLES ± 1°                       | PARALLEL WITHIN   | NOTE IV CHART UNREGULATED FUSE                      |
| SURFACE TREATMENT         | CORNERS OUTSIDE                   | STRAIGHT WITHIN   | NOTE V DIM. ALL 50-55 SCALE NONE                    |
|                           | WAYS BE BROADEN INSIDE            | SQUARE WITHIN     | NOTE VI CHECK FOR 50-55 TRAC APPRO 82 54557105      |

512730

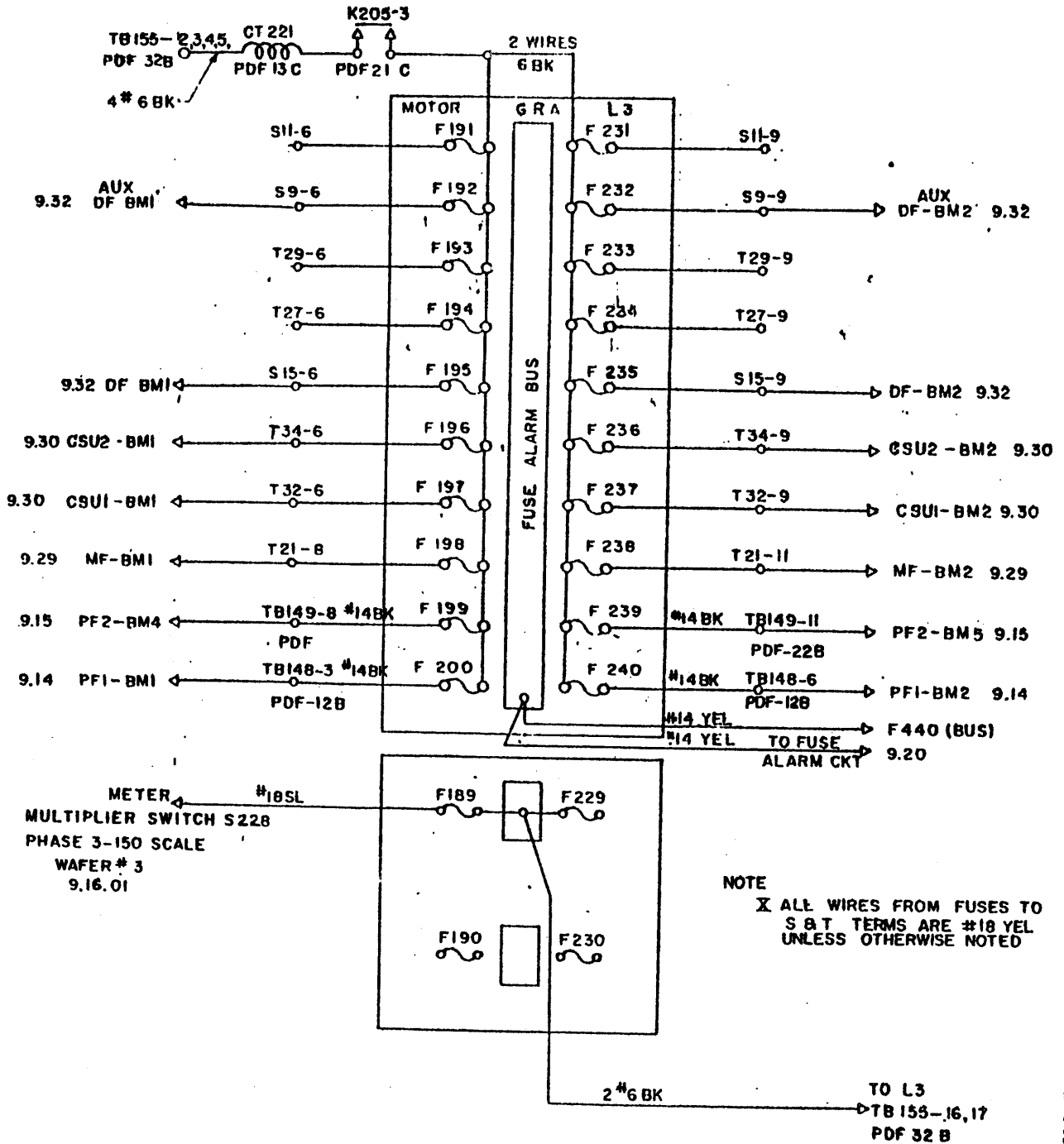




UN-REG AC FUSING L-3 MTR GR "A"

9.19

SHEET 3 OF 6

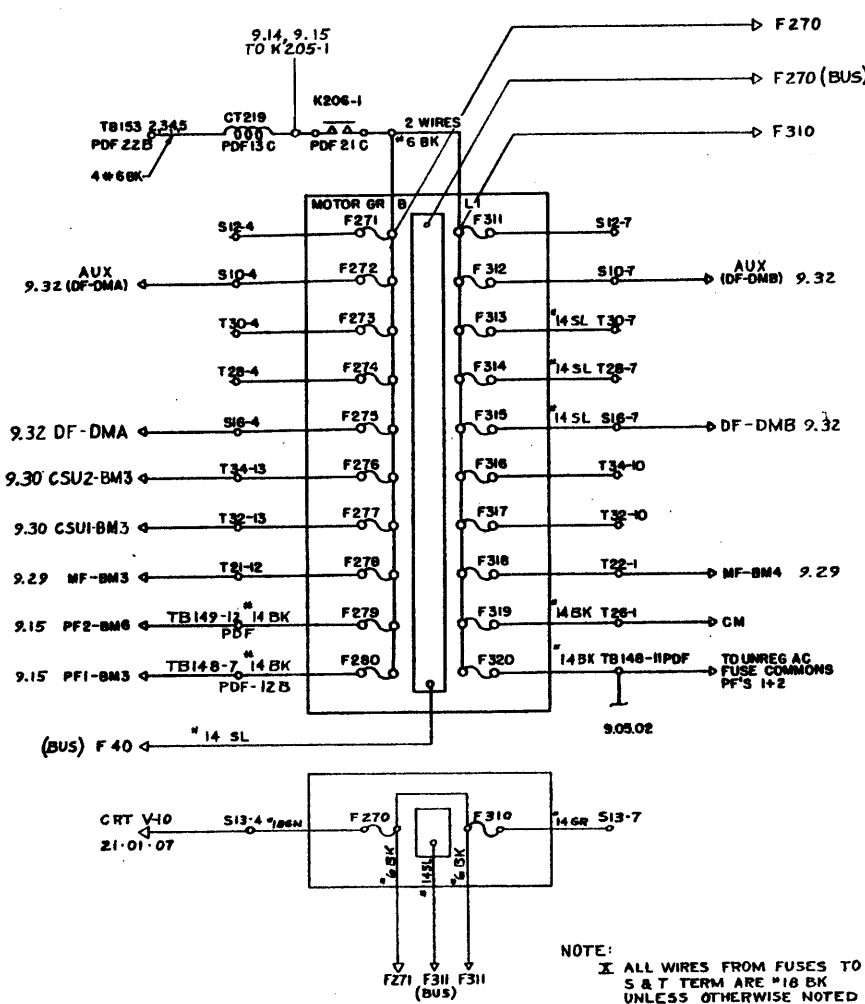


|              |            |         |        |
|--------------|------------|---------|--------|
| PACKAGE CODE | REV. LEVEL | DATE    | 512727 |
| NONE         | 503629     | 1-15-51 | 241159 |
|              |            | 2-15-51 | 241164 |
|              |            | 7-7-51  | 241181 |
|              |            | 8-24-51 | 241199 |

WAS 704-3555

UN-REG AC FUSING L-1 MTR GR "B"

9.19  
SHEET 4 OF 6



NOTE: II PRINT TO ENG.  
SPEC. 095291

|                                       |                  |                   |                    |               |                  |                  |                |        |        |         |
|---------------------------------------|------------------|-------------------|--------------------|---------------|------------------|------------------|----------------|--------|--------|---------|
| INTERNATIONAL BUSINESS MACHINES CORP. | WIRE 1           | WIRE 2            | WIRE 3             | WIRE 4        | WIRE 5           | WIRE 6           | WIRE 7         | WIRE 8 | WIRE 9 | WIRE 10 |
| POWER DISTRIBUTION UNIT               | ALUMINUM WITTING | STEEL WITTING     | COMBUSTING WITTING | PLAST WITTING | PARALLEL WITTING | STRAIGHT WITTING | SQUARE WITTING | IN     | UNUS   | UNUS    |
| 744 NOBELLE                           | ORIGINALS 2. 0/0 | FRANCHISES 2. 0/0 | AMPLIES 2. 0/0     | CONCORD       | WITTING          | UNUS             |                |        |        |         |
| SYSTEMS DIAGRAM                       |                  |                   |                    |               |                  |                  |                |        |        |         |
| 9.19                                  |                  |                   |                    |               |                  |                  |                |        |        |         |
| 12-16-51                              |                  |                   |                    |               |                  |                  |                |        |        |         |
| 241159                                |                  |                   |                    |               |                  |                  |                |        |        |         |
| 241164                                |                  |                   |                    |               |                  |                  |                |        |        |         |
| 241181                                |                  |                   |                    |               |                  |                  |                |        |        |         |
| 241199                                |                  |                   |                    |               |                  |                  |                |        |        |         |

512727 EC 243195

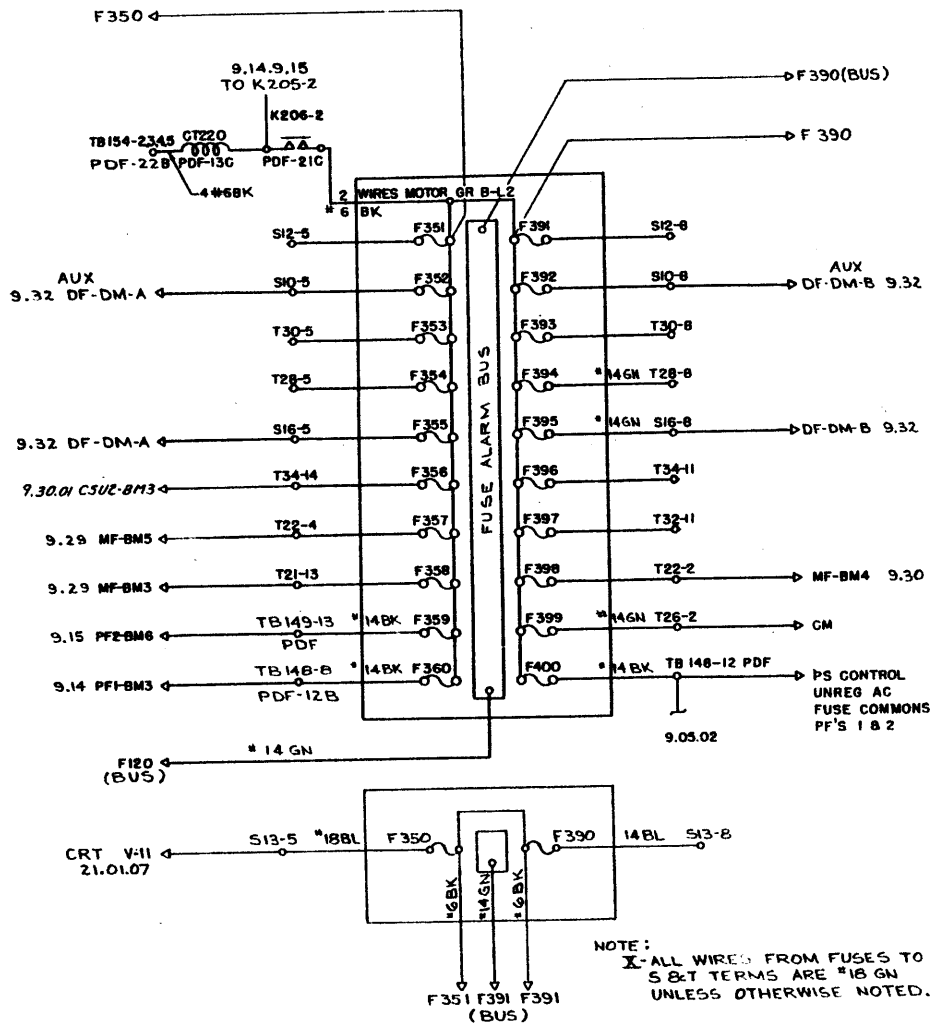
512727

|          |        |    |
|----------|--------|----|
| REV. NO. | DATE   | BY |
| NONE     | 503629 |    |
| 512728   |        |    |
| 6-10-55  | 241153 |    |
| 8-12-55  | 241066 |    |
| 10-31-55 | 241913 |    |
| 7-22-56  | 243778 |    |

WAS 704-3555

UNREG AC FUSING L-2 MTR GR "B"

9.19  
SHEET 5 OF 8

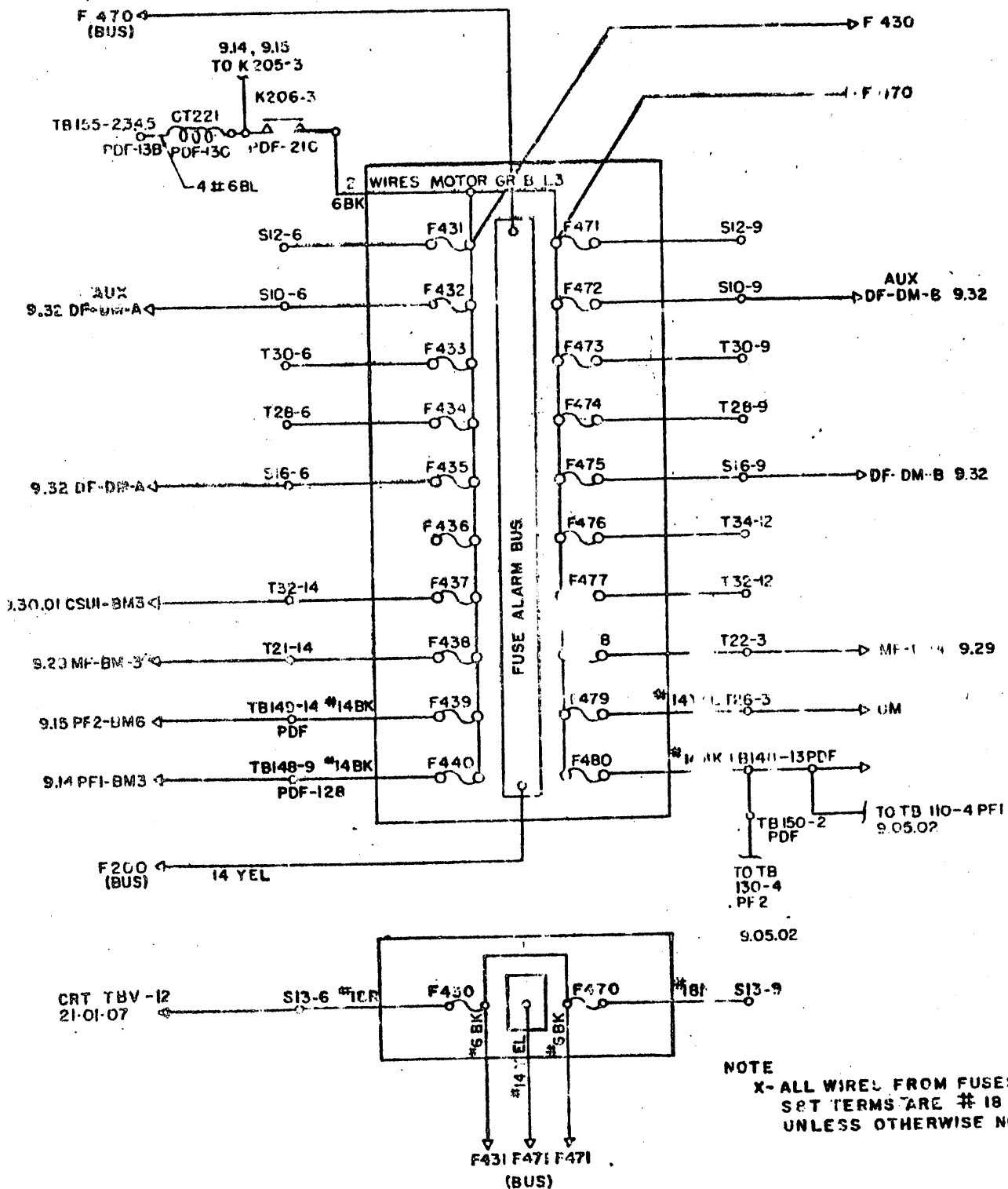


NOTE:  
I PRINT TO ENG  
II SPEC 895191

|                                       |         |                   |      |
|---------------------------------------|---------|-------------------|------|
| INTERNATIONAL BUSINESS MACHINES CORP. | NOTE 1  | ALLOCATION WITHIN | DATE |
| POWER DISTRIBUTION                    | NOTE 2  | CONCENTRIC WITHIN | 5-13 |
| UNIVERSITY MICROFILMS                 | NOTE 3  | PLATE WITHIN      | 5-13 |
| SYSTEMS DIAGRAM                       | NOTE 4  | PARALLEL WITHIN   | 5-13 |
|                                       | NOTE 5  | SERIAL WITHIN     | 5-13 |
|                                       | NOTE 6  | OTHER             | 5-13 |
|                                       | NOTE 7  | OTHER             | 5-13 |
|                                       | NOTE 8  | OTHER             | 5-13 |
|                                       | NOTE 9  | OTHER             | 5-13 |
|                                       | NOTE 10 | OTHER             | 5-13 |

512728 EC 243196

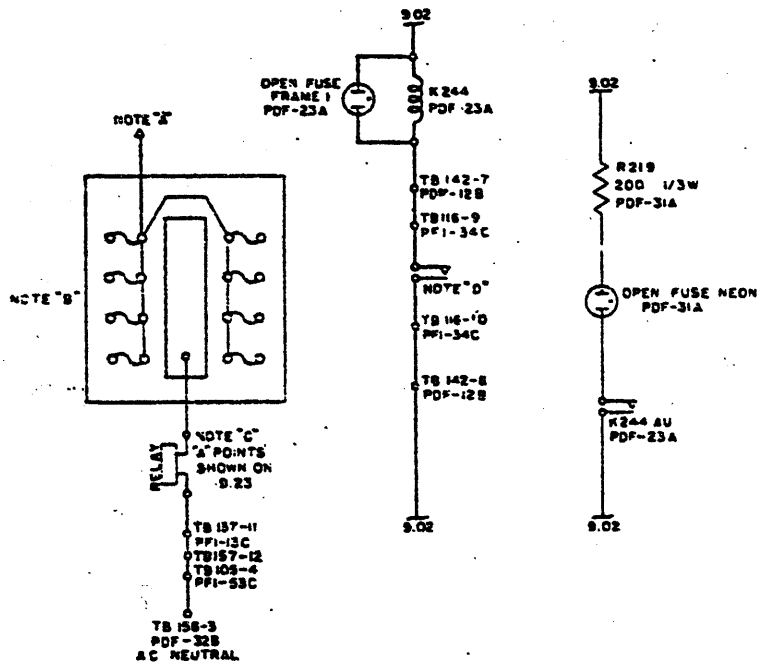
512728



512729 E C 241913

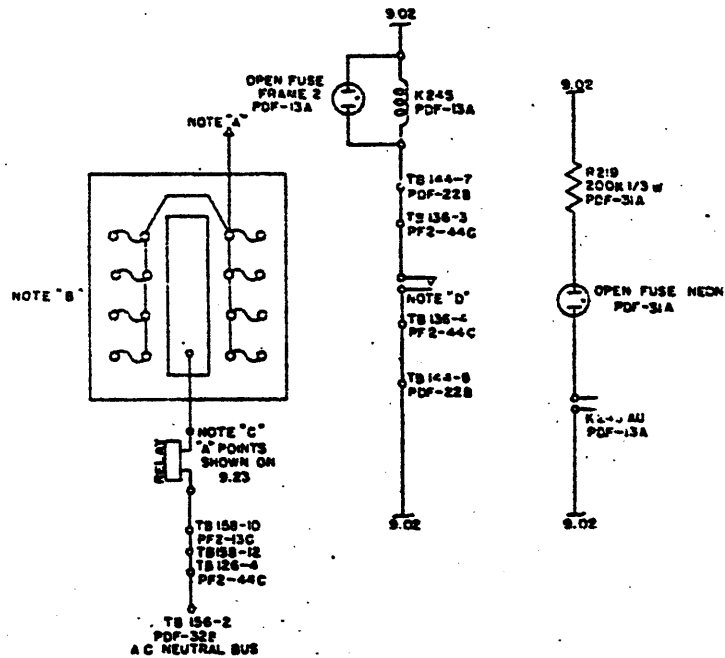


FUSE ALARM CIRCUIT  
POWER FRAME 1



FUSE ALARM CIRCUIT  
POWER FRAME 2

920  
SHEET 1 OF 2



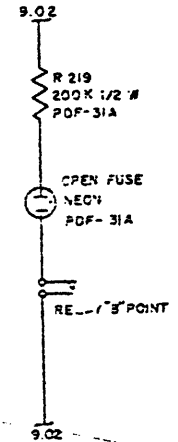
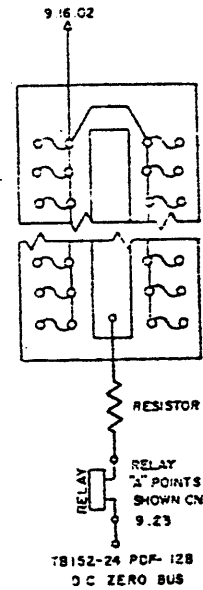
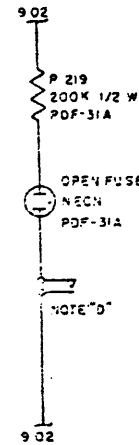
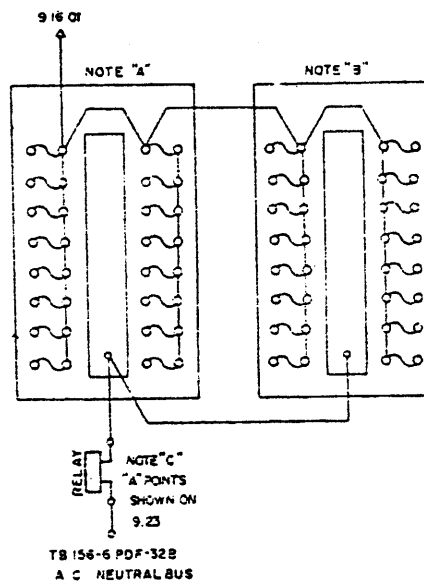
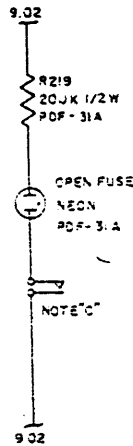
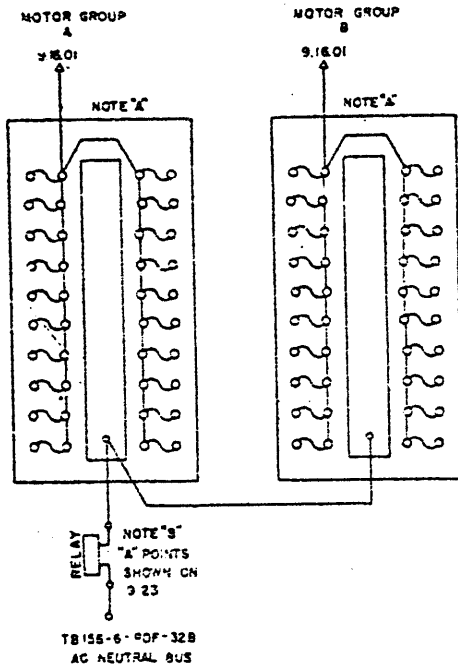
| NOTES            | UNREG L1           | UNREG L2           | UNREG L3           | REG L1             | REG L2             | REG L3             |
|------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| "A"              | 9.25               | 9.25               | 9.25               | 9.24               | 9.24               | 9.24               |
| FUSES "B"        | 725-732<br>PFI-33C | 733-740<br>PFI-23C | 741-748<br>PFI-23C | 701-708<br>PFI-43C | 709-716<br>PFI-43C | 717-724<br>PFI-33C |
| RELAYS "C"       | K2062<br>PFI-24C   | K2063<br>PFI-24C   | K2064<br>PFI-24C   | K2065<br>PFI-34C   | K2066<br>PFI-34C   | K2067<br>PFI-34C   |
| RELAY POINTS "D" | K2062B<br>PFI-24C  | K2063B<br>PFI-24C  | K2064B<br>PFI-24C  | K2065B<br>PFI-34C  | K2066B<br>PFI-34C  | K2067B<br>PFI-34C  |
| FUSE CHART       | 9.25               | 9.25               | 9.25               | 9.24               | 9.24               | 9.24               |

| NOTES            | UNREG L1           | UNREG L2           | UNREG L3           | REG L1             | REG L2             | REG L3             |
|------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| "A"              | 9.27               | 9.27               | 9.27               | 9.26               | 9.26               | 9.26               |
| FUSES "B"        | 825-832<br>PF2-33C | 833-840<br>PF2-22C | 841-848<br>PF2-22C | 801-808<br>PF2-43C | 809-816<br>PF2-43C | 817-824<br>PF2-33C |
| RELAYS "C"       | K2068<br>PF2-24C   | K2069<br>PF2-24C   | K2070<br>PF2-24C   | K2071<br>PF2-34C   | K2072<br>PF2-34C   | K2073<br>PF2-34C   |
| RELAY POINTS "D" | K2068B<br>PF2-24C  | K2069B<br>PF2-24C  | K2070B<br>PF2-24C  | K2071B<br>PF2-34C  | K2072B<br>PF2-34C  | K2073B<br>PF2-34C  |
| FUSE CHART       | 9.27               | 9.27               | 9.27               | 9.26               | 9.26               | 9.26               |

FUSE ALARM CIRCUIT  
MOTOR GROUPS A AND B  
POWER DISTRIBUTION FRAME  
UNREGULATED A C

FUSE ALARM CIRCUIT  
REGULATED AC  
POWER DISTRIBUTION FRAME

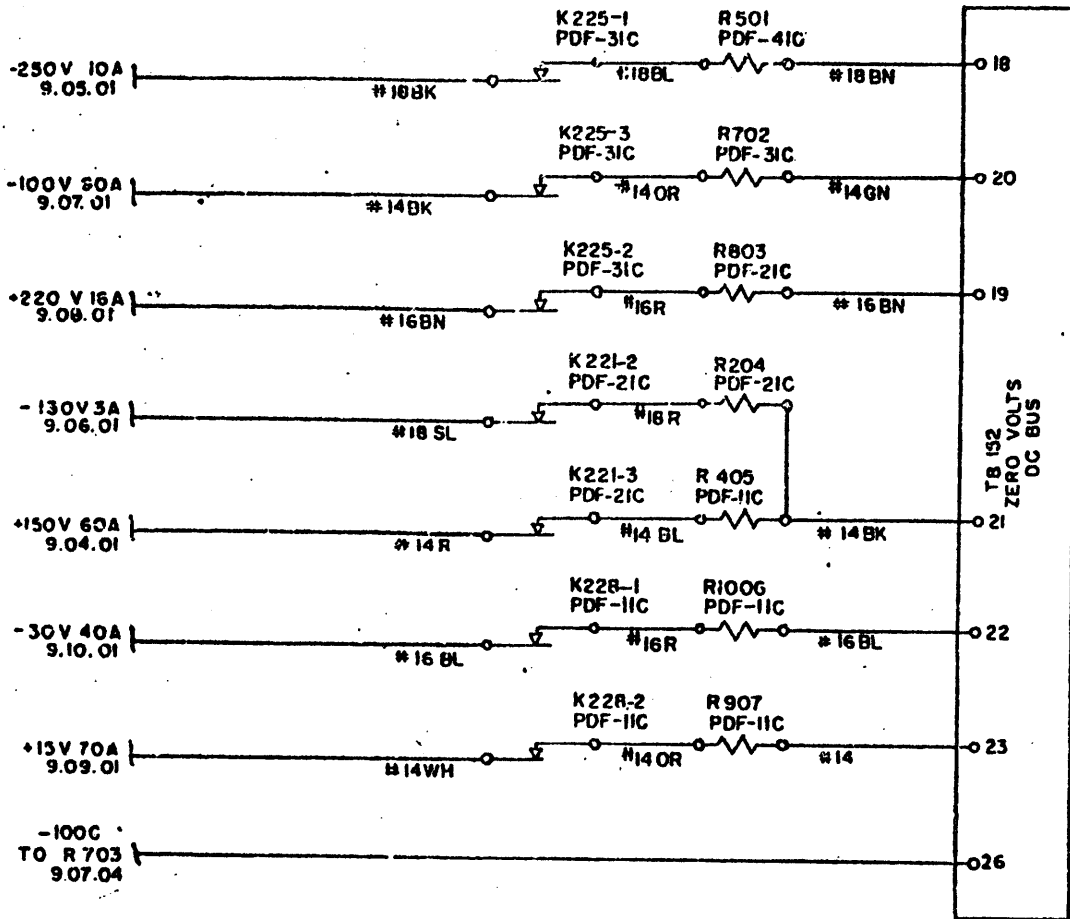
DC FUSE ALARM CIRCUIT  
POWER DISTRIBUTION FRAME



| NOTES                       | MOTOR GROUP A       |                     |                     | MOTOR GROUP B       |                      |                      |
|-----------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|
|                             | L1                  | L2                  | L3                  | L1                  | L2                   | L3                   |
| FUSES<br>NOTE "A"           | 31 → 40<br>PDF-11B  | 51 → 60<br>PDF-11B  | 71 → 80<br>PDF-21B  | 91 → 100<br>PDF-21B | 111 → 120<br>PDF-31B | 131 → 140<br>PDF-31B |
| RELAYS<br>NOTE "B"          | K 2048<br>PDF-33A   | K 2049<br>PDF-33A   | K 2050<br>PDF-33A   | K 2048<br>PDF-33A   | K 2049<br>PDF-33A    | K 2050<br>PDF-33A    |
| RELAY<br>POINTS<br>NOTE "C" | K 2050 B<br>PDF-33A | K 2050 A<br>PDF-33A | K 2050 B<br>PDF-33A | K 2048 B<br>PDF-33A | K 2048 A<br>PDF-33A  | K 2050 B<br>PDF-33A  |
| FUSE<br>CHARTS              | SHEET 1             | SHEET 2             | SHEET 3             | SHEET 4             | SHEET 5              | SHEET 6              |

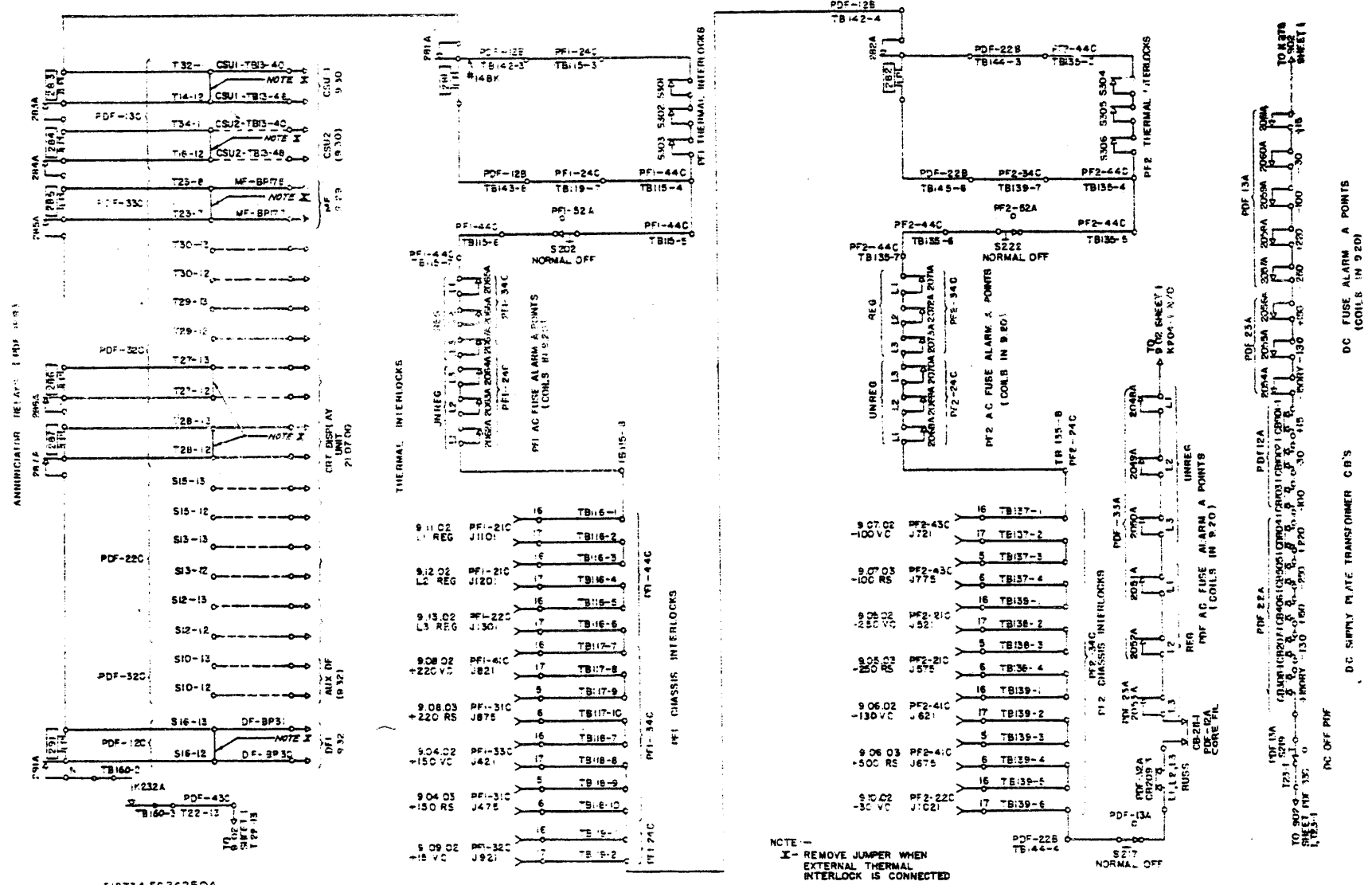
| NOTES                       | L1                  | L2                  | L3                  |
|-----------------------------|---------------------|---------------------|---------------------|
| FUSES                       | 21 → 28<br>PDF-11B  | 31 → 38<br>PDF-11B  | 41 → 48<br>PDF-21B  |
| FUSES<br>NOTE "A"           | 51 → 58<br>PDF-11B  | 61 → 68<br>PDF-21B  | 71 → 78<br>PDF-31B  |
| RELAYS<br>NOTE "B"          | K 2051<br>PDF-33A   | K 2052<br>PDF-33A   | K 2053<br>PDF-33A   |
| RELAY<br>POINTS<br>NOTE "C" | K 2051 B<br>PDF-33A | K 2051 A<br>PDF-33A | K 2053 B<br>PDF-33A |
| FUSE<br>CHARTS              | SHEET 1 & 2         | SHEET 2 & 3         | SHEET 3 & 6         |

| POWER SUPPLY | FUSES     |          | RESISTOR |             | RELAY  |          | FUSE CHART         |
|--------------|-----------|----------|----------|-------------|--------|----------|--------------------|
|              | NO.       | LOCATION | NO.      | RATING      | NO.    | LOCATION |                    |
| -130         | 241 → 299 | PDF-21B  | 2001     | 100 Ω 10 W  | K 2050 | PDF-13A  | SHEET 4            |
| +115         | 61 → 219  | PDF-21B  | —        | —           | K 2051 | PDF-13A  | SHEET 3            |
| -220         | 471 → 499 | PDF-31B  | 2004     | 150 Ω 1/2 W | K 2057 | PDF-13A  | SHEET 5            |
| +220         | — 59      | PDF-11B  | 2005     | 500 Ω 1/2 W | K 2058 | PDF-13A  | SHEET 1            |
| -100         | 31 → 379  | PDF-31B  | 2006     | 500 Ω 1/2 W | K 2059 | PDF-13A  | SHEET 5            |
| +150         | 81 → 130  | PDF-11B  | 2003     | 100 Ω 20 W  | K 2053 | PDF-23A  | SHEET 2            |
| -130         | 2051, 20  | PDF-11B  | 2002     | 700 Ω 20 W  | K 2055 | PDF-23A  | SHEET 1 & 2        |
| -150V        | 180, 215  | PDF-21B  | 2001     | 100 Ω 20 W  | K 2054 | PDF-23A  | SHEETS 3, 4, 5 & 6 |
|              | 200, 230  | PDF-31B  |          |             |        |          |                    |
|              | 340, 350  | PDF-31B  |          |             |        |          |                    |



NOTE: COILS OF CONTACTORS  
ARE SHOWN ON 9.02

NORMAL OFF & DC OFF INTERLOCK CIRCUITS



512734 EC 242504

NOTE: X - REMOVE JUMPER WHEN EXTERNAL THERMAL INTERLOCK IS CONNECTED

DC SIXTY PLATE TRANSFORMER C.B.'S  
DC FUSE ALARM A POINTS (COILS IN 9201)  
DC OFF PFI

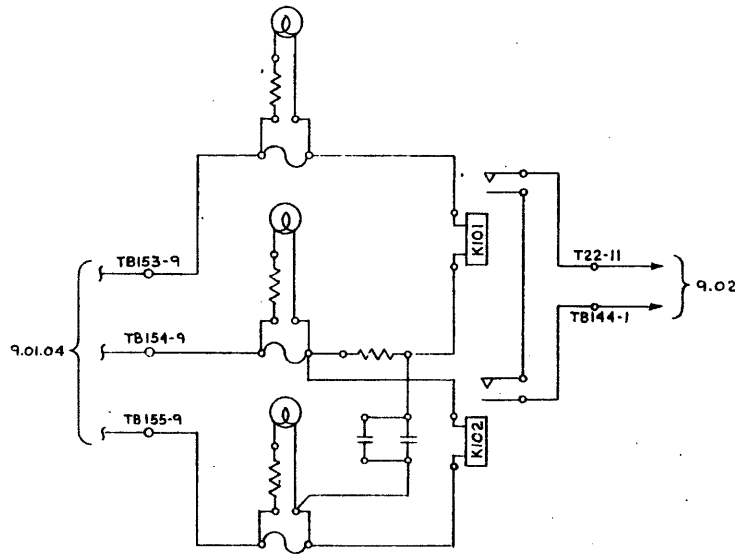
WAS 704-3543

|                |         |             |        |      |        |
|----------------|---------|-------------|--------|------|--------|
| STANDARDS CODE | NONE    | RELEASED BY | 503629 | UNIT | 503666 |
| DATE           | 10-5-55 | CHANGE NO.  |        |      |        |
|                | 7-17-56 |             |        |      |        |
|                | 242988  |             |        |      |        |

# PHASE PROTECTION INTERLOCK

9.23.01

503666



NOTE I PRINT TO ENG. SPEC. 895991

REFER TO S.F.I.

503666 EC 242988

|                                      |                                       |
|--------------------------------------|---------------------------------------|
| MATERIAL SPECIFICATION NO.           | INTERNATIONAL BUSINESS MACHINES CORP. |
| TO DIMENSIONS UNLESS OTHERWISE NOTED | NOTE I                                |
| DECIMALS & SIG.                      | NOTE II                               |
| FRACTIONS & I.M.                     | NOTE III                              |
| ANGLES & °                           | NOTE IV                               |
| CORNERS MAY BE ROUNDED               | NOTE V                                |
| OUTSIDE                              | NOTE VI                               |
| INSIDE                               |                                       |
| ALIGNED WITHIN                       |                                       |
| CONCENTRIC WITHIN                    |                                       |
| PLAT WITHIN                          |                                       |
| PARALLEL WITHIN                      |                                       |
| STRAIGHT WITHIN                      |                                       |
| SQUARE WITHIN                        |                                       |
| TOLERANCE                            |                                       |
| FINISH                               |                                       |
| SCALE                                |                                       |
| DATE                                 |                                       |
| DRAWN                                |                                       |
| CHECKED                              |                                       |
| APPROVED                             |                                       |
| TITLE                                |                                       |
| UNIT                                 |                                       |
| SYSTEM                               |                                       |
| DIAGRAM                              |                                       |
| SCALE                                |                                       |
| SCALE                                |                                       |
| SCALE                                |                                       |
| SCALE                                |                                       |

503666

| FUSE NO. | PHYSICAL LOCATION | REFER TO PRINT NO. | AMPS. | PART NO. |
|----------|-------------------|--------------------|-------|----------|
| F701     | PFI-43C           | 9.11.01            | 10.0  | 322889   |
| F702     | PFI-43C           | 9.08.01            | 5.0   | 322890   |
| F703     | PFI-43C           | 9.04.01            | 5.0   | 322890   |
| F704     | PFI-43C           | 9.04.02            | 0.8   | 322783   |
| F705     |                   |                    |       |          |
| F706     | PFI-43C           | 9.11.02            | 0.5   | 322781   |
| F707     | PFI-43C           | 9.11.02            | 0.2   | 322780   |
| F708     | PFI-43C           | 9.11.02            | 2.0   | 322784   |
| F709     | PFI-43C           | 9.12.01            | 10.0  | 322889   |
| F710     | PFI-43C           | 9.04.01            | 5.0   | 322890   |
| F711     | PFI-43C           | 9.09.02            | 0.5   | 322781   |
| F712     | PFI-43C           | 9.12.02            | 0.5   | 322781   |
| F713     |                   |                    |       |          |
| F714     | PFI-33C           | 9.12.02            | 0.2   | 322780   |
| F715     | PFI-33C           | 9.12.02            | 2.0   | 322784   |
| F716     | PFI-33C           | 9.08.03            | 0.6   | 322782   |
| F717     | PFI-33C           | 9.07.02, 9.13.01   | 10.0  | 322889   |
| F718     | PFI-33C           | 9.04.01            | 5.0   | 322890   |
| F719     | PFI-33C           | 9.08.02            | 0.8   | 322783   |
| F720     | PFI-33C           | 9.13.02            | 0.5   | 322781   |
| F721     | PFI-33C           | 9.09.02            | 0.8   | 322783   |
| F722     | PFI-33C           | 9.13.02            | 0.2   | 322780   |
| F723     | PFI-33C           | 9.04.03            | 0.6   | 322782   |
| F724     | PFI-33C           | 9.13.02            | 2.0   | 322784   |

REGULATED AC FUSING  
FRAME 1

9.24

NOTE:

ALL FUSES ARE INDICATOR  
FUSETRON TYPE.  
FUSE ALARM CIRCUIT IS  
SHOWN ON 9.20

|                             | FUSE NO. | PHYSICAL LOCATION | REFER TO PRINT NO. | AMPS. | PART. NO. |
|-----------------------------|----------|-------------------|--------------------|-------|-----------|
| L1<br>FROM TB 10-2, PFI-34C | F725     |                   |                    |       |           |
|                             | F726     |                   |                    |       |           |
|                             | F727     | PFI-33C           | 9.08.02            | 0.2   | 322780    |
|                             | F728     | PFI-33C           | 9.04.02            | 0.1   | 322779    |
|                             | F729     |                   |                    |       |           |
|                             | F730     | PFI-33C           | 9.08.03            | 0.8   | 322783    |
|                             | F731     | PFI-33C           | 9.09.02            | 0.5   | 322781    |
|                             | F732     |                   |                    |       |           |
|                             | F733     |                   |                    |       |           |
|                             | F734     |                   |                    |       |           |
| L2<br>FROM TB 10-3, PFI-34C | F735     | PFI-23C           | 9.04.02            | 0.1   | 322779    |
|                             | F736     | PFI-23C           | 9.08.03            | 0.8   | 322783    |
|                             | F737     |                   |                    |       |           |
|                             | F738     | PFI-23C           | 9.04.03            | 0.8   | 322783    |
|                             | F739     | PFI-23C           | 9.09.02            | 0.5   | 322781    |
|                             | F740     |                   |                    |       |           |
|                             | F741     |                   |                    |       |           |
| L3<br>FROM TB 10-4, PFI-34C | F742     | PFI-23C           | 9.08.02            | 0.2   | 322780    |
|                             | F743     | PFI-23C           | 9.04.02            | 0.1   | 322779    |
|                             | F744     | PFI-23C           | 9.04.03            | 0.8   | 322783    |
|                             | F745     |                   |                    |       |           |
|                             | F746     |                   |                    |       |           |
|                             | F747     |                   |                    |       |           |
|                             | F748     |                   |                    |       |           |

UNREGULATED AC FUSING  
FRAME 1

9.25

NOTE:

ALL FUSES ARE INDICATOR  
FUSETRON TYPE.  
FUSE AI.ARM CIRCUIT IS  
SHOWN ON 9.20

REGULATED AC FUSING  
FRAME 2

|                              | FUSE NO | PHYSICAL LOCATION | REFER TO SHEET NO. | AMPS. | PART NO. |
|------------------------------|---------|-------------------|--------------------|-------|----------|
| L1<br>FROM TB 120-1, PF2-44C | F801    |                   |                    |       |          |
|                              | F802    | PF2-43C           | 9.05.01            | 5.0   | 322890   |
|                              | F803    | PF2-43C           | 9.07.01            | 5.0   | 322890   |
|                              | F804    | PF2-43C           | 9.05.02            | 0.8   | 322783   |
|                              | F805    |                   |                    |       |          |
|                              | F806    |                   |                    |       |          |
|                              | F807    | PF2-43C           | 9.05.03            | 0.6   | 322782   |
|                              | F808    |                   |                    |       |          |
| L2<br>FROM TB 126-2, PF2-44C | F809    |                   |                    |       |          |
|                              | F810    |                   |                    |       |          |
|                              | F811    | PF2-43C           | 9.07.01            | 5.0   | 322890   |
|                              | F812    | PF2-43C           | 9.06.02            | 0.8   | 322783   |
|                              | F813    |                   |                    |       |          |
|                              | F814    |                   |                    |       |          |
|                              | F815    | PF2-43C           | 9.10.02            | 0.6   | 322782   |
|                              | F816    |                   |                    |       |          |
| L3<br>FROM TB 126-3, PF2-44C | F817    |                   |                    |       |          |
|                              | F818    | PF2-33C           | 9.07.01            | 5.0   | 322890   |
|                              | F819    | PF2-33C           | 9.03               | 3.2   | 322898   |
|                              | F820    | PF2-33C           | 9.07.02            | 0.8   | 322783   |
|                              | F821    | PF2-33C           | 9.10.02            | 0.8   | 322783   |
|                              | F822    | PF2-33C           | 9.07.03            | 0.6   | 322782   |
|                              | F823    |                   |                    |       |          |
|                              | F824    |                   |                    |       |          |

NOTE:

ALL FUSES ARE INDICATOR  
FUSETRON TYPE.  
FUSE ALARM CIRCUIT IS  
SHOWN ON 9.20



|                             | FUSE NO. | PHYSICAL LOCATION | REFER TO SHEET NO. | AMPS. | PART NO. |
|-----------------------------|----------|-------------------|--------------------|-------|----------|
|                             | F825     | PF2-33C           | 9.06.02            | 0.5   | 322781   |
| L1<br>FROM TB130-2, PF2-340 | F826     | PF2-33C           | 9.05.02            | 0.2   | 322780   |
|                             | F827     | PF2-33C           | 9.07.02            | 0.1   | 322779   |
|                             | F828     | PF2-33C           | 9.05.03            | 0.8   | 322783   |
|                             | F829     |                   |                    |       |          |
|                             | F830     | PF2-33C           | 9.06.03            | 0.8   | 322783   |
|                             | F831     |                   |                    |       |          |
|                             | F832     | PF2-33C           | 9.10.02            | 0.5   | 322781   |
|                             | F833     | PF2-23C           | 9.06.02            | 0.5   | 322781   |
| L2<br>FROM TB130-3, PF2-34  | F834     | PF2-23C           | 9.05.02            | 0.2   | 322780   |
|                             | F835     |                   |                    |       |          |
|                             | F836     | PF2-23C           | 9.07.02            | 0.1   | 322779   |
|                             | F837     |                   |                    |       |          |
|                             | F838     |                   |                    |       |          |
|                             | F839     | PF2-23C           | 9.07.03            | 0.8   | 322783   |
|                             | F840     |                   |                    |       |          |
|                             | F841     |                   |                    |       |          |
| L3<br>FROM TB130-4, PF2-34C | F842     |                   |                    |       |          |
|                             | F843     | PF2-23C           | 9.07.02            | 0.1   | 322779   |
|                             | F844     | PF2-23C           | 9.05.03            | 0.8   | 322783   |
|                             | F845     |                   |                    |       |          |
|                             | F846     | PF2-23C           | 9.07.03            | 0.8   | 322783   |
|                             | F847     |                   |                    |       |          |
|                             | F848     | PF2-23C           | 9.10.02            | 0.5   | 322781   |

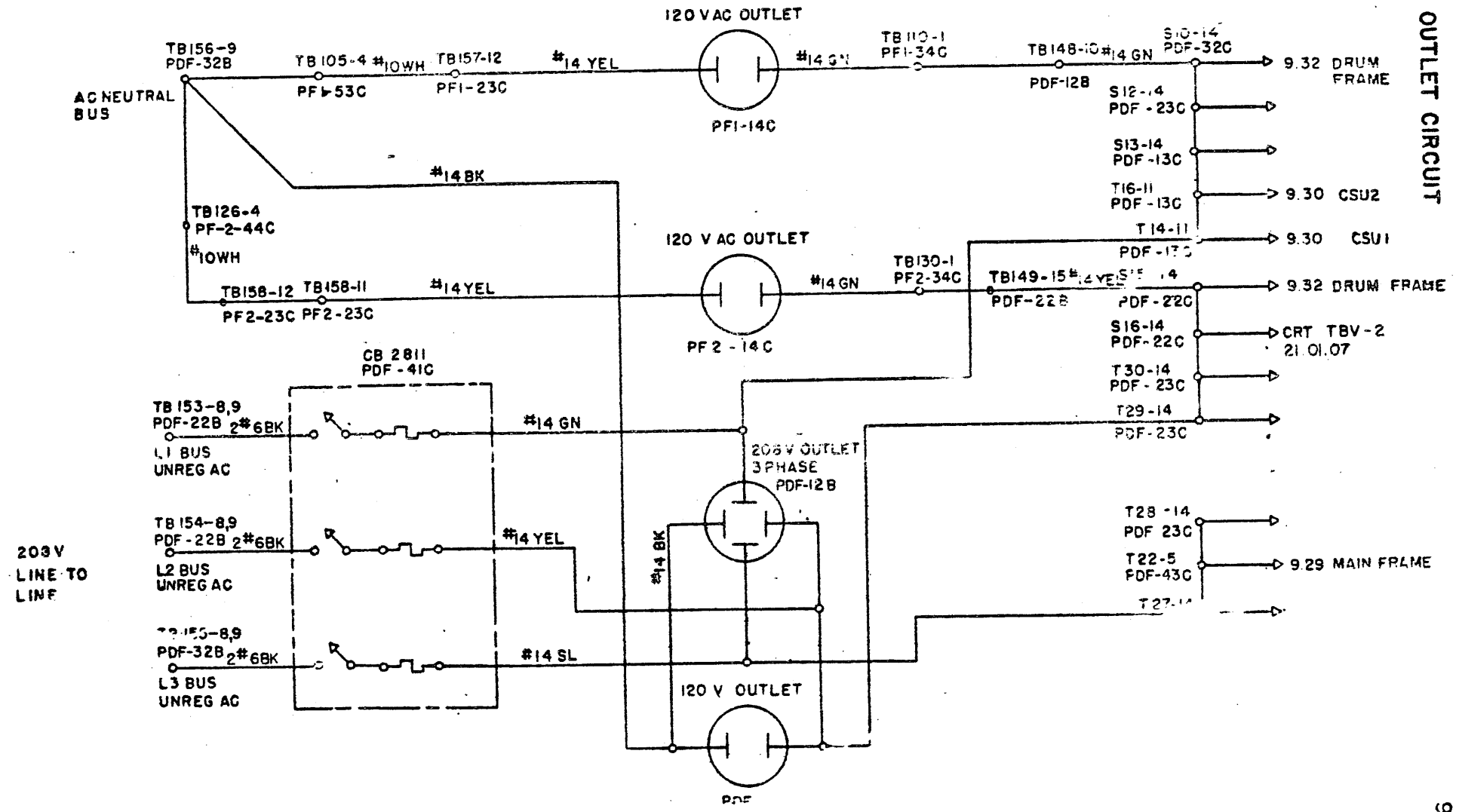
UNREGULATED AC FUSING  
FRAME 2

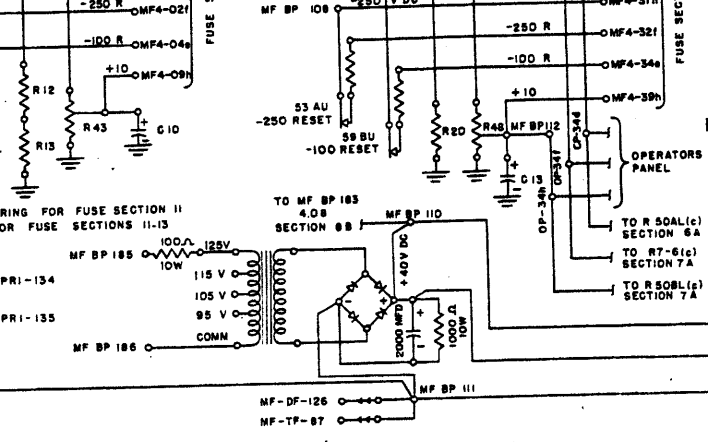
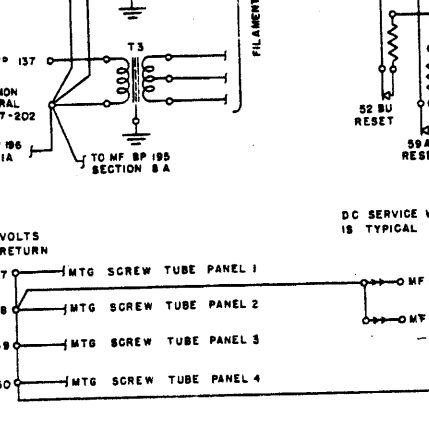
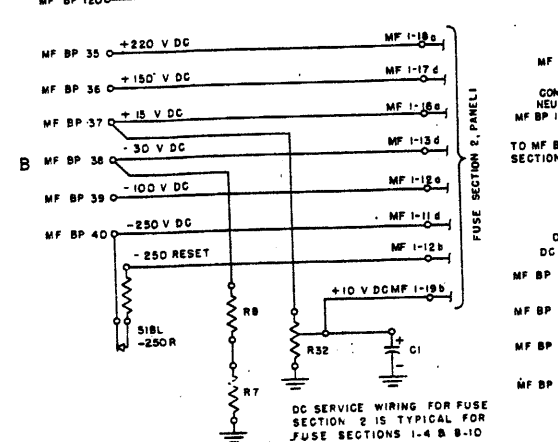
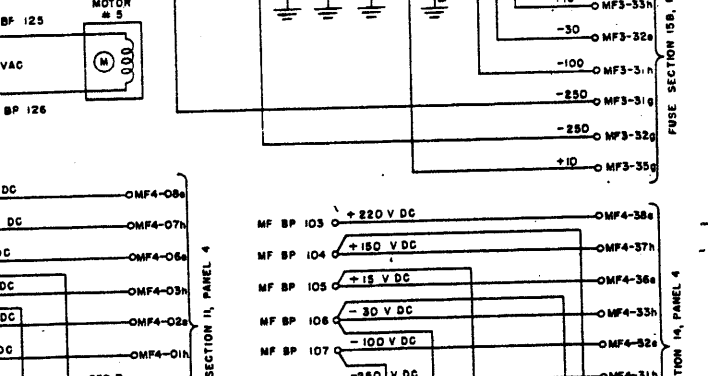
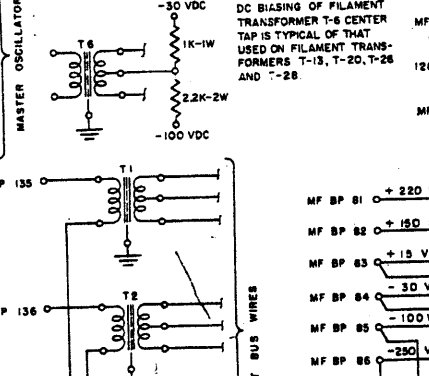
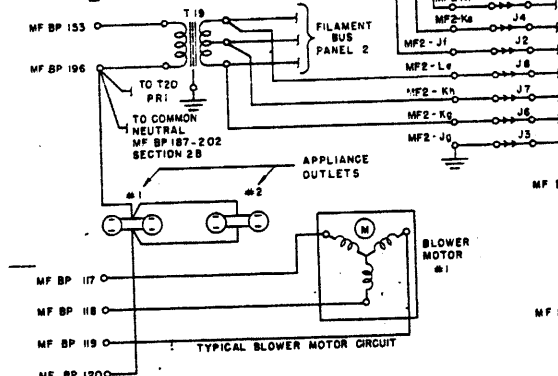
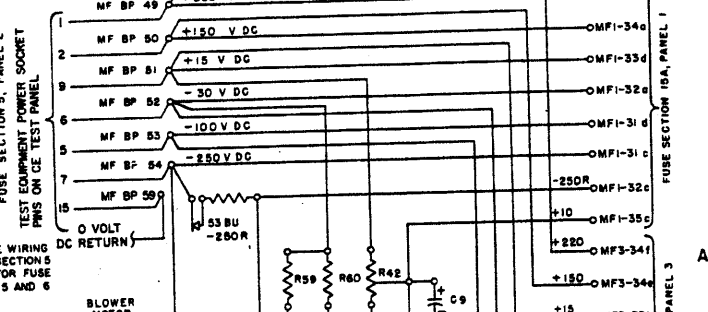
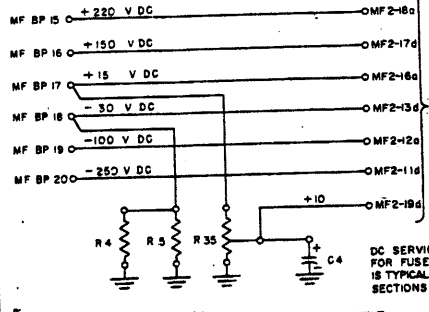
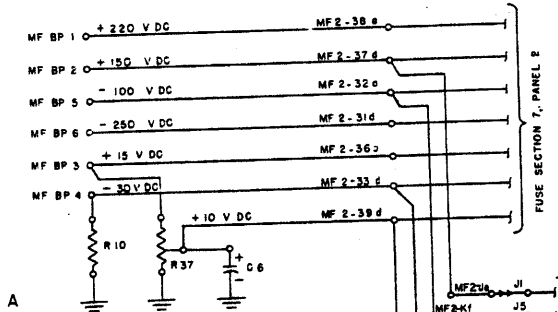
NOTE:

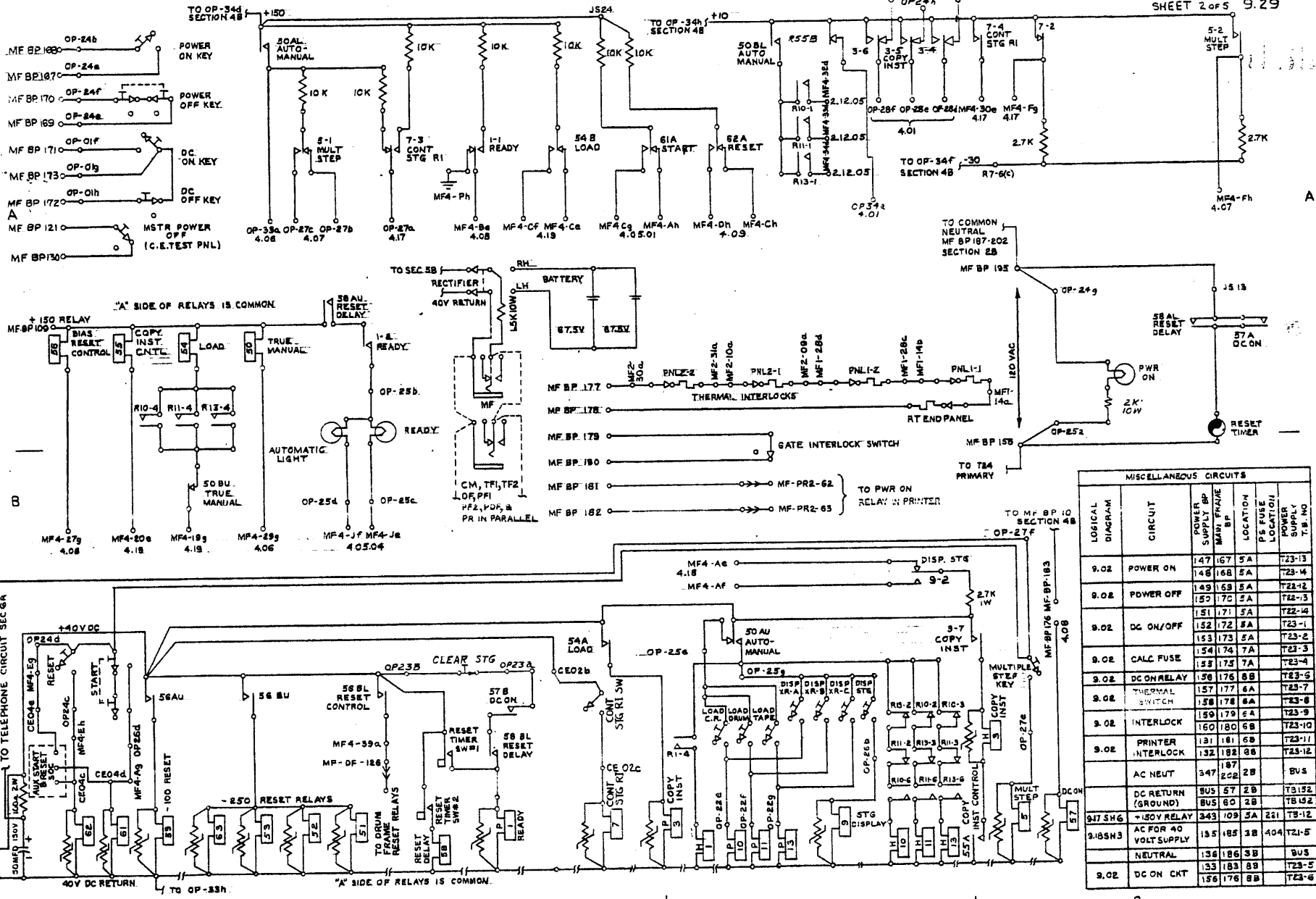
ALL FUSES ARE INDICATOR  
FUSETRON TYPE.  
FUSE ALARM CIRCUIT IS  
SHOWN ON 9.20

9.27

AC OUTLET CIRCUIT







MISCELLANEOUS CIRCUITS

| LOGICAL DIAGRAM | CIRCUIT               | POWER SUPPLY BP | MARK FRAME BP | LOCATION | DE FILE LOCATION | POWER SUPPLY | T.B. NO |
|-----------------|-----------------------|-----------------|---------------|----------|------------------|--------------|---------|
| 9.02            | POWER ON              | 147             | 167           | 5A       |                  |              | T23-13  |
|                 |                       | 148             | 168           | 5A       |                  |              | T23-4   |
| 9.02            | POWER OFF             | 149             | 169           | 5A       |                  |              | T22-2   |
|                 |                       | 150             | 170           | 5A       |                  |              | T22-3   |
| 9.02            | DC ON/OFF             | 152             | 172           | 5A       |                  |              | T23-1   |
|                 |                       | 153             | 173           | 5A       |                  |              | T23-2   |
| 9.02            | CALC FUSE             | 154             | 174           | 7A       |                  |              | T23-3   |
| 9.02            | DC ON RELAY           | 158             | 176           | 8B       |                  |              | T23-6   |
| 9.02            | THERMAL SWITCH        | 157             | 177           | 6A       |                  |              | T23-7   |
|                 |                       | 158             | 178           | 6A       |                  |              | T23-8   |
| 9.02            | INTERLOCK             | 159             | 179           | 6A       |                  |              | T23-9   |
| 9.02            | INTERLOCK             | 160             | 180           | 6B       |                  |              | T23-10  |
| 9.02            | PRINTER INTERLOCK     | 131             | 181           | 6B       |                  |              | T23-11  |
|                 |                       | 132             | 182           | 6B       |                  |              | T23-12  |
|                 | AC NEUT               | 347             | 187           | 2B       |                  |              | BUS     |
|                 | DC RETURN (GROUND)    | 805             | 57            | 2B       |                  |              | T3152   |
|                 |                       | 805             | 60            | 2B       |                  |              | TB152   |
| 9.02            | 5A7 SH6 150V RELAY    | 343             | 109           | 3A       | 221              |              | TB-12   |
| 9.02            | AC FOR 40 VOLT SUPPLY | 135             | 185           | 3B       | 404              |              | T21-5   |
|                 | NEUTRAL               | 136             | 186           | 3B       |                  |              | BUS     |
| 9.02            | DC ON CNT             | 133             | 183           | 8B       |                  |              | T23-5   |
|                 |                       | 156             | 176           | 8B       |                  |              | T23-6   |

NOTE  
 PRINT TO ENG SPEC  
 895291

| SYN | DATE | CHANGE NO | BY | CHKD |
|-----|------|-----------|----|------|
|     |      |           |    |      |
|     |      |           |    |      |
|     |      |           |    |      |
|     |      |           |    |      |

| DETAIL | SCALE |
|--------|-------|
|        |       |
|        |       |
|        |       |
|        |       |

| APPROV | DATE | CHKD | DATE |
|--------|------|------|------|
|        |      |      |      |
|        |      |      |      |

| INTERNATIONAL BUSINESS MACHINES CORP. |       |       |      |
|---------------------------------------|-------|-------|------|
| NAME SYSTEM DIAGRAM                   |       |       |      |
| 9.29                                  |       |       |      |
| DESIGN                                | DATE  | MODEL | 704  |
| DETAIL                                | SCALE |       |      |
| CHECK                                 | DATE  | DRAW  | DATE |
| APPROV                                | DATE  | CHECK | DATE |
|                                       |       |       |      |
|                                       |       |       |      |
|                                       |       |       |      |
|                                       |       |       |      |

512741

512741





TERMINALS ON SERVICE PANEL  
OF MAIN FRAME

9:26  
SHEET 8 OF 8

|   |   |   |   |   |   |   |   |   |    |    |    |    |    |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

|    |    |    |    |
|----|----|----|----|
| 57 | 58 | 59 | 60 |
|----|----|----|----|

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

|    |    |    |    |    |    |    |    |    |    |    |     |     |     |
|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|
| 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 |
|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 | 144 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 159 | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 | 181 | 182 | 183 | 184 | 185 | 186 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

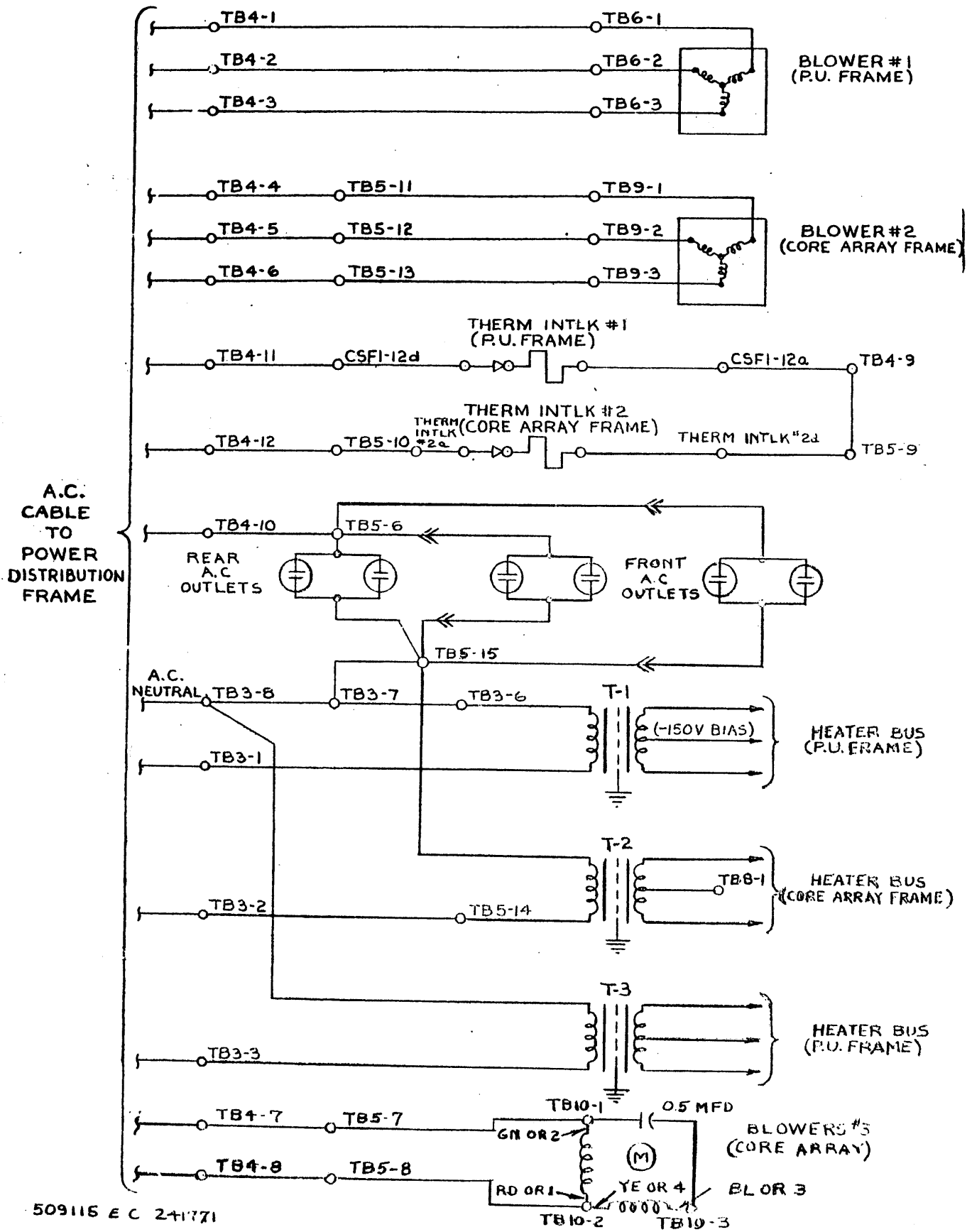
|     |     |
|-----|-----|
| 187 | 195 |
| 188 | 196 |
| 189 | 197 |
| 190 | 198 |
| 191 | 199 |
| 192 | 200 |
| 193 | 201 |
| 194 | 202 |





INTERNAL A.C. SERVICE WIRING

9.30.01



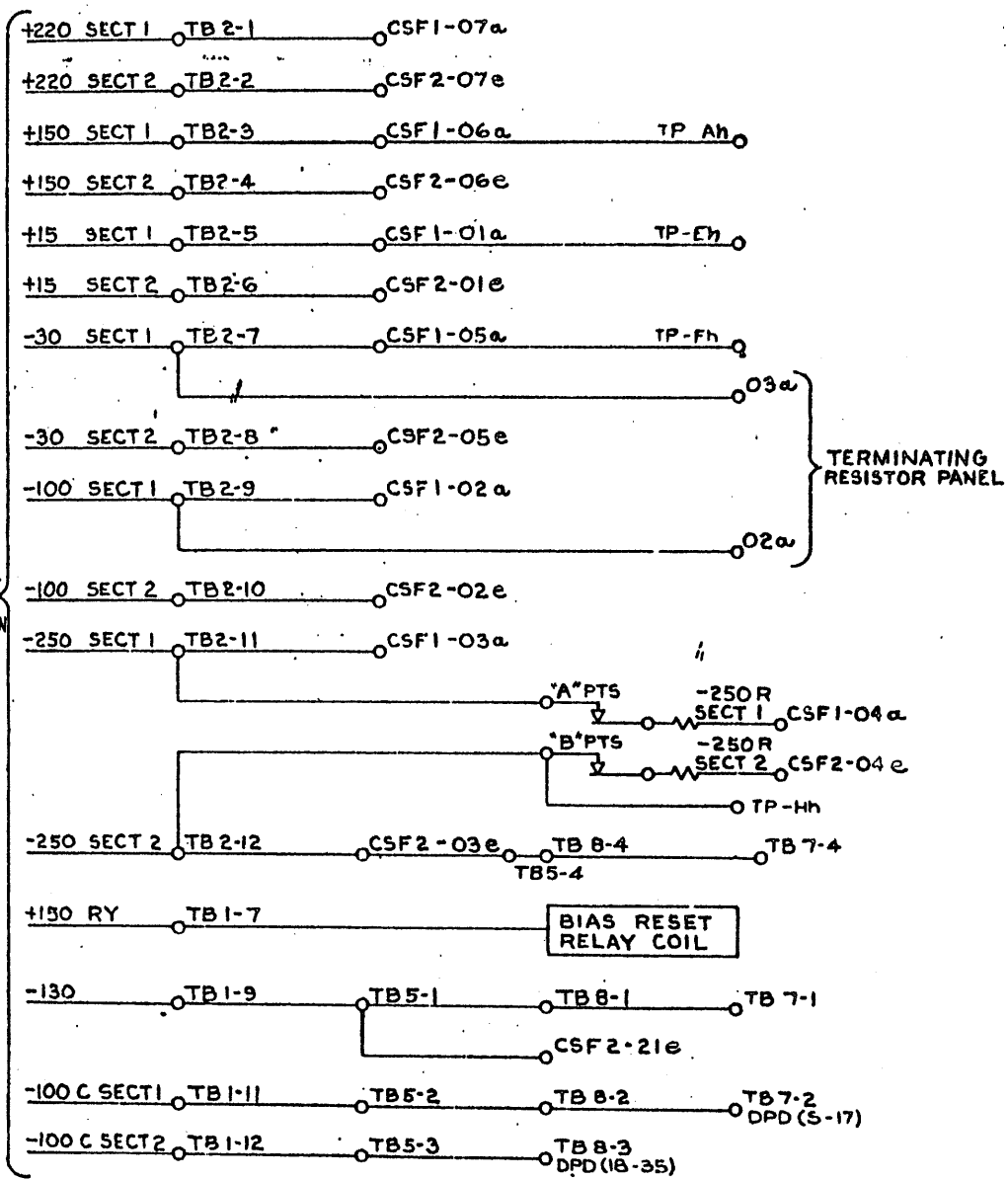
509116

INTERNAL D.C. SERVICE WIRING

9.30.02

STANDARD  
NONE  
REVISED  
503629  
CIT.  
509116  
NOTE X  
PRINT TO  
SHEET NO.

D.C. CABLE TO POWER DISTRIBUTION FRAME



NOTES

CSF1 IS SECT 1 FOR DC SERVICE VOLTAGES  
CSF2 IS SECT 2 FOR DC SERVICE VOLTAGES

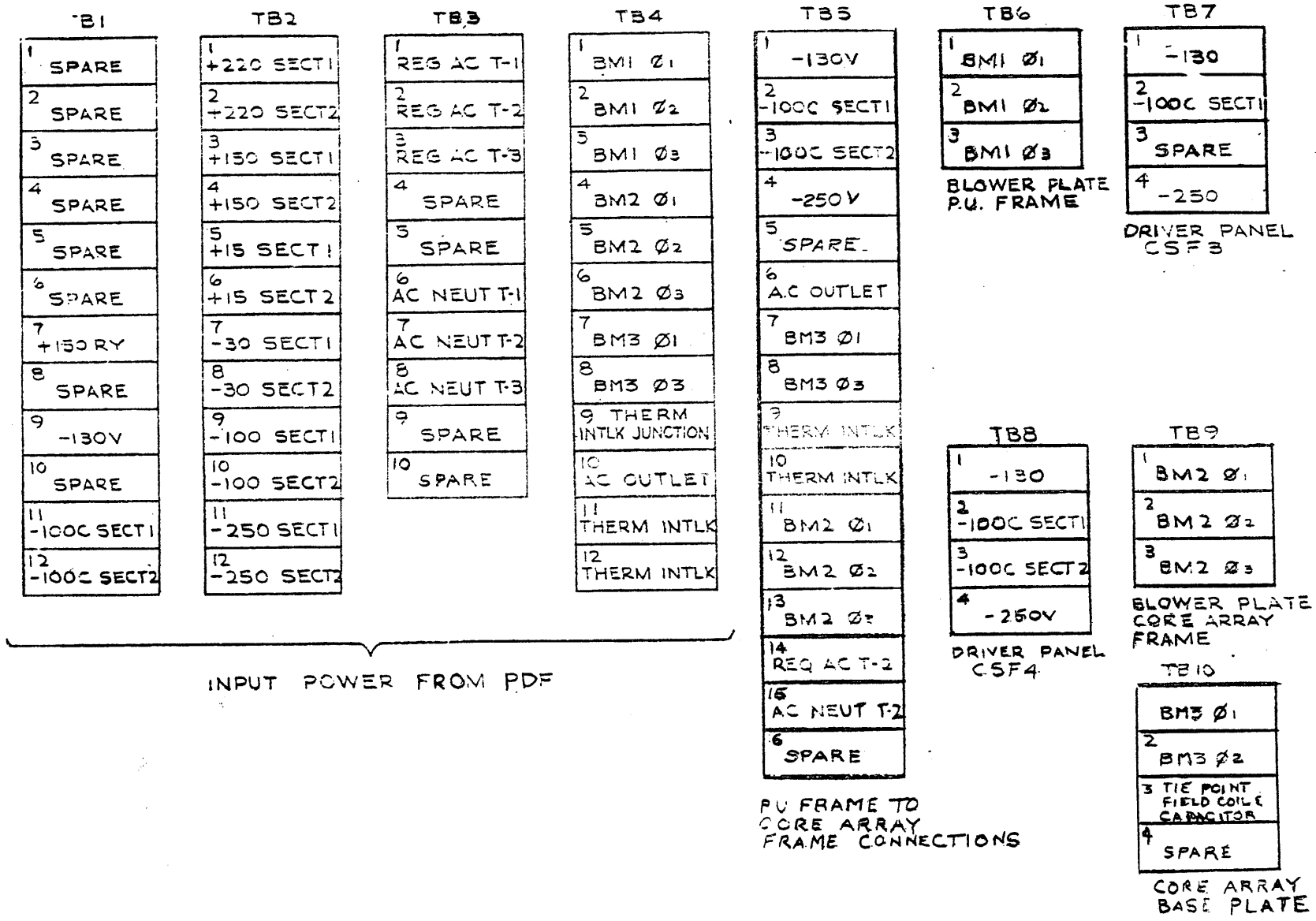
09116 E.C 241944

|                                       |  |        |     |         |          |            |      |            |      |            |
|---------------------------------------|--|--------|-----|---------|----------|------------|------|------------|------|------------|
| INTERNATIONAL BUSINESS MACHINES CORP. |  | DRAW   | RET | 3-8-55  | DATE     | CHANGE N°. | DATE | CHANGE NO. | DATE | CHANGE NO. |
| CORE STORAGE UNIT                     |  | CHECK  | RET | 5-23-55 | 6-9-55   | 241159     |      |            |      |            |
| MODEL 737                             |  | APPRO. | PKS | 6-6-55  | 10-29-55 | 241944     |      |            |      |            |
| SYSTEM DIAGRAM                        |  | REDRAW | JK  | 4-28-55 |          |            |      |            |      |            |
| 9.30.02                               |  | CHECK  | JK  | 4-28-55 |          |            |      |            |      |            |

509116

509117 241771

TERMINAL BOARD ASSIGNMENTS 9.30.03



512927

| DC SECTION | VOLTAGE | CSU - 1                  |                           |               | CSU - 2                   |               | LOGICAL DIAGRAM: 9.17 |
|------------|---------|--------------------------|---------------------------|---------------|---------------------------|---------------|-----------------------|
|            |         | CSU POWER DIST. TERMINAL | POWER DIST. UNIT TERMINAL | FUSE LOCATION | POWER DIST. UNIT TERMINAL | FUSE LOCATION |                       |
| 1          | + 220   | TB 2 - 1                 | T 13 - 1                  | F 41          | T 15 - 1                  | F 43          | SHEET 1               |
|            | + 150   | TB 2 - 3                 | T 13 - 2                  | F 121         | T 15 - 2                  | F 123         | SHEET 2               |
|            | + 15    | TB 2 - 5                 | T 13 - 3                  | F 201         | T 15 - 3                  | F 203         | SHEET 3               |
|            | - 30    | TB 2 - 7                 | T 13 - 4                  | F 281         | T 15 - 4                  | F 283         | SHEET 4               |
|            | - 100   | TB 2 - 9                 | T 13 - 5                  | F 361         | T 15 - 5                  | F 363         | SHEET 5               |
|            | - 250   | TB 2 - 11                | T 13 - 6                  | F 441         | T 15 - 6                  | F 443         | SHEET 6               |
|            | - 100 C | TB 1 - 11                | T 14 - 5                  | F 376         | T 16 - 5                  | F 378         | SHEET 5               |
| 2          | + 220   | TB 2 - 2                 | T 13 - 7                  | F 42          | T 15 - 7                  | F 44          | SHEET 1               |
|            | + 150   | TB 2 - 4                 | T 13 - 8                  | F 122         | T 15 - 8                  | F 124         | SHEET 2               |
|            | + 15    | TB 2 - 6                 | T 13 - 9                  | F 202         | T 15 - 9                  | F 204         | SHEET 3               |
|            | - 30    | TB 2 - 8                 | T 13 - 10                 | F 282         | T 15 - 10                 | F 284         | SHEET 4               |
|            | - 100   | TB 2 - 10                | T 13 - 11                 | F 362         | T 15 - 11                 | F 364         | SHEET 5               |
|            | - 250   | TB 2 - 12                | T 13 - 12                 | F 442         | T 15 - 12                 | F 444         | SHEET 6               |
|            | - 100 C | TB 1 - 12                | T 14 - 6                  | F 377         | T 16 - 6                  | F 379         | SHEET 5               |
| +150 RELAY | + 150   | TB 1 - 7                 | T 14 - 7                  | F 340         | T 16 - 7                  | F 300         | SHEETS 4, 5           |
|            | - 130   | TB 1 - 9                 | T 14 - 10                 | F 60          | T 16 - 10                 | F 100         | SHEETS 1, 2           |

THIS COPY REDUCED 39%

STANDARDS CODE ENOV 629605  
RELEASED FOR ASSEM.  
QTY.

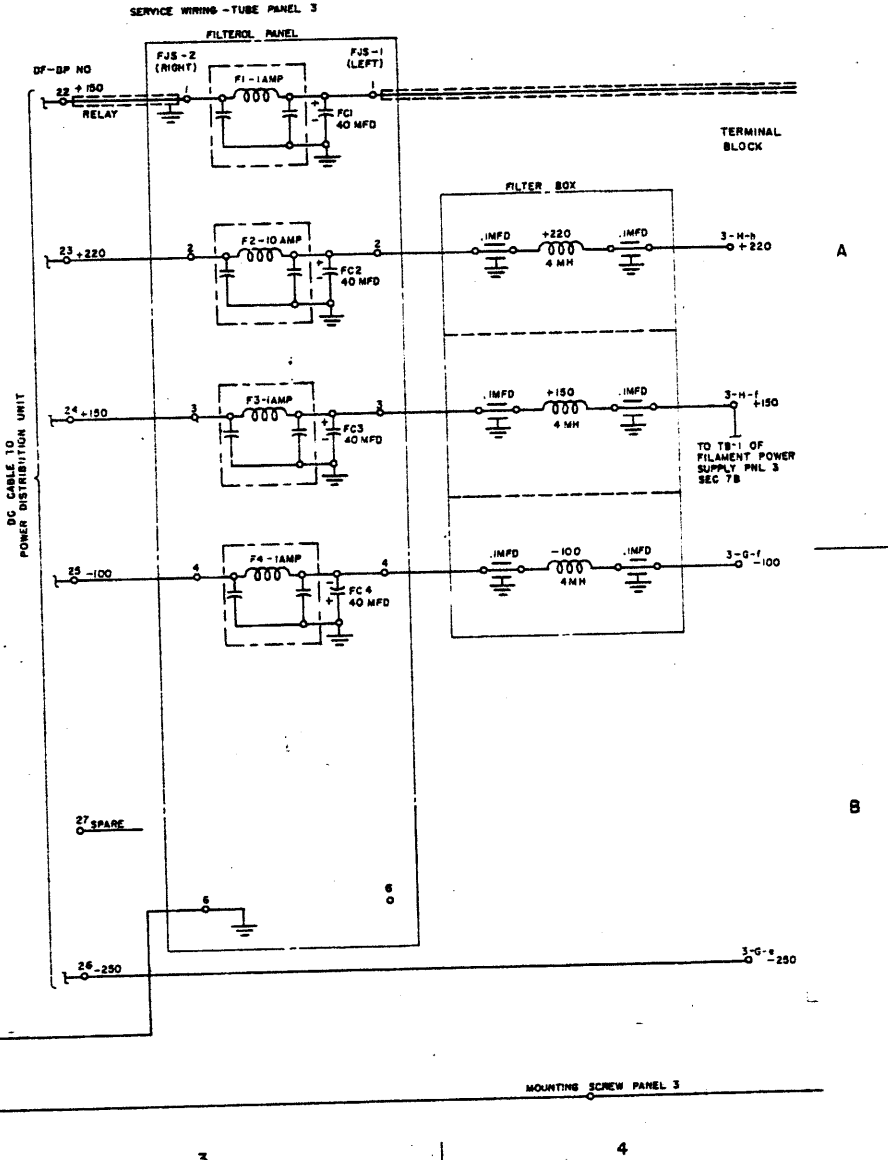
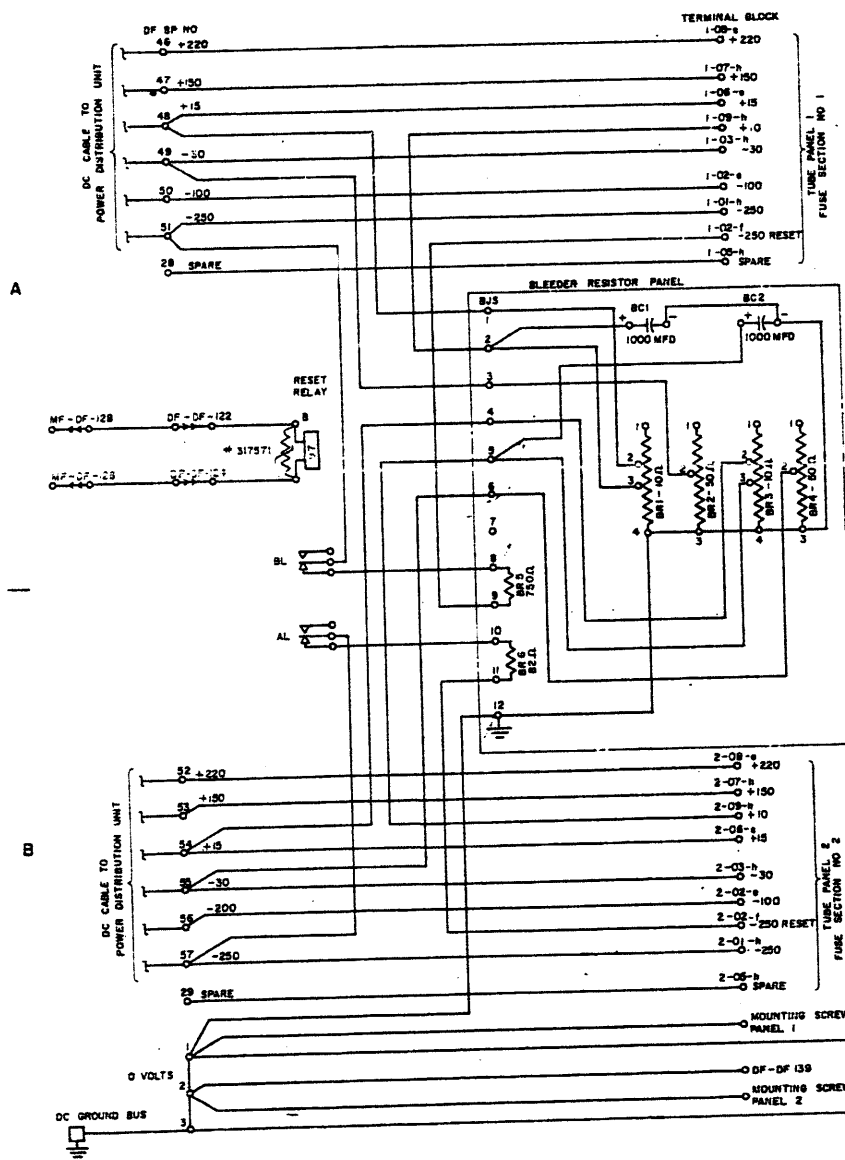
| A.C. CIRCUIT      | VOLTAGE     | CSU - 1                       |                        |               | CSU - 2                |               | LOGICAL DIAGRAM |
|-------------------|-------------|-------------------------------|------------------------|---------------|------------------------|---------------|-----------------|
|                   |             | C.S.U. POWER DIST. UNIT TERM. | POWER DIST. UNIT TERM. | FUSE LOCATION | POWER DIST. UNIT TERM. | FUSE LOCATION |                 |
| Transformer T 1   | 120 V - 1 φ | TB 3 - 1                      | T 31 - 12              | F 461         | T 33 - 12              | F 463         | SH. 6-9.18      |
|                   |             | TB 3 - 8                      |                        |               |                        |               |                 |
| Transformer T 2   | 120 V - 1 φ | TB 3 - 2                      | T 31 - 13              | F 462         | T 33 - 13              | F 464         | SH. 6-9.18      |
|                   |             | NEUTRAL                       |                        |               |                        |               |                 |
| Transformer T 3   | 120 V - 1 φ | TB 3 - 3                      | TB 141 - 5             | CB 211        | TB 141 - 6             | CB 211        | SH. 1 - 9.18    |
|                   |             | TB 3 - 8                      |                        |               |                        |               |                 |
| A.C. OUTLETS      | 120 V - 1 φ | TB 4 - 10                     | T 14 - 11              | CB 2811       | T 16 - 11              | CB 2811       | 9.28            |
|                   |             | NEUTRAL                       |                        |               |                        |               |                 |
| BLOWER MOTOR 1    | 1 φ         | TB 4 - 1                      | T 32 - 4               | F 37          | T 34 - 4               | F 36          | SH 1 - 9.19     |
|                   | 2 φ         | TB 4 - 2                      | T 32 - 5               | F 117         | T 34 - 5               | F 116         | SH. 2 - 9.19    |
|                   | 3 φ         | TB 4 - 3                      | T 32 - 6               | F 197         | T 34 - 6               | F 196         | SH. 3 - 9.19    |
| BLOWER MOTOR 2    | 1 φ         | TB 4 - 4                      | T 32 - 7               | F 77          | T 34 - 7               | F 76          | SH. 1 - 9.19    |
|                   | 2 φ         | TB 4 - 5                      | T 32 - 8               | F 157         | T 34 - 8               | F 156         | SH. 2 - 9.19    |
|                   | 3 φ         | TB 4 - 6                      | T 32 - 9               | F 237         | T 34 - 9               | F 236         | SH. 3 - 9.19    |
| BLOWER MOTOR 3    | 1 φ         | TB 4 - 7                      | T 32 - 13              | F 277         | T 34 - 13              | F 276         | SH. 4 - 9.19    |
|                   | 3 φ         | TB 4 - 8                      | T 32 - 14              | F 437         | T 34 - 14              | F 356         | SH. 5, 6, 9.19  |
| THERMAL INTERLOCK |             |                               |                        |               |                        |               |                 |
|                   |             | TB 4 - 11                     | T 32 - 1               |               | T 34 - 1               |               | 9.23            |
|                   |             | TB 4 - 12                     | T 14 - 12              |               | T 16 - 12              |               |                 |

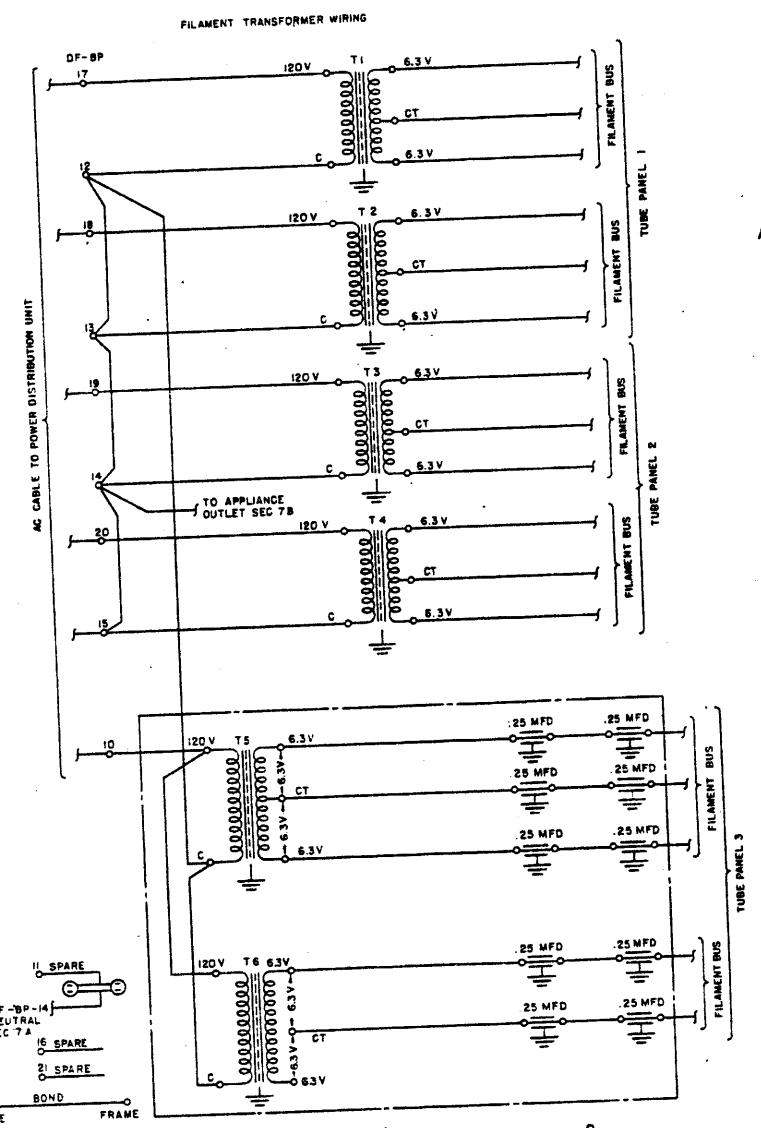
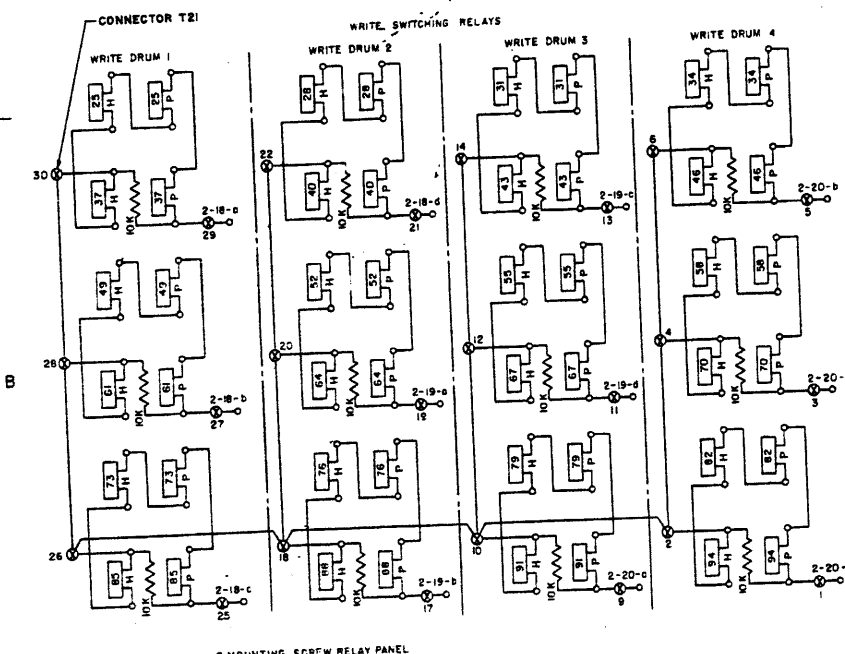
NOTE X PRINT TO ENG. SPEC. NO.

|  |           |         |         |            |      |            |
|--|-----------|---------|---------|------------|------|------------|
| INTERNATIONAL BUSINESS MACHINES CORP.              |           | DRAW    | DATE    | CHANGE NO. | DATE | CHANGE NO. |
| MACH. ELECTRONIC DATA PROCESSING MACHINE MODEL 704 | CHECK TFD | 9-19-56 | 9-24-56 | 243198     |      |            |
| NAME SYSTEM DIAGRAM 9.30.04                        | APPRO RET | 9-21-56 |         |            |      |            |
|  | REDRAW    |         |         |            |      |            |
|  | CHECK     |         |         |            |      |            |

G. B. CO. NO. 10789 1700

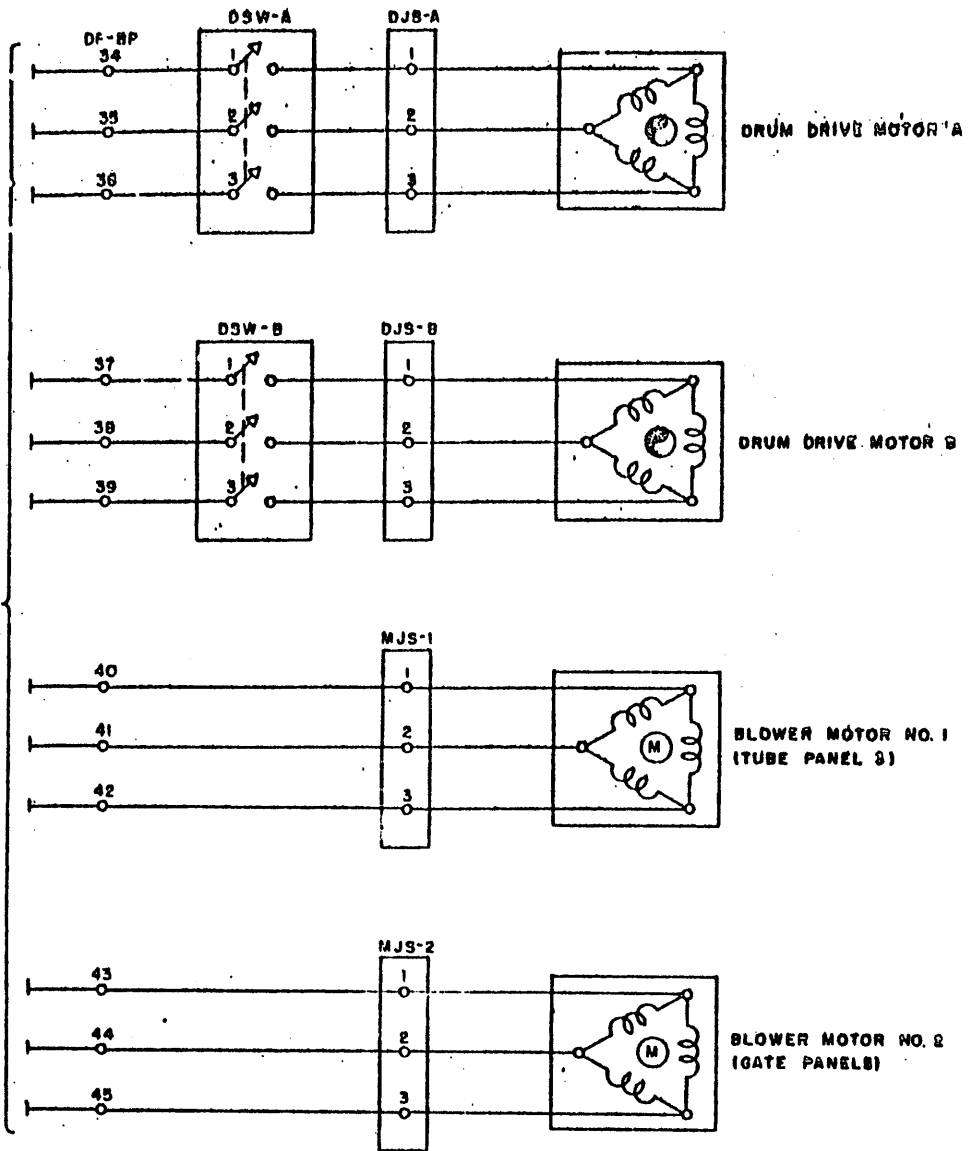
512927





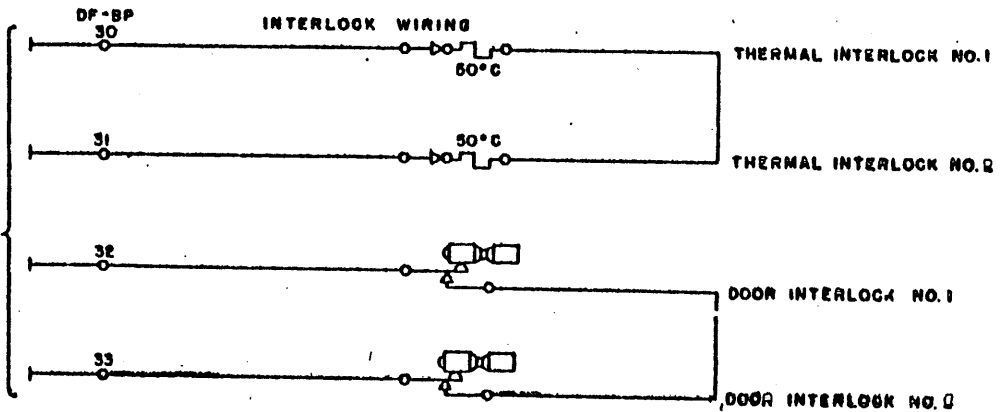
A

DC CABLE TO POWER DISTRIBUTION UNIT

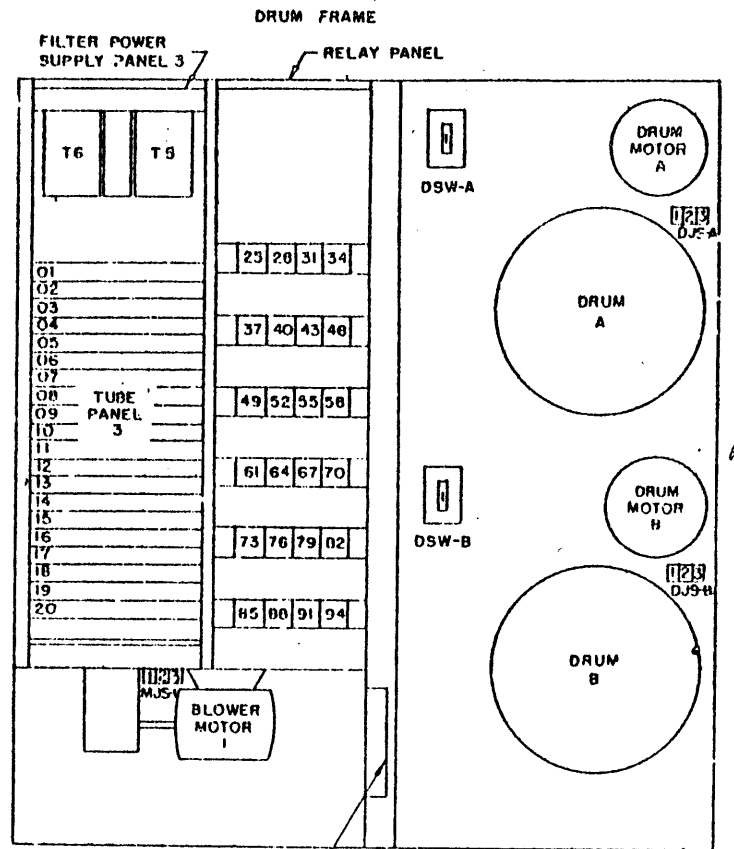
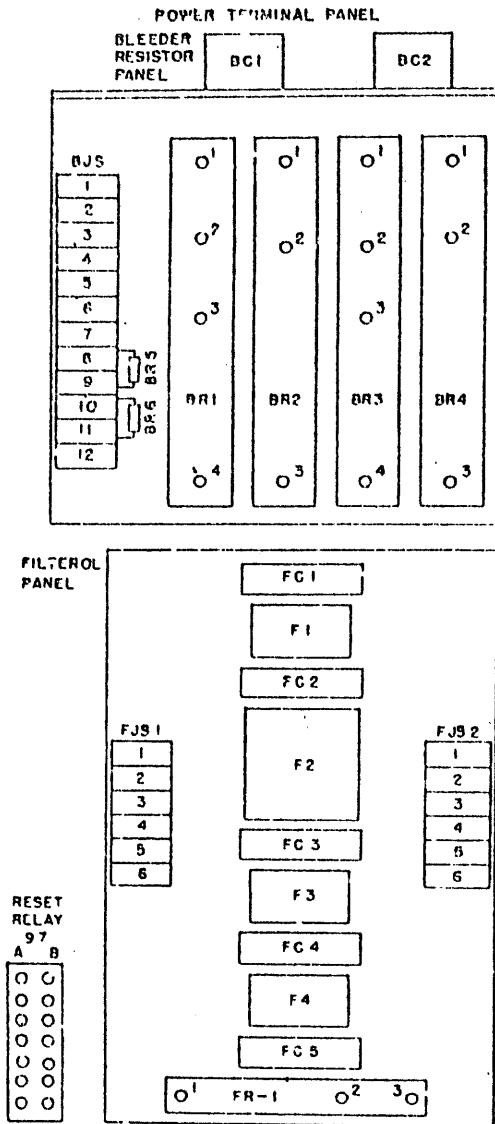


B

AC CABLE TO POWER DISTRIBUTION UNIT



LOCATION AND IDENTIFICATION OF COMPONENTS

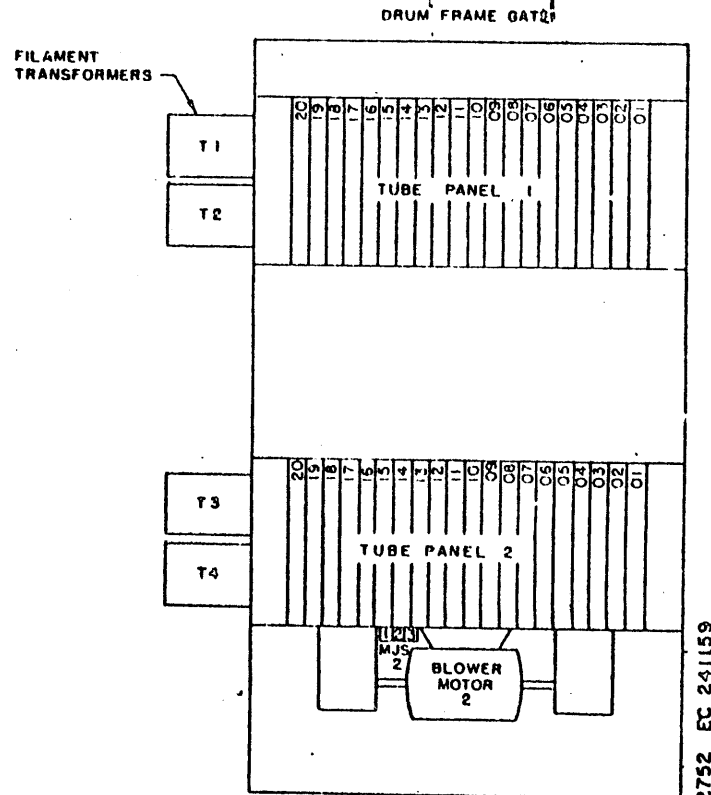


**BINDING POST TERMINAL NO**

|            |                  |         |
|------------|------------------|---------|
| 1 GROUND   | 22 +150 RLY      | 46 +220 |
| 2 GROUND   | 23 +220          | 47 +150 |
| 3 GROUND   | 24 +150          | 48 +15  |
| 4 } UNUSED | 25 -100          | 49 -30  |
| 5 } UNUSED | 26 -250          | 50 -100 |
| 6 } UNUSED | 27 SPARE         | 51 -250 |
| 7 } UNUSED | 28 SPARE         | 52 +220 |
| 8 } UNUSED | 29 SPARE         | 53 +150 |
| 9 } UNUSED | 30 THERMAL INTLK | 54 +15  |
|            | 31 DOOR INTLK    | 55 -30  |
|            | 32 DOOR INTLK    | 56 -100 |
|            | 33 DOOR INTLK    | 57 -250 |

**TUBE PANEL 1**

|               |                  |    |
|---------------|------------------|----|
| 10 120V FILT  | 34 DR MTR A φ1   | 58 |
| 11 120V-SPARE | 35 φ2            | 59 |
| 12 NEUTRAL    | 36 φ3            | 60 |
| 13 NEUTRAL    | 37 GR MTR D φ1   | 61 |
| 14 NEUTRAL    | 38 φ2            | 62 |
| 15 NEUTRAL    | 39 φ3            | 63 |
| 16 SPARE      | 40 BLWR MTR 1 φ1 | 64 |
| 17 120V FILT  | 41 φ2            | 65 |
| 18 120V FILT  | 42 φ3            | 66 |
| 19 120V FILT  | 43 BLWR MTR 2 φ1 | 67 |
| 20 120V FILT  | 44 φ2            | 68 |
| 21 SPARE      | 45 φ3            | 69 |





WIRE CONTACT RELAYS

| RELAY NUMBER | WIRING DIAGRAM | LOGICAL DIAGRAM | CONTACT POINTS LOGICAL DIAGRAM LOCATION |      |      |      |      |      |      |      |      |      |      |      | NAME | SIZE         | TYPE | PART NO |
|--------------|----------------|-----------------|---|------|------|------|------|------|------|------|------|------|------|------|------|--------------|------|---------|
|              |                |                 | 1                                       | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   |      |              |      |         |
|              |                | 7.06            | 7.03                                    | 7.03 | 7.03 | 7.03 | 7.03 | 7.03 | 7.03 | 7.03 | 7.03 | 7.03 | 7.03 | 7.03 |      |              |      |         |
| 25           | 5A             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | WRITE DRUM 1 | 12   | 196187  |
| 28           | 5A             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 2            | 12   |         |
| 31           | 6A             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 3            | 12   |         |
| 34           | 6A             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 4            | 12   |         |
| 37           | 5B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 1            | 12   |         |
| 40           | 5B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 2            | 12   |         |
| 43           | 6B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 3            | 12   |         |
| 46           | 6B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 4            | 12   |         |
| 49           | 5B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 1            | 12   |         |
| 52           | 5B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 2            | 12   |         |
| 53           | 6B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 3            | 12   |         |
| 58           | 6B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 4            | 12   |         |
| 61           | 5B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 1            | 12   |         |
| 64           | 5B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 2            | 12   |         |
| 67           | 6B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 3            | 12   |         |
| 70           | 6B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 4            | 12   |         |
| 73           | 5B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 1            | 12   |         |
| 76           | 5B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 2            | 12   |         |
| 79           | 6B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 3            | 12   |         |
| 82           | 6B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 4            | 12   |         |
| 85           | 5B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 1            | 12   |         |
| 88           | 5B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 2            | 12   |         |
| 91           | 6B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 3            | 12   |         |
| 94           | 6B             |                 |   |      |      |      |      |      |      |      |      |      |      |      |      | 4            | 12   |         |

51275 EC 241159

WAS 704-3540

STANDARDS NONE  
 95, 94820 FOR ASSEMBLY QTY. 303 649

512754

|         |          |
|---------|----------|
| DATE    | REVISION |
| 8-10-55 | 241159   |
| 9-24-56 | 243178   |
|         |          |
|         |          |

512754

NOTE: PRINT TO ENG SPEC 895291

SHEET 6 OF 6 9.32

| DC SECTION | VOLTAGE | DRUM FRAME BINDING POST | DRUM FRAME BINDING UNIT | AUG. 57                  |                                     | OCT. 57                  |               | LOGICAL DIAGRAM |
|------------|---------|-------------------------|-------------------------|--------------------------|-------------------------------------|--------------------------|---------------|-----------------|
|            |         |                         |                         | POWER DIST UNIT TERMINAL | FUSE LOCATION                       | POWER DIST UNIT TERMINAL | FUSE LOCATION |                 |
| 1          | +220    | 46                      | 17                      | 58-1                     | F 16                                | 57-1                     | F 40          | SMT 1           |
|            | +150    | 47                      | 18                      | 53-2                     | F 96                                | 57-2                     | F 125         | SMT 2           |
|            | +15     | 48                      | 19                      | 53-3                     | F 178                               | 57-3                     | F 205         | SMT 3           |
|            | -30     | 49                      | 20                      | 53-4                     | F 296                               | 57-4                     | F 285         | SMT 4           |
|            | -100    | 50                      | 21                      | 53-5                     | F 336                               | 57-5                     | F 360         | SMT 5           |
|            | -250    | 51                      | 22                      | 53-6                     | F 418                               | 57-6                     | F 445         | SMT 6           |
|            | +220    | 52                      | 10                      | 53-7                     | F 17                                | 57-7                     | F 48          | SMT 7           |
|            | +150    | 53                      | 11                      | 53-8                     | F 97                                | 57-8                     | F 126         | SMT 8           |
|            | +15     | 54                      | 12                      | 53-9                     | F 177                               | 57-9                     | F 206         | SMT 9           |
|            | -30     | 55                      | 13                      | 53-10                    | F 287                               | 57-10                    | F 286         | SMT 4           |
| 2          | -100    | 56                      | 20                      | 53-11                    | F 337                               | 57-11                    | F 366         | SMT 5           |
|            | -250    | 57                      | 21                      | 53-12                    | F 417                               | 57-12                    | F 446         | SMT 6           |
|            | +220    | 23                      | 10                      | 54-1                     | F 18                                | 58-1                     | F 47          | SMT 1           |
|            | +150    | 24                      | 11                      | 54-2                     | F 98                                | 58-2                     | F 127         | SMT 2           |
|            | -100    | 25                      | 12                      | 54-3                     | F 338                               | 58-3                     | F 367         | SMT 5           |
| 3          | +220    | 26                      | 13                      | 54-4                     | F 418                               | 58-4                     | F 447         | SMT 6           |
|            | +150    | 27                      | 14                      | 54-5                     | F 418                               | 58-5                     | F 447         | SMT 6           |
|            | -100    | 28                      | 15                      | 54-6                     | F 418                               | 58-6                     | F 447         | SMT 6           |
| +100 RELAY | +150    | 22                      | 16                      | 54-12                    | F 220                               | 58-12                    | F 360         | SMT 6           |
| DC RETURN  | 0       | 3                       | 17                      | ZERO                     | VOLT BUS ON POWER DISTRIBUTION UNIT |                          |               |                 |

| AG CIRCUIT             | VOLTAGE | DRUM FRAME BINDING UNIT | AUG. 57                  |               | OCT. 57                  |               | LOGICAL DIAGRAM |       |      |
|------------------------|---------|-------------------------|--------------------------|---------------|--------------------------|---------------|-----------------|-------|------|
|                        |         |                         | POWER DIST UNIT TERMINAL | FUSE LOCATION | POWER DIST UNIT TERMINAL | FUSE LOCATION |                 |       |      |
| TRANSFORMER T1         | 120V-1# | 12(N)                   | 17                       | 58-1          | F 27                     | 515-1         | F 65            | SMT 1 | 9.18 |
| TRANSFORMER T2         | 120V-1# | 13(N)                   | 18                       | 59-2          | F 107                    | 515-2         | F 145           | SMT 2 | 9.18 |
| TRANSFORMER T3         | 120V-1# | 14(N)                   | 19                       | 59-3          | F 187                    | 515-3         | F 225           | SMT 3 | 9.18 |
| TRANSFORMER T4         | 120V-1# | 15(N)                   | 20                       | 50-1          | F 287                    | 516-1         | F 305           | SMT 4 | 9.18 |
| TRANSFORMER T5 T6      | 120V-1# | 20(N)                   | 10                       | 510-2         | F 347                    | 516-2         | F 385           | SMT 5 | 9.18 |
| DRUM - DRIVE MOTOR - A | 208V-2# | 1#                      | 34                       | 510-4         | F 272                    | 516-4         | F 272           | SMT 4 | 9.19 |
| DRUM - DRIVE MOTOR - B | 208V-2# | 3#                      | 35                       | 510-5         | F 382                    | 516-5         | F 382           | SMT 5 | 9.19 |
| DRUM - DRIVE MOTOR - 8 | 208V-2# | 1#                      | 37                       | 510-7         | F 312                    | 516-7         | F 315           | SMT 4 | 9.19 |
| DRUM - DRIVE MOTOR - 8 | 208V-2# | 3#                      | 38                       | 510-8         | F 392                    | 516-8         | F 395           | SMT 5 | 9.19 |
| DRUM - DRIVE MOTOR - 8 | 208V-2# | 3#                      | 39                       | 510-9         | F 472                    | 516-9         | F 475           | SMT 6 | 9.19 |
| BLOWER MOTOR 1         | 208V-2# | 1#                      | 40                       | 59-4          | F 32                     | 516-4         | F 35            | SMT 1 | 9.19 |
| BLOWER MOTOR 1         | 208V-2# | 4#                      | 41                       | 59-5          | F 112                    | 516-5         | F 115           | SMT 2 | 9.19 |
| BLOWER MOTOR 2         | 208V-2# | 1#                      | 42                       | 59-6          | F 192                    | 516-6         | F 195           | SMT 3 | 9.19 |
| BLOWER MOTOR 2         | 208V-2# | 4#                      | 43                       | 59-7          | F 72                     | 516-7         | F 75            | SMT 1 | 9.19 |
| BLOWER MOTOR 2         | 208V-2# | 3#                      | 44                       | 59-8          | F 152                    | 516-8         | F 155           | SMT 2 | 9.19 |
| BLOWER MOTOR 2         | 208V-2# | 3#                      | 45                       | 59-9          | F 232                    | 516-9         | F 235           | SMT 3 | 9.19 |
| THERMAL INTERLOCK      |         | 30                      | 510-12                   |               |                          | 516-12        |                 |       | 9.23 |
|                        |         | 31                      | 510-13                   |               |                          | 516-13        |                 |       | 9.23 |

NOTE: N INDICATES NEUTRAL IN 208 V 3#4 WIRE SYSTEM

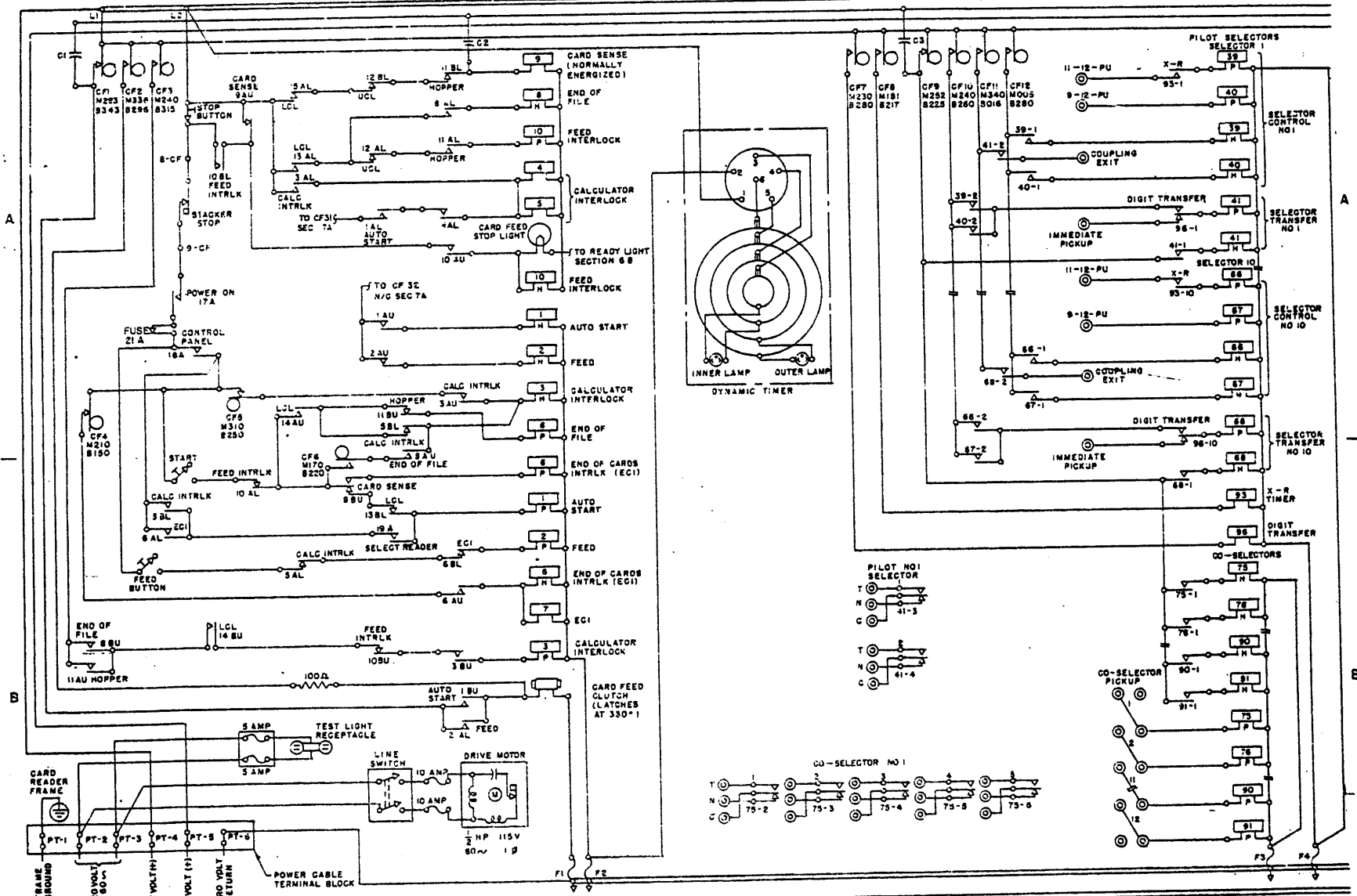
512754 EC 243178

|                        |                                  |                  |        |                                       |
|------------------------|----------------------------------|------------------|--------|---------------------------------------|
| MATERIAL SPECIFICATION | TOLERANCE UNLESS OTHERWISE NOTED | ALIGNMENT WITHIN | NOTE 1 | INTERNATIONAL BUSINESS MACHINES CORP. |
| CASE DEPTH             | CONCENTRIC WITHIN                | FLAT WITHIN      | NOTE 2 | MACH ELECTRONIC ANALYTICAL            |
| HARDNESS               | PARALLEL WITHIN                  | STRAIGHT WITHIN  | NOTE 3 | CONTROL UNIT MODEL 704                |
| SURFACE FINISH         | CORNERS                          | SQUARE WITHIN    | NOTE 4 | TITLE SYSTEM DIAGRAM                  |
|                        | INSIDE                           |                  | NOTE 5 | SCALE NONE                            |
|                        |                                  |                  | NOTE 6 | DRAP JLC 6-24-54                      |
|                        |                                  |                  | NOTE 7 | CHECK TRIC EJS 7-6-54                 |
|                        |                                  |                  | NOTE 8 | PNS 6-1-55                            |
|                        |                                  |                  | NOTE 9 | CHECK WAL 8-2-55                      |

512754

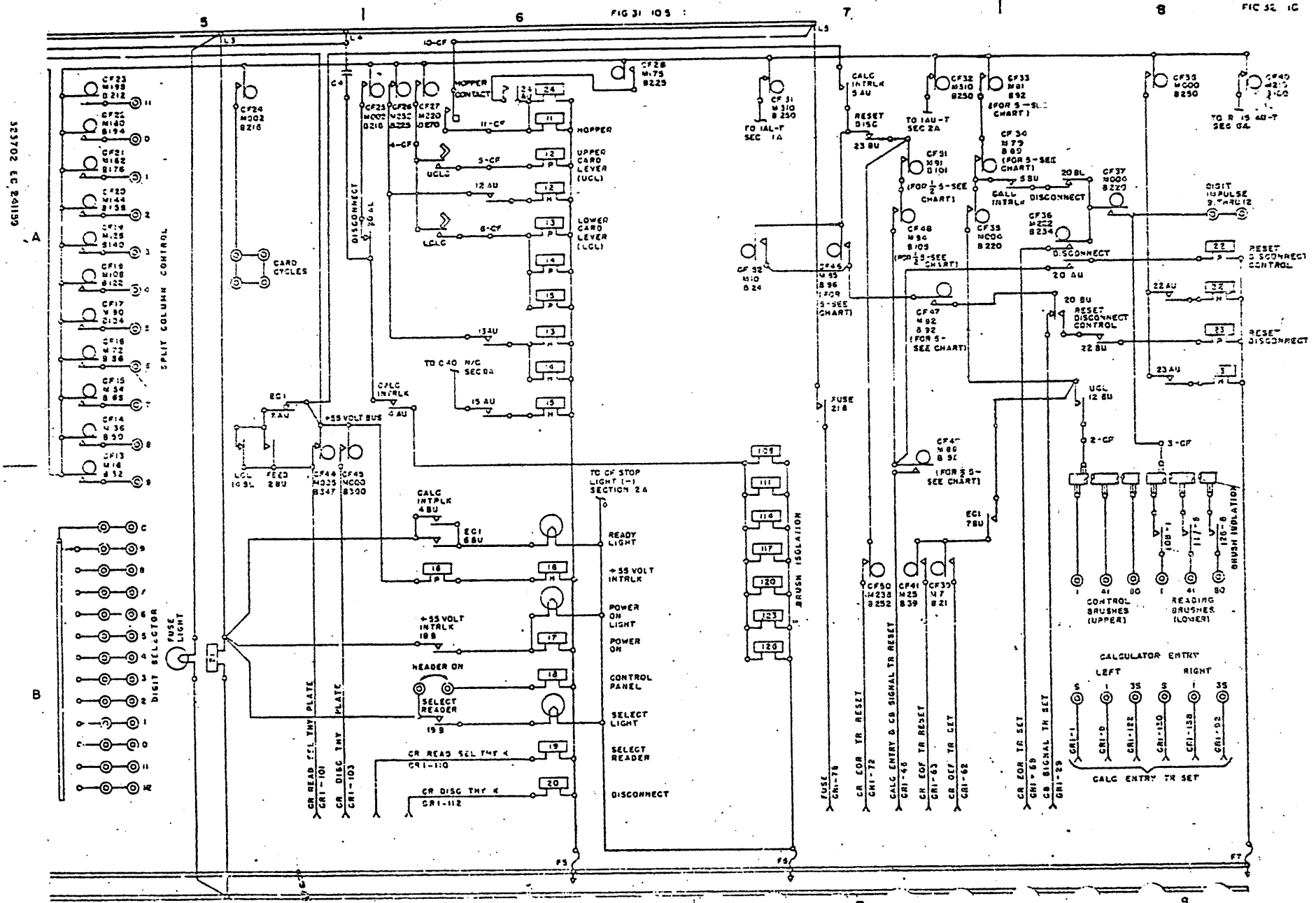
FIG 29 10.3

FIG 30 10.8



323702 EC 241644

FIG 31 103



323702 EC 241139

A

B

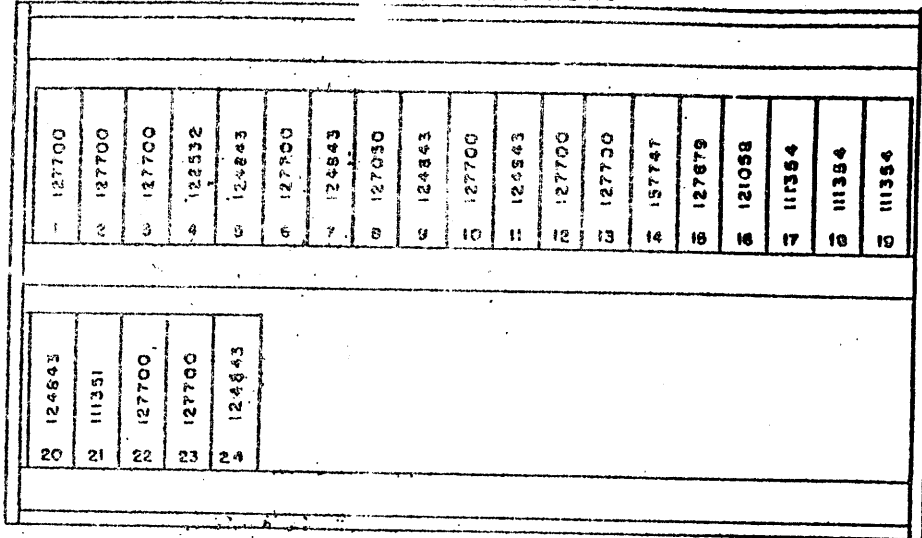
DOD RELAYS

| RELAY NO | COILS |    |    | CONTACT POINTS |    |    |    |    |     |    |    | NAME | PART NO                   | TYPE   |   |
|----------|-------|----|----|----------------|----|----|----|----|-----|----|----|------|---------------------------|--------|---|
|          | PU    | PL | H  | A              | AU | AC | AL | AB | BU  | BC | BL |      |                           |        |   |
| 1        | 2B    |    | 2A |                | 2A |    | 2A |    | 2B  |    |    |      | AUTO START                | 127700 | D |
| 2        | 2B    |    | 2A |                | 2A |    | 2B |    | 5B  |    |    |      | FEED                      | 127700 | D |
| 3        | 2B    |    | 2A |                | 2A |    | 1A |    | 2B  |    | 1B |      | CALCULATOR INTERLOCK      | 127700 | D |
| 4        | 2A    |    |    |                | 6A |    | 2A |    | 6B  |    |    |      | CALCULATOR INTERLOCK      | 122532 | S |
| 5        | 2A    |    |    |                | 7A |    | 1B |    | 8A  |    | 2A |      | CALCULATOR INTERLOCK      | 124843 | S |
| 6        | 2B    |    | 2B |                | 2B |    | 1B |    | 6B  |    | 2B |      | END OF CARDS INTERLOCK    | 127700 | D |
| 7        | 2B    |    |    |                | 5A |    |    |    | 7B  |    |    |      | END OF CARDS INTERLOCK    | 124843 | S |
| 8        | 2A    |    | 2A |                | 2B |    | 2A |    | 11B |    |    |      | END OF FILE               | 127050 | D |
| 9        | 2A    |    |    |                | 1A |    |    |    | 2B  |    |    |      | CARD SENSE                | 124843 | S |
| 10       | 2A    |    | 2A |                | 2A |    | 1B |    | 2B  |    | 1A |      | FEED INTERLOCK            | 127700 | D |
| 11       | 6A    |    |    |                | 1B |    | 2A |    | 2A  |    | 2A |      | HOPPER                    | 124843 | S |
| 12       | 6A    |    | 6A |                | 6A |    | 2A |    | 8A  |    | 2A |      | UPPER CARD LEVER          | 127700 | D |
| 13       | 6A    |    | 6A |                | 6A |    | 1A |    |     |    | 2B |      | LOWER CARD LEVER          | 127700 | D |
| 14       | 6A    |    | 6A |                | 6A |    | 1A |    | 1B  |    | 5B |      | LOWER CARD LEVER          | 157747 | D |
| 15       | 6A    |    | 6A |                | 6A |    | 1A |    |     |    |    |      | LOWER CARD LEVER          | 127679 | D |
| 16       | 6B    |    | 6B |                |    |    |    |    | 6B  |    |    |      | 55 VOLT SUPPLY INTERLOCK  | 121058 | D |
| 17       | 6B    |    |    |                | 1A |    |    |    |     |    |    |      | POWER ON                  | 111354 | S |
| 18       | 6B    |    |    |                | 1A |    |    |    |     |    |    |      | CONTROL PANEL             | 111354 | S |
| 19       | 6B    |    |    |                | 2B |    |    |    | 6B  |    |    |      | SELECT READER             | 111354 | S |
| 20       | 6B    |    |    |                |    |    | 8A |    | 5A  |    |    |      | DISCONNECT                | 124843 | S |
| 21       | 5B    |    |    |                | 1A |    |    |    | 7A  |    | 8A |      | FUSE                      | 111351 | S |
| 22       | 8A    |    | 8A |                | 8A |    |    |    | 8A  |    |    |      | RESET DISCONNECT CONTROL  | 127700 | D |
| 23       | 8A    |    | 8A |                | 8A |    |    |    | 7A  |    |    |      | RESET DISCONNECT          | 127700 | D |
| 24       | 6A    |    |    |                | 6A |    |    |    |     |    |    |      | HOPPER CONTACT RELAY HOLD | 124843 | S |

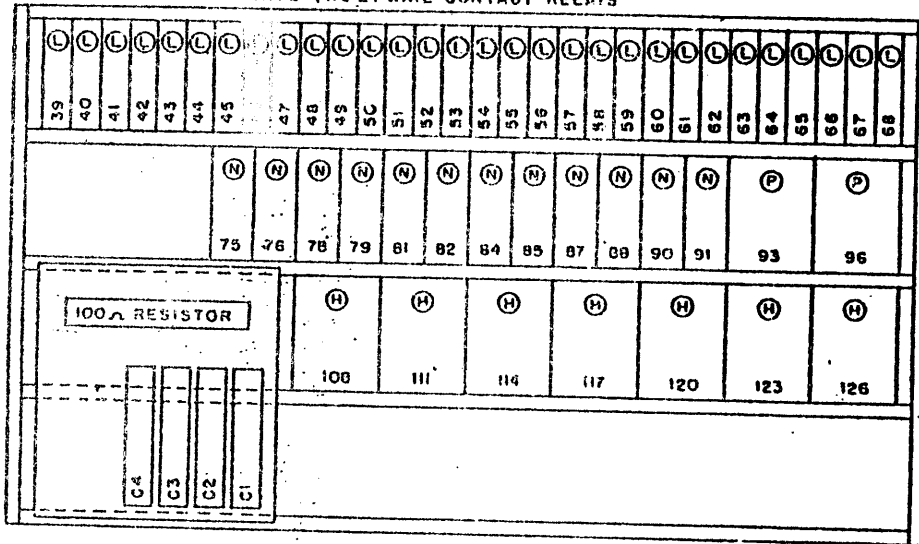


# RELAY GATES

## LEFT GATE (NO 1) DUG RELAYS



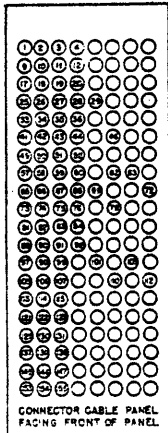
## REAR GATE (NO 2) WIRE CONTACT RELAYS



HINGE END

## WIRE CONTACT RELAYS

| CODE | SIZE   | COILS | COIL NO                    | ASSEM NO | NAME                 |
|------|--------|-------|----------------------------|----------|----------------------|
| (A)  | FOUR   | ONE   | 198881                     | 196206   | STANDARD             |
| (B)  | FOUR   | TWO   | 198884                     | 196207   | STANDARD             |
| (C)  | FOUR   | TWO   | 198887                     | 196208   | HIGH RESISTANCE HOLD |
| (D)  | FOUR   | THREE | 196259<br>196260<br>196693 | 196596   | HIGH SPEED PICKUP    |
| (F)  | SIX    | ONE   | 198882                     | 196193   | STANDARD             |
| (G)  | SIX    | TWO   | 198885                     | 196197   | STANDARD             |
| (H)  | TWELVE | ONE   | 150282                     | 196186   | STANDARD             |
| (J)  | TWELVE | TWO   | 198887                     | 196107   | STANDARD             |
| (K)  | FOUR   | TWO   | 228881                     | 104753   | HIGH SPEED PICKUP    |
| (M)  | SIX    | ONE   | 107359                     | 107358   | HIGH SPEED PICKUP    |
| (N)  | SIX    | TWO   | 107566                     | 107560   | HIGH SPEED PICKUP    |
| (P)  | TWELVE | ONE   | 107537                     | 107556   | HIGH SPEED PICKUP    |
| (Q)  | TWELVE | TWO   | 100386                     | 108380   | HIGH SPEED PICKUP    |



CONNECTOR CABLE PANEL  
FACING FRONT OF PANEL

FIG 36 10.5

| DESCRIPTION      | LOCATION |
|------------------|----------|
| CARD BRUSH       | 6B       |
| HOPPER CONTACT   | 6A       |
| UPPER CARD LEVER | 6A       |
| LOWER CARD LEVER | 6A       |

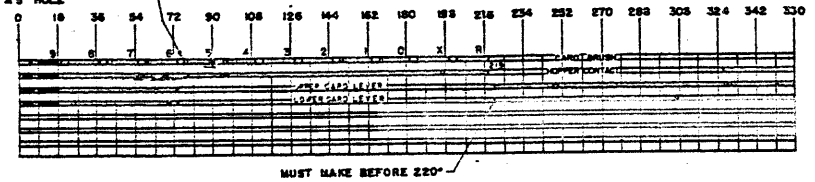
CARD FEED (CF) CAMS

| NO | LOC | CR | TIME  | TOL  | DUR-  | CONTACT | NAME                         | PART NO |
|----|-----|----|-------|------|-------|---------|------------------------------|---------|
|    |     | B  |       | DES  | ATION | AIR GAP |                              |         |
| 1  | 7A  | M  | 125   | ±1   | 350   | O12-O18 | CF CLUTCH MAGNET PICK        | 182030  |
| 2  | 7A  | B  | 126   | ±1   | 320   | O12-O18 | CF CLUTCH MAGNET HOLD        | 323758  |
| 3  | 7A  | M  | 1240  | ±2   | 75    | O12-O18 | CALCULATOR INTRLK HOLD       | 182075  |
| 4  | 7A  | M  | 210   | ±2   | 300   | O12-O18 | END OF CARDS INTRLK HOLD     | 182300  |
| 5  | 7A  | B  | 250   | ±2   | 300   | O12-O18 | CALCULATOR INTRLK PICK       | 182325  |
| 6  | 7B  | M  | 170   | ±2   | 30    | O12-O18 | END OF CARDS INTRLK PICK     | 182250  |
| 7  | 3A  | M  | 230   | ±2   | 30    | O12-O18 | DIGIT TRANSFER               | 182050  |
| 8  | 3A  | M  | 181   | ±1   | 36    | O12-O18 | Y-P FILTER                   | 182050  |
| 9  | 3A  | B  | 232   | ±1   | 32    | O12-O18 | PICK SELECTOR                | 182050  |
| 10 | 3A  | B  | 230   | ±1   | 30    | O12-O18 | PICK SELECTOR                | 182050  |
| 11 | 3A  | B  | 240   | ±1   | 36    | O12-O18 | DOUBLE NO. 27                | 182050  |
| 12 | 4A  | M  | 0     | ±2   | 273   | O12-O18 | PILOT SEL CONTROL HOLD       | 182275  |
| 13 | 5A  | M  | 18    | ±1/2 | 14    | O12-O18 | SPLIT COL HALF AFTER 9       | 182014  |
| 14 | 5A  | M  | 36    | ±1/2 | 14    | O12-O18 | SPLIT COL HALF AFTER 8       | 182014  |
| 15 | 5A  | M  | 54    | ±1/2 | 14    | O12-O18 | SPLIT COL HALF AFTER 7       | 182014  |
| 16 | 5A  | M  | 72    | ±1/2 | 14    | O12-O18 | SPLIT COL HALF AFTER 6       | 182014  |
| 17 | 5A  | M  | 90    | ±1/2 | 14    | O12-O18 | SPLIT COL HALF AFTER 5       | 182014  |
| 18 | 5A  | M  | 108   | ±1/2 | 14    | O12-O18 | SPLIT COL HALF AFTER 4       | 182014  |
| 19 | 5A  | M  | 126   | ±1/2 | 14    | O12-O18 | SPLIT COL HALF AFTER 3       | 182014  |
| 20 | 5A  | M  | 144   | ±1/2 | 14    | O12-O18 | SPLIT COL HALF AFTER 2       | 182014  |
| 21 | 5A  | M  | 162   | ±1/2 | 14    | O12-O18 | SPLIT COL HALF AFTER 1       | 182014  |
| 22 | 5A  | M  | 180   | ±1/2 | 14    | O12-O18 | SPLIT COL HALF AFTER I       | 182014  |
| 23 | 5A  | M  | 198   | ±1/2 | 14    | O12-O18 | SPLIT COL HALF AFTER II      | 182014  |
| 24 | 5A  | B  | 216   | ±1   | 216   | O12-O18 | CARD CYCLES                  | 182216  |
| 25 | 6A  | B  | 218   | ±1/2 | 216   | O12-O18 | BRUSH ISOLATION              | 182216  |
| 26 | 6A  | B  | 225   | ±1   | 333   | O12-O18 | CARD LEVER HOLD              | 182333  |
| 27 | 6A  | M  | 220   | ±1   | 30    | O12-O18 | CARD LEVER PICK              | 182030  |
| 28 | 6A  | B  | 225   | ±1   | 30    | O12-O18 | HOPPER CONTACT RELAY HOLD    | 182030  |
| 29 |     |    |       |      |       |         |                              |         |
| 30 |     |    |       |      |       |         |                              |         |
| 31 | 7A  | B  | 250   | ±1   | 300   | O12-O18 | CALCULATOR INTRLK HOLD       | 182300  |
| 32 | 7A  | B  | 230   | ±1   | 300   | O12-O18 | AUTO START & FEED HOLD       | 182300  |
| 33 | 8A  | M  | 8EC   | ±1/2 | 8EC   | O12-O18 | MAIN C B IMPULSES            | 323765  |
| 34 | 8A  | B  | CHART | ±1/2 | CHART | O27-O33 | MAIN C B IMPULSES            | 323765  |
| 35 | 7A  | M  | 4     | ±1   | 216   | O12-O18 | UPPER READING CONTROL        | 182216  |
| 36 | 8A  | B  | 234   | ±1   | 12    | O12-O18 | END OF RECORD SET            | 182012  |
| 37 | 8A  | M  | 4     | ±1   | 216   | O12-O18 | LOWER READING CONTROL        | 182216  |
| 38 | 8A  | B  | 250   | ±1   | 250   | O12-O18 | RESET DISCONNECT HOLD        | 182250  |
| 39 | 7B  | B  | 21    | ±1   | 14    | O12-O18 | END OF FILE SET              | 182014  |
| 40 | 8A  | B  | 100   | ±1   | 250   | O12-O18 | LOWER CARD LEVER HOLD        | 182250  |
| 41 | 7B  | M  | 25    | ±1   | 14    | O12-O18 | END OF FILE RESET            | 182014  |
| 42 |     |    |       |      |       |         |                              |         |
| 43 |     |    |       |      |       |         |                              |         |
| 44 | 5B  | M  | 5     | ±1   | 342   | O12-O18 | SELECT READER THY HOLD       | 182342  |
| 45 | 5B  | B  | 300   | ±1   | 300   | O12-O18 | DISCONNECT THY HOLD          | 182300  |
| 46 | 7A  | M  | 8EC   | ±1/2 | 8EC   | O12-O18 | CB SIGNAL TGR SET            | 182369  |
| 47 | 7A  | B  | CHART | ±1/2 | CHART | O27-O33 | CB SIGNAL TGR SET            | 182369  |
| 48 | 7A  | M  | 77    | ±1/2 | 77    | O12-O18 | ENTRY & CB SIG TGR RESET     | 323765  |
| 49 | 7A  | B  | CHART | ±1/2 | CHART | O27-O33 | ENTRY & CB SIG TGR RESET     | 323765  |
| 50 | 7B  | M  | 238   | ±1   | 14    | O12-O18 | END OF RECORD SET            | 182014  |
| 51 | 7A  | M  | 234   | ±1/2 | 234   | O12-O18 | RESET CB FILTER              | 323765  |
| 52 | 7A  | M  | 10    | ±1   | 14    | O12-O18 | CB SIGNAL TGR SET, AUXILIARY | 182014  |

FIG 37 10.5

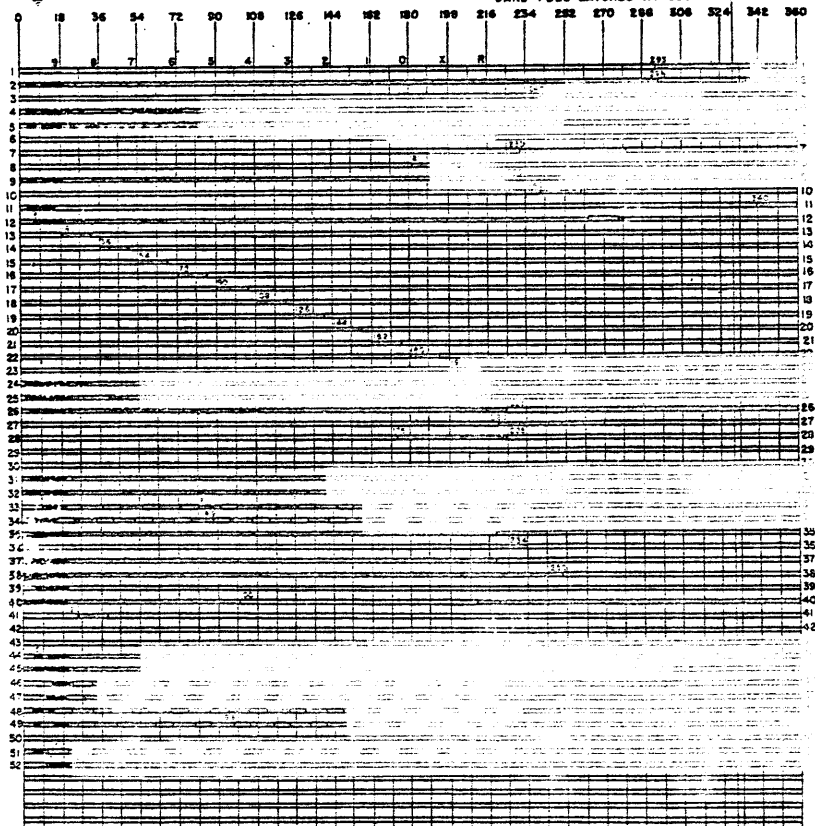
BRUSHES TO START  
MAKING AT 77° AND TO BE  
ALL MADE AT 70°30' FOR  
A 5" HOLE

ELECTRICAL TIME CHART



CARD FEED (CF) CAMS

CARD FEED LATCHES AT 350° 330





|               |           |
|---------------|-----------|
| <b>513305</b> |           |
| DATE          | CHANGE NO |
| 4-29-55       | 240841    |
| 6-10-55       | 241159    |
| 11-18-55      | 242084    |
| 7-12-56       | 243085    |
| 10-16-56      | 243240    |

| RELAY NO | PULL/PUSH | H  | CONTACT POINTS |    |    |    |    |    |    |    |    |    |    |    | NAME | SIZE | TYPE | RELAY NO |
|----------|-----------|----|----------------|----|----|----|----|----|----|----|----|----|----|----|------|------|------|----------|
|          |           |    | 1              | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 |      |      |      |          |
| 20       | 6B        | 4A |                |    |    |    |    |    |    |    |    |    |    |    |      |      |      | 20       |
| 39       | 4A        | 4A | 4A             | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A   | 4A   | 4A   | 21       |
| 40       | 4A        | 4A | 4A             | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A   | 4A   | 4A   | 22       |
| 41       | 4A        | 4A | 4A             | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A   | 4A   | 4A   | 23       |
| 42       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 24       |
| 43       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 25       |
| 44       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 26       |
| 45       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 27       |
| 46       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 28       |
| 47       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 29       |
| 48       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 30       |
| 49       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 31       |
| 50       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 32       |
| 51       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 33       |
| 52       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 34       |
| 53       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 35       |
| 54       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 36       |
| 55       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 37       |
| 56       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 38       |
| 57       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 39       |
| 58       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 40       |
| 59       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 41       |
| 60       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 42       |
| 61       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 43       |
| 62       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 44       |
| 63       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 45       |
| 64       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 46       |
| 65       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 47       |
| 66       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 48       |
| 67       | 4A        | 4A | 4A             | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A   | 4A   | 4A   | 49       |
| 68       | 4A        | 4A | 4A             | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A | 4A   | 4A   | 4A   | 50       |
| 74       | 2B        | 2B | 2B             | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B   | 2B   | 2B   | 74       |
| 75       | 4B        | 4B | 4B             | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B   | 4B   | 4B   | 75       |
| 76       | 4B        | 4B | 4B             | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B   | 4B   | 4B   | 76       |
| 78       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 78       |
| 79       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 79       |
| 81       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 81       |
| 82       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 82       |
| 84       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 84       |
| 85       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 85       |
| 87       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 87       |
| 88       | NS        | NS | NS             | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS   | NS   | NS   | 88       |
| 90       | 4B        | 4B | 4B             | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B   | 4B   | 4B   | 90       |
| 91       | 4B        | 4B | 4B             | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B   | 4B   | 4B   | 91       |
| 93       | 4B        | 4B | 4B             | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B   | 4B   | 4B   | 93       |
| 96       | 4B        | 4B | 4B             | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B | 4B   | 4B   | 4B   | 96       |
| 108      | 7A        |    |                |    |    |    |    |    |    |    |    |    |    |    |      |      |      | 108      |
| 111      | 7B        |    |                |    |    |    |    |    |    |    |    |    |    |    |      |      |      | 111      |
| 114      | 7B        |    |                |    |    |    |    |    |    |    |    |    |    |    |      |      |      | 114      |
| 117      | 7B        |    |                |    |    |    |    |    |    |    |    |    |    |    |      |      |      | 117      |
| 120      | 7B        |    |                |    |    |    |    |    |    |    |    |    |    |    |      |      |      | 120      |
| 123      | 7B        |    |                |    |    |    |    |    |    |    |    |    |    |    |      |      |      | 123      |
| 126      | 7B        |    |                |    |    |    |    |    |    |    |    |    |    |    |      |      |      | 126      |

WIRE CONTACT RELAYS  
FIG 34 10 S  
711 MOD 2

513305

NOTE:  
X PRINT TO ENG SPEC 895291

513305 E.C. 243240

|                           |                                  |                    |                   |                                       |
|---------------------------|----------------------------------|--------------------|-------------------|---------------------------------------|
| MATERIAL SPECIFICATION NO | TOLERANCE UNLESS OTHERWISE NOTED | ALIGNMENT WITHIN   | NOTE:             | INTERNATIONAL BUSINESS MACHINES CORP. |
| CASE DEPTH                | DECIMALS                         | CENTRIC WITHIN     | TOT. IND. READING | MODEL 711 MOD 2                       |
| HARDNESS                  | FRACTIONS                        | FAT WITHIN         |                   | WIRING DIAGRAM B                      |
| 1. FACE TREATMENT         | ANGLES                           | PARALLEL WITHIN    |                   | TIMING CHART                          |
|                           | TECH. RELIABLE APPR. DATE        | STR. SH. WITHIN    |                   | DRW. JAG 3-30-55                      |
|                           |                                  | 1 SQUARE WITHIN IN |                   | CHKD. JWJ 4-4-55                      |
|                           |                                  |                    |                   | APPROV. CEB 4-22-55                   |

513305

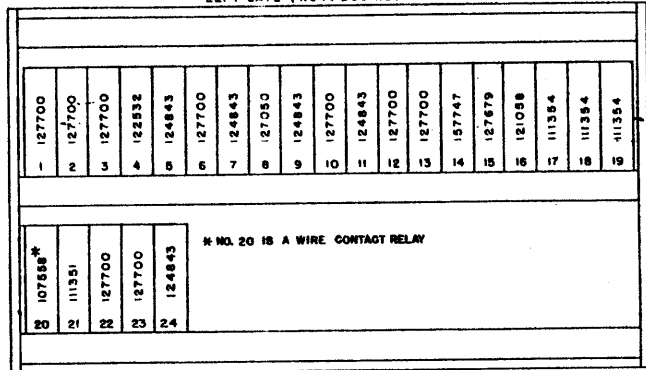
STANDARD CODE NONE 513301 513 305  
 SHEET 5 OF 6  
 DATE 1-27-55 2402647  
 6-10-55 241159  
 11-18-55 242084  
 7-7-56 243285  
 10-16-56 243486

WAS 704-2018

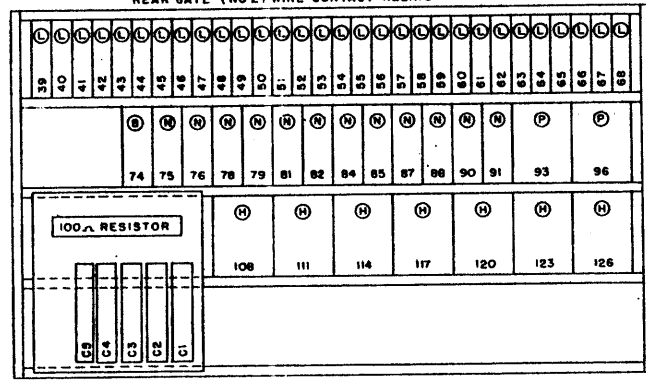
513305

RELAY GATES

LEFT GATE (NO 1) DUO RELAYS



REAR GATE (NO 2) WIRE CONTACT RELAYS



WIRE CONTACT RELAYS

| CODE | SIZE   | COILS | COIL NO                    | ASSEM NO | NAME                 |
|------|--------|-------|----------------------------|----------|----------------------|
| (A)  | FOUR   | ONE   | 198881                     | 196206   | STANDARD             |
| (B)  | FOUR   | TWO   | 198884                     | 196207   | STANDARD             |
| (C)  | FOUR   | TWO   | 198887                     | 196208   | HIGH RESISTANCE HOLD |
| (D)  | FOUR   | THREE | 186259<br>186260<br>186693 | 186696   | HIGH SPEED PICKUP    |
| (E)  | SIX    | ONE   | 198882                     | 196196   | STANDARD             |
| (F)  | SIX    | TWO   | 198885                     | 196197   | STANDARD             |
| (G)  | TWELVE | ONE   | 159982                     | 196186   | STANDARD             |
| (H)  | TWELVE | TWO   | 198887                     | 196187   | STANDARD             |
| (I)  | FOUR   | TWO   | 228881                     | 104733   | HIGH SPEED PICKUP    |
| (J)  | SIX    | ONE   | 107559                     | 107558   | HIGH SPEED PICKUP    |
| (K)  | SIX    | TWO   | 107566                     | 107560   | HIGH SPEED PICKUP    |
| (L)  | TWELVE | ONE   | 107557                     | 107556   | HIGH SPEED PICKUP    |
| (M)  | TWELVE | TWO   | 108386                     | 108388   | HIGH SPEED PICKUP    |

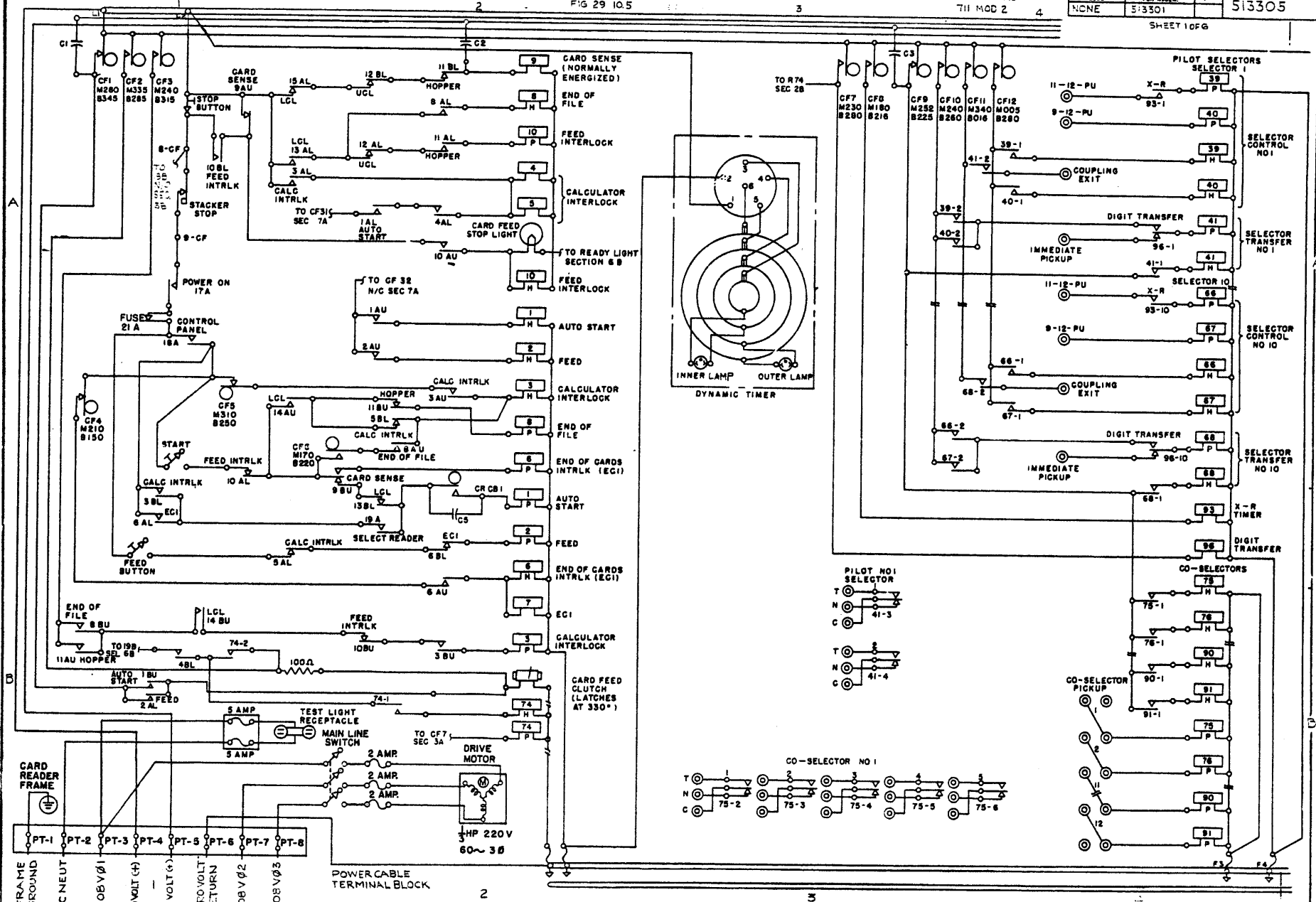
NOTE  
 PRINT TO ENG SPEC 895891  
 FIG 35 10.5  
 711 MOD 2

INTERNATIONAL BUSINESS MACHINES CORP.  
 NAME: GARD READER  
 MODEL: 711 MOD 2  
 SERIAL: 330-88  
 DATE: 4-4-55  
 DRAWN: JAMES  
 CHECKED: JAMES  
 APPROVED: JAMES

513305 E.C.243240

513305

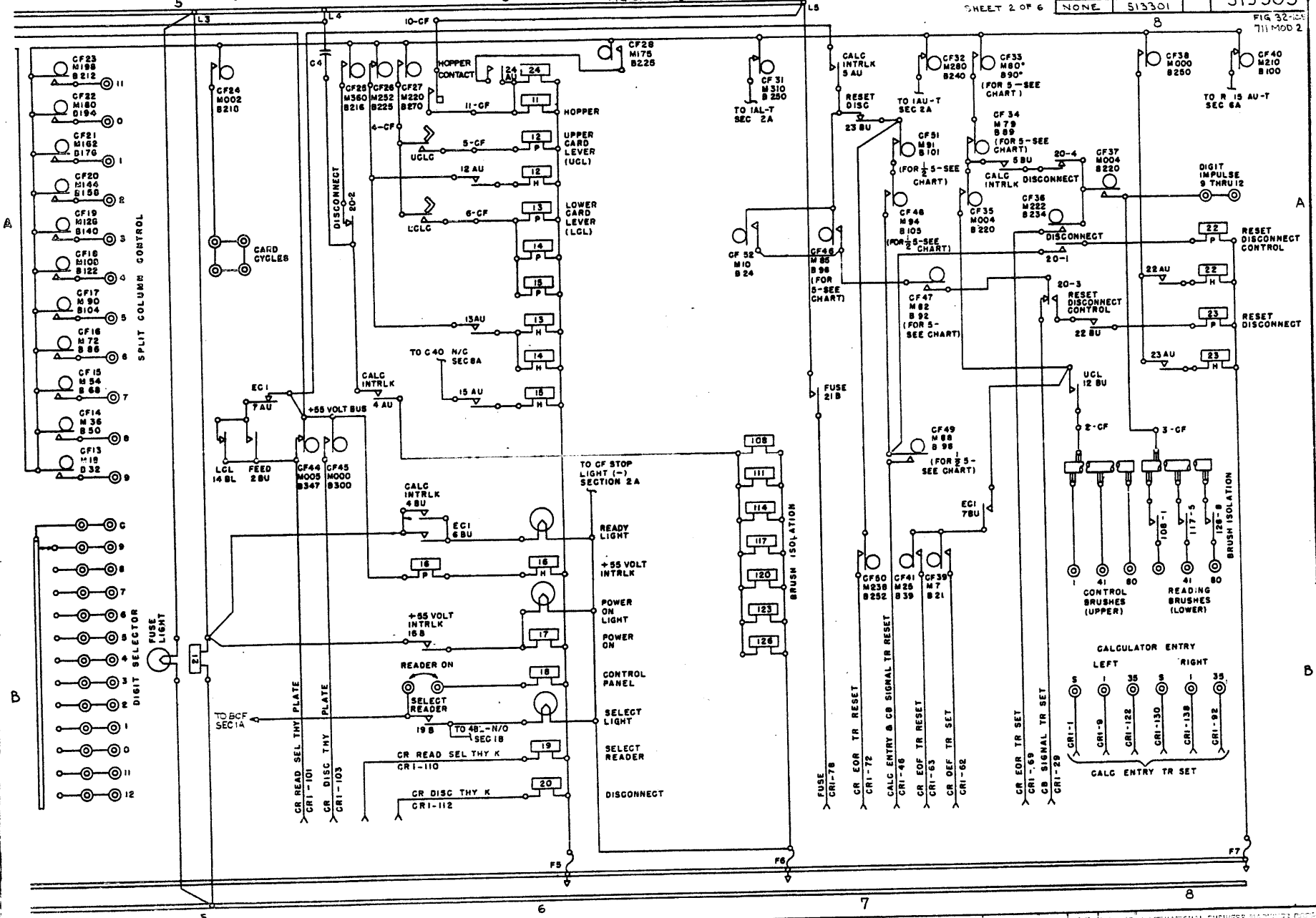




513305

| NOTE        | DATE    | CHANGE NO | DATE    | CHANGE NO | DATE | CHANGE NO | BY | CHKD | INTL BUSINESS MACHINES CORP |
|-------------|---------|-----------|---------|-----------|------|-----------|----|------|-----------------------------|
| PRINT TO    | 4-29-55 | 240841    | 2-10-56 | 249247    |      |           |    |      |                             |
| ENG SPEC NO | 8-10-55 | 241159    |         |           |      |           |    |      |                             |
|             | 1-18-55 | 242084    |         |           |      |           |    |      |                             |
|             | 2-17-56 | 249247    |         |           |      |           |    |      |                             |

REGRAN FOR 74930 NAME WIRING DIAGRAM  
CHGCE DTL 72356 TIMING CHART



| DATE     | BY  | REVISION | DATE | BY | REVISION | DATE | BY | REVISION |
|----------|-----|----------|------|----|----------|------|----|----------|
| 10-15-54 | WAS | 1        |      |    |          |      |    |          |
| 10-15-54 | WAS | 2        |      |    |          |      |    |          |
| 10-15-54 | WAS | 3        |      |    |          |      |    |          |
| 10-15-54 | WAS | 4        |      |    |          |      |    |          |
| 10-15-54 | WAS | 5        |      |    |          |      |    |          |
| 10-15-54 | WAS | 6        |      |    |          |      |    |          |
| 10-15-54 | WAS | 7        |      |    |          |      |    |          |
| 10-15-54 | WAS | 8        |      |    |          |      |    |          |
| 10-15-54 | WAS | 9        |      |    |          |      |    |          |
| 10-15-54 | WAS | 10       |      |    |          |      |    |          |

506615

513305  
 DATE 4-20-55  
 24084  
 6-10-55 24119  
 11-18-55 242084  
 9-7-56 243085  
 12-15-56 243240

WAS 704-2018  
 SHEET 3 OF 6

513305

FIG 33 10.5  
711 MOD 2

NOTE:  
 I PRINT TO ENG SPEC 855291

DUO RELAYS

| RELAY NO | COILS |    |    | CONTACT POINTS |    |    |    |    |    |    |    | NAME | PART NO                   | TYPE   |   |
|----------|-------|----|----|----------------|----|----|----|----|----|----|----|------|---------------------------|--------|---|
|          | PU    | PL | H  | A              | AU | AC | AL | S  | RU | BC | BL |      |                           |        |   |
| 1        | 2B    |    | 2A |                | 2A |    | 2A |    | 1B |    |    |      | AUTO START                | 127700 | D |
| 2        | 2B    |    | 2A |                | 2A |    | 2B |    | 5B |    |    |      | FEED                      | 127700 | D |
| 3        | 2B    |    | 2A |                | 2A |    | 1A |    | 2B |    | 1B |      | CALCULATOR INTERLOCK      | 127700 | D |
| 4        | 2A    |    |    |                | 6A |    | 2A |    | 6B |    |    |      | CALCULATOR INTERLOCK      | 125532 | S |
| 5        | 2A    |    |    |                | 7A |    | 1B |    | 6B |    | 2A |      | CALCULATOR INTERLOCK      | 124843 | S |
| 6        | 2B    |    | 2B |                | 2B |    | 1B |    | 6B |    | 2B |      | END OF CARDS INTERLOCK    | 127700 | D |
| 7        | 2B    |    |    |                | 5A |    |    |    | 7B |    |    |      | END OF CARDS INTERLOCK    | 124843 | S |
| 8        | 2A    |    | 2A |                | 2B |    | 2A |    | 1B |    |    |      | END OF FILE               | 127050 | D |
| 9        | 2A    |    |    |                | 1A |    | 2A |    | 2B |    |    |      | CARD SENSE                | 124843 | S |
| 10       | 2A    |    | 2A |                | 2A |    | 1B |    | 2B |    | 1A |      | FEED INTERLOCK            | 127700 | D |
| 11       | 6A    |    |    |                | 1B |    | 2A |    | 2A |    | 2A |      | HOPPER                    | 124843 | S |
| 12       | 6A    |    | 6A |                | 6A |    | 2A |    | 8A |    | 2A |      | UPPER CARD LEVER          | 127700 | D |
| 13       | 6A    |    | 6A |                | 6A |    | 1A |    |    |    | 2B |      | LOWER CARD LEVER          | 127700 | D |
| 14       | 6A    |    | 6A |                | 1A |    |    |    | 1B |    | 5B |      | LOWER CARD LEVER          | 157747 | D |
| 15       | 6A    |    | 6A |                | 6A |    | 1A |    |    |    |    |      | LOWER CARD LEVER          | 127679 | D |
| 16       | 6B    |    | 6B |                |    |    |    | 6B |    |    |    |      | 55 VOLT SUPPLY INTERLOCK  | 121058 | D |
| 17       | 6B    |    |    |                | 1A |    |    |    |    |    |    |      | POWER ON                  | 111354 | S |
| 18       | 6B    |    |    |                | 1A |    |    |    |    |    |    |      | CONTROL PANEL             | 111354 | S |
| 19       | 6B    |    |    |                | 2B |    |    | 6B |    |    |    |      | SELECT READER             | 111354 | S |
| 21       | 5B    |    |    |                | 1A |    |    | 7A |    |    |    |      | FUSE                      | 111351 | S |
| 22       | 8A    |    | 8A |                | 8A |    |    |    | 8A |    |    |      | RESET DISCONNECT CONTROL  | 127700 | D |
| 23       | 8A    |    | 8A |                | 8A |    |    |    | 7A |    |    |      | RESET DISCONNECT          | 127700 | D |
| 24       | 6A    |    |    |                | 6A |    |    |    |    |    |    |      | HOPPER CONTACT RELAY HOLD | 124843 | S |

INTERNATIONAL BUSINESS MACHINES CORP.

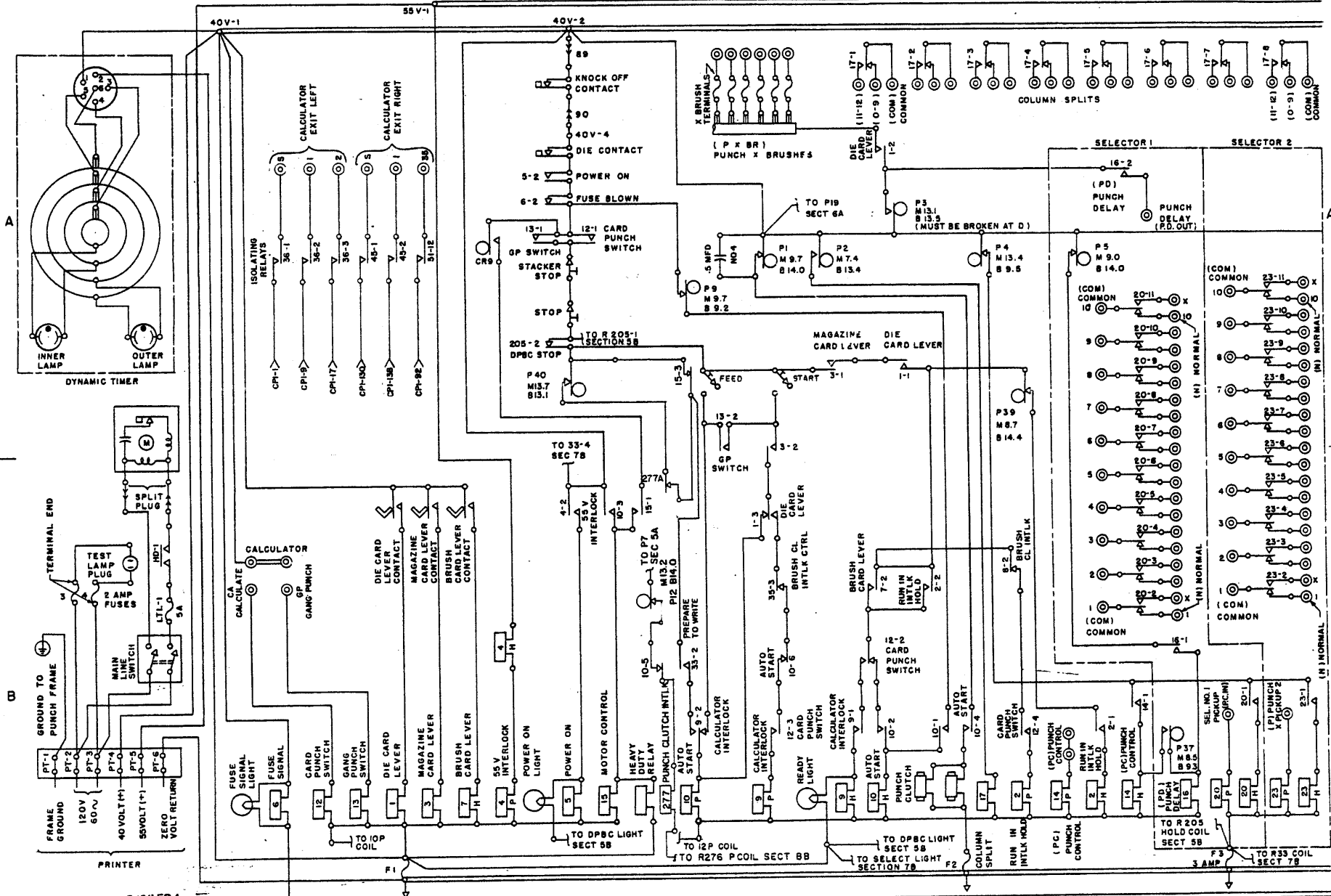
NOTE 1: MACH. CARD READER  
 NOTE 2: WIRING DIAGRAM & TIMING CHART  
 NOTE 3: TAP LAG  
 NOTE 4: CHECK HULL  
 NOTE 5: CHECK  
 NOTE 6: CHECK

ALIGNMENT WITHIN: CONCENTRIC WITHIN, FLAT WITHIN, PARALLEL WITHIN, STRAIGHT WITHIN, SQUARE WITHIN  
 MATERIAL SPECIFICATION NO.:  
 CASE WITH: HANDLE, SCREW, TIGHTENING  
 FINISH: POLISH, ENAMEL, OTHER

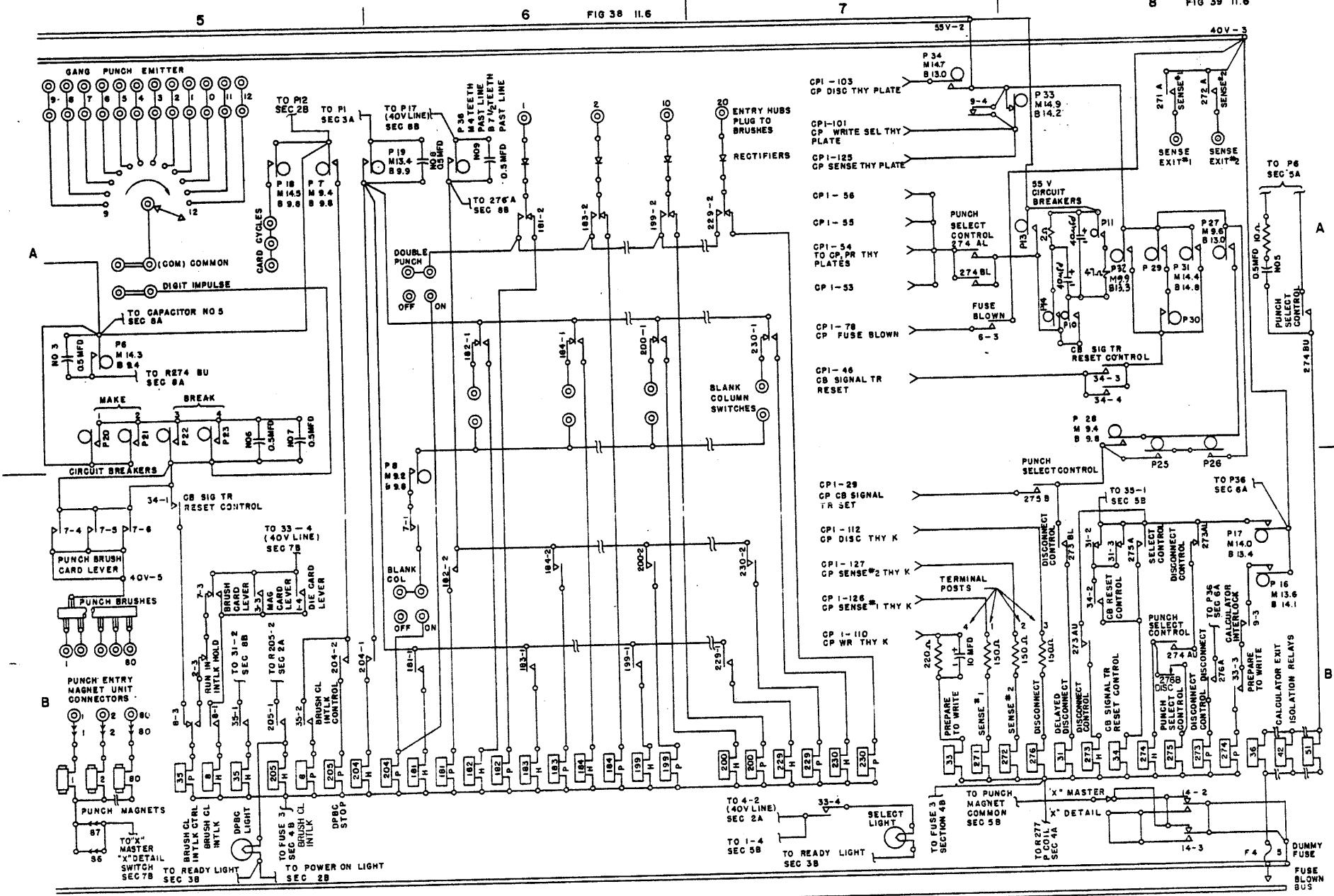
MODEL: 711 MOD 2  
 SCALE: NONE  
 FILE: NONE

513305 E.C.243240

513305



322930 EC-242159A





| DATE     | DRAWING NO. |
|----------|-------------|
| 3-28-52  | 29024       |
| 5-16-52  | 29320       |
| 11-18-52 | 50082       |
| 12-29-52 | 50192       |
| 2-18-54  | 51089       |
| 6-9-54   | 51328       |
| 6-10-55  | 24155       |
| 2-29-56  | 242315      |
| 16-15-56 | 242749      |
| 10-21-56 | 242759A     |

322930

NOTE: PRINT TO ENG. SPEC. 895291

REFER TO S.F.I.

WIRE CONTACT RELAYS

FIG 40 II.6

| RELAY NO     | COILS    | CONTACT POINTS  | PART NO   | NAME                      | SIZE | TYPE |
|--------------|----------|---|-----------|---------------------------|------|------|
|              | P11/P2 H | 1 2 3 4 5 6 7 8 9 10 11 12  |           |                           |      |      |
| 1            | 2B       | 2A 3A 3B  | 196207    | ONE CARD LEVER            | 4    | 4    |
| 2            | 2B       | 2A 3A 3B  | 196206    | BURN IN INTLK HOLD        | 4    | 4    |
| 3            | 2B       | 2A 3A 3B  | 196207    | MAGNIFYING CARD LEVER     | 4    | 4    |
| 4            | 2B       | 2A 3A 3B  | 196207    | 95 V INTERLOCK            | 4    | 4    |
| 5            | 2B       | 2A 3A 3B  | 196207    | POWER ON                  | 4    | 4    |
| 6            | 1B       | 2A 1A 1B  | 196207    | RISE SIGNAL LEVER         | 4    | 4    |
| 7            | 2B       | 2A 3A 3B  | 196207    | BURN IN INTLK LEVER       | 4    | 4    |
| 8            | 2B       | 2A 3A 3B  | 196207    | BURN IN INTLK LEVER       | 4    | 4    |
| 9            | 2B       | 2A 3A 3B  | 196207    | BURN IN INTLK LEVER       | 4    | 4    |
| 10           | 2B       | 2A 3A 3B  | 196207    | CALCULATOR INTERLOCK      | 4    | 4    |
| 11           | 2B       | 2A 3A 3B  | 196197    | AUTO START                | 6    | 6    |
| 12           | 1B       | 2A 3A 3B  | 196207    | CARD PUNCH SWITCH         | 4    | 4    |
| 13           | 2B       | 2A 3A 3B  | 196207    | GANG PUNCH SWITCH         | 4    | 4    |
| 14           | 2B       | 2A 3A 3B  | 196207    | MOTOR CONTROL             | 4    | 4    |
| 15           | 2B       | 2A 3A 3B  | 196207    | FDI PUNCH DELAY           | 4    | 4    |
| 16           | 2B       | 2A 3A 3B  | 196186    | COLUMN SPLIT              | 4    | 4    |
| 17           | 2B       | 2A 3A 3B  | 196186    | COLUMN SPLIT              | 4    | 4    |
| 20           | 4B       | 4A 4B 4C 4D 4E 4F 4G 4H 4I 4J 4K 4L 4M 4N 4O 4P 4Q 4R 4S 4T 4U 4V 4W 4X 4Y 4Z | 196607    | SEL. NO. 1 (PC IN)        | 12   | 12   |
| 23           | 4B       | 4A 4B 4C 4D 4E 4F 4G 4H 4I 4J 4K 4L 4M 4N 4O 4P 4Q 4R 4S 4T 4U 4V 4W 4X 4Y 4Z | 196187    | SEL. NO. 2 (PC IN)        | 12   | 12   |
| 31           | 8B       | 8A 8B 8C 8D 8E 8F 8G 8H 8I 8J 8K 8L 8M 8N 8O 8P 8Q 8R 8S 8T 8U 8V 8W 8X 8Y 8Z | 107560    | DELATED DISCONNECT        | 5    | 5    |
| 33           | 7B       | 7A 7B 7C 7D 7E 7F 7G 7H 7I 7J 7K 7L 7M 7N 7O 7P 7Q 7R 7S 7T 7U 7V 7W 7X 7Y 7Z | 196207    | PREPARE TO WRITE          | 4    | 4    |
| 34           | 8B       | 8A 8B 8C 8D 8E 8F 8G 8H 8I 8J 8K 8L 8M 8N 8O 8P 8Q 8R 8S 8T 8U 8V 8W 8X 8Y 8Z | 196207    | CRASH SET CONTROL         | 4    | 4    |
| 35           | 3B       | 3A 3B 3C 3D 3E 3F 3G 3H 3I 3J 3K 3L 3M 3N 3O 3P 3Q 3R 3S 3T 3U 3V 3W 3X 3Y 3Z | 196207    | BURN IN INTLK CTRL        | 4    | 4    |
| 36           | 8B       | 8A 8B 8C 8D 8E 8F 8G 8H 8I 8J 8K 8L 8M 8N 8O 8P 8Q 8R 8S 8T 8U 8V 8W 8X 8Y 8Z | 196187    | CALCULATOR EXIT ISOLATION | 12   | 12   |
| 39           |          |   | 196187    |                           | 12   | 12   |
| 42           | 8B       |   | 196187    | CALCULATOR EXIT ISOLATION | 12   | 12   |
| 45           |          |   | 196187    |                           | 12   | 12   |
| 48           |          |   | 196187    |                           | 12   | 12   |
| 51           | 8B       |   | 2A 196187 | CALCULATOR EXIT ISOLATION | 12   | 12   |
| 181 THRU 230 | sec 6,7  |   | 196207    |                           | 4    | 4    |
| 204          | 6B       | 5B 5C 5D  | 196207    | DRAG STOP                 | 4    | 4    |
| 205          | 5B       | 5C 5D 2A  | 196207    |                           | 4    | 4    |
| 211 THRU 230 | sec 7    |   | 196207    |                           | 4    | 4    |

DUO RELAYS

| RELAY NO | P  | COILS | H  | A  | AU | AL | B  | BU | BL | PART NO | NAME                 | TYPE |
|----------|----|-------|----|----|----|----|----|----|----|---------|----------------------|------|
| 271      | 7B | 7A    | 7B | 7A | 7B | 7A | 7B | 7A | 7B | 111351  | SENSE EXIT NO. 1     | 5    |
| 272      | 7B | 7A    | 7B | 7A | 7B | 7A | 7B | 7A | 7B | 111351  | SENSE EXIT NO. 2     | 5    |
| 273      | 8B | 8A    | 8B | 8A | 8B | 8A | 8B | 8A | 8B | 111351  | DESELECT CONTROL     | 0    |
| 274      | 8B | 8A    | 8B | 8A | 8B | 8A | 8B | 8A | 8B | 111351  | PUNCH SELECT CONTROL | 0    |
| 275      | 8B | 8A    | 8B | 8A | 8B | 8A | 8B | 8A | 8B | 111351  | PUNCH SELECT CONTROL | 0    |
| 276      | 8B | 8A    | 8B | 8A | 8B | 8A | 8B | 8A | 8B | 111351  | PUNCH SELECT CONTROL | 0    |
| 277      | 4A |       |    |    |    |    |    |    |    | 117371  | PUNCH CLUTCH INTLK   | 5    |

DOUBLE PUNCH AND BLANK COLUMN DETECTION RELAYS

| POSITION NUMBER        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| POINT RELAY HOLD       | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 |
| BLANK COL. SWITCH      | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 |
| 1/2 POINT RELAY PICKUP | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 |
| 1/2 POINT RELAY HOLD   | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 |
| DOUBLE PUNCH DETECT    | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 |

322930 EC 242759A

|                            |                                  |                   |          |                                       |
|----------------------------|----------------------------------|-------------------|----------|---------------------------------------|
| MATERIAL SPECIFICATION NO. | TOLERANCE UNLESS OTHERWISE NOTED | ALIGNMENT WITHIN  | NOTE I   | INTERNATIONAL BUSINESS MACHINES CORP. |
| CASE DEPTH                 | DECIMALS                         | CONCENTRIC WITHIN | NOTE II  | MACH CARD RECORDER                    |
| HARDNESS                   | FRACTIONS                        | FLAT WITHIN       | NOTE III | WORLD 721                             |
| TREATMENT                  | ANGLES                           | PARALLEL WITHIN   | NOTE IV  | WIRING DIAGRAM & TIMING CHART         |
|                            | CORNERS                          | STRAIGHT WITHIN   | NOTE V   | DRAWING SCALE                         |
|                            | BECKED                           | SQUARE WITHIN     | NOTE VI  | CHECK: RWP 10-24-56 TRAC EJS 7-22-52  |

322930

| CAM NO | LOC | MAKE TIME | BREAK TIME | TOL   | COMPONENT NAME                      | PART NO |
|--------|-----|-----------|------------|-------|-------------------------------------|---------|
| P1     | 3A  | 9.7       | 14.0       | M 1/2 | PUNCH CLUTCH                        | 182036  |
| P2     | 3A  | 7.4       | 13.4       | M 1/2 | COLUMN SPLLY                        | 182075  |
| P3     | 3A  | 13.1      | 13.5       | B 1/2 | PX BRUSH CONTROL                    | 182012  |
| P4     | 4A  | 13.4      | 9.5        | M 1/2 | PX BRUSH HOLD                       | 182335  |
| P5     | 4A  | 9.0       | 14.0       | M 1/2 | PX DELAY HOLD                       | 182050  |
| P6     | 5A  | 14.3      | 9.4        | B 1/2 | ISOLATION CONTROL                   | 182310  |
| P7     | 5A  | 9.4       | 9.8        | B 1/2 | DPBC STOP                           | 182014  |
| P8     | 6A  | 9.2       | 9.8        | B 1/2 | BLANK COLUMN CONTROL                | 322965  |
| P9     | 3A  | 9.7       | 9.2        | M 1/2 | AUTO START HOLD                     | 182366  |
| P10    | 8A  |           |            | M 1/2 | 55V CIRCUIT BREAKERS ARC SUPPRESSOR | 182366  |
| P11    | 8A  |           |            | B 1/2 |                                     |         |
| P12    | 2B  | 13.2      | 14.0       | M 1/2 | AUTO START CONTROL                  | 182020  |
| P13    | 8A  |           |            | B 1/2 | 55V CIRCUIT BREAKERS                | 182366  |
| P14    | 8A  |           |            | B 1/2 |                                     |         |
| P15    |     |           |            |       | DO NOT USE THIS POSITION            |         |
| P16    | 8B  | 13.6      | 14.1       | B 1/2 | PUNCH SELECT CONTROL                | 182012  |
| P17    | 8B  | 14.0      | 13.4       | M 1/2 | PUNCH SELECT CONTROL HOLD           | 182345  |
| P18    | 5A  | 14.5      | 9.8        | M 1/2 | CARD CYCLES                         | 322967  |
| P19    | 6A  | 13.4      | 9.9        | M 1/2 | DPBC SENSE HOLD                     | 322965  |
| P20    | 5A  |           |            | M 1/2 |                                     | 32366   |
| P21    | 5A  | SEE CHART |            | B 1/2 | PUNCH BRUSH CIRCUIT BREAKERS        | 182366  |
| P22    | 5A  |           |            | B 1/2 |                                     | 182366  |
| P23    | 5A  |           |            | B 1/2 |                                     | 182366  |
| P24    |     |           |            |       | DO NOT USE THIS POSITION            |         |
| P25    | 8A  | SEE CHART |            | M 1/2 |                                     | 182366  |
| P26    | 8A  | SEE CHART |            | B 1/2 |                                     | 182366  |
| P27    | 8A  | 9.6       | 13.0       | M 1/2 | CB SIGNAL TRIGGER SET               | 182012  |
| P28    | 8A  | 9.4       | 9.8        | B 1/2 |                                     | 182366  |
| P29    | 8A  | SEE CHART |            | M 1/2 |                                     | 182366  |
| P30    | 8A  | SEE CHART |            | B 1/2 | CB SIGNAL TRIGGER RESET             | 182012  |
| P31    | 8A  | 14.4      | 14.8       | M 1/2 |                                     | 182012  |
| P32    | 8A  | 9.9       | 13.3       | M 1/2 | WRITE AND SENSE THYRATRON PLATES    | 182342  |
| P33    | 8A  | 14.9      | 14.2       | M 1/2 |                                     | 322967  |
| P34    | 7A  | 14.7      | 13.0       | B 1/2 | DISCONNECT THYRATRON PLATE          |         |
| P35    |     |           |            |       | DO NOT USE THIS POSITION            |         |
| P36    | 6A  | SEE CHART |            | M 1/2 | HALF AFTER (DPBC PICKUP)            | 182366  |
| P37    | 4B  | 8.5       | 9.3        | M 1/2 | PX DELAY PICKUP                     | 182020  |
| P39    | 4A  | 8.7       | 14.4       | M 1/2 | RUN IN INTERLOCK HOLD               | 182070  |
| P40    | 2A  | 13.7      | 13.1       | B 1/2 | PUNCH CLUTCH INTLK                  | 182345  |
| CR9    | 2A  | SEE       | NOTE 2     |       | MOTOR CONTROL HOLD                  |         |
| 9B     |     |           |            |       | CARD BRUSH                          |         |
| 2B     |     |           |            |       | MAGAZINE C.L.C (LAST CARD)          |         |
| 2B     |     |           |            |       | DIE C.L.C (FIRST CARD)              |         |
| 2B     |     |           |            |       | DIE C.L.C (LAST CARD)               |         |
| 2B     |     |           |            |       | BRUSH C.L.C (FIRST CARD)            |         |
| 2B     |     |           |            |       | BRUSH C.L.C (LAST CARD)             |         |

\*CONTACT MUST MAKE BEFORE 9 AND BREAK AFTER 14 MAINTAINING THIS CONDITION, TIME BREAK SO MACHINE WILL COAST TO A STOP WITH INDEX NEAR TO BUT NOT LATER THAN 9 WHEN OIL IS WARM  
NOTE 1- TOLERANCE IN CAM DURATION IS ± 1/2 TOOTH UNLESS OTHERWISE NOTED  
NOTE 2- MINIMUM AIR GAP .012"

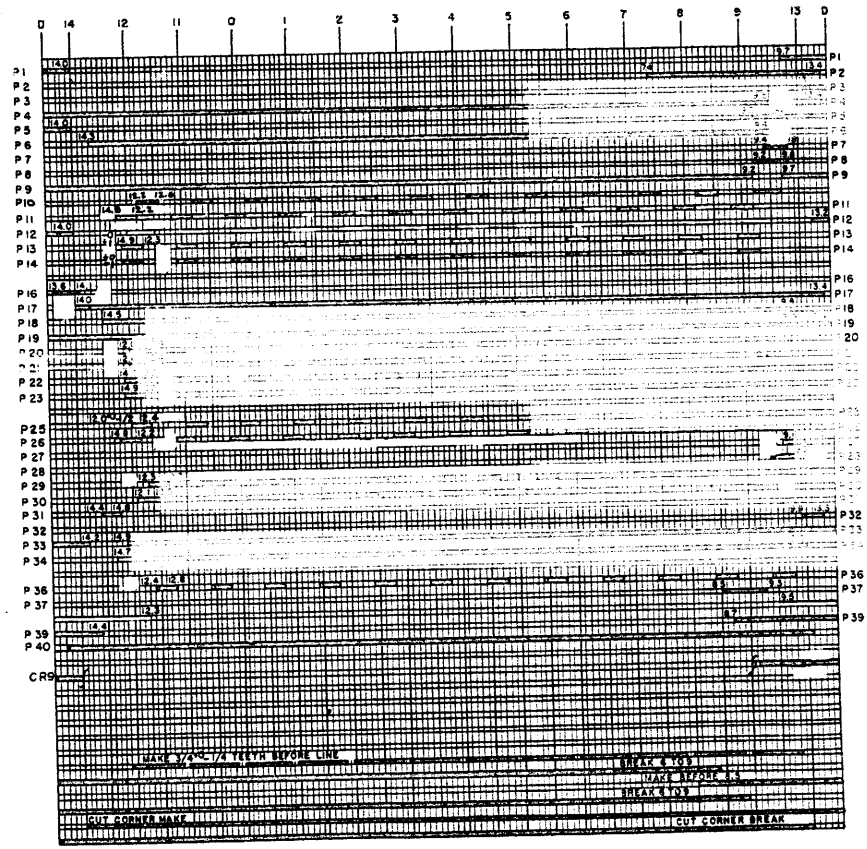


FIG 107 12.7

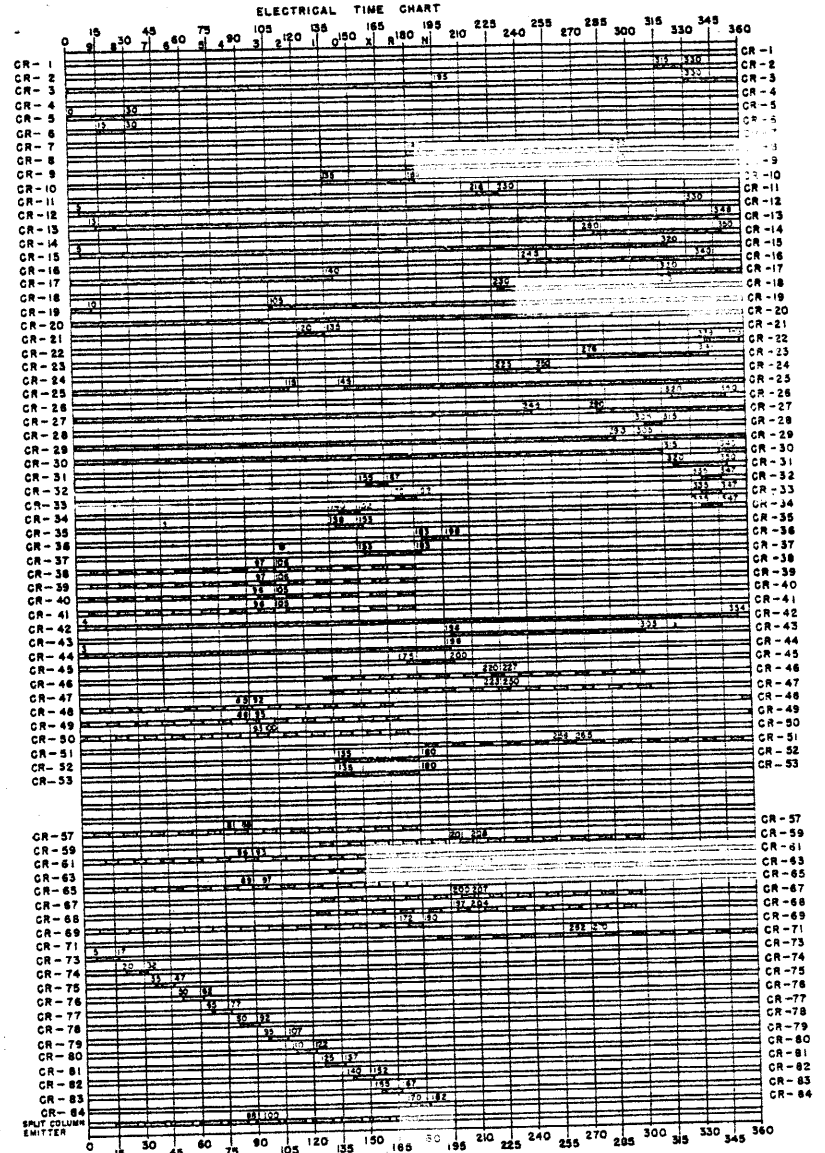
CR CAM CHART

| CAM NO. | LOC | NAME                           | CAM PART NO. | STYLE | MAKE TIME | TOL IN DEG | BREAK TIME | TOL IN DEG |
|---------|-----|--------------------------------|--------------|-------|-----------|------------|------------|------------|
| 1       |     |                                |              |       |           |            |            |            |
| 2       | 10A | PILOT SELECTOR PICKUP          | 182014       | M     | 315       | ± 1        | 330        | ± 1        |
| 3       | 9A  | PILOT SELECTOR COUPLING EXIT   | 321969       | B     | 350       | ± 2        | 195        | ± 1        |
| 4       |     |                                |              |       |           |            |            |            |
| 5       | 9A  | ALTERATIONS IMPULSE            | 321978       | M     | 360       | ± 1        | 30         | ± 1        |
| 6       | 4A  | EIGHT RELAY CONTROL            | 782014       | M     | 15        | ± 1/2      | 30         | ± 1/2      |
| 7       |     |                                |              |       |           |            |            |            |
| 8       | 4A  | N RELAY CONTROL                | 321973       | M     | 180       | ± 1/2      | 295        | ± 2        |
| 9       | 4A  | OXRN RELAY CONTROL             | 321973       | M     | 180       | ± 1/2      | 295        | ± 2        |
| 10      | 4A  | OXRN RELAY CONTROL (PLUGGABLE) | 182050       | M     | 135       | ± 1/2      | 185        | ± 2        |
| 11      | 5A  | SKIP END INTERLOCK             | 182012       | M     | 218       | ± 1        | 230        | ± 1        |
| 12      | 5A  | EXTRA SPACE HOLD               | 322966       | B     | 13        | ± 1        | 348        | ± 1        |
| 13      | 6A  | SHORT SKIP HOLD                | 182070       | M     | 280       | ± 1        | 350        | ± 1        |
| 14      | 6A  | EXTRA SPACE CONTROL            | 322967       | B     | 5         | ± 1        | 320        | ± 1        |
| 15      | 6A  | ALL SKIPS HOLD                 | 321976       | B     | 245       | ± 1        | 340        | ± 1        |
| 16      | 10A | SENSE EXIT IMPULSE             | 132179       | M     | 320       | ± 1        | 310        | ± 1        |
| 17      | 6A  | SPACE SUPPRESS HOLD            | 322006       | M     | 230       | ± 1        | 315        | ± 1        |
| 18      | 8A  | SKIP INTERLOCK                 | 321968       | B     | 105       | ± 1        | 10         | ± 1        |
| 19      | 7A  | COMMON SPACE CTR. HOLD         | 321965       | B     | 130       | ± 1        | 290        | ± 1        |
| 20      | 7A  | NON-PRINT                      | 182014       | M     | 120       | ± 1        | 135        | ± 1        |
| 21      | 7A  | GARRIAGE START SPACE           | 182010       | M     | 338       | ± 1        | 358        | ± 1        |
| 22      | 7A  | GARRIAGE START - SKIP          | 182089       | M     | 276       | ± 1        | 341        | ± 1        |
| 23      | 8A  | PLATEN LOCK MAG                | 321979       | M     | 225       | ± 1        | 250        | ± 1        |
| 24      | 8A  | RIBBON FEED CLUTCH             | 321963       | B     | 145       | ± 1        | 115        | ± 1        |
| 25      | 2A  | DRIVE CLUTCH                   | 321978       | M     | 350       | ± 1        | 350        | ± 1        |
| 26      | 3A  | CF CLUTCH MAGNET               | 321964       | B     | 250       | ± 1        | 245        | ± 1        |
| 27      | 3A  | AUTO START HOLD                | 321983       | M     | 305       | ± 1        | 315        | ± 1        |
| 28      | 3A  | AUTO START PICK                | 182345       | B     | 305       | ± 1        | 290        | ± 1        |
| 29      | 3A  | DRIVE CLUTCH RELAY HOLD        | 321983       | B     | 345       | ± 1        | 315        | ± 1        |
| 30      | 5A  | ISOLATION RELAY HOLD           | 321978       | M     | 320       | ± 1        | 350        | ± 1        |
| 31      | 5A  | ISOLATION RELAY PICK           | 321980       | M     | 240       | ± 1        | 315        | ± 1        |
| 32      | 13B | SYMBOL EXIT (B)                | 321981       | M     | 245       | ± 1        | 245        | ± 1        |
| 33      | 13B | SYMBOL EXIT DECIMAL            | 182014       | M     | 138       | ± 1        | 153        | ± 1        |
| 34      | 13B | SYMBOL EXIT COMMA              | 182014       | M     | 183       | ± 1        | 198        | ± 1        |
| 35      | 12A | ZERO ENTRY                     | 321978       | M     | 183       | ± 1        | 183        | ± 1        |
| 36      | 12A | ASTERISK ENTRY                 | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 37      | 12A | MINUS PLUS ENTRY               | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 38      | 16A | IMPULSE DISTRIBUTOR            | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 39      | 16A | IMPULSE DISTRIBUTOR            | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 40      | 16A | IMPULSE DISTRIBUTOR            | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 41      | 16A | IMPULSE DISTRIBUTOR            | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 42      | 16A | SENSE THYRATRON BREAK          | 321975       | M     | 198       | ± 1        | 303        | ± 1        |
| 43      | 16A | ECHO (READ) CB SIGNAL          | 321970       | B     | 3         | ± 1        | 196        | ± 1        |
| 44      | 16A | WRITE CB SIGNAL                | 321979       | M     | 175       | ± 1        | 200        | ± 1        |
| 45      | 15B | WRITE CB SIGNAL RESET          | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 46      | 15B | READ CB SIGNAL RESET           | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 47      | 15B | READ CB SIGNAL RESET           | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 48      | 15B | WRITE CB SIGNAL RESET          | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 49      | 15B | WRITE CB SIGNAL RESET          | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 50      | 15A | CB SIGNAL TOR SET (BREAK)      | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 51      | 15A | CB SIGNAL TOR SET (BREAK)      | 321977       | M     | 135       | ± 1/2      | 180        | ± 1/2      |
| 52      | 4A  | OXRN RELAY CONTROL             | 321977       | M     | 135       | ± 1/2      | 180        | ± 1/2      |
| 53      | 4A  | OXRN RELAY CONTROL             | 321977       | M     | 135       | ± 1/2      | 180        | ± 1/2      |
| 54      |     |                                |              |       |           |            |            |            |
| 55      |     |                                |              |       |           |            |            |            |
| 56      |     |                                | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 57      | 5B  | DISCONNECT CONTROL             | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 58      | 5B  | DISCONNECT CONTROL             | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 59      | 5B  | RESET DISCONNECT CONTROL       | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 60      | 5B  | RESET DISCONNECT CONTROL       | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 61      | 5B  | RESET DISCONNECT CONTROL       | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 62      | 5B  | RESET DISCONNECT CONTROL       | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 63      | 5B  | OFFSET EMITTER CONTROL         | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 64      | 16A | READ IMPULSE DISTRIB           | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 65      | 16A | READ IMPULSE DISTRIB           | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 66      | 16A | READ IMPULSE DISTRIB           | 321962       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 67      | 13B | SYMBOL EXIT IMPULSES           | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 68      | 13B | SYMBOL EXIT IMPULSES           | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 69      | 13B | SYMBOL EXIT IMPULSES           | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 70      | 14A | C E PRINT 9                    | 182012       | M     | 20        | ± 1        | 32         | ± 1        |
| 71      | 14A | C E PRINT 8                    | 182012       | M     | 35        | ± 1        | 47         | ± 1        |
| 72      | 14A | C E PRINT 7                    | 182012       | M     | 50        | ± 1        | 62         | ± 1        |
| 73      | 14A | C E PRINT 6                    | 182012       | M     | 65        | ± 1        | 77         | ± 1        |
| 74      | 14A | C E PRINT 5                    | 182012       | M     | 80        | ± 1        | 92         | ± 1        |
| 75      | 13A | C E PRINT 4                    | 182012       | M     | 95        | ± 1        | 107        | ± 1        |
| 76      | 13A | C E PRINT 3                    | 182012       | M     | 110       | ± 1        | 122        | ± 1        |
| 77      | 13A | C E PRINT 2                    | 182012       | M     | 125       | ± 1        | 137        | ± 1        |
| 78      | 13A | C E PRINT 1                    | 182012       | M     | 140       | ± 1        | 152        | ± 1        |
| 79      | 13A | C E PRINT 0                    | 182012       | M     | 155       | ± 1        | 167        | ± 1        |
| 80      | 13A | C E PRINT 11                   | 182012       | M     | 170       | ± 1        | 182        | ± 1        |
| 81      | 14A | C E PRINT 12                   | 321982       | M     | 215       | ± 1/2      | 215        | ± 1/2      |
| 82      |     | SPLIT COLUMN EMITTER           |              |       |           |            |            |            |

321448 E.C. 242767

NOTE: SPLIT COLUMN EMITTER BRUSH TIMING MUST OVERLAP CR65 BY A MAXIMUM OF 8°, MINIMUM OF 2° (4°(1°) BEFORE MAKE, 4°(1°) AFTER BREAK)

FIG 108 12.7

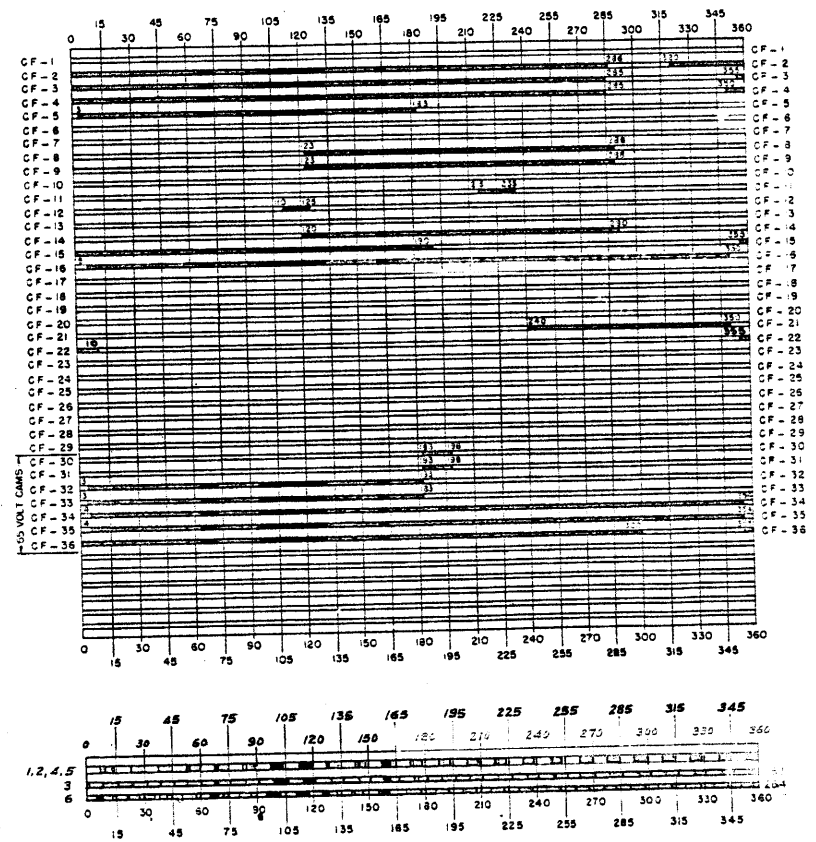


CF CAM CHART

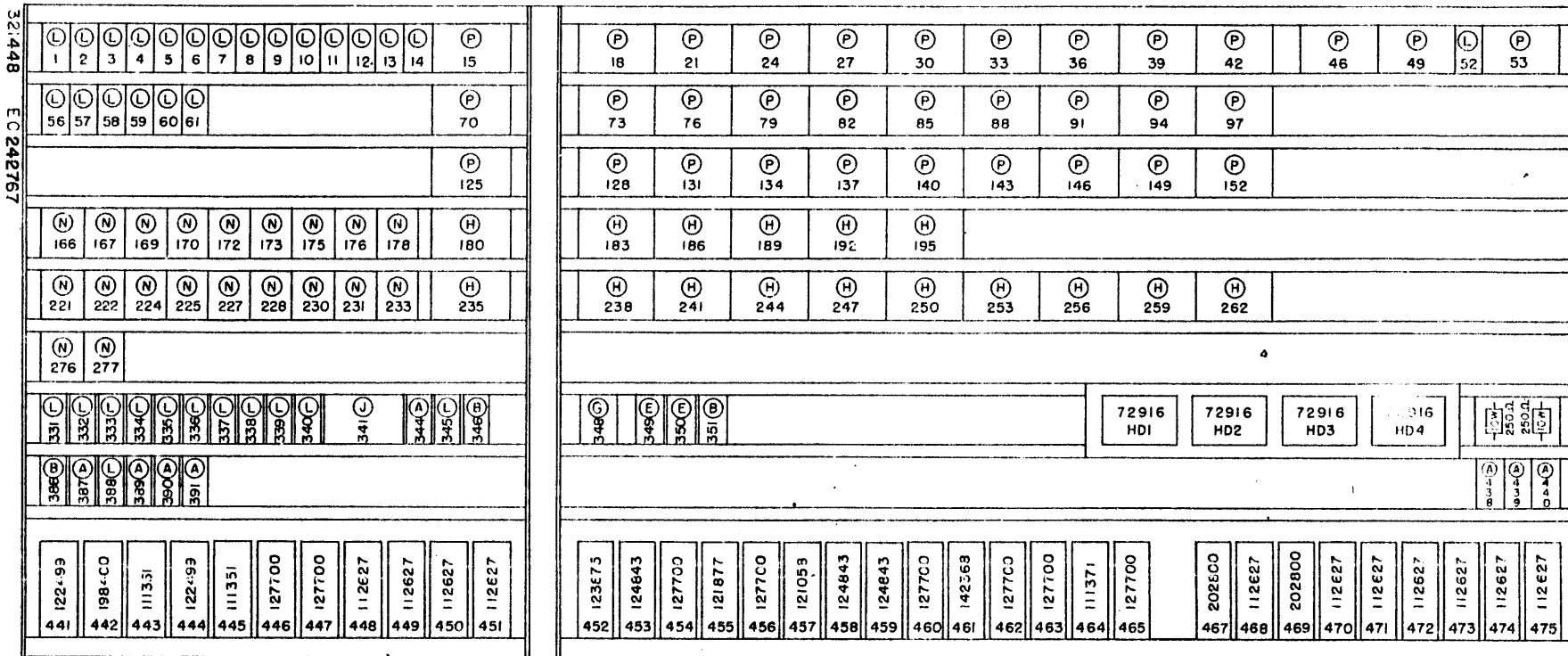
| CAM NO | LOC | NAME                             | CAM PART NO | STYLE | MAKE TIME | TOL IN DEG | BREAK TIME | TOL IN DEG |
|--------|-----|----------------------------------|-------------|-------|-----------|------------|------------|------------|
| 1      |     |                                  |             |       |           |            |            |            |
| 2      | 9A  | PILOT SELECTOR HOLD              | 321964      | B     | 320       | ±1         | 288        | ±10        |
| 3      | 9A  | PRINT CYCLES IMPULSE             | 321967      | B     | 355       | ±2         | 285        | ±1         |
| 4      | 9A  | CO-SELECTOR HOLD                 | 321966      | B     | 350       | ±2         | 285        | ±20        |
| 5      | 13A | CHAR EMITTER COMMON              | 182179      | M     | 3         | ±2         | 183        | ±2         |
| 6      |     |                                  |             |       |           |            |            |            |
| 7      |     |                                  |             |       |           |            |            |            |
| 8      | 1A  | TYPE WHEEL IMPULSE COMMON        | 182155      | M     | 123       | ±2         | 288        | ±2         |
| 9      | 11A | TYPE WHEEL IMPULSE COMMON        | 182155      | M     | 123       | ±2         | 288        | ±2         |
| 10     |     |                                  |             |       |           |            |            |            |
| 11     | 6A  | 1ST LINE SPACE SUPPRESS          | 182022      | M     | 215       | ±1         | 235        | ±1         |
| 12     | 7A  | COMMON SPACE CONTROL             | 182014      | M     | 110       | ±1         | 125        | ±1         |
| 13     |     |                                  |             |       |           |            |            |            |
| 14     | 5A  | ECHO ISOLATION RELAYS            | 321971      | M     | 120       | ±1         | 290        | ±1         |
| 15     | 5C  | P.M. SELECTOR RELAY              | 321970      | M     | 354       | ±1         | 190        | ±1         |
| 16     | 10A | PILOT SELECTOR CTRL HOLD         | 182365      | B     | 5         | ±1         | 360        | ±1         |
| 17     |     |                                  |             |       |           |            |            |            |
| 18     |     |                                  |             |       |           |            |            |            |
| 19     |     |                                  |             |       |           |            |            |            |
| 20     |     |                                  |             |       |           |            |            |            |
| 21     | 10A | SENSE EXIT HOLD                  | 321974      |       | 240       | ±1         | 350        | ±21        |
| 22     | 10A | CO SELECTOR PRINT CYCLES IMPULSE | 182014      |       | 355       | ±1         | 10         | ±1         |
| 23     |     |                                  |             |       |           |            |            |            |
| 24     |     |                                  |             |       |           |            |            |            |
| 25     |     |                                  |             |       |           |            |            |            |
| 26     |     |                                  |             |       |           |            |            |            |
| 27     |     |                                  |             |       |           |            |            |            |
| 28     |     |                                  |             |       |           |            |            |            |
| 29     |     |                                  |             |       |           |            |            |            |
| 30     | 11A | "N" IMPULSE FILTER               | 182014      | M     | 183       | ±1         | 198        | ±1         |
| 31     | 11A | "N" IMPULSE FILTER               | 182014      | M     | 183       | ±1         | 198        | ±1         |
| 32     | 5A  | PRINT THYRATRON HOLD             | 182179      | M     | 3         | ±1         | 183        | ±1         |
| 33     | 5A  | PRINT THYRATRON HOLD             | 182179      | M     | 3         | ±1         | 183        | ±1         |
| 34     | 6A  | SENSE THYRATRON HOLD             | 321982      | B     | 4         | ±1         | 354        | ±1         |
| 35     | 15A | READ/WRITE THY HOLD              | 321982      | B     | 4         | ±1         | 354        | ±1         |
| 36     | 15A | DISCONNECT THY HOLD              | 322005      | B     | 355       | ±1         | 300        | ±1         |

| CAM NO. | LOC. | MASTER CB CAM CHART | STYLE | MAKE TIME | TOL IN DEG | BREAK TIME | TOL IN DEG |
|---------|------|---------------------|-------|-----------|------------|------------|------------|
| 1,2,4,5 | 15A  | ALL PULSES          | M     | 96        | ±2         | 103        | ±2         |
| 3       | 15A  | DURATION            | M     | 96        | ±1         | 105        | ±2         |
| 6       | 15A  |                     | M     | 95        | ±2         | 102        | ±1         |

ELECTRICAL TIME CHART



RELAY GATE



HINGE END

WIRE CONTACT RELAYS

| CODE | SIZE   | COILS | COIL NO                    | ASSEM NO | NAME                  |
|------|--------|-------|----------------------------|----------|-----------------------|
| (A)  | FOUR   | ONE   | 198881                     | 196206   | STANDARD              |
| (B)  | FOUR   | TWO   | 198884                     | 196207   | STANDARD              |
| (C)  | FOUR   | TWO   | 198887                     | 196208   | HIGH RESISTANCE HOLD. |
| (D)  |        |       |                            |          |                       |
| (E)  | FOUR   | THREE | 186693<br>186259<br>186260 | 186696   | HIGH SPEED PICK UP    |
| (F)  | SIX    | ONE   | 198882                     | 196196   | STANDARD              |
| (G)  | SIX    | TWO   | 198885                     | 196197   | STANDARD              |
| (H)  | TWELVE | ONE   | 198883                     | 196188   | STANDARD              |
| (J)  | TWELVE | TWO   | 198886                     | 196187   | STANDARD              |
| (K)  |        |       |                            |          |                       |
| (L)  | FOUR   | TWO   | 228881                     | 104753   | HIGH SPEED PICK UP    |
| (M)  | SIX    | ONE   | 107559                     | 107558   | HIGH SPEED PICK UP    |
| (N)  | SIX    | TWO   | 107566                     | 107560   | HIGH SPEED PICK UP    |
| (P)  | TWELVE | ONE   | 107557                     | 107536   | HIGH SPEED PICK UP    |
| (Q)  | TWELVE | TWO   | 108386                     | 108388   | HIGH SPEED PICK UP    |

DUO RELAY CHART

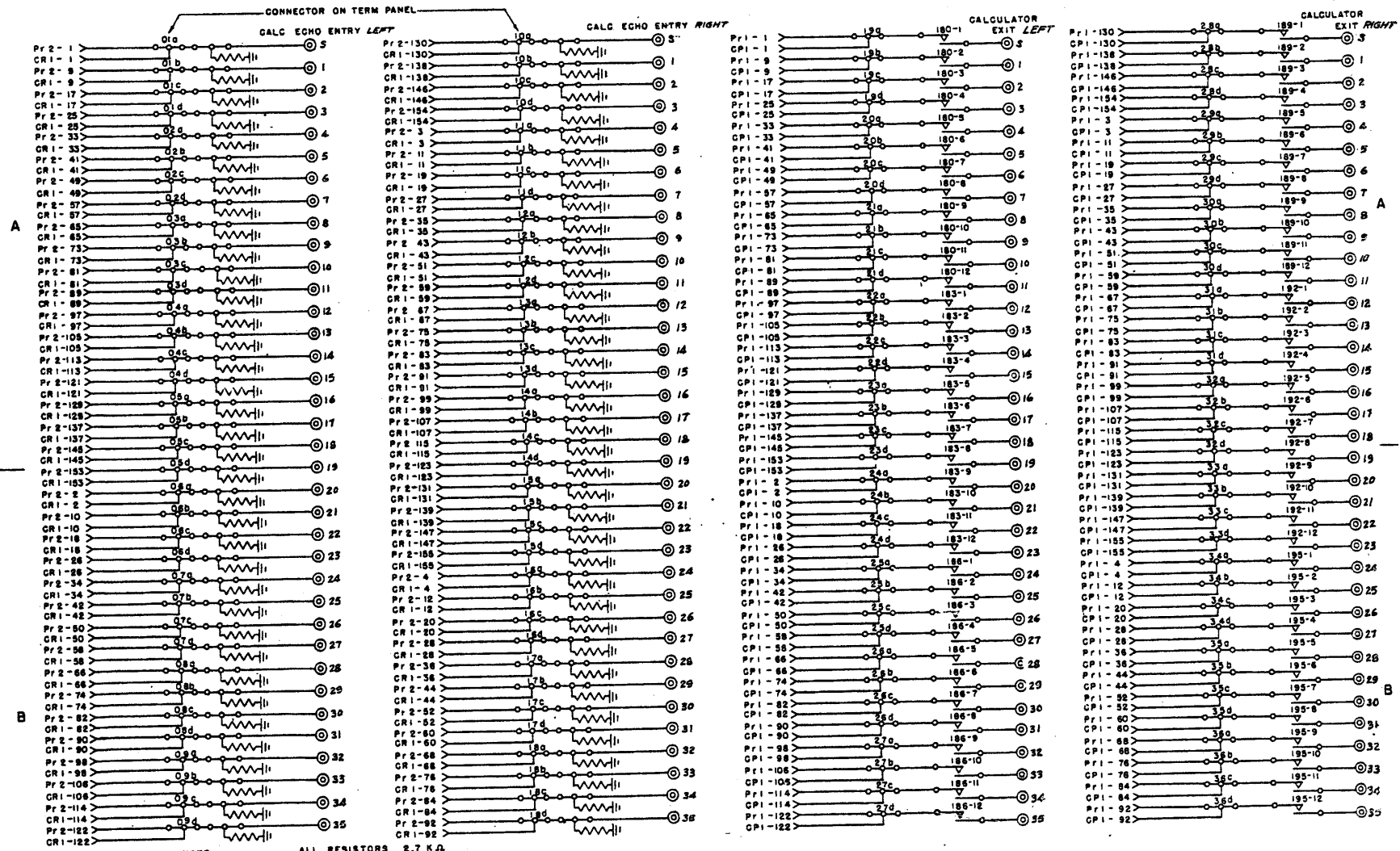
| RELAY NO. | COILS |    |    | CONTACT POINTS |     |    |     |    |     |     |     |     |  | NAME | TYPE                                 |   |
|-----------|-------|----|----|----------------|-----|----|-----|----|-----|-----|-----|-----|--|------|--------------------------------------|---|
|           | PU    | PL | H  | A              | AU  | AC | AL  | B  | BU  | BC  | BL  |     |  |      |                                      |   |
|           |       |    |    |                |     | 2A | 2A  | 2A |     |     |     |     |  |      | IDLING CONTROL                       |   |
| 441       | 2A    |    |    |                |     | 2A | 2A  | 2A |     |     |     |     |  |      | DRIVE CLUTCH RELAY                   |   |
| 442       | 4A    |    | 4A |                |     | 3A |     |    |     |     |     |     |  |      | FLSE BLOWN                           |   |
| 443       | 3B    |    |    | 3B             |     |    |     |    | 17A |     |     |     |  |      | PRINT THYRATRON PLATE CONTROL        |   |
| 444       | 5A    |    |    |                |     |    |     |    |     | 15A | 15A | 15A |  |      | POWER INTERLOCK                      |   |
| 445       | 17A   |    |    |                | 17B |    |     |    |     |     |     |     |  |      | TYPE WHEEL CONTACT ISOLATION CONTROL |   |
| 446       | 5A    |    | 5A |                | 5A  |    | 16A |    |     | 5B  |     | 5A  |  |      | PRINTING ISOLATION CONTROL           |   |
| 447       | 5A    |    | 5A |                | 5A  |    | 16A |    |     | 5B  |     | 5A  |  |      | SENSE # 7                            |   |
| 448       | 16B   |    |    |                | 10A |    |     |    |     |     |     |     |  |      | SENSE # 8                            |   |
| 449       | 16B   |    |    |                | 10A |    |     |    |     |     |     |     |  |      | SENSE # 9                            |   |
| 450       | 16B   |    |    |                | 10A |    |     |    |     |     |     |     |  |      | SENSE # 10                           |   |
| 451       | 16B   |    |    |                | 10A |    |     |    |     |     |     |     |  |      | NON PRINT                            | D |
| 452       | 7A    |    | 7A |                | 7A  |    |     |    |     | 7A  |     | 8A  |  |      | NON PRINT                            | D |
| 453       | 7A    |    |    |                | 4A  |    | 11A |    |     | 11A |     |     |  |      | COMMON SPACE CONTROL                 | D |
| 454       | 7A    |    | 7A |                | 7A  |    |     |    | 7A  |     |     |     |  |      | CONTROL AFTER SPACE OR SKIP          | D |
| 455       | 6B    |    | 6B |                | 6B  |    |     | 7A |     |     |     |     |  |      | SPACE SUPPRESSION                    | D |
| 456       | 6B    |    | 6B |                | 6B  |    |     | 7A |     |     |     |     |  |      | EXTRA SPARE AFTER PRINTING           | D |
| 457       | 6B    |    | 6B | 6B             |     |    |     |    | 6B  |     |     | 8A  |  |      | ALL SKIPS                            | S |
| 458       | 6A    |    |    |                | 6A  |    |     |    | 6B  |     |     | 8A  |  |      | ALL SKIPS                            | S |
| 459       | 6A    |    |    |                | 16A |    |     | 8B |     | 8B  |     | 10A |  |      | FIRST LINE SUPPRESSION               | D |
| 460       | 6B    |    | 6B |                | 6B  |    | 6B  |    | 7A  |     |     | 8B  |  |      | CARRIAGE START                       | T |
| 461       | 8A    | 8A | 8B |                | 8B  |    | 8B  |    | 8A  |     |     | 7B  |  | 6B   | CARRIAGE RESTORE                     | D |
| 462       | 8A    |    | 8B |                | 8B  |    | 8A  |    | 8A  |     |     |     |  |      | SPACE INTERLOCK                      | D |
| 463       | 8B    |    | 8A |                | 8A  |    | 8A  |    |     |     |     |     |  |      | SKIP END CONTROL                     | S |
| 464       | 8A    |    |    | 8A             |     |    |     | 8B |     |     |     |     |  |      | OVERFLOW                             | D |
| 465       | 8B    |    | 6A |                | 6A  |    | 6B  |    |     |     |     | 8A  |  |      |                                      |   |
|           |       |    |    |                |     |    |     |    |     |     |     |     |  |      | STOP # 2                             | S |
| 467       | 8B    |    |    |                | 8B  |    |     |    |     |     |     |     |  |      | SKIP END                             | S |
| 468       | 8B    |    |    |                | 8B  |    |     |    |     |     |     |     |  |      | SKIP END                             | S |
| 469       | 8B    |    |    |                | 6A  |    |     |    |     |     |     |     |  |      | SENSE # 1                            | S |
| 470       | 16A   |    |    |                | 10A |    |     |    |     |     |     |     |  |      | SENSE # 2                            | S |
| 471       | 16A   |    |    |                | 10A |    |     |    |     |     |     |     |  |      | SENSE # 3                            | S |
| 472       | 16B   |    |    |                | 10A |    |     |    |     |     |     |     |  |      | SENSE # 4                            | S |
| 473       | 16B   |    |    |                | 10A |    |     |    |     |     |     |     |  |      | SENSE # 5                            | S |
| 474       | 16B   |    |    |                | 10A |    |     |    |     |     |     |     |  |      | SENSE # 6                            | S |
| 475       | 16B   |    |    |                | 10A |    |     |    |     |     |     |     |  |      |                                      |   |

WIRE CONTACT RELAY CHART

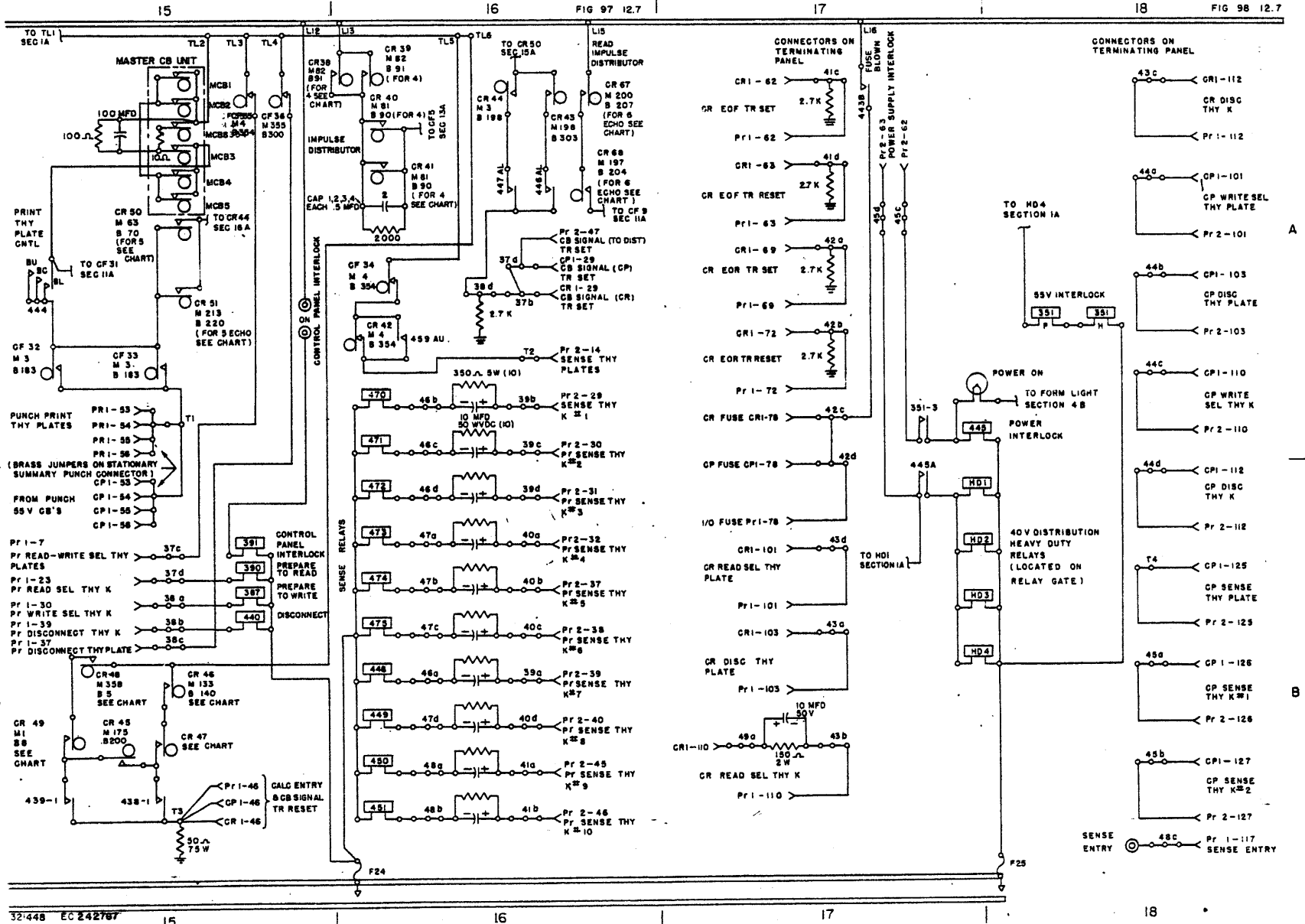
| RELAY NO. | COILS |     |     | CONTACT POINTS |     |     |    |    |    |    |    |    |    |    |     | NAME                               | SIZE | TYPE |
|-----------|-------|-----|-----|----------------|-----|-----|----|----|----|----|----|----|----|----|-----|------------------------------------|------|------|
|           | PU1   | PU2 | H   | 1              | 2   | 3   | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12  |                                    |      |      |
| 253       | 5B    |     |     | NS             | NS  | NS  | NS | NS | NS | NS | NS | NS | NS | NS | NS  | TYPE WHEEL CONTACT ISOLATION RELAY | 12   | H    |
| 256       | 5B    |     |     | NS             | NS  | NS  | NS | NS | NS | NS | NS | NS | NS | NS | NS  | TYPE WHEEL CONTACT ISOLATION RELAY | 12   | H    |
| 259       | 5B    |     |     | NS             | NS  | NS  | NS | NS | NS | NS | NS | NS | NS | NS | NS  | TYPE WHEEL CONTACT ISOLATION RELAY | 12   | H    |
| 262       | 5B    |     |     | NS             | NS  | NS  | NS | NS | NS | NS | NS | NS | NS | NS | 12A | TYPE WHEEL CONTACT ISOLATION RELAY | 12   | H    |
| 266       |       |     |     |                |     |     |    |    |    |    |    |    |    |    |     |                                    |      |      |
| THRU 275  |       |     |     |                |     |     |    |    |    |    |    |    |    |    |     |                                    |      |      |
| 276       | 9B    |     | 9A  | 9A             | NS  | NS  | NS | NS | NS |    |    |    |    |    |     | GO-SELECTOR # 19                   | 6    | N    |
| 277       | 9B    |     | 9A  | 9A             | NS  | NS  | NS | NS | NS |    |    |    |    |    |     | GO-SELECTOR # 20                   | 6    | N    |
| 279       |       |     |     |                |     |     |    |    |    |    |    |    |    |    |     |                                    |      |      |
| THRU 330  |       |     |     |                |     |     |    |    |    |    |    |    |    |    |     |                                    |      |      |
| 331       | 6A    |     | 6A  | 6A             | 7B  | 3A  | 6B |    |    |    |    |    |    |    |     | # 1 TAPE CHANNEL CONTROL           | 4    | L    |
| 332       | 6A    |     | 6A  | 6A             | 7B  | 3A  | 6B |    |    |    |    |    |    |    |     | # 2 TAPE CHANNEL CONTROL           | 4    | L    |
| 333       | NS    |     | NS  | NS             | 7B  | NS  | NS |    |    |    |    |    |    |    |     | # 3 TAPE CHANNEL CONTROL           | 4    | L    |
| 334       | NS    |     | NS  | NS             | 7B  | NS  | NS |    |    |    |    |    |    |    |     | # 4 TAPE CHANNEL CONTROL           | 4    | L    |
| 335       | NS    |     | NS  | NS             | 7B  | NS  | NS |    |    |    |    |    |    |    |     | # 5 TAPE CHANNEL CONTROL           | 4    | L    |
| 336       | NS    |     | NS  | NS             | 7B  | NS  | NS |    |    |    |    |    |    |    |     | # 6 TAPE CHANNEL CONTROL           | 4    | L    |
| 337       | NS    |     | NS  | NS             | 7B  | NS  | NS |    |    |    |    |    |    |    |     | # 7 TAPE CHANNEL CONTROL           | 4    | L    |
| 338       | NS    |     | NS  | NS             | 7B  | NS  | NS |    |    |    |    |    |    |    |     | # 8 TAPE CHANNEL CONTROL           | 4    | L    |
| 339       | 6A    |     | 6A  | 6A             | 7B  | 3A  | 6B |    |    |    |    |    |    |    |     | # 9 TAPE CHANNEL CONTROL           | 4    | L    |
| 340       | 6A    |     | 6A  | 6A             | 7B  | 3A  | 6B |    |    |    |    |    |    |    |     | # 10 TAPE CHANNEL CONTROL          | 4    | L    |
| 341       | 8B    |     |     | 6A             | 6A  | NS  | NS | NS | NS | NS | NS | 6A | 6A |    |     | SKIP INTERLOCK                     | 12   | J    |
| 344       | 8B    |     |     | 3B             | 8B  |     | 7B |    |    |    |    |    |    |    |     | CARRIAGE STOP # 3                  | 4    | A    |
| 345       | 8B    |     |     | 8B             | 7B  | 8B  |    |    |    |    |    |    |    |    |     | DOUBLE SPACE # 1                   | 4    | L    |
| 346       | 8B    |     | 8B  | 8B             | 7B  | 8B  | 8B |    |    |    |    |    |    |    |     | DOUBLE SPACE # 2                   | 4    | B    |
| 348       | 6B    |     | 6B  | 6B             | 6A  | 8A  | 6B |    |    |    |    |    |    |    |     | SKIP END INTERLOCK                 | 6    | G    |
| 349       | 7A    | 7A  | 7A  | 7A             | 3A  |     |    |    |    |    |    |    |    |    |     | SHORT SKIP #1                      | 4    | E    |
| 350       | 7A    | 7A  | 7A  | 7A             | 3A  |     |    |    |    |    |    |    |    |    |     | SHORT SKIP #2                      | 4    | E    |
| 351       | 18A   |     | 18A |                |     | 17A |    |    |    |    |    |    |    |    |     | 55 VOLT INTERLOCK                  | 4    | B    |
| 352       |       |     |     |                |     |     |    |    |    |    |    |    |    |    |     |                                    |      |      |
| THRU 385  |       |     |     |                |     |     |    |    |    |    |    |    |    |    |     |                                    |      |      |
| 386       | 4B    |     | 4B  | 3B             | 3A  | 5A  | 3B |    |    |    |    |    |    |    |     | CALCULATOR INTERLOCK RELAY         | 4    | B    |
| 387       | 15B   |     |     | 3B             | 3A  |     | 5A |    |    |    |    |    |    |    |     | PREPARE TO WRITE RELAY             | 4    | A    |
| 388       | 4A    |     | 4A  | 3A             | 15B | 3A  | 5A |    |    |    |    |    |    |    |     | AUTO START                         | 4    | L    |
| 389       | 4B    |     |     | 3B             | 3B  |     |    |    |    |    |    |    |    |    |     | FORM STOP                          | 4    | A    |
| 390       | 15B   |     |     |                | 5A  |     |    |    |    |    |    |    |    |    |     | PREPARE TO READ                    | 4    | A    |
| 391       | 15B   |     |     | 7B             | 3B  |     |    |    |    |    |    |    |    |    |     | CONTROL PANEL INTERLOCK            | 4    | A    |
| 392       |       |     |     |                |     |     |    |    |    |    |    |    |    |    |     |                                    |      |      |
| THRU 437  |       |     |     |                |     |     |    |    |    |    |    |    |    |    |     |                                    |      |      |
| 438       | 5B    |     |     | 15B            | 5B  |     |    |    |    |    |    |    |    |    |     | READ, TRIGGER RESET CONTROL        | 4    | A    |
| 439       | 5B    |     |     | 15B            | 5B  |     |    |    |    |    |    |    |    |    |     | WRITE, TRIGGER RESET CONTROL       | 4    | A    |
| 440       | 15B   |     |     | 5A             | 5A  |     |    |    |    |    |    |    |    |    |     | DISCONNECT CONTROL                 | 4    | A    |







NOTE  
 ALL RESISTORS 2.7 KΩ  
 SYMBOL REPRESENTS CONNECTION TO ZERO VOLT RETURN

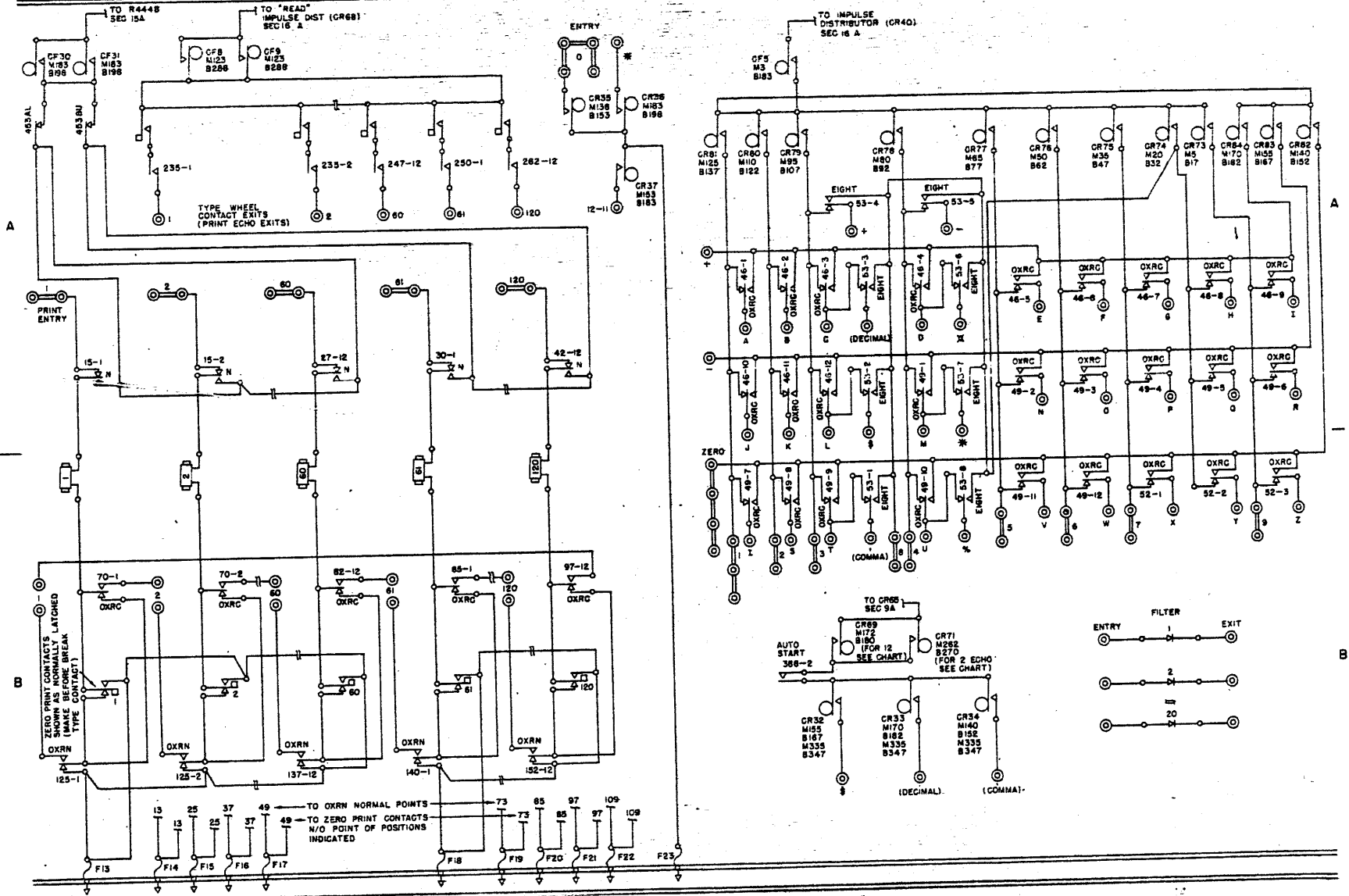


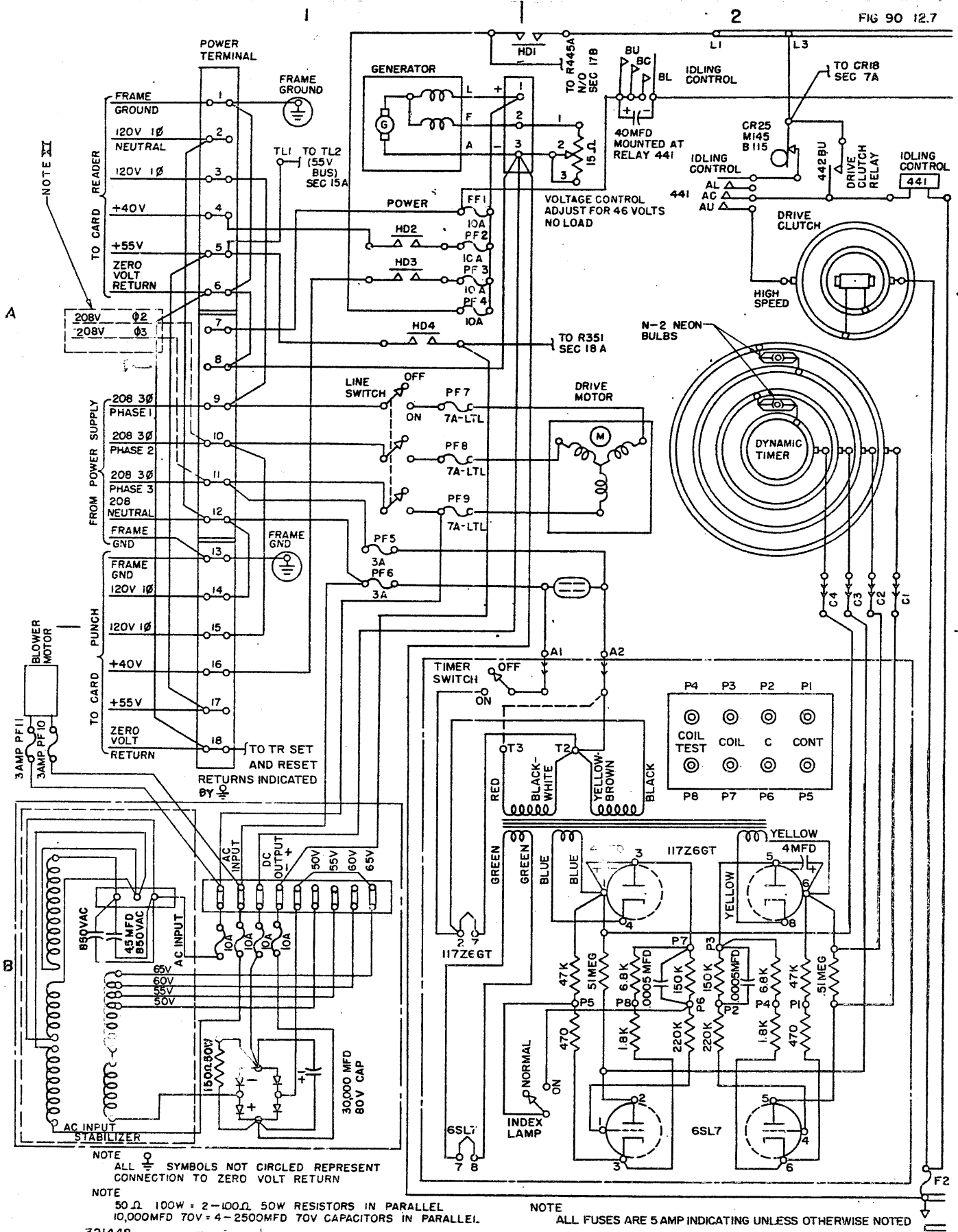
15

16

17

18





NOTE  
 ALL SYMBOLS NOT CIRCLED REPRESENT CONNECTION TO ZERO VOLT RETURN

NOTE  
 50Ω 100W = 2-100Ω 50W RESISTORS IN PARALLEL  
 10,000MFD 70V = 4-2500MFD 70V CAPACITORS IN PARALLEL

NOTE  
 ALL FUSES ARE 5 AMP INDICATING UNLESS OTHERWISE NOTED

321448

EC 242767

2

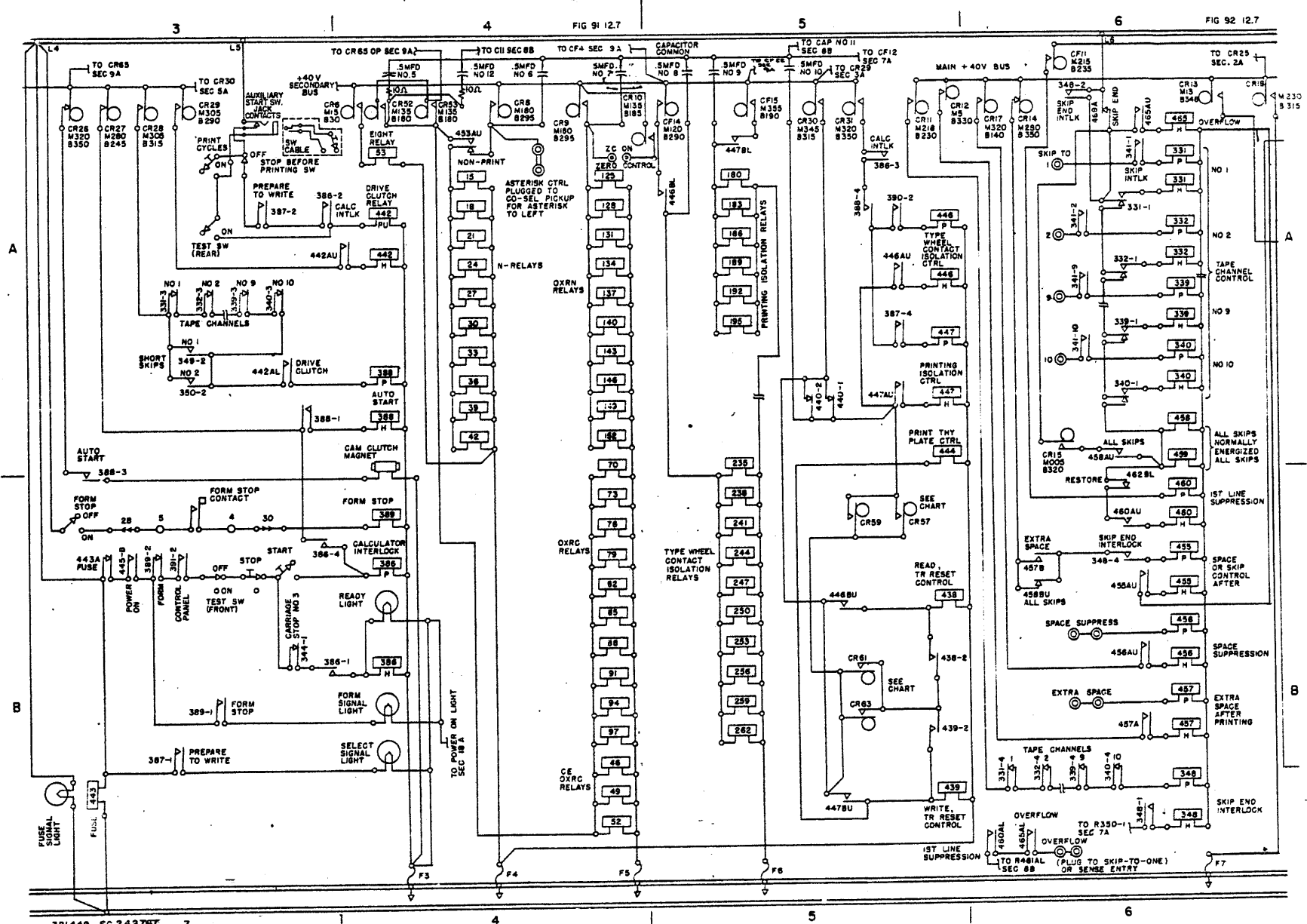


FIG 91 12.7

FIG 92 12.7

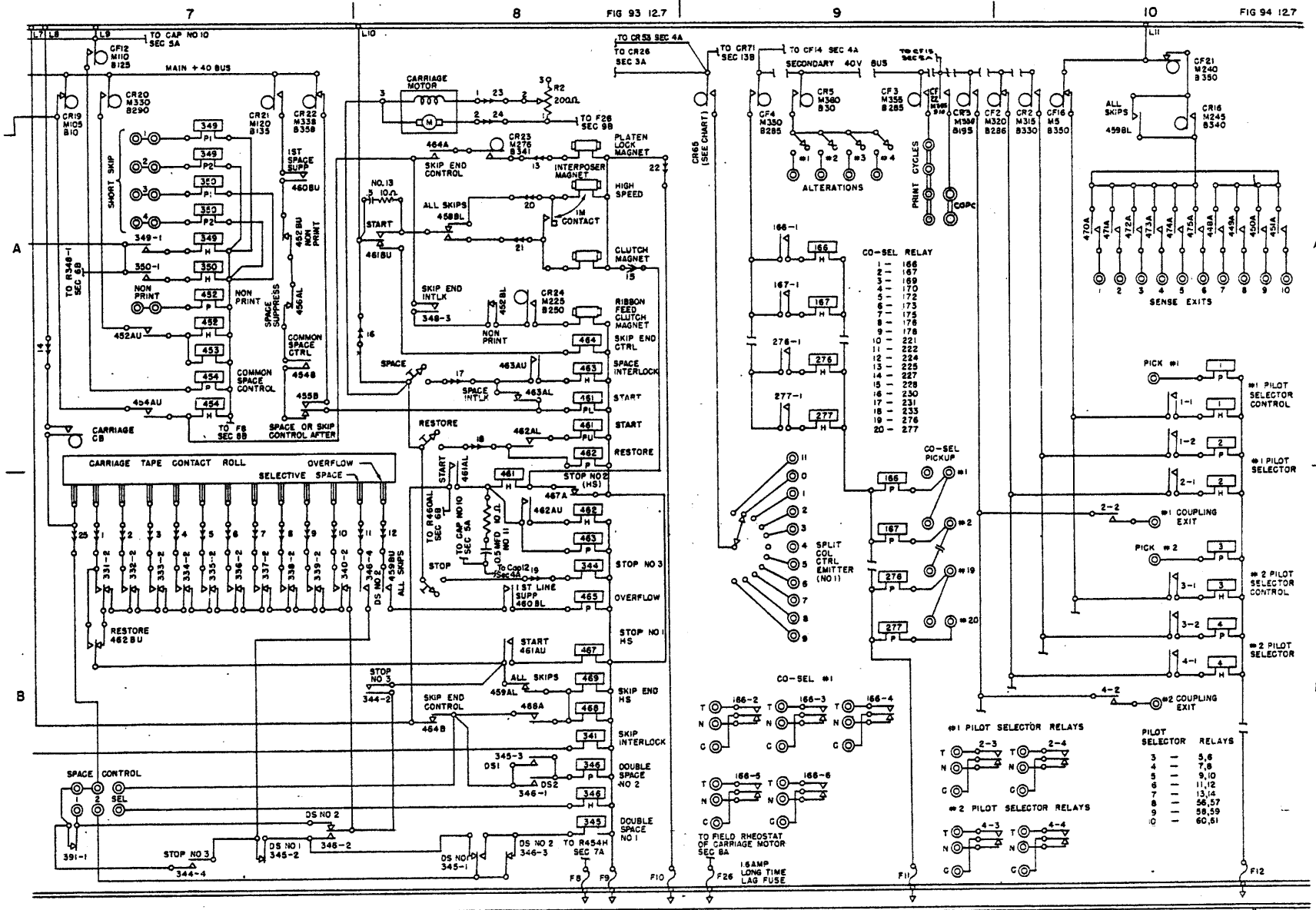


FIG 93 12.7

FIG 94 12.7

| #1 PILOT SELECTOR RELAYS |     | PILOT SELECTOR RELAYS |       |
|--------------------------|-----|-----------------------|-------|
| T                        | 2-3 | T                     | 2-4   |
| N                        | 3   | N                     | 5,6   |
| C                        | 4   | C                     | 7,8   |
| T                        | 5   | T                     | 9,10  |
| N                        | 6   | N                     | 11,12 |
| C                        | 7   | C                     | 13,14 |
| T                        | 8   | T                     | 56,57 |
| N                        | 9   | N                     | 58,59 |
| C                        | 10  | C                     | 60,61 |

| #2 PILOT SELECTOR RELAYS |     |
|--------------------------|-----|
| T                        | 4-3 |
| N                        | 4-4 |
| C                        | 4-5 |
| T                        | 4-6 |
| N                        | 4-7 |
| C                        | 4-8 |