

**PDP-15 SYSTEMS**  
**FP15**  
**FLOATING POINT PROCESSOR**  
**MAINTENANCE MANUAL**  
**VOLUME 2**

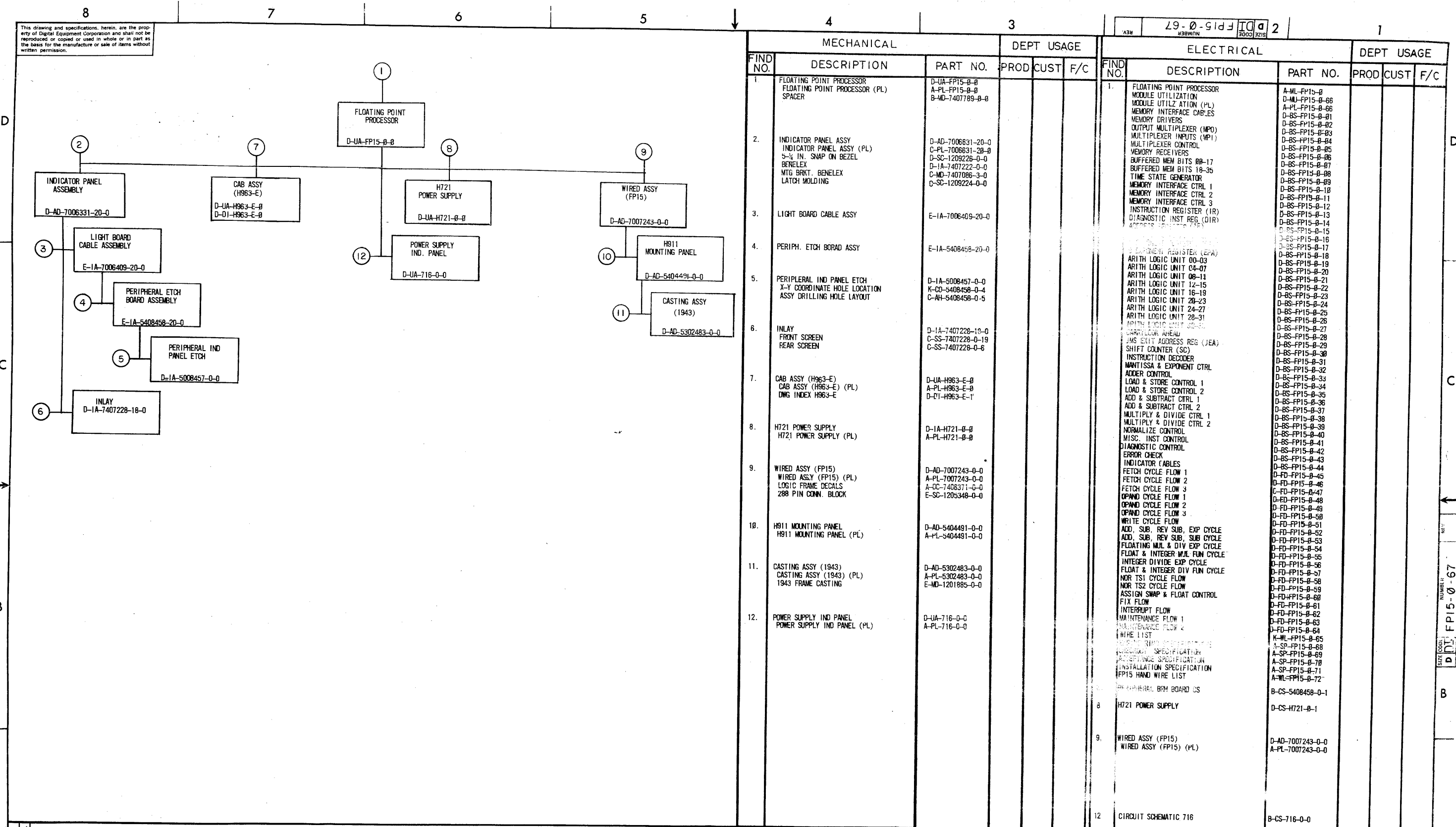
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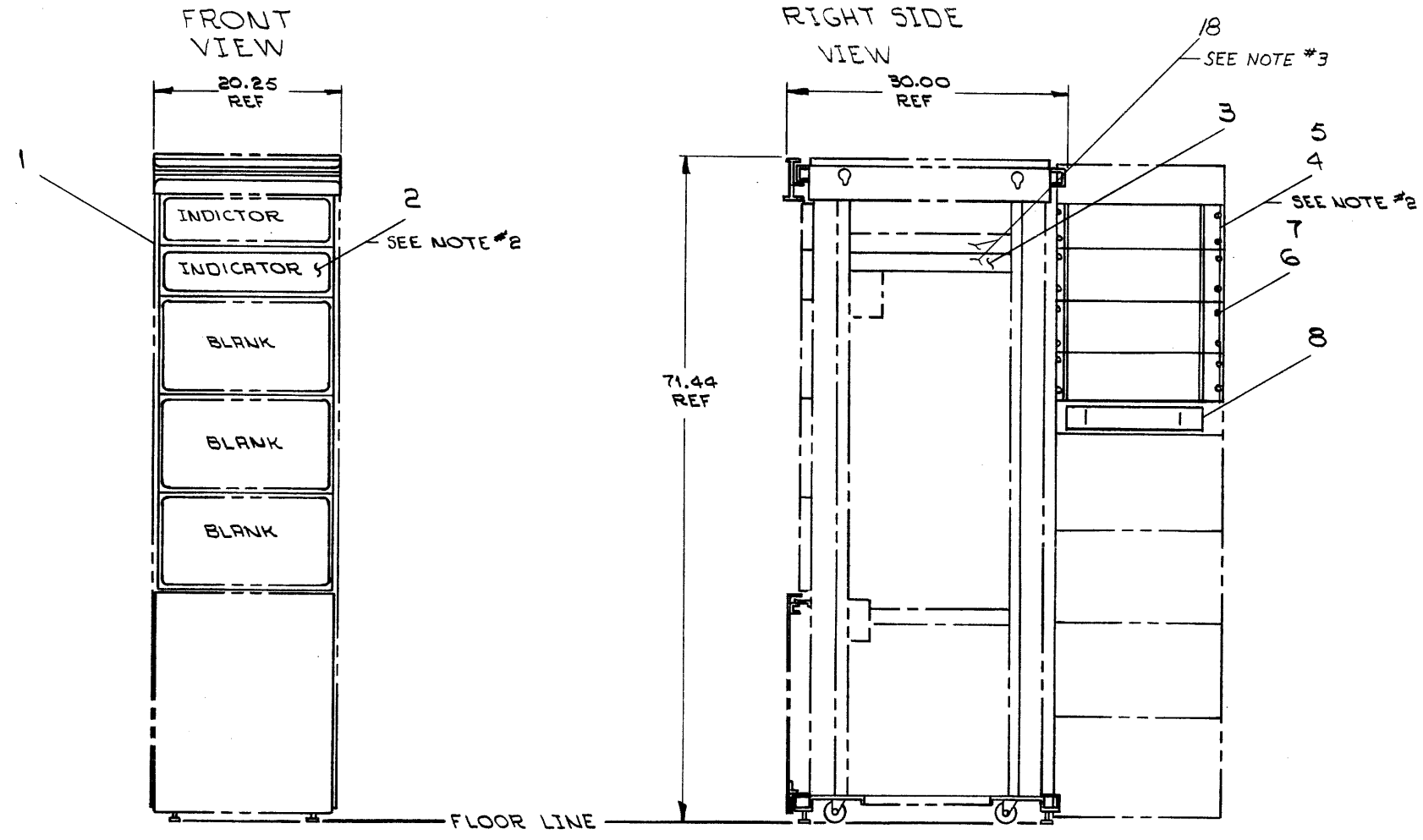
| MECHANICAL |   |  |      | DEPT USAGE |     | ELECTRICAL |  |   |      | DEPT USAGE |     |  |
|------------|---|--|------|------------|-----|------------|--|---|------|------------|-----|--|
| FIND NO.   | DESCRIPTION   | PART NO.   | PROD | CUST       | F/C | FIND NO.   | DESCRIPTION  | PART NO.  | PROD | CUST       | F/C |  |
| 1          | FLOATING POINT PROCESSOR<br>FLOATING POINT PROCESSOR (PL)<br>SPACER   | D-UA-FP15-0-0<br>A-PL-FP15-0-0<br>B-MD-7407789-0-0   |      |            |     | 1          | FLOATING POINT PROCESSOR<br>MODULE UTILIZATION<br>MODULE UTILIZATION (PL)<br>MEMORY INTERFACE CABLES<br>MEMORY DRIVERS<br>OUTPUT MULTIPLEXER (MPO)<br>MULTIPLEXER INPUTS (MPI)<br>MULTIPLEXER CONTROL<br>MEMORY RECEIVERS<br>BUFFERED MEM BITS 00-17<br>BUFFERED MEM BITS 18-35<br>TIME STATE GENERATOR<br>MEMORY INTERFACE CTRL 1<br>MEMORY INTERFACE CTRL 2<br>MEMORY INTERFACE CTRL 3<br>INSTRUCTION REGISTER (IR)<br>DIAGNOSTIC INST REG (DIR)<br>ADDRESS REGISTER (A/R)   | A-ML-FP15-0<br>D-MU-FP15-0-66<br>A-PL-FP15-0-66<br>D-BS-FP15-0-01<br>D-BS-FP15-0-02<br>D-BS-FP15-0-03<br>D-BS-FP15-0-04<br>D-BS-FP15-0-05<br>D-BS-FP15-0-06<br>D-BS-FP15-0-07<br>D-BS-FP15-0-08<br>D-BS-FP15-0-09<br>D-BS-FP15-0-10<br>D-BS-FP15-0-11<br>D-BS-FP15-0-12<br>D-BS-FP15-0-13<br>D-BS-FP15-0-14<br>D-BS-FP15-0-15<br>D-BS-FP15-0-16<br>D-BS-FP15-0-17<br>D-BS-FP15-0-18<br>D-BS-FP15-0-19<br>D-BS-FP15-0-20<br>D-BS-FP15-0-21<br>D-BS-FP15-0-22<br>D-BS-FP15-0-23<br>D-BS-FP15-0-24<br>D-BS-FP15-0-25<br>D-BS-FP15-0-26<br>D-BS-FP15-0-27<br>D-BS-FP15-0-28<br>D-BS-FP15-0-29<br>D-BS-FP15-0-30<br>D-BS-FP15-0-31<br>D-BS-FP15-0-32<br>D-BS-FP15-0-33<br>D-BS-FP15-0-34<br>D-BS-FP15-0-35<br>D-BS-FP15-0-36<br>D-BS-FP15-0-37<br>D-BS-FP15-0-38<br>D-BS-FP15-0-39<br>D-BS-FP15-0-40<br>D-BS-FP15-0-41<br>D-BS-FP15-0-42<br>D-BS-FP15-0-43<br>D-BS-FP15-0-44<br>D-FD-FP15-0-45<br>D-FD-FP15-0-46<br>D-FD-FP15-0-47<br>D-FD-FP15-0-48<br>D-FD-FP15-0-49<br>D-FD-FP15-0-50<br>D-FD-FP15-0-51<br>D-FD-FP15-0-52<br>D-FD-FP15-0-53<br>D-FD-FP15-0-54<br>D-FD-FP15-0-55<br>D-FD-FP15-0-56<br>D-FD-FP15-0-57<br>D-FD-FP15-0-58<br>D-FD-FP15-0-59<br>D-FD-FP15-0-60<br>D-FD-FP15-0-61<br>D-FD-FP15-0-62<br>D-FD-FP15-0-63<br>D-FD-FP15-0-64<br>K-ML-FP15-0-65<br>A-SP-FP15-0-68<br>A-SP-FP15-0-69<br>A-SP-FP15-0-70<br>A-SP-FP15-0-71<br>A-ML-FP15-0-72 |      |            |     |  |
| 2          | INDICATOR PANEL ASSY<br>INDICATOR PANEL ASSY (PL)<br>5-3/4 IN. SNAP ON BEZEL<br>BENELEX<br>MTG BRKT. BENELEX<br>LATCH MOLDING | D-AD-7006631-20-0<br>C-PL-7006631-20-0<br>D-SC-1209228-0-0<br>D-IA-7407222-0-0<br>C-MD-7407086-3-0<br>C-SC-1209224-0-0 |      |            |     | 2          | ARITH LOGIC UNIT 00-03<br>ARITH LOGIC UNIT 04-07<br>ARITH LOGIC UNIT 08-11<br>ARITH LOGIC UNIT 12-15<br>ARITH LOGIC UNIT 16-19<br>ARITH LOGIC UNIT 20-23<br>ARITH LOGIC UNIT 24-27<br>ARITH LOGIC UNIT 28-31<br>ARITH LOGIC UNIT 32-35<br>CARRYOVER AHEAD<br>JMS EXIT ADDRESS REG (JEA)<br>SHIFT COUNTER (SC)<br>INSTRUCTION DECODER<br>MANTISSA & EXPONENT CTRL<br>ADDER CONTROL<br>LOAD & STORE CONTROL 1<br>LOAD & STORE CONTROL 2<br>ADD & SUBTRACT CTRL 1<br>ADD & SUBTRACT CTRL 2<br>MULTIPLY & DIVIDE CTRL 1<br>MULTIPLY & DIVIDE CTRL 2<br>NORMALIZE CONTROL<br>MISC. INST CONTROL<br>DIAGNOSTIC CONTROL<br>ERROR CHECK<br>INDICATOR CABLES<br>FETCH CYCLE FLOW 1<br>FETCH CYCLE FLOW 2<br>FETCH CYCLE FLOW 3<br>OPAND CYCLE FLOW 1<br>OPAND CYCLE FLOW 2<br>OPAND CYCLE FLOW 3<br>WRITE CYCLE FLOW<br>ADD, SUB, REV SUB, EXP CYCLE<br>ADD, SUB, REV SUB, SUB CYCLE<br>FLOATING MUL & DIV EXP CYCLE<br>INTEGER DIVIDE EXP CYCLE<br>FLOAT & INTEGER DIV FLOW CYCLE<br>NOR TST CYCLE FLOW<br>NOR TST CYCLE FLOW<br>ASSIGN SWAP & FLOAT CONTROL<br>FIX FLOW<br>INTERRUPT FLOW<br>MAINTENANCE FLOW 1<br>MAINTENANCE FLOW 2<br>WIRE LIST<br>SECONDARY SPECIFICATION<br>PERFORMANCE SPECIFICATION<br>INSTALLATION SPECIFICATION<br>FP15 HAND WIRE LIST |   |      |            |     |  |
| 3          | LIGHT BOARD CABLE ASSY  | E-IA-7006409-20-0  |      |            |     | 3          | PERIPHERAL BRN BOARD CS  | B-CS-5408458-0-1  |      |            |     |  |
| 4          | PERIPH. ETCH BOARD ASSY   | E-IA-5408458-20-0  |      |            |     | 8          | H721 POWER SUPPLY  | D-CS-H721-0-1   |      |            |     |  |
| 5          | PERIPHERAL IND PANEL ETCH<br>X-Y COORDINATE HOLE LOCATION<br>ASSY DRILLING HOLE LAYOUT  | D-IA-5008457-0-0<br>K-CO-5408458-0-4<br>C-AH-5408458-0-5   |      |            |     | 9          | WIRE ASSY (FP15)<br>WIRE ASSY (FP15) (PL)  | D-AD-7007243-0-0<br>A-PL-7007243-0-0  |      |            |     |  |
| 6          | INLAY<br>FRONT SCREEN<br>REAR SCREEN  | D-IA-7407228-10-0<br>C-SS-7407228-0-19<br>C-SS-7407228-0-6   |      |            |     | 12         | CIRCUIT SCHEMATIC 716  | B-CS-716-0-0  |      |            |     |  |
| 7          | CAB ASSY (H963-E)<br>CAB ASSY (H963-E) (PL)<br>DWS INDEX H963-E   | D-UA-H963-E-0<br>A-PL-H963-E-0<br>D-DI-H963-E-1  |      |            |     |            |  |   |      |            |     |  |
| 8          | H721 POWER SUPPLY<br>H721 POWER SUPPLY (PL)   | D-IA-H721-0-0<br>A-PL-H721-0-0   |      |            |     |            |  |   |      |            |     |  |
| 9          | WIRE ASSY (FP15)<br>WIRE ASSY (FP15) (PL)<br>LOGIC FRAME DECALS<br>288 PIN CONN. BLOCK  | D-AD-7007243-0-0<br>A-PL-7007243-0-0<br>A-DC-7406371-0-0<br>E-SC-1205348-0-0   |      |            |     |            |  |   |      |            |     |  |
| 10         | H911 MOUNTING PANEL<br>H911 MOUNTING PANEL (PL)   | D-AD-5404491-0-0<br>A-PL-5404491-0-0   |      |            |     |            |  |   |      |            |     |  |
| 11         | CASTING ASSY (1943)<br>CASTING ASSY (1943) (PL)<br>1943 FRAME CASTING   | D-AD-5302483-0-0<br>A-PL-5302483-0-0<br>E-MD-1201885-0-0   |      |            |     |            |  |   |      |            |     |  |
| 12         | POWER SUPPLY IND PANEL<br>POWER SUPPLY IND PANEL (PL)   | D-UA-716-0-0<br>A-PL-716-0-0   |      |            |     |            |  |   |      |            |     |  |

|                                  |            |              |                                  |
|----------------------------------|------------|--------------|----------------------------------|
| REV. _____                       | DATE _____ |              | <b>DRAWING INDEX LIST (FP15)</b> |
| CHANGE NO. _____                 | DATE _____ |              |                                  |
| CHK _____                        | DATE _____ |              |                                  |
| _____                            | DATE _____ |              |                                  |
| _____                            | DATE _____ |              |                                  |
| FIRST USED ON OPTION/MODEL _____ |            | SIZE CODE    | NUMBER                           |
| _____                            |            | DDI          | FP15-0-67                        |
| NEXT HIGHER ASSY _____           |            | SCALE        | REV. _____                       |
| _____                            |            | SHEET 1 OF 1 |                                  |

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0-0-FP15-0-0  
REV A

- NOTES:
1. FOR DRAWING INDEX LIST REFER TO: 0-01-FP15-0-67
  2. REMOVE EXISTING HARDWARE AND PLACE ITEMS AS SHOWN.
  3. PLACE FOUR TWO INCH STRIPS OF GROMMET ON REAR EDGES OF 716 P.S.



| REV | CHANGE NO. | CHK  | DATE    |
|-----|------------|------|---------|
| A   | 131        | J.P. | 5-15-74 |

DRAWN BY: J.P. 5-15-74

FIRST USED ON OPTION/ MODEL  
PDP-15

|            |      |         |
|------------|------|---------|
| DRN'D      | DATE | 5/14/74 |
| CHK'D      | DATE | 4/24/74 |
| ENG.       | DATE | 5/14/74 |
| PROJ. ENG. | DATE | 5/14/74 |
| PROD.      | DATE | 5/14/74 |

DO NOT SCALE DRAWING  
UNLESS OTHERWISE SPECIFIED  
DIMENSION IN INCHES  
TOLERANCES  
ANGLES = 0°30'  
FINAL SURFACE QUALITY  
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: #

FINISH: #

| QTY.  | DESCRIPTION | PART NO.           | ITEM NO.   |
|---|-------------|--------------------|------------|
| PARTS LIST  |             |                    |            |
| digital EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |             |                    |            |
| TITLE<br>FLOATING POINT PROCESSOR                       |             |                    |            |
| NEXT HIGHER ASSY<br>A-ML-FP15-0                         |             | SCALE<br>NONE      | SHEET OF 2 |
| SIZE CODE<br>DUA  |             | NUMBER<br>FP15-0-0 | REV.<br>A  |

REV A  
NUMBER  
DUA FP15-0-0



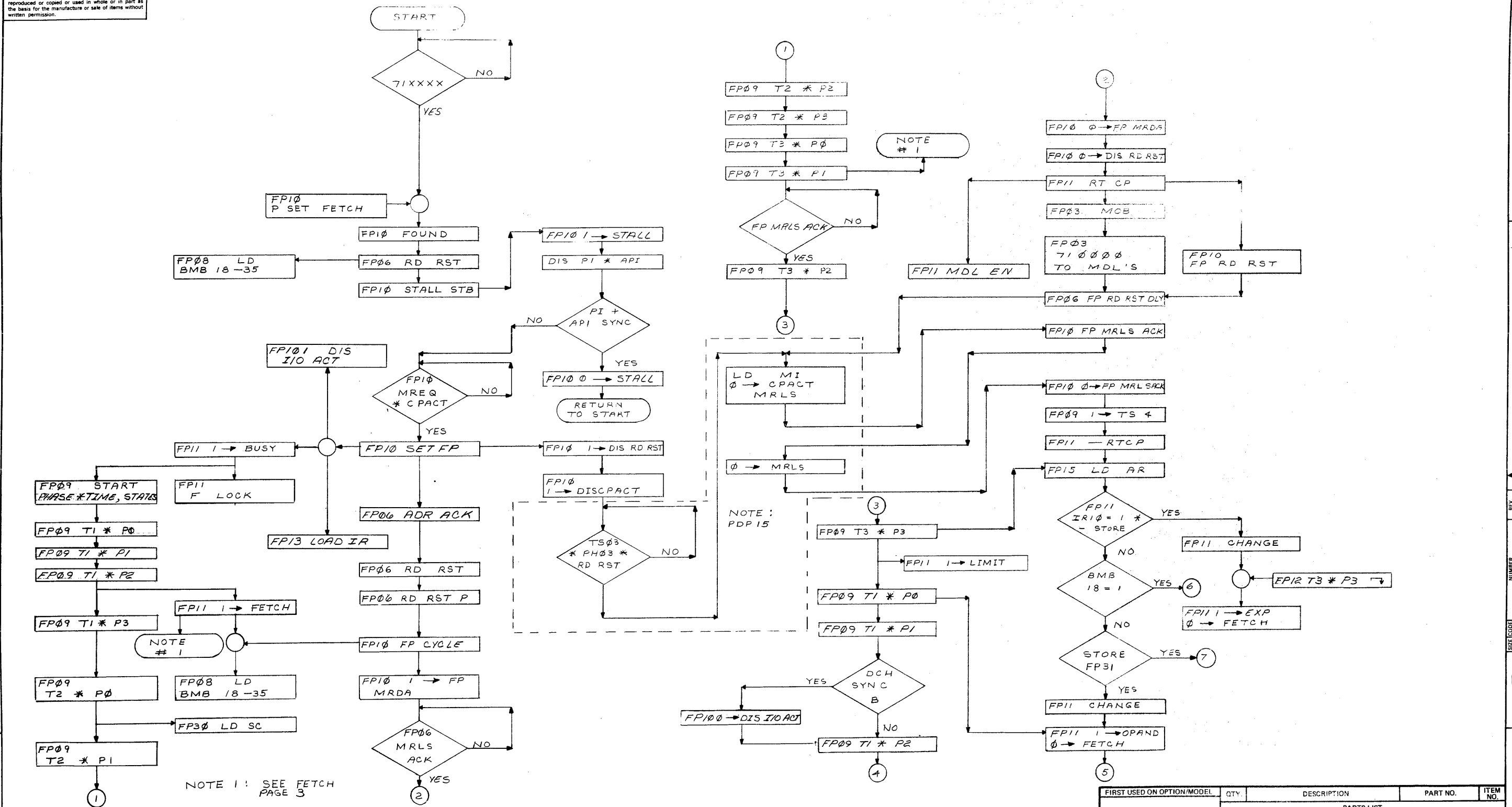
| DIGITAL EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS<br><b>PARTS LIST</b> |                    |  |  | QUANTITY/VARIATION |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
|--|--------------------|--|--|--------------------|------------|--------------------|--|--|--|-----------|-----------------------|--|--|--|--|--|--|--|--|--|
| MADE BY P. J. LeBLANC  |                    | CHECKED <i>R. Col</i>                  |  | SECTION 1          |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| DATE 4/13/71   |                    | DATE 4-23-71                           |  | ISSUED SECT. 1     |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| ENG <i>Ed King</i>   |                    | PROD <i>D. Deane</i>                   |  |                    |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| DATE 5/14/71   |                    | DATE 5/14/71                           |  |                    |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| ITEM NO.   | DWG NO. / PART NO. | DESCRIPTION                            |  |                    |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 1  | D-UA-H963-E-0      | CAB ASSY (H963-E)                      |  | 1                  |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 2  | D-AD-7006331-20-0  | INDICATOR PANEL ASSY                   |  | 1                  |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 3  | D-UA-716-0-0       | POWER SUPPLY IND PANEL                 |  | 1                  |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 4  | D-AD-7007243-0-0   | WIRED ASSY (FP15)                      |  | 1                  |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 5  | B-MD-7407789-0-0   | SPACER                                 |  | 8                  |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 6  | 9006074-1          | SCR, PHL HD PAN #10-32 X 5/8 LG        |  | 24                 |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 7  | 9007786            | SPEED NUT #10-32 TINNEMAN              |  | 24                 |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 8  | D-UA-H721-0-0      | H721 POWER SUPPLY                      |  | 1                  |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 9  | 1209340-0-0        | 8 CIRCUIT MATE-N-LOCK CONN             |  | 4                  |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 10   | 1209378-01         | PIN, #60620-4 AMD (MALE)               |  | 16                 |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 11   | 120935-12          | SOCKET HOUSING #1-480278-0 MATE-N-LOCK |  | 1                  |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 12   | 9107440-50         | WIRE #14 AWG STRD TWP GRN/BLK          |  | A/R                |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 13   | 9107440-29         | WIRE #14 AWG STRD TWP RED/WHT          |  | A/R                |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 14   | 9107370-00         | WIRE #14 AWG STRD TEF INS BLK          |  | A/R                |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 15   | 9107370-11         | WIRE #14 AWG STRD TEF INS BRN          |  | A/R                |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 16   | 9107370-33         | WIRE #14 AWG STRD TEF INS ORN          |  | A/R                |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 17   | D-UA-BC08-A-3      | MEMORY BUS CABLE                       |  | 3                  |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| REF  | D-MU-FP15-0-66     | MODULE UTILIZATION                     |  |                    |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| 18   | 9007036            | GROMMET # 122-37-2500                  |  | A/R                |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
|  |                    |  |  |                    |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
|  |                    |  |  |                    |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
|  |                    |  |  |                    |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |
| TITLE<br>FLOATING POINT PROCESSOR  |                    | ASSY NO.<br>D-UA-FP15-0-0              |  | SIZE<br>A          | CODE<br>PL | NUMBER<br>FP15-0-0 |  |  |  | REV.<br>A | ECO NO.<br>FP15-00013 |  |  |  |  |  |  |  |  |  |
|  |                    | SHEET 1 OF 1                           |  | DIST. G            |            |                    |  |  |  |           |                       |  |  |  |  |  |  |  |  |  |

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D  
C  
B  
A

D  
C  
B  
A

|      |  |
|------|--|
| REV. |  |
| CHG. |  |
| NO.  |  |

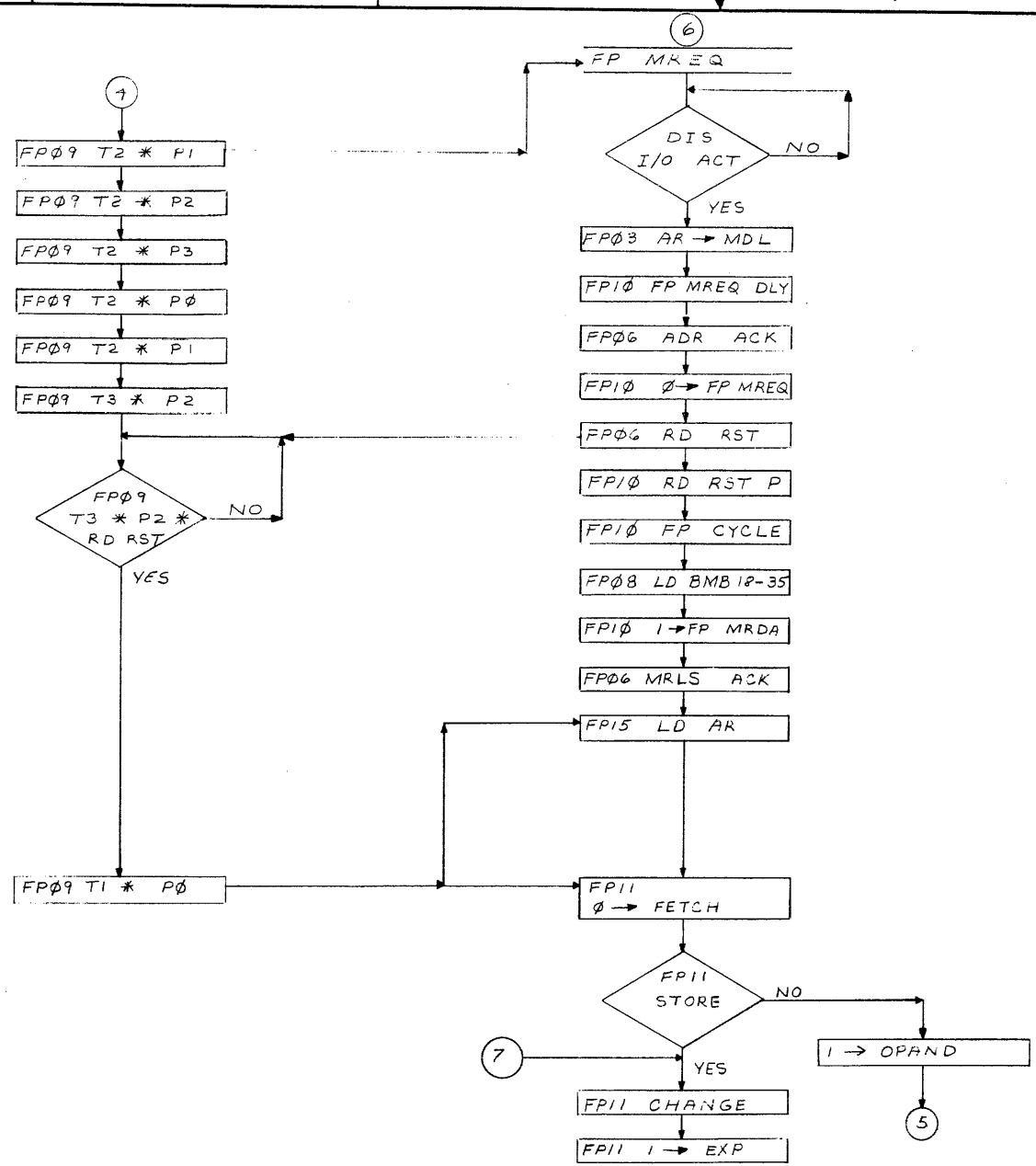


| FIRST USED ON OPTION/MODEL                             | QTY.              | DESCRIPTION                                       | PART NO.   | ITEM NO. |
|--|-------------------|---|--|----------|
| PARTS LIST   |                   |   |  |          |
| UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.        |                   | DRN <i>Wilson</i> DATE <i>7/27/71</i>             | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |          |
| TOLERANCES   |                   | CHK'D <i>L.P. Hottos</i> DATE <i>8/11/71</i>      |  |          |
| DECIMALS .XXX = .005                                   | ANGLES ±0° 30'    | ENG <i>L.P. Hottos</i> DATE <i>5/11/71</i>        | TITLE<br><b>FETCH CYCLE I</b>                                  |          |
| .XX = .02  |                   | PROJ. ENG. <i>L.P. Hottos</i> DATE <i>5/11/71</i> |  |          |
| .X = .1  |                   | PROJ. <i>L.P. Hottos</i> DATE <i>5/11/71</i>      |  |          |
| REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓ |                   |   |  |          |
| MATERIAL   | NEXT HIGHER ASSY. | SIZE CODE NUMBER REV.<br>DFD P15-0-45             |  |          |
| FINISH   | SCALE OF          | SHEET OF  |  |          |



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96-0-5-1-2  
 338788 NUMBER  
 1000123



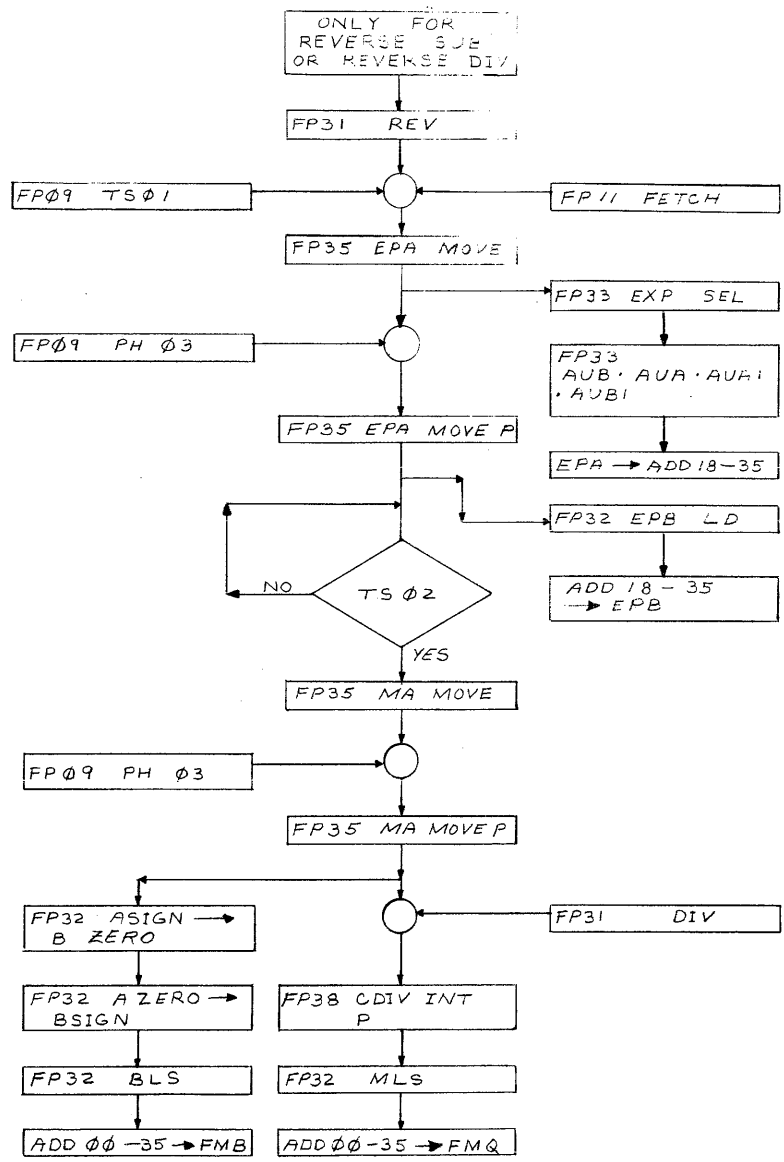
|      |     |
|------|-----|
| REV. | NO. |
| CHG. | NO. |
| CHK. | NO. |

DEC FORM NO DRD 102-B

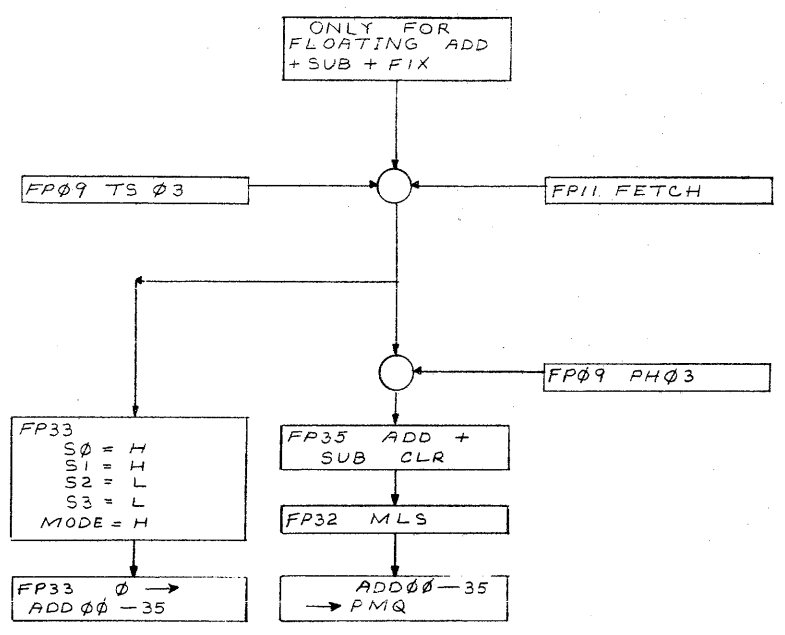
| FIRST USED ON OPTION/MODEL                              | QTY.                            | DESCRIPTION     | PART NO.   | ITEM NO. |
|---|---------------------------------|-----------------|--|----------|
| PARTS LIST  |                                 |                 |  |          |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES.      | DRN<br><i>Wilson</i>            | DATE<br>4/20/71 | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |          |
| TOLERANCES  | CHK'D<br><i>L.P. Hones</i>      | DATE<br>5/14/71 |  |          |
| DECIMALS .XXX = .005<br>.XX = .02<br>.X = .1            | ENG.<br><i>Ed. King</i>         | DATE<br>5/14/71 | TITLE<br><b>FETCH CYCLE<br/>FLOW 2</b>                         |          |
| ANGLES ± 0° 30'   | PROJ. ENG.<br><i>L.P. Hones</i> | DATE<br>5/14/71 |  |          |
| REMOVE BURRS AND BREAK SHARP<br>CORNERS SURFACE QUALITY | PROD.<br><i>Ed. King</i>        | DATE<br>5/14/71 | SIZE CODE NUMBER REV.<br><b>D FDFP15-0-46</b>                  |          |
| MATERIAL  | NEXT HIGHER ASSY.               |                 |  |          |
| FINISH  | SCALE                           | SHEET OF        |  |          |

REV. NUMBER  
D FDFP15-0-46

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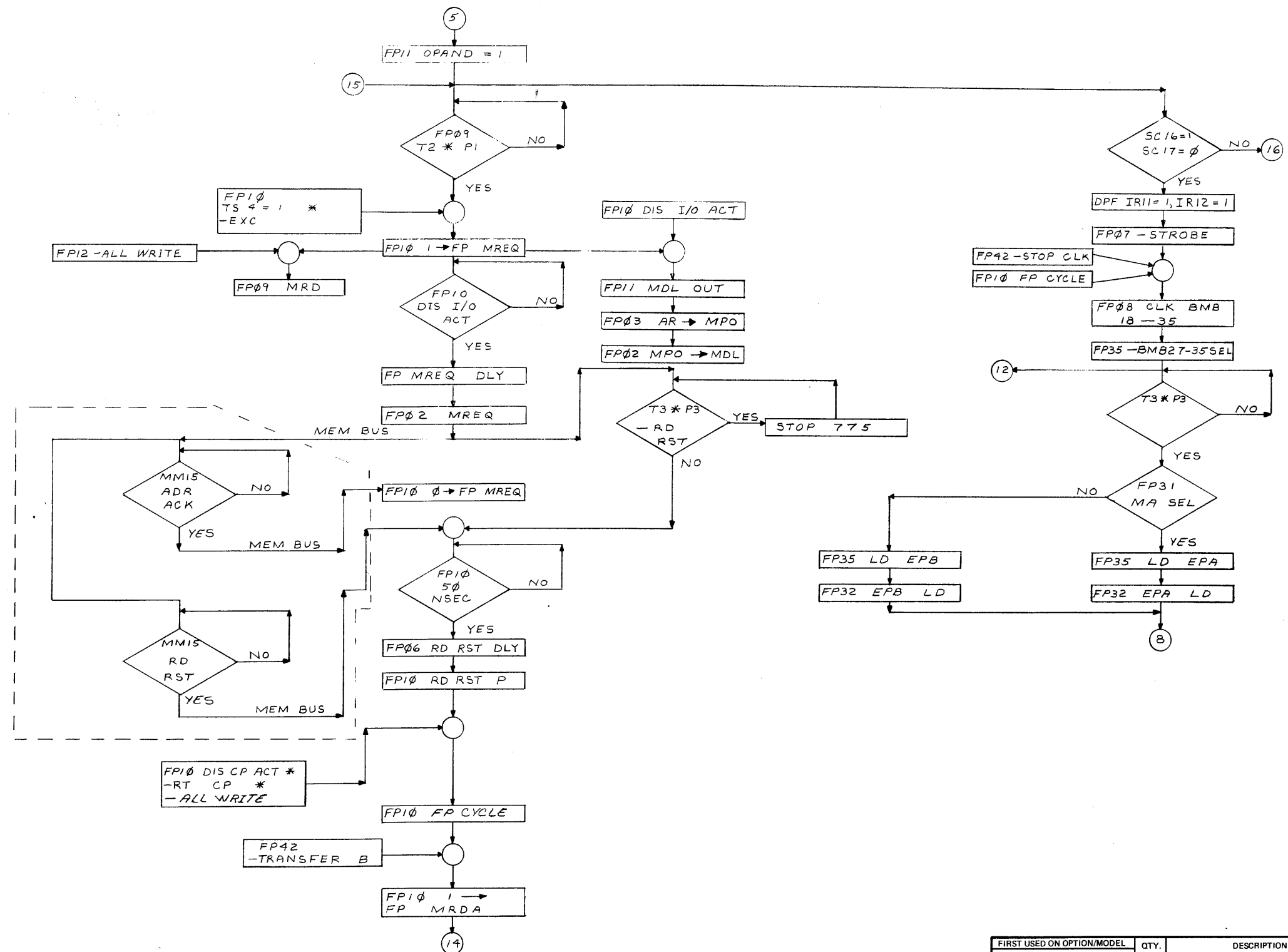
NOTE: FMA IS ON ADD 00-35



|            |  |
|------------|--|
| REV        |  |
| CHANGE NO. |  |
| CHK        |  |

| FIRST USED ON OPTION/MODEL                                | QTY.                            | DESCRIPTION     | PART NO.   | ITEM NO. |
|---|---------------------------------|-----------------|--|----------|
| PARTS LIST  |                                 |                 |  |          |
| UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES | DRN<br><i>E. Wilson</i>         | DATE<br>4/14/71 | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |          |
| DECIMALS  | CHK'D<br><i>L. Roberts</i>      | DATE<br>5/14/71 |  |          |
| ANGLES  | ENG.<br><i>C. K.</i>            | DATE<br>5/14/71 | TITLE<br>FETCH CYCLE FLOW 3                                    |          |
| .XXX = .006<br>.XX = .02<br>.X = .1                       | PROJ. ENG.<br><i>L. Roberts</i> | DATE<br>5/14/71 |  |          |
| REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY      | PROD.<br><i>L. Roberts</i>      | DATE<br>5/14/71 |  |          |
| MATERIAL  | NEXT HIGHER ASSY.               |                 | SIZE CODE  | NUMBER   |
| FINISH  | SCALE                           | SHEET OF        | D F D F P I 5 - 0 - 4 7  | REV.     |

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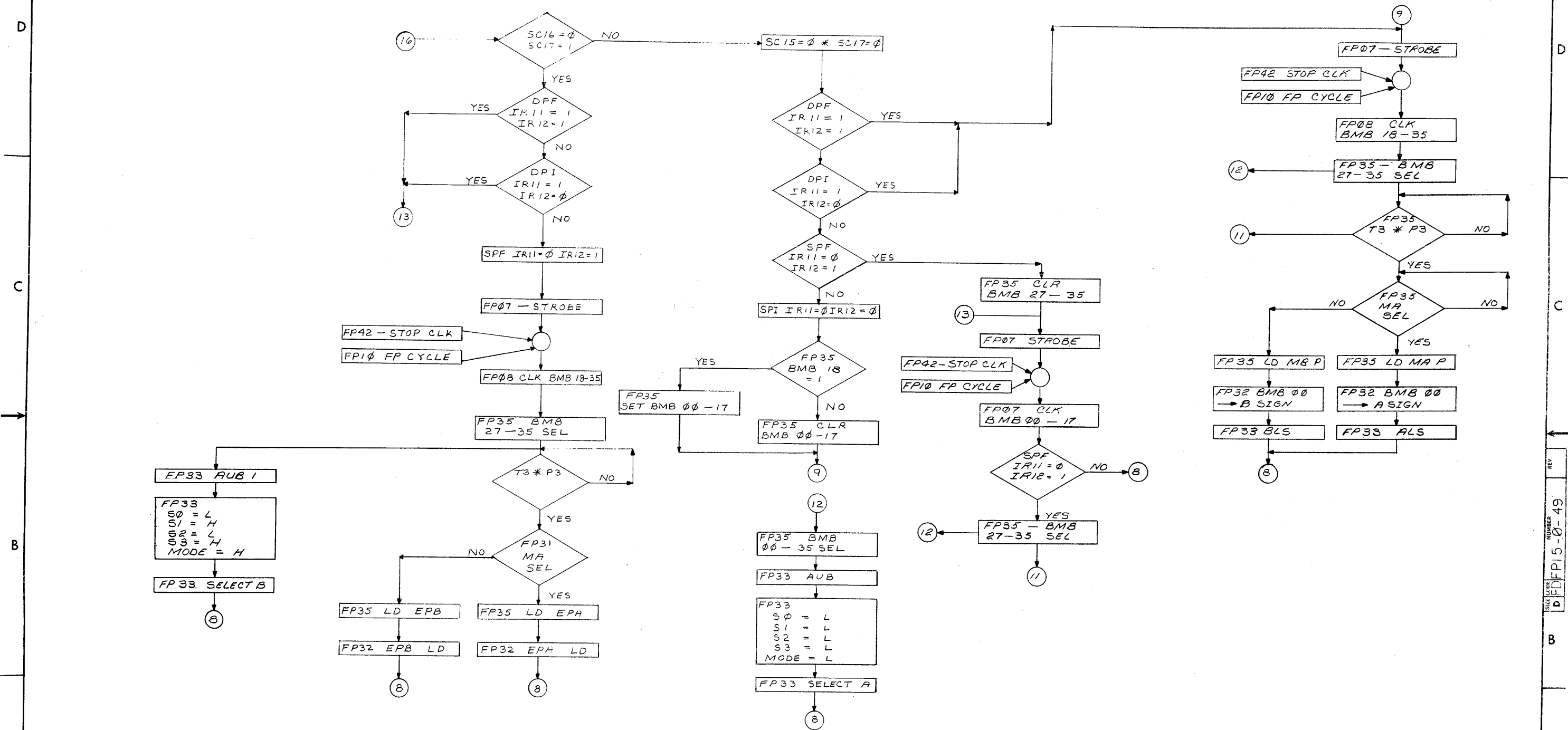
|            |  |
|------------|--|
| REV        |  |
| CHANGE NO. |  |
| CHK        |  |

| FIRST USED ON OPTION/MODEL                                      | QTY.                           | DESCRIPTION     | PART NO.   | ITEM NO.     |
|---|--------------------------------|-----------------|--|--------------|
| PARTS LIST  |                                |                 |  |              |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES<br>TOLERANCES | DRN.<br><i>E. Wilson</i>       | DATE<br>4/16/71 | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |              |
| DECIMALS  | CHK'D<br><i>L.P. HoHo</i>      | DATE<br>5/14/71 |  |              |
| ANGLES  | ENG.<br><i>C. King</i>         | DATE<br>5/14/71 | TITLE<br><b>OPAND CYCLE I</b>                                  |              |
| .XXX = .005<br>.XX = .02<br>.X = .1                             | PROJ. ENG.<br><i>L.P. HoHo</i> | DATE<br>5/14/71 |  |              |
| REMOVE BURRS AND BREAK SHARP<br>CORNERS SURFACE QUALITY         | PROOF<br><i>[Signature]</i>    | DATE<br>5/14/71 |  |              |
| MATERIAL  | NEXT HIGHER ASSY.              |                 | SIZE CODE  | NUMBER       |
| FINISH  | SCALE                          | SHEET           | D  | FD FPI5-0-48 |
|   |                                | OF              | DIST.  |              |

REV 87-0-48 SIZE CODE DFD FPI5-0-48

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REV. 2 DFD F15-0-49

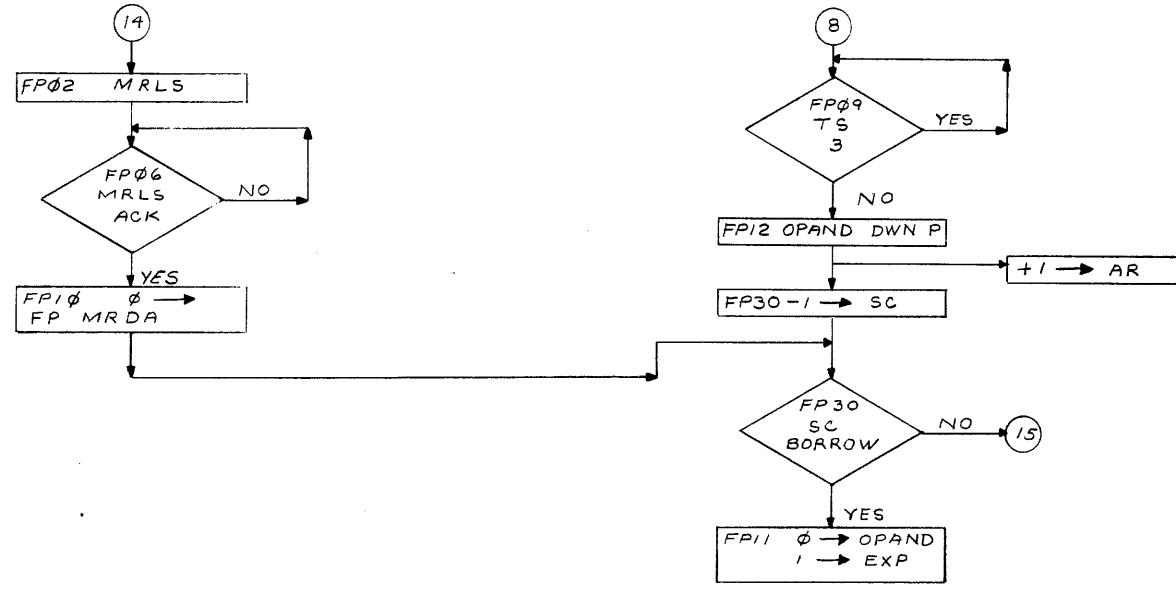


|     |     |
|-----|-----|
| REV | NO. |
| CHK | NO. |
| CHG | NO. |
| REV | NO. |

|   |                      |                 |   |          |
|---|----------------------|-----------------|---|----------|
| FIRST USED ON OPTION/MODEL                                      | QTY.                 | DESCRIPTION     | PART NO.  | ITEM NO. |
| PARTS LIST  |                      |                 |   |          |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES<br>TOLERANCES | DRN<br>E. Wilson     | DATE<br>4/10/72 | digital EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |          |
| DECIMALS  | CHK'D<br>L.P. Holmes | DATE<br>5/14/72 | TITLE   |          |
| ANGLES  | ENG.<br>J. X.        | DATE<br>5/14/72 | OPAND CYCLE   |          |
| .XXX = .005<br>.XX = .02<br>.X = .1                             | PROJ. ENG.<br>J. X.  | DATE<br>5/14/72 | FLOW 2  |          |
| REMOVE BURRS AND BREAK SHARP<br>CORNERS SURFACE QUALITY         | DATE<br>5/14/72      |                 |   |          |
| MATERIAL  | NEXT HIGHER ASSY.    | SIZE CODE       | NUMBER  | REV.     |
| FINISH  | SCALE                | DFD F15-0-49    |   |          |
|   | SHEET                | OF              | DIST.   |          |

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SIZE CODE NUMBER REV  
**D** **FD** **F15-0-50** **2**



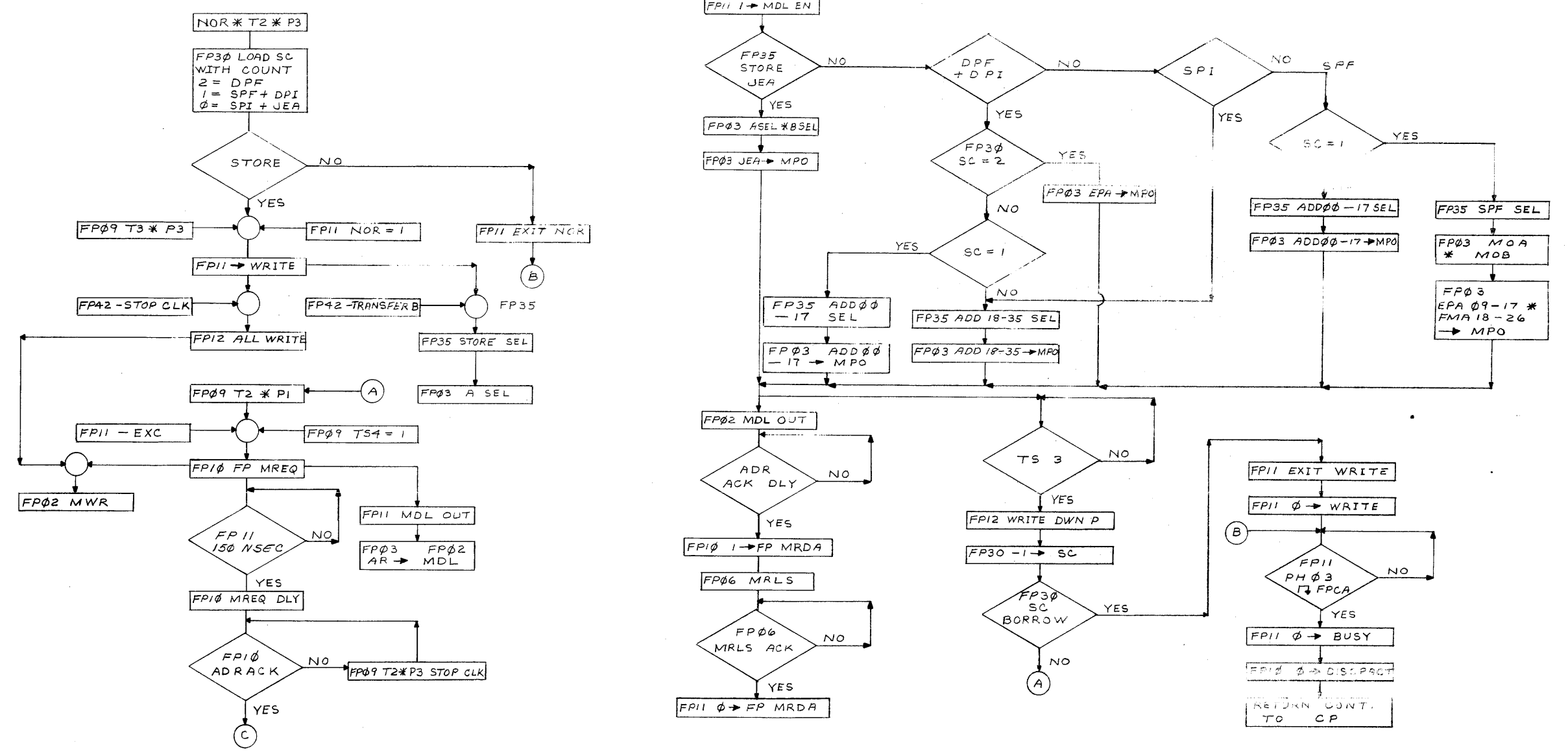
|     |            |
|-----|------------|
| REV | CHANGE NO. |
|     |            |
|     |            |
|     |            |

DEC FORM NO  
 DRD 102-B

| FIRST USED ON OPTION/MODEL                                       | QTY.                            | DESCRIPTION     | PART NO.   | ITEM NO.                     |
|--|---------------------------------|-----------------|--|------------------------------|
| PARTS LIST   |                                 |                 |  |                              |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES.<br>TOLERANCES | DRN.<br><i>E. Wilson</i>        | DATE<br>4/15/70 | <b>digital</b> EQUIPMENT CORPORATION<br><small>MAYNARD MASSACHUSETTS</small><br>TITLE<br><b>OPAND CYCLE FLOW 3</b> |                              |
| DECIMALS   | CHK'D<br><i>L.P. Hottel</i>     | DATE<br>3/24/71 |  |                              |
| .XXX = .005  | ENG.<br><i>Ed King</i>          | DATE<br>3/14/71 |  |                              |
| .XX = .02  | PROJ. ENG.<br><i>J. Belcher</i> | DATE<br>5/22/71 |  |                              |
| .X = .1  | PROD.<br><i>[Signature]</i>     | DATE<br>2/14/71 |  |                              |
| REMOVE BURRS AND BREAK SHARP<br>CORNERS SURFACE QUALITY ✓        | NEXT HIGHER ASSY.               |                 | SIZE CODE<br><b>D</b>  | NUMBER<br><b>FD F15-0-50</b> |
| MATERIAL   | SCALE                           | SHEET           | OF   | DIST.                        |

SIZE CODE NUMBER REV  
**D** **FD** **F15-0-50**

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|     |     |
|-----|-----|
| REV | NO. |
| CHK | NO. |
| CHG | NO. |

DEC FORM NO. DRD 102-B

| FIRST USED ON OPTION   | QTY                         | DESCRIPTION            | PART NO.  | ITEM NO. |
|--|-----------------------------|------------------------|---|----------|
| PARTS LIST   |                             |                        |   |          |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES.<br>TOLERANCES | DRN<br><i>Wilson</i>        | DATE<br><i>4/15/71</i> | <b>digital</b> EQUIPMENT CORPORATION<br><small>MAYNARD, MASSACHUSETTS</small> |          |
| DECIMALS .xxx = .005   | CHK'D<br><i>L.P. Hodges</i> | DATE<br><i>5/14/71</i> |   |          |
| ANGLES ±0° 30'   | ENG.<br><i>J. King</i>      | DATE<br><i>5/14/71</i> |   |          |
| REMOVE BURRS AND BREAK SHARP<br>CORNERS SURFACE QUALITY          | PROL'NG.<br><i>J. King</i>  | DATE<br><i>5/14/71</i> |   |          |
| MATERIAL   | NEXT HIGHER ASSY.           |                        | SIZE CODE   | NUMBER   |
| FINISH   | SCALE                       | SHEET OF               | DFD FPI5-0-51   | REV.     |

WRITE CYCLE FLOW

DFD FPI5-0-51

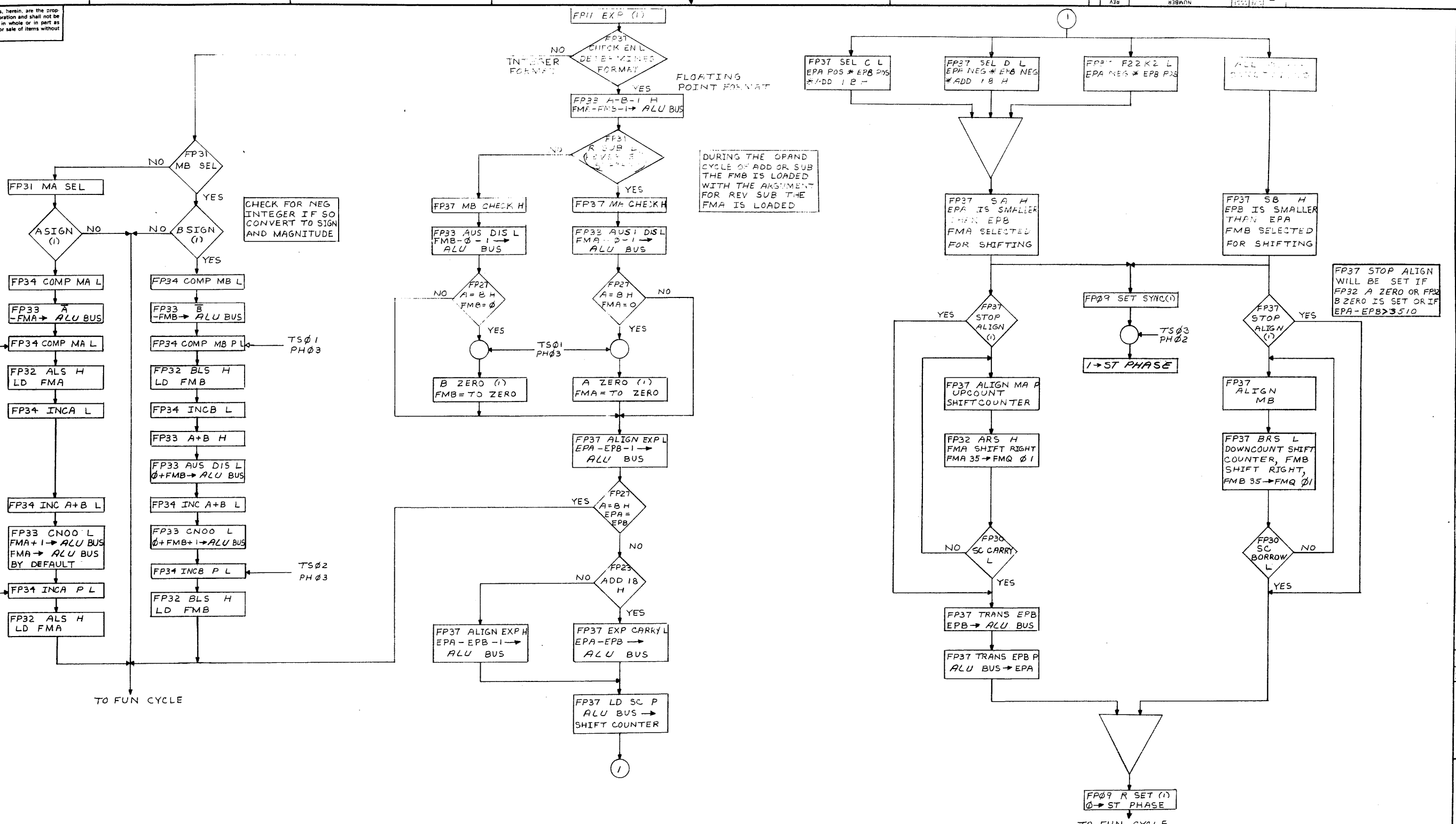
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D  
C  
B  
A

D  
C  
B  
A

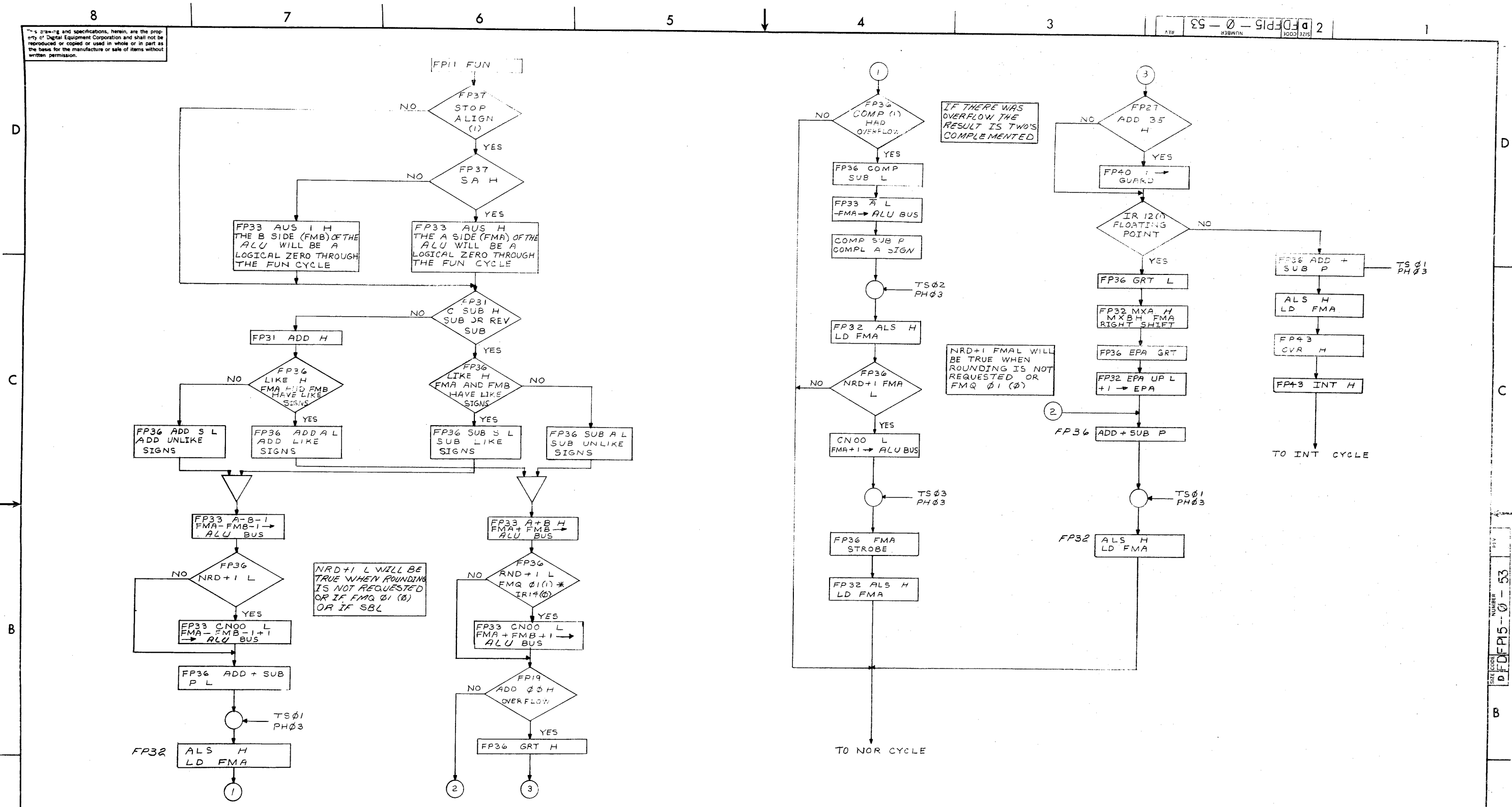
| REV. | CHG. | NO. |
|------|------|-----|
|      |      |     |
|      |      |     |

8 7 6 5 4 3 2 1



| QTY.  | DESCRIPTION   | PART NO. | ITEM NO.   |
|---|---------------|----------|--|
| PARTS LIST  |               |          |  |
| UNLESS OTHERWISE SPECIFIED                                    | DRN           | DATE     | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD MASSACHUSETTS<br>TITLE<br>ADD, SUB, REV SUB<br>EXP CYCLE |
| UNLESS OTHERWISE SPECIFIED                                    | CHK'D         | DATE     |  |
| DIMENSION IN INCHES   | ENG           | DATE     |  |
| TOLERANCES  | PROJ. ENG.    | DATE     |  |
| DECIMALS FRACTIONS ANGLES<br>± .005 ± 1/64 ± 0°30'            | PRG.          | DATE     |  |
| FINAL SURFACE QUALITY<br>REMOVE BURRS AND BREAK SHARP CORNERS | DATE          | DATE     |  |
| MATERIAL  | FIRST USED ON |          |  |
| FINISH  | SCALE         | OF       |  |
|   | SHEET         | OF       |  |
|   | DIST.         |          |  |

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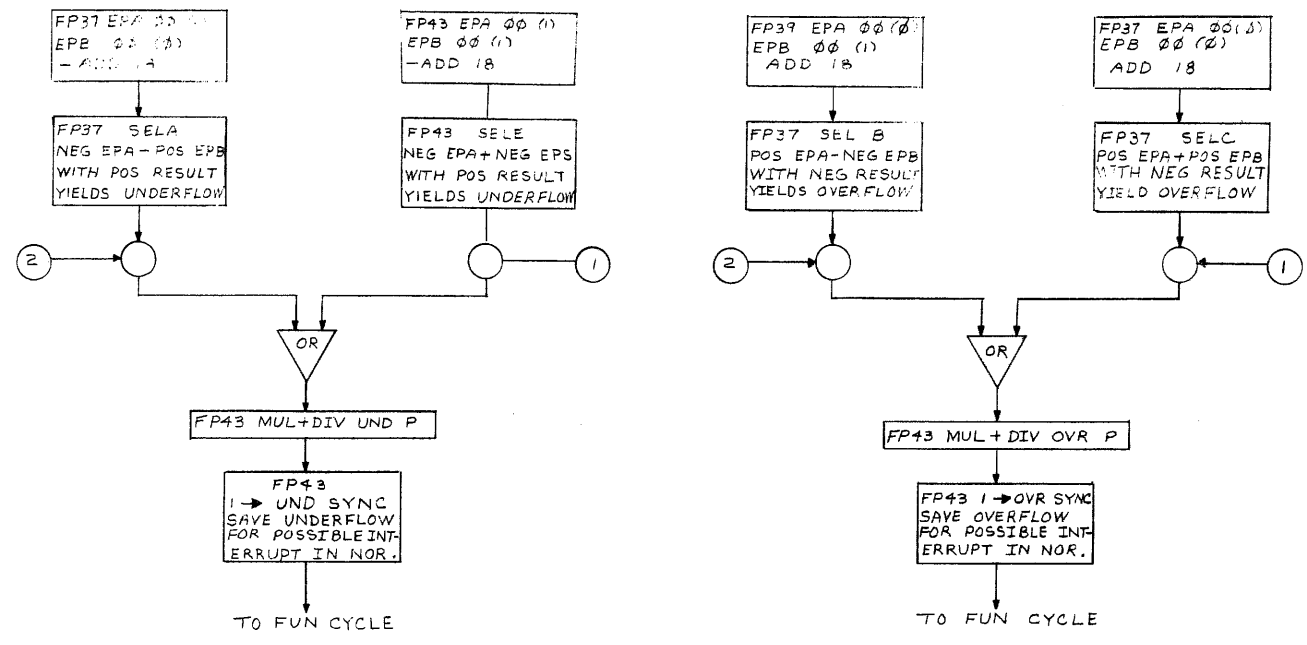
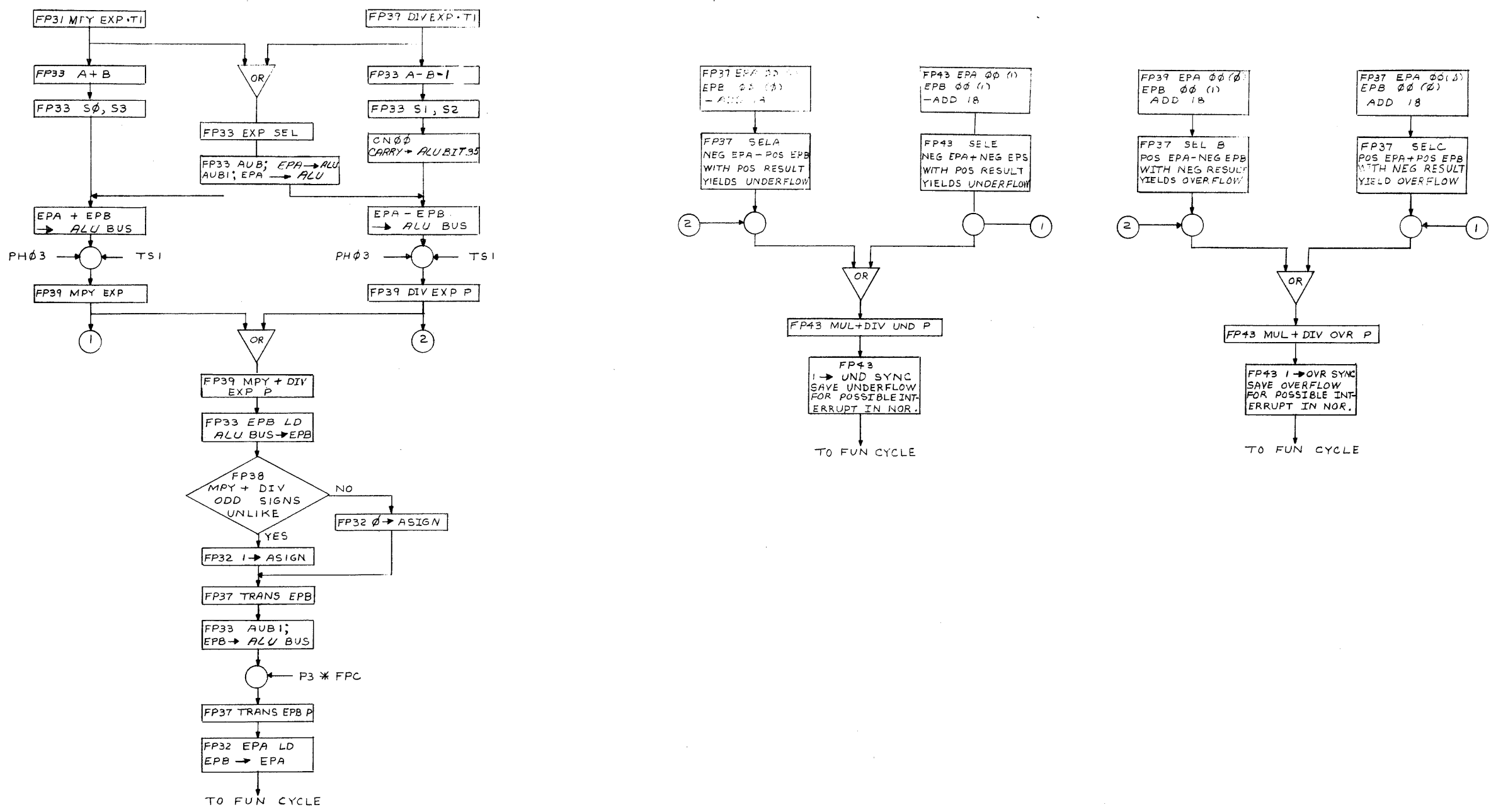
|      |  |
|------|--|
| REV. |  |
| CHG. |  |
| CHK. |  |

DEC FORM NO. DRD 102A

| QTY.                       | DESCRIPTION | PART NO.   | ITEM NO. |
|----------------------------|-------------|--|----------|
| PARTS LIST                 |             |  |          |
| UNLESS OTHERWISE SPECIFIED |             |  |          |
| DRN                        | DATE        | digital EQUIPMENT CORPORATION<br>MAYNARD MASSACHUSETTS |          |
| CHK'D                      | DATE        | TITLE  |          |
| ENG.                       | DATE        | ADD, SUB, REV SUB FUN CYCLE                            |          |
| PROJ. ENG.                 | DATE        | SIZE CODE NUMBER                                       |          |
| PROD.                      | DATE        | DFDFP15-0-53   |          |
| MATERIAL                   |             | REV.   |          |
| FINISH                     |             | SCALE  |          |
| FIRST USED ON              |             | SHEET OF   |          |
| DIST.                      |             | REV.   |          |



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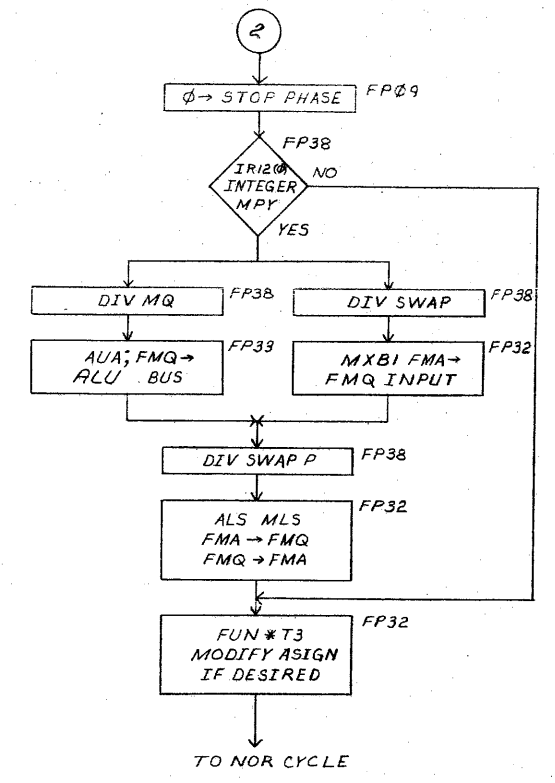
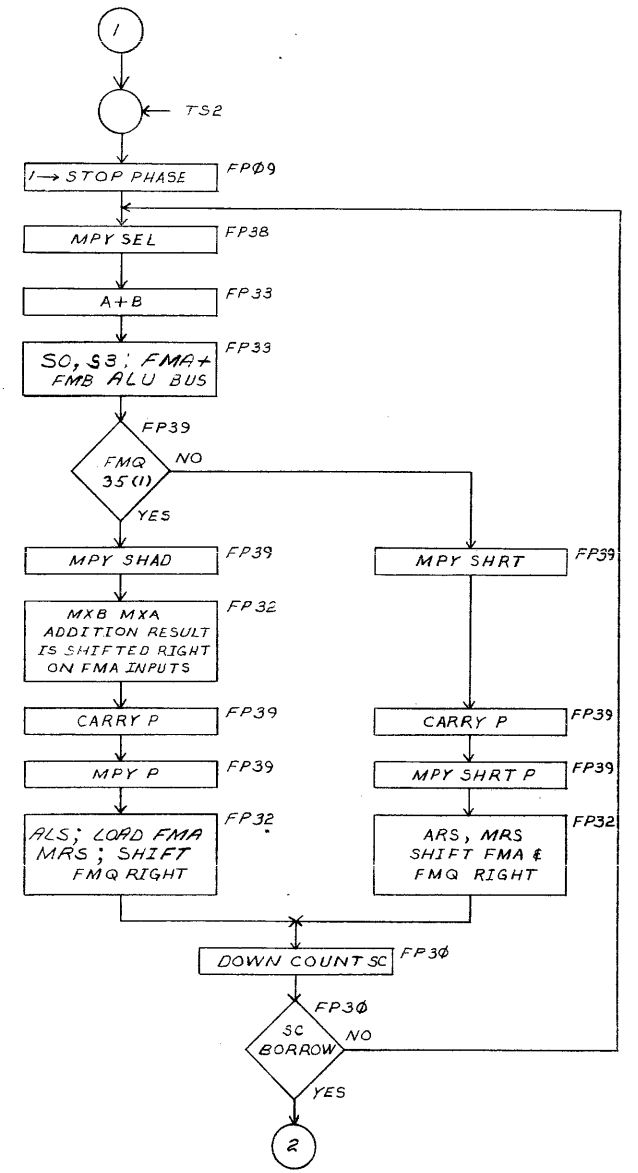
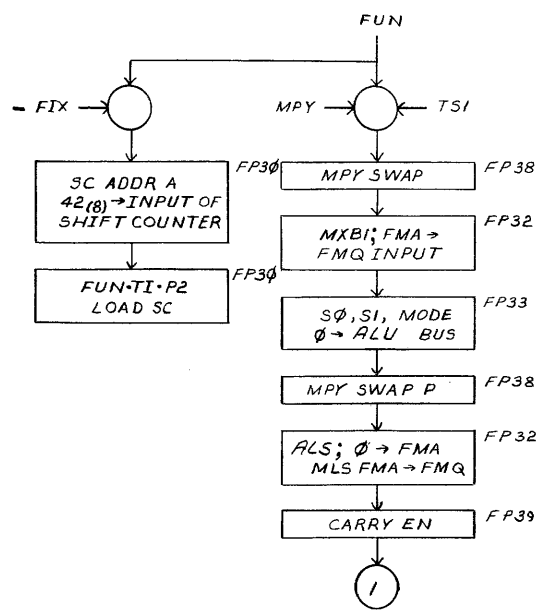


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| REV. | CHG. |
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|  |             |                                      |          |
|--|-------------|--------------------------------------|----------|
| QTY.                                       | DESCRIPTION | PART NO.                             | ITEM NO. |
| PARTS LIST                                 |             |                                      |          |
| FIRST USED ON OPTION / MODEL               |             | DO NOT SCALE DRAWING                 |          |
| UNLESS OTHERWISE SPECIFIED                 |             | DIMENSION IN INCHES                  |          |
| TOLERANCES                                 |             | ANGLES                               |          |
| DECIMALS ± .005                            |             | FRACTIONS ± 1/64                     |          |
| FINAL SURFACE QUALITY                      |             | REMOVE BURRS AND BREAK SHARP CORNERS |          |
| MATERIAL                                   |             | NEXT HIGHER ASSY                     |          |
| FINISH                                     |             | SCALE                                |          |
| SHEET OF                                   |             | DIST.                                |          |
| DRN. <i>L.P. Hellos</i> DATE 3/28/71       |             | DATE 5/4/71                          |          |
| CHKD. <i>L.P. Hellos</i> DATE 5/4/71       |             | DATE 5/14/71                         |          |
| ENG. <i>L.P. Hellos</i> DATE 5/14/71       |             | DATE 5/14/71                         |          |
| PROJ. ENG. <i>L.P. Hellos</i> DATE 5/14/71 |             | DATE 5/14/71                         |          |
| PROD. <i>L.P. Hellos</i> DATE 5/14/71      |             | DATE 5/14/71                         |          |
| TITLE                                      |             | digital EQUIPMENT CORPORATION        |          |
| TITLE                                      |             | MAYNARD, MASSACHUSETTS               |          |
| FLOATING MUL & DIV EXP CYCLE               |             |                                      |          |
| SIZE CODE                                  |             | NUMBER                               |          |
| DFD/FP15-0-54                              |             | REV.                                 |          |

REV. 54-0-54 DFD/FP15-0-54

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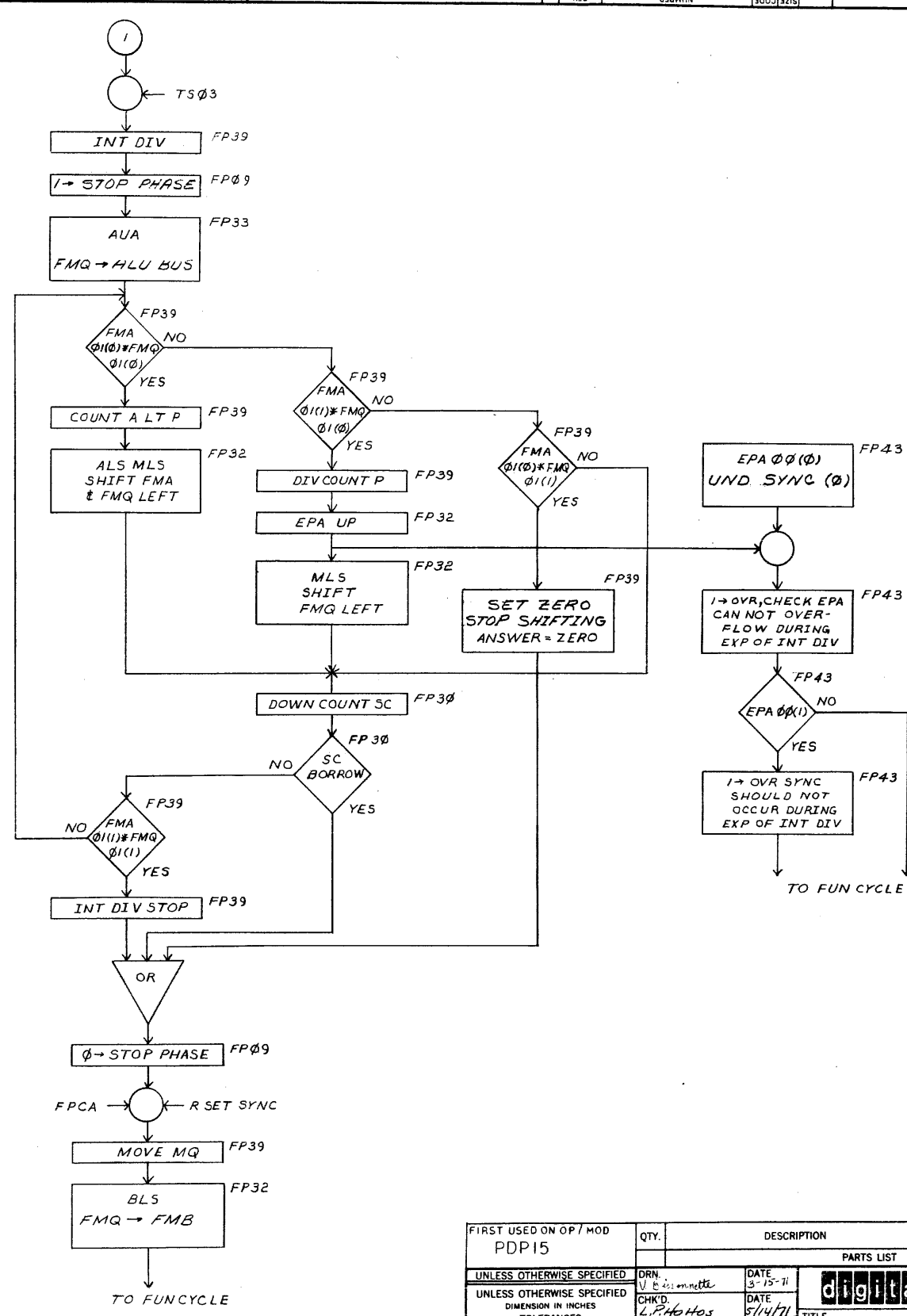
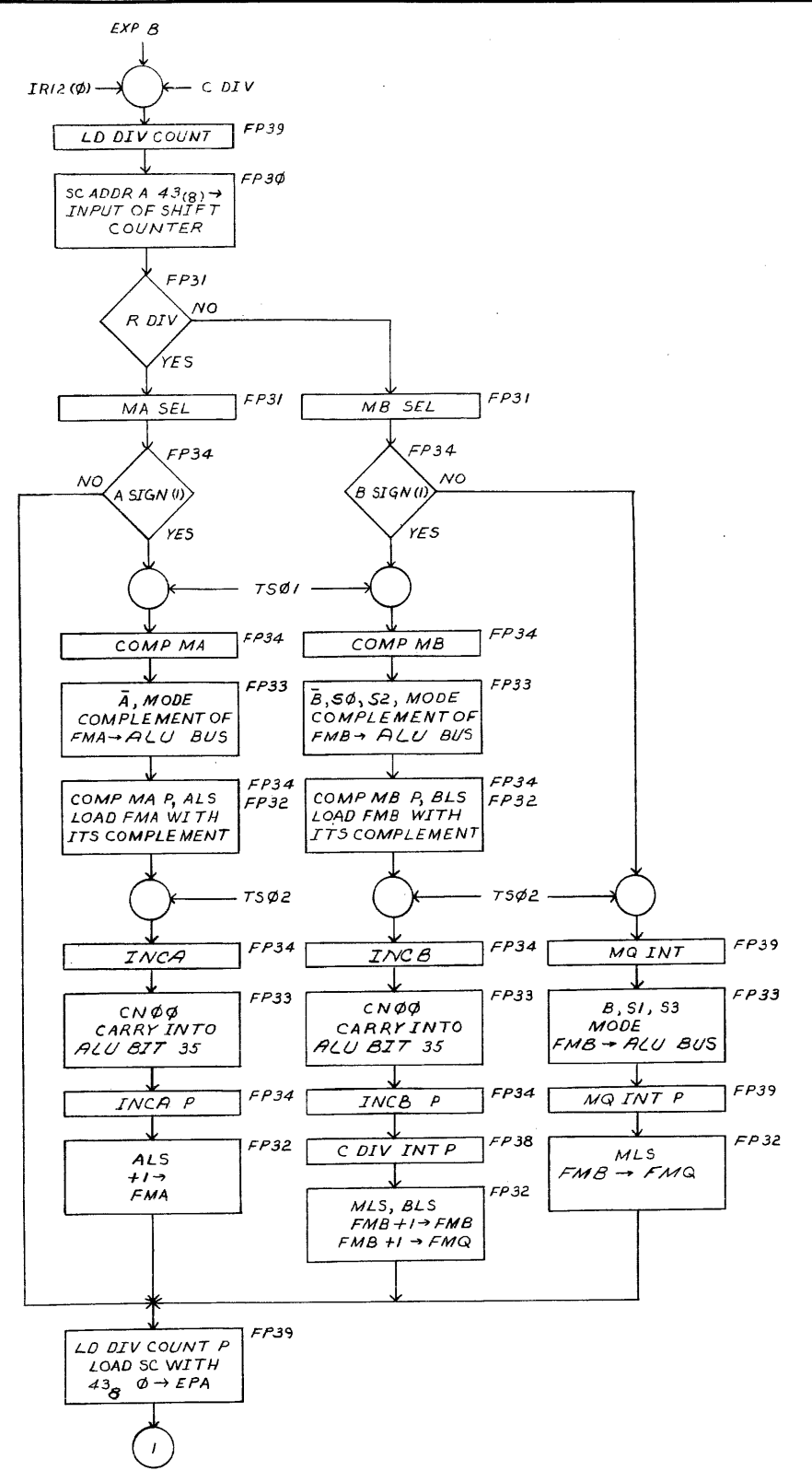


|            |     |
|------------|-----|
| REVISIONS  | REV |
| CHANGE NO. |     |
| CHK        |     |

|   |                      |                 |   |             |
|---|----------------------|-----------------|---|-------------|
| FIRST USED ON OP/MOD<br>PDP 15                                | QTY.                 | DESCRIPTION     | PART NO.  | ITEM NO.    |
| PARTS LIST  |                      |                 |   |             |
| UNLESS OTHERWISE SPECIFIED                                    | DRN<br>V. Cassinatti | DATE<br>3-18-71 | digital EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |             |
| UNLESS OTHERWISE SPECIFIED                                    | CHK'D<br>L.P. Hobbs  | DATE<br>5/14/71 | TITLE<br>FLOAT & INTEGER MUL FUN CYCLE                  |             |
| TOLERANCES  | ENG.<br>C.J. King    | DATE<br>5/14/71 | PROJ. ENG.<br>J. O'Leary                                |             |
| DECIMALS FRACTIONS ANGLES<br>± .005 ± 1/64 ± 0°30'            | PROD.<br>K. S. Stone | DATE<br>5/14/71 | MATERIAL<br>NEXT HIGHER ASSY<br>A-ML-FPI5               |             |
| FINAL SURFACE QUALITY<br>REMOVE BURRS AND BREAK SHARP CORNERS | FINISH<br>/ /        | SCALE<br>/ /    | SIZE CODE<br>DFD FPI5-0-55                              | NUMBER<br>2 |
|   |                      | SHEET<br>/ OF / | DIST.   | REV.        |

REV. NUMBER DFD FPI5-0-55

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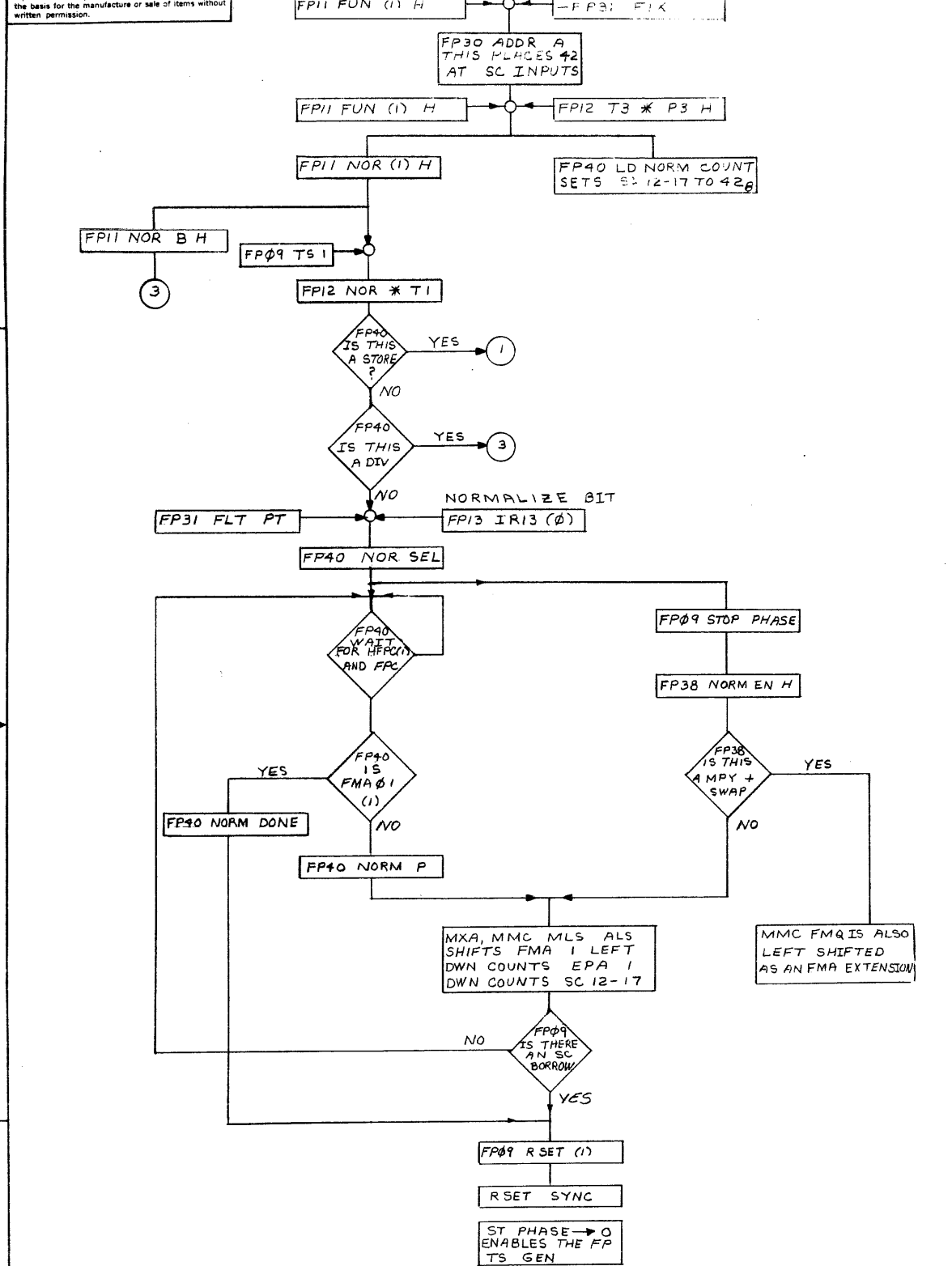
|            |     |      |
|------------|-----|------|
| REVISIONS  | NO. | DATE |
| CHANGE NO. |     |      |
| CHK        |     |      |

|   |                         |                 |   |                     |
|---|-------------------------|-----------------|---|---------------------|
| FIRST USED ON OP/ MOD<br>PDP15  | QTY.                    | DESCRIPTION     | PART NO.  | ITEM NO.            |
| UNLESS OTHERWISE SPECIFIED<br>DRN. V. E. 5/15/71<br>DATE 5/15/71  |                         |                 |   |                     |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES<br>TOLERANCES<br>DECIMALS FRACTIONS ANGLES<br>= .005 ± 1/64 ± 0°30' | CHK'D.<br>L.P.H.Hos     | DATE<br>5/14/71 | PARTS LIST  |                     |
| FINAL SURFACE QUALITY<br>REMOVE BURRS AND BREAK SHARP CORNERS   | ENG.<br>E. J. Hos       | DATE<br>5/14/71 | digital EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |                     |
| MATERIAL  | PROJ. ENG.<br>J. B. Hos | DATE<br>5/14/71 | TITLE<br>INTEGER DIVIDE<br>EXP CYCLE                    |                     |
| FINISH  | PROD.<br>S. Hos         | DATE<br>5/14/71 | FIRST USED ON<br>A-ML-FP15                              | SIZE CODE<br>DFD    |
|   |                         |                 | SCALE   | NUMBER<br>FP15-0-56 |
|   |                         |                 | SHEET   | REV.                |



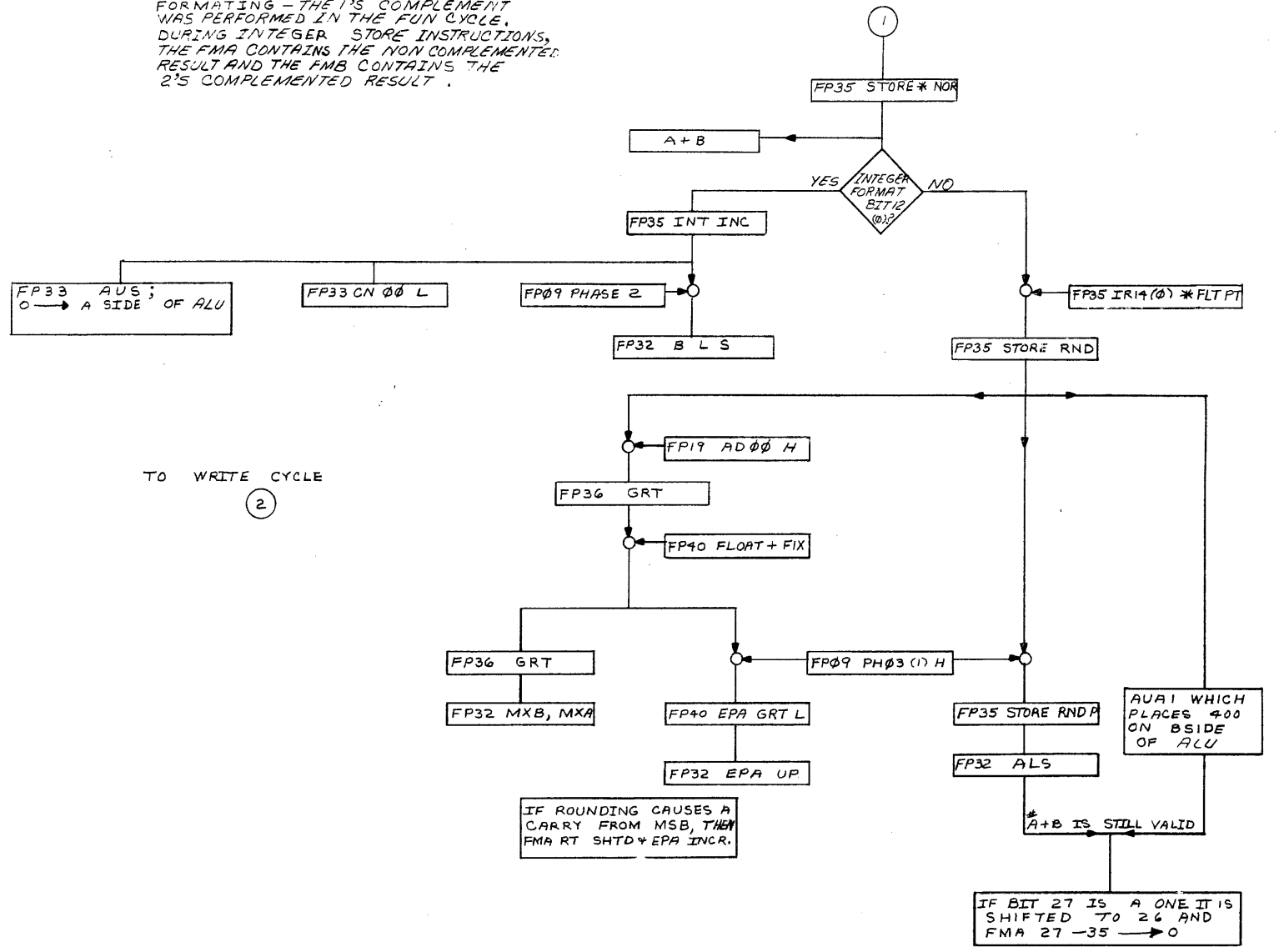
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INITIALLY IN THE FUN CYCLE



NOR CYCLE TS 1

\* THIS IS ACTUALLY A 0+1 COMPLETING THE 2'S COMPLEMENT FORMATING - THE 1'S COMPLEMENT WAS PERFORMED IN THE FUN CYCLE. DURING INTEGER STORE INSTRUCTIONS, THE FMA CONTAINS THE NON COMPLEMENTED RESULT AND THE FMB CONTAINS THE 2'S COMPLEMENTED RESULT.



TO WRITE CYCLE (2)

TO WRITE CYCLE (2)

|     |            |
|-----|------------|
| REV | CHANGE NO. |
| CHK |            |

| FIRST USED ON OPTION/MODEL                                 | QTY.                | DESCRIPTION     | PART NO.  | ITEM NO. |
|--|---------------------|-----------------|---|----------|
| PARTS LIST   |                     |                 |   |          |
| UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES | DRN<br>G. Wilson    | DATE<br>3/23/71 | <br>digital EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |          |
| DECIMALS   | CHK'D<br>L.P. HoHas | DATE<br>5/4/71  |   |          |
| ANGLES   | ENG.<br>C. K.       | DATE<br>5/19/71 |   |          |
| .XXX = .005<br>.XX = .02<br>.X = .1                        | PROJ. ENG.<br>R. B. | DATE<br>5/14/71 |   |          |
| REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY       | PREP.<br>G.P.       | DATE<br>5/11/71 | TITLE<br>NOR TSI CYCLE<br>FLOW                              |          |
| MATERIAL   | NEXT HIGHER ASSY.   | SIZE CODE       | NUMBER  | REV.     |
| FINISH   | SCALE               | D               | DFD FPI5-0-58   |          |
|  | SHEET OF            | DIST            |   |          |

NUMBER  
 DFD FPI5-0-58  
 REV.

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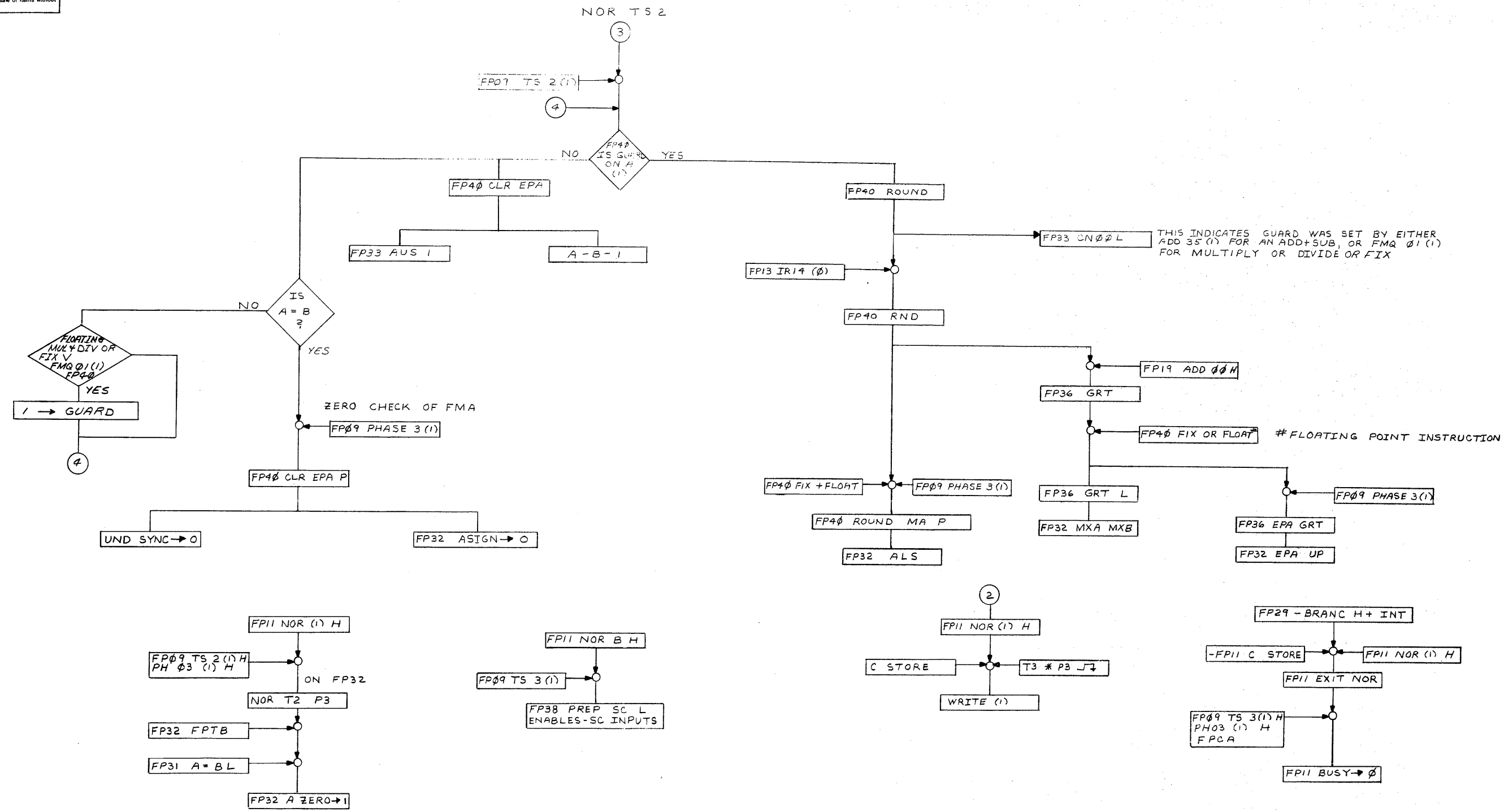
8 7 6 5 4 3 2 1

D

C

B

A



| QTY.                      | DESCRIPTION         | PART NO.   | ITEM NO. |
|---------------------------|---------------------|--|----------|
| PARTS LIST                |                     |  |          |
| DRN. <i>Wilson</i>        | DATE <i>3/23/70</i> | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |          |
| CHK'D. <i>L. P. H. H.</i> | DATE <i>5/14/71</i> |  |          |
| ENG. <i>W. J.</i>         | DATE <i>3/14/71</i> | TITLE<br><b>NOR TS2 CYCLE FLOW</b>                             |          |
| PROJ. ENG. <i>W. J.</i>   | DATE <i>5/14/71</i> |  |          |
| PROD. <i>W. J.</i>        | DATE <i>5/14/71</i> | NUMBER<br>DIFDFP15-0-59  |          |
| NEXT HIGHER ASSY          |                     |  |          |
| SCALE                     |                     | SIZE CODE  | REV.     |
| SHEET OF                  |                     | DIST.  |          |

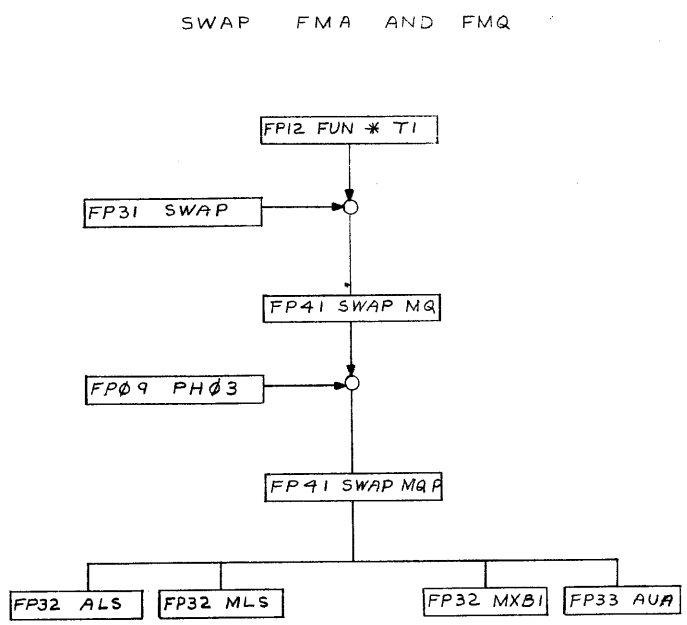
FIRST USED ON OPTION/MODEL

DO NOT SCALE DRAWING  
 UNLESS OTHERWISE SPECIFIED  
 DIMENSION IN INCHES  
 TOLERANCES FRACTIONS ANGLES  
 DECIMALS ± .005 ± 1/64 ± 0°30'  
 FINAL SURFACE QUALITY  
 REMOVE BURRS AND BREAK SHARP CORNERS

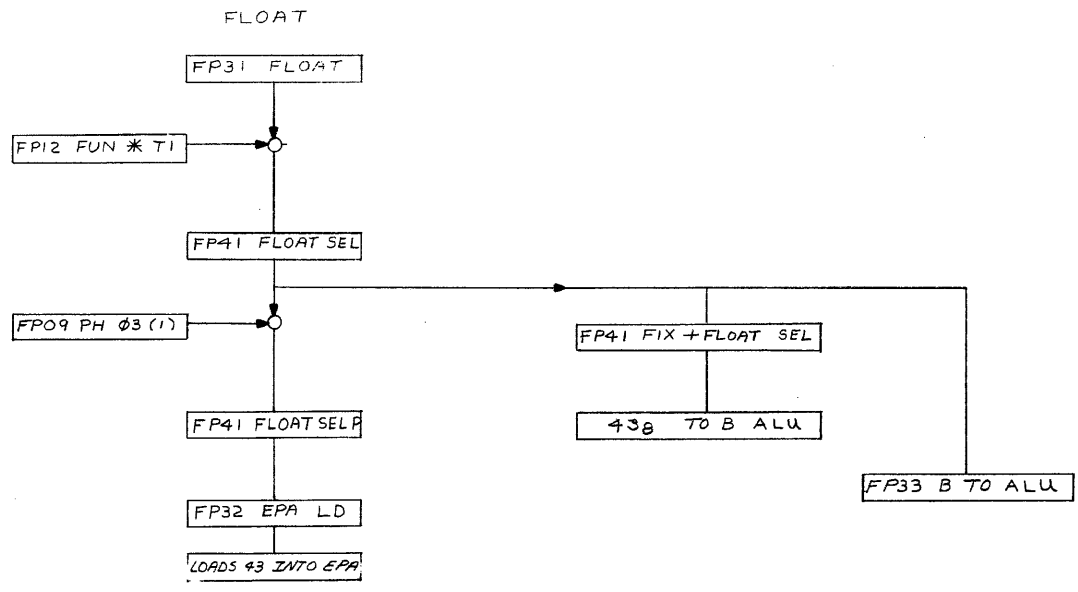
| REV. | CHANGE NO. |
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|      |            |
|      |            |

8 7 6 5 4 3 2 1

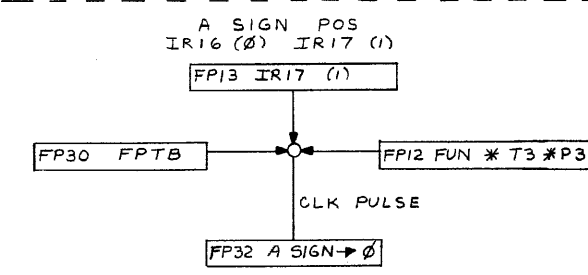
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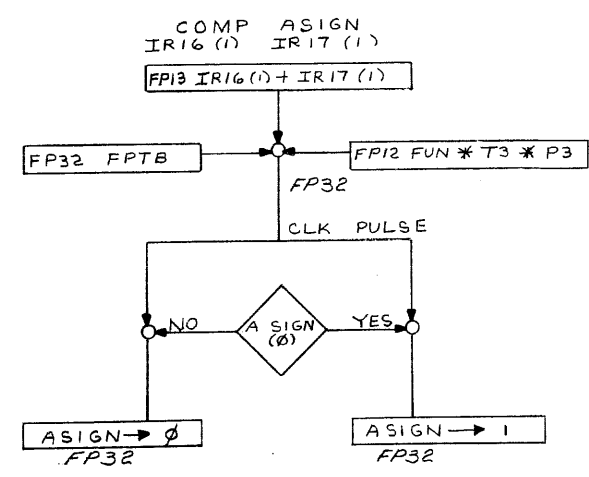
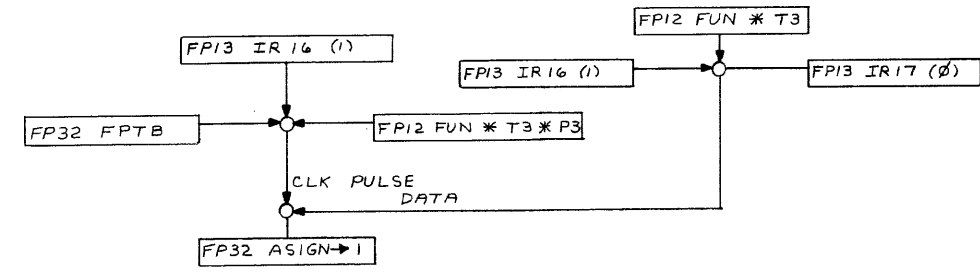
FMA → FMQ ; MXB1, MLS  
 FMQ → ASIDE OF ADDER ; AUA  
 FMQ → ADDER OUTPUT BY DEFAULT  
 ADDEK → FMA BY DEFAULT & ALS



A SIGN CONTROL



A SIGN NEG  
 IR16 (1) IR17 (0)



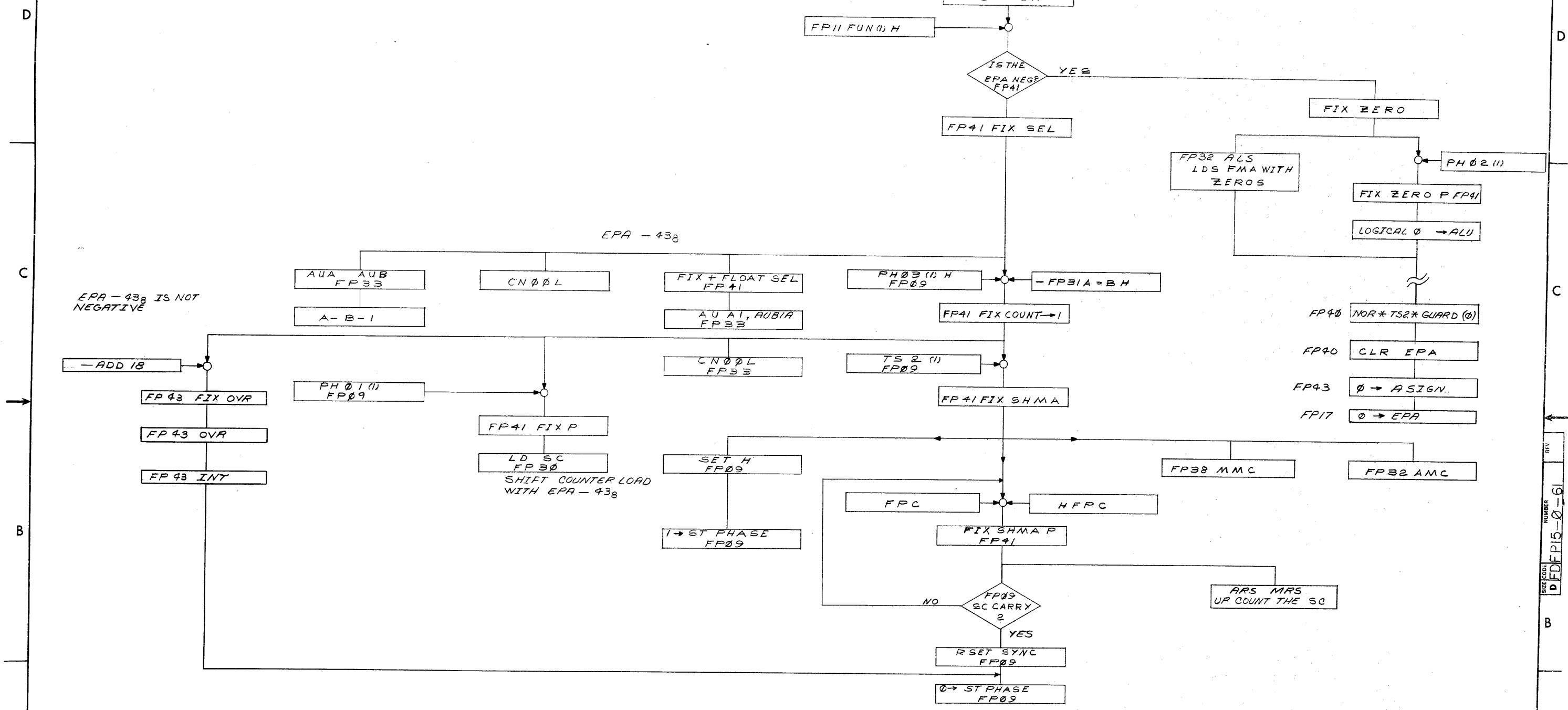
REV. NO. 60  
 NUMBER  
 DFD  
 SIZE CODE  
 FD

| FIRST USED ON OPTION/MODEL                                       | QTY.                     | DESCRIPTION     | PART NO.   | ITEM NO.  |
|--|--------------------------|-----------------|--|-----------|
| PARTS LIST   |                          |                 |  |           |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES.<br>TOLERANCES | DRN.<br>G. Wilson        | DATE<br>3/22/71 | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |           |
| DECIMALS .XXX = .005<br>.XX = .02<br>.X = .1                     | CHKD.<br>L. P. H. H. S.  | DATE<br>5/14/71 |  |           |
| ANGLES ±0° 30'   | ENG.<br>C. J. King       | DATE<br>5/14/71 | TITLE<br>FLOAT,<br>SWAP AND ASIGN<br>CONTROL                   |           |
| REMOVE BURRS AND BREAK SHARP<br>CORNERS SURFACE QUALITY ✓        | PRJ. ENG.<br>L. G. L. S. | DATE<br>5/14/71 |  |           |
| MATERIAL   | REDD.<br>J. S. L.        | DATE<br>5/14/71 | SIZE CODE  | NUMBER    |
| FINISH   | NEXT HIGHER ASSY.        | SCALE           | DFD  | FP15-0-60 |
| REVISIONS  | SHEET                    | OF              | DIST.  | REV.      |

REVISIONS  
 CHANGE NO.  
 REV.

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REV. 19-9-71  
 NUMBER  
 SIZE CODE  
 DFD/FP15-0-61



| REV. | CHANGE NO. |
|------|------------|
|      |            |
|      |            |
|      |            |

DEC FORM NO. DRD 102-B

| FIRST USED ON OPTION/MODEL                           | QTY.     | DESCRIPTION                  | PART NO.            | ITEM NO.  |
|--|----------|------------------------------|---------------------|---|
| PARTS LIST   |          |                              |                     |   |
| UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.      |          | DRN. <i>M. Garina</i>        | DATE <i>4-20-71</i> | <b>digital</b> EQUIPMENT CORPORATION<br><small>MAYNARD, MASSACHUSETTS</small> |
| TOLERANCES   |          | CHK'D. <i>L.P. Holmes</i>    | DATE <i>5/14/71</i> |   |
| DECIMALS   | ANGLES   | ENG. <i>Cal. K.</i>          | DATE <i>5/14/71</i> |   |
| .XXX = .005  | ± 0° 30' | PROJ. ENG. <i>J. Colburn</i> | DATE <i>5/14/71</i> |   |
| .XX = .02  |          | PROD. <i>W.P. Blaine</i>     | DATE <i>5/14/71</i> |   |
| REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY |          | NEXT HIGHER ASSY.            |                     |   |
| FINISH   |          | SCALE NONE                   |                     | SIZE CODE NUMBER REV.   |
|  |          | SHEET 1 OF 1                 |                     | DFD/FP15-0-61   |
|  |          |                              |                     | DIST.   |

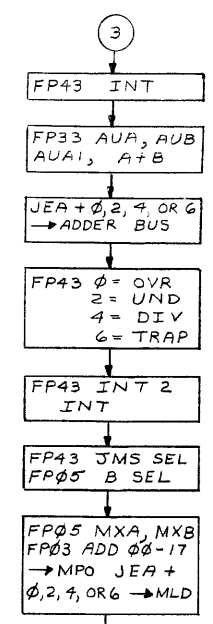
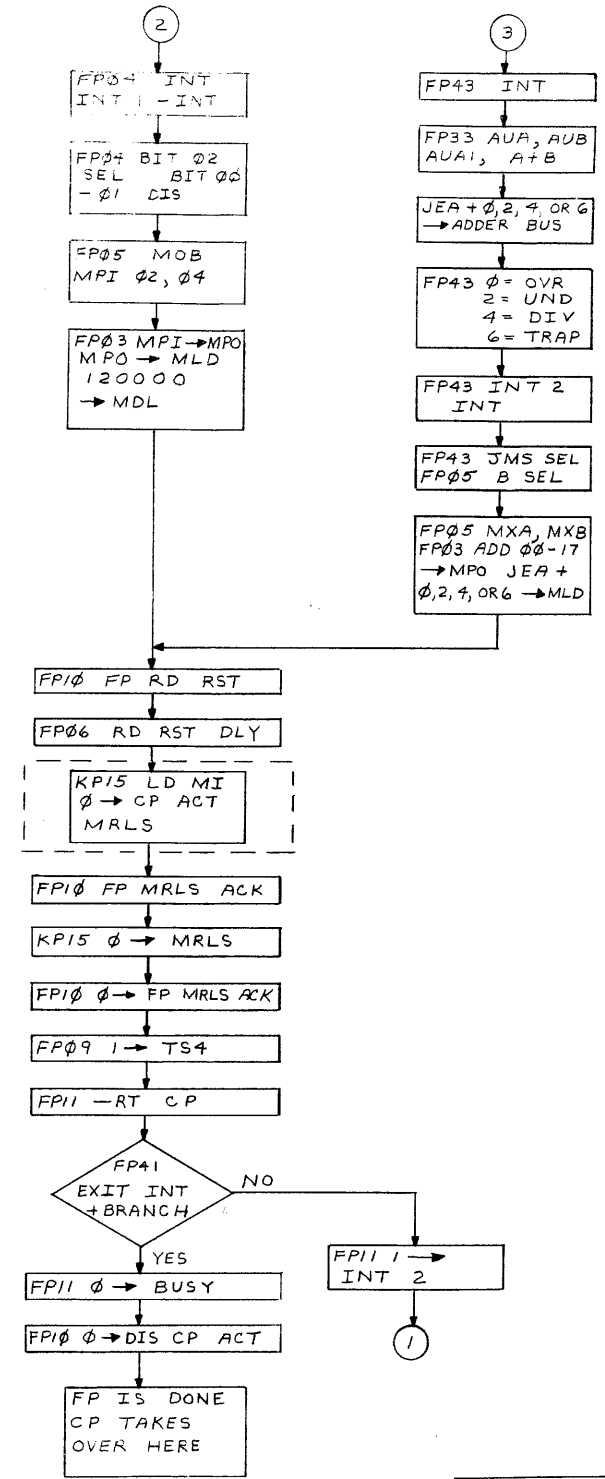
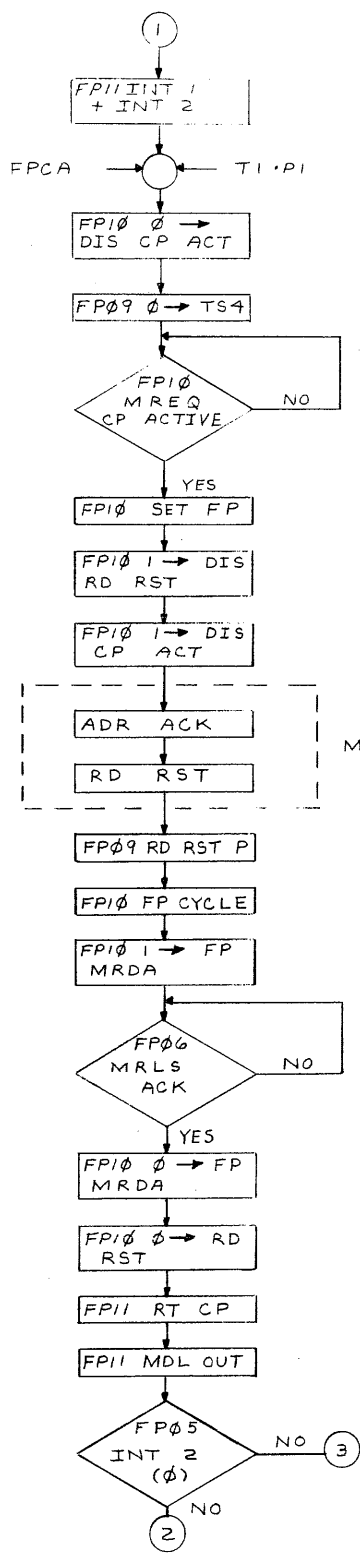
TITLE  
 FIX FLOW

SIZE CODE NUMBER REV.  
 DFD/FP15-0-61

SIZE CODE NUMBER REV.  
 DFD/FP15-0-61



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|      |            |
|------|------------|
| REV. | CHANGE NO. |
| CHK. |            |

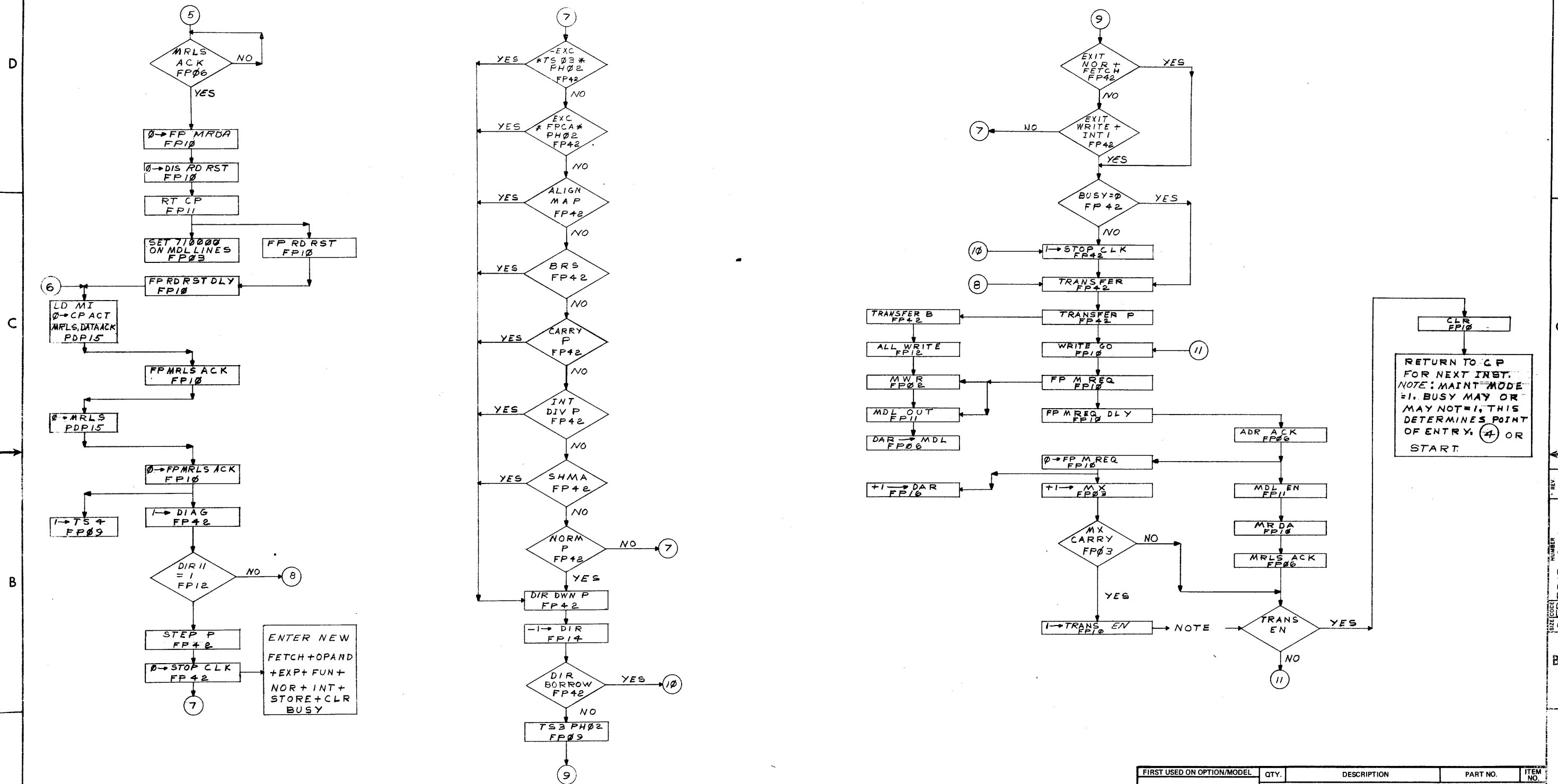
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|--|-------------|-----------------------|----------|
| PARTS LIST   |             |                       |          |
| UNLESS OTHERWISE SPECIFIED                                   |             | DRN                   | DATE     |
| UNLESS OTHERWISE SPECIFIED                                   |             | CHK'D                 | DATE     |
| DIMENSION IN INCHES  |             | ENG.                  | DATE     |
| TOLERANCES   |             | PROJ. ENG.            | DATE     |
| DECIMALS FRACTIONS ANGLES                                    |             | DRG.                  | DATE     |
| = .005 = 1/64 = 0°30'  |             | FIRST USED ON         |          |
| FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS |             | SCALE                 |          |
| MATERIAL   |             | SHEET OF              |          |
| FINISH   |             | SIZE CODE NUMBER REV. |          |
|  |             | DFD/FPI5-0-62         |          |
|  |             | DIST.                 |          |

digital EQUIPMENT CORPORATION  
NATWAD, MASSACHUSETTS

TITLE  
INTERRUPT FLOW



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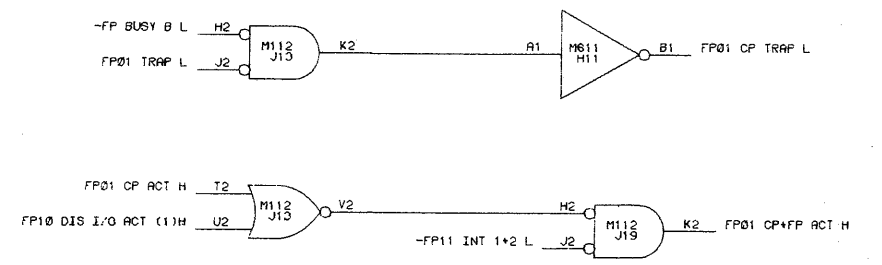
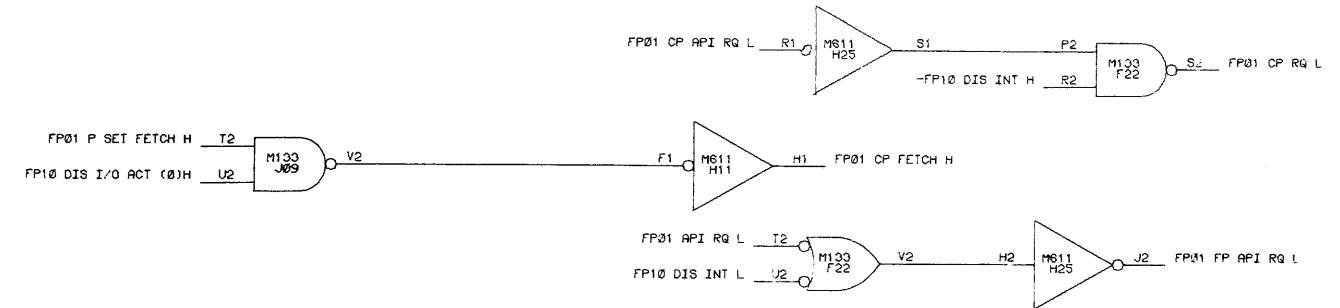
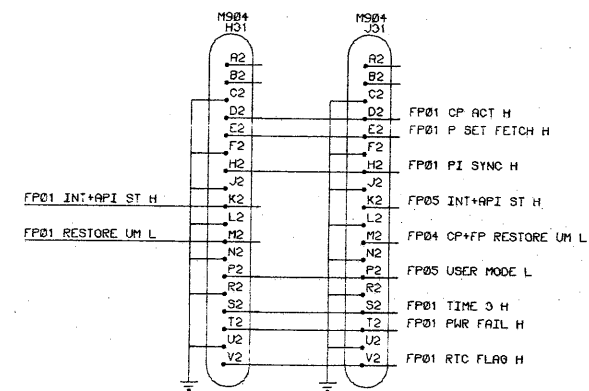
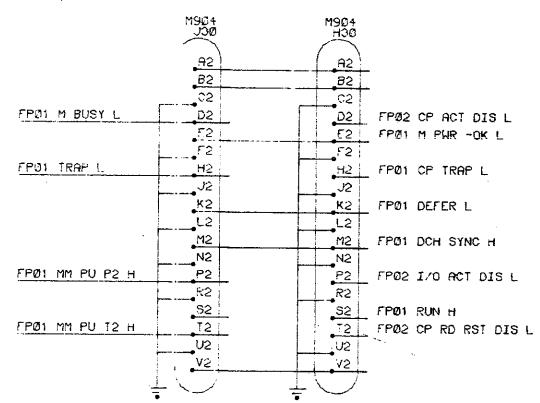
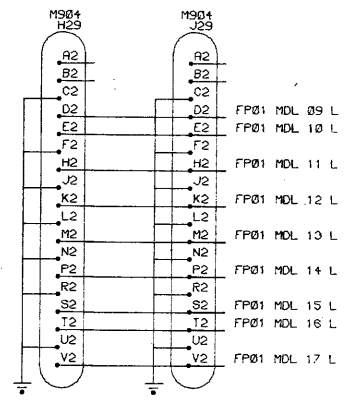
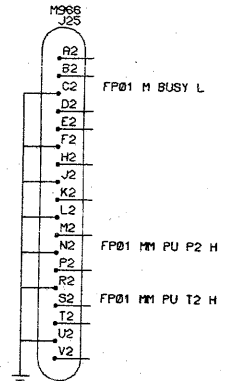
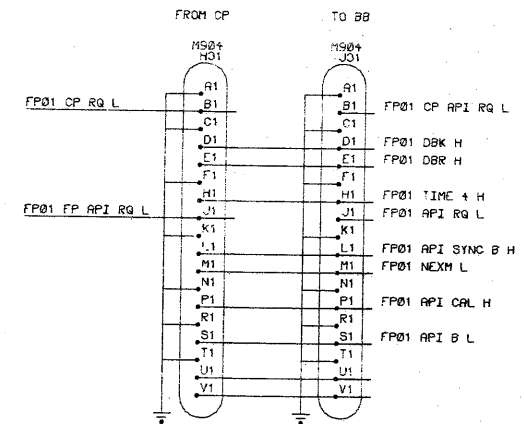
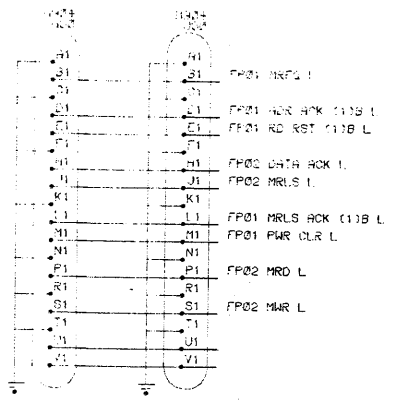
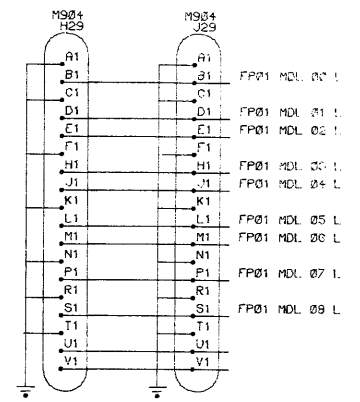
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|---|----------------------------|-----------------|--|----------|
| PARTS LIST  |                            |                 |  |          |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES<br>TOLERANCES | DRM<br>M-Garini            | DATE<br>4-18-71 | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |          |
| DECIMALS .XXX = .006<br>.XX = .02<br>.X = .1                    | CHKD.<br>L.F. Hughes       | DATE<br>5/14/71 |  |          |
| ANGLES ±0° 30'  | ENG.<br>Cal King           | DATE<br>5/14/71 | TITLE<br><b>MAINT FLOW 2</b>                                   |          |
| REMOVE BURRS AND BREAK SHARP<br>CORNERS SURFACE QUALITY ✓       | PROJ. ENG.<br>J.P. D'Arone | DATE<br>5/14/71 |  |          |
| MATERIAL  | NEXT HIGHER ASSY.          | SIZE CODE       | NUMBER   | REV.     |
| FINISH  | SCALE NONE                 | DFDFP15-0-64    |  |          |
| DEC FORM NO. DRD 102-B  | SHEET OF                   | DIST.           |  |          |

REVISIONS  
CHANGE NO.  
CHK

SIZE CODE NUMBER DFDFP15-0-64 P00

CP FP BB MX  
 910 910 910 910  
 902 902 902 902

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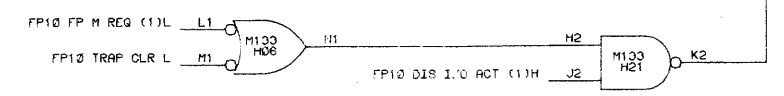
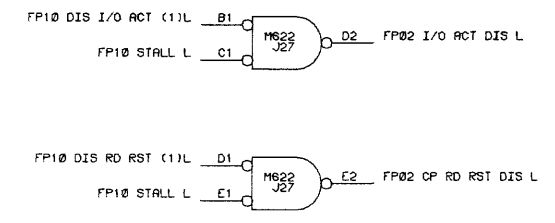
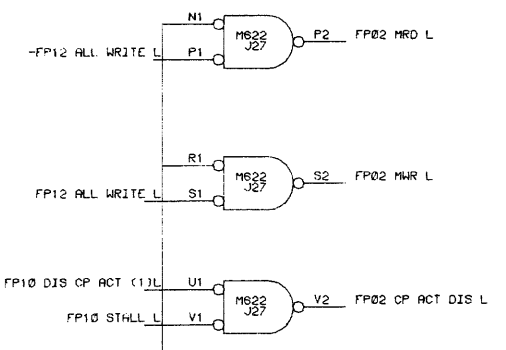
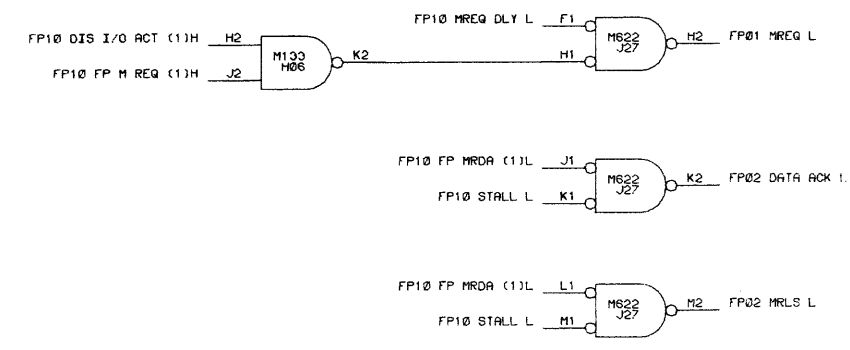
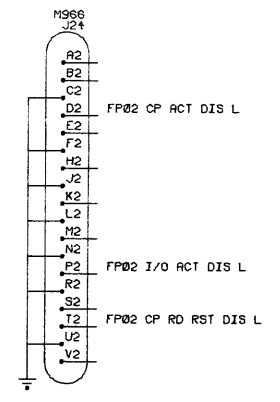
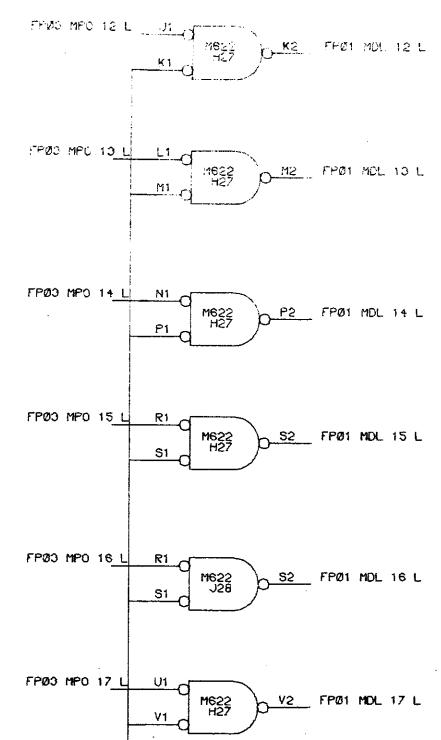
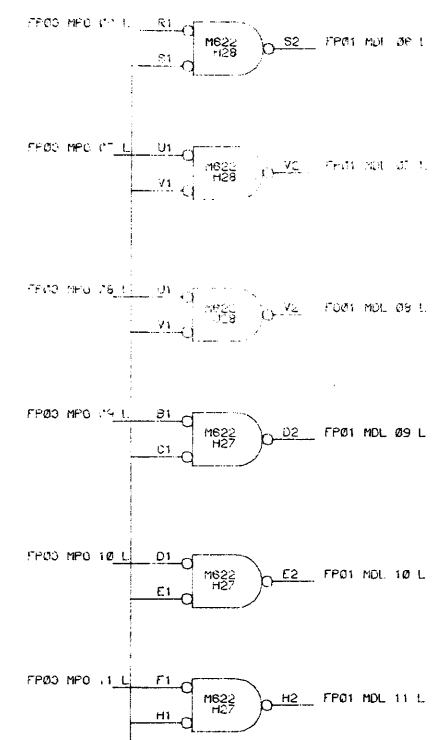
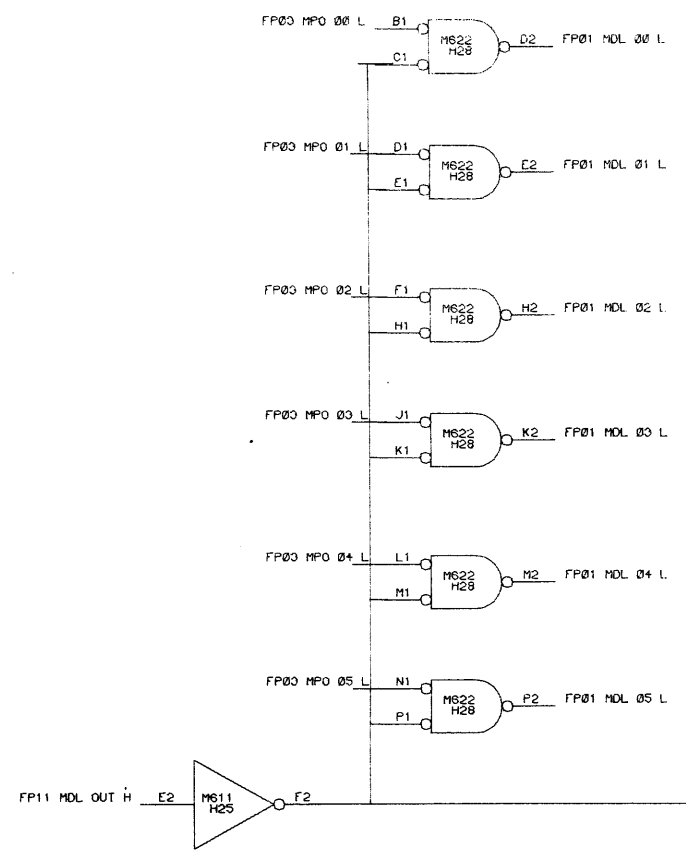


| REVISIONS |                    |      | REVISIONS |                 |      |
|-----------|--------------------|------|-----------|-----------------|------|
| CHK.      | CHANGE NO.         | REV. | CHK.      | CHANGE NO.      | REV. |
| GH        | FP15-00000         | A    | GH        | FP15-00012      | D    |
|           | R SOFKA 7/12/71    |      |           | F. DOLL         |      |
|           | E KING 7/13/71     |      |           | I. COLL 7-11-73 |      |
| RA        | FP15-00008         | B    |           |                 |      |
|           | Rita Soper 1/24/73 |      |           |                 |      |
|           | 4-2-73             |      |           |                 |      |
| PH        | FP15-00011         | C    |           |                 |      |
|           | B. Swanson 4-3-73  |      |           |                 |      |
|           | J. Swanson         |      |           |                 |      |
|           | 4/6/73             |      |           |                 |      |

|  |  |                         |                 |   |
|--|--|-------------------------|-----------------|---|
| UNLESS OTHERWISE SPECIFIED   |  | DRN<br>K FRENCH         | DATE<br>5/14/71 | digital<br>EQUIPMENT<br>CORPORATION<br>MAYNARD, MASSACHUSETTS |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES<br>TOLERANCES<br>DECIMALS FRACTIONS ANGLES<br>±.005 ± 1/64 ± 0°30' |  | CHK'D<br>G TRIVILAND    | DATE<br>5/14/71 |   |
| FINAL SURFACE QUALITY<br>REMOVE BURRS AND BREAK SHARP<br>CORNERS   |  | ENG<br>E KING           | DATE<br>5/14/71 | TITLE<br>MEMORY INTERFACE<br>CABLES                           |
| MATERIAL<br>FINISH   |  | PROJ. ENG.<br>J ELSBREE | DATE<br>5/14/71 |   |
|  |  | PROD.<br>D. FERCHE      | DATE<br>5/14/71 |   |
|  |  | FIRST USED ON<br>PL15   |                 |   |
|  |  | SCALE<br>NONE           |                 | SIZE CODE<br>D BS   |
|  |  | SHEET<br>OF             |                 | NUMBER<br>FP15-0-01   |
|  |  |                         |                 | REV.<br>D   |

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NOTE: H27, H28, J27, J28, P1, P2, T1, T2, U1, U2, R2, T1 ARE USED AS CABLE GROUND RETURN AND ARE THEREFORE GROUND.

| REVISIONS |               |                |
|-----------|---------------|----------------|
| CHK       | CHANGE NO.    | REV.           |
| EC        | FP15-00308    | A              |
|           | <i>Rita</i>   | <i>1/24/72</i> |
|           | <i>4/1/72</i> | <i>2/15/72</i> |

| FIRST USED ON OPTION/MODEL                                 | QTY. | DESCRIPTION             | PART NO.             | ITEM NO.         |
|--|------|-------------------------|----------------------|------------------|
| PDP15  |      | PARTS LIST              |                      |                  |
| UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES |      | DRN. DATE 5/14/71       |                      |                  |
|  |      | CHK'D. DATE 5/14/71     |                      |                  |
|  |      | ENG. DATE 5/14/71       |                      |                  |
|  |      | PROJ. ENG. DATE 5/14/71 |                      |                  |
| DECIMALS .xxx = .005 .xx = .02 .x = .1                     |      | ANGLES 10° 30'          | TITLE MEMORY DRIVERS |                  |
| REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY       |      | PROD. DATE 5/14/71      |                      |                  |
| MATERIAL   |      | NEXT HIGHER ASSY.       |                      |                  |
| FINISH   |      | SCALE NONE              | SIZE CODE D BS       | NUMBER FP15-0-02 |
|  |      | SHEET 1 OF 1            | DIST.                | REV. A           |

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3

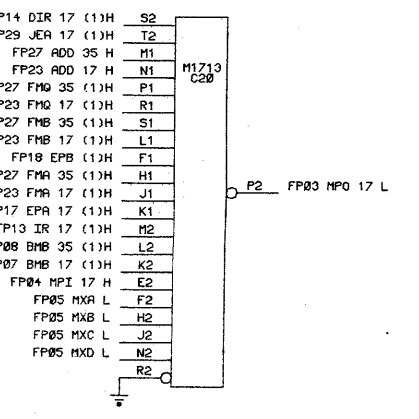
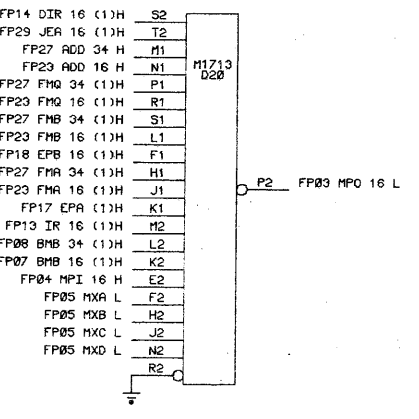
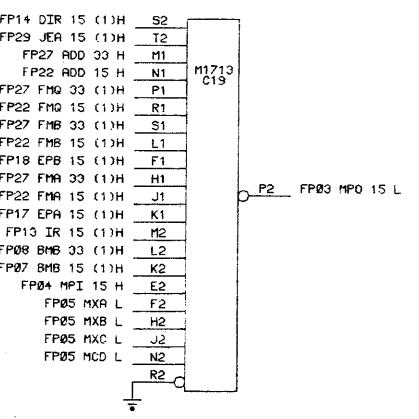
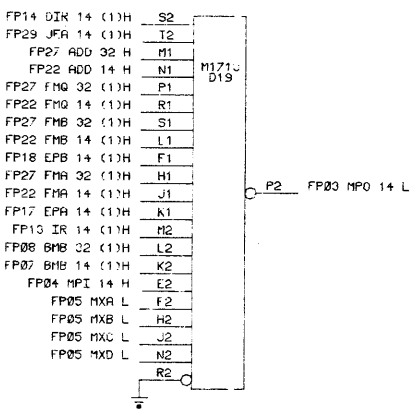
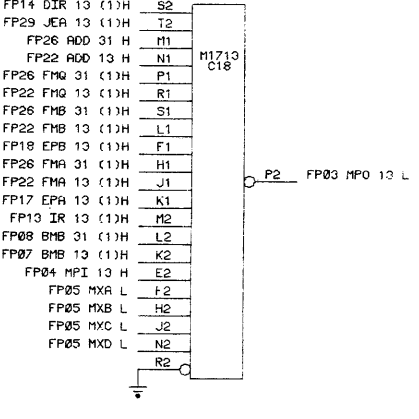
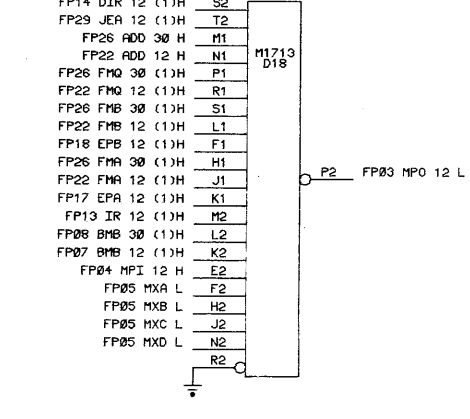
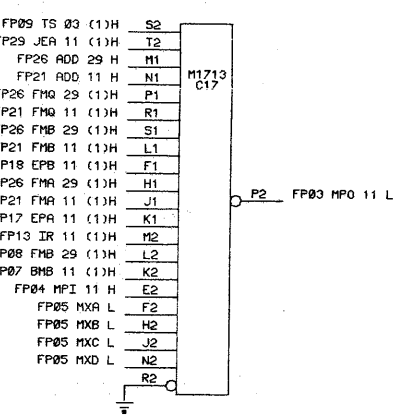
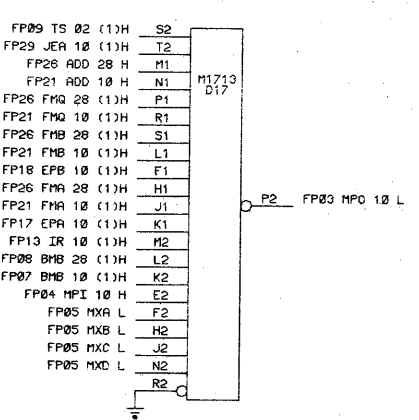
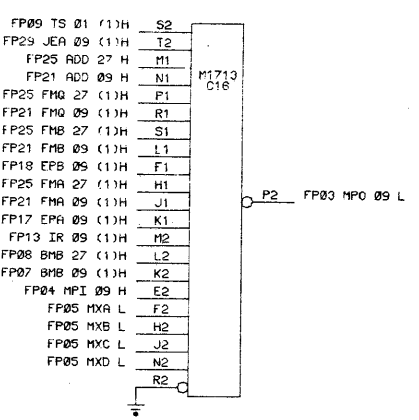
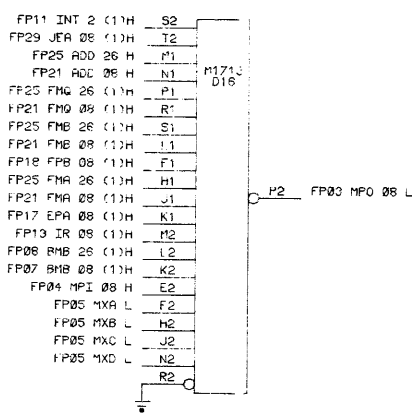
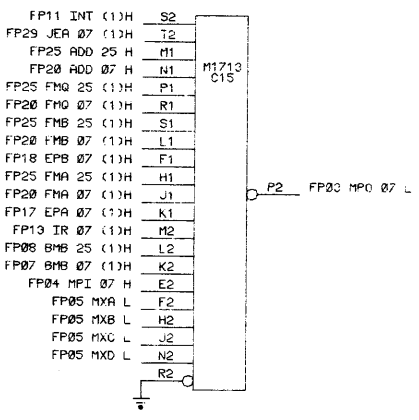
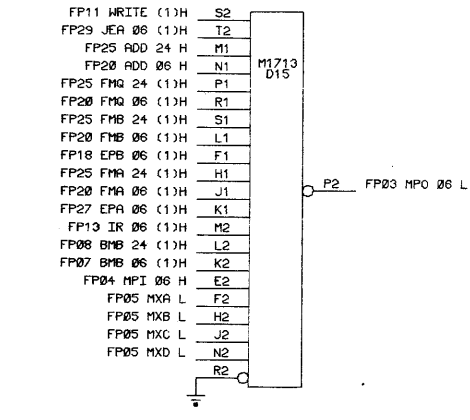
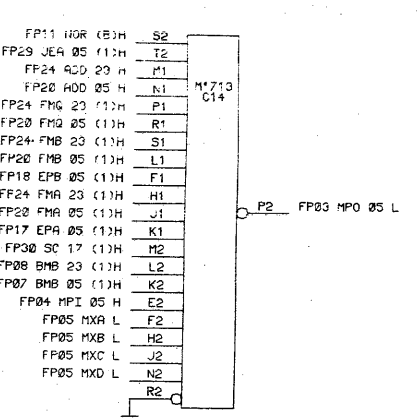
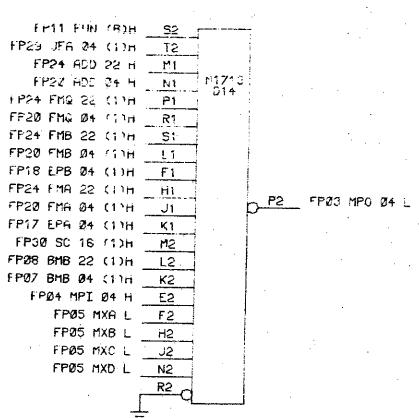
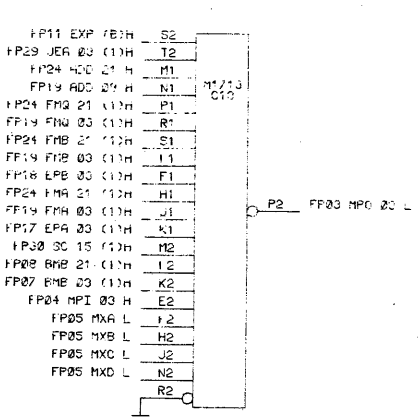
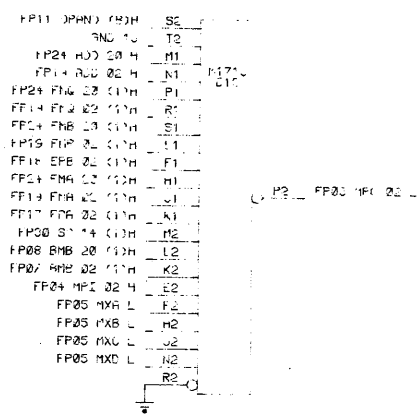
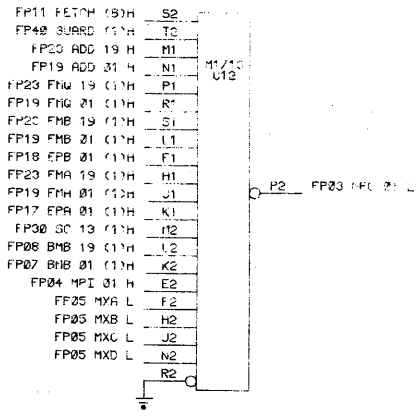
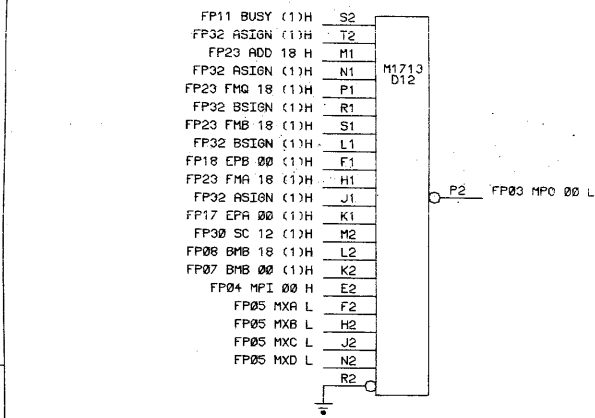
2

1

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| REVISIONS |            |      |
|-----------|------------|------|
| CHK.      | CHANGE NO. | REV. |
|           |            |      |
|           |            |      |

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

|                             |                 |  |
|-----------------------------|-----------------|--|
| DRN.<br><i>R. F. ...</i>    | DATE<br>5-14-71 | <b>digital EQUIPMENT CORPORATION</b><br>MAYNARD, MASSACHUSETTS |
| CHK'D.<br><i>W. ...</i>     | DATE<br>5-14-71 |  |
| ENG.<br><i>C. ...</i>       | DATE<br>5/15/71 | TITLE<br>MULTIPLEXER OUTPUT (MPO)                              |
| PROJ. ENG.<br><i>W. ...</i> | DATE<br>7/14/71 | SIZE/CODE<br>D BS  |
| PRG.<br><i>W. ...</i>       | DATE<br>5/14/71 | NUMBER<br>FP15-0-03  |
| FIRST USED ON<br>POP15      |                 | REV.<br>00   |
| SCALE                       |                 | DIST.  |
| SHEET 1 OF 1                |                 |  |

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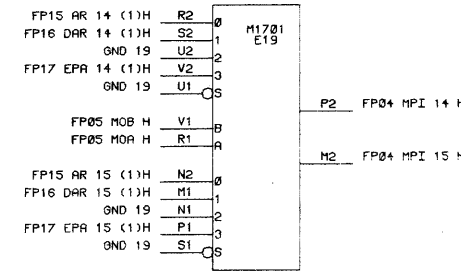
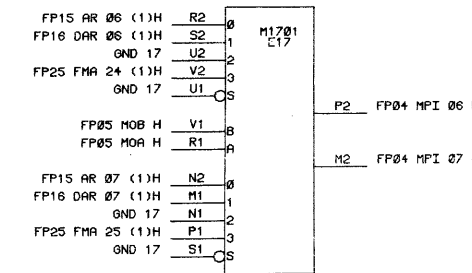
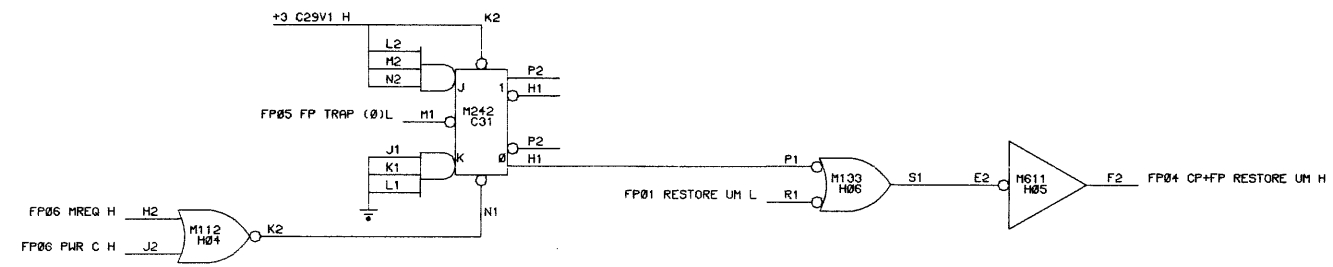
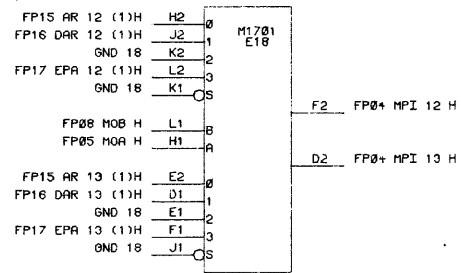
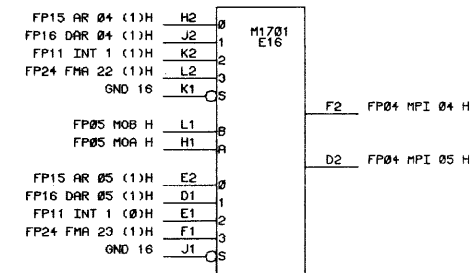
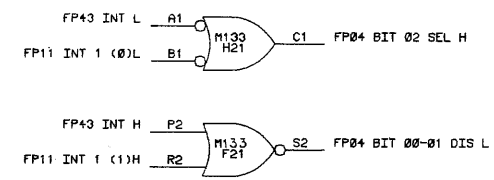
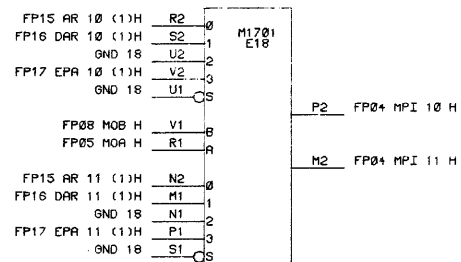
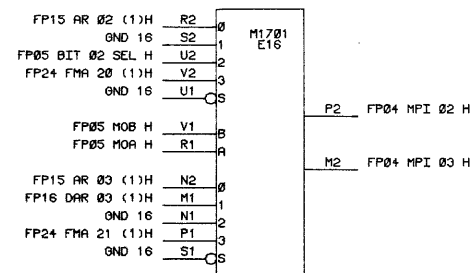
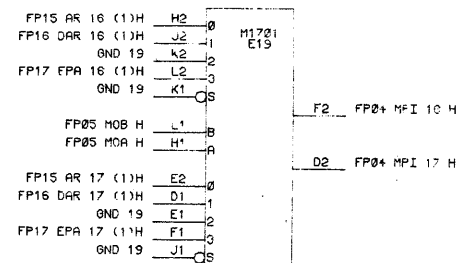
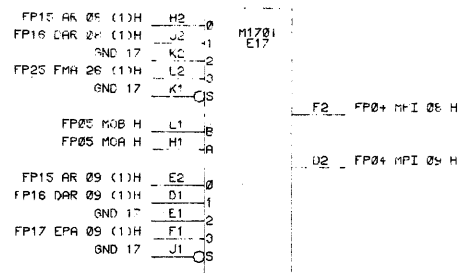
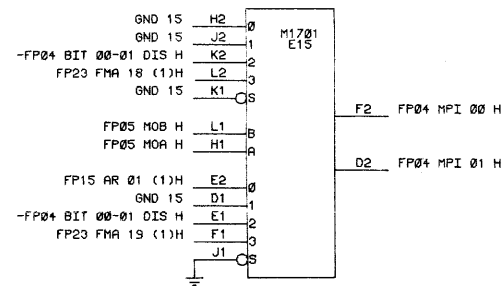
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1

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| REVISIONS |            |      |
|-----------|------------|------|
| CHK.      | CHANGE NO. | REV. |
|           |            |      |

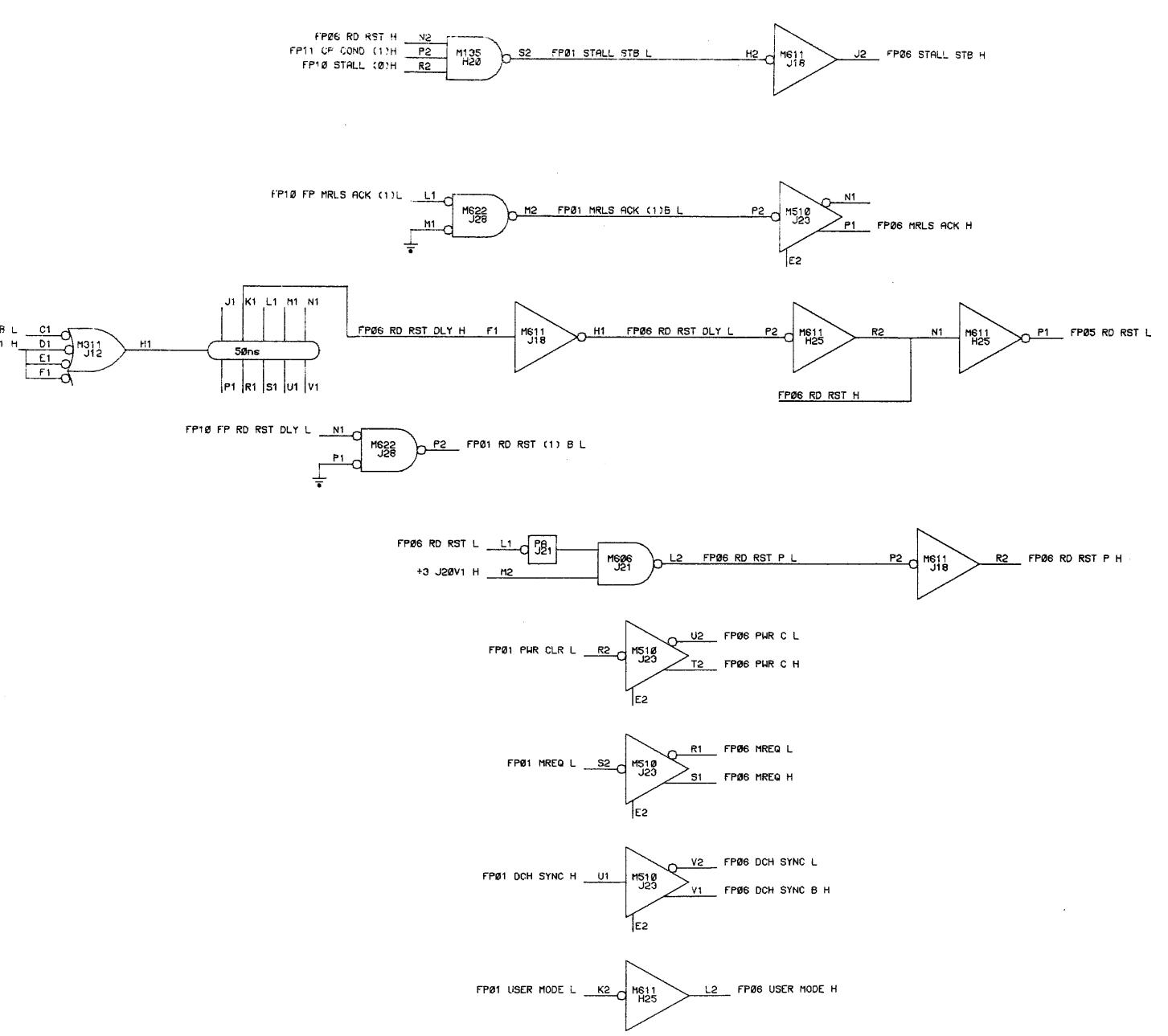
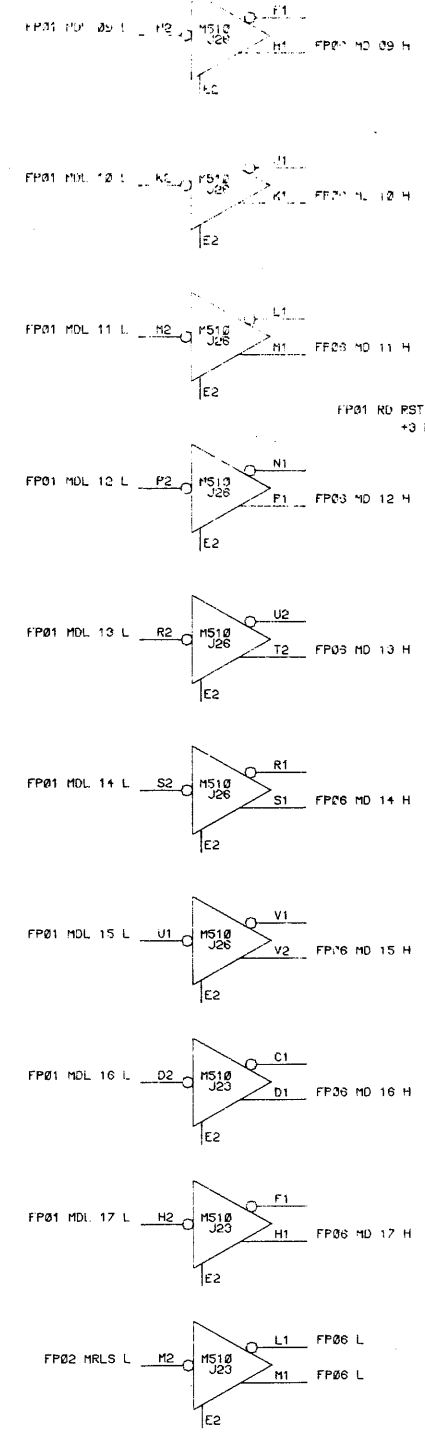
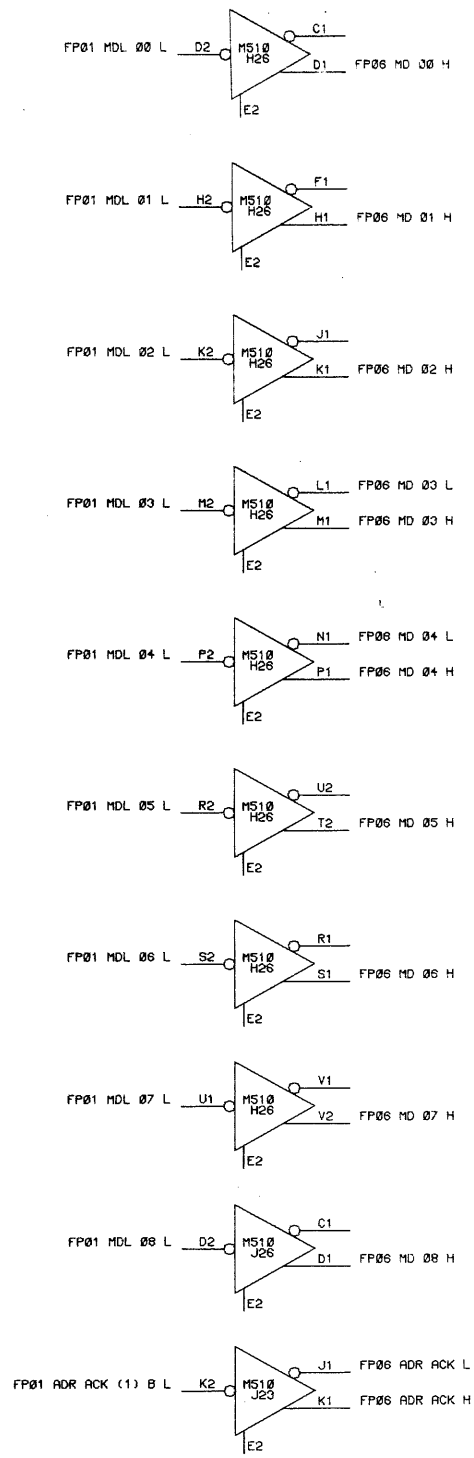
-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

|                               |                     |   |
|-------------------------------|---------------------|---|
| DRN. <i>R. Pappas</i>         | DATE <i>5/14/71</i> | <br><b>digital EQUIPMENT CORPORATION</b><br>MAYNARD, MASSACHUSETTS<br>TITLE<br>MULTIPLEXER INPUTS (MPI) |
| CHK'D. <i>[Signature]</i>     | DATE <i>5/19/71</i> |   |
| ENGR. <i>[Signature]</i>      | DATE <i>5/14/71</i> |   |
| PROJ. ENG. <i>[Signature]</i> | DATE <i>5/14/71</i> |   |
| PROD. <i>[Signature]</i>      | DATE <i>5/14/71</i> |   |
| FIRST USED ON<br>POP15        | SIZE/CODE<br>D BS   | NUMBER<br>FP15-0-04   |
| SCALE                         | SHEET 1 OF 1        | REV.<br>00  |





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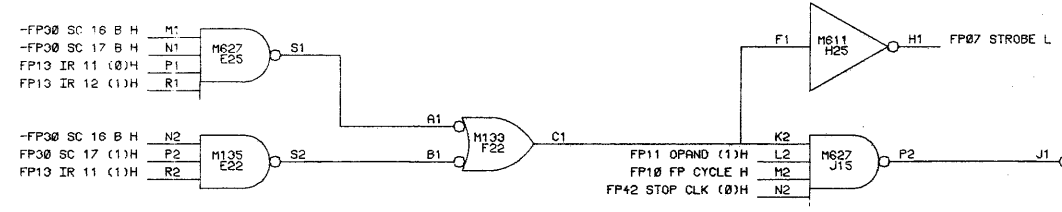
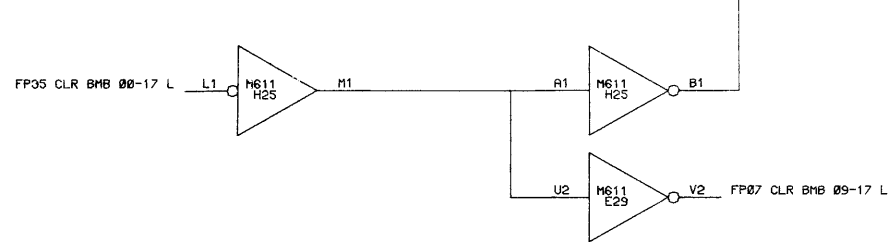
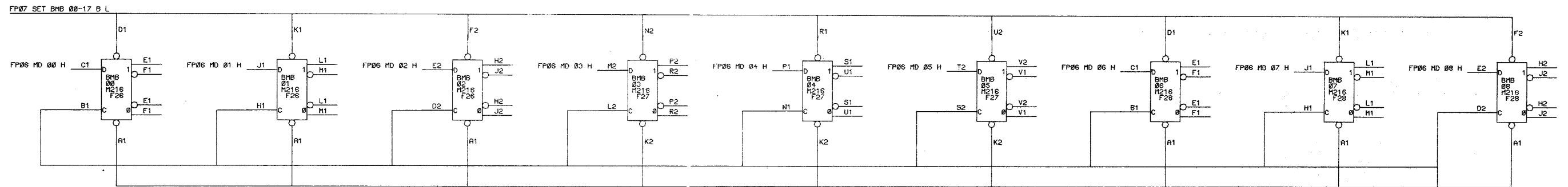
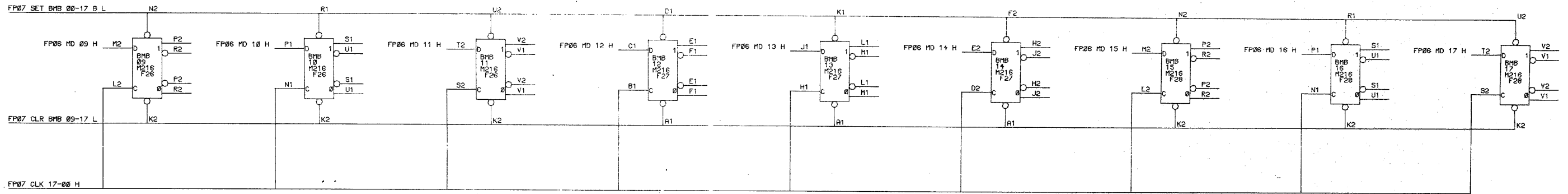


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| DRN. <i>R. 12/11</i>          | DATE 5-14-71 | <br><b>digital EQUIPMENT CORPORATION</b><br><small>MAYNARD, MASSACHUSETTS</small> |
| CHK'D. <i>[Signature]</i>     | DATE 5-14-71 |   |
| ENG. <i>[Signature]</i>       | DATE 5/14/71 |   |
| PROJ. ENG. <i>[Signature]</i> | DATE 5/14/71 |   |
| PROV'D. <i>[Signature]</i>    | DATE 5/14/71 |   |
| FIRST USED ON                 |              | TITLE   |
| PDP-15                        |              | MEMORY RECEIVERS  |
| SCALE                         | SIZE CODE    | NUMBER  |
| SHEET 1 OF 1                  | D BS         | FP15-0-06   |
|                               | DIST.        | REV. 00   |

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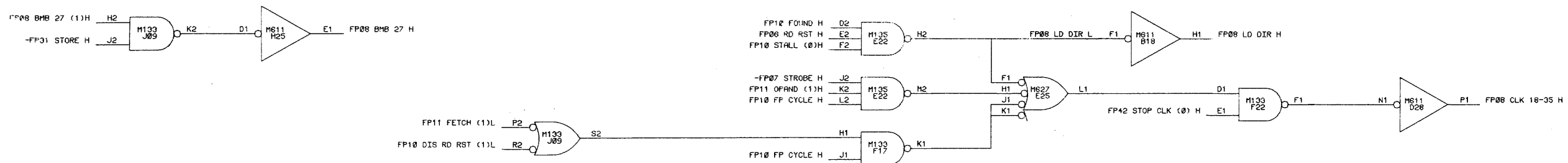
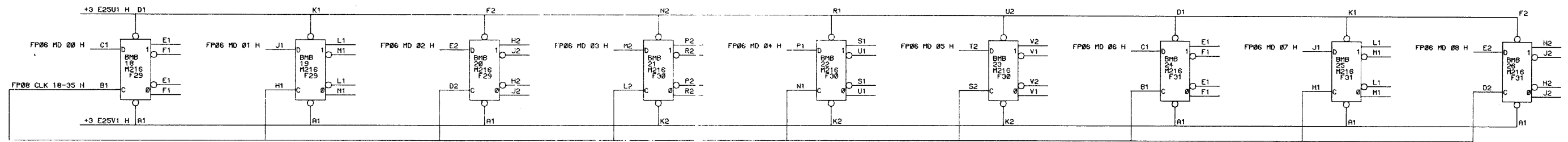
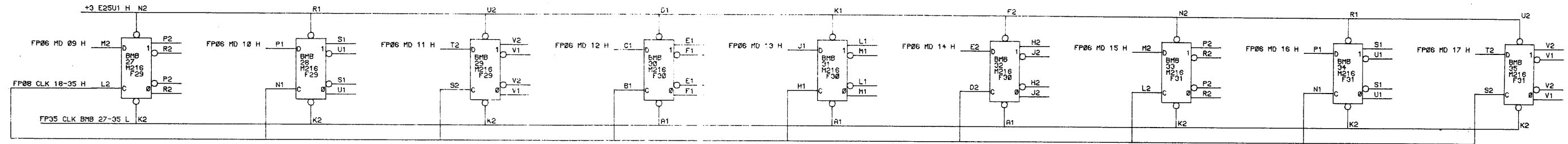


| REVISIONS |            |      |
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| DRN<br><i>K. Fair-A</i>           | DATE<br>11/71     | <b>digital</b> CORPORATION<br>MAYNARD, MASSACHUSETTS |
| CHK'D.<br><i>M. Kennedy</i>       | DATE<br>5/19/71   |  |
| ENG.<br><i>Ed King</i>            | DATE<br>5/14/71   |  |
| PROJ. ENG.<br><i>J. Galbreath</i> | DATE<br>7/14/71   |  |
| DESIGN<br><i>A. J. Colan</i>      | DATE<br>5/11/71   |  |
| FIRST USED ON<br>PDP15            |                   | TITLE<br>BUFFERED MEM BITS<br>00-17                  |
| SCALE                             | SIZE CODE<br>D BS | NUMBER<br>FP15-0-07                                  |
| SHEET 1 OF 1                      | DIST.             | REV.<br>00   |

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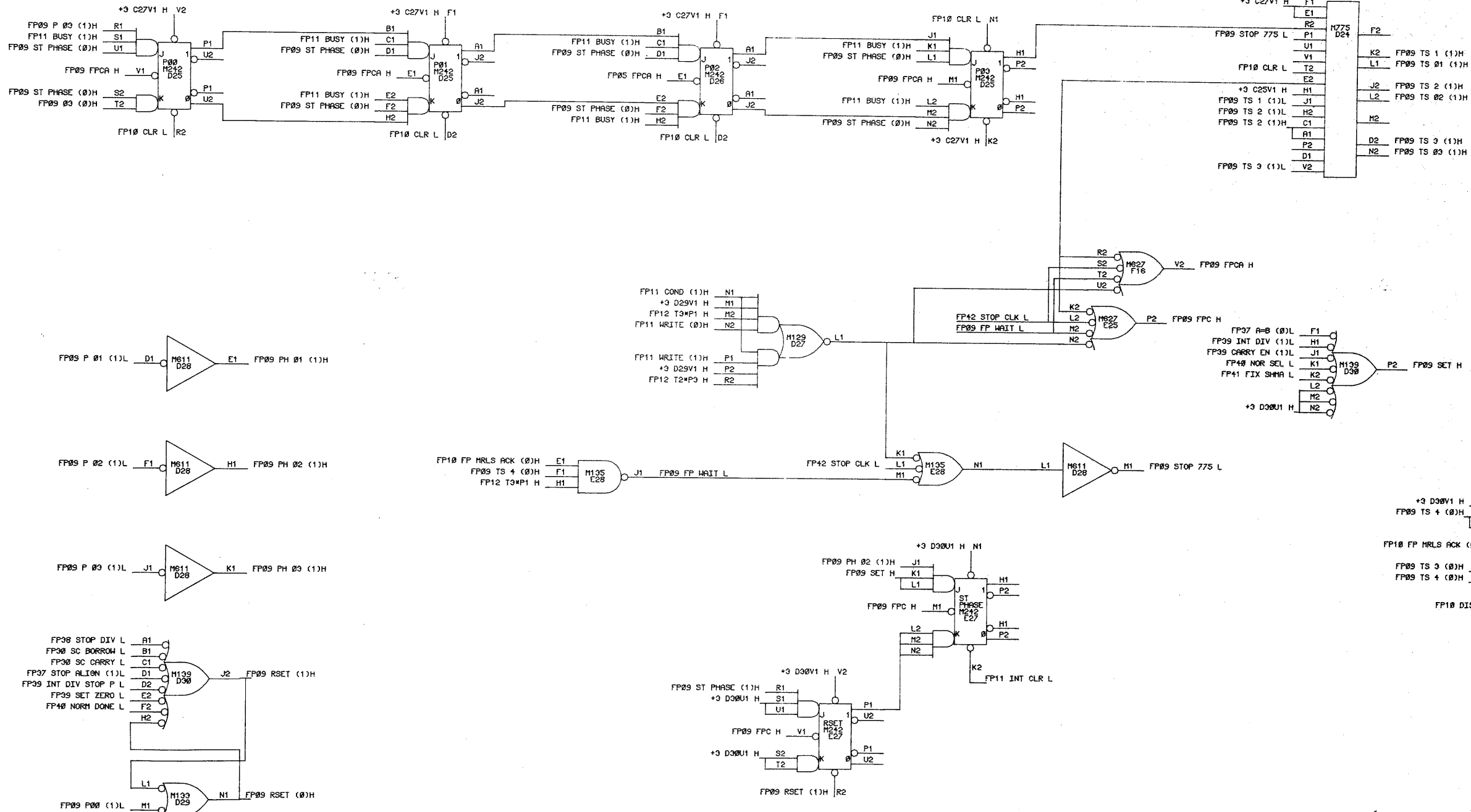


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| DRN<br><i>K. Frisch</i>       | DATE<br>5-14-71   | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |
| CHKD.<br><i>D. Dowland</i>    | DATE<br>5-14-71   |  |
| ENG.<br><i>Ed King</i>        | DATE<br>5/14/71   |  |
| PROJ. ENG.<br><i>W. Dwyer</i> | DATE<br>5/24/71   |  |
| PROG.<br><i>C. Doherty</i>    | DATE<br>5/19/71   |  |
| FIRST USED ON<br>PDP15        |                   | TITLE<br>BUFFERED MEM BITS<br>18-35                            |
| SCALE                         | SIZE CODE<br>D BS | NUMBER<br>FP15-0-08  |
| SHEET 1 OF 1                  | DIST.             | REV.<br>00   |

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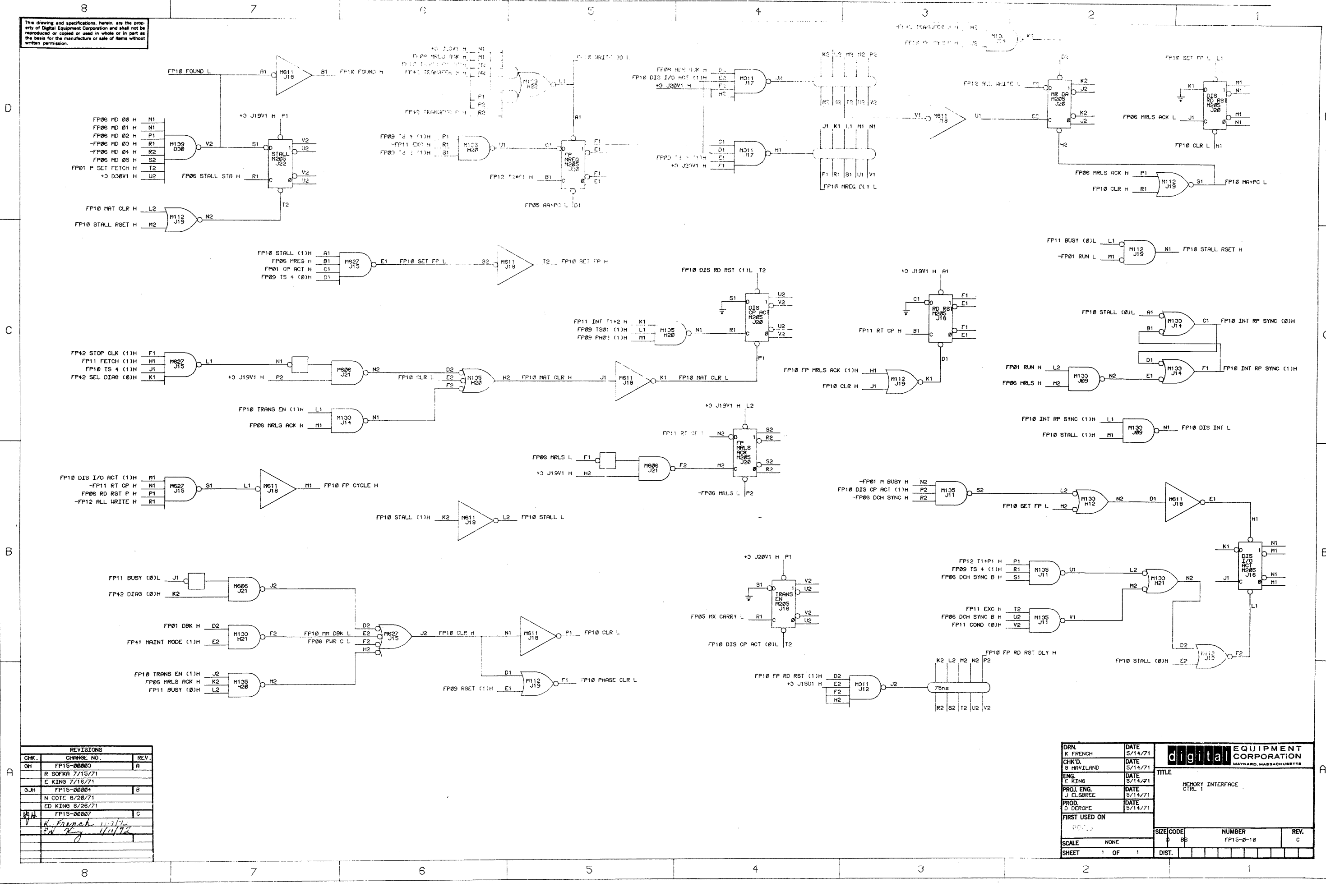
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| GH        | FP15-00003                 | A    |
|           | R. SOFKA 7/15/71           |      |
|           | E. KING 7/16/71            |      |
|           | FP15-00004                 | B    |
|           | <i>[Signature]</i> 8/19/71 |      |
|           | <i>[Signature]</i> 8/26/71 |      |

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|---|-------------|--------|-----------|
| DRN.  | K. FRENCH   | DATE   | 5/14/71.  |
| CHKD.                                       | S. HAVILAND | DATE   | 5/14/71   |
| ENG.  | E. KING     | DATE   | 5/14/71   |
| PROJ. ENG.                                  | J. ELSBREE  | DATE   | 5/14/71   |
| PROD.                                       | D. DEROME   | DATE   | 5/14/71   |
| FIRST USED ON                               | PDP15       |        |           |
| SCALE                                       | D BS        | NUMBER | FP15-0-09 |
| SHEET                                       | 1 OF 1      | DIST.  |           |


**digital EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**TIME STATE GENERATOR**

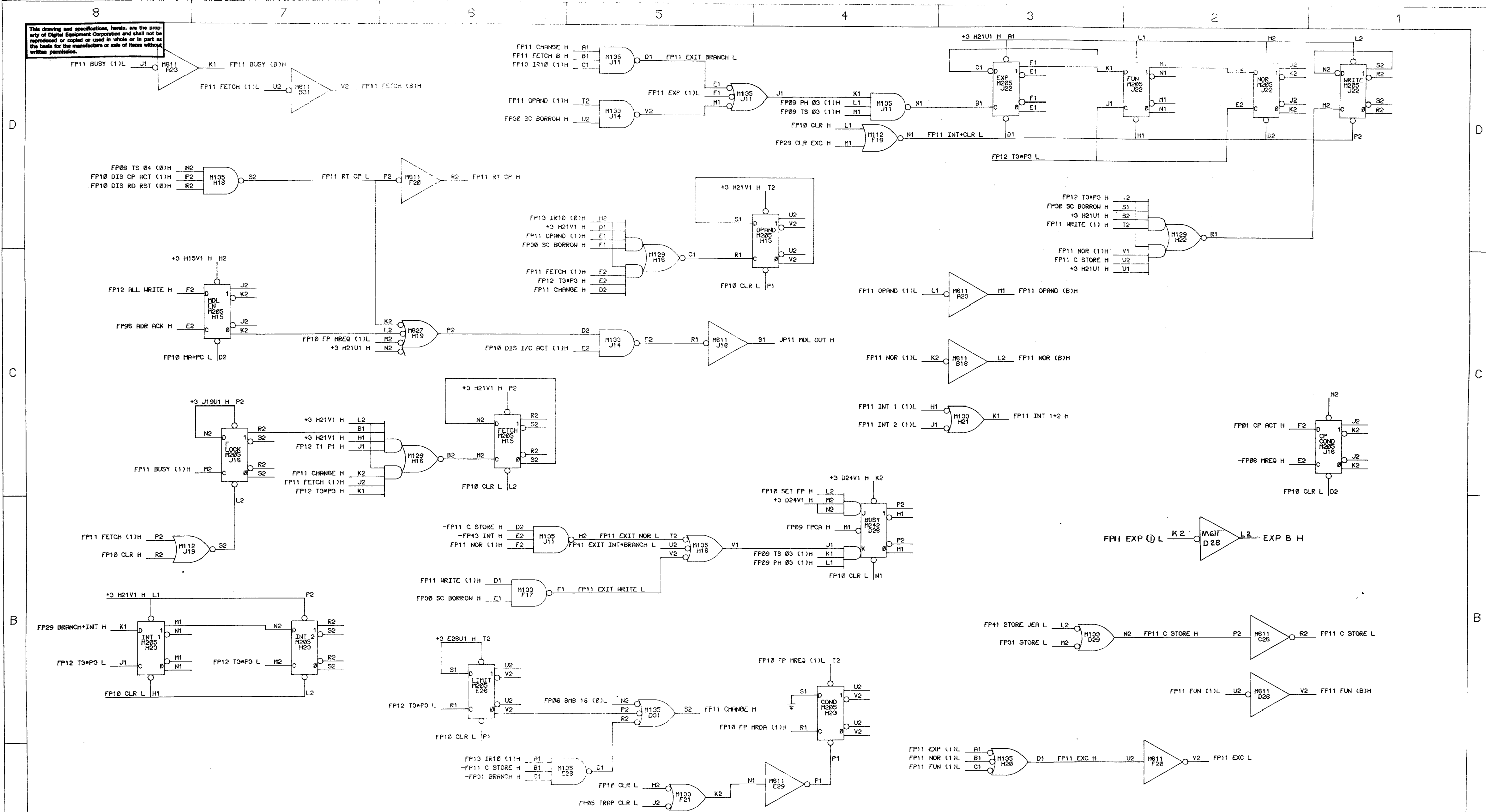
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| CHK.      | CHANGE NO.        | REV. |
| GH        | FP15-00000        | A    |
|           | R SOFKA 7/15/71   |      |
|           | E KING 7/16/71    |      |
| GJH       | FP15-00004        | B    |
|           | N COTE 8/20/71    |      |
|           | ED KING 8/26/71   |      |
| MAH       | FP15-00007        | C    |
|           | K. French 11/2/72 |      |
|           | Ed King 11/1/72   |      |

|                         |                 |   |
|-------------------------|-----------------|---|
| DRN.<br>K FRENCH        | DATE<br>5/14/71 | <br>MAYNARD, MASSACHUSETTS |
| CHK'D.<br>B HAYLAND     | DATE<br>5/14/71 |   |
| ENG.<br>E KING          | DATE<br>5/14/71 | TITLE<br>MEMORY INTERFACE<br>CTRL 1   |
| PROJ. ENG.<br>J ELSBREE | DATE<br>5/14/71 |   |
| PROD.<br>D DEROME       | DATE<br>5/14/71 |   |
| FIRST USED ON<br>FP15   |                 |   |
| SCALE<br>NONE           |                 | SIZE CODE<br>B5   |
| SHEET<br>1 OF 1         |                 | NUMBER<br>FP15-0-10   |
|                         |                 | REV.<br>C   |

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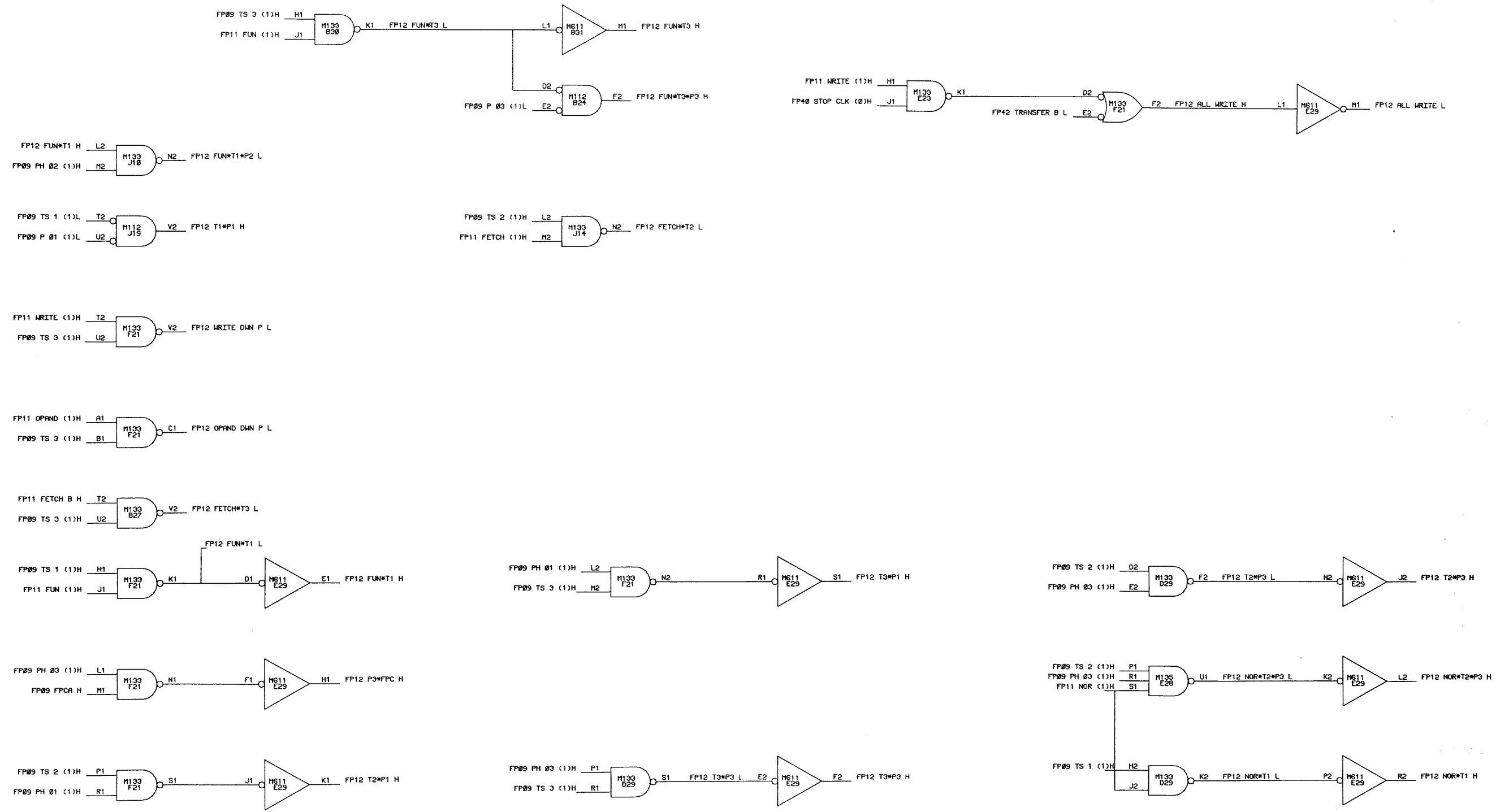


| REVISIONS |                |      |
|-----------|----------------|------|
| CHK       | CHANGE NO.     | REV. |
| 7/1       | FP15-00002     | A    |
|           | <i>Ed King</i> |      |
|           | <i>6/23/71</i> |      |
|           | FP15-00014     | B    |
|           | <i>Ed King</i> |      |
|           | <i>6/23/71</i> |      |
|           | <i>Ed King</i> |      |
|           | <i>6/23/71</i> |      |

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| DRN.<br>K. FRENCH        | DATE<br>5/14/71   | <b>digital</b><br>EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |
| CHK'D.<br>B. HAVILAND    | DATE<br>5/14/71   |   |
| ENG.<br>E. KING          | DATE<br>5/14/71   | TITLE<br>MEMORY INTERFACE CTRL 2                                  |
| PROJ. ENG.<br>J. ELSBREE | DATE<br>5/14/71   |   |
| PROD.<br>D. DERONE       | DATE<br>5/14/71   |   |
| FIRST USED ON<br>PDP15   | SIZE CODE<br>D BS | NUMBER<br>FP15-0-11   |
| SCALE                    | DIST.             | REV.<br>B   |
| SHEET 1 OF 1             |                   |   |

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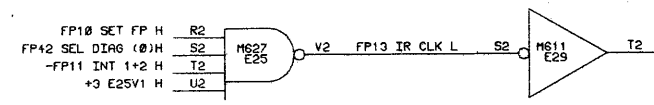
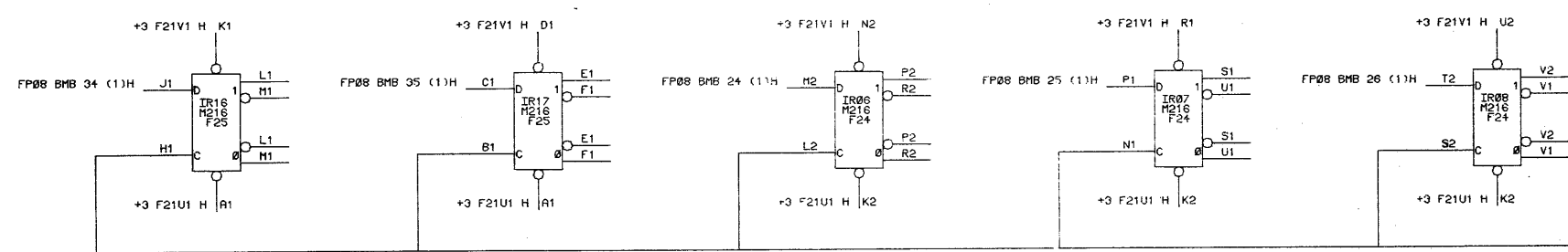
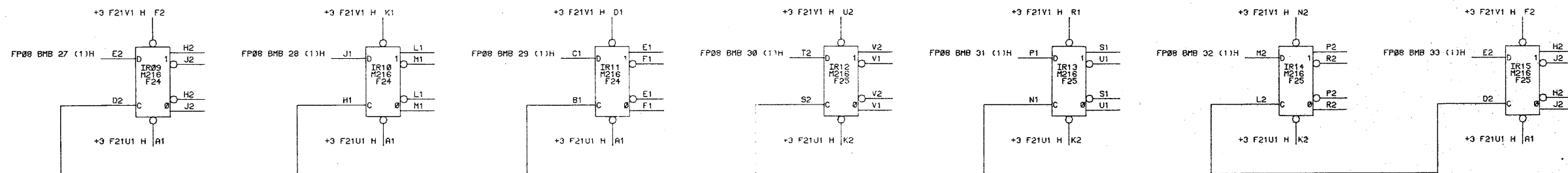


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| DRN<br><i>K French</i>              | DATE<br>5-14-71   | <br><b>digital EQUIPMENT CORPORATION</b><br><small>MAYNARD, MASSACHUSETTS</small> |
| CHKD.<br><i>JL Newland</i>          | DATE<br>5-14-71   |   |
| ENG.<br><i>Ed King</i>              | DATE<br>3/18/71   |   |
| PROL ENG.<br><i>Kalshrae</i>        | DATE<br>5/11/71   |   |
| PRD.<br><i>C. J. O'Keefe</i>        | DATE<br>5/11/71   |   |
| FIRST USED ON<br>POP15              |                   |   |
| TITLE<br>MEMORY INTERFACE<br>CTRL 3 |                   |   |
| SCALE<br>D BS                       | SIZE CODE<br>D BS | NUMBER<br>FP15-0-12   |
| SHEET 1 OF 1                        | DIST.             | REV.<br>00  |

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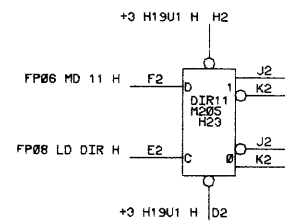
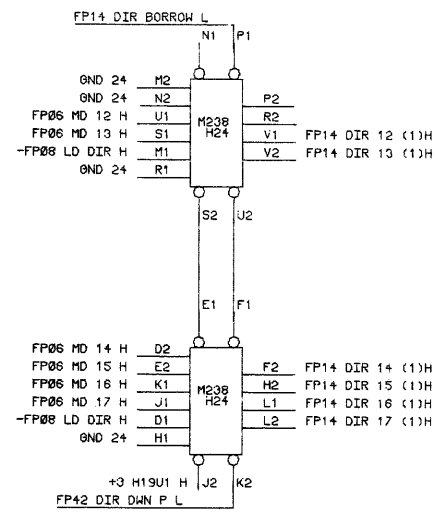
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| DRN. <i>K. J. ...</i>    | DATE <i>2/14/71</i> | <br><b>digital EQUIPMENT CORPORATION</b><br><small>MAYNARD, MASSACHUSETTS</small> |
| CHK'D. <i>J. ...</i>     | DATE <i>5/14/71</i> |   |
| ENG. <i>C. ...</i>       | DATE <i>3/14/71</i> |   |
| PROJ. ENG. <i>J. ...</i> | DATE <i>3/14/71</i> |   |
| PROB. <i>J. ...</i>      | DATE                |   |
| FIRST USED ON            |                     | TITLE   |
| PDP-15                   |                     | INSTRUCTION REGISTER (IR)   |
| SCALE                    | SIZE CODE           | NUMBER  |
| D                        | BS                  | FP15-0-13   |
| SHEET 1 OF 1             | DIST.               | REV. 00   |




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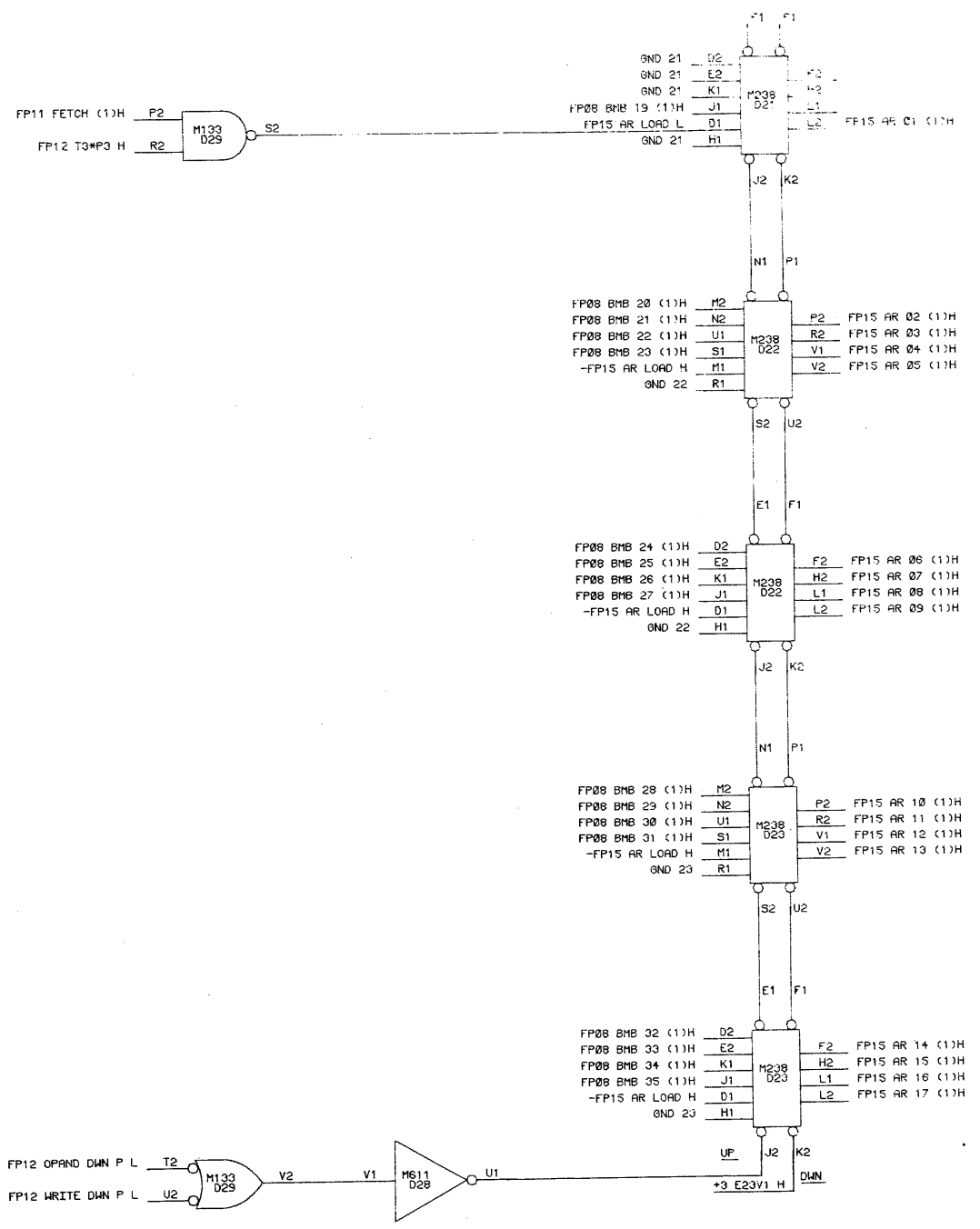


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|----------------------------|---------------------|--|
| DRN. <i>V. Funch</i>       | DATE <i>5/1/71</i>  | <br><b>digital EQUIPMENT CORPORATION</b><br><small>MAYNARD, MASSACHUSETTS</small> |
| CHKD. <i>A. Nardand</i>    | DATE <i>5/14/71</i> |  |
| ENG. <i>D. King</i>        | DATE <i>5/14/71</i> |  |
| PROJ. ENG. <i>R. Adams</i> | DATE <i>5/14/71</i> |  |
| PRD. <i>R. Adams</i>       | DATE <i>5/14/71</i> |  |
| FIRST USED ON<br>POP15     |                     | TITLE<br>DIAGNOSTIC INST REGISTER  |
| SCALE<br>SHEET 1 OF 1      | SIZE CODE<br>D BS   | NUMBER<br>FP15-0-14  |
| DIST.                      |                     | REV.<br>00   |

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| DRN<br><i>W. Leggett</i>       | DATE<br>5-14-71 | <br><b>digital EQUIPMENT CORPORATION</b><br><small>MAYNARD, MASSACHUSETTS</small>   |           |        |      |      |           |    |
| CHKD<br><i>W. Leggett</i>      | DATE<br>5-14-71 |   |           |        |      |      |           |    |
| ESG<br><i>W. Leggett</i>       | DATE<br>5/14/71 |   |           |        |      |      |           |    |
| PROJ ENG<br><i>W. Leggett</i>  | DATE<br>5/14/71 |   |           |        |      |      |           |    |
| PROB<br><i>W. Leggett</i>      | DATE<br>5/14/71 |   |           |        |      |      |           |    |
| TITLE<br>ADDRESS REGISTER (AR) |                 | <table border="1"> <tr> <td>SIZE CODE</td> <td>NUMBER</td> <td>REV.</td> </tr> <tr> <td>D BS</td> <td>FP15-0-15</td> <td>00</td> </tr> </table> | SIZE CODE | NUMBER | REV. | D BS | FP15-0-15 | 00 |
| SIZE CODE                      | NUMBER          |   | REV.      |        |      |      |           |    |
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| FIRST USED ON<br>PDP15         |                 |   |           |        |      |      |           |    |
| SCALE                          | DIST.           |   |           |        |      |      |           |    |
| SHEET 1 OF 1                   |                 |   |           |        |      |      |           |    |

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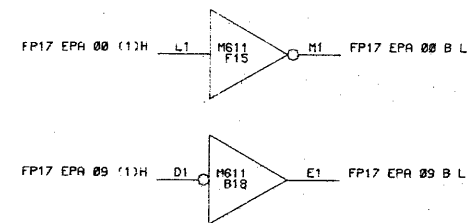
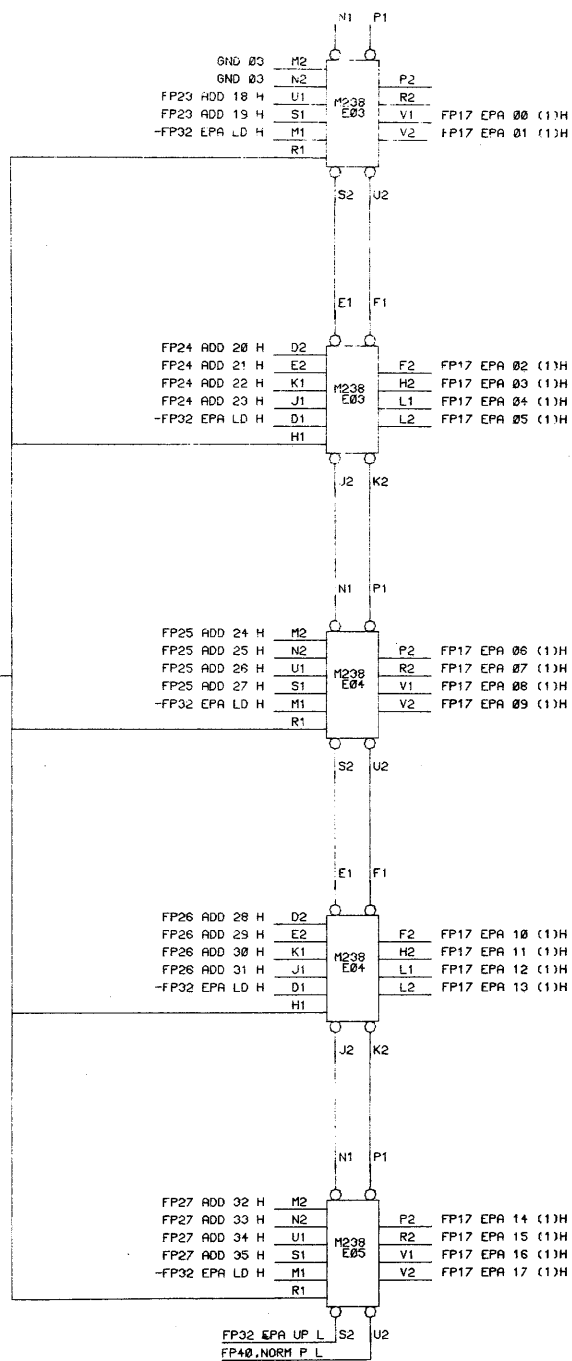
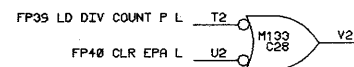


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| DRN<br><i>M. Leary</i>            | DATE<br>5-14-71   | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |
| CHK'D<br><i>D. Williams</i>       | DATE<br>5-14-71   |  |
| ENG<br><i>Cd King</i>             | DATE<br>5/14/71   |  |
| PROJ. ENG<br><i>J. S. Johnson</i> | DATE<br>5/14/71   |  |
| PROD<br><i>J. S. Johnson</i>      | DATE<br>5/14/71   |  |
| FIRST USED ON<br>PDP15            |                   | TITLE<br>DIAGNOSTIC ADDRESS REGISTER (DAR)                     |
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| SHEET 1 OF 1                      | DIST.             | REV.<br>00   |

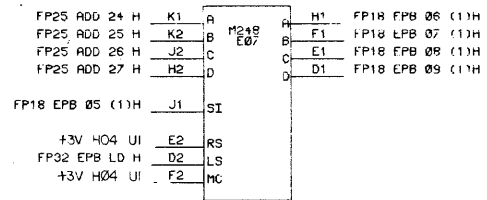
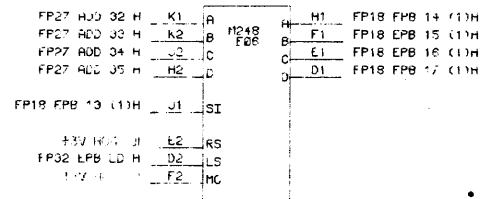
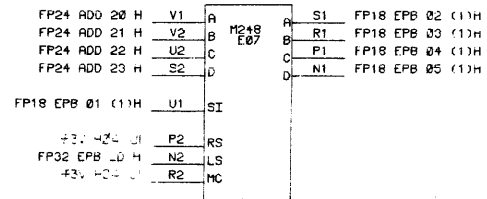
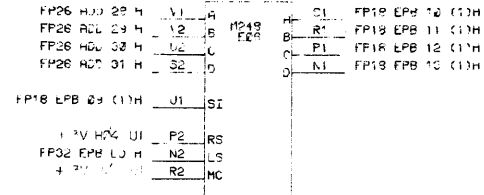
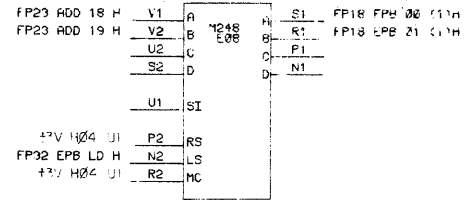
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|---------------------------------|-------------------|---|
| DRN.<br><i>M. Legere</i>        | DATE<br>5-14-71   | <b>digital EQUIPMENT CORPORATION</b><br><small>MAYNARD, MASSACHUSETTS</small><br>TITLE<br>A EXPONENT REGISTER (EPA) |
| CHK'D.<br><i>M. Hunsicker</i>   | DATE<br>5-14-71   |   |
| ENG.<br><i>P. King</i>          | DATE<br>5/14/71   |   |
| PROJ. ENG.<br><i>W. Balaban</i> | DATE<br>5/14/71   |   |
| PROD.<br><i>P. J. Kove</i>      | DATE<br>5/14/71   |   |
| FIRST USED ON<br>PDP15          | SIZE CODE<br>D BS | NUMBER<br>FP15-0-17   |
| SCALE<br>SHEET 1 OF 1           | DIST.             | REV.<br>00  |

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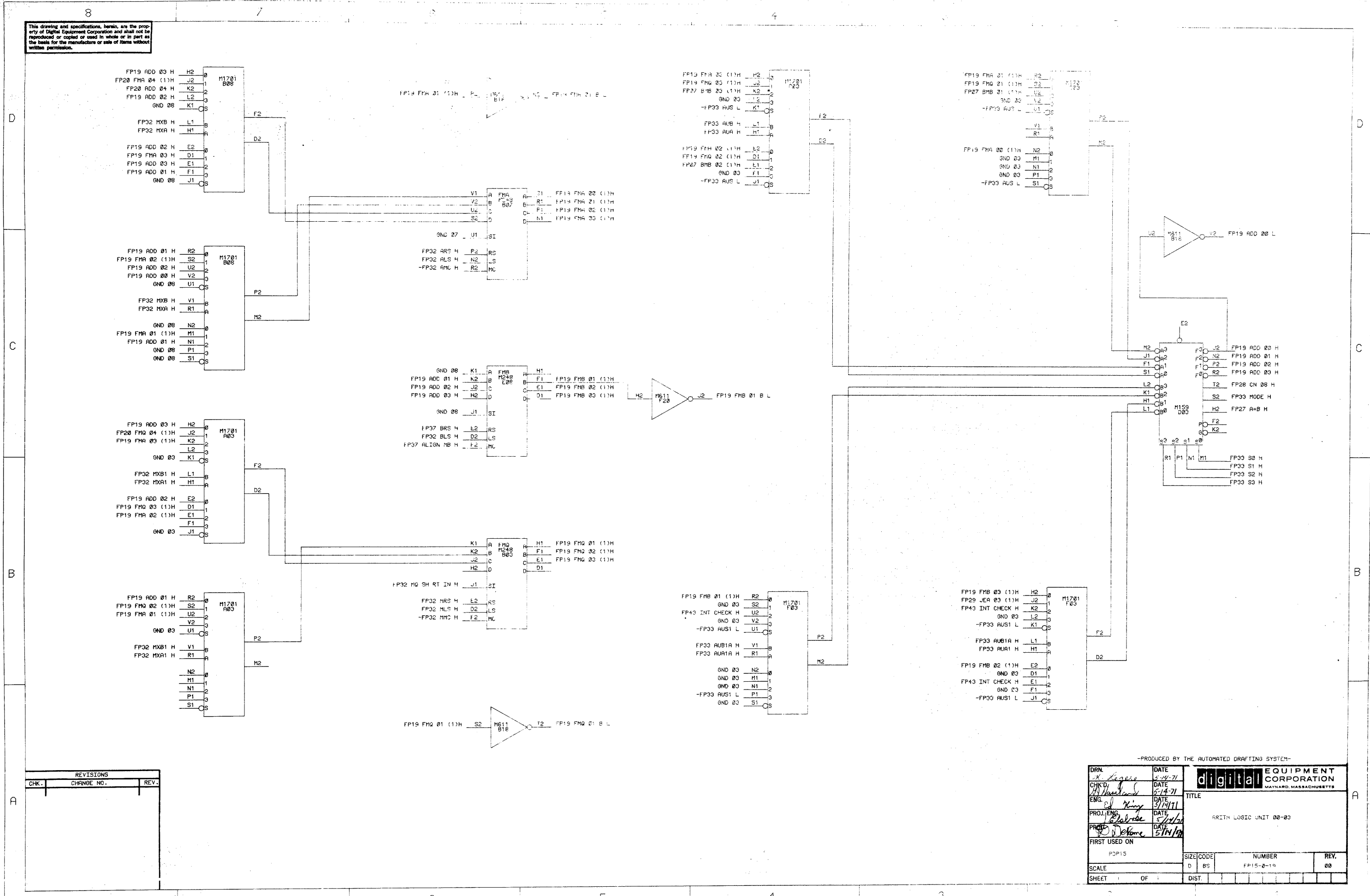


| REVISIONS |            |      |
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| CHK.      | CHANGE NO. | REV. |
| 1         | FP15-00014 | A    |
| 2         | 10-13-71   |      |
| 3         | 10-13-71   |      |

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| DRN.<br><i>A. L. Gese</i>       | DATE<br>5-14-71   | <br><b>digital EQUIPMENT CORPORATION</b><br><small>MAYNARD, MASSACHUSETTS</small> |
| CHK'D.<br><i>D. H. Haskins</i>  | DATE<br>5-14-71   |   |
| ENG.<br><i>J. R. King</i>       | DATE<br>5/14/71   |   |
| PROJ. ENG.<br><i>D. J. Kane</i> | DATE<br>5/14/71   |   |
| DATE<br>5/14/71                 |                   |   |
| TITLE<br>B EXPONENT REGISTER    |                   |   |
| FIRST USED ON<br>PDP15          |                   |   |
| SCALE<br>SHEET 1 OF 1           | SIZE CODE<br>D BS | NUMBER<br>FP15-0-18   |
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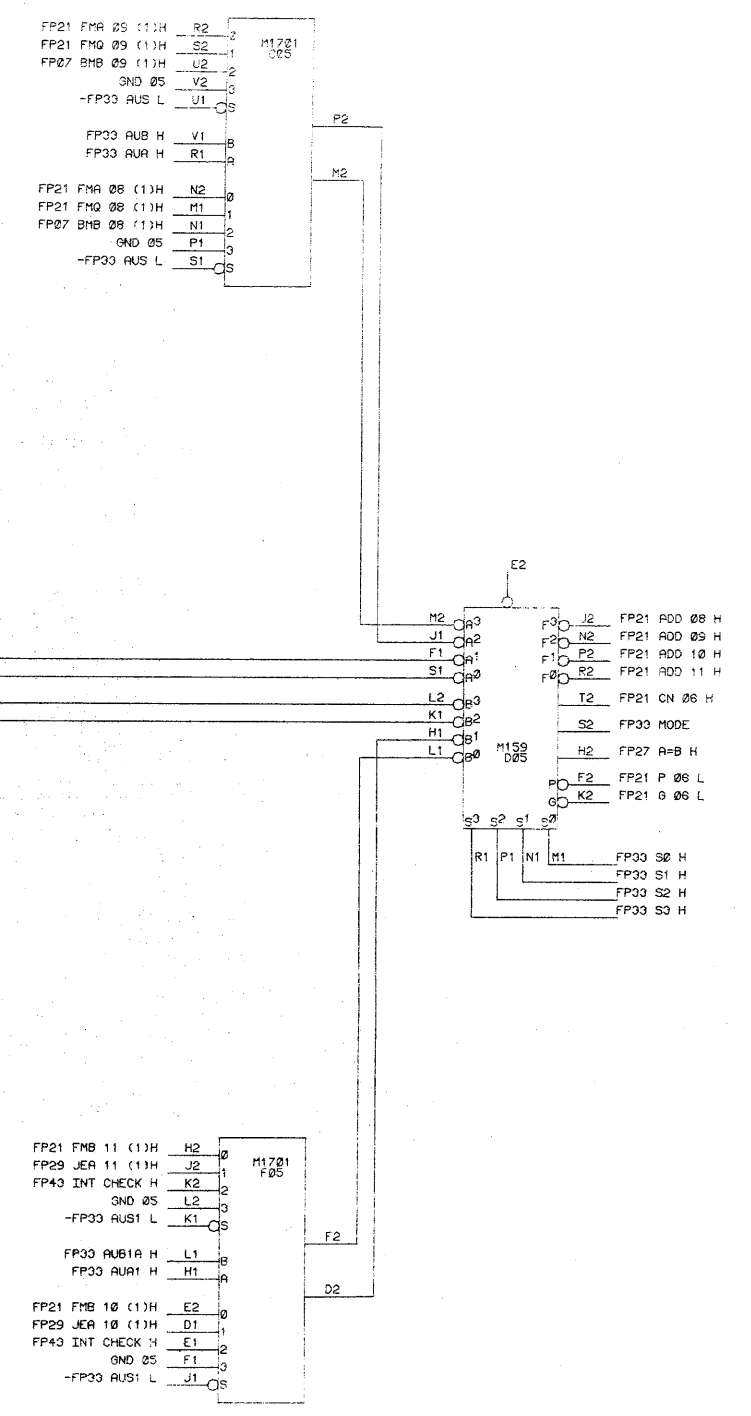
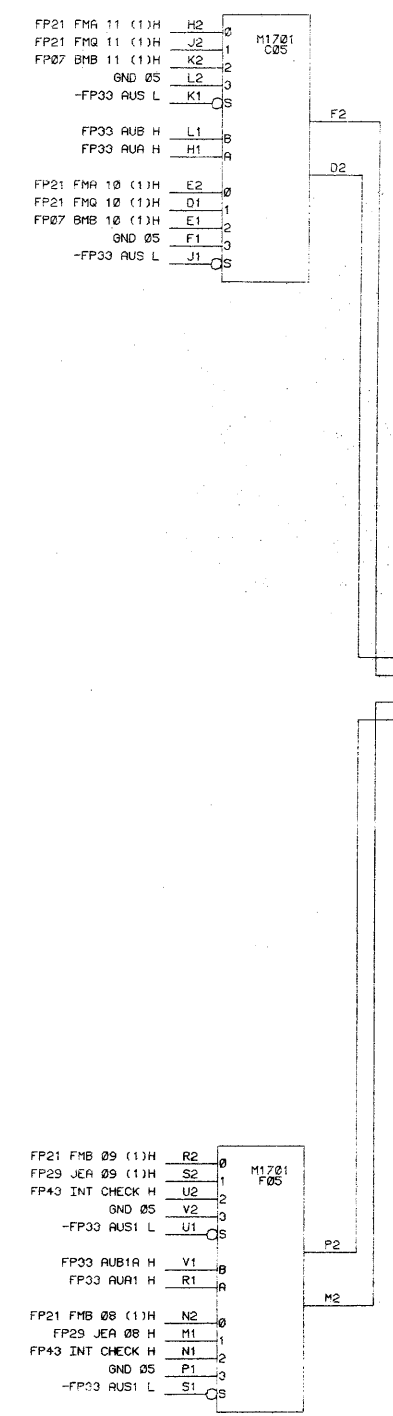
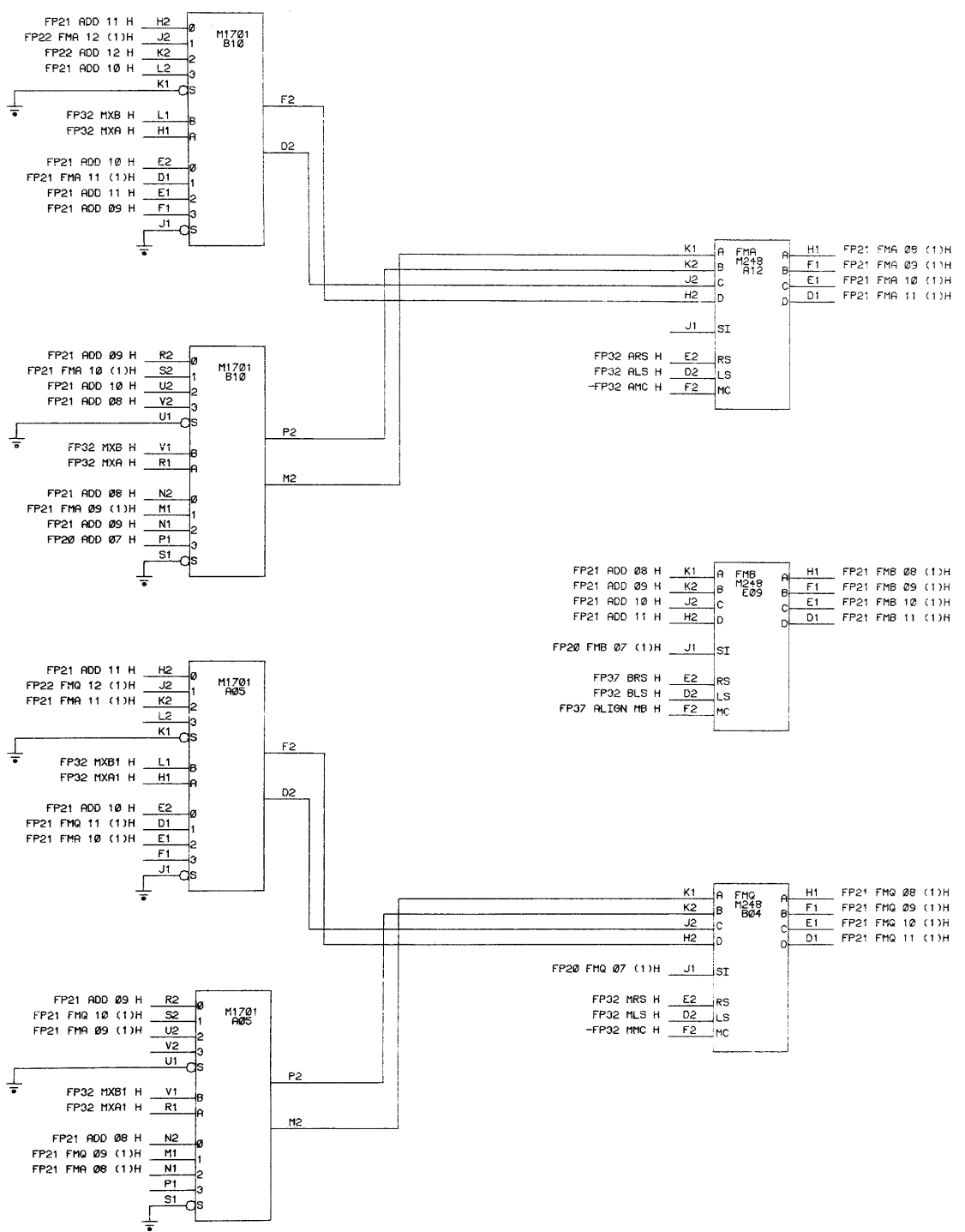
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| DRN. <i>A. Legere</i>        | DATE <i>5-14-71</i> | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |
| CHK'D. <i>M. Hamilton</i>    | DATE <i>5-14-71</i> |  |
| ENG. <i>J. King</i>          | DATE <i>5/14/71</i> | TITLE  |
| PROJ. ENG. <i>R. DeLoone</i> | DATE <i>5/14/71</i> | ARITH LOGIC UNIT 00-03   |
| PROD. <i>R. DeLoone</i>      | DATE <i>5/14/71</i> |  |
| FIRST USED ON                |                     |  |
| POP15                        | SIZE CODE           | NUMBER   |
| SCALE                        | D BS                | FP15-0-19  |
| SHEET                        | OF                  | REV. 00  |



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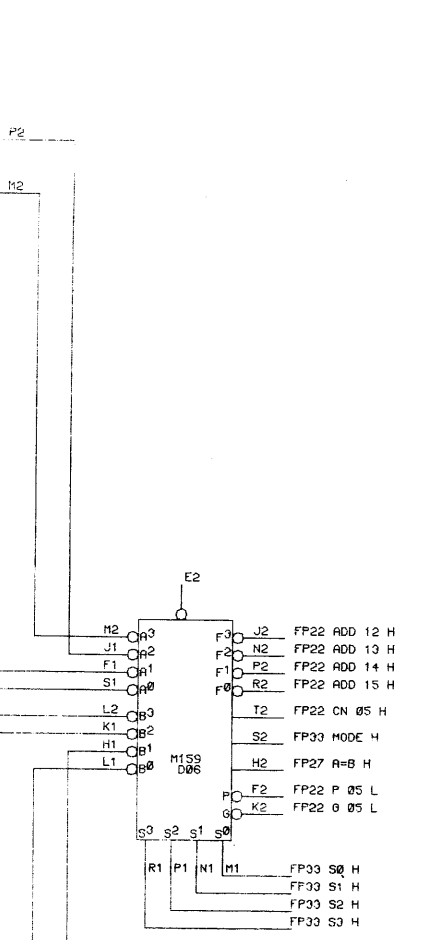
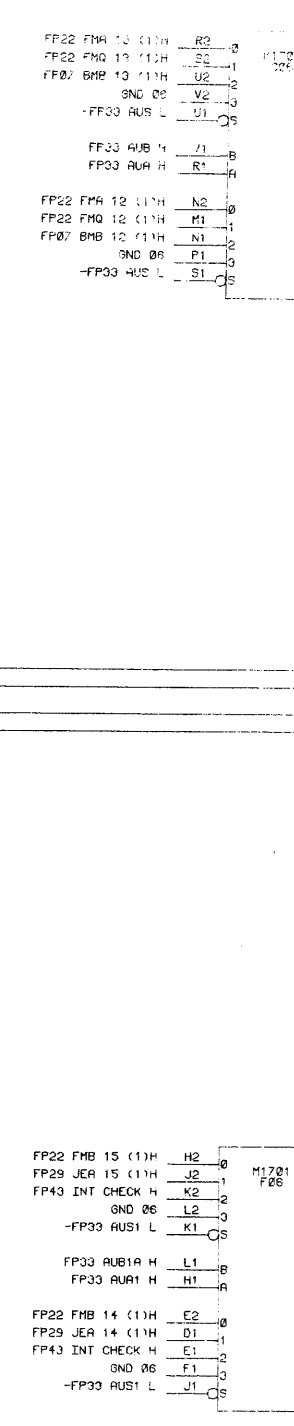
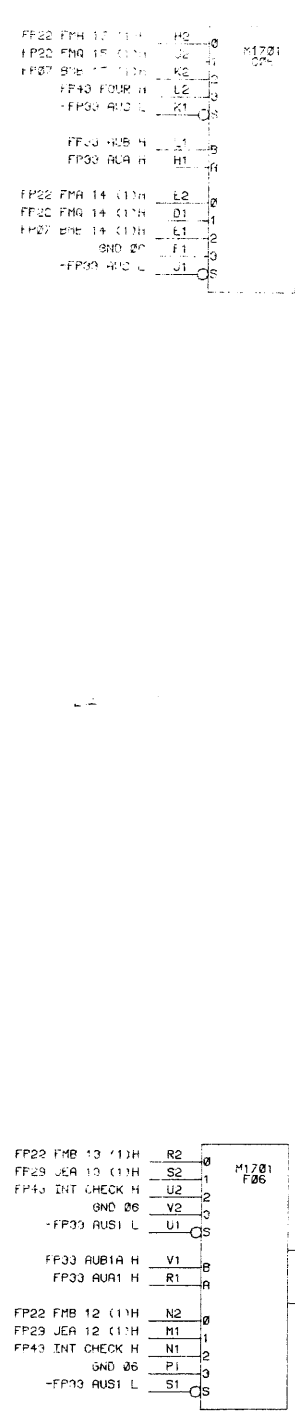
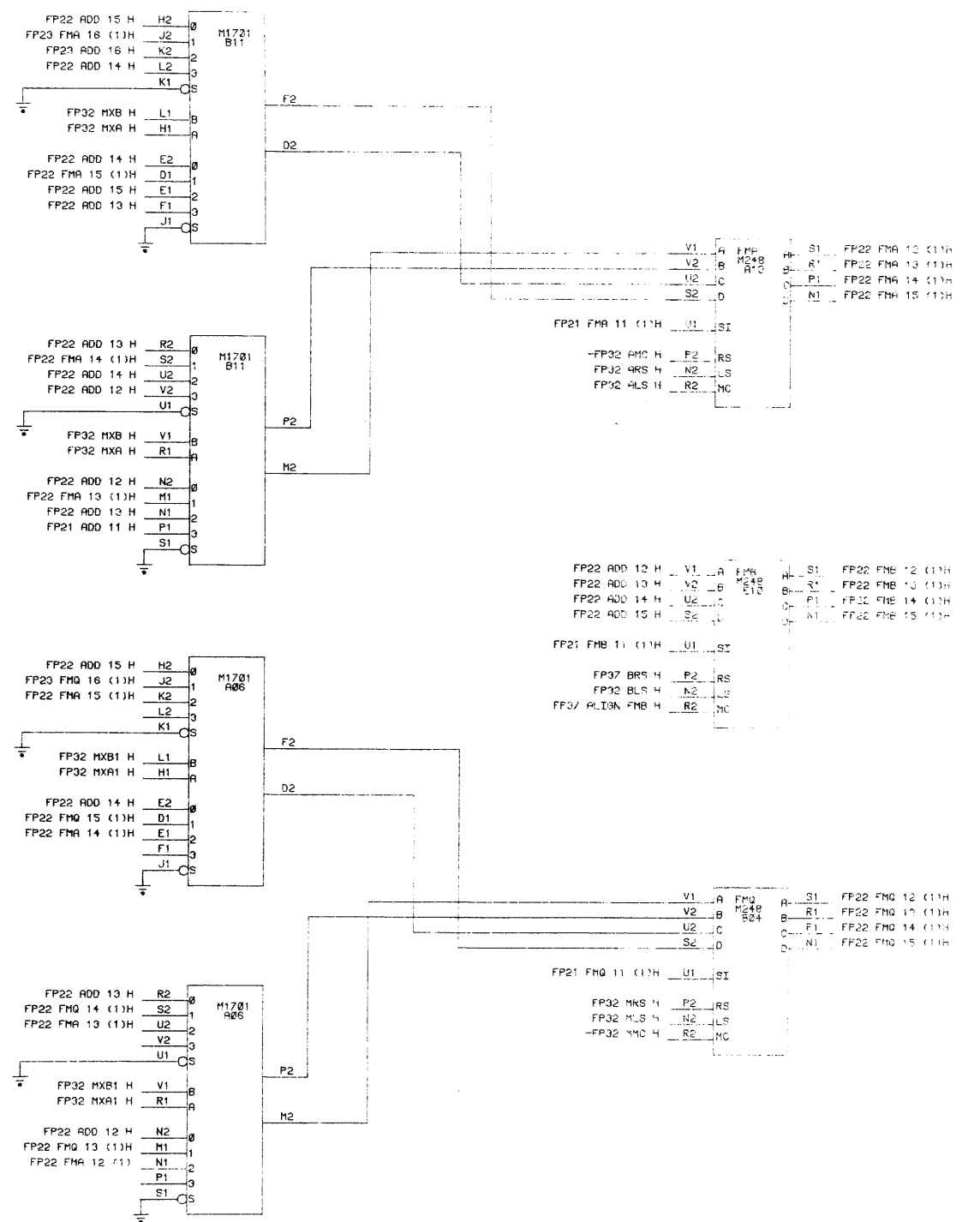
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| DRN<br><i>W. Legere</i>         | DATE<br>5-14-71   | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |
| CHK'D<br><i>M. Munn</i>         | DATE<br>5-14-71   |  |
| ENG<br><i>W. Legere</i>         | DATE<br>5/14/71   |  |
| PROJ. ENG.<br><i>W. Legere</i>  | DATE<br>5/14/71   |  |
| PROD.<br><i>W. Legere</i>       | DATE<br>5/14/71   |  |
| TITLE<br>ARITH LOGIC UNIT 08 11 |                   |  |
| FIRST USED ON<br>PDP15          | SIZE CODE<br>D BS | NUMBER<br>FP15-0-21  |
| SCALE<br>1 Of 1                 | DIST.             | REV.<br>00   |



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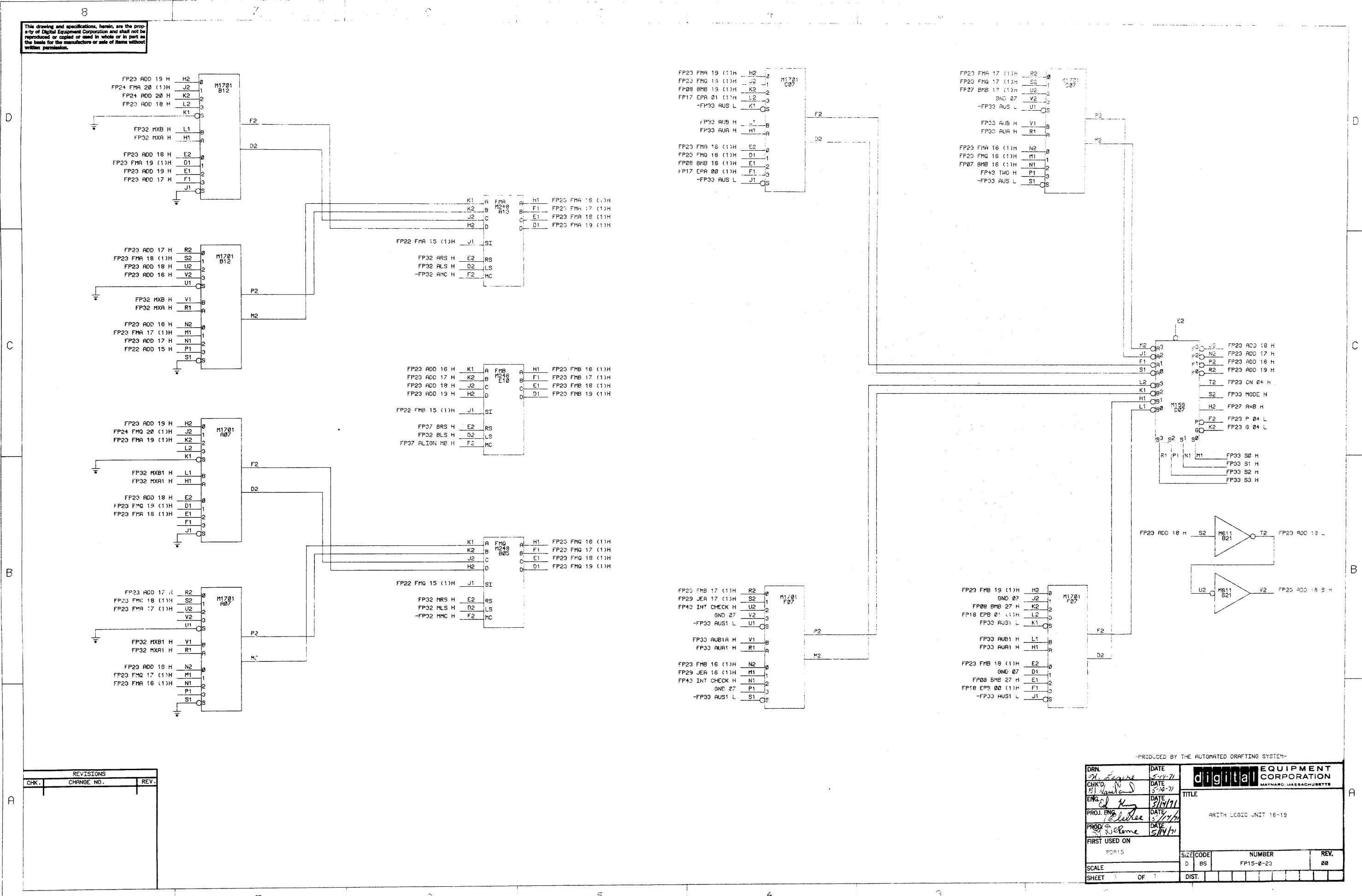
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| DRN.<br><i>H. Legere</i>       | DATE<br>5-14-71 | <br>MAYNARD, MASSACHUSETTS | TITLE                  |
| CHK'D.<br><i>R. J. Newman</i>  | DATE<br>5-14-71 |                            | ARITH LOGIC UNIT 12-15 |
| ENG.<br><i>D. J. Kane</i>      | DATE<br>5/14/71 |                            |                        |
| PROJ. ENG.<br><i>J. DeBree</i> | DATE<br>5/14/71 |                            |                        |
| PROD.<br><i>R. J. Deane</i>    | DATE<br>5/14/71 |                            |                        |
| FIRST USED ON<br>PDP15         |                 | SIZE CODE                  | NUMBER                 |
| SCALE                          |                 | D BS                       | FP15-0-22              |
| SHEET 1 OF 1                   | DIST.           |                            | REV. 00                |

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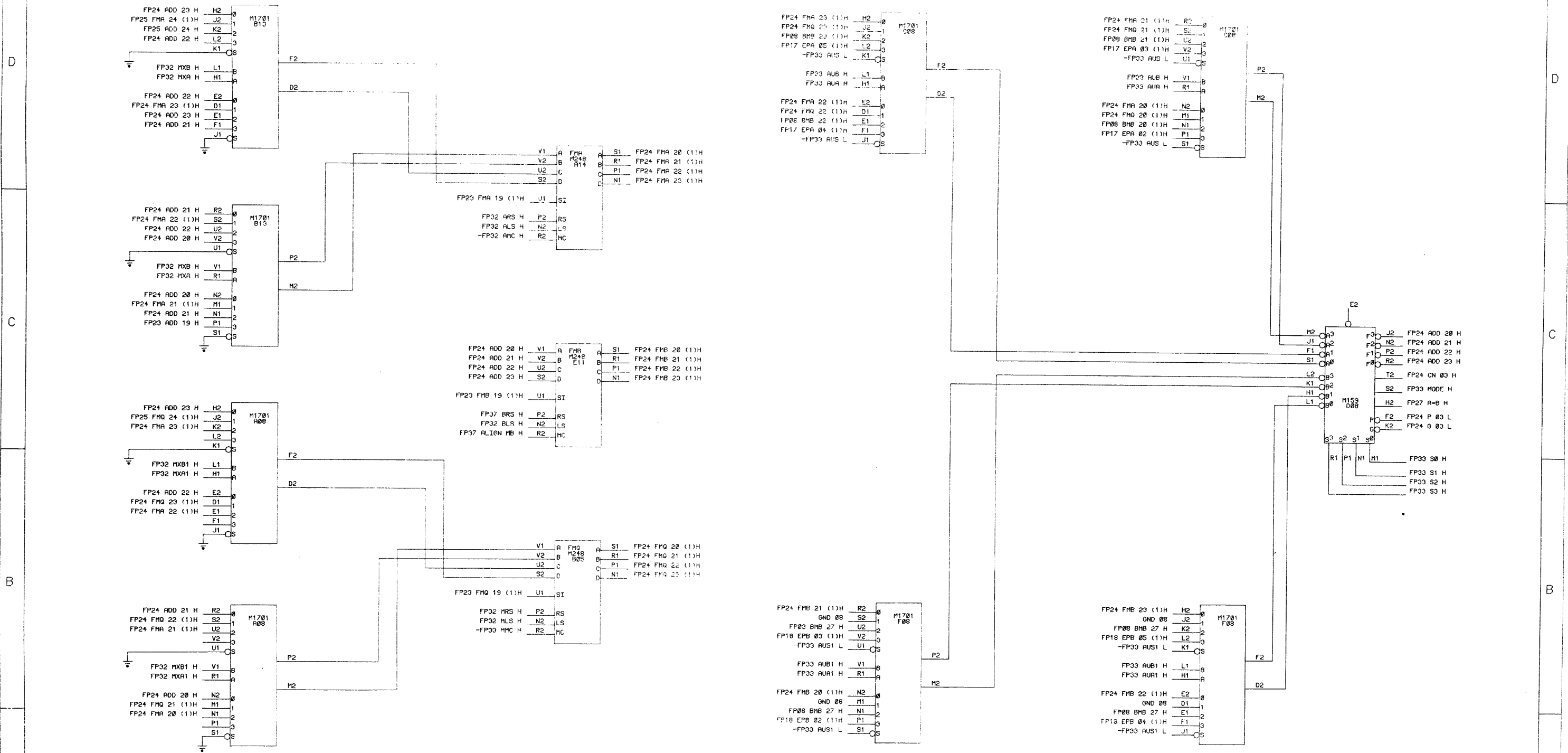


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| DRN<br><i>M. Legare</i>    | DATE<br>5-24-71   | <b>digital EQUIPMENT CORPORATION</b><br><small>MAYNARD, MASSACHUSETTS</small> |
| CHKD<br><i>M. Legare</i>   | DATE<br>5-19-71   |   |
| ENG<br><i>J. King</i>      | DATE<br>5/14/71   |   |
| PROJ ENG<br><i>Blutner</i> | DATE<br>5/14/71   |   |
| PROD<br><i>DeBorne</i>     | DATE<br>5/14/71   |   |
| FIRST USED ON<br>PDP-15    |                   | TITLE<br>ARITH LOGIC UNIT 16-19   |
| SCALE                      | SIZE CODE<br>D BS | NUMBER<br>FP15-0-20   |
| SHEET 1 OF 1               | DIST.             | REV.<br>00  |

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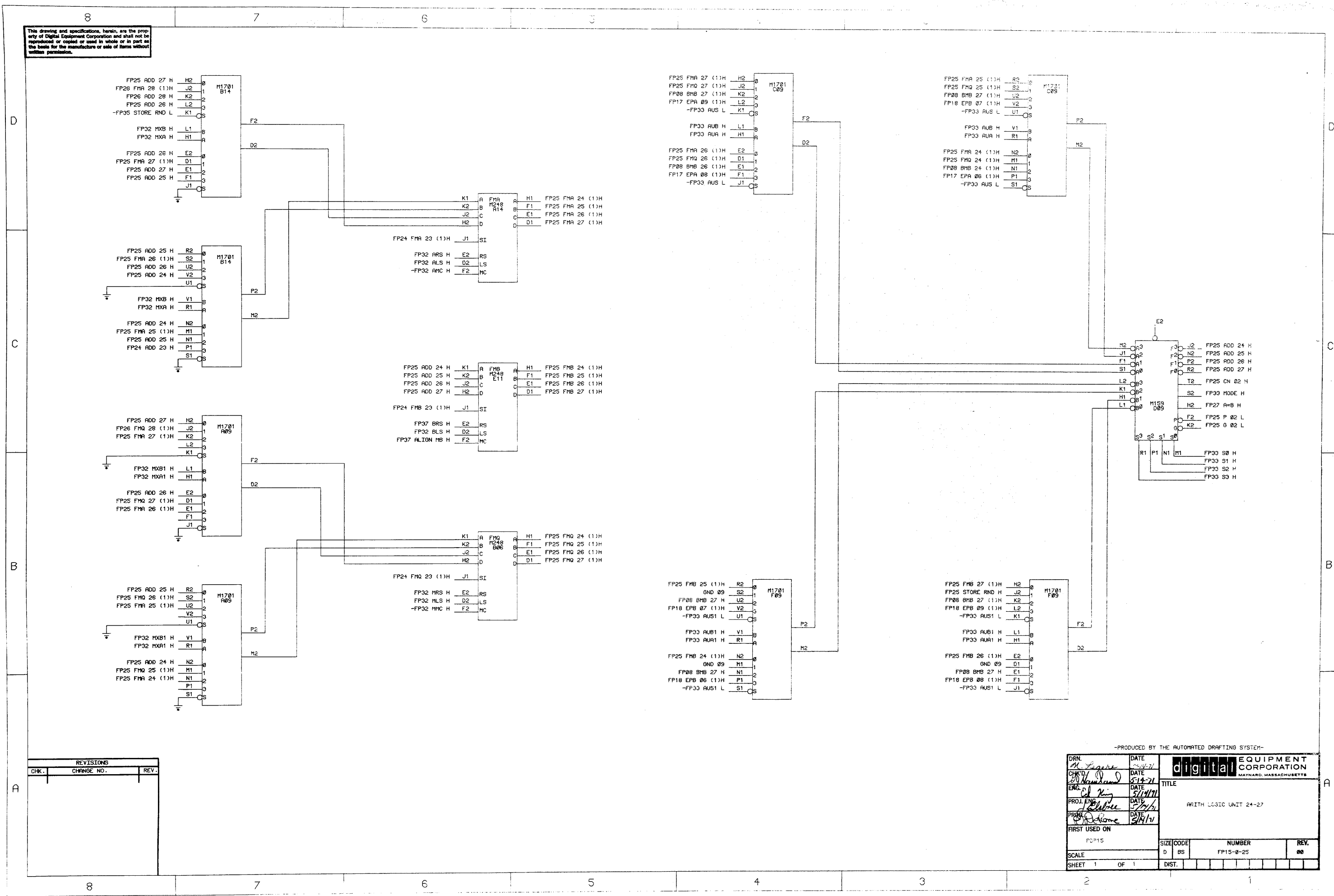


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| DRN.<br><i>M. Legere</i>      | DATE<br>5-14-71   | <br>MAYNARD, MASSACHUSETTS<br>TITLE<br>ARITH LOGIC UNIT 20-23 |
| CHK'D<br><i>H. Hamilton</i>   | DATE<br>5-14-71   |   |
| ENG<br><i>D. King</i>         | DATE<br>5/14/71   |   |
| PROJ ENG<br><i>J. Johnson</i> | DATE<br>5/14/71   |   |
| PRG<br><i>P. Quinn</i>        | DATE<br>5/14/71   |   |
| FIRST USED ON<br>PDP15        | SIZE CODE<br>D BS | NUMBER<br>FP15-8-24   |
| SCALE<br>SHEET 1 OF 1         | DIST.             | REV.<br>00  |

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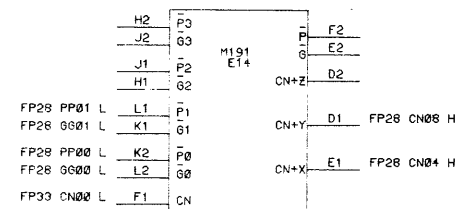
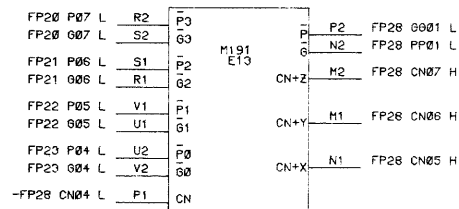
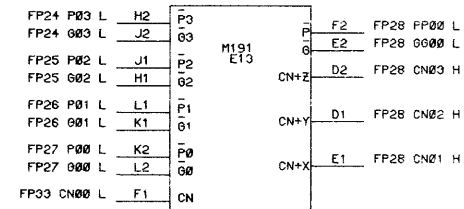
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| DRN. <i>M. Figure</i>         | DATE <i>5-14-71</i> | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |
| CHK'D <i>[Signature]</i>      | DATE <i>5-14-71</i> |  |
| ENG. <i>[Signature]</i>       | DATE <i>5/14/71</i> |  |
| PROJ. ENG. <i>[Signature]</i> | DATE <i>5/14/71</i> |  |
| PRG. <i>[Signature]</i>       | DATE <i>5/14/71</i> |  |
| FIRST USED ON                 |                     | TITLE<br>ARITH LOGIC UNIT 24-27                                |
| SCALE                         | SIZE CODE<br>D BS   | NUMBER<br>FP15-8-25  |
| SHEET 1 OF 1                  | DIST.               | REV.<br>00   |





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TRUE CARRY INSERT=LOW

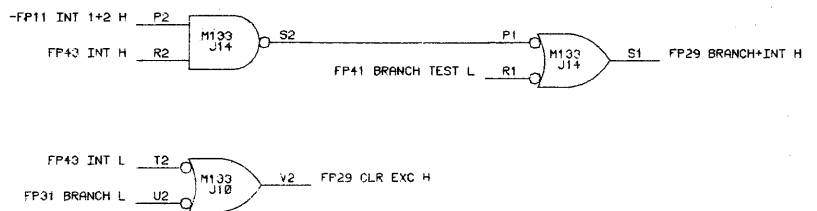
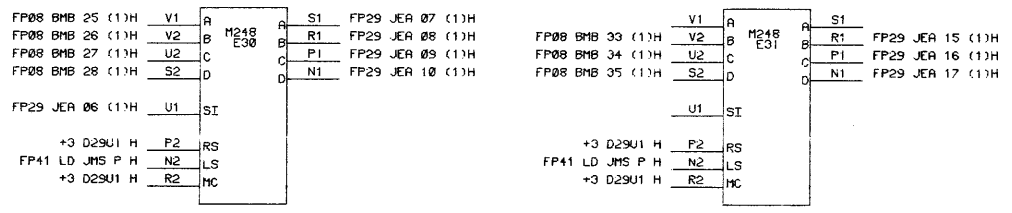
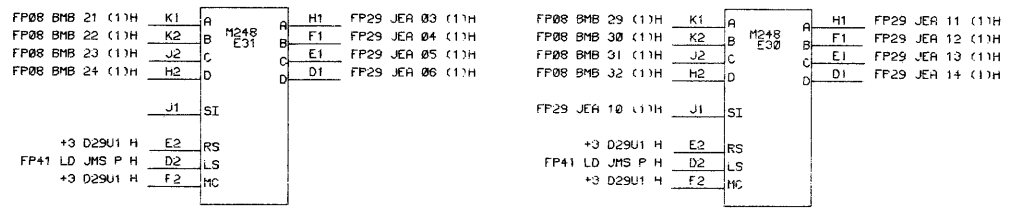
| P0 | 00 | CN | CN+X |
|----|----|----|------|
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| H  | H  | H  | L    |
| L  | H  | L  | L    |

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| CHKD. <i>H. Howard</i>   | DATE <i>5-14-71</i> |   |
| ENG. <i>C. King</i>      | DATE <i>5/19/71</i> |   |
| PROJ. ENG. <i>B. Lee</i> | DATE <i>5/20/71</i> |   |
| PROG. <i>B. Polkoma</i>  | DATE <i>5/14/71</i> |   |
| TITLE                    |                     | CARRY LOOK AHEAD  |
| FIRST USED ON            |                     |   |
| PDP15                    |                     | SIZE CODE   |
| SCALE                    | D BS                | NUMBER  |
| SHEET 1 OF 1             | DIST.               | FP15-8-28   |
|                          |                     | REV. 00   |

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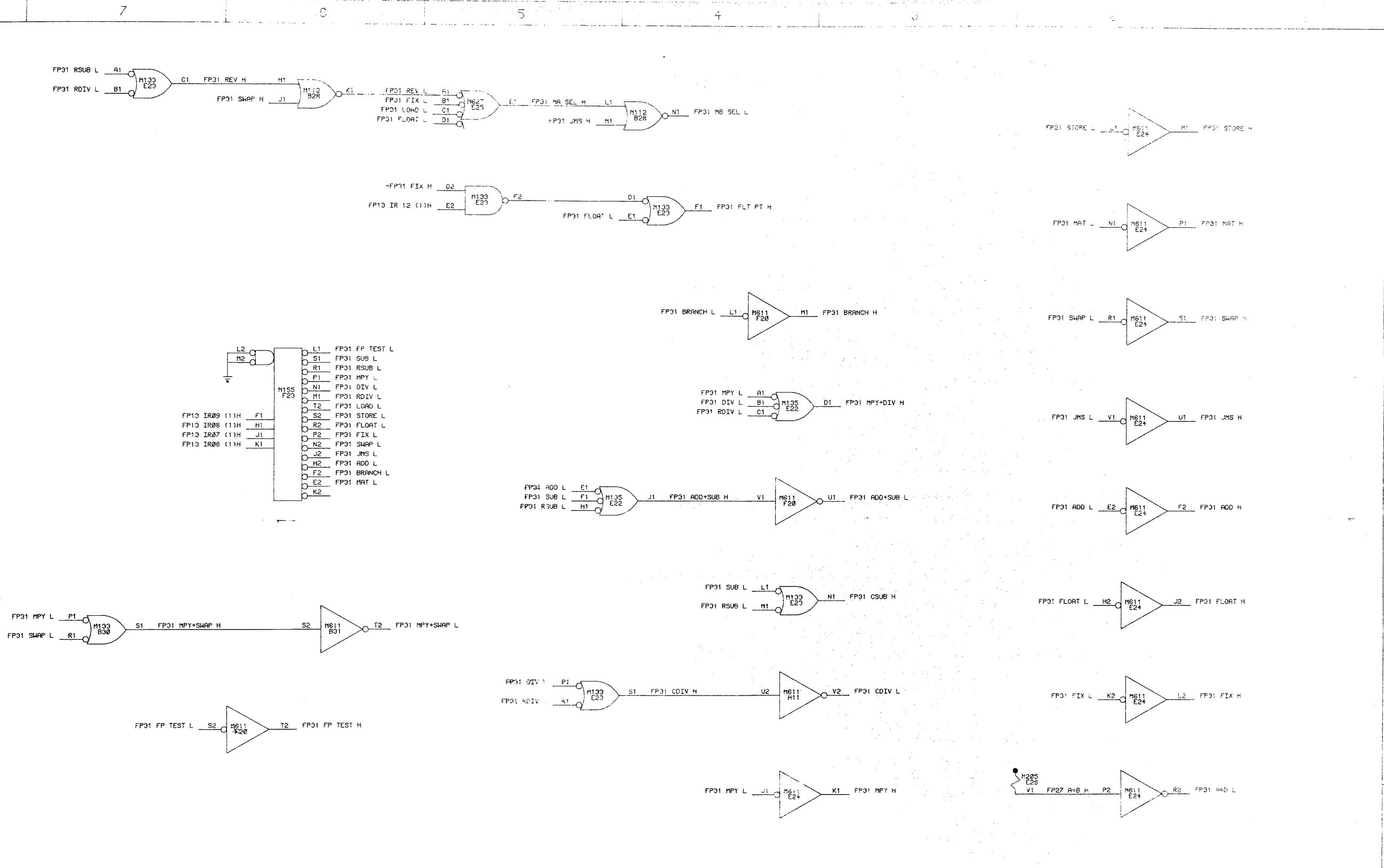
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| DRN <i>J. Cole</i>                  | DATE 5/14/71 | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |
| CHK'D <i>M. Hamilton</i>            | DATE 5/14/71 |  |
| ENG <i>J. Cole</i>                  | DATE 5/14/71 |  |
| PROJ. ENG <i>J. Cole</i>            | DATE 5/14/71 |  |
| PROD <i>J. Cole</i>                 | DATE 5/14/71 |  |
| TITLE<br>JMS EXIT ADDRESS REG (JER) |              | SIZE CODE<br>D BS<br>NUMBER<br>FP15-0-29<br>REV.<br>00         |
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| SCALE                               | DIST.        |  |
| SHEET 1                             | OF 1         |  |





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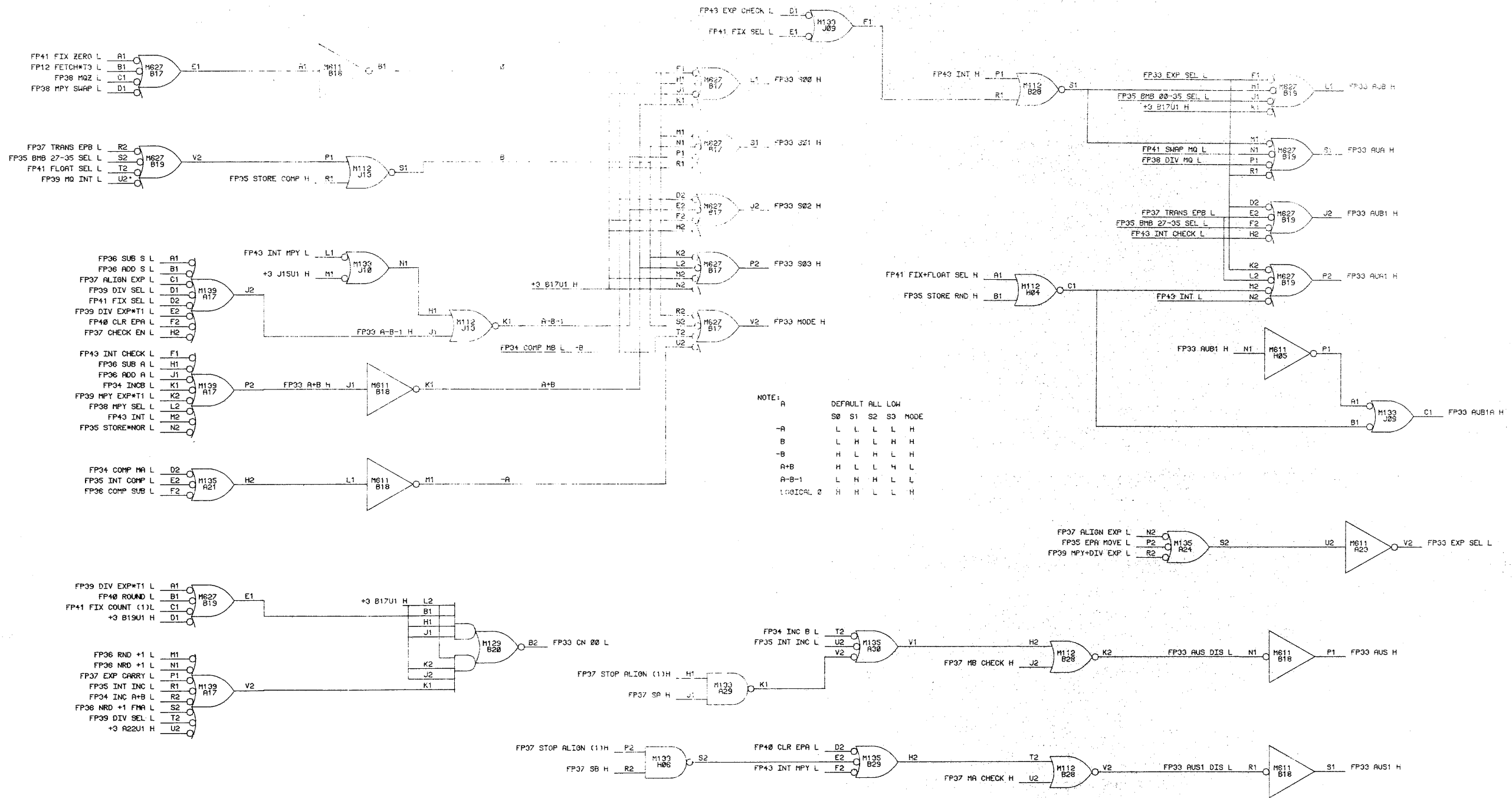
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| DRN. <i>10 46</i>            | DATE <i>5/14/71</i> | <b>digital</b> EQUIPMENT CORPORATION<br><small>MAYNARD, MASSACHUSETTS</small> |
| CHK'D. <i>DJ. Highland</i>   | DATE <i>5/14/71</i> |   |
| ENG. <i>Ed King</i>          | DATE <i>5/14/71</i> |   |
| PROJ. ENG. <i>J. O'Brien</i> | DATE <i>5/14/71</i> |   |
| PROD. <i>W. DeLone</i>       | DATE <i>5/14/71</i> |   |
| FIRST USED ON                |                     | TITLE   |
| POP15                        |                     | INSTRUCTION DECODER (IR)  |
| SCALE                        | SIZE/CODE           | NUMBER  |
| SHEET 1 OF 1                 | D. BS               | FP15-0-31   |
|                              | DIST.               | REV. 00   |



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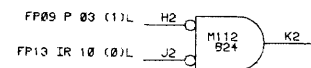
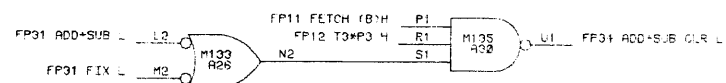
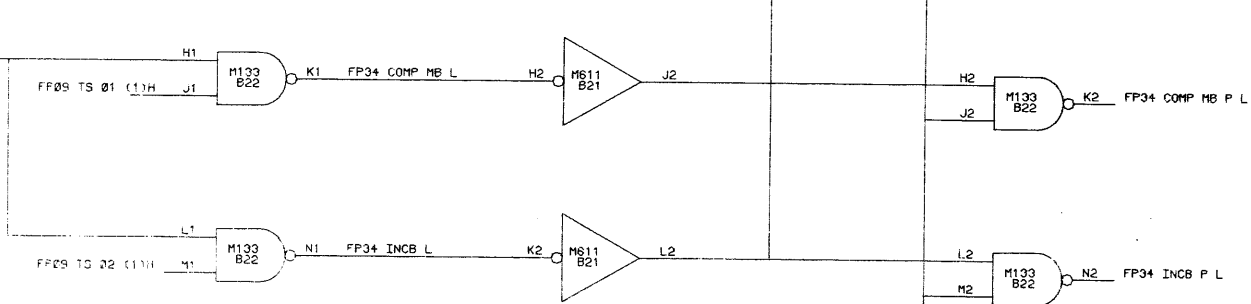
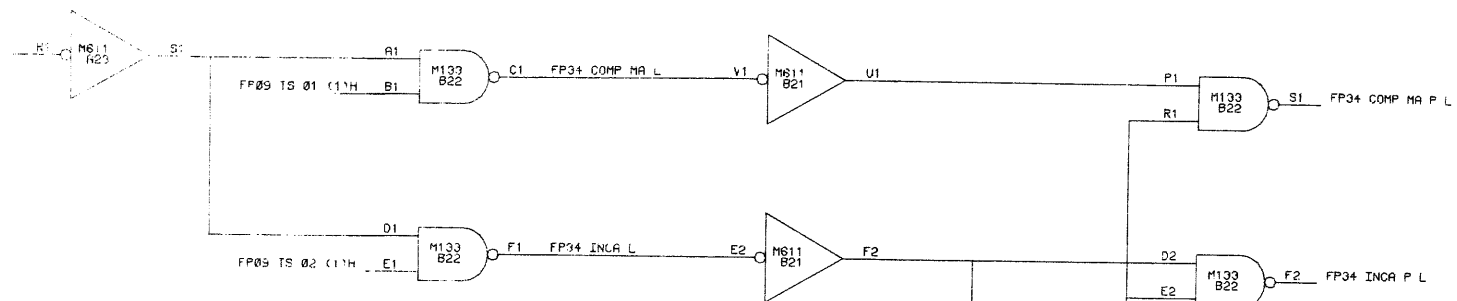
NOTE: A DEFAULT ALL LOW  
 S0 S1 S2 S3 MODE  
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 A-B-1 L H H L L  
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| CHKD.         | DATE      |  |
| ENG.          | DATE      |  |
| PROL ENG.     | DATE      |  |
| PROB.         | DATE      |  |
| FIRST USED ON |           | TITLE  |
| PDP-15        |           | ALU CONTROL  |
| SCALE         | SIZE CODE | NUMBER   |
| SHEET 1 OF 1  | D         | FP15-0-33  |
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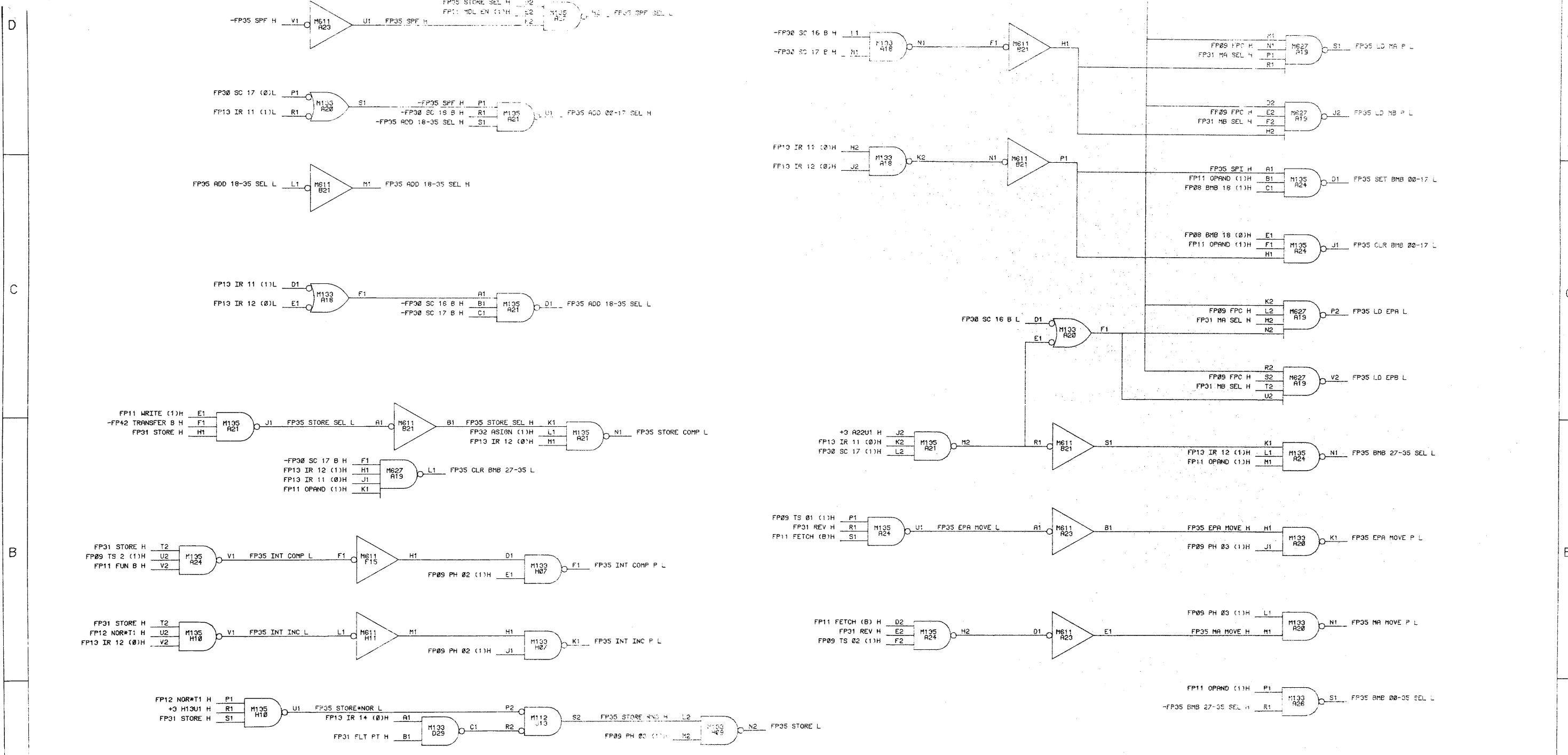
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| DRN. <i>J. G. G.</i>       | DATE <i>5/29/71</i> | <br><b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS | TITLE                |      |
| CHK'D. <i>J. G. G.</i>     | DATE <i>5/29/71</i> |  | LOAD+STORE CONTROL 1 |      |
| ENG. <i>D. J. King</i>     | DATE <i>3/14/71</i> |  |                      |      |
| PROJ. ENG. <i>J. G. G.</i> | DATE <i>5/14/71</i> |  |                      |      |
| PROD. <i>J. G. G.</i>      | DATE <i>5/14/71</i> |  |                      |      |
| FIRST USED ON              | POP15               | SIZE CODE  | NUMBER               | REV. |
| SCALE                      | D BS                | D BS   | FP15-0-34            | 00   |
| SHEET 1 OF 1               | DIST.               |  |                      |      |

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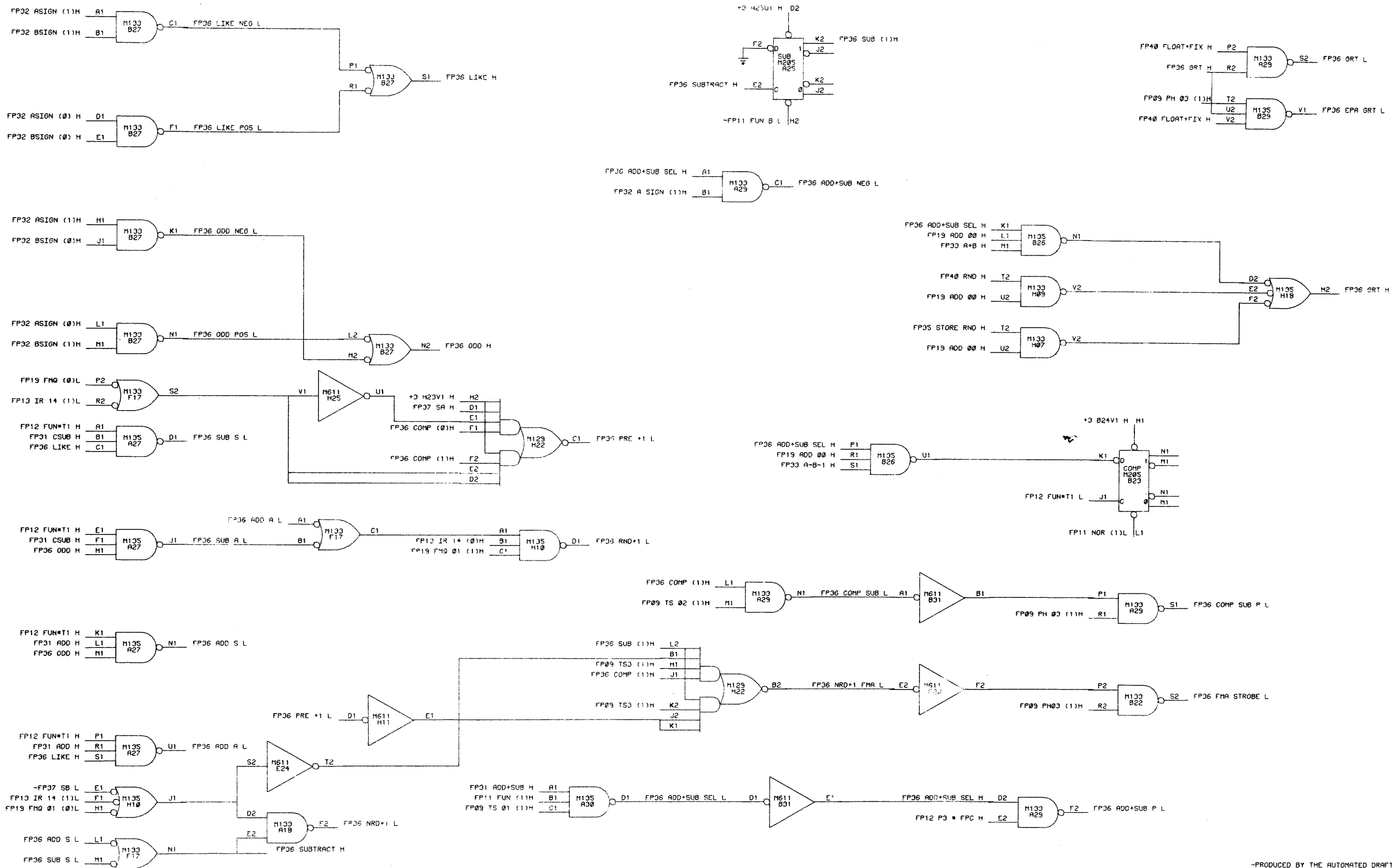
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| DRN<br><i>H. Cole</i>        | DATE<br>3/14/71   | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |
| CHK'D<br><i>H. Cole</i>      | DATE<br>3/14/71   |  |
| ENG<br><i>Al. King</i>       | DATE<br>3/14/71   |  |
| PROJ ENGR<br><i>Al. King</i> | DATE<br>3/14/71   |  |
| PROD<br><i>J. Deane</i>      | DATE<br>3/14/71   |  |
| FIRST USED ON<br>PDP15       |                   | TITLE<br>LOAD AND STORE CONTROL 2                              |
| SCALE<br>SHEET 1 OF 1        | SIZE CODE<br>D BS | NUMBER<br>FP15-0-35  |
| DIST.                        |                   | REV.<br>00   |

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| CHK.      | CHANGE NO.                 | REV. |
| GH        | FP15-00003                 | A    |
|           | R SOFKA 7/15/71            |      |
|           | E KING 7/16/71             |      |
|           | FP15-00004                 | B    |
|           | <i>[Signature]</i> 8/19/71 |      |
|           | <i>[Signature]</i> 8/26/71 |      |

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| DRN<br>N COTE           | DATE<br>5/14/71   | <b>digital EQUIPMENT CORPORATION</b><br>MAYNARD, MASSACHUSETTS |
| CHKD.<br>B HAVILAND     | DATE<br>5/14/71   |  |
| ENG.<br>E KING          | DATE<br>5/14/71   | TITLE  |
| PROJ. ENG.<br>J ELSBREE | DATE<br>5/14/71   | ADD + SUBTRACT CTRL 1  |
| PROD.<br>O DEROME       | DATE<br>5/15/71   |  |
| FIRST USED ON<br>PDP15  | SIZE CODE<br>D BS | NUMBER<br>FP15-0-26  |
| SCALE                   | SHEET 1 OF 1      | REV.<br>B  |
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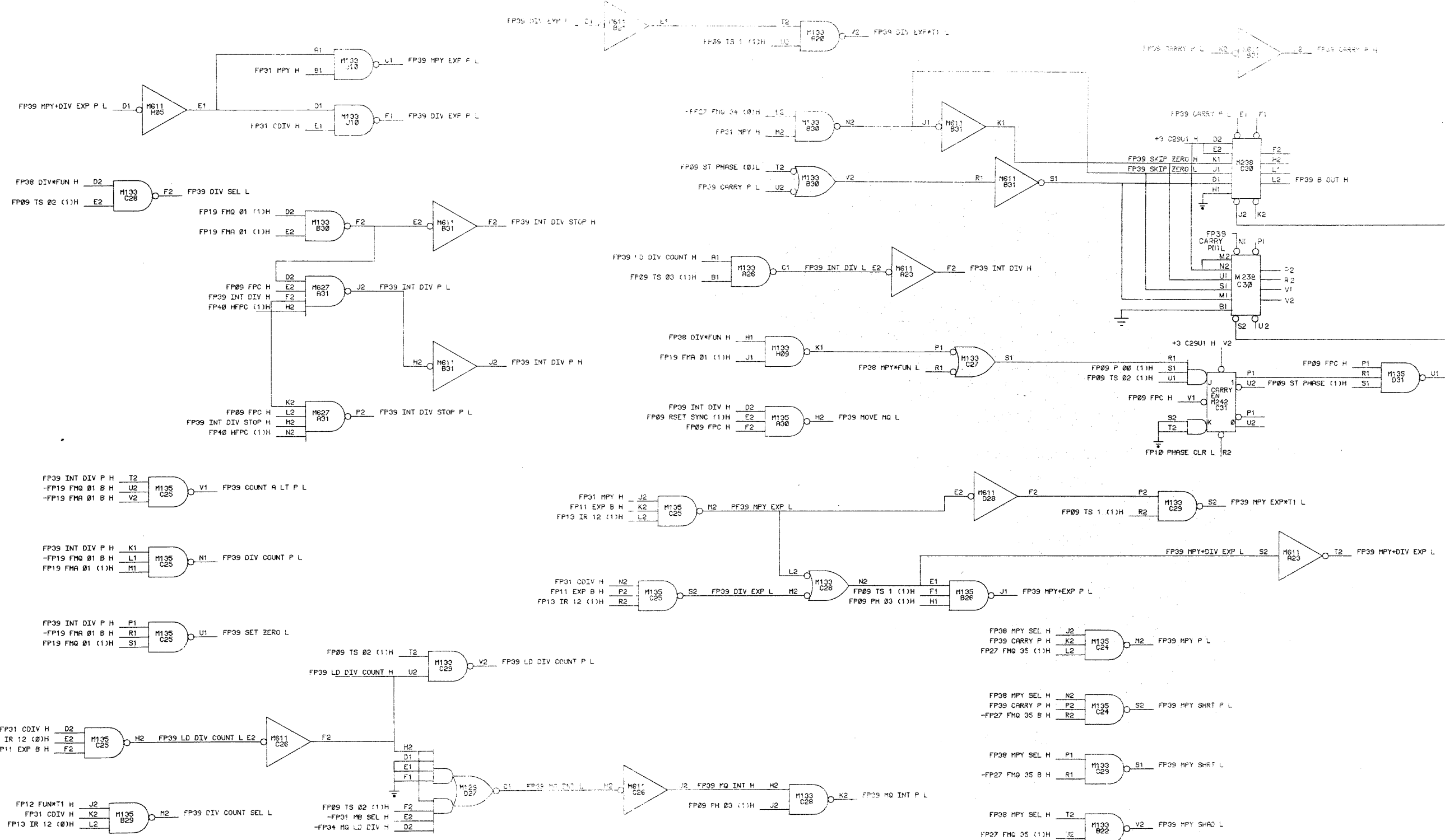








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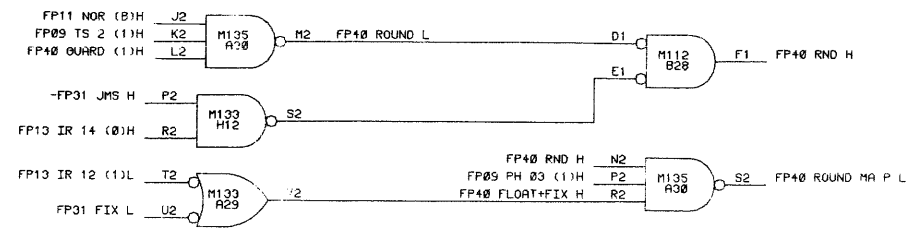
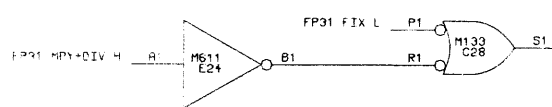
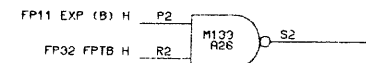
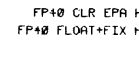
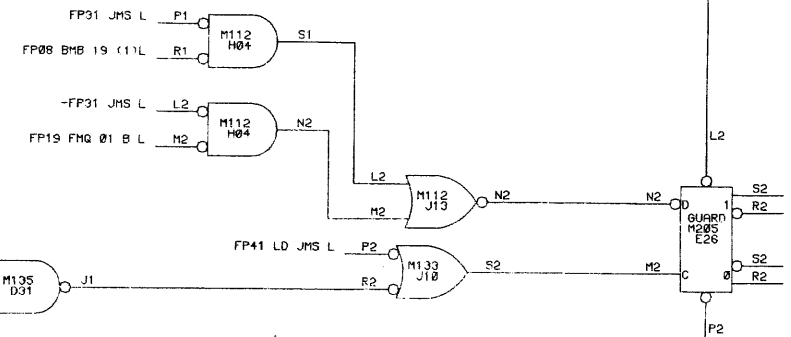
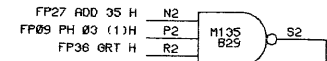
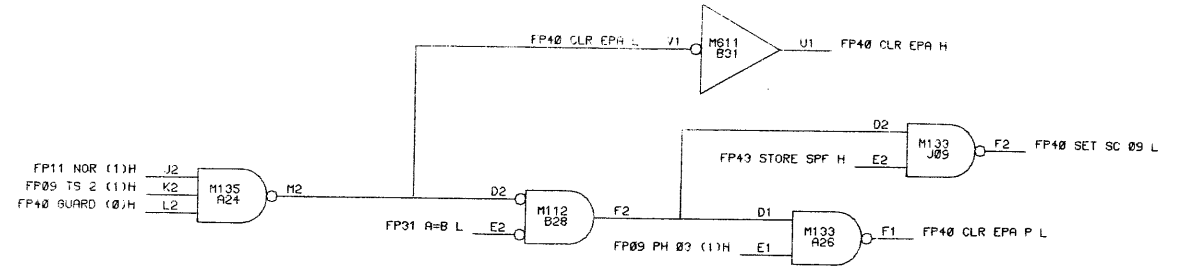
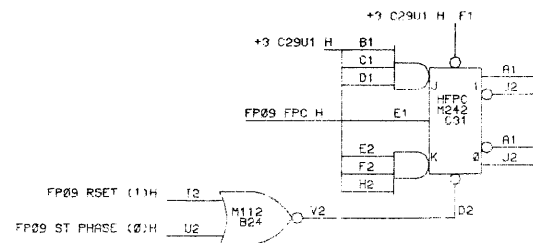
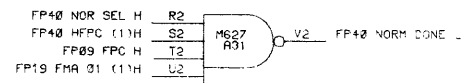
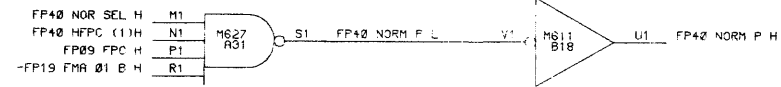
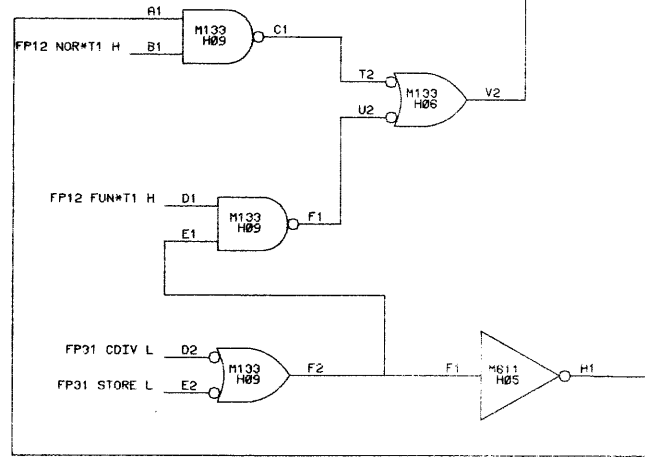
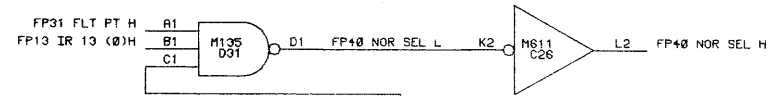
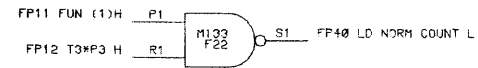
| REVISIONS |            |      |
|-----------|------------|------|
| CHK.      | CHANGE NO. | REV. |
| 871       | FP15-00010 | A    |
|           | 300-20-73  |      |
|           | E. KING    |      |

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

|                             |               |                                    |
|-----------------------------|---------------|------------------------------------|
| DRN: <i>J. King</i>         | DATE: 5-14-71 |                                    |
| CHK'D: <i>J. Hayward</i>    | DATE: 5-14-71 |                                    |
| ENG: <i>Cd King</i>         | DATE: 5/14/71 |                                    |
| PROJ. ENG: <i>G. Labree</i> | DATE: 5/14/71 |                                    |
| PRD: <i>G. Labree</i>       | DATE: 5/14/71 |                                    |
| FIRST USED ON               |               | TITLE<br>MULTIPLY-DIVIDE<br>CTRL 2 |
| SIZE CODE                   | NUMBER        |                                    |
| SCALE                       | REV.          |                                    |
| SHEET 1 OF 1                | DIST.         |                                    |

5/15/71

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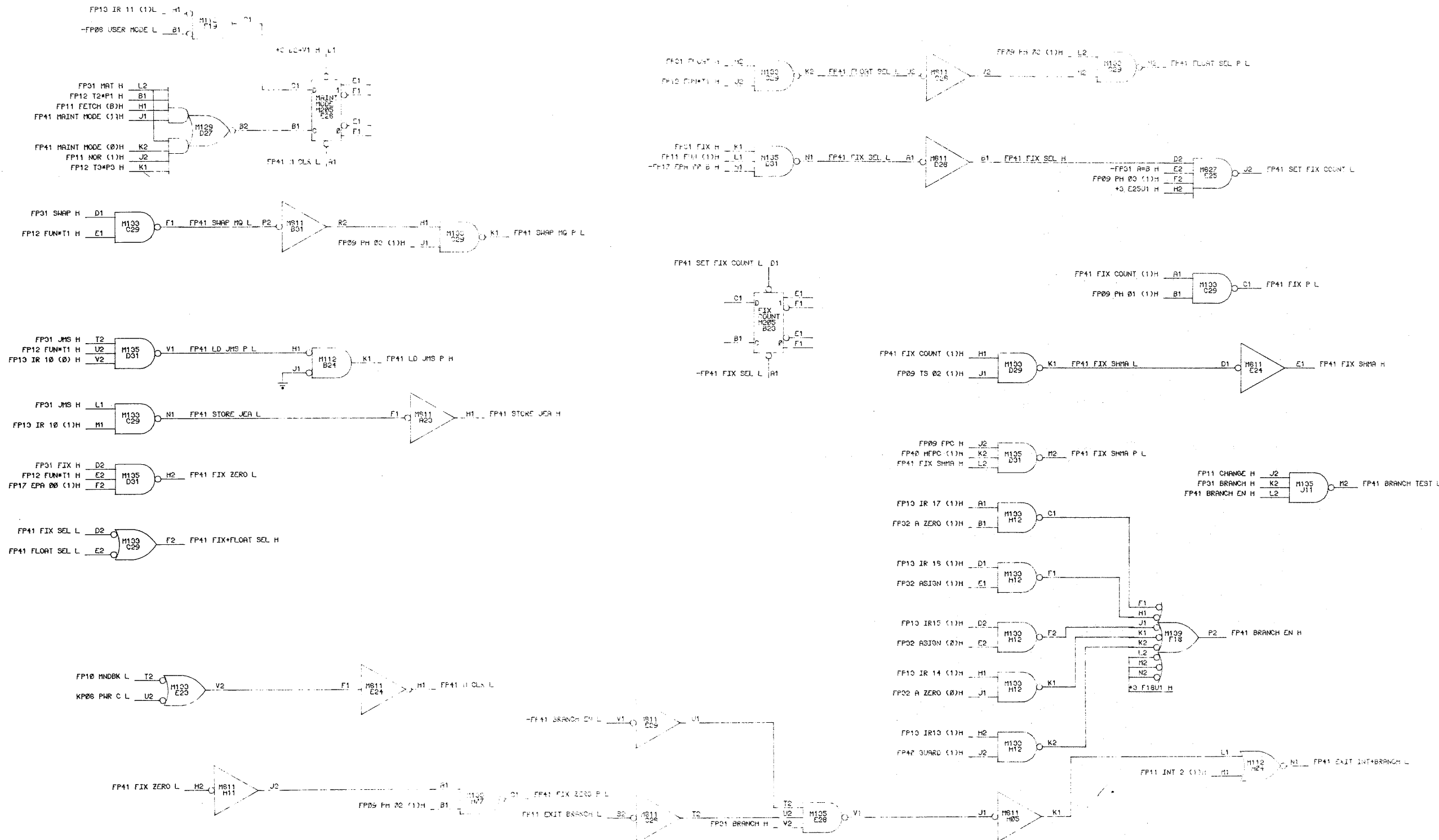


| REVISIONS |            |      |
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| CHK.      | CHANGE NO. | REV. |
|           |            |      |
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PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

|                              |                      |                            |        |
|------------------------------|----------------------|----------------------------|--------|
| DRN: <i>M. C. C.</i>         | DATE: <i>5-14-71</i> | <br>MAYNARD, MASSACHUSETTS | TITLE  |
| CHKD: <i>M. Hamilton</i>     | DATE: <i>5-14-71</i> |                            |        |
| ENR: <i>C. J. King</i>       | DATE: <i>5/14/71</i> |                            |        |
| PROJ ENGR: <i>J. Wallace</i> | DATE: <i>5/14/71</i> |                            |        |
| PRGR: <i>R. DeLoe</i>        | DATE: <i>5-14-71</i> |                            |        |
| FIRST USED ON                |                      |                            |        |
| PDP15                        |                      | SIZE CODE                  | NUMBER |
| SCALE                        | D BS                 | 15-0-40                    | REV.   |
| SHEET 1 OF 1                 | DIST.                |                            |        |

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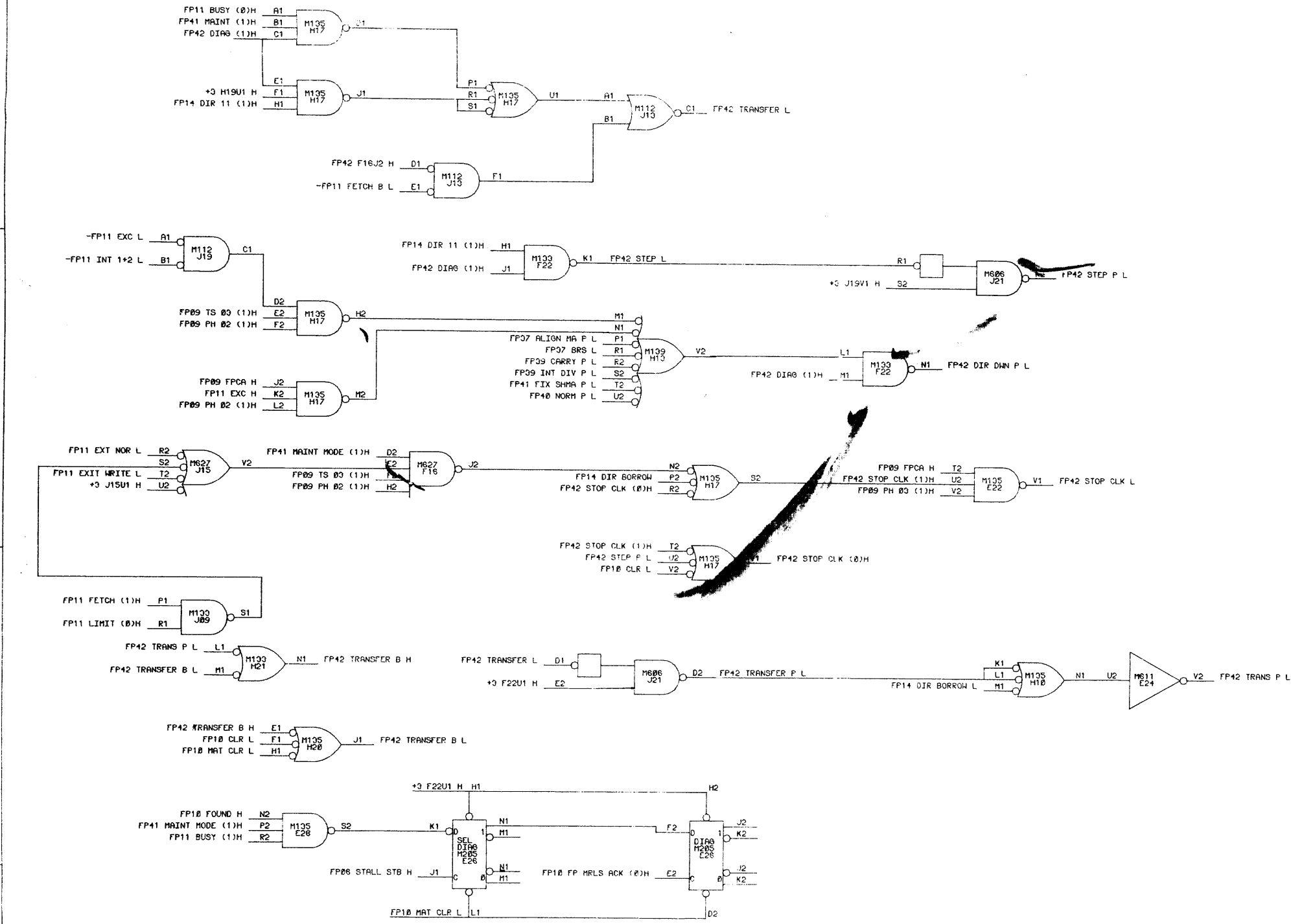
| REVISIONS |                         |      |
|-----------|-------------------------|------|
| CHK       | CHANGE NO.              | REV. |
|           | FP15-00002              | A    |
|           | <i>72. Late 4/21/71</i> |      |
|           | <i>at King 6/23/71</i>  |      |
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-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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|----------------------------|-----------------|--|--------------------------------|
| DRN<br>N. SCOTE            | DATE<br>5/14/71 | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS | TITLE<br><br>MISC INST CONTROL |
| CHK'D.<br>B. HAVILAND      | DATE<br>5/14/71 |  |                                |
| ENG.<br>E. KING            | DATE<br>5/14/71 |  |                                |
| PROJ. ENG.<br>J. EL SBRCCE | DATE<br>5/14/71 |  |                                |
| PROD.<br>L. BERCOME        | DATE<br>5/14/71 |  |                                |
| FIRST USED ON<br>PCP15     |                 | SIZE CODE<br>D BS  | NUMBER<br>FP15-0-41            |
| SCALE                      | OF 1            | DIST.  | REV.<br>A                      |

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D  
C  
B  
A

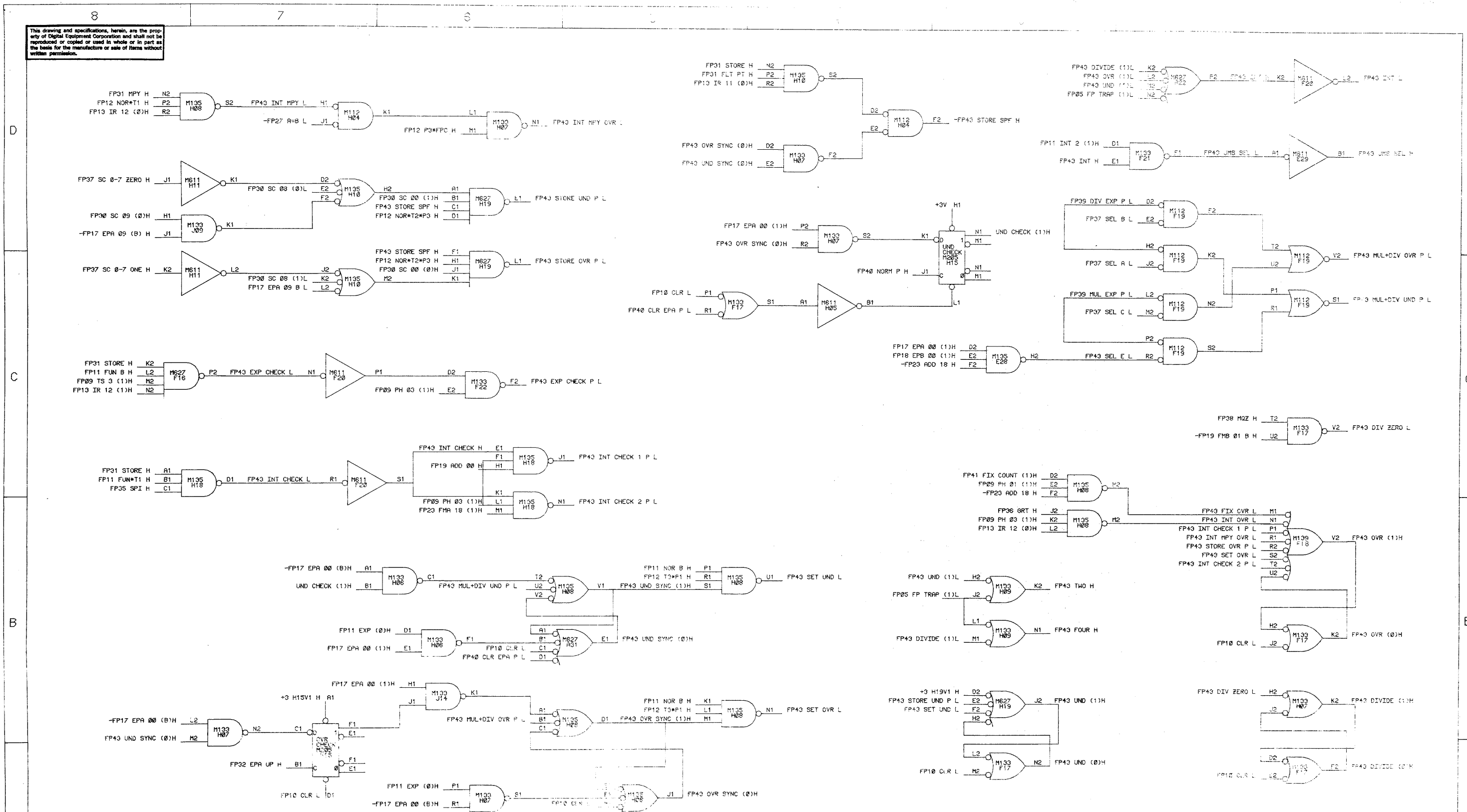


| REVISIONS |               |                |
|-----------|---------------|----------------|
| CHK.      | CHANGE NO.    | REV.           |
| MJH       | FP15-00003    | A              |
|           | <i>Mita</i>   | <i>7/20/71</i> |
|           | <i>Edmond</i> | <i>7/13/71</i> |
|           |               |                |
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|               |           |   |      |
|---------------|-----------|---|------|
| DRN           | DATE      | <b>digital</b> EQUIPMENT CORPORATION<br><small>MAYNARD, MASSACHUSETTS</small> |      |
| AL COTE       | 5/14/71   |   |      |
| CHK'D         | DATE      |   |      |
| B. NEWLAND    | 5/14/71   |   |      |
| ENG.          | DATE      |   |      |
| E. KING       | 5/14/71   |   |      |
| PROJ. ENG.    | DATE      |   |      |
| J. ELSBREE    | 5/14/71   |   |      |
| PROD.         | DATE      | DIAGNOSTIC CONTROL  |      |
| D. DEROME     | 5/14/71   |   |      |
| FIRST USED ON |           |   |      |
| PDP15         | SIZE CODE | NUMBER  | REV. |
| SCALE         | D BS      | FP15-B-42   | A    |
| SHEET 1 OF 1  | DIST.     |   |      |

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|-----------|------------|------|
| CHK.      | CHANGE NO. | REV. |
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|                              |                     |                            |
|------------------------------|---------------------|----------------------------|
| DRN. <i>1/25</i>             | DATE <i>5/14/71</i> | <br>MAYNARD, MASSACHUSETTS |
| CHK'D. <i>W. Hayward</i>     | DATE <i>5/14/71</i> |                            |
| ENG. <i>W. Hayward</i>       | DATE <i>5/14/71</i> |                            |
| PROV. ENG. <i>W. Hayward</i> | DATE <i>5/14/71</i> |                            |
| PRD. <i>W. Hayward</i>       | DATE <i>5/14/71</i> |                            |
| FIRST USED ON                |                     | TITLE                      |
|                              |                     | ERROR CHECK                |
| SCALE                        | SIZE                | NUMBER                     |
|                              | D BS                | FP15-0-43                  |
| SHEET                        | OF                  | REV.                       |
|                              | 1                   | 00                         |



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- 6775  
JOB3
- A1 FP17 EPA 00 (1)H
  - B1 FP17 EPA 01 (1)H
  - C1 FP17 EPA 02 (1)H
  - D1 FP17 EPA 03 (1)H
  - E1 FP17 EPA 04 (1)H
  - F1 FP17 EPA 05 (1)H
  - H1 FP17 EPA 06 (1)H
  - J1 FP17 EPA 07 (1)H
  - K1 FP17 EPA 08 (1)H
  - L1 FP17 EPA 09 (1)H
  - M1 FP17 EPA 10 (1)H
  - N1 FP17 EPA 11 (1)H
  - P1 FP17 EPA 12 (1)H
  - R1 FP17 EPA 13 (1)H
  - S1 FP17 EPA 14 (1)H
  - T1 FP17 EPA 15 (1)H
  - U1 FP17 EPA 16 (1)H
  - V1 FP17 EPA 17 (1)H

- 6775  
JOB4
- A1 FP32 ASIGN (1)H
  - B1 FP40 SUBRD (1)H
  - C1 SUB 04
  - D1 FP29 JEA 03 (1)H
  - E1 FP29 JEA 04 (1)H
  - F1 FP29 JEA 05 (1)H
  - H1 FP29 JEA 06 (1)H
  - J1 FP29 JEA 07 (1)H
  - K1 FP29 JEA 08 (1)H
  - L1 FP29 JEA 09 (1)H
  - M1 FP29 JEA 10 (1)H
  - N1 FP29 JEA 11 (1)H
  - P1 FP29 JEA 12 (1)H
  - R1 FP29 JEA 13 (1)H
  - S1 FP29 JEA 14 (1)H
  - T1 FP29 JEA 15 (1)H
  - U1 FP29 JEA 16 (1)H
  - V1 FP29 JEA 17 (1)H

- 6775  
JOB5
- A1 FP32 ASIGN (1)H
  - B1 FP19 FMQ 01 (1)H
  - C1 FP19 FMQ 02 (1)H
  - D1 FP19 FMQ 03 (1)H
  - E1 FP20 FMQ 04 (1)H
  - F1 FP20 FMQ 05 (1)H
  - H1 FP20 FMQ 06 (1)H
  - J1 FP20 FMQ 07 (1)H
  - K1 FP21 FMQ 08 (1)H
  - L1 FP21 FMQ 09 (1)H
  - M1 FP21 FMQ 10 (1)H
  - N1 FP21 FMQ 11 (1)H
  - P1 FP22 FMQ 12 (1)H
  - R1 FP22 FMQ 13 (1)H
  - S1 FP22 FMQ 14 (1)H
  - T1 FP22 FMQ 15 (1)H
  - U1 FP22 FMQ 16 (1)H
  - V1 FP22 FMQ 17 (1)H

- 6775  
JOB6
- A1 FP23 FMQ 18 (1)H
  - B1 FP23 FMQ 19 (1)H
  - C1 FP24 FMQ 20 (1)H
  - D1 FP24 FMQ 21 (1)H
  - E1 FP24 FMQ 22 (1)H
  - F1 FP24 FMQ 23 (1)H
  - H1 FP25 FMQ 24 (1)H
  - J1 FP25 FMQ 25 (1)H
  - K1 FP25 FMQ 26 (1)H
  - L1 FP25 FMQ 27 (1)H
  - M1 FP26 FMQ 28 (1)H
  - N1 FP26 FMQ 29 (1)H
  - P1 FP26 FMQ 30 (1)H
  - R1 FP26 FMQ 31 (1)H
  - S1 FP27 FMQ 32 (1)H
  - T1 FP27 FMQ 33 (1)H
  - U1 FP27 FMQ 34 (1)H
  - V1 FP27 FMQ 35 (1)H

- 6775  
JOB3
- A2 FP32 ASIGN (1)H
  - B2 FP19 FMA 01 (1)H
  - C2 FP19 FMA 02 (1)H
  - D2 FP19 FMA 03 (1)H
  - E2 FP20 FMA 04 (1)H
  - F2 FP20 FMA 05 (1)H
  - H2 FP20 FMA 06 (1)H
  - J2 FP20 FMA 07 (1)H
  - K2 FP21 FMA 08 (1)H
  - L2 FP21 FMA 09 (1)H
  - M2 FP21 FMA 10 (1)H
  - N2 FP21 FMA 11 (1)H
  - P2 FP22 FMA 12 (1)H
  - R2 FP22 FMA 13 (1)H
  - S2 FP22 FMA 14 (1)H
  - T2 FP22 FMA 15 (1)H
  - U2 FP23 FMA 16 (1)H
  - V2 FP23 FMA 17 (1)H


- 6775  
JOB4
- A2 FP23 FMA 18 (1)H
  - B2 FP23 FMA 19 (1)H
  - C2 FP24 FMA 20 (1)H
  - D2 FP24 FMA 21 (1)H
  - E2 FP24 FMA 22 (1)H
  - F2 FP24 FMA 23 (1)H
  - H2 FP25 FMA 24 (1)H
  - J2 FP25 FMA 25 (1)H
  - K2 FP25 FMA 26 (1)H
  - L2 FP25 FMA 27 (1)H
  - M2 FP26 FMA 28 (1)H
  - N2 FP26 FMA 29 (1)H
  - P2 FP26 FMA 30 (1)H
  - R2 FP26 FMA 31 (1)H
  - S2 FP27 FMA 32 (1)H
  - T2 FP27 FMA 33 (1)H
  - U2 FP27 FMA 34 (1)H
  - V2 FP27 FMA 35 (1)H

- 6775  
JOB5
- A2 FP11 BUSY (B)H
  - B2 FP11 FETCH (B)H
  - C2 FP11 OPAND (B)H
  - D2 FP11 EXP (B)H
  - E2 FP11 FUN (B)H
  - F2 FP11 NOR (1)H
  - H2 FP11 WRITE (1)H
  - J2 FP11 INT 1 (1)H
  - K2 FP11 INT 2 (1)H
  - L2 FP09 TS 1 (1)H
  - M2 FP09 TS 2 (1)H
  - N2 FP09 TS 3 (1)H
  - P2 FP14 DIR 12 (1)H
  - R2 FP14 DIR 13 (1)H
  - S2 FP14 DIR 14 (1)H
  - T2 FP14 DIR 15 (1)H
  - U2 FP14 DIR 16 (1)H
  - V2 FP14 DIR 17 (1)H

- 6775  
JOB6
- A2 FP10 STALL (1)H
  - B2 FP09 TS 4 (1)H
  - C2 FP09 ST PHASE (1)H
  - D2 FP11 MDL EN (1)H
  - E2 FP11 LIMIT (1)H
  - F2 FP32 MAT H
  - H2 FP41 MAINT MODE (1)H
  - J2 FP42 SEL DIAG (1)H
  - K2 FP42 DIAG (1)H
  - L2 FP10 TRANS EN (1)H
  - M2 FP10 DIS RD RST (1)H
  - N2 FP10 DIS CP ACT (1)H
  - P2 FP10 DIS I/O ACT (1)H
  - R2 FP11 COND (1)H
  - S2 FP10 FP MREG (1)H
  - T2 FP10 FP RD RST (1)H
  - U2 FP10 FP MRDA (1)H
  - V2 FP10 FP MRLS ACK (1)H

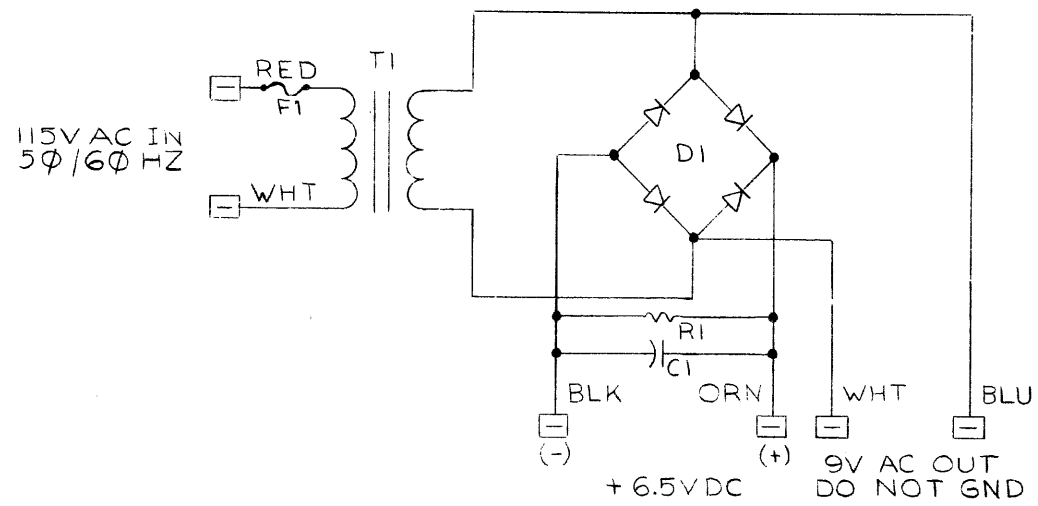
| REVISIONS |            |      |
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| CHK.      | CHANGE NO. | REV. |
|           |            |      |
|           |            |      |
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-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

|                               |                      |   |
|-------------------------------|----------------------|---|
| DRN: <i>CJ King</i>           | DATE: <i>5-14-71</i> |  <p>digital EQUIPMENT CORPORATION<br/>MAYNARD, MASSACHUSETTS</p> |
| CHK'D: <i>M. Woodland</i>     | DATE: <i>5-14-71</i> |   |
| ENGR: <i>CJ King</i>          | DATE: <i>5/14/71</i> |   |
| PROJ ENGR: <i>L. Blodgett</i> | DATE: <i>5/14/71</i> |   |
| REVISOR: <i>M. Woodland</i>   | DATE: <i>5/14/71</i> |   |
| FIRST USED ON                 |                      | TITLE   |
| PDP15                         |                      | INDICATOR CABLES  |
| SCALE                         | SIZE CODE            | NUMBER  |
| SHEET 1 OF 1                  | D BS                 | FP15-0-44   |
| DIST.                         |                      | REV.  |
|                               |                      | 00  |



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|                 |                     |              |
|-----------------|---------------------|--------------|
| F1              | 1/2 AMP S.B. FUSE   | 9007209      |
| R1              | 5ohm 25W RES        | 1300165      |
| C1              | 18000MFD 10V DC CAP | 1009437      |
|                 | PARTS LIST          | D-UA-716-0-0 |
| T1              | XMFR *F64-U TRIAD   | 1609588      |
| D1              | DIODE PACK DM-2     | 1105397      |
| REF DESIGNATION | DESCRIPTION         | PART NO.     |

PARTS LIST

| REVISIONS | CHK | CHG NO. | REV |
|-----------|-----|---------|-----|
| 716-0001  | A   |         |     |
| 716-0001  | B   |         |     |
| 716-0001  | C   |         |     |

| DRN        | DATE    |
|------------|---------|
| RAIMONDI   | 6-18-69 |
| CHK'D      | DATE    |
| HEALY      | 6-25-69 |
| ENG.       | DATE    |
| VONADA     | 7-21-69 |
| PROD.      | DATE    |
| ANTONUCCIO | 7-25-69 |

| TRANSISTOR & DIODE CONVERSION CHART |     |     |     |
|-------------------------------------|-----|-----|-----|
| DEC                                 | EIA | DEC | EIA |
|                                     |     |     |     |
|                                     |     |     |     |
|                                     |     |     |     |

**digital**  
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MAYNARD, MASSACHUSETTS

| TITLE                    |      |         | REV. |
|--------------------------|------|---------|------|
| CIRCUIT SCHEMATIC<br>716 |      |         | C    |
| SIZE                     | CODE | NUMBER  |      |
| C                        | CS   | 716-0-1 |      |
| PRINTED CIRCUIT REV.     |      |         |      |

DEC FORM NO. 102

SIZE CODE NUMBER REV.  
C CS 716-0-1 C

Pink









**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS  
**PARTS LIST**

|                       |                        |                   |
|-----------------------|------------------------|-------------------|
| MADE BY<br>J. MCHUGH  | CHECKED<br>R. COOK     | SECTION<br>1      |
| DATE<br>5/6/71        | DATE<br>5/26/71        | ISSUED SECT.<br>1 |
| ENG<br><i>Ed King</i> | PROD<br><i>R. Cook</i> |                   |
| DATE<br>6-1-71        | DATE<br>6-1-71         |                   |

| ITEM NO | DWG NO. / PART NO. | DESCRIPTION                     | SIZE CODE   | ASSY NO.       | SHEET | OF | DIST. | NUMBER    | REV. | ECO NO. |
|---------|--------------------|---------------------------------|-------------|----------------|-------|----|-------|-----------|------|---------|
|         |                    |                                 | <b>A PL</b> | D-MU-FP15-Ø-66 | 1     | 2  |       | FP15-Ø-66 | E    | 000012  |
|         | M112               | NOR GATE                        |             |                |       |    |       |           |      |         |
|         | M129               | AND/OR INVERT GATE              |             |                |       |    |       |           |      |         |
|         | M113               | 10-2 INPUT NAND GATES           |             |                |       |    |       |           |      |         |
|         | M135               | 8-3 INPUT NAND GATE             |             |                |       |    |       |           |      |         |
|         | M139               | 3-8 INPUT NAND GATE             |             |                |       |    |       |           |      |         |
|         | M155               | 4 LINE TO 16 LINE DECODER       |             |                |       |    |       |           |      |         |
|         | M159               | 4 BIT ARITHMETIC LOGIC UNIT     |             |                |       |    |       |           |      |         |
|         | M191               | LOOK AHEAD LOGIC FOR M159       |             |                |       |    |       |           |      |         |
|         | M2Ø5               | 5 "D" FLIP FLOPS                |             |                |       |    |       |           |      |         |
|         | M216               | SIX "D" FLIP FLOPS              |             |                |       |    |       |           |      |         |
|         | M238               | 2 4 BIT SYNC UP/DN COUNTERS     |             |                |       |    |       |           |      |         |
|         | M242               | 3 J.K. FLIP-FLOPS               |             |                |       |    |       |           |      |         |
|         | M248               | 2-4 BIT SHIFT RT, PARALLEL LOAD |             |                |       |    |       |           |      |         |
|         | M311               | TAP DELAY                       |             |                |       |    |       |           |      |         |
|         | M51Ø               | I/O BUS RECEIVER                |             |                |       |    |       |           |      |         |
|         | M6Ø6               | PULSE GENERATOR                 |             |                |       |    |       |           |      |         |
|         | M611               | 14 POWER INVERTERS              |             |                |       |    |       |           |      |         |
|         | M622               | 8 POSITIVE INPUT/OUTPUT DRIVERS |             |                |       |    |       |           |      |         |
|         | M627               | 6-4 INPUT NAND POWER AMPLIFIER  |             |                |       |    |       |           |      |         |
|         | M775               | TIME STATE GENERATOR            |             |                |       |    |       |           |      |         |

TITLE  
MODULE UTILIZATION

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS  
**PARTS LIST**

|                       |                        |                   |
|-----------------------|------------------------|-------------------|
| MADE BY<br>J. MCHUGH  | CHECKED<br>R. Cook     | SECTION<br>1      |
| DATE<br>5/6/71        | DATE<br>5-26-71        | ISSUED SECT.<br>1 |
| ENG<br><i>Ed King</i> | PROD<br><i>R. Cook</i> |                   |
| DATE<br>6-1-71        | DATE<br>6-1-71         |                   |

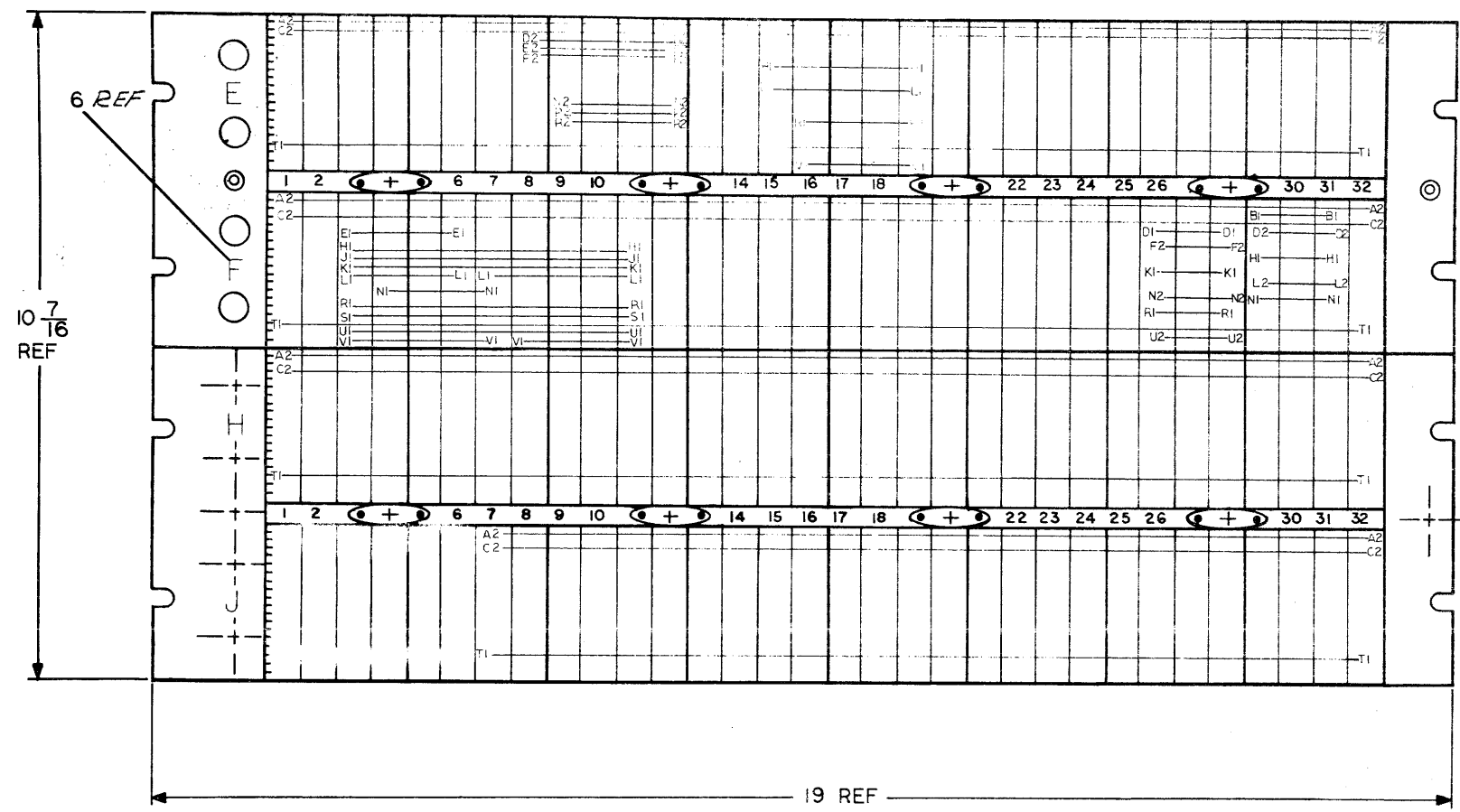
| ITEM NO | DWG NO. / PART NO. | DESCRIPTION           | SIZE CODE   | ASSY NO.       | SHEET | OF | DIST. | NUMBER    | REV. | ECO NO. |
|---------|--------------------|-----------------------|-------------|----------------|-------|----|-------|-----------|------|---------|
|         |                    |                       | <b>A PL</b> | D-MU-FP15-Ø-66 | 2     | 2  |       | FP15-Ø-66 | E    |         |
|         | M17Ø1              | 4-4 TO-1 MULTIPLEXERS |             |                |       |    |       |           |      |         |
|         | M1713              | 16-1 MULTIPLEXER      |             |                |       |    |       |           |      |         |
|         | G829               | POWER CONNECTOR       |             |                |       |    |       |           |      |         |
|         | M966               | TERMINATOR MODULE     |             |                |       |    |       |           |      |         |

TITLE  
MODULE UTILIZATION





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|            |  |
|------------|--|
| REV.       |  |
| CHG        |  |
| CHK        |  |
| REVISIONS  |  |
| CHANGE NO. |  |

|  |                  |                   |        |                               |               |
|--|------------------|-------------------|--------|-------------------------------|---------------|
| UNLESS OTHERWISE SPECIFIED                                 |                  | DRN.              | DATE   | PARTS LIST                    |               |
| UNLESS OTHERWISE SPECIFIED                                 |                  | CHK'D             | DATE   | digital EQUIPMENT CORPORATION |               |
| DIMENSION IN INCHES  |                  | ENG.              | DATE   | METHUEN, MASSACHUSETTS        |               |
| TOLERANCES   |                  | PROJ. ENG.        | DATE   | TITLE                         |               |
| DECIMALS ±.005   | FRACTIONS ± 1/64 | PROJ. ENG.        | DATE   | WIRED ASSY                    |               |
| ANGLES ± 0°30'   |                  | PROD.             | DATE   | (FP15)                        |               |
| FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS |                  | NEXT HIGHER ASSY. |        | SIZE CODE                     | NUMBER        |
|  |                  |                   |        | D                             | AD7007243-0-0 |
| MATERIAL   | FINISH           | SCALE             | SHEET  | DIST.                         | REV.          |
| ++   | ++               | NONE              | 2 OF 2 |                               |               |

REV. A  
ITEM NO. 7007243-0-0  
SHEET CODE D





TITLE

FP15 ACCEPTANCE PROCEDURE

G. V5A Software Package with Floating Point Fortran.

H. Software Checkout Package.

VI. PROCEDURE:

The following procedure will be followed step by step to insure the quality of the option.

A. Make a visual check of the FP15 to insure the following:

1. There are no loose wires or connections.
2. All modules are in their proper slots and well seated.
3. Remove the indicator and memory cables and see that the proper slot location is marked on the cable connectors. Replace memory cables in proper slots. Before replacing indicator cables apply power and check to see that all lights are on in the indicator panel.

B. Load and run the diagnostic programs as outlined in the following procedure.

1. Load Instruction Test Part I and also load FP Step. Start test at location 200 and insure that it runs error free for fifteen minutes.
2. Load Instruction Test Part II. Start at location 200 and insure that it runs error free for fifteen minutes.
3. Load Instruction Test Part III. Start the program at location 200 and run with all options the PDP-15 has. (MM, KM/KT, MP or KA). It must run error free for thirty minutes. While running Part III, vibrate all modules. Stop program and look at F16V2 with a scope and adjust clock in slot D24 of the FP to 68 nano seconds. Start and run Part III for fifteen minutes error free. Stop program and adjust clock to 90 nano seconds. Start and run Part III for fifteen minutes error free. Stop program and set back to 75 nano seconds.

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| A    | SP   | FP15-0-70 |     |

TITLE

FP15 ACCEPTANCE PROCEDURE

4. Load Random Exerciser. Start the program at location 200 and run in Random mode. It must run error free for an overnight run.

C. Do system generation using new floating point software and run the software checkout package.

D. Run System exerciser with all other options that are available on the system for at least one hour.

E. At the completion of these steps the acceptance will be complete except for touch up and insuring all paper work and shipping tags complete.

| SIZE | CODE | NUMBER    | REV |
|------|------|-----------|-----|
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TITLE

APPENDIX I

Check list for FP15 installed in PDP-15's serial # 141 and above.

- A. One FP15 Serial # \_\_\_\_\_.
- B. One FP15 Indicator Panel Assembly.
- C. One 716 P.S. for Indicator Panel.
- D. One H721 P.S. for FP15.
- E. If PDP-15 has KM, KM/KT or MP option installed three three foot cables (BC08A-3) must be sent. If the above options are not installed five six foot cables (BC08A-6) must be sent.
- F. Twelve feet of black zipper tubing # 91-07679.
- G. Twenty inches of Caterpillar grommet # 90-07679.
- H. Assorted Mounting Hardware.
  - 1. Twenty four tie wraps # 90-07880.
  - 2. Eight Spacers # B-MD-7407789-0-0.
  - 3. Twenty four screws, PHL.HD. Pan # 10-32 x 5/8 LG # 90060741.
  - 4. Twenty four speed nuts # 10-32 tinnerman # 9007786.
  - 5. Six 3/8 nylon C clamps # 90-07083.
  - 6. Six 5/16 nylon C clamps # 90-07082.
- I. WIRES AND ASSOCIATED CONNECTORS:
  - 1. Eight circuit Mate-N-Lock Connectors # 1209340-0-0.
  - 2. One socket housing # 1-480278-0.
  - 3. One black #14 wire six inches long with one solderless connector DEC part # 90-07929 at one end and one solderless connector DEC part # 90-07928 at the other end.
  - 4. One orange # 14 wire ten inches long with two solderless connector DEC part # 90-07929 attached.

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TITLE

APPENDIX I

I. WIRES AND ASSOCIATED CONNECTORS: (continued)

- 5. One black # 14 wire seven inches long with two solderless connectors DEC part # 90-07919 attached.
- 6. One red and white # 14 twisted pair seven inches long with four solderless connectors DEC part # 90-07919 attached.
- 7. One green and black # 14 twisted pair 31 inches long with four pins DEC part # 12-09378-01 attached.
- 8. One green and black # 14 twisted pair 35 inches long with four pins DEC part # 12-09278-01.
- 9. One green and black # 14 twisted pair 44 inches long with four pins DEC part # 12-09278-01 attached.
- 10. One green and black # 14 twisted pair 50 inches long with four pins DEC part # 12-09378-01 attached.
- 11. One red and white # 14 twisted pair 59 inches long with four solderless connectors DEC part # 90-07919.
- 12. One black # 14 wire 55 inches long with two solderless connectors DEC part # 90-07919 attached.
- 13. One brown # 14 wire 27 inches long with two solderless connectors DEC part # 90-07919 attached.
- 14. One brown # 14 wire 47 inches long with two solderless connectors DEC part # 90-07919 attached.
- J. If machine is between serial # PDP-15 and PDP-15-320, a complete set of flex print memory cable must be sent. The latest key sheet must be checked to determine what a complete set will consist of. If flex print cables are sent MDL M910 terminators must be sent.
- K. FUSES:
  - 1. Five 3 amp. FP
  - 2. Five 5 amp FB
  - 3. Five 25 amp FB

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## ENGINEERING SPECIFICATION

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CONTINUATION SHEET

TITLE

K. FUSES - (continued)

4. Five 12 amp SB
5. Five 10 amp FB
6. Five 1/2 amp SB

L. DIAGNOSTIC PAPER TAPES AND DOCUMENTS

## A. Paper Tapes

1. FP Instruction Test Part I Maindec 15-DOTA-PH.
2. FP Instruction Test Part II Maindec 15-DCUA-PH.
3. FP Instruction Test Part III Maindec 15-DOVA -PH.
4. FP Step Maindec 15-DOSA-PH.
5. FP Randon Exerciser Maindec 15-DOWA -PH.

## B. Documents

1. FP Instruction Test Part I Maindec 15-DOTA-D.
2. FP Instruction Test Part II Maindec 15-DOUA-D.
3. FP Instruction Test Part II Maindec 15-DOVA -D.
4. FP Step Maindec 15-DOSA-D.
5. FP Randon Exerciser Maindec 15- DOWA-D.

M. MANUALS

1. FP Maintenance Manual Volume I.
2. FP Maintenance Manual Volume II.
3. FP Programmers Guide.
4. PDP-15 Module Manual.

N. PAPER WORK CONSISTING OF THE FOLLOWING:

1. Acceptance Log.
2. Q. C. Check List.
3. ECO Status Sheet.
4. Key Sheet.
5. Waiver Sheet.
6. Customer Acceptance Form.

## O. Advanced software and advanced software checkout package.

## P. Installation Procedure.

| SIZE | CODE | NUMBER    | REV |
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## ENGINEERING SPECIFICATION

digital

CONTINUATION SHEET

TITLE

APPENDIX II

Check list for FP15 installed in PDP-15's serial # 140 and below.

## A. One # 963 Cabinet back door assembly.

## B. All items listed in Appendix I with the exception of item I which is included in H963 back door assembly.

## C. Wiring:

1. One black # 14 wire six inches long with one solderless connector DEC part # 90-0719 at one end and one solderless connector DEC part # 90-07928 at the other end.
2. One orange # 14 wire 10 inches long with two solderless connector DEC part # 90-07919 attached.
3. One black # 14 wire 7 inches long with two solderless connectors DEC part # 90-07919 attached.
4. One red and white # 14 twisted pair 7 inches long with four solderless connectors DEC part # 90-07919 attached.

## D. Four G829 modules.

| SIZE | CODE | NUMBER    | REV |
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| A    | SP   | FP15-0-70 |     |

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|---|------------------------------|------------------|------------|---------------------|---------|--------------|
|   |                              |                  |            |                     |         | DATE 5/12/71 |
| TITLE FP15 INSTALLATION PROCEDURE                       |                              |                  |            |                     |         |              |
| REVISIONS   |                              |                  |            |                     |         |              |
| REV   | DESCRIPTION                  | CHG NO           | ORIG       | DATE                | APPD BY | DATE         |
|   |                              |                  |            |                     |         |              |
| /jac  |                              |                  |            |                     |         |              |
| ENG<br>Edward King                                      | APPD<br><i>Edward R King</i> | SIZE<br><b>A</b> | CODE<br>SP | NUMBER<br>FP15-0-71 | REV     |              |

| digital CONTINUATION SHEET        |   |                     |             |
|-----------------------------------|---|---------------------|-------------|
| TITLE FP15 INSTALLATION PROCEDURE |   |                     |             |
| TABLE OF CONTENTS                 |   |                     |             |
|                                   |   |                     | <u>Page</u> |
| 1.0                               | Procedure for Installing FP15 to PDP15 #141 and Above |                     | 3           |
| 1.1                               | Indicator Power Wiring (AC-DC)                        |                     | 4           |
| 1.2                               | FP15 DC Power Wiring                                  |                     | 4-5         |
| 1.3                               | H721 Power Wiring                                     |                     | 5           |
| 1.4                               | Signal Cable Connections                              |                     | 5-6         |
| 1.5                               | Indicator Bus Cables Connections                      |                     | 6           |
| 1.6                               | Postinstallation Checks and Tests                     |                     | 7           |
| 2.0                               | Procedure for Installing FP15 to PDP15 #140 and Below |                     | 7-8         |
| 2.1                               | Indicator Power Wiring                                |                     | 8-9         |
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|                                   |   | SIZE<br><b>A</b>    | CODE<br>SP  |
|                                   |   | NUMBER<br>FP15-0-71 | REV         |



## TITLE FP15 INSTALLATION PROCEDURE

## 1.0 Procedure for Installing FP15 to PDP15 #141 and Above

- 1.0.1 Check the contents of the container against the Parts List (A-PL-FP15-0-0).
- 1.0.2 Check logic blocks for cracks and visual signs of damage.
- 1.0.3 Check location of modules in FP15 against Modules Utilization List.
- 1.0.4 Remove all blank panels above the existing 734D variable power supply on the back door of the H963-E cabinet (Bay IR) of the PDP15/20/30/40 system.
- 1.0.5 Remove the 5 1/4 inch cover panel (H950-P) and latch moulding directly below the FP15 indicator panel.
- 1.0.6 Install the FP15 indicator panel directly below the BB15 indicator panel.
- 1.0.7 Install the 716 power supply on the right side of the cabinet (H963-E), as viewed from the rear. Mount the 716 power supply directly below the existing 716 that provides power for the BB15 indicator panel. Apply caterpillar grommets to the side rails on the back end of both 716 power supplies.
- 1.0.8 Install the H721 power supply on the rear door of the cabinet (H963-E) directly above the existing 734D variable power supply.
- 1.0.9 Move the jones strip from inside post of the cabinet to the back side of the same post.
- 1.0.10 Install the FP15 logic wired assembly, with modules directly above the H721 power supply on the rear door of the cabinet (H963-E). Fasten loosely to the door with screws supplied. Place spacers (R-MD-7407789-0-0) supplied between the door and the FP15 wired assembly. Tighten all screws securely.
- 1.0.11 The KP15 must be modified as per handwire list supplied in the FP15 Installation Kit.
- 1.0.12 If the PDP15 System is below #300, a new set of Flexprint Memory cables must replace the Flat Coaxil Memory cables.

| SIZE | CODE | NUMBER    | REV |
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## TITLE FP15 INSTALLATION PROCEDURE

## 1.1 INDICATOR POWER WIRING (AC-DC)

- 1.1.1 Connect a six inch #14 black wire with connectors between the FP15 indicator panel ground tab and cabinet chassis ground.
- 1.1.2 Connect a ten inch #14 orange wire with connectors between the +6.5 volt tab on the FP15 indicator panel and the orange tab (+6.5 volts) on the FP15 indicator power supply.
- 1.1.3 Connect a seven inch #14 black wire with connectors from the black tab (GND) on the FP15 indicator power supply to the black tab (GND) on the BB15 indicator power supply.
- 1.1.4 Connect a seven inch #14 red and white twisted pair with connectors from the red and white tabs (115 volts) on the BB15 indicator power supply to the red and white tabs (115 Volts) on the FP15 indicator power supply.

## 1.2 FP15 DC POWER WIRING

- 1.2.1 Connect a fifty inch #14 green and black twisted pair with pins to 8 circuit Mate-N-Lock connector (12-09340-0-0), pin holes one for green and 3 for black. Place connector on module G829 in racks A-P. Connect the other end to the socket housing (12-0935-12), pin holes one for black and six for green.
- 1.2.2 Connect a forty-four inch #14 green and black twisted pair with pins to 8 circuit Mate-N-Lock connector (12-09340-0-0), pin holes one for green and three for black. Place connector on module G829 in racks C-D. Connect the other end to the socket housing (12-0935-12), pin holes two for black and seven for green.
- 1.2.3 Connect a thirty-five inch #14 green and black twisted pair with pins to 8 circuit Mate-N-Lock connector (12-09340-0-0), pin holes one for green and three for black. Place connector on module G829 in racks E-P. Connect the other end to the socket housing (12-0935-12), pin holes three for black and eight for green.

| SIZE | CODE | NUMBER    | REV |
|------|------|-----------|-----|
| A    | SP   | FP15-0-71 |     |

## TITLE FP15 INSTALLATION PROCEDURE

1.2.4 Connect a thirty-one inch #14 green and black twisted pair with pins to eight circuit Mate-N-Lock connector (12-09340-0-0), pin holes one for green and three for black. Place connector on module G829 in racks H-J. Connect the other end to the socket housing (12-0935-12), pin holes four for black and nine for green.

1.2.5 Place male socket housing into female socket housing on back of H721 power supply. Dress power wires down inside cabinet door using retaining lugs supplied.

## 1.3 H721 POWER SUPPLY WIRING (AC)

1.3.1 Connect a 59 inch #14 red and white twisted pair from the power control to the H721 power supply AC input terminals (TP2-1 and 2). Refer to D-CS-H721-01 for internal connections.

1.3.2 Connect a twenty-eight inch #14 black wire, from TP2-8 to cabinet chassis ground on power control.

1.3.3 Remove the console power switch lead from the existing H721 power supply (TB2-6) and connect a forty-seven inch #14 brown wire from the power control console power switch tab to the added 721 power supply at TB2-6. Connect a twenty-four inch #14 brown wire from TB2-6 on the original H721 to TP2-7 on the added H721 power supply. These connections will connect both H721 thermostat circuits in series with the console power switch.

## 1.4 SIGNAL CABLE CONNECTIONS

1.4.1 The table below is a signal cable connection chart that indicates how to connect the FP15 into an existing PDP-15 System.

## NOTE

The connections place the FP15 between the KP15 and the RB15.

| SIZE | CODE | NUMBER    | REV |
|------|------|-----------|-----|
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## TITLE FP15 INSTALLATION PROCEDURE

When the system does not include certain PB15 options (KM, KT, MP), ignore the PB15 cable connections and connect the FP15 directly to the MM15A as indicated in the table.

Connector Locations

| Cable Functions      | KP15 | FP15 |     | RB15 |     | MM15A | Remarks  |
|----------------------|------|------|-----|------|-----|-------|--|
|                      | OUT  | IN   | OUT | IN   | OUT | IN    |  |
| Memory Data Lines    | J02  | H29  | J29 | R02  | A02 | R02   | If RB15 is not included or does not contain KM15, KT15, or MP15, connect FP15-J29 MM15A-R03. |
| Memory Control Lines | J03  | H30  | J30 | B03  | A03 | R03   | Under conditions listed above, FP15-J30 to MM15-AP02.  |
| API                  | H03  | H31  | J31 | R05  | --  | --    | This cable is not required to be connected to memory.  |

Signal Cable Chart Figure 1-4

Dress all cables in cabinet securely with zipper tubing.

## 1.5 INDICATOR BUS CABLE CONNECTIONS

1.5.1 Connect the FP15 Indicator Bus cables to the FP15 wired assembly (J03, J04, J05 and J06) as marked on on connector cable ends. Dress the indicator cables between the FP15 wired assembly and the H721 power supply.

| SIZE | CODE | NUMBER    | REV |
|------|------|-----------|-----|
| A    | SP   | FP15-0-71 |     |

## TITLE FP15 INSTALLATION PROCEDURE

## 1.6 POSTINSTALLATION CHECKS AND TESTS

- 1.6.1 Make a final check of the completed installation to be sure that:
- All modules are correctly installed in the FP15 wired assembly.
  - Major components are securely mounted in the cabinet.
  - Cable and wired connections are correct and cables and harnesses are dressed and fastened within the cabinet.
  - Make an OHM check between +5 volts and GND on the FP15.
- 1.6.2 Apply primary power to the cabinet by closing the circuit breaker on the 841R power control. Turn on consoled power. Test for +5 volts at all of the G829 modules in the FP15.
- 1.6.3 With scope probe on F16V2 adjust FP15 clock (M775 in D24) to 75 nanoseconds.

## 2.0 PROCEDURE FOR INSTALLING FP15 TO PDP15 #140 AND BELOW

- 2.0.1 Remove wiring harness in cabinet H963-E.
- 2.0.2 Remove back door on cabinet H963-E.
- 2.0.3 Remove G821 modules in BB15, BA15, and DW15.
- 2.0.4 Install G829 modules in BB15, BA15, and DW15.
- 2.0.5 Install new back door on cabinet H963-E.
- 2.0.6 Remove 734D power supply from old back door.
- 2.0.7 Install the 734D on new door below the H721 for the FP15.

| SIZE | CODE | NUMBER    | REV |
|------|------|-----------|-----|
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## TITLE FP15 INSTALLATION PROCEDURE

- 2.0.8 Attach new wiring harness in cabinet H963-E and to places on back door that need it.
- 2.0.9 Remove the 5 1/4 inch cover panel (H950-P) and latch moulding directly below the BB15 indicator panel.
- 2.0.10 Install the FP15 indicator panel directly below the BB15 indicator panel.
- 2.0.11 Install the 716 power supply on the right side of the cabinet (H963-E), as viewed from the rear. Mount the 716 power supply directly below the existing 716 that provides power for the BB15 in indicator panel. Apply caterpillar grommets to the side rails on the back end of both 716 power supplies.
- 2.0.12 Move the jones strip from inside post of the cabinet to the back side of the same post.
- 2.0.13 The KP15 must be modified as per handwire list supplied in the FP15 Installation Kit.
- 2.0.14 Install a new set of Flexiprint Memory cables to replace the Flat Coaxial Memory cables.

## 2.1 INDICATOR POWER WIRING (AC-DC)

- 2.1.1 Connect a six inch #14 black wire with connectors between the FP15 indicator panel ground tab and cabinet chassis ground.
- 2.1.2 Connect a ten inch #14 orange wire with connectors between the +6.5 volt tab on the FP15 indicator panel and the orange tab (+6.5 Volt) on the FP15 indicator power supply.
- 2.1.3 Connect a seven inch #14 black wire with connectors from the black tab (GND) on the FP15 indicator power supply to the black tab (GND) on the BB15 indicator power supply.

| SIZE | CODE | NUMBER    | REV |
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## TITLE FP15 INSTALLATION PROCEDURE

- 2.1.4 Connect a seven inch #14 red and white twisted pair with connectors from the red and white tabs (115 Volts) on the FP15 716 indicator power supply to the red and white tabs (115 Volts) on the RB15 indicator power supply.

## 2.2 SIGNAL CABLE CONNECTIONS

- 2.2.1 The table below is a signal cable connection chart that indicates how to connect the FP15 into an existing PDP-15 System.

## NOTE

The connections place the FP15 between the KP15 and the RB15.

- 2.2.2 When the system does not include certain RB15 options (KM, KT, MP) ignore the RB15 cable connections and connect the FP15 directly to the MM15A as indicated in the table.

Figure 2-2 Signal Cable Chart  
Connector Locations

| Cable Functions      | KP15 | FP15 |     | RB15 |     | MM15A | Remarks  |
|----------------------|------|------|-----|------|-----|-------|--|
|                      | OUT  | IN   | OUT | IN   | OUT | IN    |  |
| Memory Data Lines    | J02  | H29  | J29 | B02  | A02 | B02   | If RB15 is not included or does not contain KM15, KT15, or MP15, connect FP15-J29 to MM15A-R03 |
| Memory Control Lines | J03  | H30  | J30 | R03  | A03 | R03   | Under conditions listed above, connect FP15-J30 to MM15A-R02.                                  |
| API Control          | H03  | H31  | J31 | B05  | --  | --    | This cable is not required to be connected to memory.  |

Dress all cables in cabinet securely with zipper tubing.

| SIZE | CODE | NUMBER    | REV |
|------|------|-----------|-----|
| A    | SP   | FP15-0-71 |     |

## TITLE FP15 INSTALLATION PROCEDURE

## 2.3 INDICATOR BUS CABLE CONNECTIONS

- 2.3.1 Connect the FP15 Indicator Bus cables to the FP15 wired assembly (J03, J04, and J05 and J06) as marked on connector cable ends. Dress the indicator cables between the FP15 wired assembly and the P721 Power Supply.

## 2.4 POSTINSTALLATION CHECKS AND TESTS

- 2.4.1 Make a final check of the completed installation to be sure that:

- All modules are correctly installed in the FP15 wired assembly.
- Major components are securely mounted in the cabinet.
- Cable and wired connections are correct, and cables and harnesses are dressed and fastened within the cabinet.
- Make an OHM check between +5 Volts and GND on the FP15.

- 2.3.2 Apply primary power to the cabinet by closing the circuit breaker on the 841P power control. Turn on consoled power. Test for +5 Volts at all of the G829 modules in the FP15.

- 2.4.3 With scope probe on F16V2 adjust FP15 lock (M775 in D24) to 75 nanoseconds.

- 3.0 The following is a list of wires needed. See Parts List attached.

- One black #14 wire six inches long with one solderless connector DEC Part #90-07919 at one end and one solderless connector DEC Part # 90-07928 at the other end.
- One orange #14 wire ten inches long with two solderless connector DEC Part #90-07919 attached.

| SIZE | CODE | NUMBER    | REV |
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## TITLE FP15 INSTALLATION PROCEDURE

3. One black #14 wire seven inches long with two solderless connectors DEC Part #90-07919 attached.
4. One red and white #14 twisted pair seven inches long with four solderless connectors DEC Part #90-07919 attached.
5. One green and black #14 twisted pair 31 inches long with four pins DEC Part #12-09378-01 attached.
6. One green and black #14 twisted pair thirty-five inches long with four pins DEC Part #12-09378-01 attached.
7. One green and black #14 twisted pair forty-four inches long with four pins DEC Part #12-09378-01 attached.
8. One green and black #14 twisted pair fifty inches long with four pins DEC Part #12-09378-01 attached.
9. One red and white #14 twisted pair 59 inches long with four solderless connectors DEC Part #90-07919 attached.
10. One black #14 wire fifty-five inches long with two solderless connectors DEC Part #90-07919 attached.
11. One brown #14 wire twenty-seven inches long with two solderless connectors DEC Part #90-07919 attached.
12. One brown #14 wire forty-seven inches long with two solderless connectors DEC Part #90-07919 attached.

| SIZE | CODE | NUMBER    | REV |
|------|------|-----------|-----|
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## TITLE FP15 INSTALLATION PROCEDURE

| DWG. NO./PART NO.  | DESCRIPTION                                    | PDP15's<br>BELOW<br>#140                      | PDP15's<br>ABOVE<br>#141 |
|--------------------|--|---|--------------------------|
| D-AD-7006331-20-0  | INDICATOR PANEL ASSEMBLY                       | 1   | 1                        |
| D-UA-716-0 0       | PWR SUPPLY INDICATOR PANEL                     | 1   | 1                        |
|                    | THREE FOOT CABLES (BC08A-3)                    | 3*  | 3*                       |
|                    | WIRE #14 BLACK 6" WITH CONN.                   | 1   | 1                        |
|                    | WIRE #14 ORANGE 10" WITH<br>CONNECTORS         | 1   | 1                        |
| SEE LIST OF WIRES  | WIRE #14 BLACK 7" WITH CONN.                   | 1   | 1                        |
|                    | WIRE #14 RED & WHITE 7"<br>WITH CONNECTORS     | 1   | 1                        |
| 90-07036           | 20" CATERPILLAR GROMMETS                       | 1   | 1                        |
| 91-07679           | 12' BLACK ZIPPER TUBING                        | 1   | 1                        |
|                    | COMPLETE SET OF MEM CABLES<br>(FLEX PRINT)     | ALL MACHINES<br>BELOW #300                    |                          |
|                    | G829 MODULES                                   | 4   |                          |
|                    | BACK DOOR WIRED                                | 1 THIS INCLUDES<br>ALL ITEMS LISTED<br>BELOW. |                          |
| J-IA-7006538-0-0   | HARNESS, H963F                                 | 1   |                          |
| 90-07880           | TIE WRAPS                                      | 24  | 24                       |
| D-AD-7007243-0-0   | WIRED ASSEMBLY (FP15)                          | 1   | 1                        |
| B-MD-7407789-0-0   | SPACERS  | 8   | 8                        |
| 9006074-1          | SCR, PHL HD PAN #10-32 x<br>5/8 LG             | 24  | 24                       |
| 9007786            | SPEED NUT #10-32 TINNFRMAN                     | 24  | 24                       |
| D-UA-H721-0-0      | H721 POWER SUPPLY                              | 2   | 1                        |
| 1209340-0-0        | 8CIRCUIT MATE-N-LOCK CONN.                     | 8   | 8                        |
| 120935-12          | SOCKET HOUSING #1-480278-0                     | 1   | 1                        |
| D-MD-7408089-0-0   | TERM STRIP PANEL                               | 1   |                          |
| D-MD-7407341-0-0   | 841-B POWER CONTROL                            | 1   |                          |
|                    | #14 GREEN & BLACK TWISTED<br>31" WITH PINS     | 1   | 1                        |
|                    | #14 GREEN & BLACK TWISTED<br>35" WITH PINS     | 1   | 1                        |
|                    | #14 GREEN & BLACK TWISTED<br>44" WITH PINS     | 1   | 1                        |
| SEE LIST OF WIRES  | #14 BREEN & BLACK TWISTED<br>50" WITH PINS     | 1   | 1                        |
|                    | #14 RED & WHITE TWISTED<br>59" WITH CONNECTORS | 1   | 1                        |
|                    | #14 BROWN 27" WITH CONN.                       | 1   | 1                        |
|                    | #14 BROWN 47" WITH CONN.                       | 1   | 1                        |
| #14 BLACK 56" WITH | #14 BLACK 56" WITH CONN.                       | 1   | 1                        |
| 90-07083           | 3/8 NYLON C CLAMPS                             | 6   | 6                        |
| 90-07082           | 5/16 NYLON C CLAMPS                            | 6   | 6                        |

\*If KM, KM/KT or MP option is not installed, five six foot BC08A cables should be used.

| SIZE | CODE | NUMBER    | REV |
|------|------|-----------|-----|
| A    | SP   | FP15-0-71 |     |

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| SIGNAL NAME       | FROM PIN  | TO PIN | COLOR | REMARKS |
|-------------------|---|--------|-------|---------|
| KP31 RUN H        | M01R2   | J03S2  |       | ADD     |
| KP27 CP ACT DIS L | N01E2   | N01U1  |       | DELETE  |
|                   | L08D2   | K13S1  |       | ADD     |
| +3V K05U1         | K05D1   | K14D2  |       | DELETE  |
|                   | K14F1   | K14N1  |       | DELETE  |
|                   | K14D2   | K14F1  |       | DELETE  |
|                   | K14D2   | K14N1  |       | ADD     |
|                   | K05D1   | K14D2  |       | ADD     |
| KP27 IO ACT DIS L | K14F1   | N01T2  |       | ADD     |
| +3V N01V1 H       | N01V1   | N01T2  |       | DELETE  |
| KP27 IO ACT DIS L | K14F1   | L08P2  |       | ADD     |
| +3V N01V1 H       | N01V1   | N01E1  |       | DELETE  |
| KP27 DIS RD RST L | J03T2   | L08T2  |       | ADD     |
|                   | L08T2   | N01E1  |       | ADD     |
|                   |   |        |       |         |
| NOTE:             | Only install this handwire list to KP15         |        |       |         |
|                   | along with the FP15 installation; once this HWL |        |       |         |
|                   | is installed, the KP15 will not operate without |        |       |         |
|                   | the FP15 in SYSTEM.                             |        |       |         |
|                   |   |        |       |         |
|                   |   |        |       |         |
|                   |   |        |       |         |
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|                   |   |        |       |         |
|                   |   |        |       |         |
|                   |   |        |       |         |

| REVISIONS     |          |            |            | DRN.                   | DATE    | <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |           |  |      |
|---------------|----------|------------|------------|------------------------|---------|--|-----------|--|------|
| REV.          | DATE     | CHG. NO.   | APP'D.     | CHK'D.                 | DATE    |  |           |  |      |
| A             | 6/29/71  | FP15-00003 | ERK        | J. MCHUGH              | 5-15-71 | <b>GENERAL WIRING SHEET</b><br>FOR Installing a FP15 in a KP15 |           |  |      |
| B             | 10/12/71 | FP15-00005 | <i>ERK</i> | L. P. HOHOS            | 5-15-71 |  |           |  |      |
| C             | 1/72     | 00009      | <i>ERK</i> | ED. KING               | 5-14-71 |  |           |  |      |
|               |          |            |            | PROJ. ENG. J. ELSEBREE | 5-14-71 |  |           |  |      |
|               |          |            |            | PROD. D DEROME         | 5-14-71 | TITLE  |           |  |      |
| FIRST USED ON |          |            |            | SIZE CODE              |         |  | NUMBER    |  | REV. |
| SCALE         |          |            |            | A WL                   |         |  | FP15-0-72 |  | C    |
| SHEET 1 OF 1  |          |            |            | DIST.                  |         |  |           |  |      |