

Table 1-2 (Cont)
Alphabetical Index

| <u>Subject</u> | <u>Drawing Number</u> | <u>Type Code</u> | <u>Page</u> |
|--|-----------------------|------------------|-------------|
| Byte Instruction Flow | KA10-0-BYTF | D-FD | 42 |
| Cable Set | 7005607-0-0 | D-AD | 154 |
| Console Switch Connections | KA10-0-ICSC1 | D-IC | 169 |
| Console Switch Connections | KA10-0-ICSC2 | D-IC | 170 |
| DC Power Wiring | KA10-0-1 | D-IC | 155 |
| Divide Subroutine and Fixed Divide | KA10-0-DIVF | D-FD | 43 |
| Double Floating Negate | KA10-0-FSDN | D-FD | 49 |
| Drawing Index List | KA10-0-3 | D-DI | 27 |
| Execute and Store Cycle | KA10-0-ESC | D-FD | 44 |
| Execution Cycle | KA10-0-E | D-BS | 82 |
| Executive Control | KA10-0-EX | D-BS | 83 |
| Extended Instruction Set | KE10-0 | A-ML | 31 |
| External Component List | KA10-0-CP | A-CP | 163 |
| Fast Memory | KM10-0 | A-ML | 33 |
| Fast Memory | KA10-0-FM | D-BS | 89 |
| Fast Memory Address | KA10-0-FMA | D-BS | 90 |
| Fast Memory Flow | KA10-0-MCFM | D-FD | 53 |
| Fetch Cycle Flow | KA10-0-FC | D-FD | 46 |
| Fetch Cycle Levels | KA10-0-F2 | D-BS | 85 |
| Fetch Cycle Time Pulse | KA10-0-F1 | D-BS | 84 |
| Fixed Divide and Subroutine | KA10-0-DSDV | D-BS | 81 |
| Fixed Point Divide and Subroutine | KA10-0-DIVF | D-FD | 43 |
| Floating Add Instruction | KA10-0-FA | D-BS | 86 |
| Floating ADD, SUB, UFA Flow | KA10-0-FAF | D-FD | 45 |
| Floating Divide | KA10-0-FDV | D-BS | 87 |
| Floating Divide | KA10-0-FDVF | D-FD | 47 |
| Floating Exponent Calculation | KA10-0-FPFM | D-BS | 91 |
| Floating Exponent Calculation Subroutine | KA10-0-FPMC | D-FD | 48 |
| Floating Exponent Register and Control | KA10-0-FE | D-BS | 88 |

Table 1-2 (Cont)
Alphabetical Index

| <u>Subject</u> | <u>Drawing Number</u> | <u>Type Code</u> | <u>Page</u> |
|---|-----------------------|------------------|-------------|
| Floating Multiply and Multiply Subroutine | KA10-0-FPMC | D-FD | 48 |
| Floating Scale and DBL Floating Negate | KA10-0-FSDN | D-FD | 49 |
| Half Word Transfer | KA10-0-HWT | D-BS | 92 |
| Indicator and Console SW Connections | KA10-0-ICSC1 | D-IC | 169 |
| Indicator and Console SW Connections | KA10-0-ICSC2 | D-IC | 170 |
| I/O Bus Control and I/O Selection | KA10-0-IOBC | D-BS | 96 |
| I/O Bus Inputs | KA10-0-IOBI | D-BS | 97 |
| I/O Bus (0-17) | KA10-0-IOB1 | D-BS | 94 |
| I/O Bus (18-35) | KA10-0-IOB2 | D-BS | 95 |
| In-Out Transfer Control | KA10-0-IOT | D-BS | 98 |
| In-Out Transfer Control Flow | KA10-0-IOTF | D-FD | 51 |
| Instruction and Address Cycles | KA10-0-IAC | D-FD | 50 |
| Instruction and Address Cycles | KA10-0-IA | D-BS | 93 |
| Instruction Register | KA10-0-IR | D-BS | 99 |
| Instruction Register Decoding | KA10-0-IR1 | D-BS | 100 |
| Instruction Register Decoding | KA10-0-IR2 | D-BS | 101 |
| Instruction Register Decoding | KA10-0-IR3 | D-BS | 102 |
| Inter-Bay Cables | KA10-0-IBC1 | D-CL | 169 |
| Inter-Bay Cables | KA10-0-IBC2 | D-CL | 170 |
| JFFO Flow | KA10-0-SMF | D-FD | 59 |
| JFFO Instruction Control | KA10-0-JFFO | D-BS | 103 |
| KA10 Assembly | KA10-A-0 | D-UA | 194 |
| KA10 Assembly Parts List | KA10-A-0 | A-PL | 197 |
| KA10 Register Interconnections | KA10-0-REG | D-FD | 55 |
| Key and Switches Controls | KA10-0-KEY1 | D-BS | 104 |
| Key and Switches Controls | KA10-0-KEY2 | D-BS | 105 |
| Key and Switches Controls | KA10-0-KEY3 | D-BS | 106 |
| Key Operations Flow Diagram | KA10-0-KO | D-FD | 52 |
| Level and Pulse Terminations Bay 1 and 2 | KA10-0-TERM | D-CL | 173 |

Table 1-2 (Cont)
Alphabetical Index

| Subject | Drawing Number | Type Code | Page |
|-------------------------------------|----------------|-----------|------|
| Master Clear and Power Clear | KA10-0-MR | D-BS | 117 |
| Memory Address Control | KA10-0-MA1 | D-BS | 107 |
| Memory Address Register | KA10-0-MA2 | D-BS | 108 |
| Memory Address Interface | KA10-0-MAI | D-BS | 109 |
| Memory Bus Data Interface | KA10-0-MBDI | D-BS | 110 |
| Memory Control | KA10-0-MC1 | D-BS | 111 |
| Memory Control | KA10-0-MC2 | D-BS | 112 |
| Memory Control and Fast Memory Flow | KA10-0-MCFM | D-FD | 53 |
| Memory Indicator | KA10-0-MI | D-BS | 113 |
| Module Utilization Panels 1A-1D | KA10-0-1A1D | D-MU | 141 |
| Module Utilization Panels 1E-1J | KA10-0-1E1J | D-MU | 142 |
| Module Utilization Panels 1K-1N | KA10-0-1K1N | D-MU | 143 |
| Module Utilization Panels 1P-1T | KA10-0-1P1T | D-MU | 144 |
| Module Utilization Panels 2A-2D | KA10-0-2A2D | D-MU | 145 |
| Module Utilization Panels 2E-2J | KA10-0-2E2J | D-MU | 146 |
| Module Utilization Panels 2K-2N | KA10-0-2K2N | D-MU | 147 |
| Module Utilization Panels 2P-2T | KA10-0-2P2T | D-MU | 148 |
| Module Utilization Panels 3A-3D | KA10-0-3A3D | D-MU | 149 |
| Module Utilization Panels 3E-3F | KA10-0-3E3F | D-MU | 150 |
| Module Count | KA10-0-MC | A-PL | 151 |
| Multiplier Quotient (MQ 0-17) | KA10-0-MQ2 | D-BS | 115 |
| Multiplier Quotient (MQ 18-35) | KA10-0-MQ3 | D-BS | 116 |
| Multiplier Quotient | KA10-0-MQ1 | D-BS | 114 |
| Multiply | KA10-0-BTMP | D-BS | 77 |
| Multiply Flow | KA10-0-SMF | D-FD | 59 |
| Normalize Return and NR Long | KA10-0-NRNL | D-BS | 118 |
| Normalize Return Subroutine | KA10-0-NRF | D-FD | 54 |
| Paper Tape Punch Control | KA10-0-PTP1 | D-BS | 126 |
| Paper Tape Punch Control | KA10-0-PTP2 | D-BS | 127 |
| Paper Tape Reader Control | KA10-0-PTR1 | D-BS | 128 |

Table 1-2 (Cont)
Alphabetical Index

| Subject | Drawing Number | Type Code | Page |
|--|----------------|-----------|------|
| Paper Tape Reader Control | KA10-0-PTR2 | D-BS | 129 |
| Paper Tape Reader Control | KA10-0-PTR3 | D-BS | 130 |
| Parity Buffer Register | KA10-0-PB | D-BS | 119 |
| Parity Network | KA10-0-PN | D-BS | 124 |
| PI Control | KA10-0-PI1 | D-BS | 122 |
| Power Clear | KA10-0-MR | D-BS | 117 |
| Priority Interrupt PIH, PIR, PIO | KA10-0-PI2 | D-BS | 123 |
| Program Counter Control | KA10-0-PC1 | D-BS | 120 |
| Program Counter Register | KA10-0-PC2 | D-BS | 121 |
| Protect Register | KA10-0-PR | D-BS | 125 |
| Pulse and Level Terminations Bay 1 and 2 | KA10-0-TERM | D-CL | 171 |
| Readin Function Isolated Flow | KA10-0-RIMF | D-FD | 56 |
| Register Interconnections | KA10-0-REG | D-FD | 55 |
| Relocate Register | KA10-0-RL | D-BS | 131 |
| Shift Connections | KA10-0-ARMQ | D-FD | 73 |
| Shift Count Register | KA10-0-SC | D-BS | 134 |
| Shift Count Adder | KA10-0-SCAD | D-BS | 135 |
| Shift Counter Control | KA10-0-SCC1 | D-BS | 136 |
| Shift Counter Control | KA10-0-SCC2 | D-BS | 137 |
| Shift and Count Subroutine and Shift Instruction | KA10-0-SCSR | D-BS | 138 |
| Shift Count Subroutine and BLT Flow | KA10-0-SCBT | D-FD | 58 |
| Shift Count Action Flow | KA10-0-SCAF | D-FD | 57 |
| Shift and MUL and JFFO Flow | KA10-0-SMF | D-FD | 59 |
| Store Cycle | KA10-0-ESC | D-FD | 44 |
| Store Cycle Time Pulses | KA10-0-S1 | D-BS | 132 |
| Store Cycle Levels | KA10-0-S2 | D-BS | 133 |
| Switch Controls | KA10-0-KEY1 | D-BS | 104 |
| Switch Controls | KA10-0-KEY2 | D-BS | 105 |
| Switch Controls | KA10-0-KEY3 | D-BS | 106 |
| Teletype Control | KA10-0-TTY1 | D-BS | 139 |

Table 1-2 (Cont)
Alphabetical Index

| <u>Subject</u> | <u>Drawing Number</u> | <u>Type Code</u> | <u>Page</u> |
|------------------------------|-----------------------|------------------|-------------|
| Teletype Control | KA10-0-TTY2 | D-BS | 140 |
| TTY Socket Wiring | KA10-0-GW | A-WL | 168 |
| Time Sharing Option | KT10-0 | A-ML | 36 |
| Twisted Pair List KA10 Bay 1 | KA10-0-TWP1 | A-WL | 174 |
| Twisted Pair List KA10 Bay 2 | KA10-0-TWP2 | A-WL | 183 |
| Wire List KA10 | KA10-0-4 | K-WL | 162 |

Table 1-3
KA10 Signal Glossary

| <u>Signal Name</u> | <u>Source Drawing</u> | <u>Description</u> |
|----------------------|-----------------------|--|
| AD0-35 | AD3 | Adder. Performs arithmetic and logical operations using AR and BR register contents as inputs. |
| AD0-7=0 | AD2 | Level. True when bits AD0 through 7 contain all zeroes. |
| AD 1 AR INP | AD3 | Level. Used to generate AD CRY1 on AD2. |
| AD 1 BR INP | AD3 | Level. Used to generate AD CRY1 on AD2. |
| AD9-35=0 | AD2 | Level. True when bits AD9 through 35 all contain zeroes. |
| AD10-35=0 | AD2 | Level. True when bits AD10 through 35 all contain zeroes. |
| AD AR NEGATE (FT9) | AD2 | Level. Setup for two's complement of AR contents. Produces AD AR-EN (FT9) and AD CRY 36 (FT9). |
| AD AR+ EN | AD1 | When set, gates ARn (1) to ADn. |
| AD AR+ EN (FT9) | AD2 | Level. Prevents FT9 from clearing AD AR+ EN. |
| AD AR- EN | AD1 | When set, gates ARn (0) to ADn. |
| AD AR- EN (FT9) | AD2 | Level. Allows FT9 pulse to set AD AR- EN. |
| AD BR± (FT9) | AD2 | Level. Produces AD BR+ EN (FT9) and AD BR- EN (FT9). Used to form arithmetic -1 at AD inputs. |
| AD BR+ EN | AD1 | When set, gates BRn (1) to ADn. |
| AD BR+ ONLY EN (ET0) | AD2 | Level. Enables ET0 pulse to clear AD AR+ EN, AD AR- EN, AD CRY 36, and to set AD BR+ EN. |
| AD BR- EN | AD1 | When set, gates BRn (0) to ADn. |
| AD BR- EN (FT9) | AD2 | Level. Enables FT9 pulse to set AD BR- EN. |
| AD COND | AD2 | Level. Provides sign/overflow compensation for arithmetic compare instructions (CAMX and CAIX). |
| AD CRY 0 | AD2 | Level. Indicates carry out of bit AD0. |
| AD CRY 1 | AD2 | Level. Indicates carry out of bit AD1. |
| AD CRY 36 | AD1 | When set, produces carry into AD35. Used for incrementing or for two's complement subtraction. |
| AD CRY 36 (FT9) | AD2 | Level. Enables FT9 pulse to set AD CRY 36. |
| AD CRY ALLOW | AD2 | Level. Completes the carry logic through AD bits 5, 14, 23, 32 (B138's). When false, speeds up carry de-propagation, important to multiply instructions. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|-------------------|----------------|--|
| AD CRY INS | AD1 | When set, produces carry into summing network of all adder bits turning the adder into an "EQUIVALENCE" gate for the normal inputs. |
| AD CRY INS (FT9) | AD2 | Level. Enables FT9 pulse to set AD CRY INS. |
| AD = 0 | AD2 | Level. True when all adder bits are zero. |
| AD MD+ | AD2 | Level. Enables SCT3 pulse (and others) to set AD BR+ EN during multiply or divide subroutine, as determined by operands. |
| AD MD- | AD2 | Level. Enables SCT3 pulse (and others) to set AD BR- EN and AD CRY 36 during multiply or divide subroutine, as determined by operands. |
| AD MINUS BR (FT9) | AD2 | Level. Produces AD BR- EN (FT9) and AD CRY 36 (FT9). Setup for subtraction of BR contents from AR contents. |
| AD+1 BOTH (FT9) | AD2 | Level. Produces AD CRY 36 (FT9) and permits FT9 pulse to set AD+1 LH. |
| AD+1 LH | AD1 | When set, causes a "one" input to AD17. |
| AD-1 LH | AD1 | When used in conjunction with AD BR+ EN and AD BR- EN, causes a "zero" input to AD17. |
| AF2 | IA | Address cycle memory subroutine flip-flop. Also causes AT3 to deliver indexed address to AR from AD. |
| AR0-35 | AR1 | Arithmetic register. Used for holding arithmetic operand. Communicates with memory bus, in-out bus, and fast memory. |
| AR0 = BR0 | ARC3 | Level. True for equal signs of AR and BR operands. Used during floating point exponent calculation. (FMP or FDV). |
| AR0 = SCAD0 | ARC3 | Level. True for equal signs of AR and SCAD (shift counter adder). Used during floating point exponent calculation. (FMP or FDV). |
| AR0 SHLT INP | ARMQ | Level. Provides left shift inputs to AR0 as shown on SCAF diagram. |
| AR35 SHLT INP | ARMQ | Level. Provides left shift inputs to AR35 as shown on SCAF diagram. |
| AR CRY 0 FLAG | ARF | Stores condition of AD CRY 0 resulting from certain arithmetic operations. |
| AR CRY 1 FLAG | ARF | Stores condition of AD CRY 1 resulting from certain arithmetic operations. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|-------------|----------------|---|
| AR DCK | ARF | Divide check flag. Set when fractional dividend not smaller than divisor. |
| AR FOV | ARF | Floating point overflow flag. Set for various error conditions by floating point instructions. Interrupt possible. |
| AR FXU | ARF | Floating point exponent underflow. Set by normalize return subroutine if result exponent is too negative to represent. |
| AR OV COND | ARF | True when overflow occurs during an additive process. An inequality (XOR) of AD CRY 0 and AD CRY 1. Used to set AR OV FLAG. |
| AR OV FLAG | ARF | Arithmetic overflow flag. Set by any arithmetic overflow condition. Interrupt possible. |
| AR SWAP | ARC1 | Pulse. Causes the two 18-bit halves of AR contents to be exchanged. |
| AR0 XOR AR1 | ARF | Level. Used to set AR OV FLAG during an arithmetic left shift. |
| ARF CRY STB | ARF | Pulse. Causes AD CRY 0 and AD CRY 1 to be stored in AR CRY0 FLAG and AR CRY1 FLAG; and stores AR OV COND in AR OV FLAG. |
| AS COND | AS | Level. True when contents of console address switches equal the absolute core memory address. Used for address stop or break (MC2) and memory indicator loading (MI). |
| AS = FMA | AS | Level. True when contents of address switches equals output of FMA address selector. |
| AS = RLA | AS | Level. True when contents of address switches equals the memory bus memory address. (RLA is obsolete) |
| BIO CPA SEL | MR | Level. True when IR 3-9 contain 000. Processor device address. |
| BIO PI SEL | MR | Level. True when IR 3-9 contain 004. Priority interrupt device address. |
| BIO PTP SEL | MR | Level. True when IR 3-9 contain 100. Paper tape punch device address. |
| BIO PTR SEL | MR | Level. True when IR 3-9 contain 104. Paper tape reader device address. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|-------------------|----------------|--|
| BIO TTY SEL | MR | Level. True when IR 3-9 contain 120. Console teletype device address. |
| BLT FI | BTMP | Subroutine flop for block transfer. Used when storing word in destination location. |
| BR0-35 | BR2 | Buffer register. Holds arithmetic operand. |
| BYF4 | BYTE | Subroutine flop for restoring incremented pointer in byte instructions. Also enables MQ to shift left (MQ1) to generate mask. |
| BYF5 | BYTE | Control flop for byte instructions. When zero causes "first part" activities (incrementation and/or size mask generation); when one causes "second part" activities (operand fetch and loading or depositing). BYF5 (0) produces PC+1 INH. |
| BYF6 | BYTE | Byte increment status (BIS) flag. Set by ILDB and IDPB in "first part" and cleared in "second part". Prevents double incrementation if instruction is interrupted between parts as may happen. BYF6 is the "Byte Interrupt" stored by JSR, JSP, PUSHJ and restored by JRSTF. |
| BYTE PTR INC | BYTE | Level. Allows ET0 pulse to start "first part" at BYT1 for those conditions and instructions which require byte pointer incrementation. |
| BYTE PTR NOT INC | BYTE | Level. Causes bypassing of the incrementation sequence for those instructions which load or deposit but do not want to change the pointer at this time. Allows ET0 to pulse BYT6. |
| CPA ADR BREAK | CPA | Set by an address break condition. Interrupt possible. |
| CPA AR OV EN | CPA | When set, enables AR OV FLAG to processor interrupt decoder. |
| CPA CLK EN | CPA | When set, enables power frequency clock to processor interrupt decoder. |
| CPA CLK FLAG | CPA | Set by CPA PWR CLK once each cycle of line current. Interrupt possible. |
| CPA FOV EN | CPA | When set, enables AR FOV to processor interrupt decoder. |
| CPA MEM PROT FLAG | CPA | Set by MC ILLEG ADR when a memory reference in user mode uses a relative address larger than the protection constant. Interrupt possible. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|-------------------|----------------|---|
| CPA NON EX MEM | CPA | Level. Set by MC NON EX MEM when no core module responds. Interrupt possible. |
| CPA PAR ENB | CPA | Level. Enables CPA PAR ERR to processor interrupt decoder. |
| CPA PAR ERR | CPA | Set by MC PAR ERR when even parity is detected in a word read from core memory. |
| CPA PDL OV | CPA | Push down list pointer overflow. Set if left half of pointer goes to zero when incremented or decremented by the pushdown instructions. |
| CPA PIA 33-35 | CPA | Processor interrupt bus address storage flops. Non-zero to allow interrupt. |
| CPA PWR CLR | CPA | Pulse. One pulse per cycle of line current. |
| CPA PWR FAIL | CPA | Sets if two consecutive CPA PWR CLK pulses are missed. Interrupt possible. |
| DB BYTE DEP | DBLB | Level. Common to DPB and IDPB to condition "second part" operations such as shifting AR and MQ to the left. |
| DIV LOW ZERO COND | DSDV | Level. During the negation of two word dividends (floating or fractional) this indicates that second word is zero. |
| DSFI | DSDV | Divide subroutine flop. Enables left shift of AR and MQ at SCT3 with connections as shown on SCAF diagram. Permits AD MD+ and AD MD- to be controlled by BR0 and ADO. |
| DSF7 | DSDV | Flip-flop used to store the original sign of the dividend in a divide instruction. (Divide subroutine requires a positive dividend.) |
| DSF7 XOR BR0 | DSDV | Level. True when dividend and divisor are of opposite sign. Used at end of divide to correct the quotient sign. |
| E LONG | E | Level. Enabled by those instructions which use a long execution cycle (ET0, ET1, ET2). Permits ET0 DEL to pulse ET1. |
| E LONG V ST INH | E | Level. Prevents ET0 DEL from pulsing ST1. |
| E UUOF | E | Set by UUO instruction. Causes the following ITO to set MA35. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|---------------|----------------|---|
| E XCTF | E | Set by UUO, XCT, or KEY RDI DONE pulse to prevent the following ITO from disturbing the MA, which points to the instruction to be executed. |
| EF0 LONG | E | Level. Causes a long delay to occur between FT9 and ET0 to allow for additive processes (AD XX EN set and carry propagation times). |
| EVEN 0-8 | PN | Level. True when PB bits 0-8 contain even parity. |
| EVEN 0-26 | PN | Level. True when PB bits 0-26 contain even parity. |
| EVEN 9-17 | PN | Level. True when PB bits 9-17 contain even parity. |
| EVEN 18-26 | PN | Level. True when PB bits 18-26 contain even parity. |
| EVEN 27-35 | PN | Level. True when PB bits 27-35 contain even parity. |
| EX ALLOW IOTS | EX | Level. Indicates that machine is in executive mode or privileged user mode. Used on IR UUO. |
| EX ILL OP | EX | Set by UUO's which trap to absolute locations 40 or 60. Suppresses relocation by producing EX TRAP COND. Cleared by an IOT BLK executed from a PI location if UUO interrupted between halves. (Prevents unwanted memory reference by an unrelocated user PC.) Normal clear is by subroutine jump instruction in 41 or 61. |
| EX IOT USER | EX | Set by executive mode JRSTF only. Allows user program to use all instructions, does not affect relocation, however. |
| EX MODE SYNC | EX | When set, causes entry into user mode at subsequent ITO (MR CLR). |
| EX PI SYNC | EX | Set by PI CYC (1). Prevents relocation of PI trap address (40+2n) by producing EX TRAP COND. |
| EX REL A, B | EX | True when in user mode and not referencing an AC, UUO or PI trap location, or performing an examine or deposit. When true, causes address checking by the protection adder (PR) and use of relocated address (MAI). |
| EX TRAP COND | EX | Level. True when fetching an instruction from a PI trap location or a non-relocated UUO trap location. Prevents relocation by making EX REL A and EX REL B false. If fetched instruction is JSR, JSP, PUSHJ, will cause EX USER to clear (to exec. mode). |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|-------------|----------------|---|
| EX USER | EX | When a one, machine is in user mode. Determines decoding of IR UUO, EX REL A, EX REL B (chiefly). |
| FAC INH | F2 | Level. ("Fetch AC Inhibit") When true, causes (AC) fetch to be bypassed in fetch cycle. |
| FAC2 | F2 | Level. ("Fetch AC ₂ ") When true causes fetch of (AC+1) to occur (FT5). |
| FAF1 | FA | Shift subroutine flop set by floating add routine. |
| FCC ACLT | F2 | Level. ("Fetch C (C (AC) Left)") When true causes the left half contents of fetched AC to be used as an operand address from which a word is fetched (FT7). |
| FCC ACRT | F2 | Level. ("Fetch C (C (AC) Right)") When true causes the left half contents of fetched AC to be used as an operand address from which a word is fetched (FT7). |
| FCE | F2 | Level. ("Fetch C(E)") When true causes the contents of the location addressed by MA to be fetched by MC RD RQ. (FT0). |
| FCE PSE | F2 | Level. ("Fetch C(E); Pause") When true causes the contents of the location address by MA to be fetched by MC RD/WR RS. (FT1). This level is produced instead of FCE by those instructions which store a result in the location from which a memory operand was fetched, and which have a relatively short execution time. (e.g. FADM doesn't meet the latter requirement, SUBM meets both.) |
| FDF1 | FDV | Memory subroutine flop set when floating divide fetches dividend exponent from memory. |
| FDF3 | FDV | Flop set to store fact that dividend was unnormalized by one right shift. Used at end of floating divide to assure proper remainder exponent (which is related to dividend exponent). |
| FMA AC EN | FMA | Level. Makes FMA 32-35 a copy of IR 9-12. (Accumulator address). |
| FMA AC2 EN | FMA | Level. Makes FMA 32-35 equal to (IR 9-12) +1. |
| FMA MA EN | FMA | Level. Makes FMA 32-35 a copy of MA 32-35. Also inhibits FMA AC EN, FMA AC2 EN, and FMA XR EN. Produced when a core memory request is initiated to read out of a fast memory location (e.g. PC or E is 0-18). |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|--------------------|----------------|--|
| FMA XR EN | FMA | Level. Makes FMA 32-35 a copy of IR 14-17. (Index register address). |
| FMD 0-17 | FMA | Level. Binary to 1 out of 16 decoder. One output selects a 36 bit fast memory location (FM). |
| FP EXP ADD | FPFM | Level. Used during exponent calculation to change SCAD inputs so that exponent magnitudes are added during FMPX and subtracted during FDVX instructions. |
| HWT 3 LET | HWT | Level. ("half-word transfer (3 Letter)") in direct mode which specify that "other half" is to be preserved. (e.g. HRL). |
| HWT ARLT CLR (ET0) | HWT | Level. True for half-word transfers which zero the left half. (e.g. HXRZX). The action occurs at ET0 because of this level. |
| HWT BR ± EN (FT9) | HWT | Level. Produces AD BR ± EN (FT9) for those half word instructions which set to ones the "other half" receiving word. |
| HWT DIR | HWT | Level. Direct or blank mode for half word instructions. (IR7 and 8 = 0). |
| HWT E TEST | HWT | Level. Used for HXXEX instructions to determine the four outcomes: 0 to left, 0 to right, 1's to left, 1's to right. |
| IF0 | IA | Instruction fetch/indirect word fetch memory subroutine flop. Also used in address condition test (MC2). |
| IOB0-35 | IOB1 | In-out bus data lines |
| IOB BUS RESET A-D | IOBC | A 2 μs pulse that switches 20 mA additional clamped load to each bus data line (IOB0-35) to restore the zero state (-3V). |
| IOB CONO CLR | IOBC | Conditions out clear. A 400 ns pulse that may be used by a device to clear its command/status register. |
| IOB CONO SET | IOBC | Conditions out set. A 400 ns pulse used by devices to load command register from IOB0-35. |
| IOB DATAI | IOBC | A 2.5 μs pulse used to gate an input device data register to IOB0-35. |
| IOB DATAO CLR | IOBC | Data out clear. A 400 ns pulse used by output device to clear data register. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|---------------|----------------|---|
| IOB DATAO SET | IOBC | Data out set. A 400 ns pulse used by output device to load its data register from IOB0-35. |
| IOB DR SPLIT | IOBC | "Drum split." May be activated by a device attached to memory port to prevent processor from doing read-modify-write cycles. (See MC SPLIT CYC SYNC). |
| IOB PI 1-7 | IOBC | Bus priority interrupt lines. Grounded by a device requesting service on that channel. |
| IOB RDI DATA | IOBC | Readin data flag. Activated by device during a key read in operation when a data word is ready. |
| IOB RDI PULSE | IOBC | Readin pulse. A 400 ns pulse issued to start the selected device for key readin operations. |
| IOB RESET | IOBC | General clear pulse going to all devices. |
| IOB STATUS | IOBC | A 2.5 μs pulse used to gate a device status register to IOB0-35. Called IOB CONI on IO bus. |
| IOS 3-9 | IOBC | Device selection code. A buffered version of IR 3-9. |
| IOT BLK | IOT | Level. True for either BLKI OR BLKO op codes. |
| IOT CONSX | IOT | Level. True for either CONSO or CONSZ op codes. |
| IOT DATA XFER | IOT | A 2.5 μs pulse. Basic timing for placing information on IOB0-35. |
| IOT F1 | IOT | Memory subroutine flop used by BLKI, BLKO when restoring incremented pointer. |
| IOT GO | IOT | Synchronizing flip-flop that is set at ET0 to request entry into IOTTO-5. |
| IOT OUT GOING | IOT | Level. True for either CONO or DATAO or second part of BLKO. |
| IR 0-17 | IR | Instruction register. Holds OP, AC, I, X during execution. |
| IR 0XX | IR1 | Level. Means op code in range 000 to 077. |
| IR 13X | IR2 | Level. Indicates op code in range 130 to 137. |
| IR 26X E LONG | IR3 | Level. True for those codes in this range requiring long execution cycle. Pushdowns, JSR, JSA, JRA. |
| IR AOJX | IR3 | Level. True for Add one and jump, any mode. |
| IR AOSX | IR3 | Level. True for Add one and skip, any mode. |
| IR AOXX | IR3 | Level. True for AOJX or AOSX. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|---------------|----------------|---|
| IR AS | IR1 | Level. True for add or subtract, any mode. |
| IR AS BOTH | IR3 | Level. True for ADDB, SUBB. Used to provide fetch cycle levels (F2). |
| IR AS DIR | IR3 | Level. True for ADD, SUB. Used to provide fetch cycle levels. (F2). |
| IR AS IMM | IR3 | Level. True for ADDI, SUBI. |
| IR AS MEM | IR3 | Level. True for ADDM, SUBM. Used to provide fetch cycle levels. (F2) |
| IR BOOLE 0-17 | IR2 | Levels. Decoding of the 16 Boolean instructions, any mode. (See BIF1.) |
| IR FDV NOT L | IR3 | Level. True for FDV, FDVR, all modes except FDVL. |
| IR FP | IR2 | Level. True for op codes 140-177 (Floating point) unless floating point trap switch is on (IR UUO, IR2 drawing), |
| IR IOT | IR2 | Level. True when IOT op code in IR and IOT's are permissible (See IRUUO). |
| IR IOT A | IR1 | Level. True when IR0-2 = 7 (IOT op code). |
| IR JRST | IR2 | Level. True when JRST op code in IR and JRST is permissible. (See IRUUO) |
| IR JRST A | IR1 | Level. True when 254 op code in IR (JRST op code). |
| IR JUMPS | IR3 | Level. True for JUMPX, AOJX, SOJX op codes. Used to condition PC from MA transfer during these instructions (PC1). |
| IR LT EN | IR | When set, enables IR bits 0-12 to receive input from memory bus. |
| IR MD | IR2 | Level. True for MUL, IMUL, DIV or IDIV op codes, any mode. |
| IR RDI SETUP | IR | Pulse. Issued by key readin operation to force IR to contain DATAI DEV, or BLKI DEV, depending on RDI PART 2 flop. "DEV" (IR3-9) determined by readin device switches on maintenance panel. |
| IR RT EN | IR | When set, enables IR bits 13-17 to receive input from memory bus. |
| IR TEST | IR1 | Level. True when op code 600-677 in IR. Boolean test class of instructions. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|------------------|----------------|--|
| IR UUO | IR2 | Level. Unimplemented User Operation True for op codes 000-127 and 130-177 if FP trap switch is on. Also true for IOT, HALT, JEN in non-privileged user mode. When true, inhibits IR IOT and IR JRST. |
| IT0-IT1 | IA | Instruction cycle time pulses. |
| KEY ADR BRK | KEY1 | Level. True when console ADR BREAK switch is on. |
| KEY ADR INST | KEY1 | Level. True when console ADDRESS CONDITION INST FETCH switch is on. |
| KEY ADR RD | KEY1 | Level. True when console ADDRESS CONDITION DATA FETCH switch is on. |
| KEY ADR STOP | KEY1 | Level. True when console ADR STOP switch is on. |
| KEY ADR WR | KEY1 | Level. True when console ADDRESS CONDITION WRITE switch is on. |
| KEY AS STROBE EN | KEY3 | Level. True for those key operations which use data switch information. |
| KEY AT INH | KEY2 | 100 μ s level. Produced by RESET with RUN (1). Holds IFO cleared to stop instruction cycle, preventing data from being clobbered when clear pulse is issued. |
| KEY CONT SW | KEY1 | Continue. Momentary level true when console CONT switch is held on. |
| KEY DEP NXT SW | KEY1 | Deposit next. Momentary level, true when console DEPOSIT - NEXT switch is held on. |
| KEY DEP SW | KEY1 | Deposit this. Momentary level, true when console DEPOSIT - THIS switch is held on. |
| KEY EX NXT | KEY1 | Examine next. Momentary level, true when console EXAMINE - NEXT switch is held on. |
| KEY EXA SW | KEY1 | Examine this. Momentary level, true when console EXAMINE - THIS switch is held on. |
| KEY EXE SW | KEY1 | Execute. Momentary level, true when console XCT switch is held on. |
| KEY F1 | KEY3 | Memory subroutine flop used by examines and deposits. Also used in MI control to allow data to be displayed. |
| KEY FCN CLR | KEY1 | Pulse. Clears key function storage register at termination of function execution. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|----------------------|----------------|---|
| KEY FCN STROBE | KEY1 | Pulse. Loads corresponding function register flop from momentary key level. |
| KEY ITO EN | KEY3 | Level. True when FT9 to be allowed to pulse ITO. |
| KEY MANUAL | KEY1 | Level. Produced by key functions to initiate timing chain. |
| KEY MEM REF | KEY3 | Level. True for those key functions (examines and deposits) which reference memory. |
| KEY MID INST STOP | KEY3 | Level. True when a memory stop or shift counter stop has occurred. Used to condition action of CONT key on RUN flip-flop. |
| KEY NEXT | KEY3 | Level. True for examine next or deposit next. Causes key flow to increment MA. |
| KEY NXM STOP | KEY1 | Level. Non-existent memory stop. True when console NXM STOP switch is on. Used in memory control (MC2). |
| KEY PAR STOP | KEY1 | Level. Parity stop. True when console PAR STOP switch is on. Used in memory control (MC2). |
| KEY PI INH | KEY1 | Level. True during key execute operation to prevent interrupts and PC incrementation at FT9. (PI1 and PC1). |
| KEY PROG STOP | KEY3 | Level. True for HALT instruction, enables clearing of RUN flop. |
| KEY RDI DLY | KEY2 | One-shot. Used to produce IOB RDI PULSE to start read in device. Delay permits device selection levels to settle down on bus. |
| KEY RDI DONE | KEY3 | Read in done. Pulse sets up machine to execute the last word read in by setting RUN and E XCTF. |
| KEY RDI PART 2 | KEY3 | Determines how IR12 is affected by IR RDI SETUP pulse to cause either DATAI or BLKI op code. |
| KEY RDI SW | KEY1 | Momentary level. True when console READ IN switch is held on. |
| KEY REPEAT BYPASS SW | KEY1 | Level. True when maintenance panel REPEAT BY-PASS switch is on. Used when troubleshooting key time pulses. Allows KT0 to be retriggered by the repeat delay. |
| KEY REPEAT SW | KEY1 | Level. True when console REPT switch is on. Inhibits KEY FCN CLR and allows KEY DONE to retrigger KT0 after the delay as controlled by maintenance panel speed knobs. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|----------------|----------------|---|
| KEY REPT DLY | KEY1 | Variable delay controlled by speed knobs on maintenance panel. Used to retrigger KT0. |
| KEY REPT SYNC | KEY1 | Set by KEY REPEAT operations, inhibits KEY FCN CLR. |
| KEY RESET SW | KEY1 | Momentary level. True when console RESET switch is held on. |
| KEY RIM | KEY3 | Remains set during readin operation. Allows entry to ITO when IOB RDI DATA pulse occurs (for each data word). Also allows BLKI pointer overflow to set PI OV. |
| KEY RUN CLR | KEY3 | Pulse. Clears RUN flop at time appropriate to operation (HALT, STOP switch, or SING INST switch). |
| KEY SING CYCLE | KEY1 | Single cycle. True when console SING CYCLE switch is on. Causes memory stop after each reference. |
| KEY SING INST | KEY1 | Single instruction. True when console SING INST switch is on. Used to clear RUN during instruction execution. |
| KEY SP CNTL-X | KEY1 | Connections to coarse and fine speed controls on maintenance panel. (See KEY REPT DLY) |
| KEY STA SW | KEY1 | Momentary level. True when console START switch is held on. |
| KEY STOP SW | KEY1 | Momentary level. True when console STOP switch is held on. |
| KEY SYNC | KEY3 | Set to allow ST9 to pulse KT1 for those key functions which operate when RUN is a one (EXA THIS, DEP THIS, EXE). |
| KEY SYNC RQ | KEY3 | Set by certain key functions (see KEY SYNC) to enable FT9 to set KEY SYNC. |
| KNT1-3 | KEY3 | Pulse chain used by key next operations to increment MA. |
| KST1-2 | KEY2 | Pulse chain used by STOP and RESET functions. |
| KT0-KT4 | KEY2 | Key timing pulse chain. |
| LB BYTE LOAD | DBLB | Level. Produced for LDB, ILDB "second part" to cause fetching of operand, loading of byte. |
| M BUS 0-35 | MBDI | Memory bus data lines, bi-directional. Connect to AR and IR. Called MBD0-35 on Memory Bus. |
| MA 18-35 | MA2 | Memory address register. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|------------------|----------------|--|
| MAIB MM 18-21,35 | MAI | Bipolar module selection levels to bus. Four bits to address a module, may be 18-21 (normal) or 18-20, 35 (interleaved) as determined by switches on module. Called MADR18-22, 35 on memory bus. |
| MC ADR ACK | MC1 | Local acknowledge pulse triggered by MAI CMC ADR ACK. Clears parity buffer and MC RQ flop to end nonexistent memory check. |
| MC ADR BREAK SET | MC2 | Pulse to set CPA address break flop when conditions are met. |
| MC BUS WR RS | MC1 | Pulse to core memory to enable write portion of cycle. Issued after data sent to module. |
| MC FM EN | MC1 | Level. True when maintenance panel FM DISABLE switch is off. Causes all references to address 0-17 to go to fast memory. If false, causes core memory references to these addresses and prevents read-modify-write (pause) operations. |
| MC FM RD RQ | MC1 | Pulse to initiate reading core locations 0-17 when in address or fetch cycles. (AC or AC2 fetch). |
| MC FM WR RQ | MC1 | Pulse to initiate writing core locations 0-17 when in store cycle (AC or AC2 store). |
| MC IGNORE PARITY | MC2 | Flop set by MAI IGN PAR PULSE to inhibit parity checking when reading from a 36 bit (no parity plane) core memory. |
| MC ILLEG ADR | MC2 | Pulse. Happens if protection violation in user mode memory reference. Sets CPA MEM PROT FLAG and causes exit from memory subroutine with no reference to core memory. |
| MC NON EX MEM | MC2 | Pulse occurs 100 μ s after memory request if no response (ADR ACK). Sets CPA NON EX MEM flop and causes exit from the memory subroutine. |
| MC NXM RD | MC2 | Pulse. Uses NON EX MEM pulse to simulate action of read restart. |
| MC NXM RST | MC2 | Pulse. Uses NON EX MEM pulse to simulate action of address acknowledge. |
| MC PAR ERR | MC1 | Parity error pulse. Occurs during read if 37 bits have even parity unless told to ignore parity. Sets CPA PAR ERR flop. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|-------------------|----------------|---|
| MA 18-31 = 0 | MAI | True when MA contains an address in range 0-17. Used to cause MC access to fast memory if one exists or to suppress relocation (EX REL A, B) if one does not. |
| MA 29-35 SET | MAI | Pulses. Used to force reserved location addresses into a cleared MA. Used in PI, UUC Operations. |
| MA FM PICH (1) | MAI | Pulse. Sets address $40 + 2N$ into MA in response to interrupt on channel N. |
| MA TRAP OFFSET | MAI | Level. True when switch in bay 1 is on. Used to change references to non-relocated 40-61 to 140-161 as in a dual processor system. |
| MAI 18-35 | MAI | Memory address interface. The address bits that go on the memory bus. May be copy of MA, RLA and MA, or FMA. |
| MAI CMC ADR ACK | MAI | Pulse. Core memory address acknowledge. Issued by addressed module at start of memory cycle. |
| MAI CMC RD RS | MAI | Pulse. Core memory read restart. Issued by core memory at same time data strobed onto bus to enter the AR. |
| MAI FMA SEL | MAI | Set when core locations 0-17 are to be addressed from FMA address selector. Makes MAI 18-31 = 0 and MAI 32-35 a copy of FMA 32-35. |
| MAI IGN PAR PULSE | MAI | Core memory ignore parity pulse. May be issued by memory at same time as ADR ACK to inhibit processor parity checking. |
| MAIB 21-35 | MAI | Buffered MAI bits. Called MADR21 to 35 on memory bus. |
| MAIB FMC SELECT | MAI | For bus compatibility with PDP-6. Pin T must be negative and pin V ground to allow memory modules to accept requests. |
| MAIB MC RD | MAI | Buffered read signal (level) to core memory. Called RD REQ on memory bus. |
| MAIB MC REQ CYC | MAI | Buffered request level to core memory. Used to start memory access. Inhibited during power up process. Called REQ CYC on memory bus. |
| MAIB MC WR | MAI | Buffered write signal (level) to core memory. Called WR REQ on memory bus. |

Table 1-3 (Cont)
KA10 Signal Glossary

| <u>Signal Name</u> | <u>Source Drawing</u> | <u>Description</u> |
|--------------------|-----------------------|---|
| MC PAR STOP | MC2 | Set by request pulse if console PAR STOP switch is on. Lengthens read timing to allow parity checking to take place between RD RS and MC RST0. Will enable MC STOP to set if error detected. |
| MC PARITY PULSE | MC1 | Bidirectional pulse generated by a one in plane 36 of core memory during a read and sent to the parity buffer (PB) also generated by processor during a write at same time as MC WR RS, if necessary. |
| MC RD | MC2 | Read command flop. Produces MAIB MC RD. Enables MBDI 0-35 to receive data from M BUS 0-35. |
| MC RD RQ PULSE | MC1 | Pulse triggered from instruction flow to start a memory read operation. Sets MC RD. |
| MC RD RS | MC1 | Local pulse produced by MAI CMC RD RS. Starts parity checking. |
| MC RD/WR RQ PULSE | MC1 | Pulse triggered from instruction flow to start a read-pause operation. Sets both MC RD and MC WR. |
| MC RD/WR RS | MC1 | Pulse triggered from instruction flow to restart a paused memory in the write cycle. |
| MC REQ CYC | MC2 | Level. When true, causes a request to core memory. |
| MC RQ | MC2 | Flop set by read, read-pause, or write requests. Causes a core memory or fast memory cycle to begin depending upon the contents of MA and MC FM EN. |
| MC RQ PULSE | MC1 | Pulse common to all memory requests. Starts non-existent memory timer, and address checking. Causes PI system to strobe requests from I/O bus. |
| MC SPLIT CYC EN | MC2 | Level. True for those cases in which read-modify-write (pause) operations must be prevented. |
| MC SPLIT CYC SYNC | MC2 | Flop set to prevent read-modify-write (pause) cycles. Enables MC RD/WR RQ pulse to trigger MC RD RQ pulse and MC RD/WR RS pulse to trigger MC WR RQ. |
| MC STOP | MC2 | Flop set to inhibit normal exit from MC subroutine by any memory stop condition. Allows continue key to pulse MC RS T0. |
| MC STOP EN | MC2 | Level. Allows MC STOP SET pulse to set MC STOP flop if doing single cycle or satisfied address stop condition. |
| MC SW COND | MC2 | Level. True when ADDRESS CONDITION conditions are satisfied. Distinguishes between instruction fetch, data fetch, or write. |

Table 1-3 (Cont)
KA10 Signal Glossary

| <u>Signal Name</u> | <u>Source Drawing</u> | <u>Description</u> |
|--------------------|-----------------------|--|
| MC WR | MC2 | Write command flop. Produces MAIB MC WR and conditions actions occurring after ADR ACK is received. |
| MC WR RQ PULSE | MC1 | Pulse triggered from instruction flow to start a write operation. Sets MC WR. |
| MC RST0-1 | MC1 | Final pulses of MC subroutine. Cause return to instruction flow depending on subroutine flop. |
| MI 0-35 | MI | Memory indicator register. Displays data on console lights. Loaded by key functions (examine, deposit) or by program (DATAO PI). |
| MI PROG | MI | When set, prevents MI from automatically displaying contents of location addressed by console address switches. Preserves program display. |
| MI PROG DIS SW | MI | True when maintenance panel MI PROG DIS switch is on. Forces automatic display of location addressed by switches. |
| MIT0-1 | MI | Pulses produced by references to a location addressed by the address switches. Will cause loading of MI from AR if MI PROG is zero. (So-called automatic display). |
| MPF1 | BTMP | Fixed point multiply subroutine flop. Enables return to MPT2 from SCT4. |
| MPF2 | BTMP | Multiply sign storage. Set if both operand signs negative. Used for fractional overflow test at MPT2. |
| MPT2-4 | BTMP | Fixed point multiply execution time pulses. |
| MQ 0-35 | MQ2 | Multiplier-quotient register. Can be loaded from AD, and shifted left or right one place. |
| MQ 0 SHLT INP | ARMQ | Level. Provides input to MQ bit 0 for left shift operations shown on SCAF diagram. |
| MQ 0 SHRT INP | ARMQ | Level. Provides input to MQ bit 0 for right shift operations shown on SCAF diagram. |
| MQ 1 SHRT INP | ARMQ | Provides input to MQ bit 1 for right shift operations shown on SCAF diagram. |
| MQ 7 SHLT INP | ARMQ | Provides input to MQ bit 7 for left shift operations shown on SCAF diagram. |
| MQ 8 SHRT INP | ARMQ | Provides input to MQ bit 8 for right shift operations shown on SCAF diagram. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|----------------|----------------|--|
| MQ 9-35 = 0 | MQ1 | Level. True as stated. Used by normalize subroutine for making rounding and zero result decisions. |
| MQ 35 SHLT INP | ARMQ | Provides input to MQ bit 35 for left shift operations shown on SCAF diagram. |
| MR CLR, A, B | MR | "Master clear". (Mister Clear). Clears subroutine flops, SC, MQ, IR, sets adder enables for indexing, enables IR to memory bus, and generally prepares processor for fetching and executing the current instruction. |
| MR PWR CLR | MR | B-series clear pulses produced at a 500 kHz rate when powering up or down. |
| MR PWR CLR R | MR | R-series (400 ns) pulses at 500 kHz rate. |
| MR PWR CLR ENB | MR | A 5 second level occurring shortly after power turn-on and 100 ms after power turn-off. Enables 500 kHz pulse source for MR PWR CLR. |
| MR START, A, B | MR | A general system clear, more general than MR CLR. Resets peripheral devices as well as processor. Caused by PWR CLR, console RESET operation, and at start of readin operation. |
| MR START R | MR | R-series (400 ns) pulse produced by MR START. |
| MSFI | BTMP | Multiply subroutine-shift counter subroutine flop. Causes right shift of AR, MQ at SCT3 (ARC2, MQ1) and qualifies register connections (ARMQ). Also allows AD MD+ and AD MD- to be controlled by MQ 34 and 35. |
| MSTO-1 | BTMP | Multiply subroutine time pulses. |
| NLTO-4 | NRNL | Pulses. "Normalize long time". Part of normalize return subroutine that determines exponent for second word in floating point long mode instructions. |
| NR ALL ZERO | NRNL | Level. True when floating point result is zero in both AR and MQ. |
| NR NORMAL | NRNL | Level. True when a floating result is normalized or if UFA op code in IR. |
| NR ROUND | NRNL | Level. True when data condition and op code specify rounding to take place. Permits NRT3 delayed to pulse NRT6. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|----------------|----------------|---|
| NR SH RT COND | NRNL | Level. True when a significant bit of result mantissa is in AR bit 8. Causes NRT10 to make one right shift. |
| NRFI | NRNL | Normalize return rounding control flop. Prevents rounding the same result more than once. |
| NRT0-7, 10, 99 | NRNL | Normalize return subroutine pulses. |
| ODD 0-8 | PN | True when PB bits 0-8 contain odd parity. |
| ODD 0-26 | PN | True when PB bits 0-26 contain odd parity. |
| ODD 9-17 | PN | True when PB bits 9-17 contain odd parity. |
| ODD 18-26 | PN | True when PB bits 18-26 contain odd parity. |
| ODD 27-35 | PN | True when PB bits 27-35 contain odd parity. |
| PB 0-35 | PB | Parity buffer data bits. Loaded from memory bus. Drives parity computing network (PN). |
| PB PAR | PB | Parity buffer parity bit. May be set during a read. Is held clear during write to force PN to compute parity of ones in PB 0-35. |
| PC 18-35 | PC2 | Program counter register. Contents used to address memory to fetch instruction. |
| PC COND P | PC1 | Level used by arithmetic compare or test (op 300-377) instructions. True when Equal, Not equal, or Always conditions are satisfied. Allows PC to be changed at ET0. |
| PC COND Q | PC1 | Level used by arithmetic compare (op 300-317) instructions. True when Less than or Greater than conditions are met. Allows PC to increment at ET0. |
| PC COND R | PC1 | Level used by arithmetic test (op 320-377) instructions. True when less than or greater than conditions are met. Allows PC to be changed at ET0. |
| PC SET (ET0) | PC1 | Level. True to allow ET0 pulse to load PC from MA. |
| PC+1 (ET2) | PC1 | Level. True to allow ET2 pulse to increment the PC. |
| PC+1 INH | PC1 | Level. True to prevent FT9 pulse from incrementing PC. |
| PCLT+1 | PC1 | Pulse. Transfers increment network outputs to PC 18-26. |
| PCRT+1 | PC1 | Pulse. Transfers increment network outputs to PC 27-35. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|--------------|----------------|---|
| PI ACT | PI1 | Priority interrupt system active. When zero, no interrupt requests will be recognized. When true, enables priority network at PI REQ 1 and PI OK 2. |
| PI CYC | PI1 | Flop set during execution of PI location contents. Prevents interruption of instruction in that location, also inhibits PC incrementation. Sets EX PI SYNC to inhibit relocation. |
| PI DATA I/O | PI1 | Level. DATAI or DATAO op code in IR. (Intent is second half of BLKI or BLKO). |
| PI ENC 32-34 | PI1 | Level. Octal to binary encoding of channel number whose PI REQ n is currently true. Used in MA control to generate address $40+2N$ or $40+2N+1$. |
| PI HOLD | PI1 | Level. When true allows PIHn flop to set for channel now being serviced. Allows PI OV and PI CYC to be cleared. |
| PI OV | PI1 | Flop set during BLKI/BLKO instruction if left half of pointer overflows, but only during interrupt or key read in situations. Inhibits PI HOLD, PI RESTORE, causes ITO to generate $40+2N+1$ in MA. |
| PR REQ 1-7 | PI2 | Priority network "request granted" outputs. Only one can be true at a time (highest priority one, lowest number). |
| PI RESTORE | PI1 | Level. When true allows the highest priority (lowest numbered) PI in progress flop (PIH) to be cleared. |
| PI RQ | PI1 | Priority interrupt request. Alters instruction flow after ITO, BLTT3. Produced by any PI REQ n level but is inhibited by KEY PI INH (key execute) or PI CYC (1). |
| PIH 1-7 | PI2 | PI Hold register. (PI IN PROGRESS lights on console). PIHn (1) feeds back to priority network preventing PI REQ n through PI REQ 7 from being produced. Also clears PIRn. |
| PIO 1-7 | PI2 | PI On. Channel on/off switch or enable. PION must be a one to allow IOB PI RQn to be loaded into PIRn. |
| PIOK 2-7 | PI2 | Priority network functions. PIOKn must be true to allow PI REQ n to happen. PIOKn means there is nothing currently in progress or being requested for channels 1 through n-1. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|-------------|----------------|--|
| PIR 1-7 | PI2 | PI Request storage. Stores requests for enabled channels. PI bus strobed each core memory reference by MC RQ PULSE. Can also be set by CONO PI, to initiate interrupt from within program. Outputs go to priority network. |
| PN PAR EVEN | PN | Level. True for even parity in PB 0-35 and PB PAR. Used in MC subroutine (MC1). |
| PN PAR ODD | PN | Level. True for odd parity in PB 0-35 and PB PAR. |
| PR 18-25 | PR | First protection register. Holds protection constant. |
| PRB 18-25 | PR | Second protection register. |
| PRA ILL ADR | PR | Protection adder illegal address. True when MA 18-25 are greater than PR 18-25, or PRB 18-25 and memory protection is desired. Used in memory control (MC2). |
| RDI SEL 3-9 | IR | Read in device selection switches. Located on maintenance panel. |
| RL 18-25 | RL | First relocation register. Holds relocation constant. |
| RLA 18-25 | RL | First relocation adder. Forms sum of MA 18-25 and RLA 18-25. Outputs may be used by MAI logic. |
| RLB 18-25 | RL | Second relocation register. |
| RLC 18-25 | RL | Second relocation adder, sum of MA 18-25 and RLB 18-25. |
| RUN | KEY3 | Run flip-flop. When set, allows repetition of ITO-ST9 sequence. Clearing run causes a program to stop with ST9 of current instruction. |
| SAC = 0 | S2 | True when IR9-12 = 0000. Used by store cycle to inhibit storing result in AC zero for Self mode and skip instructions. |
| SAC INH | S2 | Store AC inhibit. Prevents storage of AR in location addressed by FMA. |
| SAC2 | S2 | Store AC2. Causes store cycle to write MQ into location AC+1. |
| SAR ≠ BR | S2 | Causes store cycle to write AR contents into (AC) and BR contents into (MA). |
| SC 0-8 | SC | Shift counter register. Used to control shift count subroutine and for floating exponent calculation. |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|-------------------|----------------|---|
| SC 0-8 CLR or SET | SC | Outputs of shift counter incrementation network. |
| SC0 = AR0 | SCC2 | True when SC sign equals AR sign. Used by floating add to make AR contain operand with smaller exponent. (FAT3A). |
| SC DATA 0-8 | SCAD | Outputs of a data multiplexer that supplies data to be arithmetically combined with SC by SCAD (shift count adder.) |
| SC FP SETUP | SCC2 | Shift count pre-load for floating multiply (745 _g) or divide (744 _g). |
| SC MD SETUP | SCC2 | Shift count pre-load for fixed point multiply or divide (735 _g). |
| SC NEGATE SETUP | SCC1 | Sets the SCAD controls to cause the negative of SC to appear at the SCAD outputs. |
| SC SBR (ET0) | SCSR | Level to allow ET0 to pulse SCT0 for certain instructions. |
| SC STOP | SCSR | When set, inhibits SCT1 pulse until continue key is set. Controlled by SC STOP. |
| SC STOP SW | SCSR | When maintenance panel switch is on, allows SCT0 to set SC STOP. |
| SC+1 | SC | Pulse that transfers SC incrementing network outputs to SC during shift count subroutine. |
| SC+ EN | SCC1 | Sets the SCAD controls to cause an addition of the SC and DATA. |
| SC- EN | SCC1 | Sets the SCAD controls to cause the data to be subtracted from the SC. Result at SCAD outputs. |
| SCAD 0-8 | SCAD | Shift counter adder. Performs arithmetic operations on SC contents and selected other data. |
| SCAD 200 EN | SCC1 | When set, makes SC DATA equal 200 _g . |
| SCAD 33 EN | SCC1 | When set, makes SC DATA equal 033. (May be 032 if FDF3(1) during floating divide). |
| SCAD ALL DIS | SCC1 | Sets the SCAD controls to cause SCAD outputs to be only a copy of SC. |
| SCAD AR 6-11 EN | SCC1 | When set, makes SC DATA a copy of AR 6-11 contents. (Byte pointer size field). |
| SCAD BR EN | SCC1 | When set, makes SC DATA a copy of BR0-8. (Floating point operand exponent). |

Table 1-3 (Cont)
KA10 Signal Glossary

| Signal Name | Source Drawing | Description |
|--------------------|----------------|--|
| SCAD DATA 0 | SCC1 | When set, gates SC DATA true to SCAD B138's. |
| SCAD DATA 1 | SCC1 | When set, gates SC DATA false (complement) to SCAD B138's. |
| SCAD SC COMP | SCC1 | When set, gates SCn(0) to SCADn. When cleared, gates SCn(1) to SCADn. |
| SCAD SC COMP SETUP | SCC1 | Sets SCAD controls to make SCAD outputs the complement of SC contents. |
| SCAD SC+1 SETUP | SCC1 | Sets SCAD controls to make SCAD output equal (SC) +1. |
| SCAD SC+BR SETUP | SCC1 | Sets SCAD controls to make SCAD take sum of SC and BR 0-8. |
| SCAD SC-BR SETUP | SCC1 | Sets SCAD controls to make SCAD take difference between SC and BR 0-8. |
| SCAD +1 EN | SCC1 | When set, causes carry into SCAD 8. |
| SCE | S2 | Store contents of E. Causes store cycle flow to write AR into (MA). |
| SCT0-4 | SCSR | Shift count subroutine time pulses. |
| SF1 | S1 | Store cycle memory subroutine flop. |
| SF6 | S1 | Store cycle memory subroutine flop. |
| SF8 | S1 | Store cycle memory subroutine flop. |
| SR GO LEFT | SCSR | Level. True for shift-rotate instructions with positive effective address. Enables SCT3 to produce AR and MQ shift left pulses. |
| SR GO RIGHT | SCSR | Level. True for shift-rotate instructions with negative effective address. Enables SCT3 to produce AR and MQ shift right pulses. |
| SR OP | SCSR | Level. True for shift or rotate instructions. |
| SRT1 | SCSR | Shift-rotate time pulse. Used to negate shift counter for left shifts and rotates. |
| ST INH | S2 | Store inhibit. When true prevents ET0 or ET2 from pulsing ST1. Used by instructions which have special execution pulse chains. |
| ST0-9 | S1 | Store cycle pulses. |

Pages 19 through 22 will accommodate supplemental data to be furnished at a later date.

MASTER DRAWING LIST

| DWG. NO. | REV. LET. | NO. OF SHEETS | TITLE |
|------------------|-----------|---------------|-----------------------------|
| D-UA-KA10-A-0 | | 3 | KA10 ASSEMBLY |
| A-PL-KA10-A-0 | | 8 | KA10 ASSEMBLY PARTS LIST |
| D-BS-KA10-0-AD1 | A | 1 | ADDER CONTROL FLIP-FLOPS |
| D-BS-KA10-0-AD2 | A | 1 | ADDER CONTROL |
| D-BS-KA10-0-AD3 | | 1 | ADDER LEFT HALF |
| D-BS-KA10-0-AD4 | | 1 | ADDER RIGHT HALF |
| D-BS-KA10-0-AR1 | | 1 | AR REGISTER |
| D-BS-KA10-0-AR2 | | 1 | AR REGISTER |
| D-BS-KA10-0-AR3 | | 1 | AR REGISTER |
| D-BS-KA10-0-AR4 | | 1 | AR REGISTER |
| D-BS-KA10-0-ARCL | B | 1 | AR CONTROL PULSE |
| D-BS-KA10-0-ARC2 | | 1 | AR CONTROL PULSE |
| D-BS-KA10-0-ARC3 | A | 1 | AR CONTROL PULSE |
| D-BS-KA10-0-ARF | | 1 | ARITHMETIC FLAGS |
| D-BS-KA10-0-ARI | | 1 | AR INPUTS |
| D-BS-KA10-0-ARMQ | | 1 | AR & MQ SHIFT CONNECTIONS |
| D-BS-KA10-0-AS | | 1 | ADDRESS SWITCH COMPARATORS |
| D-BS-KA10-0-BR1 | | 1 | BR CONTROL |
| D-BS-KA10-0-BR2 | | 1 | BR REGISTER |
| D-BS-KA10-0-BTMP | | 1 | BLOCK TRANSFER AND MULTIPLY |

A-ML-KA10-A-0 KA10 Processor 60 Hz 115V (Sheet 1)

MASTER DRAWING LIST

| DWG. NO. | REV. LET. | NO. OF SHEETS | TITLE |
|------------------|-----------|---------------|--------------------------------------|
| D-BS-KA10-0-BYTE | | 1 | BYTE INSTRUCTION FIRST PART |
| D-BS-KA10-0-CPA | | 1 | ARITHMETIC PROCESSOR STATUS REG |
| D-BS-KA10-0-DBLB | | 1 | BYTE DEPOSIT AND LOAD |
| D-BS-KA10-0-DSDV | A | 1 | DIVIDE SUBROUTINE & FIXED DIVIDE |
| D-BS-KA10-0-E | A | 1 | EXECUTION CYCLE |
| D-BS-KA10-0-EX | A | 1 | EXECUTIVE CONTROL |
| D-BS-KA10-0-F1 | | 1 | FETCH CYCLE TIME PULSE |
| D-BS-KA10-0-F2 | | 1 | FETCH CYCLE LEVELS |
| D-BS-KA10-0-FA | | 1 | FLOATING ADD INSTRUCTION |
| D-BS-KA10-0-FDV | | 1 | FLOATING DIVIDE |
| D-BS-KA10-0-FE | | 1 | FLOATING EXPONENT REGISTER & CONTROL |
| D-BS-KA10-0-FM | | 1 | FAST MEMORY |
| D-BS-KA10-0-FMA | A | 1 | FAST MEMORY ADDRESS |
| D-BS-KA10-0-FPFM | | 1 | FP EXP CALC FLOATING MULTIPLY |
| D-BS-KA10-0-HWT | | 1 | HALF WORD TRANSFER |
| D-BS-KA10-0-IA | | 1 | INSTRUCTION & ADDRESS CYCLES |
| D-BS-KA10-0-IOB1 | | 1 | I/O BUS (0-17) |
| D-BS-KA10-0-IOB2 | | 1 | I/O BUS (18-35) |

A-ML-KA10-A-0 KA10 Processor 60 Hz 115V (Sheet 2)

MASTER DRAWING LIST

| DWG. NO. | REV. LET. | NO. OF SHEETS | TITLE |
|------------------|-----------|---------------|---------------------------------|
| D-BS-KA10-0-IOBC | | 1 | I/O BUS CONTROL & I/O SELECTION |
| D-BS-KA10-0-IOBI | B | 1 | IOB INPUTS |
| D-BS-KA10-0-IOT | A | 1 | IN-OUT TRANSFER CONTROL |
| D-BS-KA10-0-IR | | 1 | INSTRUCTION REGISTER |
| D-BS-KA10-0-IR1 | A | 1 | IR DECODING |
| D-BS-KA10-0-IR2 | A | 1 | IR DECODING |
| D-BS-KA10-0-IR3 | | 1 | IR DECODING |
| D-BS-KA10-0-JFF0 | A | 1 | JFF0 INSTRUCTION CONTROL |
| D-BS-KA10-0-KEY1 | | 1 | KEY & SWITCHES CONTROLS |
| D-BS-KA10-0-KEY2 | | 1 | KEY & SWITCHES CONTROLS |
| D-BS-KA10-0-KEY3 | | 1 | KEY & SWITCHES CONTROLS |
| D-BS-KA10-0-MA1 | A | 1 | MA CONTROL |
| D-BS-KA10-0-MA2 | | 1 | MA REGISTER |
| D-BS-KA10-0-MAI | A | 1 | MEMORY ADDRESS INTERFACE |
| D-BS-KA10-0-MBDI | | 1 | MEMORY BUS DATA INTERFACE |
| D-BS-KA10-0-MC1 | | 1 | MEMORY CONTROL |
| D-BS-KA10-0-MC2 | | 1 | MEMORY CONTROL |
| D-BS-KA10-0-MI | | 1 | MEMORY INDICATOR |
| D-BS-KA10-0-MQ1 | A | 1 | MQ CONTROL |
| D-BS-KA10-0-MQ2 | A | 1 | MULTIPLIER QUOTIENT (MQ 0-17) |

A-ML-KA10-A-0 KA10 Processor 60 Hz 115V (Sheet 3)

MASTER DRAWING LIST

| DWG. NO. | REV. LET. | NO. OF SHEETS | TITLE |
|------------------|-----------|---------------|--------------------------------|
| D-BS-KA10-0-MQ3 | A | 1 | MULTIPLIER QUOTIENT (MQ18-35) |
| D-BS-KA10-0-MR | | 1 | MASTER CLEAR & POWER CLEAR |
| D-BS-KA10-0-NRNL | | 1 | NORMALIZE RETURN & NR LONG |
| D-BS-KA10-0-PB | | 1 | PARITY BUFFER REGISTER |
| D-BS-KA10-0-PC1 | A | 1 | PROGRAM COUNTER CONTROL |
| D-BS-KA10-0-PC2 | | 1 | PROGRAM COUNTER REGISTER |
| D-BS-KA10-0-PI1 | | 1 | PI CONTROL |
| D-BS-KA10-0-PI2 | | 1 | PRIORITY INTERRUPT PIH,PIR,PIO |
| D-BS-KA10-0-PN | | 1 | PARITY NETWORK |
| D-BS-KA10-0-PR | A | 1 | PROTECT REGISTER |
| D-BS-KA10-0-PTP1 | | 1 | PAPER TAPE PUNCH CONTROL 1 |
| D-BS-KA10-0-PTP2 | A | 1 | PAPER TAPE PUNCH CONTROL 2 |
| D-BS-KA10-0-PTR1 | B | 1 | PAPER TAPE READER CONTROL |
| D-BS-KA10-0-PTR2 | | 1 | PAPER TAPE READER CONTROL |
| D-BS-KA10-0-PTR3 | | 1 | PAPER TAPE READER CONTROL |
| D-BS-KA10-0-RL | A | 1 | RELOCATE REGISTER |
| D-BS-KA10-0-S1 | A | 1 | STORE CYCLE TIME PULSES |
| D-BS-KA10-0-S2 | A | 1 | STORE CYCLE LEVELS |

A-ML-KA10-A-0 KA10 Processor 60 Hz 115V (Sheet 4)

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MASTER DRAWING LIST

| DWG. NO. | REV. LET. | NO. OF SHEETS | TITLE |
|------------------|-----------|---------------|-------------------------------------|
| D-BS-KA10-0-SC | | 1 | SHIFT COUNT REGISTER |
| D-BS-KA10-0-SCAD | | 1 | SHIFT COUNT ADDER |
| D-BS-KA10-0-SCC1 | | 1 | SHIFT COUNTER CONTROL |
| D-BS-KA10-0-SCC2 | | 1 | SHIFT COUNTER CONTROL |
| D-BS-KA10-0-SCSR | A | 1 | SHIFT & COUNT SUBROUTINE SHIFT INST |
| D-BS-KA10-0-TTY1 | | 1 | TELETYPE CONTROL |
| D-BS-KA10-0-TTY2 | C | 1 | TELETYPE CONTROL |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| D-FD-KA10-0-BIF1 | | 1 | BASIC INSTRUCTION FLOW |
| D-FD-KA10-0-BIF2 | | 1 | BASIC INSTRUCTION FLOW |
| D-FD-KA10-0-BIF3 | | 1 | BASIC INSTRUCTION FLOW |
| D-FD-KA10-0-BIOR | | 1 | BASIC I-O REGISTERS |
| D-FD-KA10-0-BYTF | | 1 | BYTE INSTRUCTION FLOW |
| D-FD-KA10-0-DIVF | | 1 | FIXED POINT DIVIDE & SUBROUTINE |
| D-FD-KA10-0-ESC | A | 1 | EXECUTE AND STORE CYCLE |
| D-FD-KA10-0-FAF | | 1 | FLOATING ADD, SUB, UFA FLOW |
| D-FD-KA10-0-FC | | 1 | FETCH CYCLE FLOW |

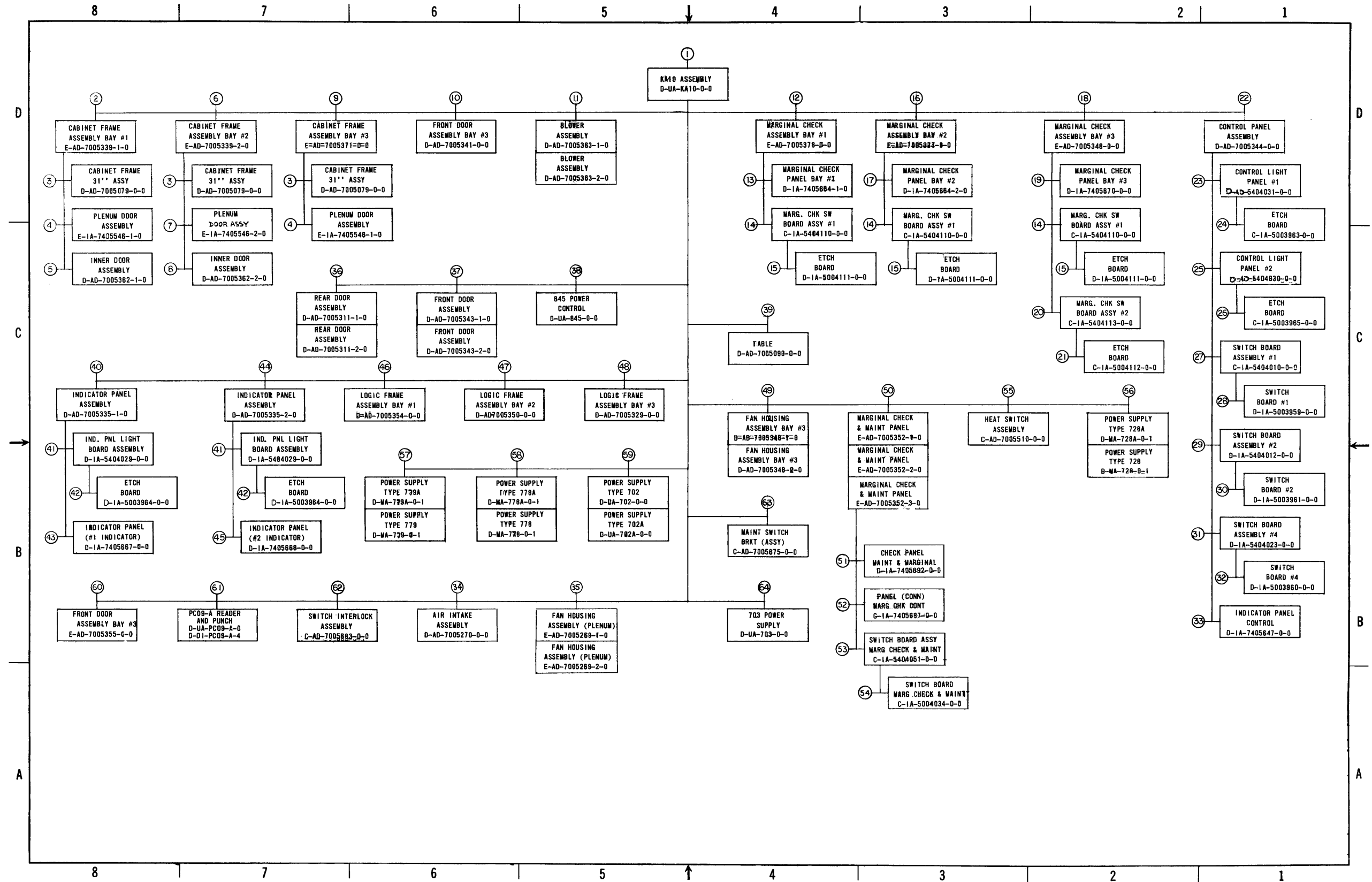
A-ML-KA10-A-0 KA10 Processor 60 Hz 115V (Sheet 5)

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MASTER DRAWING LIST

| DWG. NO. | REV. LET. | NO. OF SHEETS | TITLE |
|-------------------|-----------|---------------|--------------------------------------|
| D-FD-KA10-0-FDVF | | 1 | FLOATING DIVIDE |
| D-FD-KA10-0-FPMC | | 1 | FP EXP CALCULATE SUBR FM & MPY SUBR |
| D-FD-KA10-0-FSDN | | 1 | FLOATING SCALE & DBL FLOATING NEGATE |
| D-FD-KA10-0-IAC | | 1 | INSTRUCTION & ADDRESS CYCLES |
| D-FD-KA10-0-KO | A | 1 | KEY OPERATIONS FLOW DIAGRAM |
| D-FD-KA10-0-MCFM | A | 1 | MEMORY CONTROL & FAST MEMORY FLOW |
| D-FD-KA10-0-NRF | | 1 | NORMALIZE RETURN SUBROUTINE |
| D-FD-KA10-0-SCAF | | 1 | SHIFT COUNT ACTION FLOW |
| D-FD-KA10-0-SMF | A | 1 | SHIFT & MUL & JFFO FLOW |
| D-FD-KA10-0-IOTF | | 1 | IN-OUT TRANSFER CONTROL FLOW |
| D-FD-KA10-0-REG | | 1 | KA10 REGISTER INTER-CONNECTIONS |
| D-FD-KA10-0-RIMF | | 1 | READ-IN FUNCTION ISOLATED FLOW |
| D-FD-KA10-0-SCBT | | 1 | SHIFT COUNT SUBROUTINE & BLT FLOW |
| | | | |
| D-IC-KA10-0-ICSC1 | A | 1 | INDICATOR & CONSOLE SW CONNECTIONS |
| D-IC-KA10-0-ICSC2 | A | 1 | INDICATOR & CONSOLE SW CONNECTIONS |
| D-CL-KA10-0-IBC1 | A | 1 | INTER-BAY CABLES |
| D-CL-KA10-0-IBC2 | A | 1 | INTER - BAY CABLES |
| | | | |
| | | | |

A-ML-KA10-A-0 KA10 Processor 60 Hz 115V (Sheet 6)



D-DI-KA10-0-3 Drawing Index List KA10 (Sheet 1)

| 8 | | | | | 7 | | | | | 6 | | | | | 5 | | | | | 4 | | | | | 3 | | | | | 2 | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------|--|--|------|------|------------|----------|---|--|------|------------|-----|----------|--|---|------------|------|-----|----------|---|--|------|------|-----|----------|---|--|------|------|-----|------------|---|--|--|--|------------|----|-------------------------------|------------------|--|--|--|----|---|--------------------------------------|--|--|--|----|--|--|--|--|--|----|---|--|--|--|--|----|-------------------------------|------------------|--|--|--|----|---|--|--|--|--|----|--|--------------------------------------|--|--|--|----|-----------------------------|------------------|--|--|--|----|--|--|--|--|--|----|--|--|--|--|--|----|--|--------------------------------------|--|--|--|----|--|--|--|--|--|----|--|--------------------------------------|--|--|--|----|--|--|--|--|--|----|--|--|--|--|--|----|--|--|--|--|--|----|---|--|--|--|--|----|---|--|--|--|--|----|---|--|--|--|--|----|---|--|--|--|--|----|---|--|--|--|--|----|--|--|--|--|--|----|--|--|--|--|--|----|--|--|--|--|--|----|--|--|--|--|--|----|---|------------------------------|--|--|--|----|---|--|--|--|--|----|---|--|--|--|--|----|---|--------------------------------------|--|--|--|----|--|---|--|--|--|----|--|--|--|--|--|----|---|--|--|--|--|----|--|--|--|--|--|
| MECHANICAL | | | | | DEPT USAGE | | | | | MECHANICAL | | | | | DEPT USAGE | | | | | MECHANICAL | | | | | DEPT USAGE | | | | | MECHANICAL | | | | | DEPT USAGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FIND NO. | DESCRIPTION | PART NO. | PROD | CUST | F/C | FIND NO. | DESCRIPTION | PART NO. | PROD | CUST | F/C | FIND NO. | DESCRIPTION | PART NO. | PROD | CUST | F/C | FIND NO. | DESCRIPTION | PART NO. | PROD | CUST | F/C | FIND NO. | DESCRIPTION | PART NO. | PROD | CUST | F/C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | KA10 ASSEMBLY KA10 ASSEMBLY (P.L.) END PANEL ASSEMBLY PANEL, BLANK FILLER BRACKET, SUPPORT CABLE MARG CHK RWTE CONTROL CABLE MARG CHK RWTE CONTROL SHORTING PLUG CABLE MARG CHK RWTE CONTROL CABLE MARG CHK RWTE CONTROL SLIDE BRACE CHASSIS TRACK (LEFT) CHASSIS TRACK (RIGHT) STANDARD CHASSIS 7402037 STANDARD CHASSIS 7402036 STANDARD CHASSIS 7402039 PROTECTION STRIP CABLE SET CTR CLIP 7403106 CABLE ASSEMBLY POWER CLOCK BRACKET, SHIPPING SUPPORT, CABLE DUCT CABLE DUCT | D-UA-KA10-0-0 A-PL-KA10-0-0 E-IA-7405092-0-0 C-IA-7406093-0-0 C-MD-7406336-0-0 C-UA-BC10B-1S-C C-UA-BC10B-3-0 B-IA-7005496-0-0 C-UA-BC10B-5-0 C-UA-BC10B-7-0 C-IA-7005914-0-0 C-MD-7405636-7-C D-SC-3404701-1-0 D-SC-3404701-2-0 B-5111 B-5111 B-5111 D-01454 D-AD-7005607-0-0 B-MD-01486 C-AD-7005604-0-0 B-IA-7406001-0-0 C-IA-7406406-0-0 C-MD-7406408-0-0 E-AD-7005339-1-0 A-PL-7005339-0-0 C-IA-7405701-1-0 C-MD-7405641-1-0 D-IA-7405723-0-0 D-IA-7405689-0-0 B-MD-7405686-0-0 D-MD-7405724-0-0 D-IA-7405591-1-0 D-IA-7405699-0-0 B-IA-7405611-2-0 B-MD-7405643-0-0 D-IA-7405703-0-0 C-MD-7405618-0-0 C-MD-7405594-0-0 D-MD-20406-1 | | | | 8 | INNER DOOR ASSEMBLY INNER DOOR ASSEMBLY (P.L.) DOOR, INNER HINGE PIN, TOP DOOR SPACER, BOTTOM HINGE PIN, BOTTOM LATCH PIN, LOGIC DOOR DOOR COVER, FOAM | D-AD-7005362-2-0 A-PL-7005362-0-0 D-IA-7405678-0-0 B-MD-20400-7 A-MD-7405312-0-0 B-MD-20400-8 B-MD-7405598-0-0 B-MD-7405771-0-0 | | | | 9 | CABINET FRAME ASSEMBLY BAY #3 CAB FRAME ASSY BAY #3 (P.L.) TRIM STRIP, SHORT TRIM STRIP, LONG STRIKER PLATE SPACER PIVOT POST LOWER DOOR SUPPORT HORIZONTAL SUPPORT VERTICAL PANEL BRACKET STOP DOOR VERTICAL SUPPORT SPACER CABINET FILLER CENTER CLIP PANEL BLANK, PLENUM DOOR TABLE SUPPORT BAR TABLE SUPPORT LATCH PLATE PLATE, STRIKER | E-AD-7005371-0-0 A-PL-7005371-0-0 A-MD-7405675-0-0 B-MD-7405674-0-0 B-MD-7405643-0-0 B-MD-7405545-0-0 C-IA-7405544-0-0 C-MD-7405440-0-0 B-MD-5-0-1-17 C-MD-7405160-0-0 C-MD-7405702-0-0 A-MD-7405700-0-0 D-IA-7405721-0-0 C-MD-7405349-0-0 D-IA-7405347-0-0 D-IA-7405344-0-0 D-MD-7405689-0-0 C-IA-7405672-0-0 B-MD-7405163-0-0 A-MD-7405619-0-0 C-MD-7405619-0-0 | | | | 10 | FRONT DOOR ASSEMBLY BAY #3 FRONT DOOR ASSY BAY #3 (P.L.) FRONT DOOR HINGE PIN, TOP DOOR SPACER, BOTTOM HINGE PIN, BOTTOM KICK PLATE | D-AD-7005347-0-0 A-PL-7005347-0-0 C-MD-7405706-1-0 B-MD-20400-7 A-MD-7405312-0-0 B-MD-20400-8 C-MD-7405677-0-0 | | | | 11 | BLOWER ASSY BLOWER ASSY BLOWER ASSY (P.L.) BLOWER HOUSING COVER TOP, BLOWER FILTER, BLOWER COVER BOTTOM, BLOWER BAFFLE, BLOWER EXTENTION CORD, REWORK BLOWER EASTERN | D-AD-7005363-1-0 D-AD-7005363-2-0 A-PL-7005363-0-0 D-IA-7405729-0-0 D-IA-7405774-0-0 C-SC-3405433-0-0 D-IA-7405732-0-0 D-IA-7405778-0-0 B-IA-7405470-0-0 D-SC-3405463-0-0 | | | | 12 | MARGINAL CHECK ASSEMBLY BAY #1 MARG CHK ASSY BAY #1 (P.L.) PLATE CONN | E-AD-7005378-0-0 A-PL-7005378-0-0 C-MD-7405662-0-0 | | | | 13 | PANEL, MARGINAL CHECK, BAY #1 | D-IA-7405664-1-0 | | | | 14 | MARG CHECK SW BOARD ASSY #1 ETCH BOARD | C-IA-5404110-0-0 D-IA-5004111-0-0 | | | | 15 | ETCH BOARD ETCH PATTERN FIRST PUNCH FLIP CHIP MODULE (BLANK) | D-IA-5004111-0-0 PC-5404110-0-1 D-MD-1402230-0-0 | | | | 16 | MARGINAL CHECK ASSEMBLY BAY #2 MARG CHK ASSY BAY #2 (P.L.) PLATE CONN | E-AD-7005377-0-0 A-PL-7005377-0-0 C-MD-7405662-0-0 | | | | 17 | PANEL, MARGINAL CHECK, BAY #2 | D-IA-7405664-2-0 | | | | 18 | MARGINAL CHECK ASSEMBLY BAY #3 MARG CHK ASSY BAY #3 (P.L.) PLATE LATCH LIMIT PANEL OUTLET CONN PLATE COVER, PROTECTION | E-AD-7005349-0-0 A-PL-7005349-0-0 A-MD-7405773-0-0 B-MD-7405671-0-0 C-MD-7405662-0-0 B-MD-7405987-0-0 | | | | 19 | PANEL, MARGINAL CHECK, BAY #3 SILK SCREEN | D-IA-7405670-0-0 C-SS-7405775-0-0 | | | | 20 | MARG CHECK SW BOARD ASSY #2 | B-IA-5404113-0-0 | | | | 21 | ETCH BOARD ETCH PATTERN FIRST PUNCH FLIP CHIP MOD, PLAIN | D-IA-5004112-0-0 PC-5404113-0-1 D-MD-1402230-0-0 | | | | 22 | CONTROL PANEL ASSEMBLY CONTROL PANEL ASSY (P.L.) CASTING, REWORK GLASS SUPPORT RETAINER, GLASS SUPPORT BRACKET, MTG CONSOLE BRACKET, MTG CONSOLE | D-AD-7005344-0-0 A-PL-7005344-0-0 E-MD-7405676-0-0 E-IA-7405639-0-0 B-MD-7405684-0-0 C-MD-7405673-1-0 C-MD-7405673-2-0 | | | | 23 | CONTROL PANEL LIGHT BOARD ASSY #1 18 PIN RECEPTACLE, REWORK | D-AD-5404031-0-0 C-IA-5503954-0-0 | | | | 24 | ETCH BOARD PRINTED CIRCUIT LAYOUT FIRST PUNCH FLIP CHIP MOD, BLANK | C-IA-5003963-0-0 PC-5404031 D-MD-1402230-0-0 | | | | 25 | CONTROL PANEL LIGHT BOARD ASSY #2 18 PIN RECEPTACLE, REWORK | D-AD-5404030-0-0 C-IA-5503954-0-0 | | | | 26 | ETCH BOARD PRINTED CIRCUIT LAYOUT FIRST PUNCH FLIP CHIP MOD, BLANK | C-IA-5003965-0-0 PC-5404030 D-MD-1402230-0-0 | | | | 27 | SWITCH BOARD ASSEMBLY #1 SPACER BAR 18 PIN CONN, REWORK ROCKER SWITCH RS-50-FB-PC(CHALK BLU) ROCKER SWITCH RS-50-FB-PC(NEG WD GRN) SWITCH BOARD #1 ETCH PATTERN BOARD, GLASS EPOXY, BLANK | C-IA-5404010-0-0 B-MD-7405656-1-0 B-MD-5503630-0-0 C-AD-5404331-1-0 C-AD-5404331-3-0 D-IA-5003959-0-0 D-MD-1402671-0-0 | | | | 28 | SWITCH BOARD #2 ASSEMBLY SPACER BAR SPACER BAR #2 SWITCH ROCKER SWITCH ROCKER 18 PIN CONN, REWORK SWITCH ROCKER SWITCH ROCKER | D-IA-5404012-0-0 B-MD-7405656-2-0 B-MD-7405655-0-0 C-AD-5404331-2-0 C-AD-5404331-1-0 B-MD-5503630-0-0 C-AD-5404413-1-0 C-AD-5404413-3-0 | | | | 29 | SWITCH BOARD #2 ETCH PATTERN FIRST PUNCH FLIP CHIP, BLANK SWITCH BOARD ASSEMBLY #4 SWITCH ROCKER SWITCH ROCKER SPACER BAR 18 PIN CONN, REWORK SWITCH ROCKER | D-IA-5003961-0-0 PC-5003961 D-MD-1402671-0-0 D-IA-5404023-0-0 C-AD-5404331-3-0 C-AD-5404331-1-0 B-MD-7405633-0-0 B-MD-5503630-0-0 C-AD-5404331-2-0 | | | | 30 | SWITCH BOARD #4 ETCH PATTERN BOARD, GLASS EPOXY (BLANK) | D-IA-5003960-0-0 PC-5003960-0-1 D-MD-1402671-0-0 | | | | 31 | INDICATOR PANEL CONTROL SILK SCREEN (CHR BLU) STEP #4 (FS) SILK SCREEN (GRN) STEP #3 (FS) SILK SCREEN (BLU) STEP #2 (FS) SILK SCREEN (GRY) STEP #1 (FS) SILK SCREEN (BLK) (RS) | D-IA-7405647-0-0 D-SS-7405467-0-0 D-SS-7405466-0-0 D-SS-7405465-0-0 D-SS-7405464-0-0 D-SS-7405645-0-0 | | | | 32 | INDICATOR PANEL ASSEMBLY INDICATOR PANEL ASSY (P.L.) BEZEL, INDICATOR-REWORK SUPPORT GLASS MOUNT, INDICATOR PANEL | D-AD-7005335-1-0 A-PL-7005335-0-0 D-MD-7405533-0-0 D-IA-7405771-0-0 B-MD-7405690-0-0 | | | | 33 | INDICATOR PANEL ASSEMBLY INDICATOR PANEL ASSY (P.L.) BEZEL, INDICATOR-REWORK SUPPORT GLASS MOUNT, INDICATOR PANEL | D-AD-7005335-2-0 A-PL-7005335-0-0 D-MD-7405533-0-0 D-IA-7405771-0-0 B-MD-7405690-0-0 | | | | 34 | AIR INTAKE ASSEMBLY AIR INTAKE ASSY (P.L.) BEZEL REWORK, BOTTOM GRILL, BEZEL BEZEL REWORK, TOP HINGE, REWORK STRIKER PLATE GRILL RETAINER #1 GRILL RETAINER #2 | D-AD-7005270-0-0 A-PL-7005270-0-0 D-MD-7405635-0-0 B-MD-7405646-0-0 D-MD-7405636-0-0 C-MD-7405620-0-0 A-MD-7405640-0-0 C-MD-7406163-0-0 C-MD-7406164-0-0 | | | | 35 | FAN HOUSING ASSEMBLY, PLENUM FAN HOUSING ASSEMBLY, PLENUM FAN HOUSING ASSY, PLENUM (P.L.) FAN HOUSING, PLENUM EXTENTION CORD, REWORK FAN SCREEN PROTECTION COVER, 4 TERM | E-AD-7005169-1-0 E-AD-7005269-2-0 A-PL-7005269-0-0 D-MD-7405637-0-0 B-IA-7405474-0-0 C-MD-7404981-0-0 B-MD-7404721-0-0 | | | | 36 | REAR DOOR ASSEMBLY REAR DOOR ASSEMBLY (P.L.) REAR DOOR HINGE PIN, TOP DOOR SPACER, BOTTOM HINGE PIN, BOTTOM | D-AD-7005311-1-0 D-AD-7005311-2-0 A-PL-7005311-0-0 D-IA-7405624-0-0 B-MD-20400-7 A-MD-7405312-0-0 B-MD-20400-8 | | | | 37 | FRONT DOOR ASSEMBLY FRONT DOOR ASSEMBLY (P.L.) FRONT DOOR HINGE PIN, TOP HINGE SLIDE REWORK DOOR SPACER, BOTTOM HINGE PIN, BOTTOM BRACKET, MAGNET MTG | D-AD-7005343-1-0 D-AD-7005343-2-0 A-PL-7005343-0-0 D-IA-7405705-0-0 B-MD-20400-7 B-MD-7405955-0-0 A-MD-7405312-0-0 B-MD-20400-8 B-MD-7405710-0-0 | | | | 38 | 845 POWER CONTROL 845 POWER CONTROL (P.L.) | D-UA-845-0-0 A-PL-845-0-0 | | | | 39 | TABLE TABLE (P.L.) TABLE TOP TABLE FRAME | D-DA-7005090-0-0 A-PL-7005090-0-0 D-IA-7405353-0-0 D-IA-7405189-0-0 | | | | 40 | INDICATOR PANEL ASSEMBLY INDICATOR PANEL ASSY (P.L.) BEZEL, INDICATOR-REWORK SUPPORT GLASS MOUNT, INDICATOR PANEL | D-AD-7005335-1-0 A-PL-7005335-0-0 D-MD-7405533-0-0 D-IA-7405771-0-0 B-MD-7405690-0-0 | | | | 41 | INDICATOR PANEL LIGHT BOARD ASSY 18 PIN RECEPTACLE | D-AD-5404029-0-0 B-MD-5503954-0-0 | | | | 42 | ETCH BOARD PRINTED CIRCUIT LAYOUT FIRST PUNCH FLIP CHIP MOD, BLANK | D-IA-5003964-0-0 PC-5404029 1402230-0-0 | | | | 43 | INDICATOR PANEL (INDICATOR #1) SILK SCREEN (GRY) (FS) SILK SCREEN (BLK) (RS) | D-IA-7405667-0-0 D-SS-7405587-0-0 D-SS-7405598-0-0 | | | | 44 | INDICATOR PANEL ASSEMBLY INDICATOR PANEL ASSY (P.L.) BEZEL, INDICATOR-REWORK SUPPORT GLASS MOUNT, INDICATOR PANEL | D-AD-7005335-2-0 A-PL-7005335-0-0 D-MD-7405533-0-0 D-IA-7405771-0-0 B-MD-7405690-0-0 | | | | 45 | INDICATOR PANEL (INDICATOR #2) SILK SCREEN (BLK) (RS) SILK SCREEN (GRY) (FS) | D-IA-7405668-0-0 D-SS-7405588-0-0 D-SS-7405599-0-0 | | | |

D-DI-KA10-0-3 Drawing Index List KA10 (Sheet 2)

| MECHANICAL | | | | DEPT USAGE | | | MECHANICAL | | | | DEPT USAGE | | | |
|------------|---|------------------|-----|------------|-----|----------|---|------------------|-----|------|------------|---|--|--|
| FIND NO. | DESCRIPTION | PART NO. | PRD | CUST | F/C | FIND NO. | DESCRIPTION | PART NO. | PRD | CUST | F/C | | | |
| D | 46 LOGIC FRAME ASSEMBLY BAY #1 LOGIC FRAME ASSY BAY #1 (P.L.) LOGIC FRAME 144 PIN CONNECTOR BLK MTG BAR MTG BAR SCOTCHCAL (CLR BACKGND, WHT LTR) | D-AD-7005354-0-0 | | | | 59 | 702A MARGINAL CHK POWER SUPPLY 702A MARG CHK POWER SUPPLY (P.L.) 702 MARGINAL CHK POWER SUPPLY 702 MARG CHK POWER SUPPLY (P.L.) | D-UA-702A-0-0 | | | | D | | |
| | | A-PL-7005354-0-0 | | | | | | A-PL-702A-0-0 | | | | | | |
| | | D-IA-7405584-0-0 | | | | | | D-UA-702-D-0 | | | | | | |
| 47 | LOGIC FRAME ASSEMBLY BAY #2 LOGIC FRAME ASSY BAY #2 (P.L.) LOGIC FRAME 144 PIN CONNECTOR BLK MTG BAR MTG BAR SCOTCHCAL (CLR BACKGND, WHT LTR) | D-AD-7005350-0-0 | | | | 60 | FRONT DOOR ASSEMBLY BAY #3 FRONT DOOR ASSY BAY #3 (P.L.) DOOR FRAME HINGE PIN, TOP HINGE PIN, BOTTOM SPACER, DOOR | E-AD-7005355-0-0 | | | | C | | |
| | | A-PL-7005350-0-0 | | | | | | A-PL-7005355-0-0 | | | | | | |
| | | D-IA-7405584-0-0 | | | | | | E-IA-7405725-0-0 | | | | | | |
| 48 | LOGIC FRAME ASSEMBLY BAY #3 LOGIC FRAME ASSY BAY #3 (P.L.) LOGIC FRAME 144 PIN CONNECTOR BLOCK MTG BAR MTG BAR SCOTCHCAL (CLR BACKGND, WHT LTR) | D-AD-7005329-0-0 | | | | 61 | PC09-A READER & PUNCH DNG INDEX | D-UA-PC09-A-0 | | | | C | | |
| | | A-PL-7005329-0-0 | | | | | | D-DI-PC09-A-4 | | | | | | |
| | | D-IA-7405317-0-0 | | | | | | | | | | | | |
| C | FAN HOUSING ASSEMBLY BAY #3 FAN HOUSING ASSEMBLY BAY #3 FAN HOUSING ASSY BAY #3 (P.L.) FAN HOUSING, LOGIC DOOR MTG PLATE, FAN HOUSING SCREEN, FAN PROTECTION COVER BOTTOM PLATE, FAN HOUSING | D-AD-7005346-1-0 | | | | 62 | SWITCH INTERLOCK ASSEMBLY SWITCH INTERLOCK ASSY (PL) PLATE CONNECTOR PLATE CONNECTOR COVER | C-MD-7005683-0-0 | | | | C | | |
| | | A-PL-7005346-0-0 | | | | | | A-PL-7005683-0-0 | | | | | | |
| | | D-IA-7405681-0-0 | | | | | | B-IA-7406415-0-0 | | | | | | |
| 50 | MARG CHK & MAINT PANEL ASSEMBLY MARG CHK & MAINT PANEL ASSEMBLY MARG CHK & MAINT PANEL ASSEMBLY MARG CHK & MAINT PNL ASSY (PL) | E-AD-7005352-1-0 | | | | 63 | MAINT SWITCH BRKT (ASSY) MAINT SWITCH BRKT (ASSY) (PL) BRKT, MAINT SWITCH DECAL | C-MD-7005675-0-0 | | | | C | | |
| | | E-AD-7005352-2-0 | | | | | | A-PL-7005675-0-0 | | | | | | |
| | | E-AD-7005352-3-0 | | | | | | C-MD-7406397-0-0 | | | | | | |
| 51 | CHECK PANEL MAINT & MARGINAL SILK SCREEN (SEE NOTE #2) | D-IA-7405692-0-0 | | | | 64 | 703 POWER SUPPLY 703 POWER SUPPLY (PL) | D-UA-703-0-0 | | | | C | | |
| | | C-SS-7405428-0-0 | | | | | | A-PL-703-0-0 | | | | | | |
| | | | | | | | | | | | | | | |
| 52 | PANEL (CONN) MARG CHECK CONT PANEL (CONN) MARG CHK CONT | C-IA-7405687-0-0 | | | | CONT | DECALS KA10 | A-DC-7406473-0-0 | | | | C | | |
| | | B-SS-7405776-0-0 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| 53 | SWITCH BOARD ASSY (MARG CHK & MAINT) 18 PIN RECEPTACLE REWORK SPACER BAR ROCKER TO SW (PEACOCK BLU) ROCKER TO SW (CHK BLU) | C-IA-5404051-0-0 | | | | 50 | SWITCH REWORK PHENOLIC BOARD METER REWORK (HOBBS)(240V 50 HZ) METER REWORK (HOBBS)(115V 60 HZ) METER REWORK (HOBBS)(115V 50 HZ) | B-MD-7405975-0-0 | | | | C | | |
| | | B-MD-5503954-0-0 | | | | | | C-MD-7406490-0-0 | | | | | | |
| | | B-MD-7405508-0-0 | | | | | | B-MD-7406249-1-0 | | | | | | |
| 54 | SWITCH BOARD, MARG CHK & MAINT BOARD GLASS EPOXY, BLANK | C-IA-5004034-0-0 | | | | 50 | SWITCH REWORK PHENOLIC BOARD METER REWORK (HOBBS)(240V 50 HZ) METER REWORK (HOBBS)(115V 60 HZ) METER REWORK (HOBBS)(115V 50 HZ) | B-MD-7406249-2-0 | | | | C | | |
| | | D-MD-1402290-0-0 | | | | | | B-MD-7406249-3-0 | | | | | | |
| | | | | | | | | | | | | | | |
| B | HEAT SWITCH ASSEMBLY HEAT SWITCH ASSY (P.L.) RETAINER BRACKET, SIDE COVER | C-AD-7005510-0-0 | | | | 56 | 728 POWER SUPPLY 728 POWER SUPPLY (P.L.) 729A POWER SUPPLY 729A POWER SUPPLY (P.L.) | D-MA-728-0-1 | | | | B | | |
| | | A-PL-7005510-0-0 | | | | | | A-PL-728-0-1 | | | | | | |
| | | C-MD-7406108-0-0 | | | | | | D-MA-728A-0-1 | | | | | | |
| 57 | 779 POWER SUPPLY 779 POWER SUPPLY (P.L.) 779A POWER SUPPLY 779A POWER SUPPLY (P.L.) | D-MA-779-0-1 | | | | 57 | 779 POWER SUPPLY 779 POWER SUPPLY (P.L.) 779A POWER SUPPLY 779A POWER SUPPLY (P.L.) | D-MA-779-0-1 | | | | B | | |
| | | A-PL-779-0-1 | | | | | | A-PL-779A-0-1 | | | | | | |
| | | B-IA-7406108-0-0 | | | | | | A-PL-779A-0-1 | | | | | | |
| 58 | 778 POWER SUPPLY 778 POWER SUPPLY (P.L.) 778A POWER SUPPLY 778A POWER SUPPLY (P.L.) | D-MA-778-0-1 | | | | 58 | 778 POWER SUPPLY 778 POWER SUPPLY (P.L.) 778A POWER SUPPLY 778A POWER SUPPLY (P.L.) | D-MA-778-0-1 | | | | B | | |
| | | A-PL-778-0-1 | | | | | | A-PL-778A-0-1 | | | | | | |
| | | D-MA-778A-0-1 | | | | | | A-PL-778A-0-1 | | | | | | |

D-DI-KA10-0-3 Drawing Index List KA10 (Sheet 3)

| DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS | | | | | | |
|--|-------------|--------|------|---------------|---------|------|
| ENGINEERING SPECIFICATION | | | | DATE 10/16/67 | | |
| TITLE Removing and Reinstalling the KE10 Option: Byte and Floating Point | | | | | | |
| REVISIONS | | | | | | |
| REV | DESCRIPTION | CHG NO | ORIG | DATE | APPD BY | DATE |
| | | | | | | |

| ENGINEERING SPECIFICATION | | CONTINUATION SHEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--------------------|-------|------------------|----|--|----|--|----|---|----|---|----|---|----|----------------------------|----|----|----|---------------|----|----|----|------------|----|--|----|--------|----|----|----|--|----|----|
| TITLE Removing and Reinstalling the KE10 Option: Byte and Floating Point | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>I. Removing the Option</p> <p>A. Before removing the KE10 Option, the computer should be thoroughly checked out, including the instructions in this option.</p> <p>B.</p> <ol style="list-style-type: none"> 1. Procure 38 W990 Blank modules. 2. Install a continuous jumper through lugs C-D-E-P-N on each of 32 W990's. (Unlabeled) 3. Install a jumper through lugs C-F-N-S-V on one of the W990's and label it 1N23. 4. Install a jumper through lugs C-F-L-R-V on one of the W990's and label it 1N14. 5. Install a jumper through lugs C-D-E-K-N-P-U on three W990's and label them 1B03 and 1A07 and 1B09. 6. Install a jumper through lugs C-U on one W990 and label it 1L21. <p>C. Remove the following modules:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Panel</th> <th style="text-align: left; border-bottom: 1px solid black;">Module Positions</th> </tr> </thead> <tbody> <tr> <td>1A</td> <td>1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 22, 24</td> </tr> <tr> <td>1B</td> <td>2, 3, 4, 5, 6, 9, 10, 11, 12, 14, 15, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 33, 36, 39, 40</td> </tr> <tr> <td>1C</td> <td>1, 2, 3, 5, 6, 7, 8, 10, 11, 12, 23, 24, 30, 34, 38</td> </tr> <tr> <td>1D</td> <td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 31, 32, 33, 35, 37, 38, 39</td> </tr> <tr> <td>1E</td> <td>1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17, 18, 19, 20, 24, 25, 36</td> </tr> <tr> <td>1F</td> <td>18, 22, 23, 24, 29, 31, 35</td> </tr> <tr> <td>1H</td> <td>21</td> </tr> <tr> <td>1J</td> <td>4, 29, 38, 39</td> </tr> <tr> <td>1K</td> <td>30</td> </tr> <tr> <td>1L</td> <td>21, 33, 39</td> </tr> <tr> <td>1M</td> <td></td> </tr> <tr> <td>1N</td> <td>14, 23</td> </tr> <tr> <td>1P</td> <td>38</td> </tr> <tr> <td>1R</td> <td></td> </tr> <tr> <td>1S</td> <td>25</td> </tr> </tbody> </table> | | | Panel | Module Positions | 1A | 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 22, 24 | 1B | 2, 3, 4, 5, 6, 9, 10, 11, 12, 14, 15, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 33, 36, 39, 40 | 1C | 1, 2, 3, 5, 6, 7, 8, 10, 11, 12, 23, 24, 30, 34, 38 | 1D | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 31, 32, 33, 35, 37, 38, 39 | 1E | 1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17, 18, 19, 20, 24, 25, 36 | 1F | 18, 22, 23, 24, 29, 31, 35 | 1H | 21 | 1J | 4, 29, 38, 39 | 1K | 30 | 1L | 21, 33, 39 | 1M | | 1N | 14, 23 | 1P | 38 | 1R | | 1S | 25 |
| Panel | Module Positions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1A | 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 22, 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1B | 2, 3, 4, 5, 6, 9, 10, 11, 12, 14, 15, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 33, 36, 39, 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1C | 1, 2, 3, 5, 6, 7, 8, 10, 11, 12, 23, 24, 30, 34, 38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1D | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 31, 32, 33, 35, 37, 38, 39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1E | 1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17, 18, 19, 20, 24, 25, 36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1F | 18, 22, 23, 24, 29, 31, 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1H | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1J | 4, 29, 38, 39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1K | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1L | 21, 33, 39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1N | 14, 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1P | 38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1S | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TITLE Removing and Reinstalling the KE10 Option: Byte and Floating Point

I. Removing the Option (continued)

C. Remove the following modules: (continued)

| Panel | Module Positions |
|-------|--------------------------------------|
| IT | |
| 2E | 6, 8, 10, 11, 12, 14, 16, 32, 37, 40 |

You should have removed 138 modules.

D. I. Install the 32 unlabeled W990's in the following slots:

| Panel | Module Positions |
|-------|---------------------------------|
| IA | 2, 5, 10, 12, 14, 16 |
| IB | 5, 14, 21, 24 |
| IC | 1, 5, 8 |
| ID | 2, 5, 8, 12, 16, 19, 22, 24, 25 |
| IE | 2, 4, 7, 11, 14, 18 |
| IF | |
| IH | 21 |
| IJ | 4 |
| IK | 30 |
| IL | |
| IM | |
| IN | |
| IP | |
| IR | |
| IS | 25 |
| IT | |

2. Install the 6 labeled W990's in the appropriate slots.

E. Turn the machine on and run all diagnostics, remembering to disable the Byte and Floating Point tests.

TITLE Removing and Reinstalling the KE10 Option: Byte and Floating Point

2. Reinstalling the KE10 Option

A. Procure the following modules

| | | |
|-------|-----------|----------------------------|
| BT30 | 2 | |
| BT33 | 4 | |
| BT34 | 16 | |
| BT35 | 6 | |
| BT37 | 4 | |
| BT41 | 1 | |
| BT56 | 1 | |
| BT63 | 3 | |
| BT65 | 10 | |
| BT68 | 9 | |
| B212 | 9 | |
| B311 | 39 | |
| B312 | 1 | (Set to 280 ns Pin L to N) |
| B611 | <u>33</u> | |
| Total | 138 | |


B. Remove the 41 W990's specified in parts IB3 through IB6 and ID above.

C. Referring to the appropriate UML's, install all modules listed in Part IC above.

D. Make sure the F-P trap switch to the right of panel IJ is off (down).

E. Run all diagnostics, making sure to thoroughly test the byte and floating point instructions.

| DIGITAL EQUIPMENT CORPORATION | | | | | | |
|---|-------------|--------|------|---------------|---------|------|
| MAYNARD, MASSACHUSETTS | | | | | | |
| ENGINEERING SPECIFICATION | | | | DATE 10-18-67 | | |
| TITLE Removal and Re-Installation of KM-10 "Fast Registers" | | | | | | |
| REVISIONS | | | | | | |
| REV | DESCRIPTION | CHG NO | ORIG | DATE | APPD BY | DATE |
| | | | | | | |

| ENGINEERING SPECIFICATION |  | CONTINUATION SHEET | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--------------------|-----|-------------|----------|-----|--------------|---|-----|--------------|---|------|--------|---|------|---|---|------|---|----|------|---|---|------|---|---|
| TITLE Removal and Re-Installation of KM-10 "Fast Registers" | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>1. Removing KM-1Ø Option</p> <p>A. Before removing the KM-1Ø option, the computer should be thoroughly checked out, including using the fast ac's.</p> <p>B. Procure a W990 blank module and install a continuous jumper thru pins C-D-E-P-N.</p> <p>C. Remove the following modules:</p> <p style="margin-left: 40px;">1J 26</p> <p style="margin-left: 40px;">1T 31, 33</p> <p style="margin-left: 40px;">2E 15, 19, 23</p> <p style="margin-left: 40px;">2K-L 9, 10, 11, 12, 13, 15, 16, 17, 18, 20, 21, 22, 23</p> <p style="margin-left: 40px;">2L 8</p> <p>D. Install the W990 in 1J26.</p> <p>E. Remove the 703 power supply on the door of BAY 2; also remove the 728 supply at the top of the BAY 2. Be sure to thoroughly tape all exposed wire ends. Do not remove the wires themselves.</p> <p>F. Procure and install a 31 1/2" x 11 1/4" blank panel (#7405689) in place of the 7Ø3, and an 8" plenum door blank (7402036) <u>place of the 728.</u></p> <p>G. Turn off FM Enable switch on the maintenance panel.</p> <p>H. Run all diagnostic programs briefly to insure correct operation of the machine.</p> <p>2. Re-Installing KM-1Ø Option</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">No.</th> <th style="text-align: left;">Description</th> <th style="text-align: left;">Quantity</th> </tr> </thead> <tbody> <tr> <td>728</td> <td>Power Supply</td> <td>1</td> </tr> <tr> <td>703</td> <td>Power Supply</td> <td>1</td> </tr> <tr> <td>B163</td> <td>Module</td> <td>3</td> </tr> <tr> <td>B199</td> <td>"</td> <td>1</td> </tr> <tr> <td>B250</td> <td>"</td> <td>12</td> </tr> <tr> <td>B311</td> <td>"</td> <td>2</td> </tr> <tr> <td>B611</td> <td>"</td> <td>2</td> </tr> </tbody> </table> | | | No. | Description | Quantity | 728 | Power Supply | 1 | 703 | Power Supply | 1 | B163 | Module | 3 | B199 | " | 1 | B250 | " | 12 | B311 | " | 2 | B611 | " | 2 |
| No. | Description | Quantity | | | | | | | | | | | | | | | | | | | | | | | | |
| 728 | Power Supply | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 703 | Power Supply | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| B163 | Module | 3 | | | | | | | | | | | | | | | | | | | | | | | | |
| B199 | " | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| B250 | " | 12 | | | | | | | | | | | | | | | | | | | | | | | | |
| B311 | " | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| B611 | " | 2 | | | | | | | | | | | | | | | | | | | | | | | | |

| ENGINEERING SPECIFICATION | CONTINUATION SHEET |
|--|--------------------|
| TITLE Removal and Re-Installation of KM-10 "Fast Registers" | |
| <p>B. Remove the blank panels from the bay 2 plenum door (described in 1F). Remove the W990 in 1J26.</p> <p>C. Install the 2 power supplies in the bay 2 plenum door, and wire them using the existing taped-up wires, according to fig. 1, (attached).</p> <p>D. On Line Checkout Procedure for the KM-10.</p> <p>NOTE: Do not install modules</p> <p>1.0 Visually check the wiring run from the 703 Power Supply to the logic on Bay 2.</p> <p>1.1 Check for correct size of wire.</p> <p style="margin-left: 20px;">A. 14 gauge for the +1.8 volt line and the -3 volt line. B. 18 gauge for the sense line for both the +1.8 volt line and the -3 volt line.</p> <p>1.2 Check for correct color of wire</p> <p style="margin-left: 20px;">A. Brown -3 volt line B. Yellow +1.8 volt line</p> <p>1.3 Check for correct location of wire on logic.</p> <p style="margin-left: 20px;">A. -3 volt line on pin U of 2L16 B. +1.8 volt line on pin V of 2L16</p> <p>2.0 Visually inspect the 703 Power Supply for</p> <p style="margin-left: 20px;">A. 1-G811 (+1.8 volt regulator) B. 1-G812 (-3.0 volt regulator) C. 2-G805C (series regulator)</p> <p>2.1 Visually inspect the 728 or 728A power supplies for</p> <p style="margin-left: 20px;">A. H series or latter on the 728 60 Hz P.S. B. E series on the 728 A 50 Hz P.S.</p> <p>Note the models 728 (H) or 728A (E) provide a 160,000 MFD capacitor on the +10 volt side.</p> | |

| ENGINEERING SPECIFICATION | CONTINUATION SHEET | | | | | | | | | | | | |
|---|--------------------|------|------|----------|------|---------------|------|--------|------|---|------|------|------|
| TITLE Removal and Re-Installation of KM-10 "Fast Registers" | | | | | | | | | | | | | |
| <p>3.0 Power Check. Turn on power.</p> <p>3.1 Using a Triplett meter. place one probe on pin U of 1L16 and the other probe to ground. Observe a -3 volt reading.</p> <p>3.2 Place one probe on pin V of 1L16 and the other probe to ground. Observe a +1.8 volt reading.</p> <p>3.3 Adjustments for the voltages are made on the 703 Power Supply while observing voltage reading on the logic.</p> <p>NOTE: Turn power down.</p> <p>4.0 Insert the modules specified in 2A as follows:</p> <table style="margin-left: 40px; border: none;"> <tr> <td style="padding-right: 20px;">1J26</td> <td>B611</td> </tr> <tr> <td>1T31, 33</td> <td>B311</td> </tr> <tr> <td>2E 15, 19, 23</td> <td>B163</td> </tr> <tr> <td>2K-L 9</td> <td>B199</td> </tr> <tr> <td>2K-L 10, 11, 12, 13, 15, 16, 17, 18, 20, 21, 22, 23</td> <td>B250</td> </tr> <tr> <td>2L 8</td> <td>B611</td> </tr> </table> <p>4.1 Turn power on and again measure the voltages.</p> <p style="margin-left: 40px;">Pin U -3.0 volts 1L16 Pin V +1.8 volts 1L16</p> <p>5.0 Dynamic Test</p> <p>5.1 Deposit and examine all ones through fast memory.</p> <p>5.2 Deposit and examine all zeroes through fast memory.</p> <p>NOTE: The following programs shall be used while taking margins both at room temperature and elevated temperature.</p> <p style="margin-left: 20px;">A. Blt. B. Program M C. Address test high and low D. Fast memory test = Maindec 10-D1FM-D</p> | | 1J26 | B611 | 1T31, 33 | B311 | 2E 15, 19, 23 | B163 | 2K-L 9 | B199 | 2K-L 10, 11, 12, 13, 15, 16, 17, 18, 20, 21, 22, 23 | B250 | 2L 8 | B611 |
| 1J26 | B611 | | | | | | | | | | | | |
| 1T31, 33 | B311 | | | | | | | | | | | | |
| 2E 15, 19, 23 | B163 | | | | | | | | | | | | |
| 2K-L 9 | B199 | | | | | | | | | | | | |
| 2K-L 10, 11, 12, 13, 15, 16, 17, 18, 20, 21, 22, 23 | B250 | | | | | | | | | | | | |
| 2L 8 | B611 | | | | | | | | | | | | |

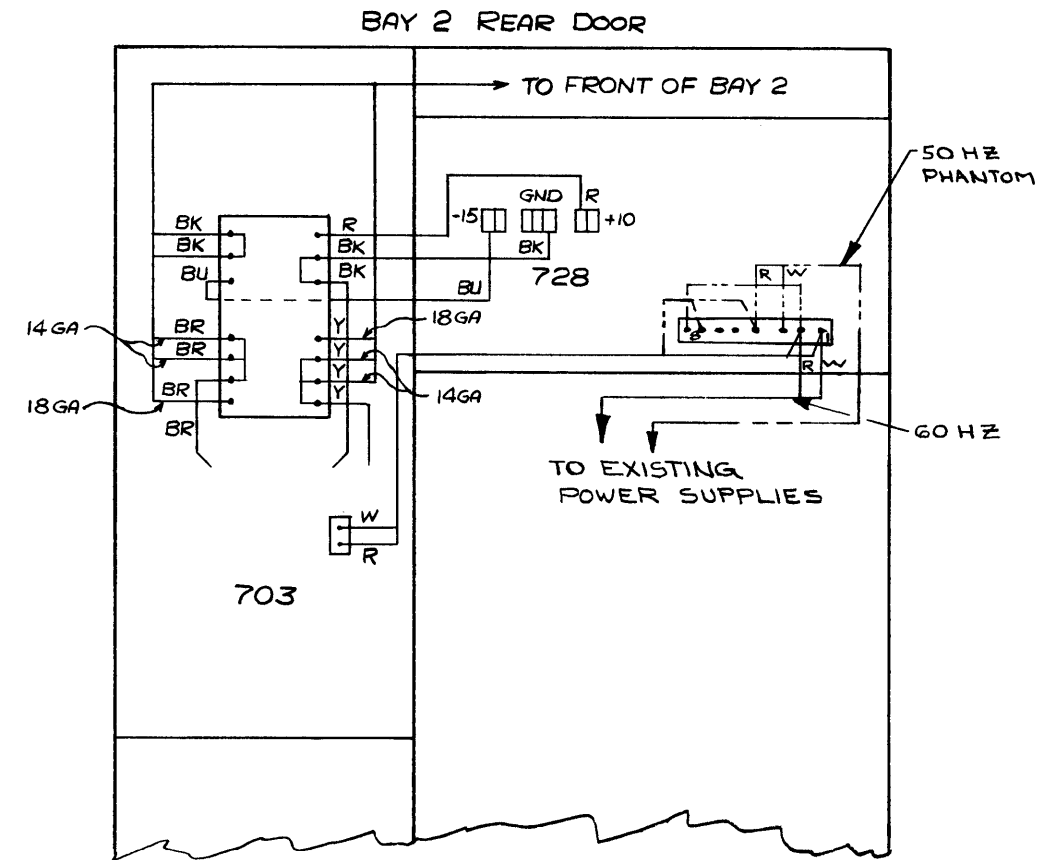
TITLE Removal and Re-Installation of KM-10 "Fast Registers"

5.3 Margins

- A. The +10 volt lines shall be margined at + - 7.5 volt.
- B. The -15 volt lines shall be margined at + - 3.0 volts.
- C. All margins shall be kept at the high end for five (5) minutes and at the low end for five (5) minutes.

TITLE

FIG.1: AC & DC POWER WIRING FOR KM-10 POWER SUPPLIES



REFER TO DWG'S D-IC-KA10-0-2 SHT #3 & D-IC-KA10-0-1 SHT #3 FOR MASTER OF POWER WIRING.

| DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS | | | | | | |
|---|-------------|--------|------|------|---------|----------------------|
| ENGINEERING SPECIFICATION | | | | | | DATE <i>12/21/67</i> |
| TITLE Removing and Re-Installing the KT10 Option: "Time Sharing Option" | | | | | | |
| REVISIONS | | | | | | |
| REV | DESCRIPTION | CHG NO | ORIG | DATE | APPD BY | DATE |
| | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|----------------------------|--------------------|----|--------|----|--------|----|----|----|----------------------------|----|--------------------|-------|---|-------|---|-------|---|-------|----|-------|---|-------|----------|-------|----|
| ENGINEERING SPECIFICATION | DIGITAL | CONTINUATION SHEET | | | | | | | | | | | | | | | | | | | | | | | | |
| TITLE Removing and Re-Installing the KT10 Option: "Time Sharing Option" | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>I. Removing the KT10 Option.</p> <p>A. Before removing the KT10 option the computer shall have been thoroughly tested, including the KT10 option</p> <p>B. 1. Obtain two W990 Blank Modules.</p> <p>2. Label one W990: "1S20". Connect a jumper from pin C to pin N of this module.</p> <p>3. Label the other W990: "1S33". Connect a jumper from pin C, to pin F, and to pin R of this module.</p> <p>C. Remove the following modules:</p> <table style="margin-left: 40px; border: none;"> <tr><td>1P</td><td>21, 23</td></tr> <tr><td>1S</td><td>20, 33</td></tr> <tr><td>1T</td><td>14</td></tr> <tr><td>2M</td><td>27 through 43 (17 modules)</td></tr> <tr><td>2N</td><td>28, 30, 38, 40, 42</td></tr> </table> <p>D. Install the two W990 modules in the appropriate slots.</p> <p>E. Turn on the computer and run all diagnostic programs briefly. Remember to set console switches appropriately, to disable the user mode tests.</p> <p>II. Re-Installing the KT10 Option.</p> <p>A. Obtain the following modules:</p> <table style="margin-left: 40px; border: none;"> <tr><td>B133:</td><td>1</td></tr> <tr><td>B134:</td><td>1</td></tr> <tr><td>B135:</td><td>1</td></tr> <tr><td>B138:</td><td>17</td></tr> <tr><td>B311:</td><td>2</td></tr> <tr><td>S203:</td><td><u>5</u></td></tr> <tr><td>Total</td><td>27</td></tr> </table> | | | 1P | 21, 23 | 1S | 20, 33 | 1T | 14 | 2M | 27 through 43 (17 modules) | 2N | 28, 30, 38, 40, 42 | B133: | 1 | B134: | 1 | B135: | 1 | B138: | 17 | B311: | 2 | S203: | <u>5</u> | Total | 27 |
| 1P | 21, 23 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1S | 20, 33 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1T | 14 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2M | 27 through 43 (17 modules) | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2N | 28, 30, 38, 40, 42 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B133: | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B134: | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B135: | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B138: | 17 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B311: | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| S203: | <u>5</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 27 | | | | | | | | | | | | | | | | | | | | | | | | | |

TITLE Removing and Re-Installing the KT10
Option: "Time Sharing Option"

B: Remove the W990 modules in slots 1S20 and 1S33.

C: Insert the 27 modules specified above as follows:

B133 1P21

B134 1S33

B135 1P23

B138's 2M27-43 (17 modules)

B311's 1S20, 1T14

S203's 2N 28, 30, 38, 40, 42

D: Run Diagnostic Test "D" and block transfer test. Record margins of the B138's in panel 2M while running block transfer test.

| | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|-------------------|--|---|--|--|---|---|--|
| D | INSTRUCTION | BOOLE | ADD SUBTRACT | FWT | HWT -H ^L R ⁽⁻⁾ RL ^(I) | HWT H ^L R ⁽⁻⁾ RL ^(I) | EXCH | UJO |
| | INITIAL SWITCHES | BOOLE 2,10,13,16: E LONG BOOLE 0,3,19,17: FAC INH BOOLE A-(0,5,12,17) AXXX ^M : FCE BOOLE A-(0,5,12,17) AXXX ^B : FCE PSE | EF 0 LONG XXX ⁻ : FCE XXX ^M : FCE PSE XXX ^B : FCE PSE | MOV ^M X: EF 0 LONG MOV ^N X: FAC INH MOV ^I X: FCE MOV ^S X: FCE PSE | | | 0 - HXXXS V HXXZ I: FAC INH ES HXXX ⁻ : FCE HXXXS V HXX ^M : FCE PSE | FCE PSE |
| C | INITIAL REGISTERS | AR: C(AC) or X BR: (0, E) or C(E) MA: E | AR: C(AC) BR: (0, E) or C(E) MA: E | AR: C(AC) or (0, E) or C(E) BR: (0, E) or C(E) MA: E | AR: C(AC) or (0, E) or C(E) BR: (0, E) or C(E) NOTE: IF HWT IS F(1) OPERAND, OPERAND IS IN AR. IF TWO OPERANDS, MEM IS IN BR, AC IS IN AR | AR: C(AC) BR: C(E) or (0, E) | AR: C(AC) BR: C(E) | MA: 0 AR: 0, E IR: INST |
| | FT9 | BOOLE 6,11,12,17: AD AR-EN SET BOOLE 1,6,7,10,16: AD BR+EN SET BOOLE 2,4,11,13,14,15: AD BR-EN SET BOOLE 6,11: AD CRY INS SET | AD AR+EN SET AD BX: AD BR+EN SET SUBX: AD BR-EN SET AD CRY 36 SET | MOV ^M X: AD AR NEGATE | | AD BR+EN SET HXXOX V HXXEX: AD BR±EN | | AD BR+EN SET |
| B | ET0 | BOOLE 0,6,11,12,14: AR FM AD(J) BOOLE 1,4,13,16: AR FM AD(0) BOOLE 2,7,10,15,17: AR FM AD(I) | AR FM AD(J) ARF CRY STB | MOV ^S X: AR SWAP MOV ^N X V (MOV ^M X A R 0(1)): AR FM AD(J) ARF CRY STB | HLXX: ARRT FM ARLT(J) HRLXX: ARLT FM ARRT(J) HXLOX V (HXLEX A HWT E TEST) VHXL-MVHXR ⁻ : ARRT FM AD(J) HXROX V (HXREX A HWT E TEST) VHXR-MVHXL ⁻ : ARLT FM AD(J) HXLZX V (HXLEX A -HWT E TEST): ARRT CLR HXRX V (HXREX A -HWT E TEST): ARLT CLR | AR FM AD(J) BR FM AR(J) AD BR+ ONLY EN | AR FM AD(J) BR FM AR(J) | ARLT FM IR 0-12(I) MA 30 SET IR 2(I) VIR 3(I): EX ILL OP SET EXCTF SET EUUOF SET IR 1XX: MA 31 SET |
| | ET1 | AD CRY INS CLR AD AR-EN SET AD BR+EN CLR AD BR-EN CLR | | | | | | HLXX: ARRT FM ARLT(J) HRLXX: ARLT FM ARRT(J) HXEX: ARLT FM AD(J) HXLXX: ARRT FM AD(J) |
| A | ET2 | AR FM AD(J) | | | | | | |
| | FINAL SWITCHES | XXXM: SAC INH | XXXM: SAC INH | MOV ^M X: SCE MOV ^S A AC(0) V MOV ^M X: SAC INH | | (HXXXS A AC=0) V HXXXM: SAC INH 0 HXXZ M: SCE E | SAR+BE | SCE SAC INH |

| BOOLE # | MNEMONIC |
|---------|----------|
| 0 | SET Z |
| 1 | AND |
| 2 | ANDCA |
| 3 | SET M |
| 4 | ANDCM |
| 5 | SET A |
| 6 | XOR |
| 7 | IOR |
| 10 | ANDCB |
| 11 | EQV |
| 12 | SETCA |
| 13 | ORCA |
| 14 | SET CM |
| 15 | ORCM |
| 16 | ORCB |
| 17 | SETO |

NOTES:

- UJO = (IR JST A A - EX ALLOW IOTS A IR 9(1)) V (IR JST A A - EX ALLOW IOTS A IR 10(1)) * OPEN IR 2(0) FROM TERM TO DISABLE FLOATING POINT HARDWARE
V (IR IOT A A - EX ALLOW IOTS A EX PI SYNC(0)) V (IR 0(0) A IR 1(0) A IR 2(0)) V IR 100-127
- FLAGS: 0) AR OV FLAG 6) EX IOT USER (CANNOT BE TURNED ON IN USER MODE)
1) AR CRY 0 FLAG 7)
2) AR CRY 1 FLAG 8)
3) AR FOV 9)
4) BYFG 10)
5) EX USER (SAVED) 11) AR FLU
EX MODE SYNC (RESTORE) 12) AR DCK
- AR OV COND = (AD CRY 0(0) A AD CRY 1(1)) V (AD CRY 0(2) A AD CRY 1(0))
- HWT E TEST = (IR 3(0) A IR 6(0) A AR 0(1)) V (IR 3(1) A IR 6(1) A AR 0(1)) V (IR 3(0) A IR 6(1) A AR 1(0)) V (IR 3(1) A IR 6(0) A AR 1(1))
- ARF CRY STB A AR OV COND : AR OV FLAG SET
A AD CRY 0(1) : AR CRY 0 FLAG SET
A AD CRY 1(1) : AR CRY 1 FLAG SET

| | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|--------------------------|--|--|---|---|--|---|---|---|
| INSTRUCTION | JSR | JSP | JSA AC FM (E PC+1) E FM C(AC) PC FM E+1 | JEA AC FM C(C(ACLT)) PC FM E | JFCL | JRST | TEST | AOBJX |
| INITIAL SWITCHES | FAC INH E LONG | FAC INH | E LONG | FC C ACLT E LONG | FAC INH | FAC INH IR 10(1): E LONG | TDXX: FCE TSXX: FCE E LONG | EF 0 LONG |
| INITIAL REGISTERS | AR: 0, E BR: 0, E MA: E | MA: E | AR: C(AC) BR: (0, E) MA: E | AR: AC SWAPPED BR: (0, E) MQ: C(C(ACLT)) MA: C(ACLT) | MA: E | MA: E BR: LAST MEM REF (FLAGS LT HALF) | AR: C(AC) BR: (0, E) C(E); MASK | AR: C(AC) MA: E |
| FT9 | | | AD BR+EN | AD BR+EN | | | TXOX: AD BR+EN SET TXCX: AD BR+EN SET TX ² X: AD BR-EN SET TX ^C X: AD CRY INS SET | AD AR+EN SET AD+1 BOTH |
| ET0 | PC FM MA(J) ARBT FM PC(J) ARLT FM FLAGS(J) BYF6 CLR | PC FM MA(J) ARBT FM PC(J) ARLT FM FLAGS(J) BYF6 CLR | ARBT FM PC(J); PC+1 BR FM AR(J); C(AC) PC FM MA(J); E | AR FM AD(J); (0, E) | CONDITION 2: PC FM MA(J) IR 9(1): AR OV CLR IR 10(1): AR CRY 0 CLR IR 11(1): AR CRY 1 CLR IR 12(1): AR FOV CLR | AR FM PC(J) PC FM MA(J) IR 12(1): EX MODE SYNC SET IR 11(1): ARF FLAGS FM BR(J) IR 9(1): PIOK CLEARS PIH IR 10(1): RUN CLR | T ^S XX: AR SWAP | AR FM AD(J) (AOBJN AND 0(1)): PC FM MA(J) (AOBJP AND 0(0)): PC FM MA(J) |
| ET1 | | | ARLT FM ARBT(J); PC+1 ARBT FM PC(J); E | MA FM AR(J); E AR FM MQ(J); C(C(ACLT)) | | MA FM AR (J) | AD CRY INS CLR BR FM AR(0) TX ⁰ X: AR FM AD(1) TX ^C X: AR FM AD(0) TX ² X: AR FM AD(0) AD BR-EN CLR AD BR+EN SET AD AR+EN CLR | |
| ET2 | PC+1; E+1 | | PC+1; E+1 AR SWAP | PC FM MA(J); E | | | T ^S XX: AR SWAP TXXA V(TX XE AND 0)V (TX XN AND 0): PC+1 | |
| FINAL SWITCHES | SCE SAC INH | | SAR+BR | | SAC INH | SAC INH | TXNX: SAC INH | |

NOTES:

- CONDITION 2 = (IR 9(1) AND AR OV(1)) V (IR 10(1) AND AR CRY 0 FLAG(1)) V (IR 11(1) AND AR CRY 1 FLAG(1)) V (IR 12(1) AND AR FOV(1))
- FLAGS: 0) AR OV FLAG 6) EX TOT USER (CANNOT BE TURNED ON IN USER MODE)
1) AR CRY 0 FLAG 7)
2) AR CRY 1 FLAG 8)
3) AR FOV 9)
4) BYF6 10)
5) EX USER (SAVED) 11) AR FXU
EX MODE SYNC (RESTORE) 12) AR DCK

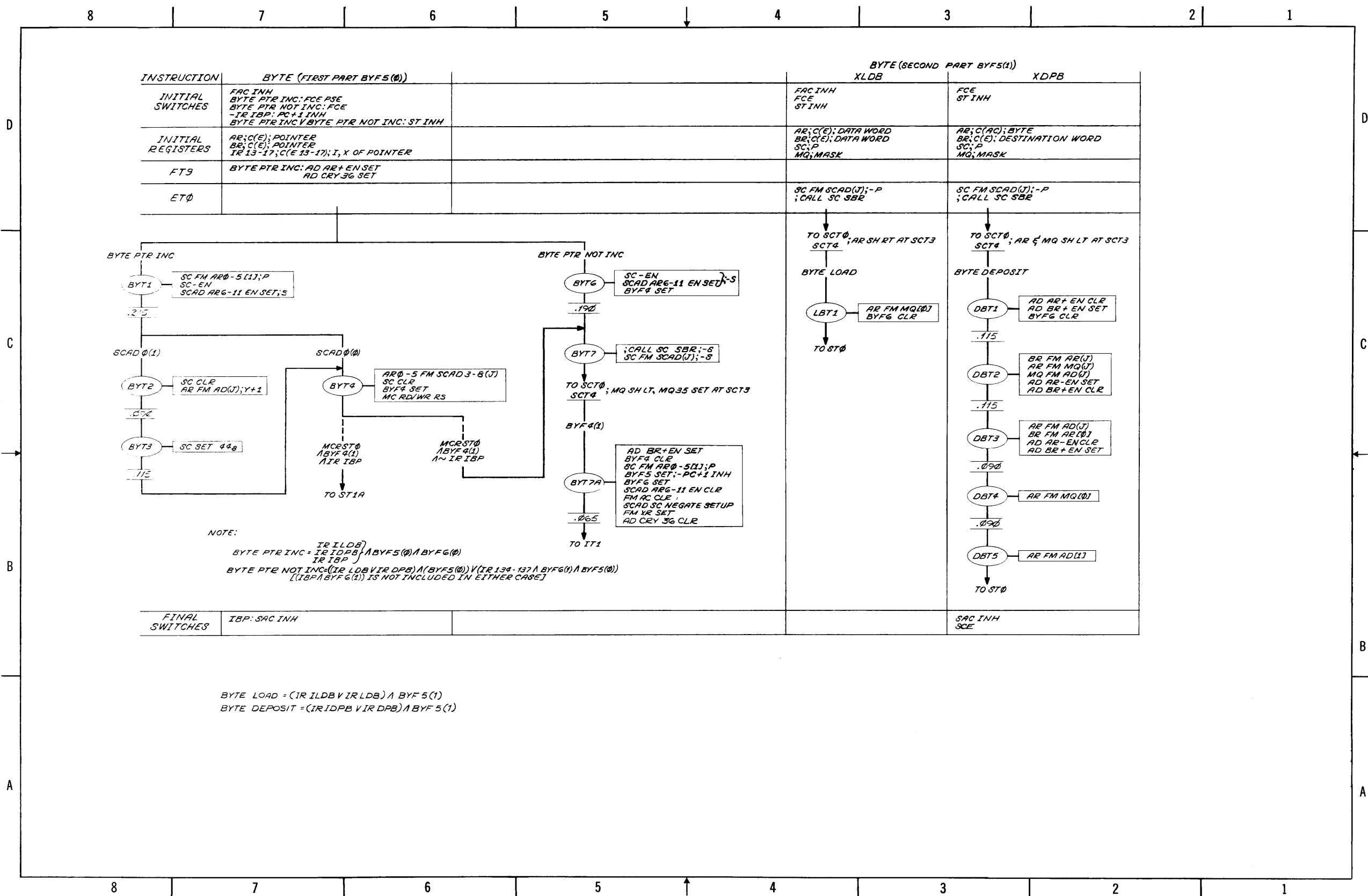
8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

D
C
B
A

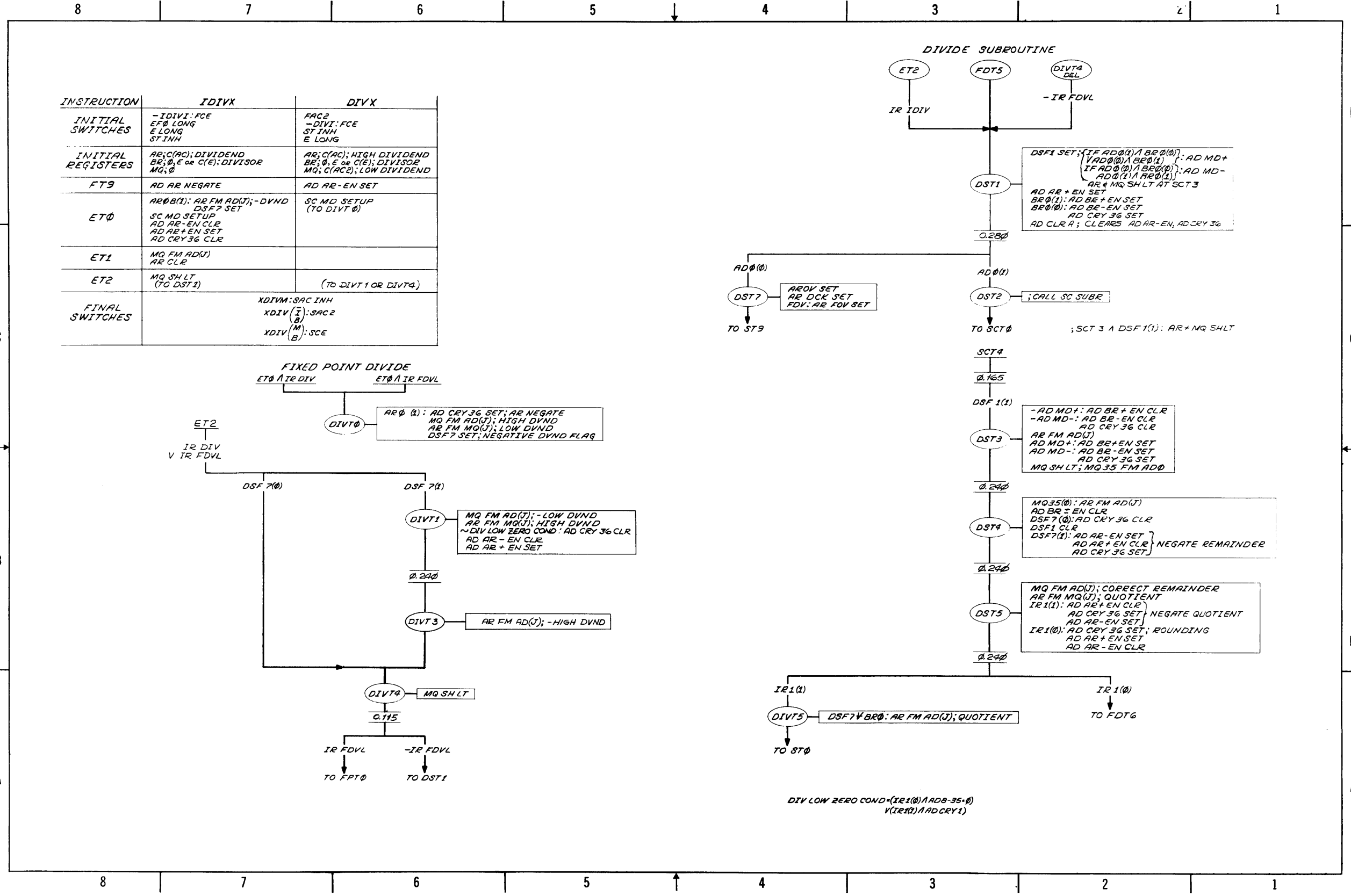
D
C
B
A

| INSTRUCTION | SKIP ROJX SKIPX SOJX | JUMP ROJX JUMPX SOJX | CAM CAI | PUSH | PUSH J | POP | POPJ | XCT |
|-------------------|---|--|---|--|---|---|----------------------------|---------------------|
| INITIAL SWITCHES | EFØ LONG XOSX: FCE PSE SKIPX: FCE FACINH | EFØ LONG | EFØ LONG CAMX: FCE | EFØ LONG FCE E LONG | EFØ LONG E LONG | EFØ LONG FCE ACET E LONG | | FACINH PC+1, INH |
| INITIAL REGISTERS | AR; C(E) | AR; C(AC) MA; E | AR; C(AC) BR; (Ø, E) OR C(E) | AR; C(AC) BR; C(E) MA; E | AR; C(AC) BR; E MA; E MQ; Ø | AR; C(AC) BR; (Ø, E) MQ; C(ACRT) MA; C(ACRT) | | MA; E |
| FT9 | AD AR+EN SET ROXX: CRY 36 SOXX: AD BR+EN SET AD BR-EN SET | | AD MINUS BR AD AR+EN SET | AD AR+EN SET AD CRY 36 SET AD+1 LH SET | | AD AR+EN SET AD BR+EN AD-1 LH SET | | |
| ETØ | AR FM AD(J) PC COND PV PC COND R: PC+1 AR OV COND: AR OV FLAG SET XOXX: V AD CRY Ø(Ø): AR CRY Ø FLAG SET V AD CRY 1(1): AR CRY 1 FLAG SET | AR FM AD(J) PC COND PV PC COND R: PC FM MA(J) | AR FM AD(J) PC COND PV PC COND Q: PC+1 | AR FM AD(J) AD CRY Ø: CPA PDL OV SET | AR FM PC FLAGS(J) MQ FM AD(J) PC FM MA(J) AD CRY Ø: CPA PDL OV SET BYF 6 CLR | MQ FM AD(J) AR FM MQ(J) -AD CRY Ø: CPA PDL OV SET AD BR+ ONLY EN | | EXCTF SET |
| ET1 | | | | MA FM AR(J) | BR FM AR(J) AR FM MQ(J) | AR FM AD(J) BR FM AR(J) | MA FM AR(J) AR FM MQ(J) | |
| ET2 | | | | | MA FM AR(J) | MA FM AR(J) AR FM MQ(J) | PC FM MA(J) | |
| FINAL SWITCHES | AC=Ø: SAC INH | JUMPX: SAC INH | SAC INH | SAR≠BR | SAR≠BR | SAR≠BR | | SAC INH |

NOTES:
 1. PC COND P = (IRG(Ø) ∧ AD=Ø ∧ IR7(1)) ∨ (IRG(1) ∧ IR7(Ø) ∧ IRB(Ø)) ∨ (IRG(1) ∧ AD=Ø ∧ IRB(Ø))
 PC COND Q = (IRG(Ø) ∧ AD COND ∧ IRB(1)) ∨ (IRG(1) ∧ IR7(Ø) ∧ AD COND) ∨ (IRG(1) ∧ AD=Ø ∧ AD COND)
 PC COND R = (IRG(Ø) ∧ IRB(Ø) ∧ ADØ(1)) ∨ (IRG(1) ∧ IR7(Ø) ∧ ADØ(Ø)) ∨ (IRG(1) ∧ AD=Ø ∧ ADØ(Ø))
 2. AR OV COND = (AD CRY Ø(Ø) ∧ AD CRY 1(1)) ∨ (AD CRY Ø(1) ∧ AD CRY 1(Ø))
 3. AD COND = (ADØ(1) ∧ AD CRY Ø(1) ∧ AD CRY 1(1)) ∨ (ADØ(1) ∧ AD CRY Ø(Ø) ∧ AD CRY 1(Ø)) ∨ (ADØ(Ø) ∧ AD CRY Ø(1) ∧ AD CRY 1(Ø))
 ∨ (ADØ(Ø) ∧ AD CRY Ø(Ø) ∧ AD CRY 1(1))



D-FD-KA10-0-BYTF Byte Instruction Flow



| INSTRUCTION | IDIVX | DIVX |
|-------------------|--|---|
| INITIAL SWITCHES | -IDIV1: FCE EF0 LONG E LONG ST INH | FAC2 -DIV1: FCE ST INH E LONG |
| INITIAL REGISTERS | AR; C(AC); DIVIDEND BR; 0, E or C(E); DIVISOR MQ; 0 | AR; C(AC); HIGH DIVIDEND BR; 0, E or C(E); DIVISOR MQ; C(AC2); LOW DIVIDEND |
| FT9 | AD AR NEGATE | AD AR-EN SET |
| ET0 | AR0B(1): AR FM AD(J); -DVND DSF7 SET SC MD SETUP AD AR-EN CLR AD AR+EN SET AD CRY36 CLR | SC MD SETUP (TO DIVT 0) |
| ET1 | MQ FM AD(J) AR CLR | |
| ET2 | MQ SHLT (TO DST1) | (TO DIVT1 OR DIVT4) |
| FINAL SWITCHES | | XDIVM: SAC INH XDIV (A): SAC2 XDIV (M/B): SCE |

FIXED POINT DIVIDE

ET0 ^ IR DIV ET0 ^ IR FDVL

DIVT0: AR 0(1): AD CRY36 SET; AR NEGATE
MQ FM AD(J); HIGH DVND
AR FM MQ(J); LOW DVND
DSF7 SET; NEGATIVE DVND FLAG

DIVT1: MQ FM AD(J); -LOW DVND
AR FM MQ(J); HIGH DVND
~DIV LOW ZERO COND: AD CRY36 CLR
AD AR-EN CLR
AD AR+EN SET

DIVT3: AR FM AD(J); -HIGH DVND

DIVT4: MQ SHLT

DIVT5: DSF7 ^ BR0: AR FM AD(J); QUOTIENT

$$DIV\ LOW\ ZERO\ COND = (IR1(0) \wedge AD8-35=0) \vee (IR1(1) \wedge AD\ CRY1)$$

DIVIDE SUBROUTINE

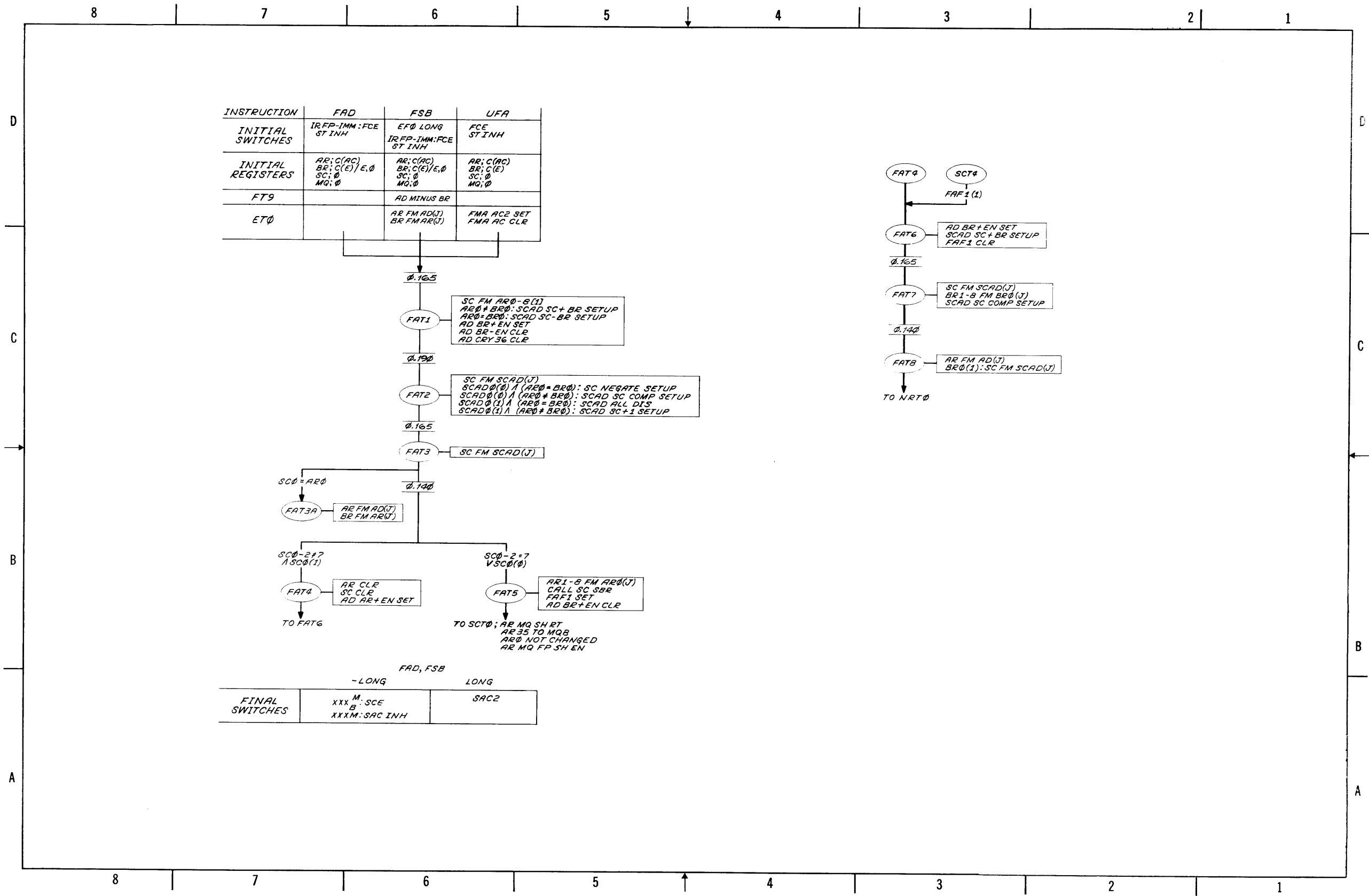
DST1: DSF1 SET; {IF AD0(1) ^ BR0(0): AD MD+
VAD0(0) ^ BR0(1)}: AD MD+
{IF AD0(0) ^ BR0(0): AD MD-
AD0(1) ^ BR0(1)}: AD MD-
AR+MQ SHLT AT SCT3
AD AR+EN SET
BR0(1): AD BR+EN SET
BR0(0): AD BR-EN SET
AD CRY36 SET
AD CLR A; CLEARS AD AR-EN, AD CRY36

DST3: -AD MD+: AD BR+EN CLR
-AD MD-: AD BR-EN CLR
AD CRY36 CLR
AR FM AD(J)
AD MD+: AD BR+EN SET
AD MD-: AD BR-EN SET
AD CRY36 SET
MQ SHLT; MQ35 FM ADD

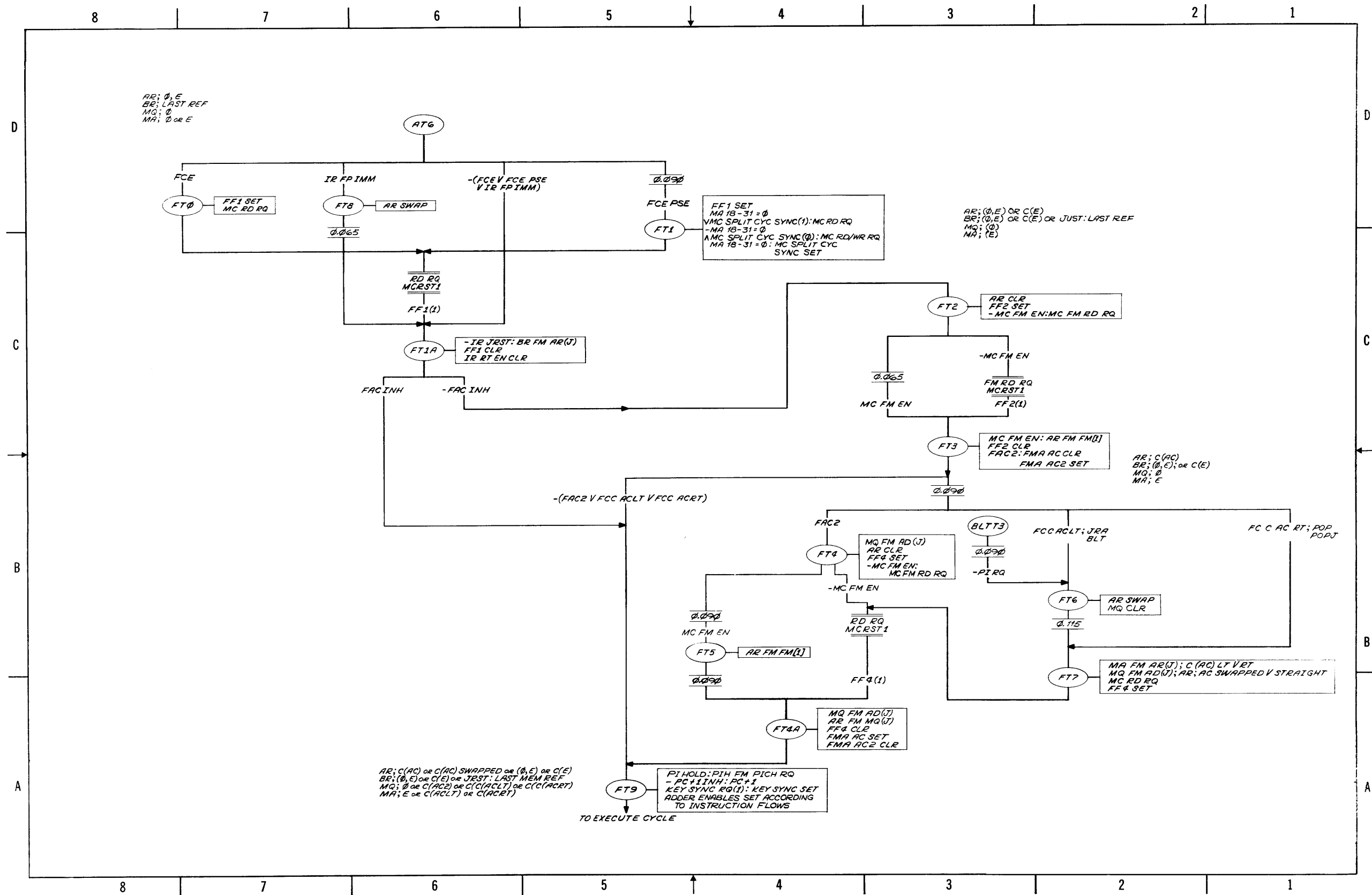
DST4: MQ35(0): AR FM AD(J)
AD BR+EN CLR
DSF7(0): AD CRY36 CLR
DSF1 CLR
DSF7(1): AD AR-EN SET
AD AR+EN CLR
AD CRY36 SET } NEGATE REMAINDER

DST5: MQ FM AD(J); CORRECT REMAINDER
AR FM MQ(J); QUOTIENT
IR1(1): AD AR+EN CLR
AD CRY36 SET } NEGATE QUOTIENT
AD AR-EN SET
IR1(0): AD CRY36 SET; ROUNDING
AD AR+EN SET
AD AR-EN CLR

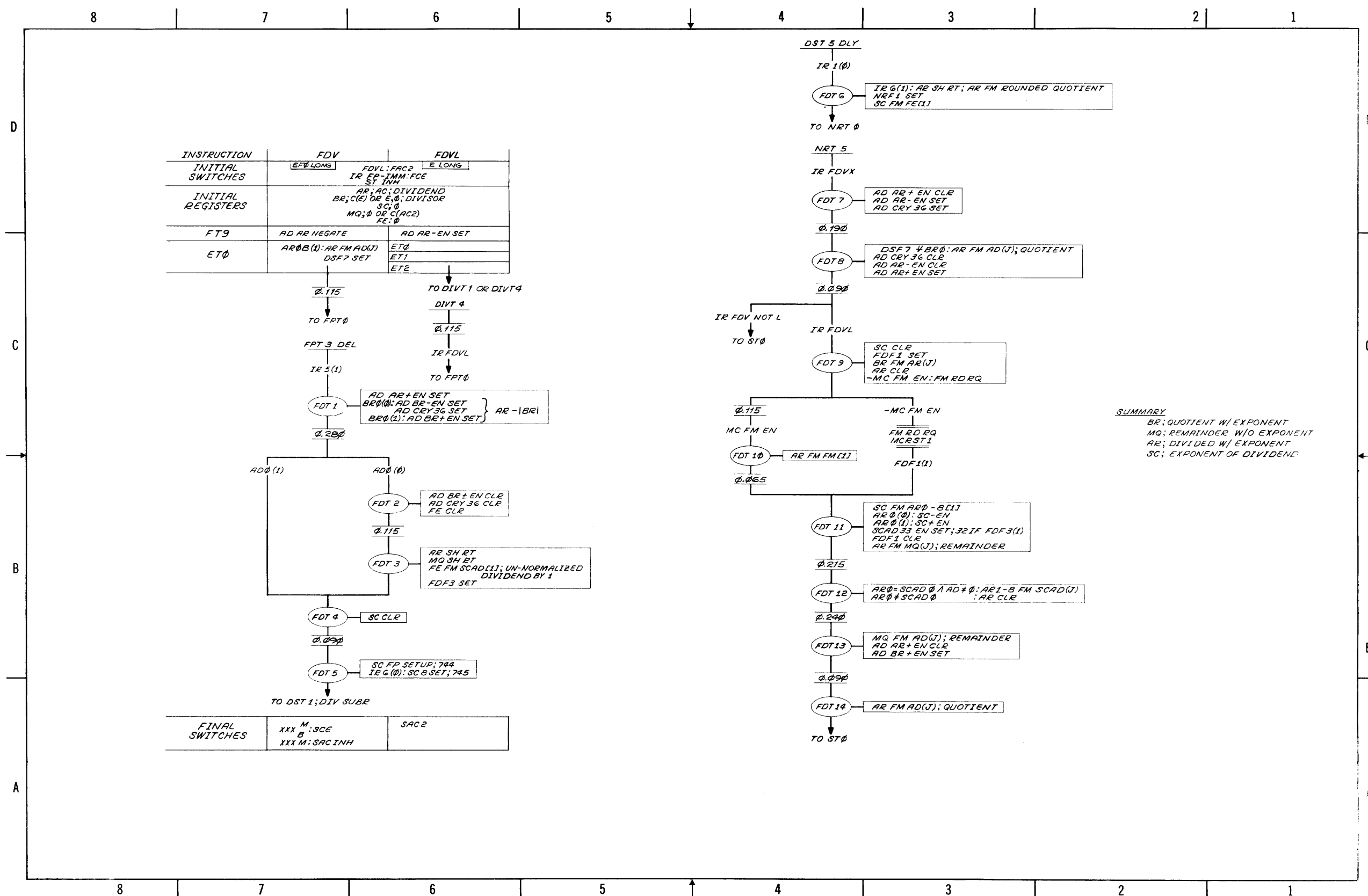
D-FD-KA10-0-DIVF Fixed Point Divide and Divide Subroutine



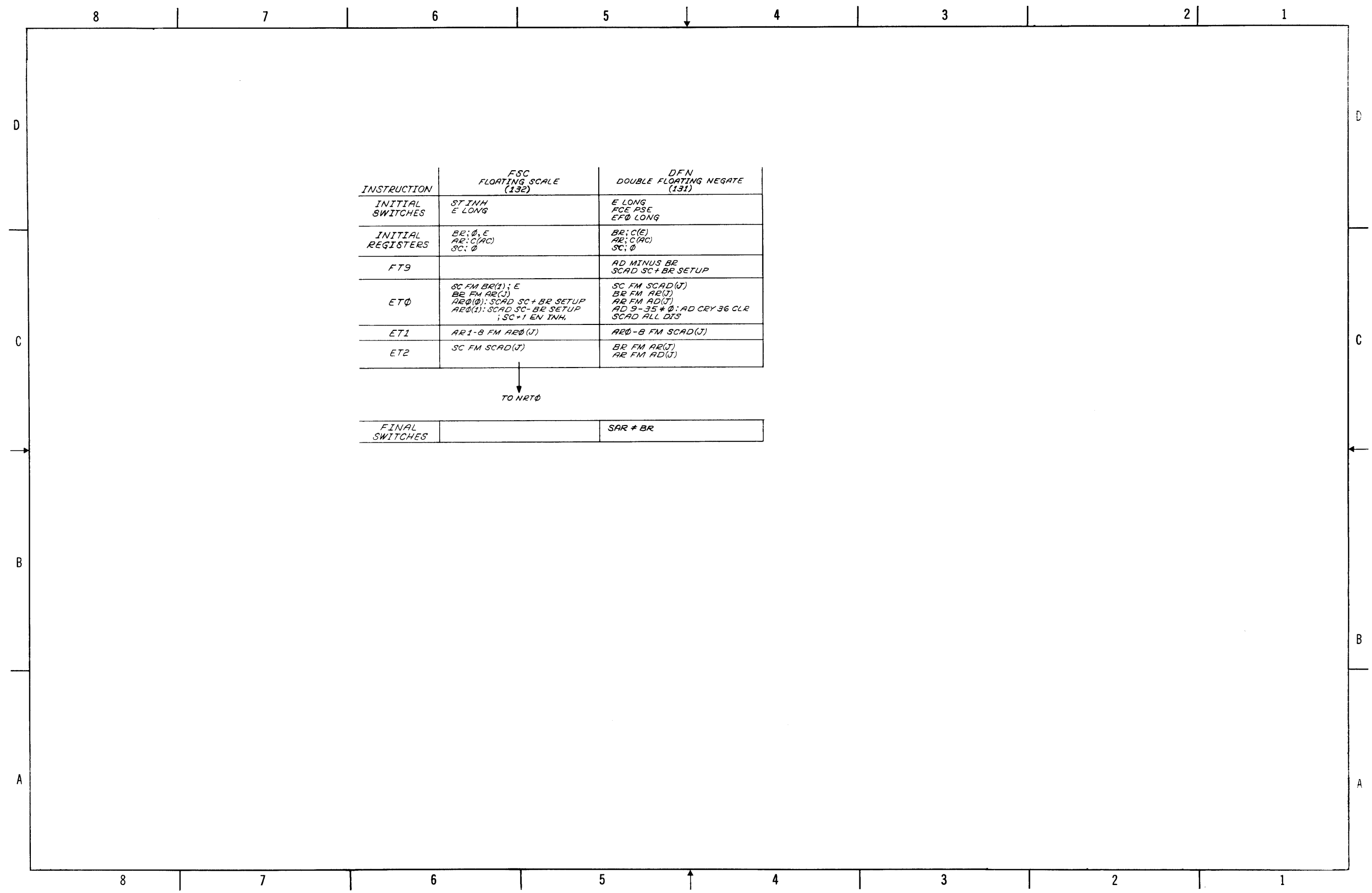
D-FD-KA10-0-FAF Floating Add, Sub and UFA Flow



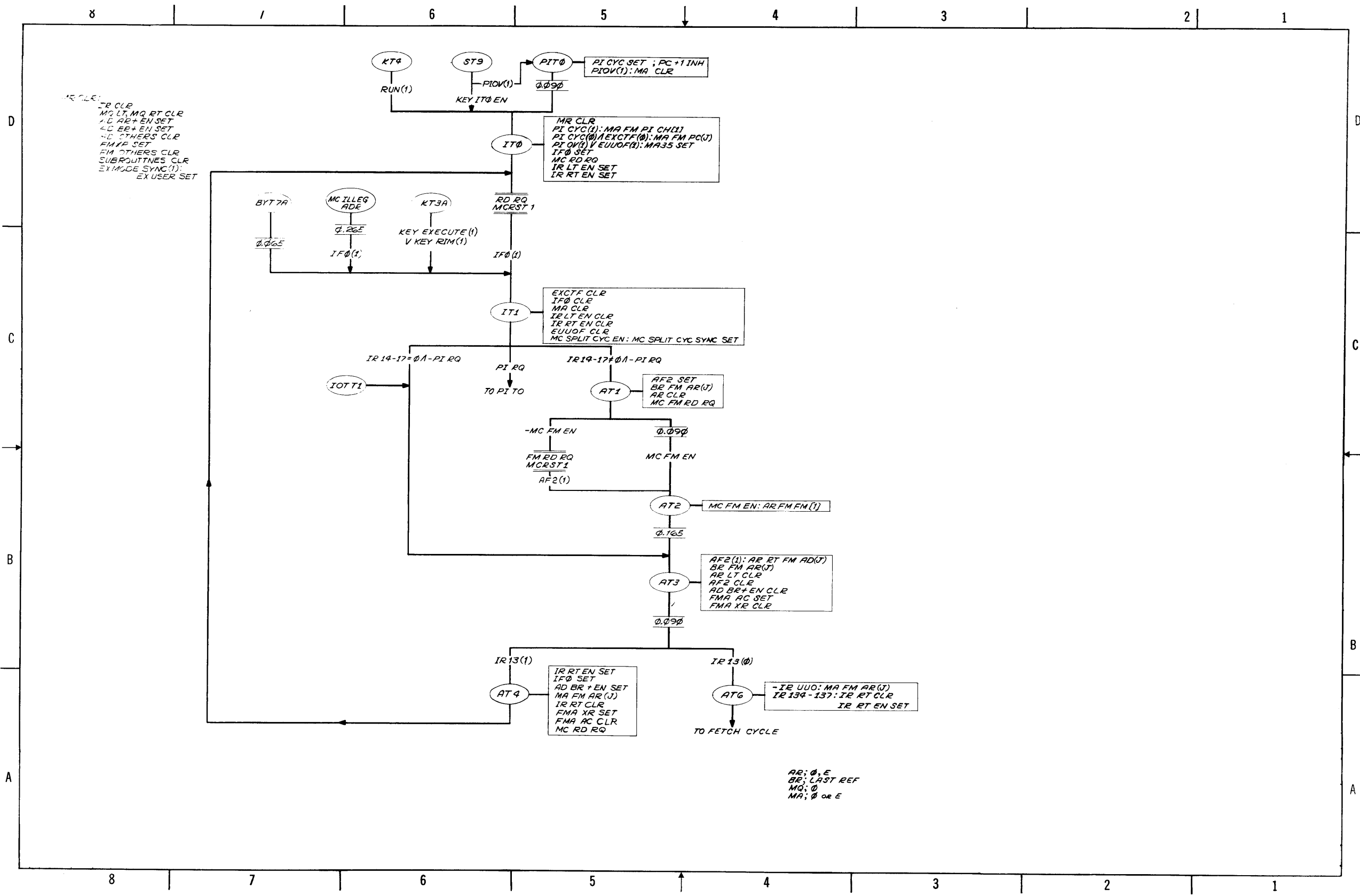
D-FD-KA10-0-FC Fetch Cycle Flow



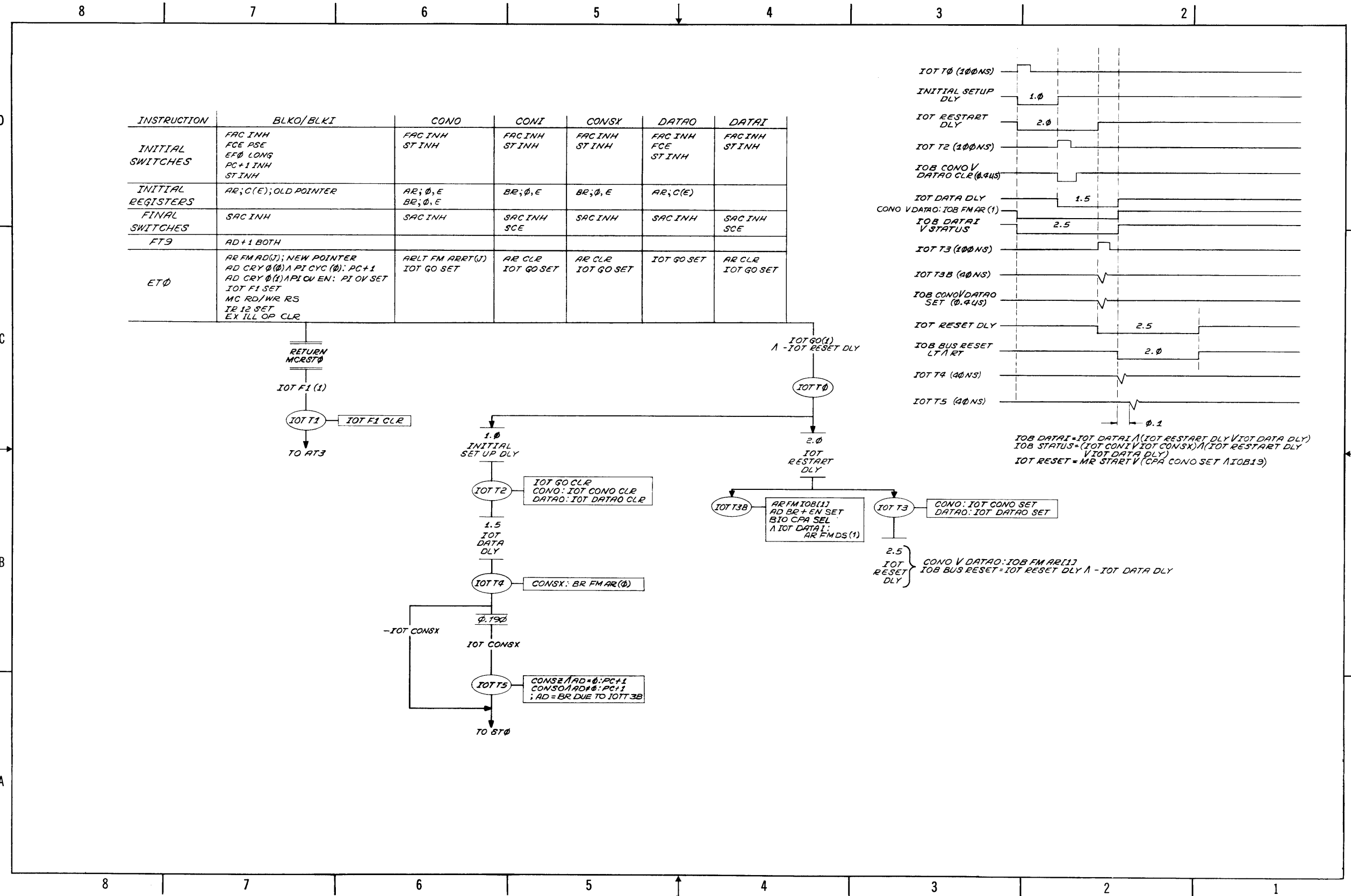
D-FD-KA10-0-FDVF Floating Divide



D-FD-KA10-0-FSDN Floating Scale and Double Floating Negate

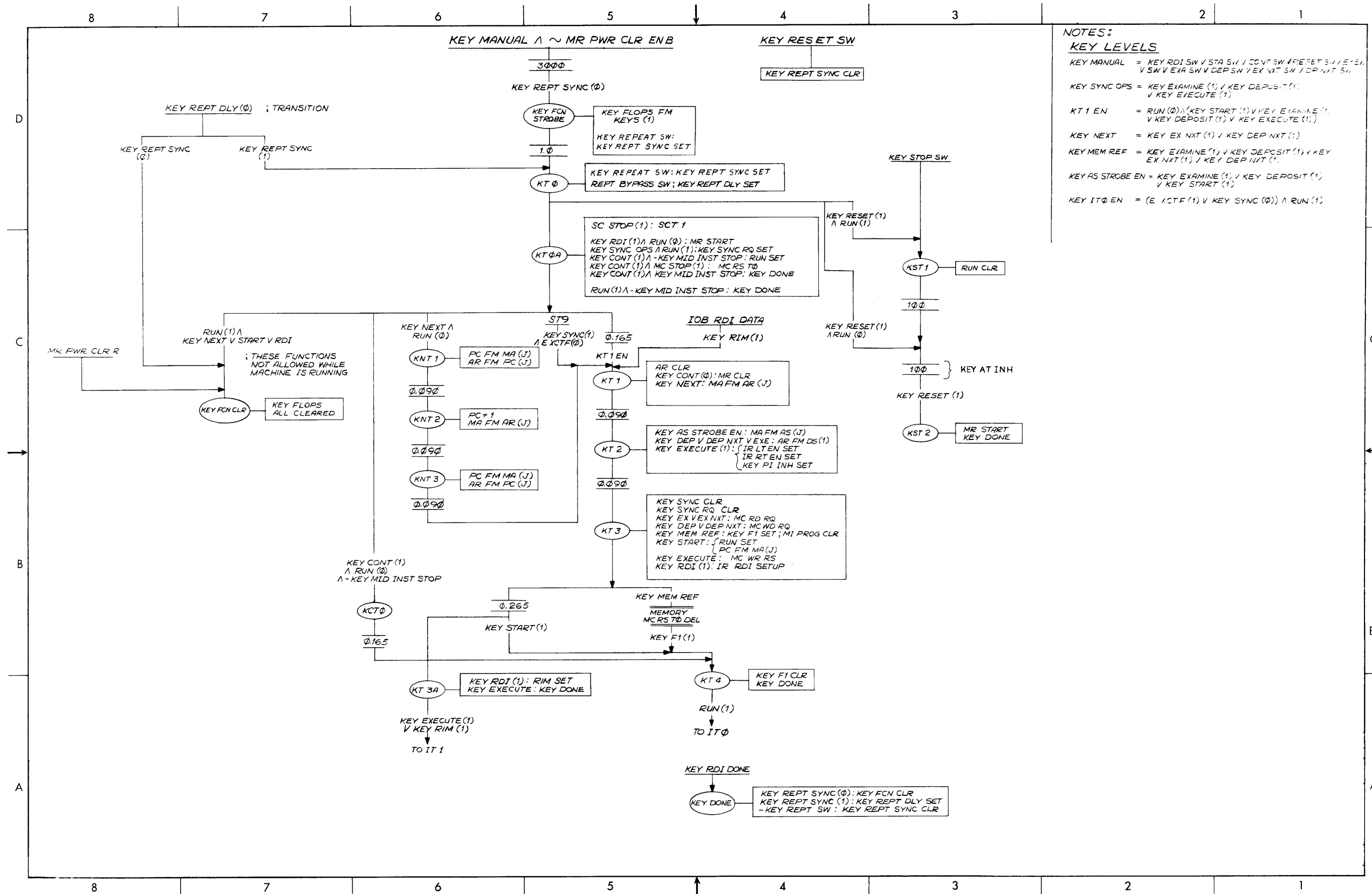


D-FD-KA10-0-IAC Instruction and Address Cycles

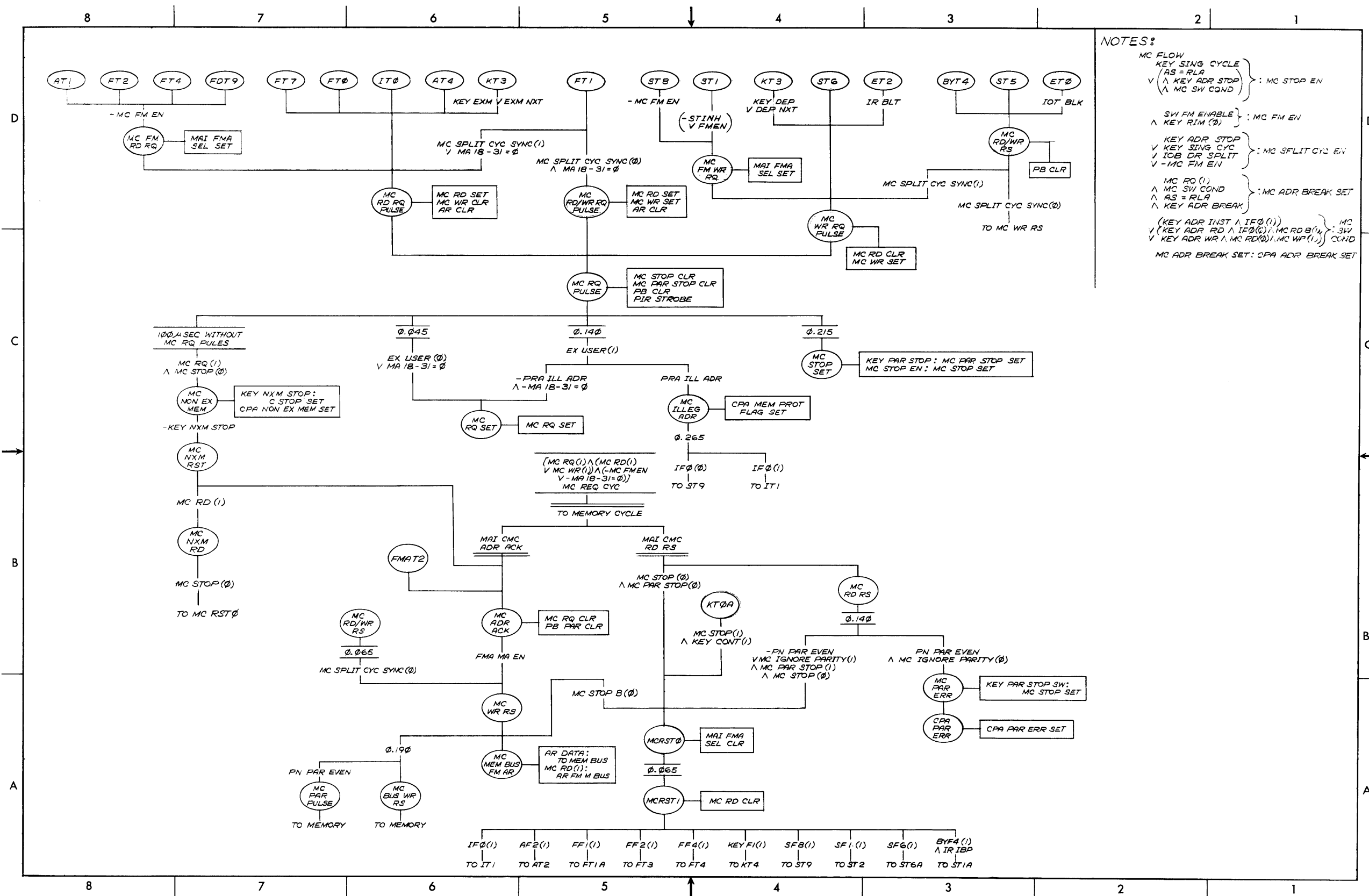


| INSTRUCTION | BLKO/BLKI | CONO | CONI | CONSX | DATAO | DATAI |
|-------------------|--|-------------------------------|----------------------|----------------------|--------------------------|----------------------|
| INITIAL SWITCHES | FAC INH FCE PSE EF0 LONG PC+1 INH ST INH | FAC INH ST INH | FAC INH ST INH | FAC INH ST INH | FAC INH FCE ST INH | FAC INH ST INH |
| INITIAL REGISTERS | AR; C(E); OLD POINTER | AR; 0, E BR; 0, E | BR; 0, E | BR; 0, E | AR; C(E) | |
| FINAL SWITCHES | SAC INH | SAC INH | SAC INH SCE | SAC INH | SAC INH | SAC INH SCE |
| FT9 | AD+1 BOTH | | | | | |
| ET0 | AR FM AD(0); NEW POINTER AD CRY 0(0) ^ PI CYC (0): PC+1 AD CRY 0(1) ^ PI OV EN: PI OV SET IOT F1 SET MC RD / WR RS IR 12 SET EX ILL OP CLR | ARLT FM ARRT(0) IOT GO SET | AR CLR IOT GO SET | AR CLR IOT GO SET | IOT GO SET | AR CLR IOT GO SET |

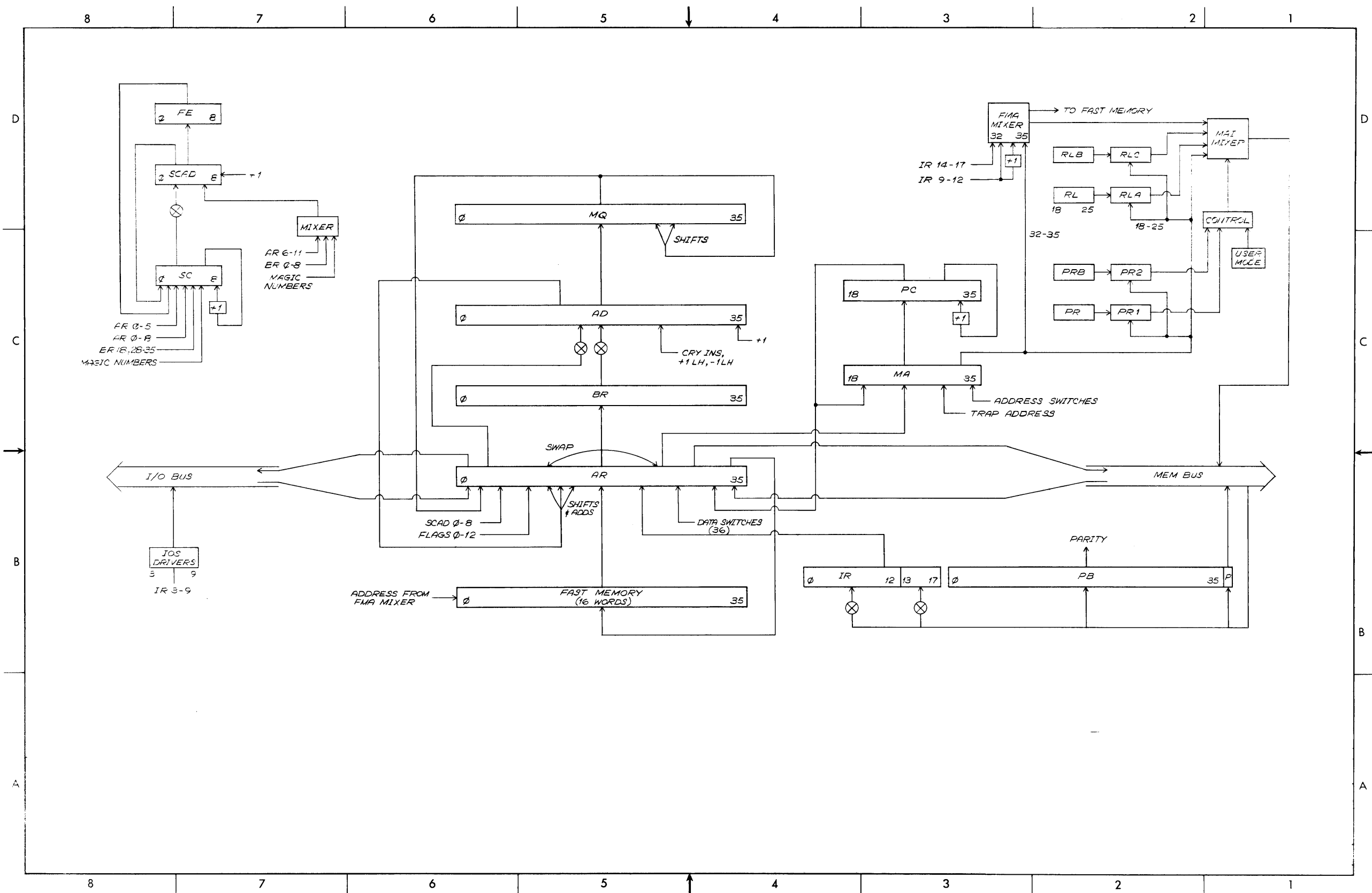
D-FD-KA10-0-IOTF In-Out Transfer Control Flow



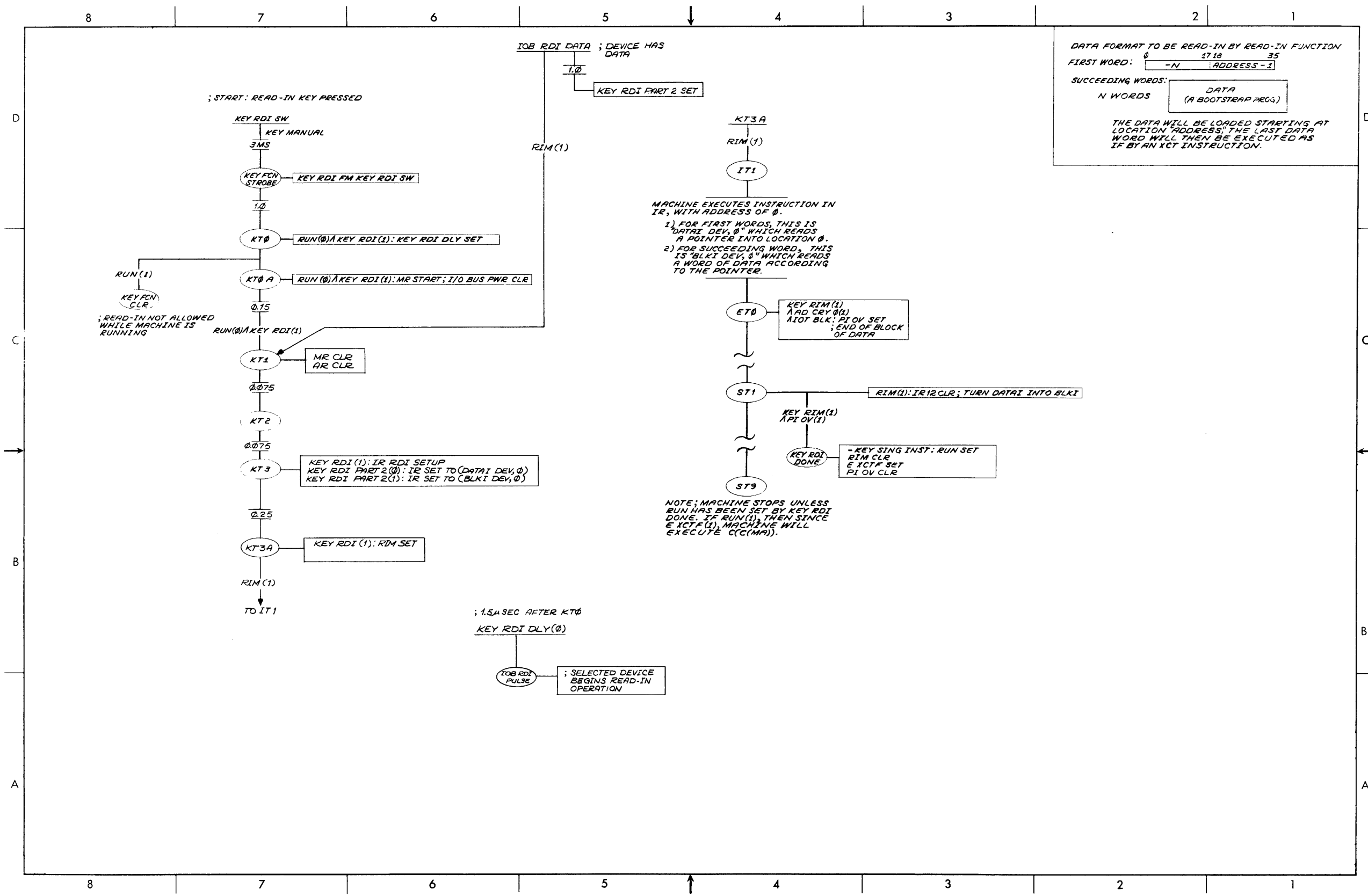
D-FD-KA10-0-KO Key Operations Flow Diagram



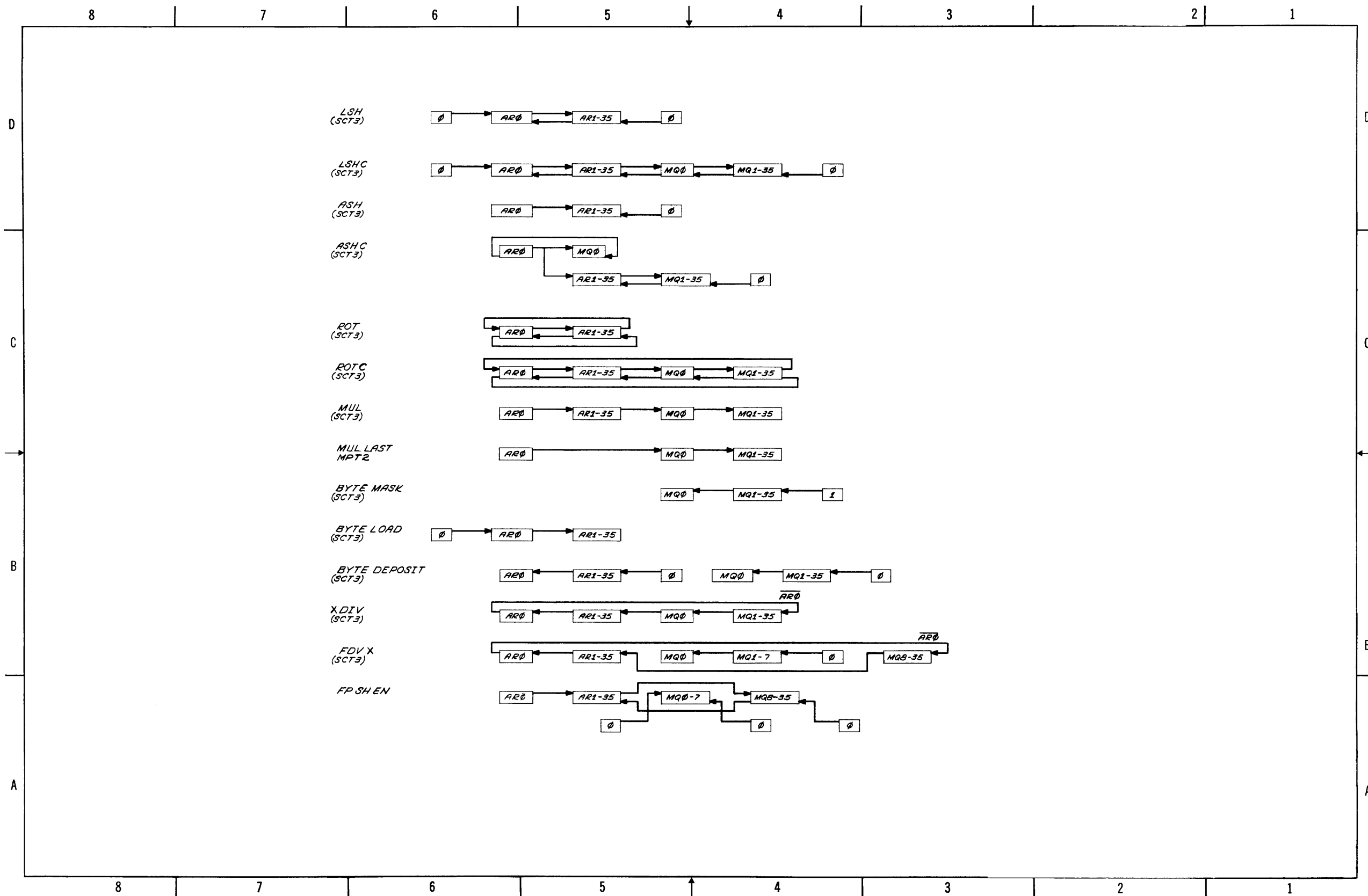
D-FD-KA10-0-MCFM Memory Control and Fast Memory Flow



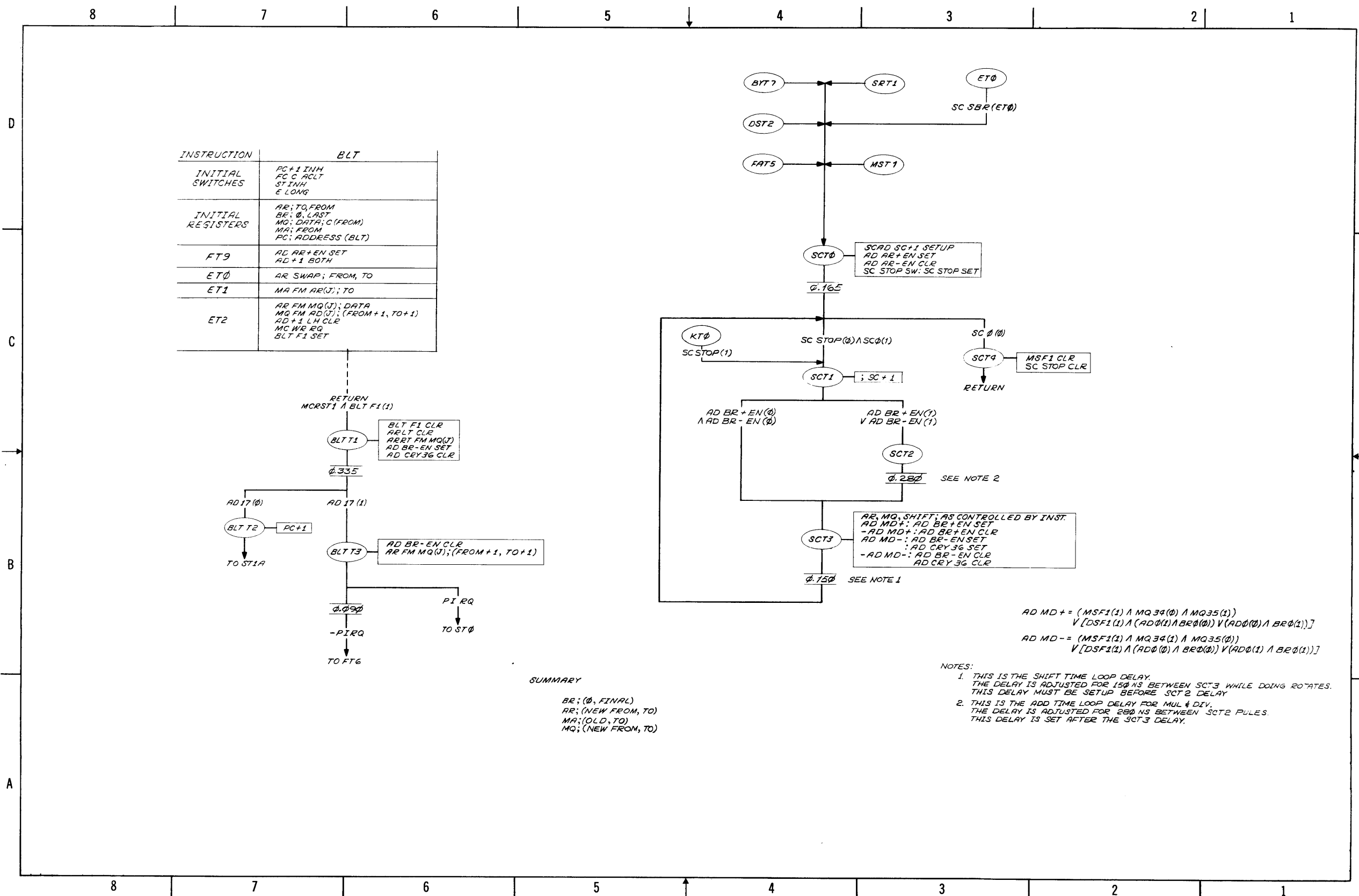
D-FD-KA10-0-REG KA10 Register Interconnections



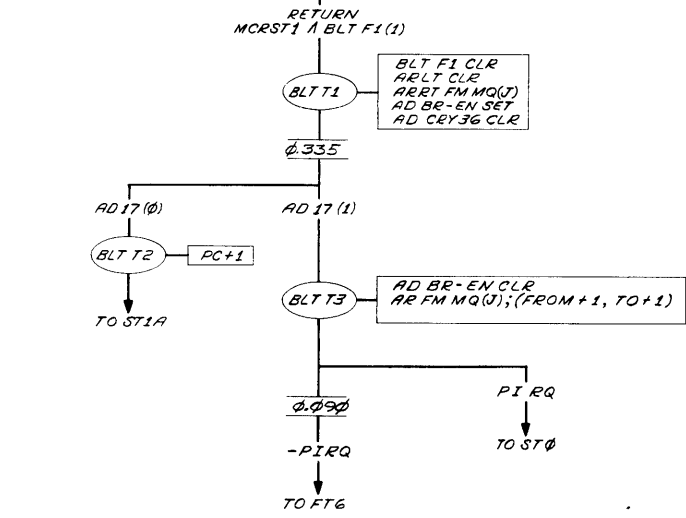
D-FD-KA10-0-RIMF Read-in Function Isolated Flow



D-FD-KA10-0-SCAF Shift Count Action Flow



| INSTRUCTION | BLT |
|-------------------|---|
| INITIAL SWITCHES | PC+1 INH FC G ACLK ST INH E LONG |
| INITIAL REGISTERS | AR; TO, FROM BR; 0, LAST MQ; DATA; C (FROM) MA; FROM PC; ADDRESS (BLT) |
| FT9 | AD AR+EN SET AD+1 BOTH |
| ET0 | AR SWAP; FROM, TO |
| ET1 | MA FM AR(J); TO |
| ET2 | AR FM MQ(J); DATA MQ FM AD(J); (FROM+1, TO+1) AD+1 LH CLR MC WR EQ BLT F1 SET |



SUMMARY

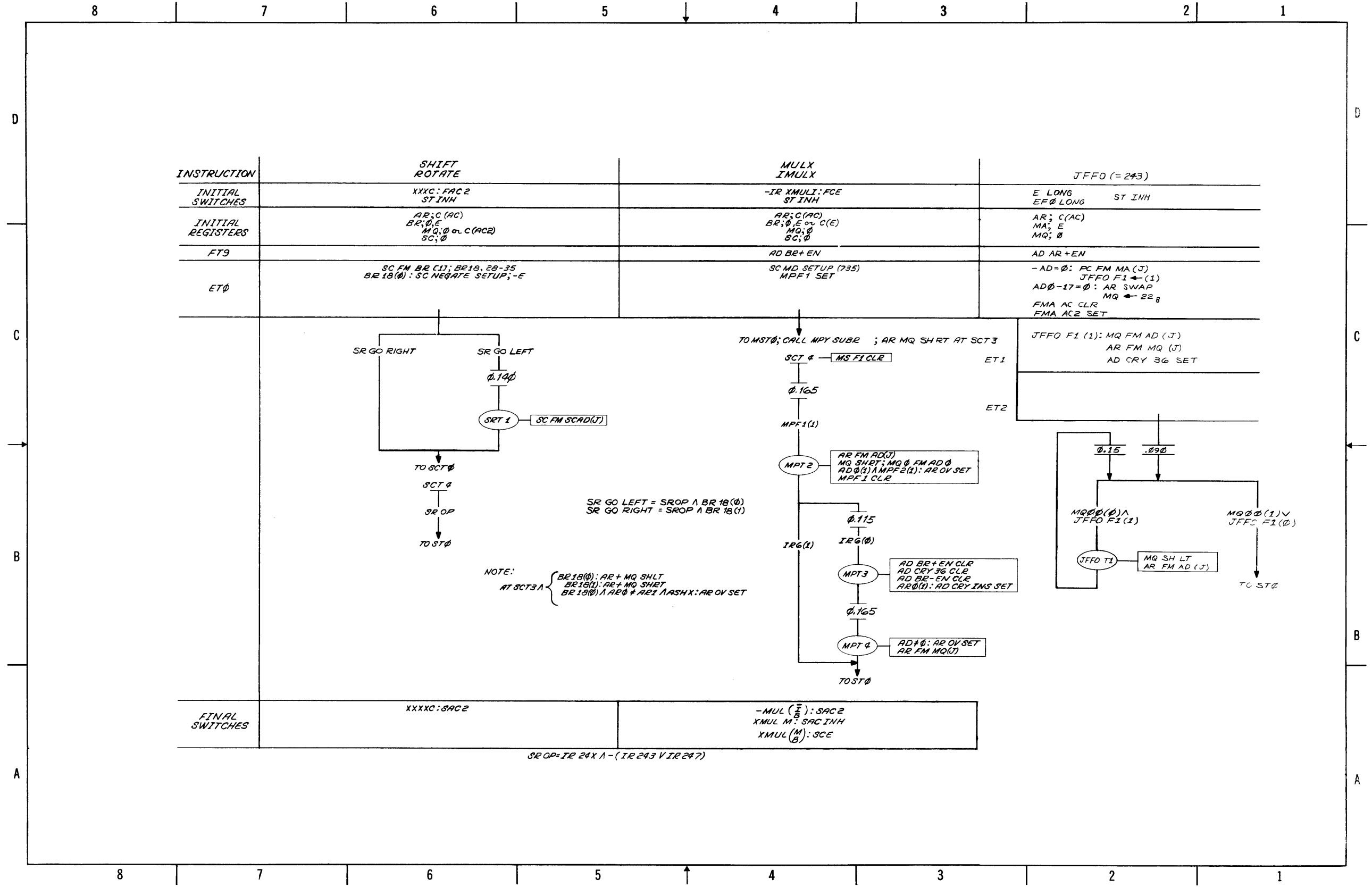
BR; (0, FINAL)
AR; (NEW FROM, TO)
MA; (OLD, TO)
MQ; (NEW FROM, TO)

$$AD MD+ = (MSF1(1) \wedge MQ34(0) \wedge MQ35(1)) \vee [DSF1(1) \wedge (AD0(1) \wedge BR0(0)) \vee (AD0(0) \wedge BR0(1))]$$

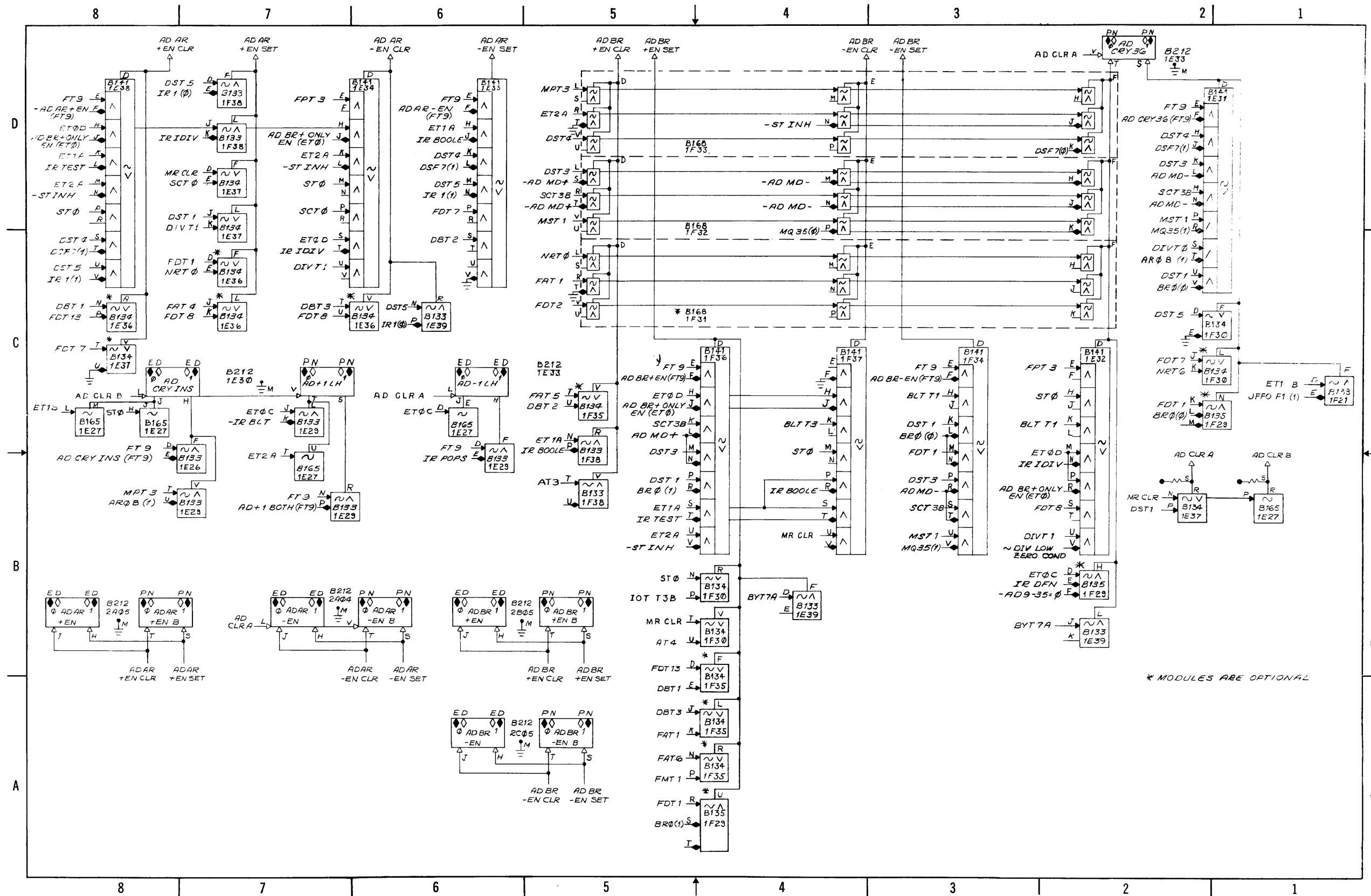
$$AD MD- = (MSF1(1) \wedge MQ34(1) \wedge MQ35(0)) \vee [DSF1(1) \wedge (AD0(0) \wedge BR0(0)) \vee (AD0(1) \wedge BR0(1))]$$

- NOTES:
1. THIS IS THE SHIFT TIME LOOP DELAY. THE DELAY IS ADJUSTED FOR 150 NS BETWEEN SCT3 WHILE DOING ROTATES. THIS DELAY MUST BE SETUP BEFORE SCT2 DELAY
 2. THIS IS THE ADD TIME LOOP DELAY FOR MUL & DIV. THE DELAY IS ADJUSTED FOR 200 NS BETWEEN SCT2 PULSES. THIS DELAY IS SET AFTER THE SCT3 DELAY.

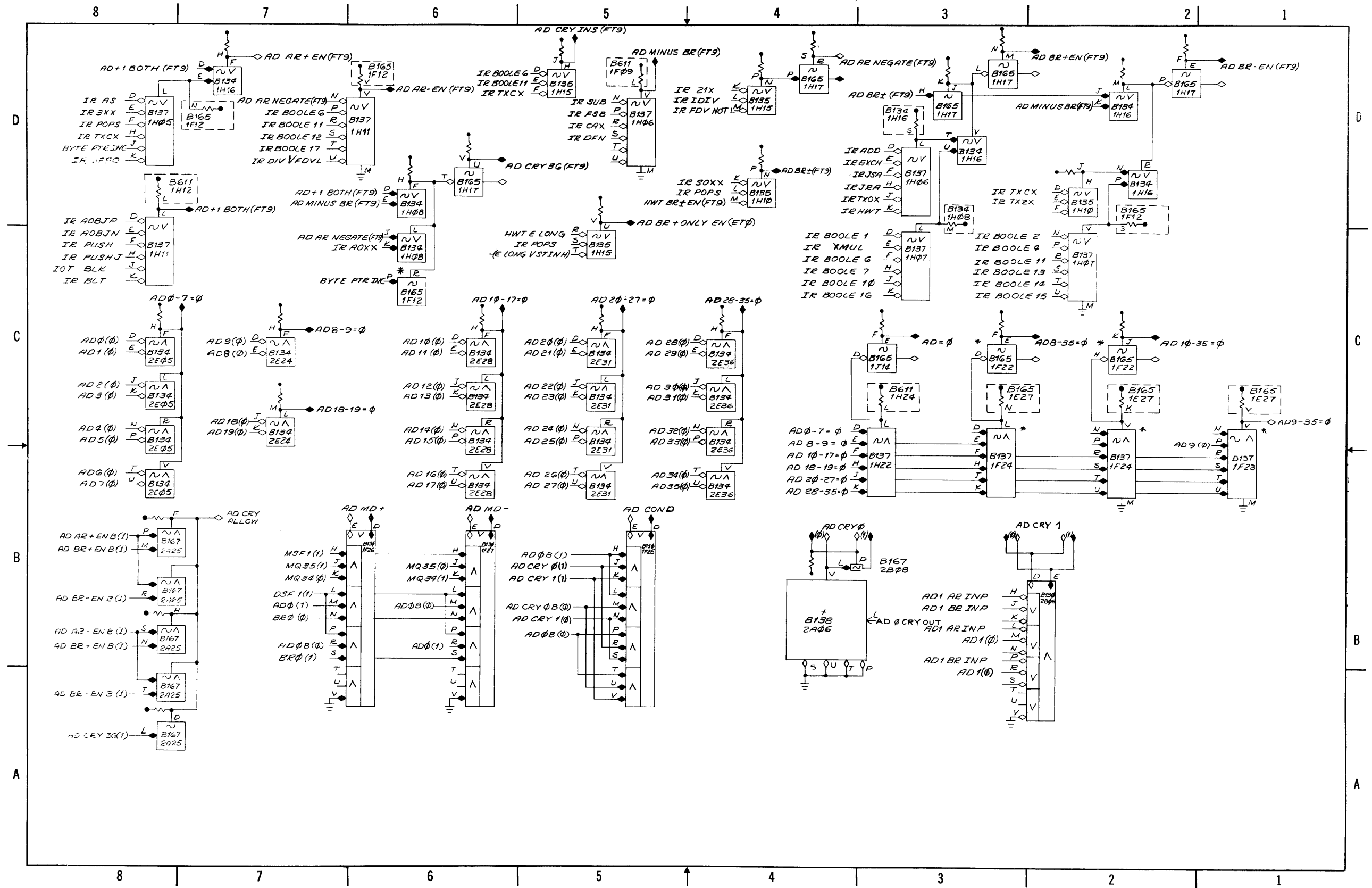
D-FD-KA10-0-SCBT Shift Count Subroutine and BLT Flow



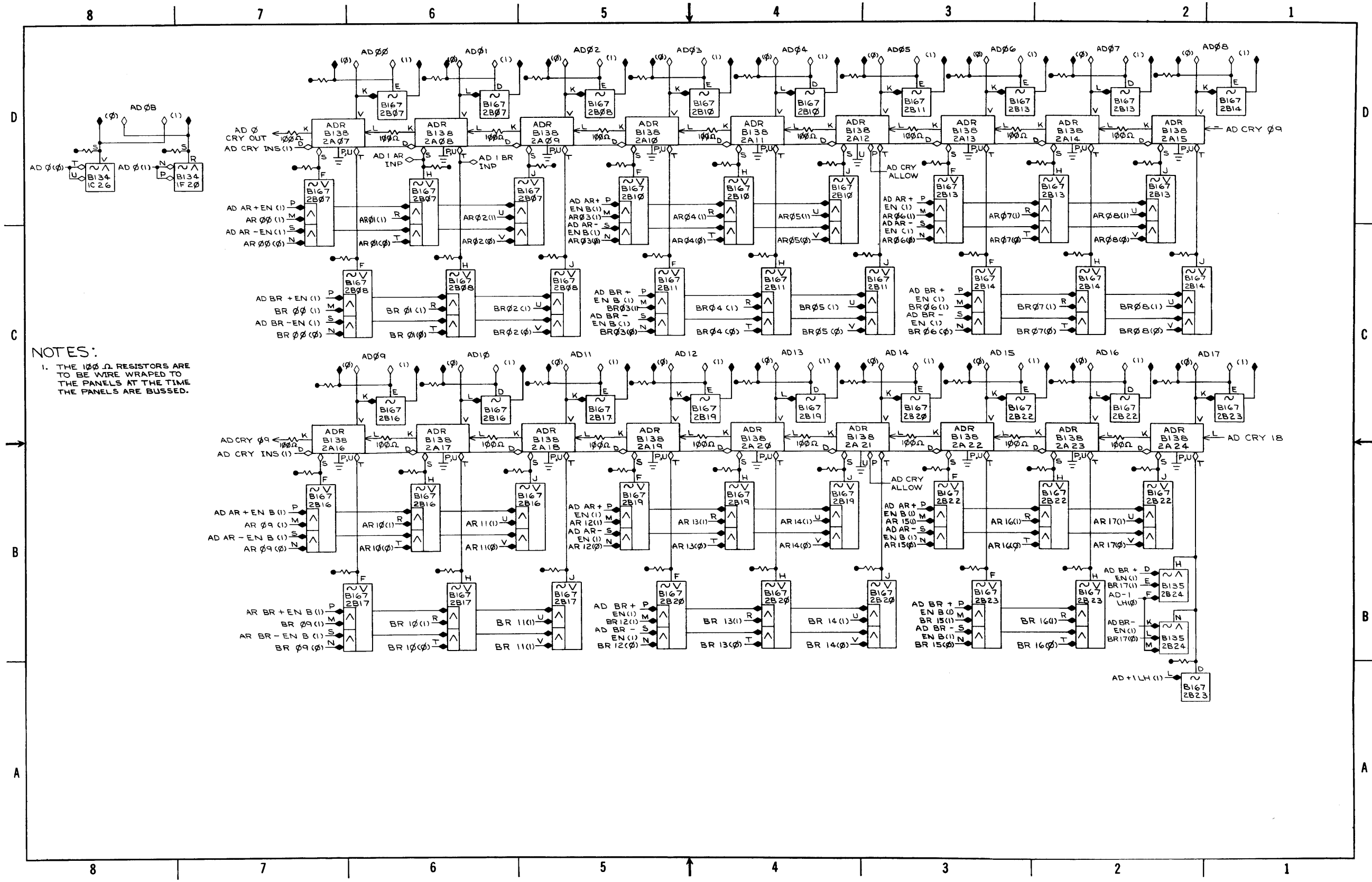
D-FD-KA10-0-SMF Shift and MUL and JFFO Flow



D-BS-KA10-0-AD1 Adder Control Flip-Flops Levels

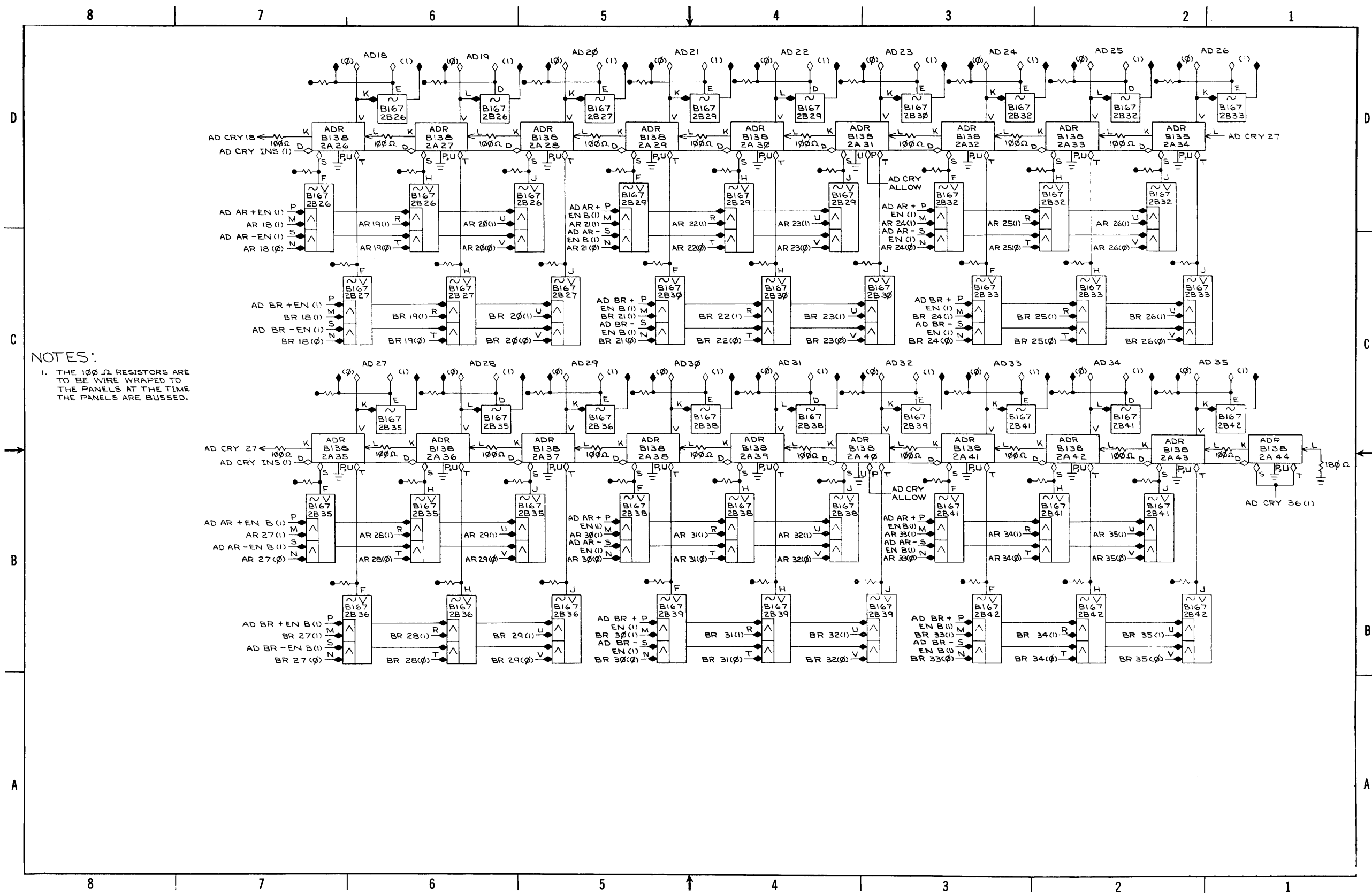


D-BS-KA10-0-AD2 Adder Control Levels



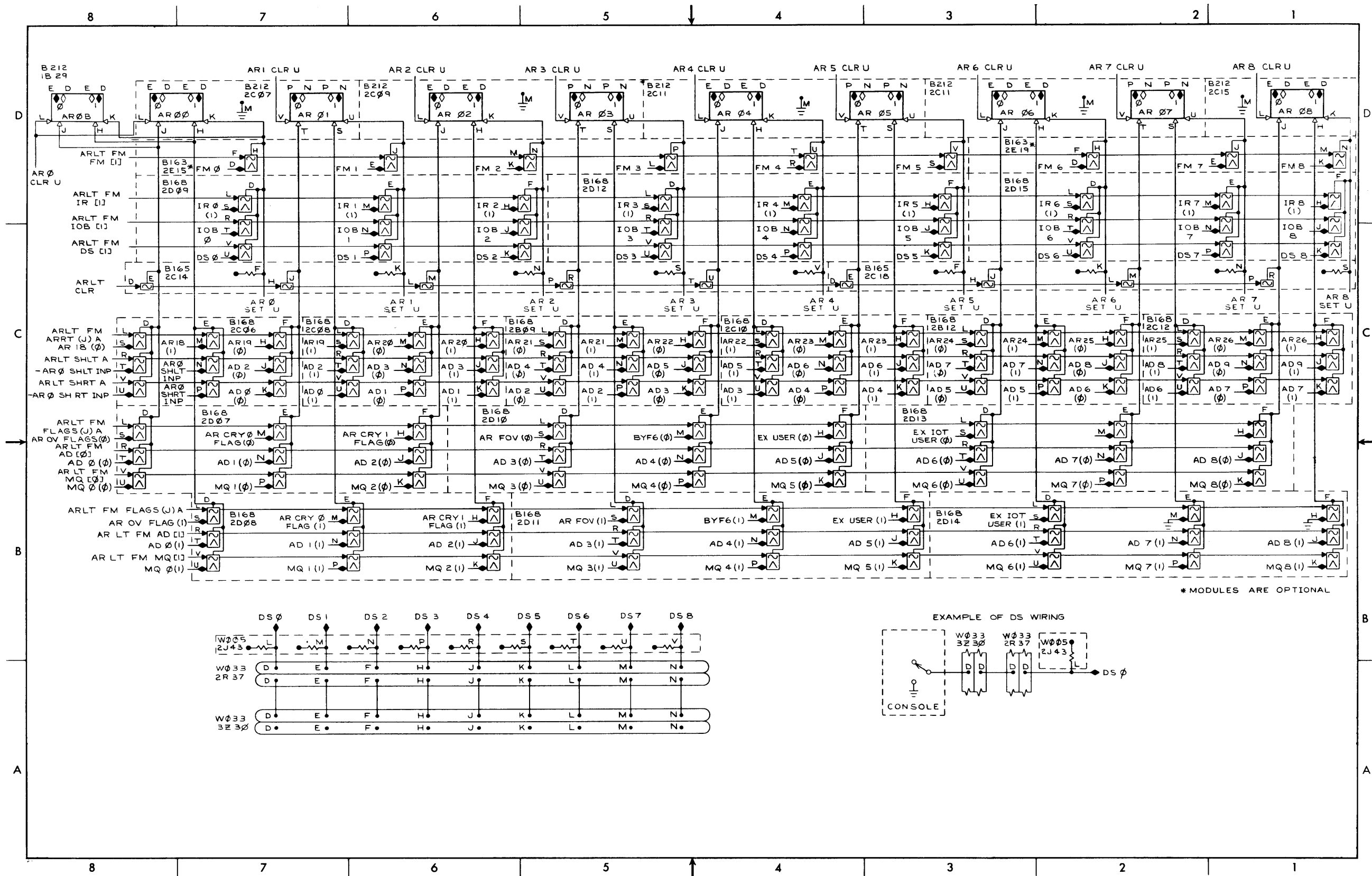
NOTES:
 1. THE 100 OHM RESISTORS ARE TO BE WIRE WRAPPED TO THE PANELS AT THE TIME THE PANELS ARE BUSSED.

D-BS-KA10-0-AD3 Adder Left Half

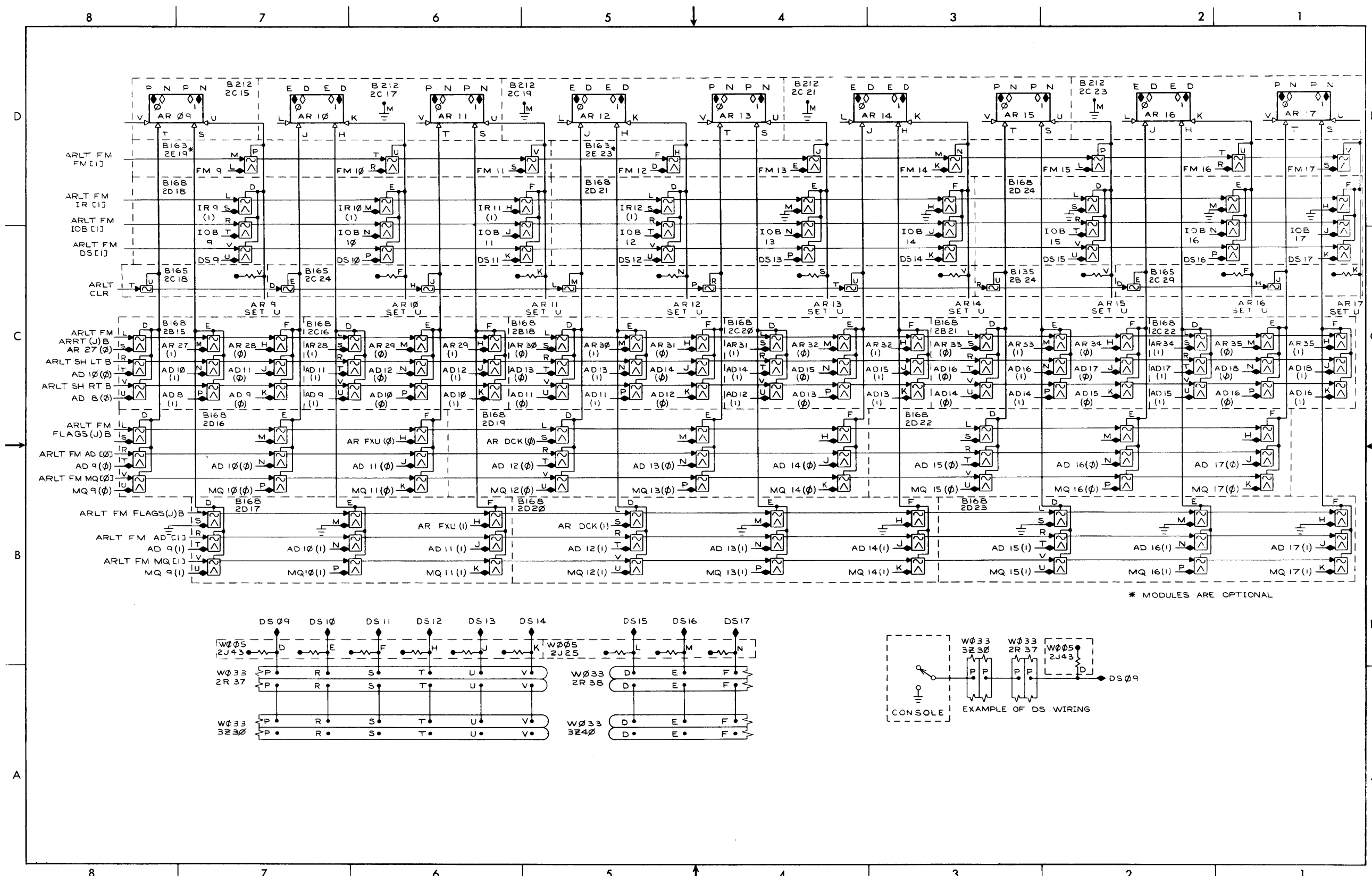


NOTES:
 1. THE 100Ω RESISTORS ARE TO BE WIRE WRAPPED TO THE PANELS AT THE TIME THE PANELS ARE BUSSED.

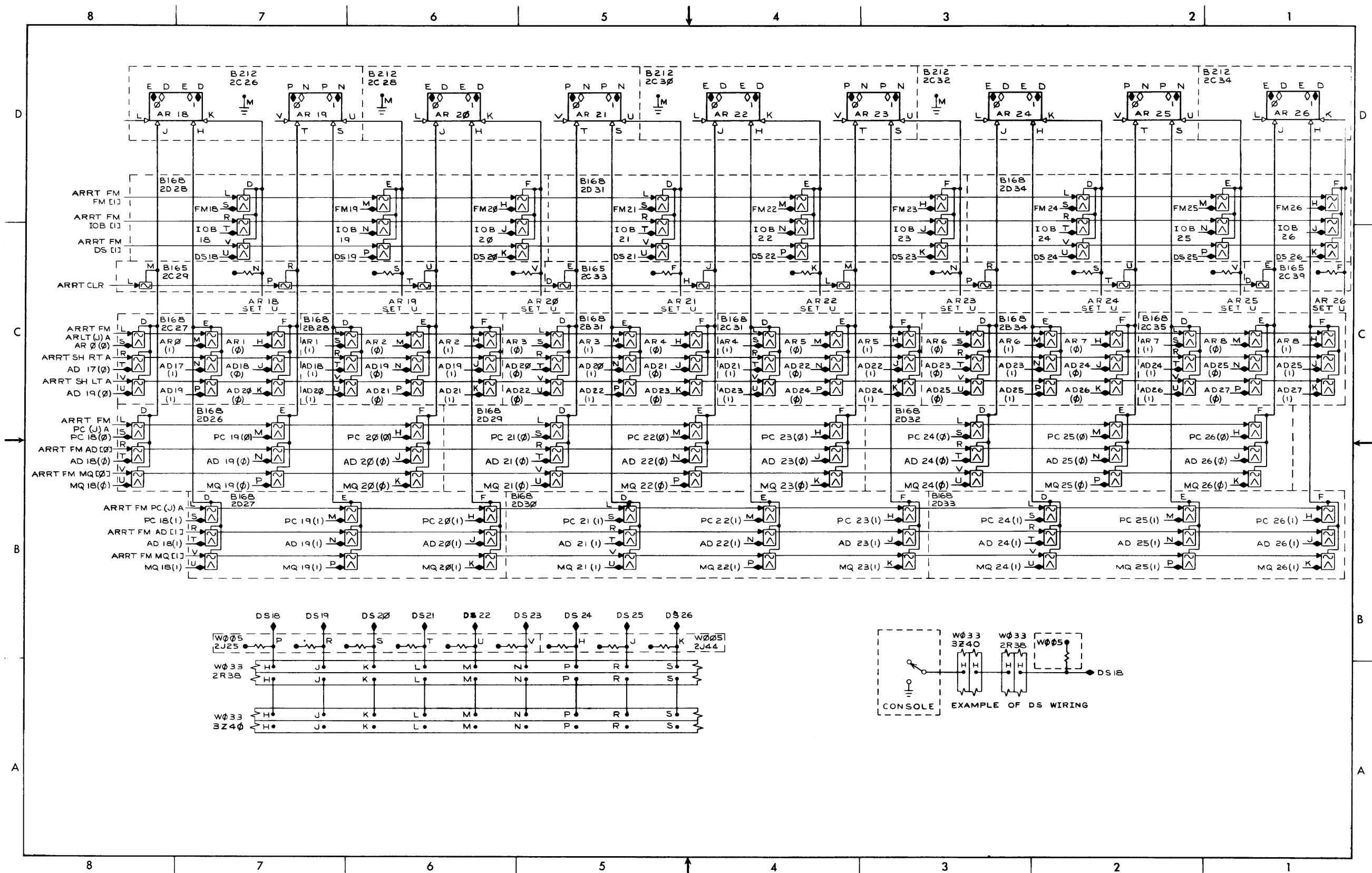
D-BS-KA10-0-AD4 Adder Right Half



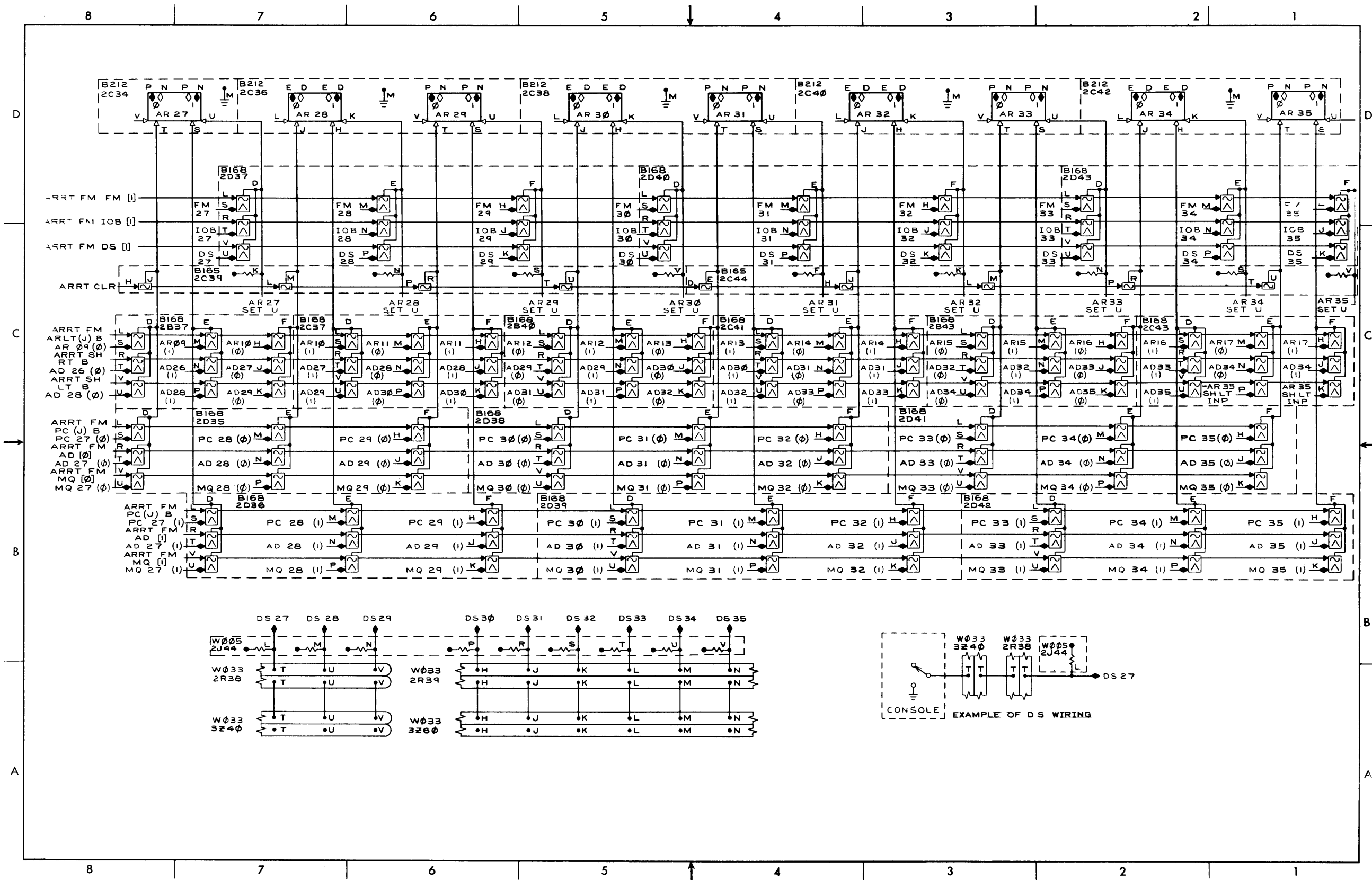
D-BS-KA10-0-AR1 AR Register



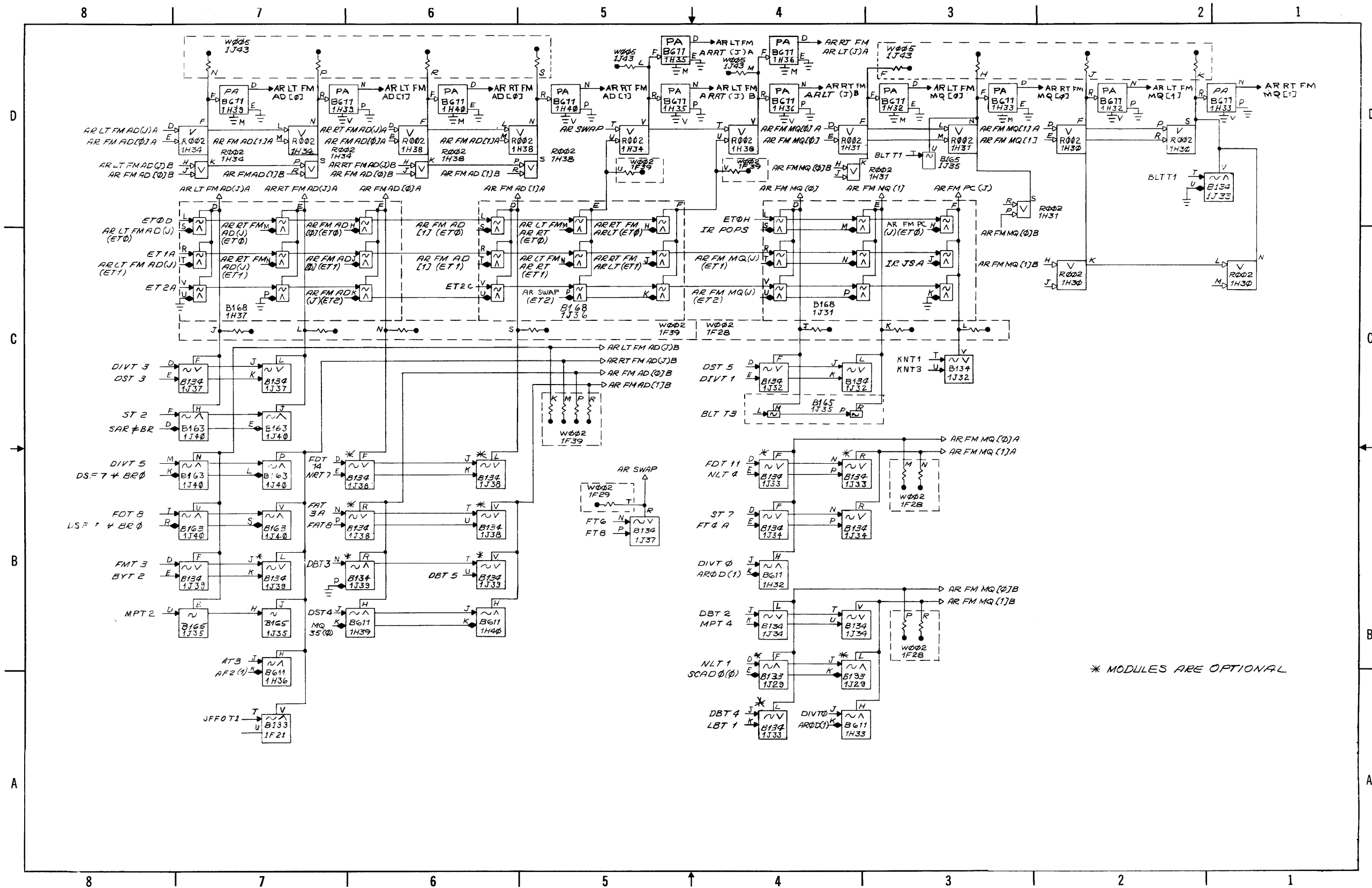
D-BS-KA10-0-AR2 AR Register



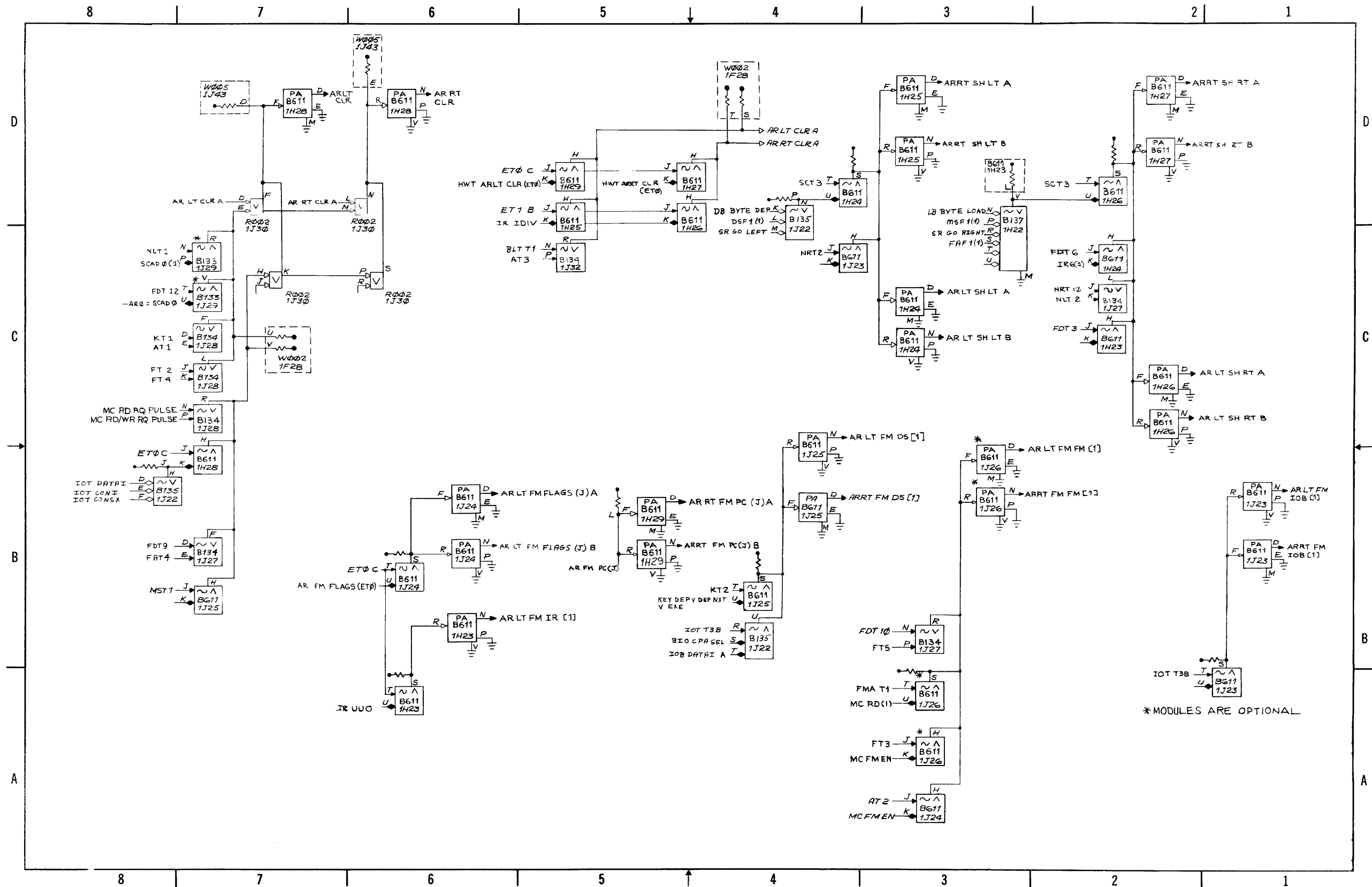
D-BS-KA10-0-AR3 AR Register



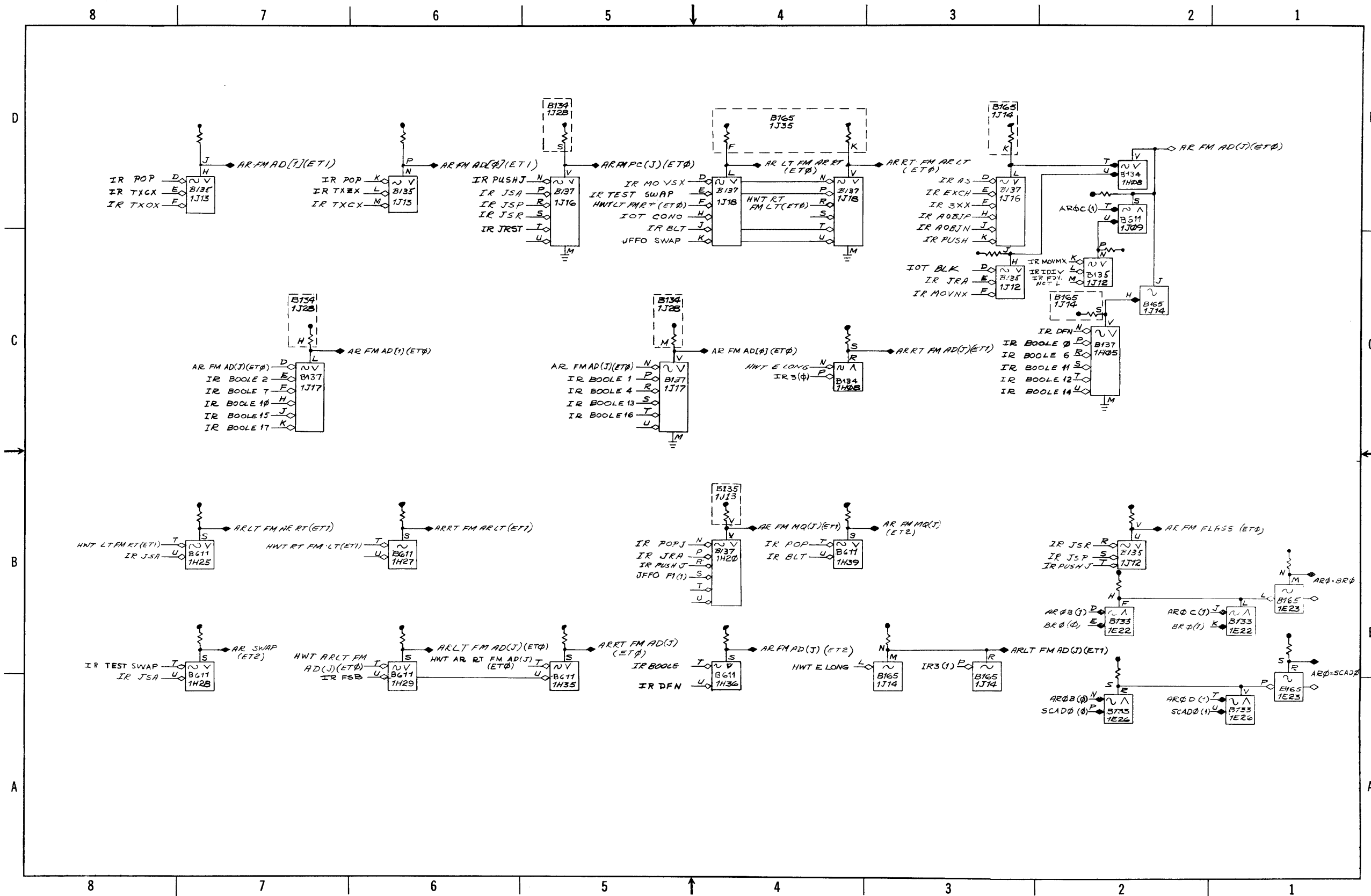
D-BS-KA10-0-AR4 AR Register



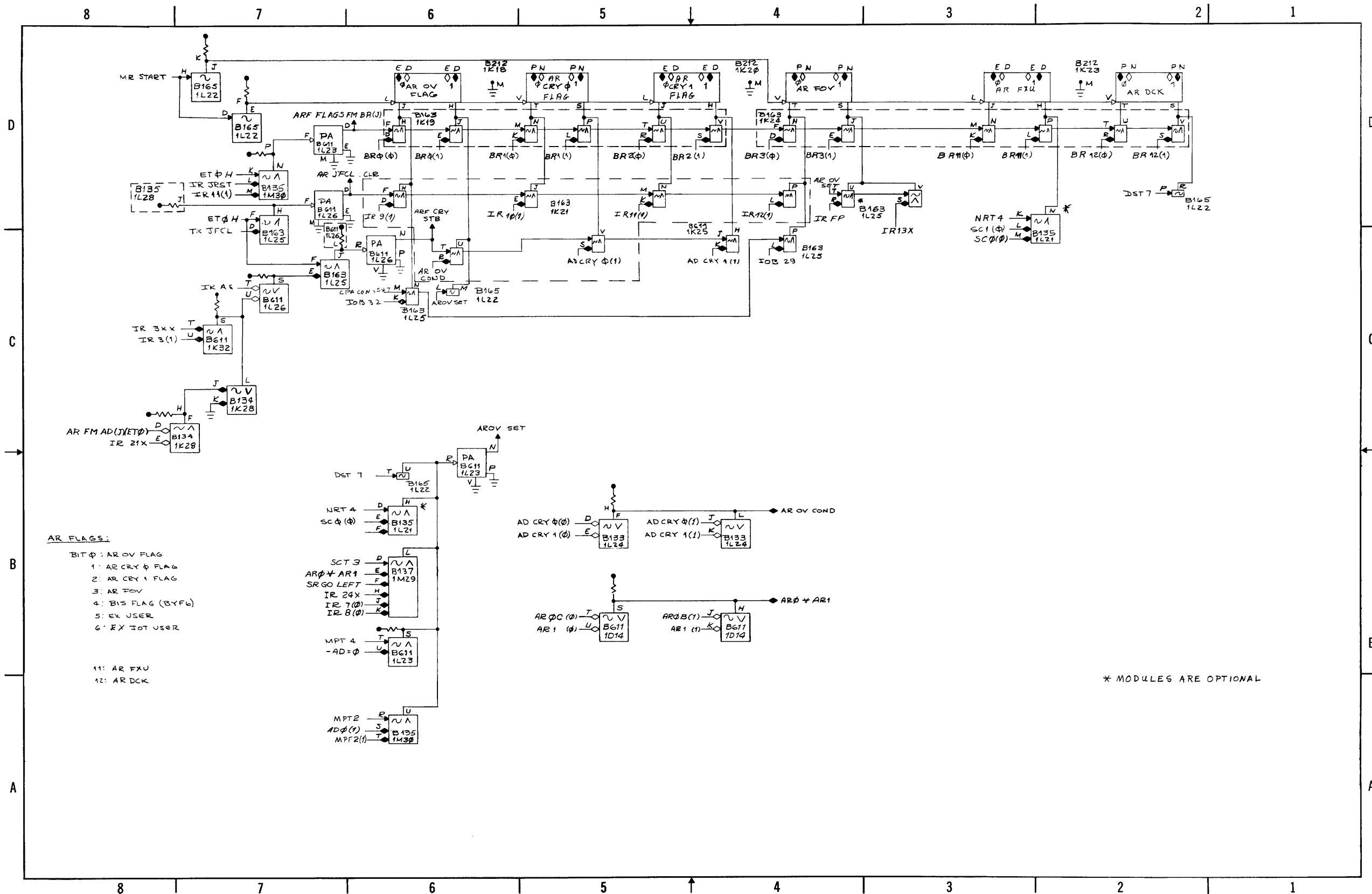
D-BS-KA10-0-ARC1 AR Control Pulses



D-BS-KA10-0-ARC2 AR Control Pulses



D-BS-KA10-0-ARC3 AR Control Levels

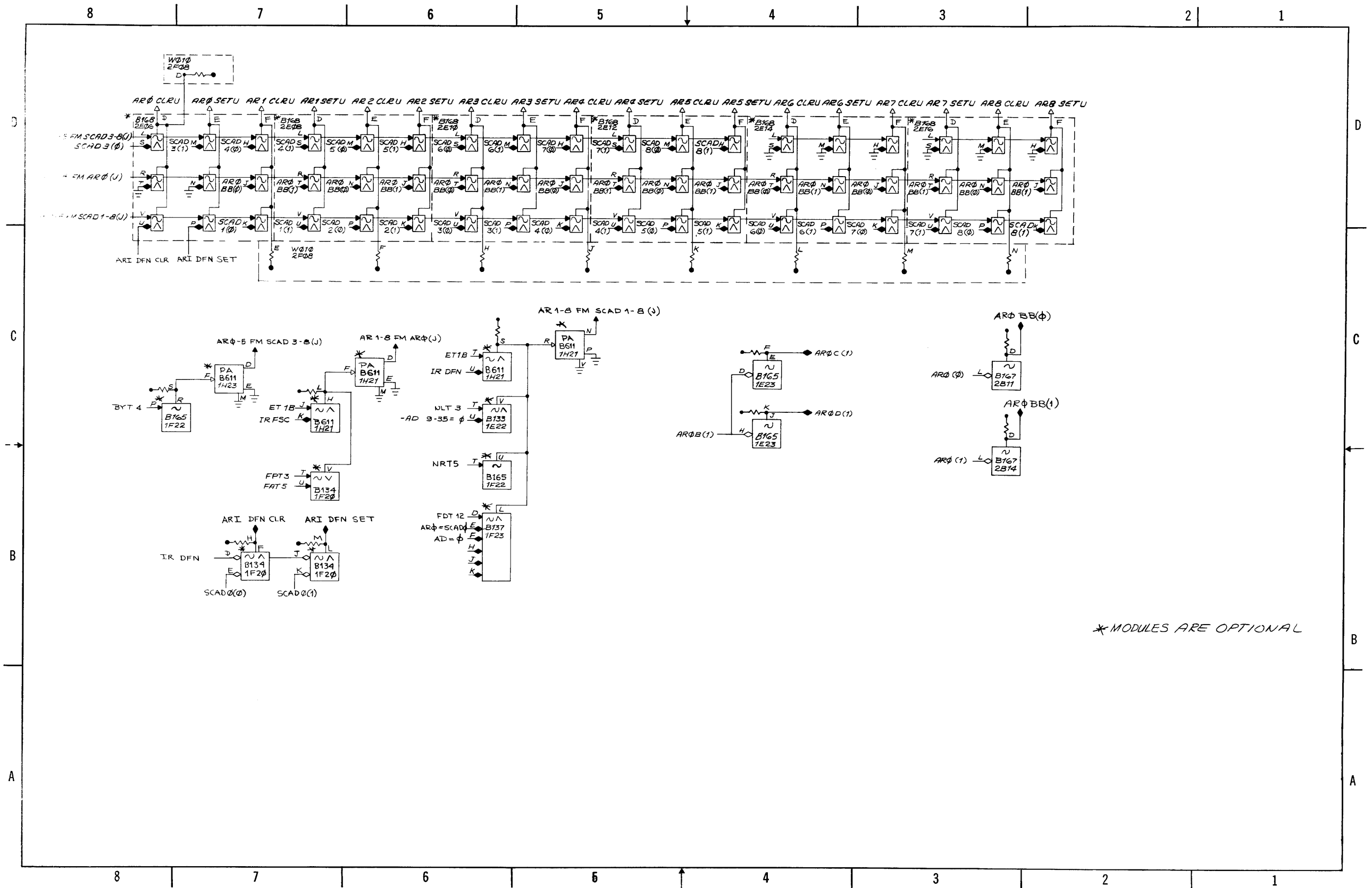


- AR FLAGS:**
- BIT 0 : AR OV FLAG
 - 1: AR CRY 0 FLAG
 - 2: AR CRY 1 FLAG
 - 3: AR FOV
 - 4: BIS FLAG (BYFW)
 - 5: EX USER
 - 6: EX JOT USER

 - 11: AR FXU
 - 12: AR DCK

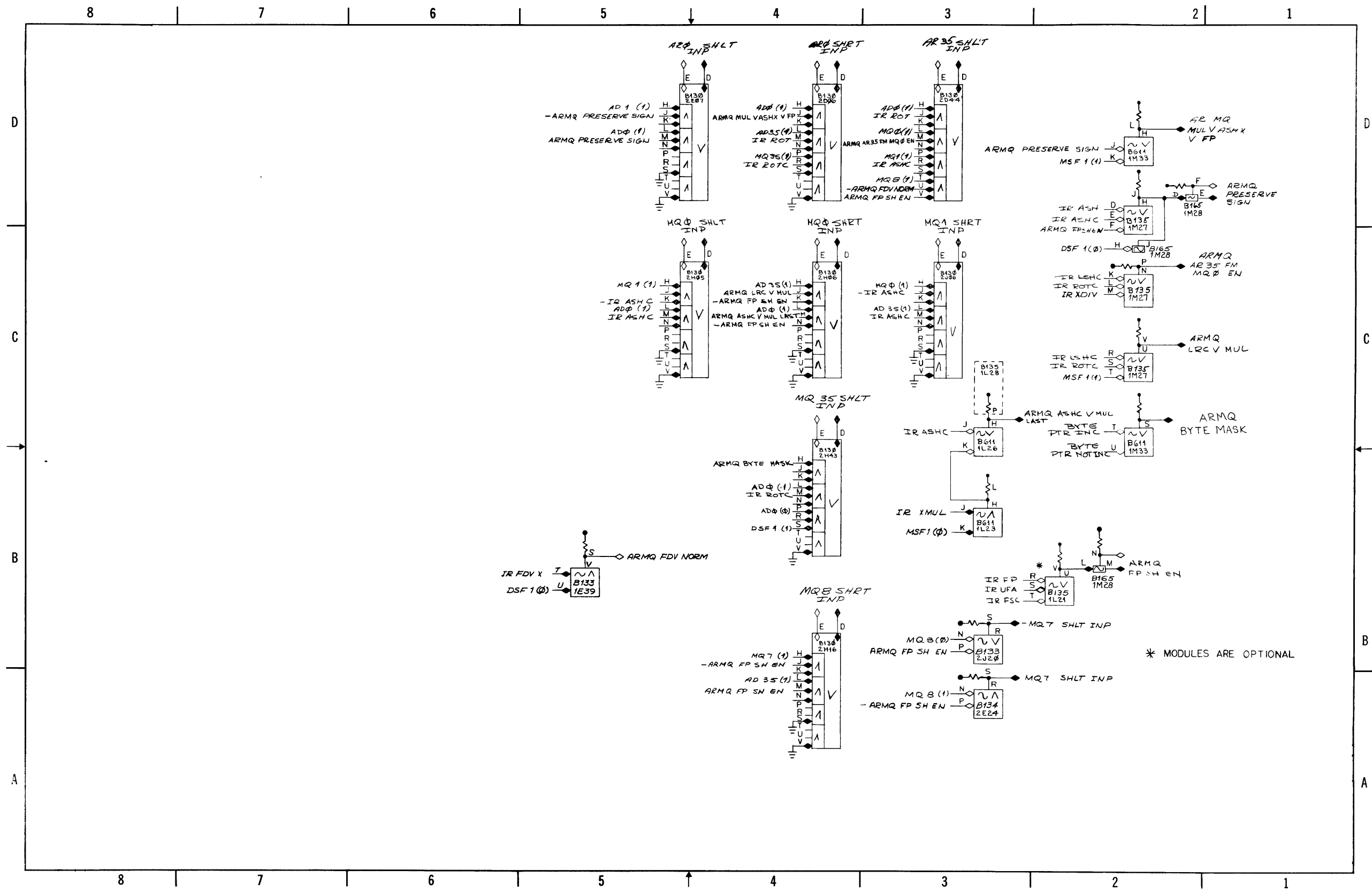
* MODULES ARE OPTIONAL

D-BS-KA10-0-ARF Arithmetic Flags

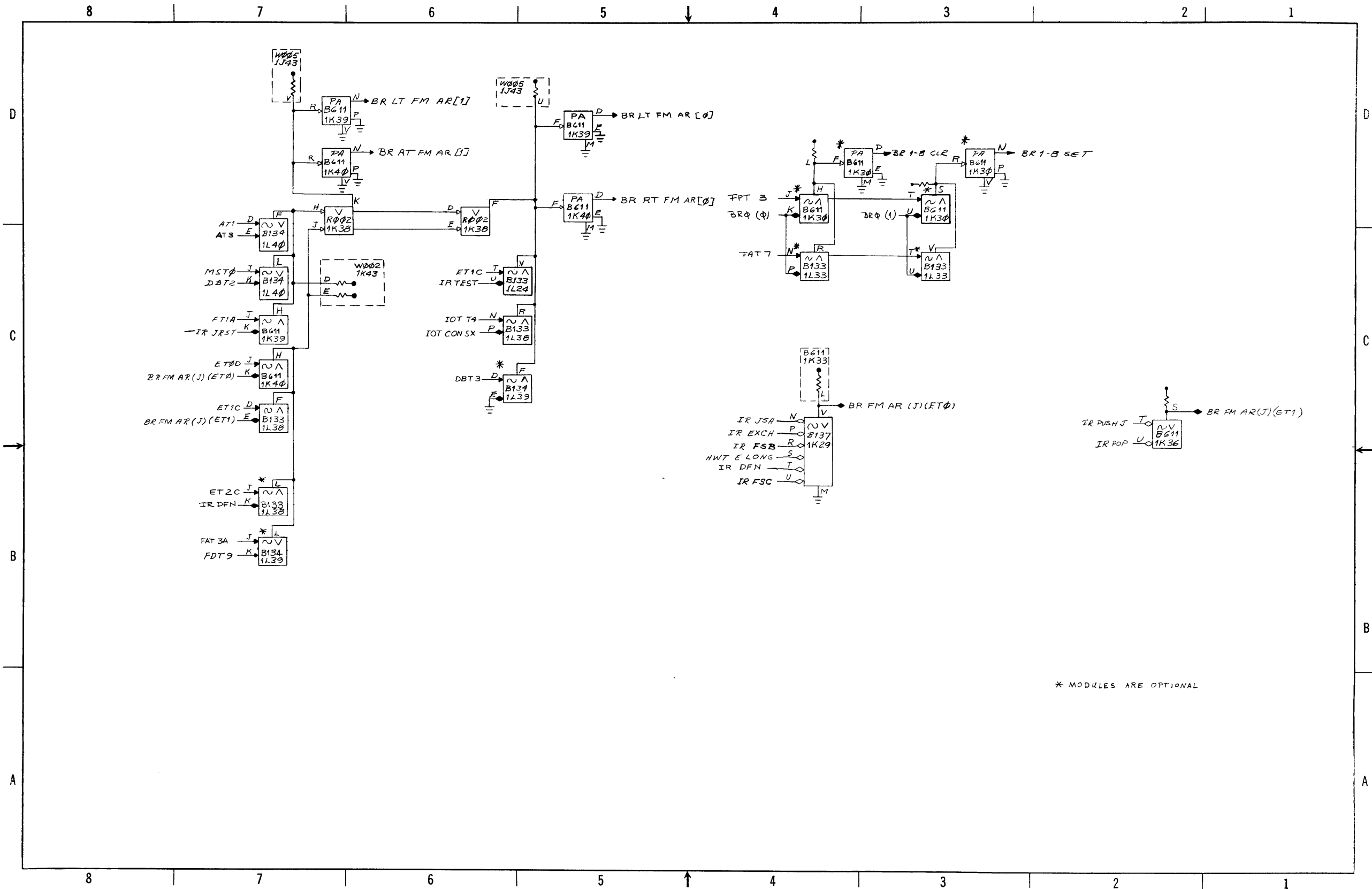


*MODULES ARE OPTIONAL

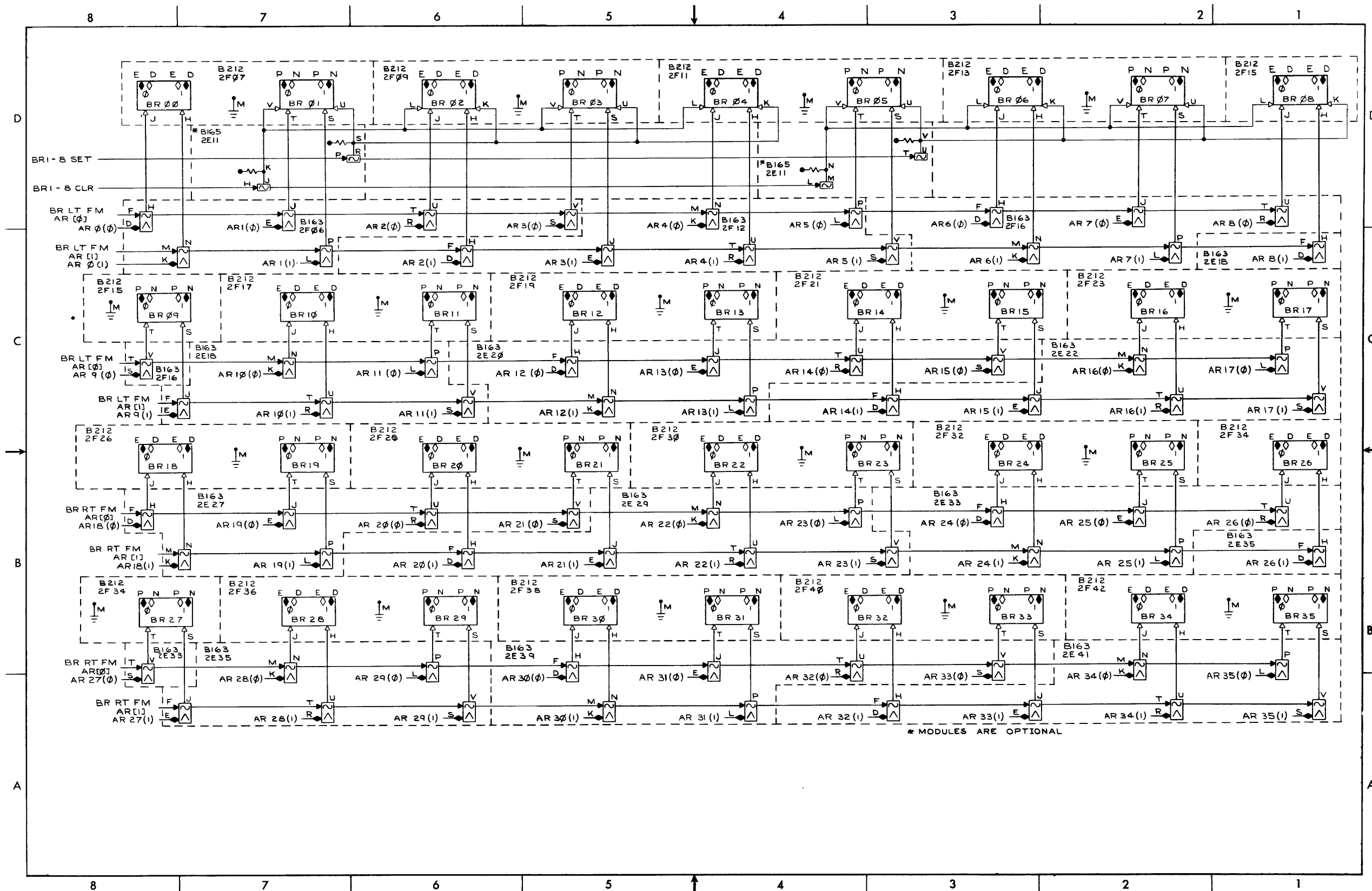
D-BS-KA10-0-ARI AR Inputs



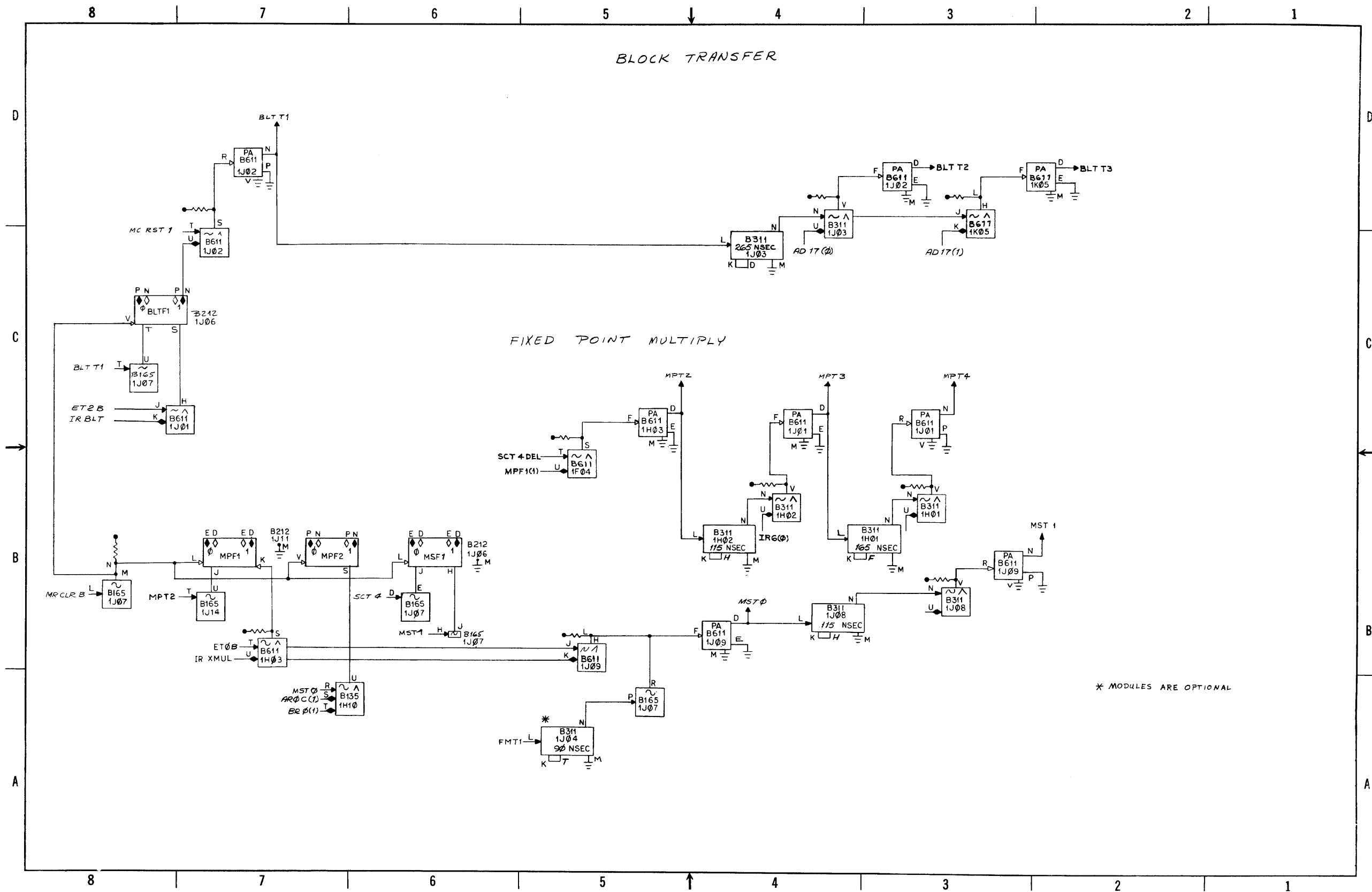
D-BS-KA10-0-ARMQ AR and MQ Shift Connections



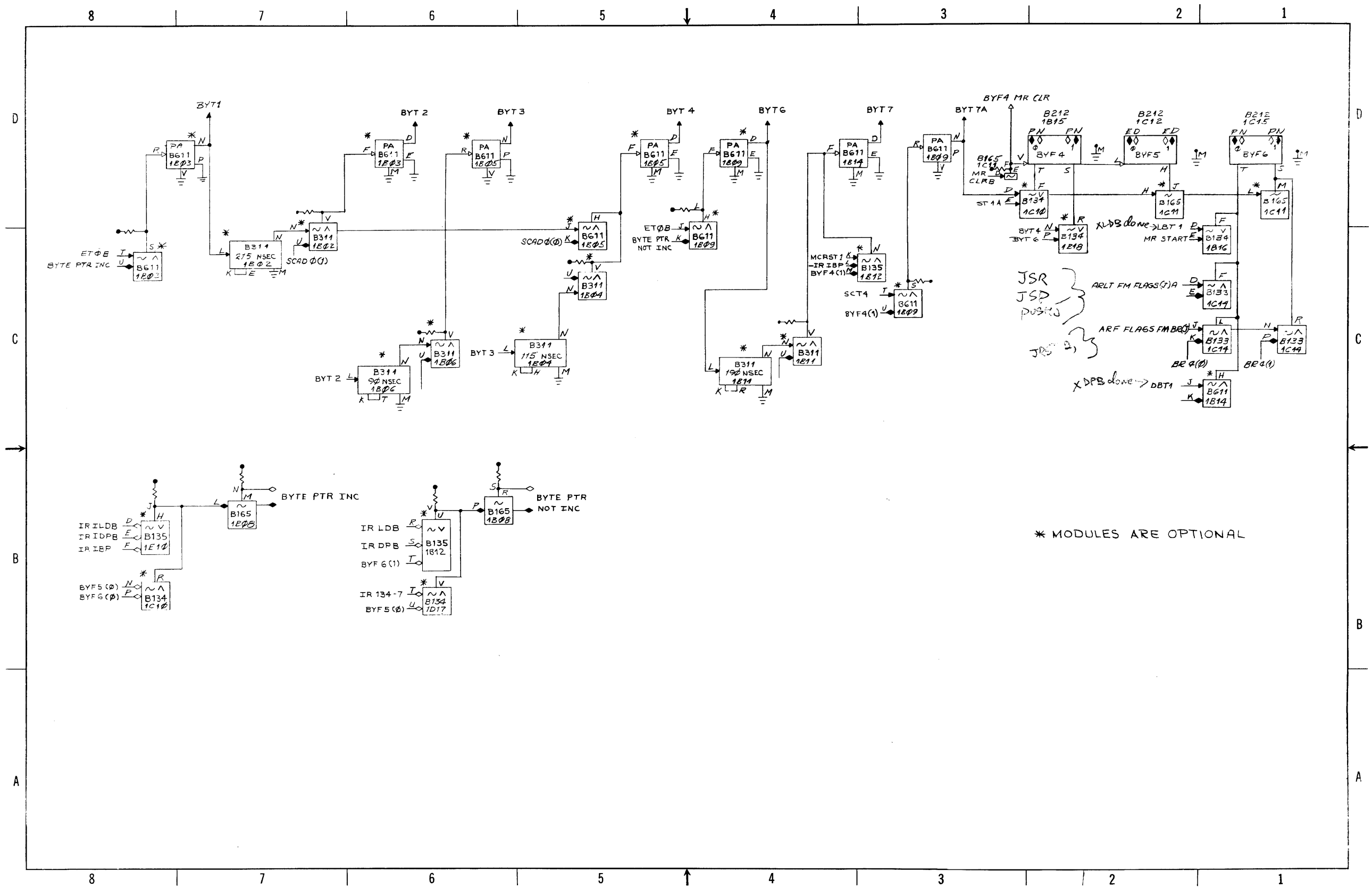
D-BS-KA10-0-BR1 BR Control



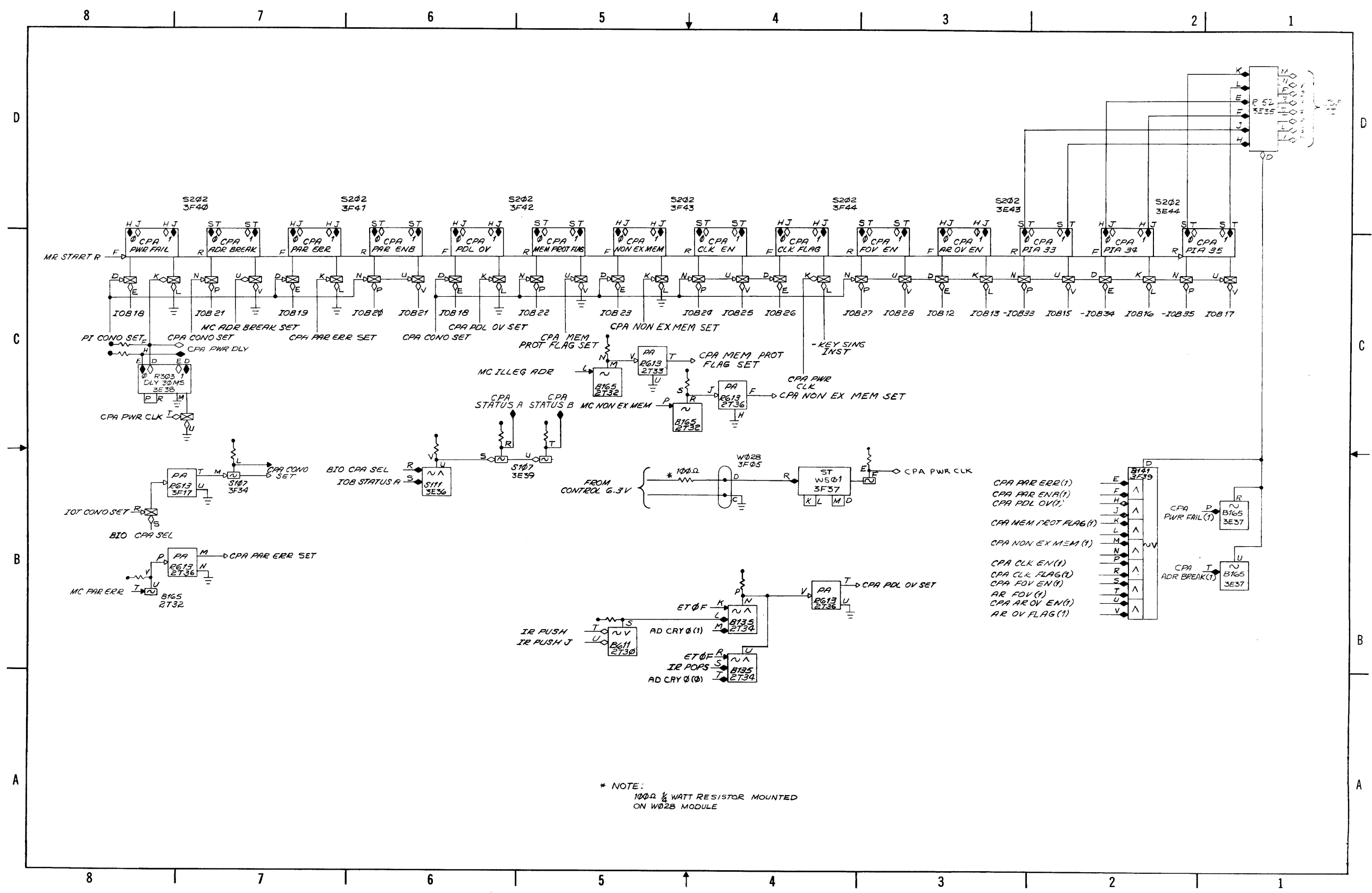
D-BS-KA10-0-BR2 BR Register



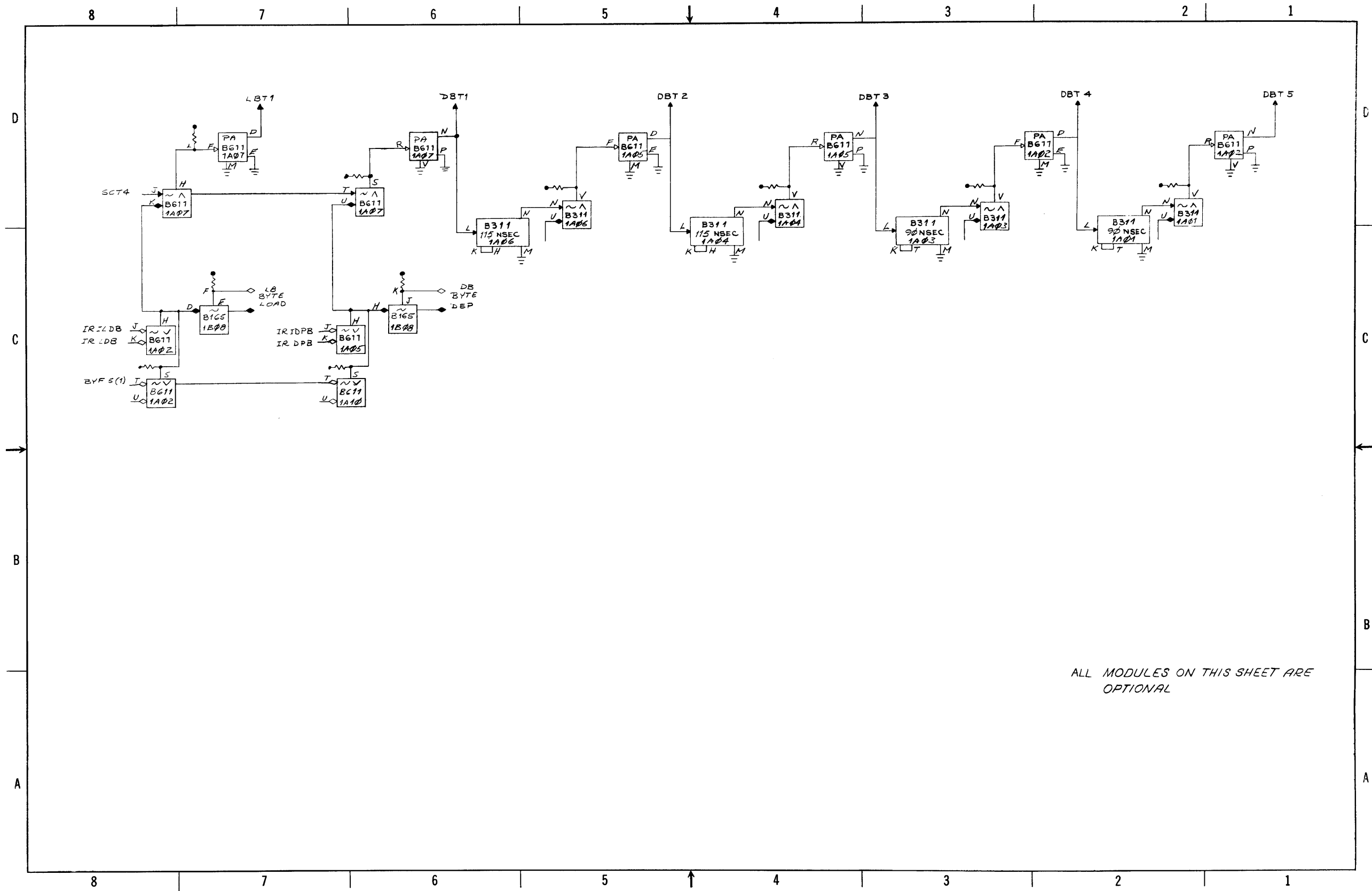
D-BS-KA10-0-BTMP Block Transfer and Multiply



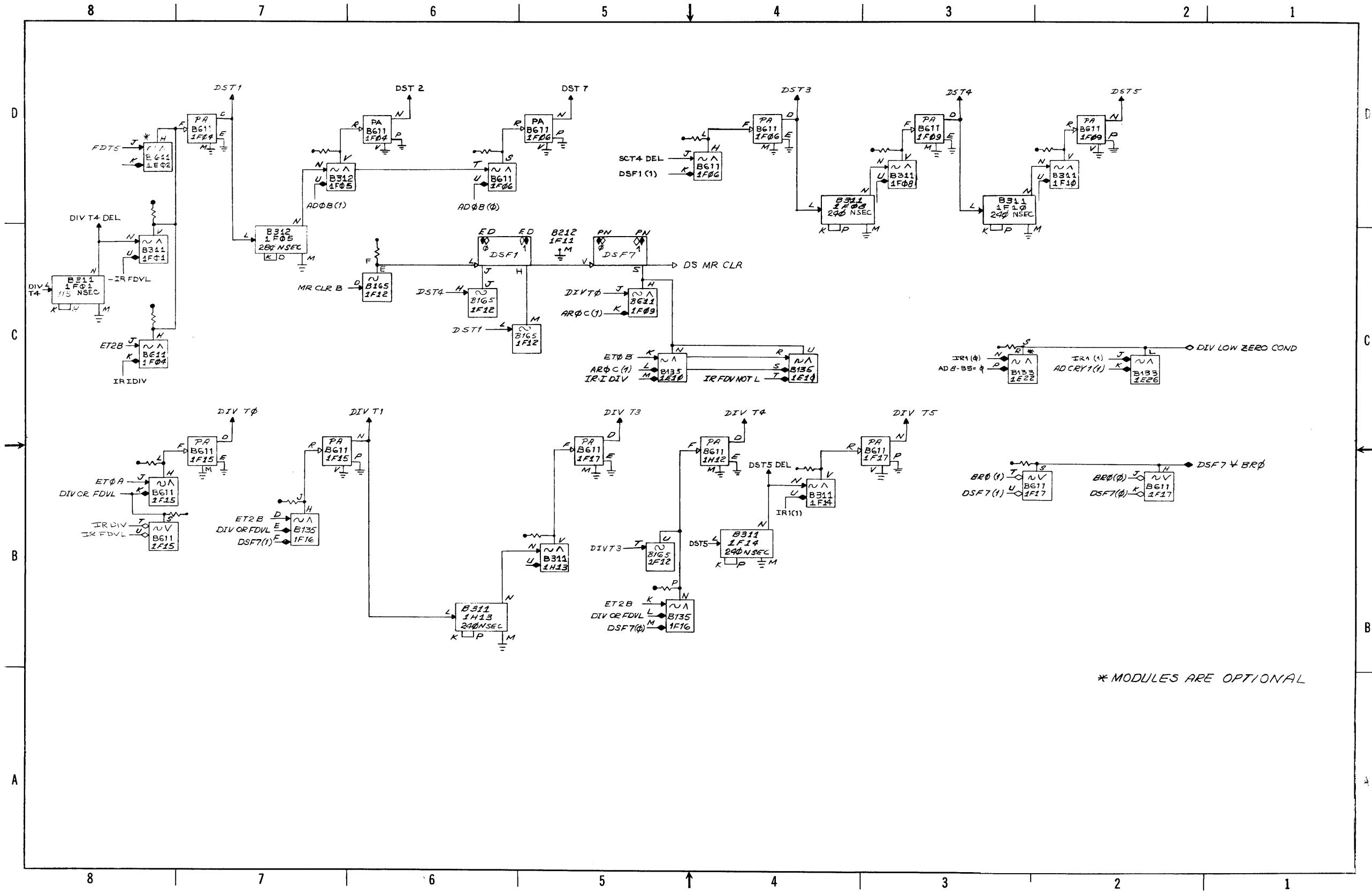
D-BS-KA10-0-BYTE Byte Instruction (First Part)



D-BS-KA10-0-CPA Arithmetic Process Status Register

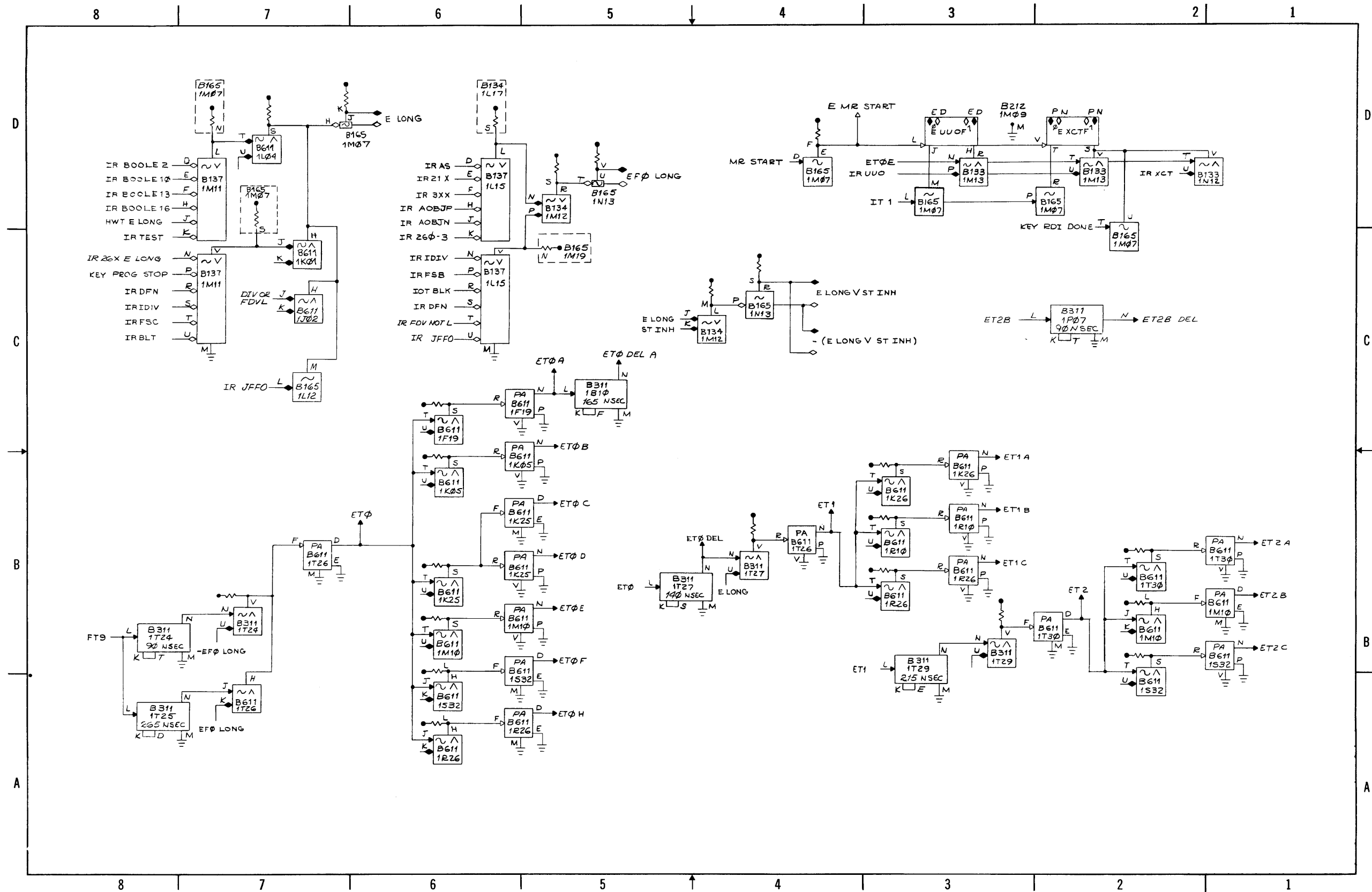


D-BS-KA10-0-DBLB Byte Instruction Deposit and Load (Second Part)

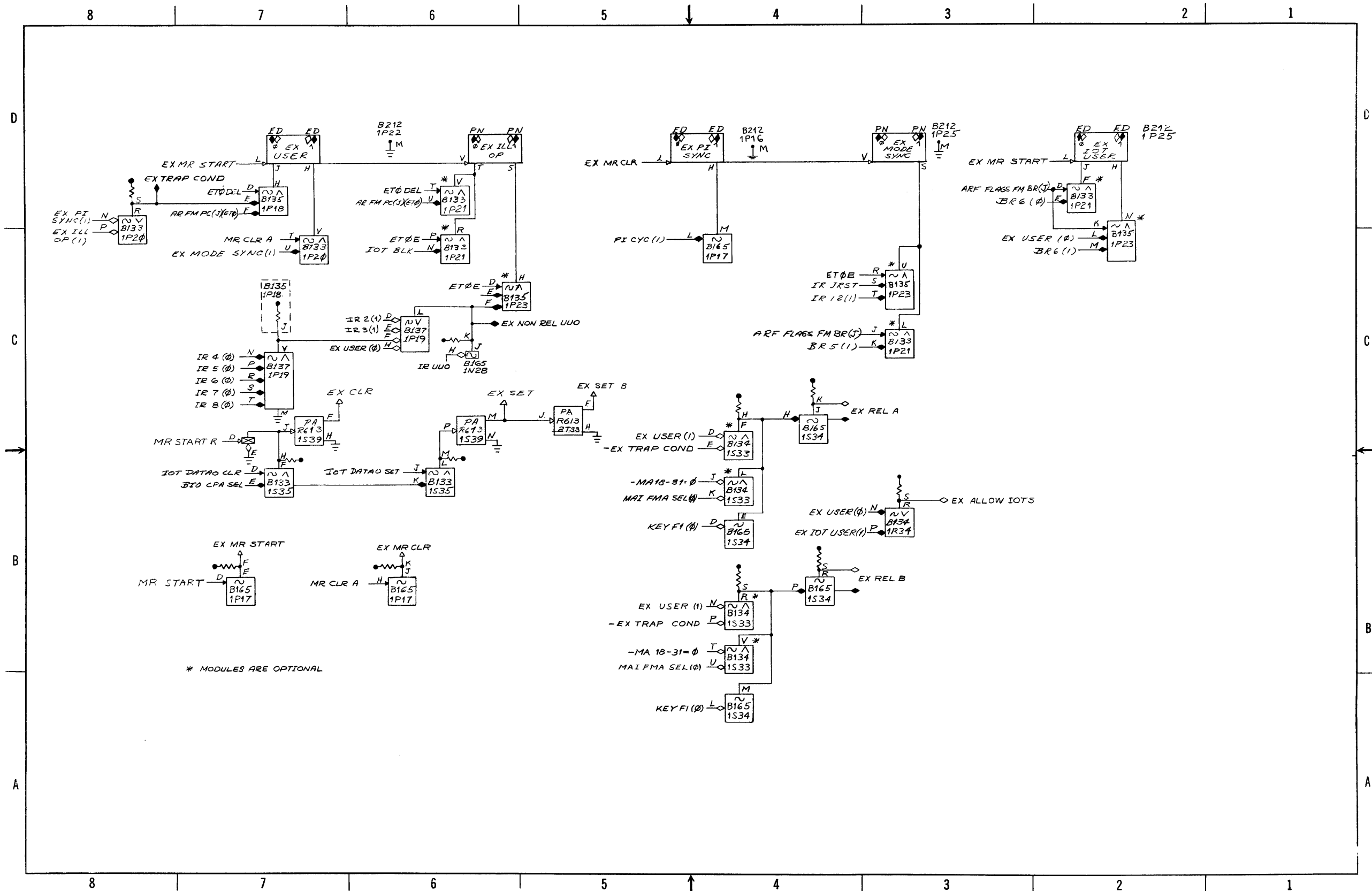


* MODULES ARE OPTIONAL

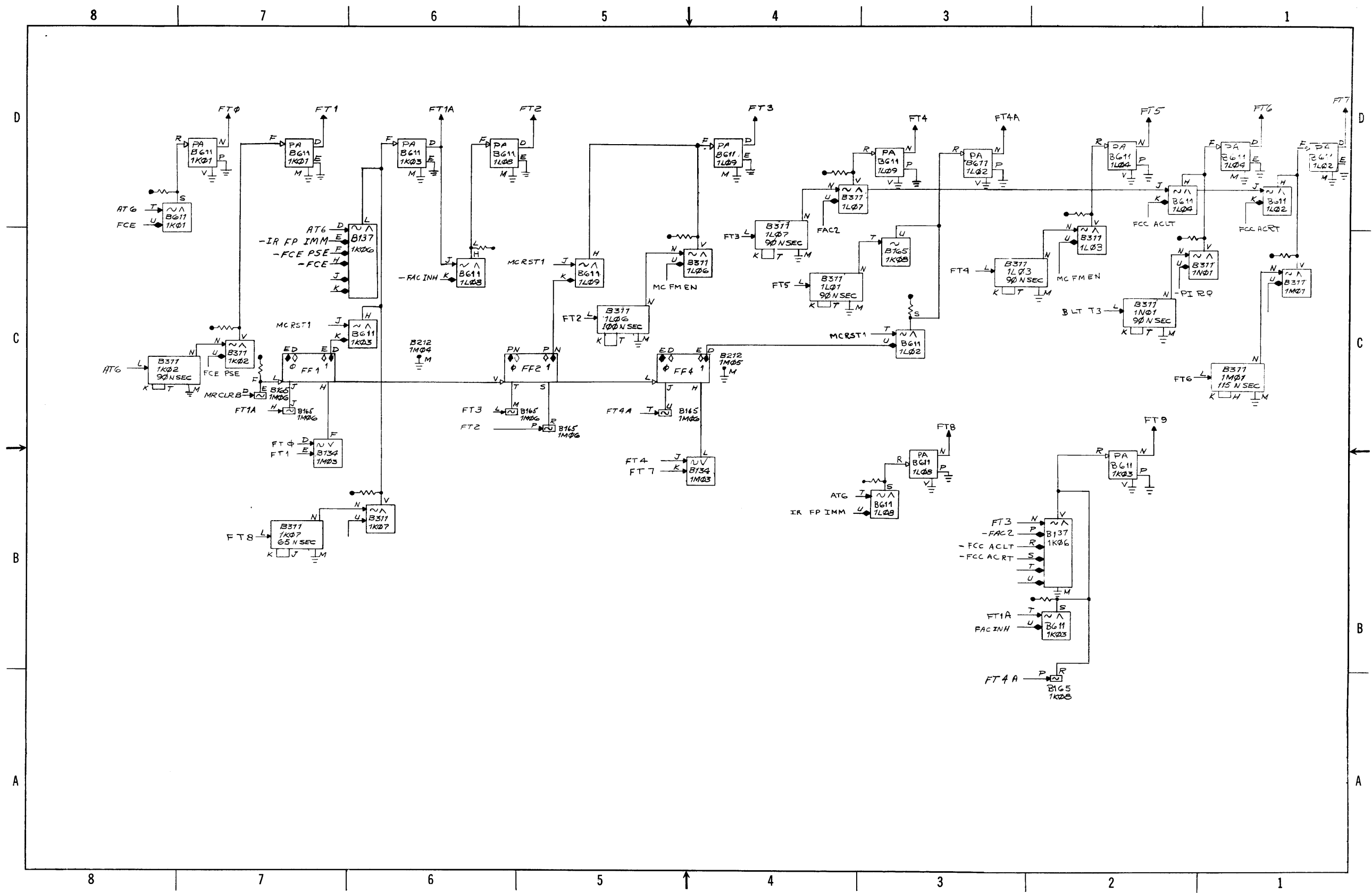
D-BS-KA10-0-DSDV Divide Subroutine and Fixed Divide



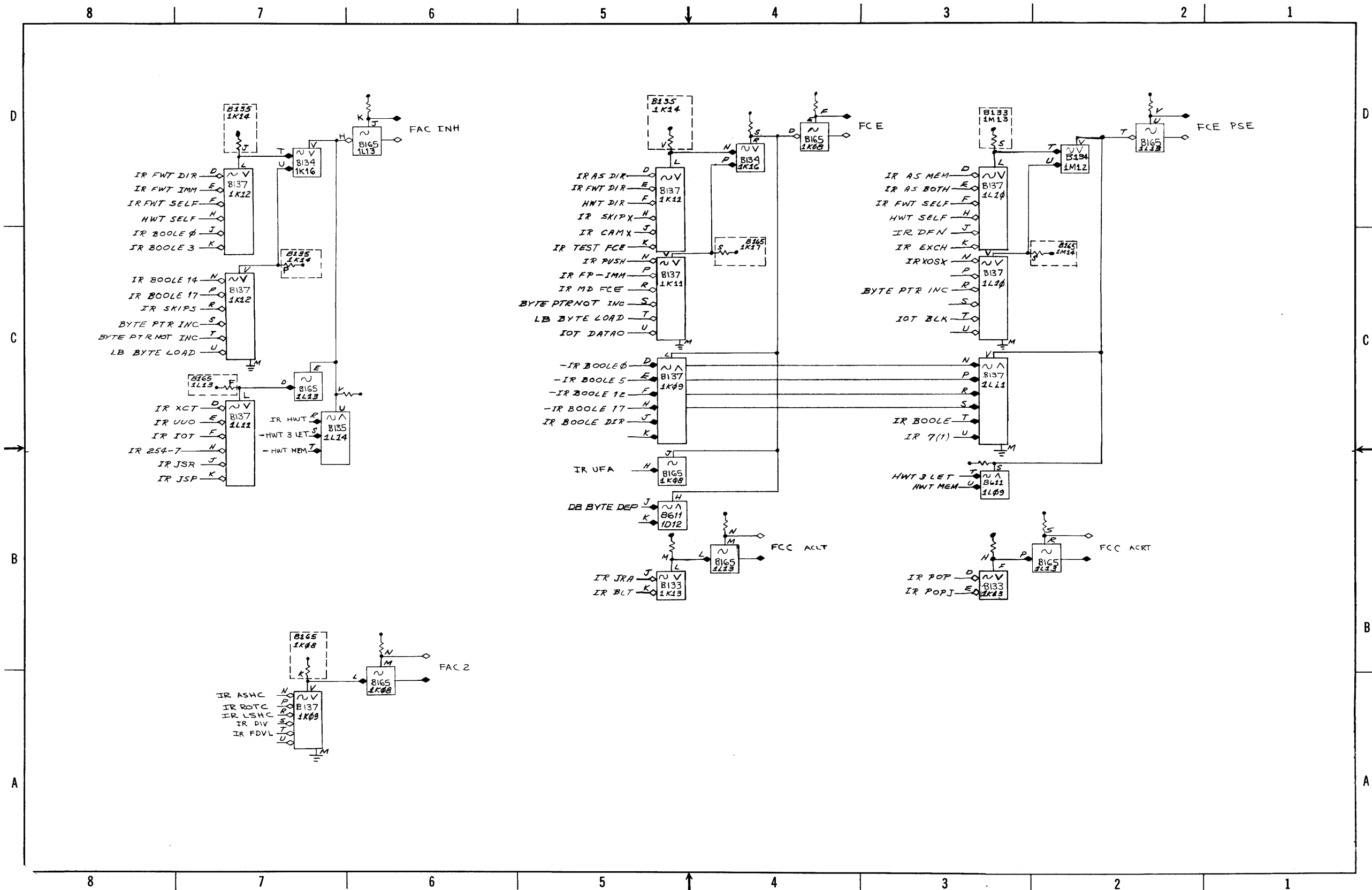
D-BS-KA10-0-E Execution Cycle



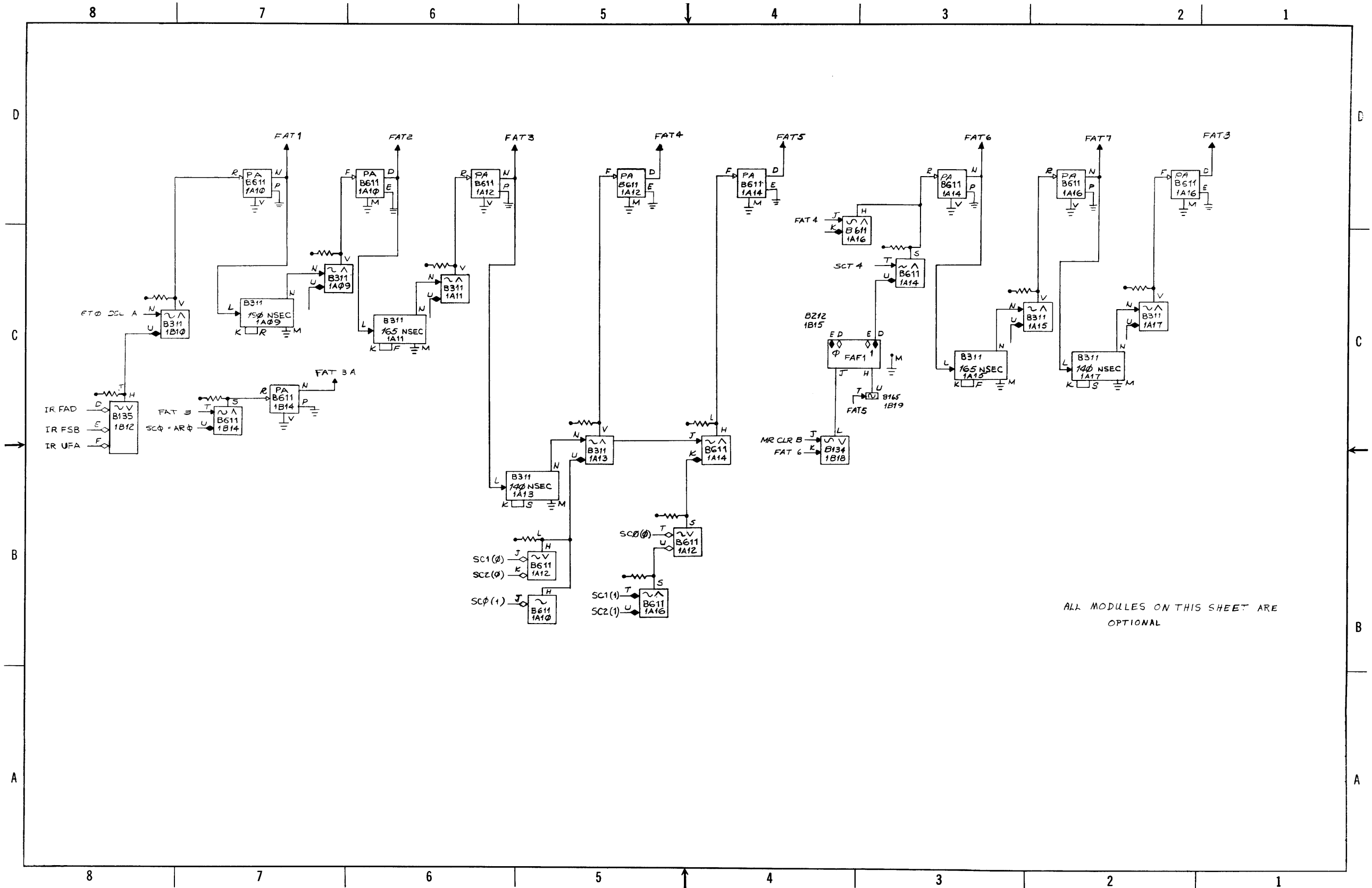
D-BS-KA10-0-EX Executive Control



D-BS-KA10-0-F1 Fetch Cycle Time Pulses

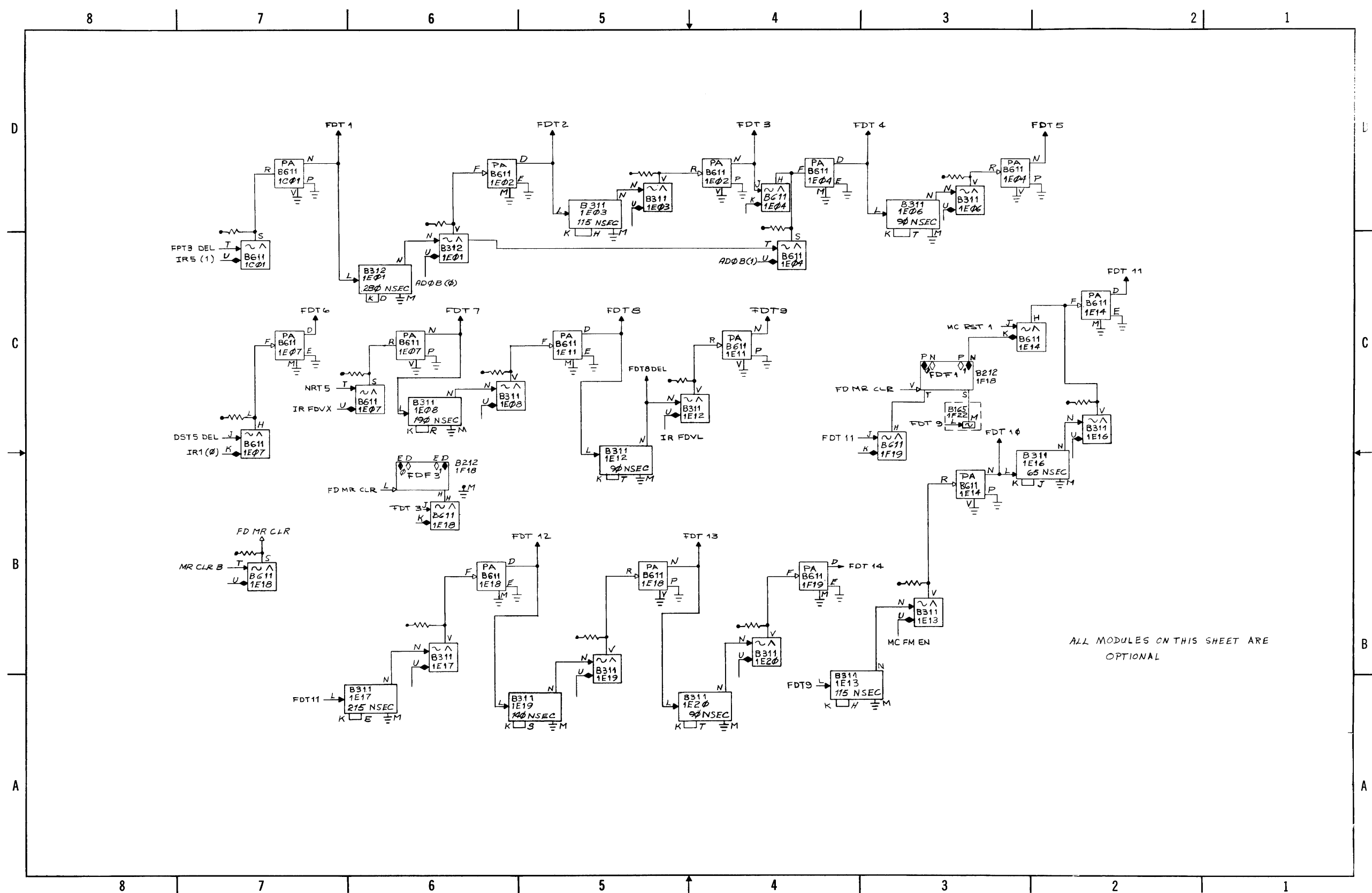


D-BS-KA10-0-F2 Fetch Cycle Levels



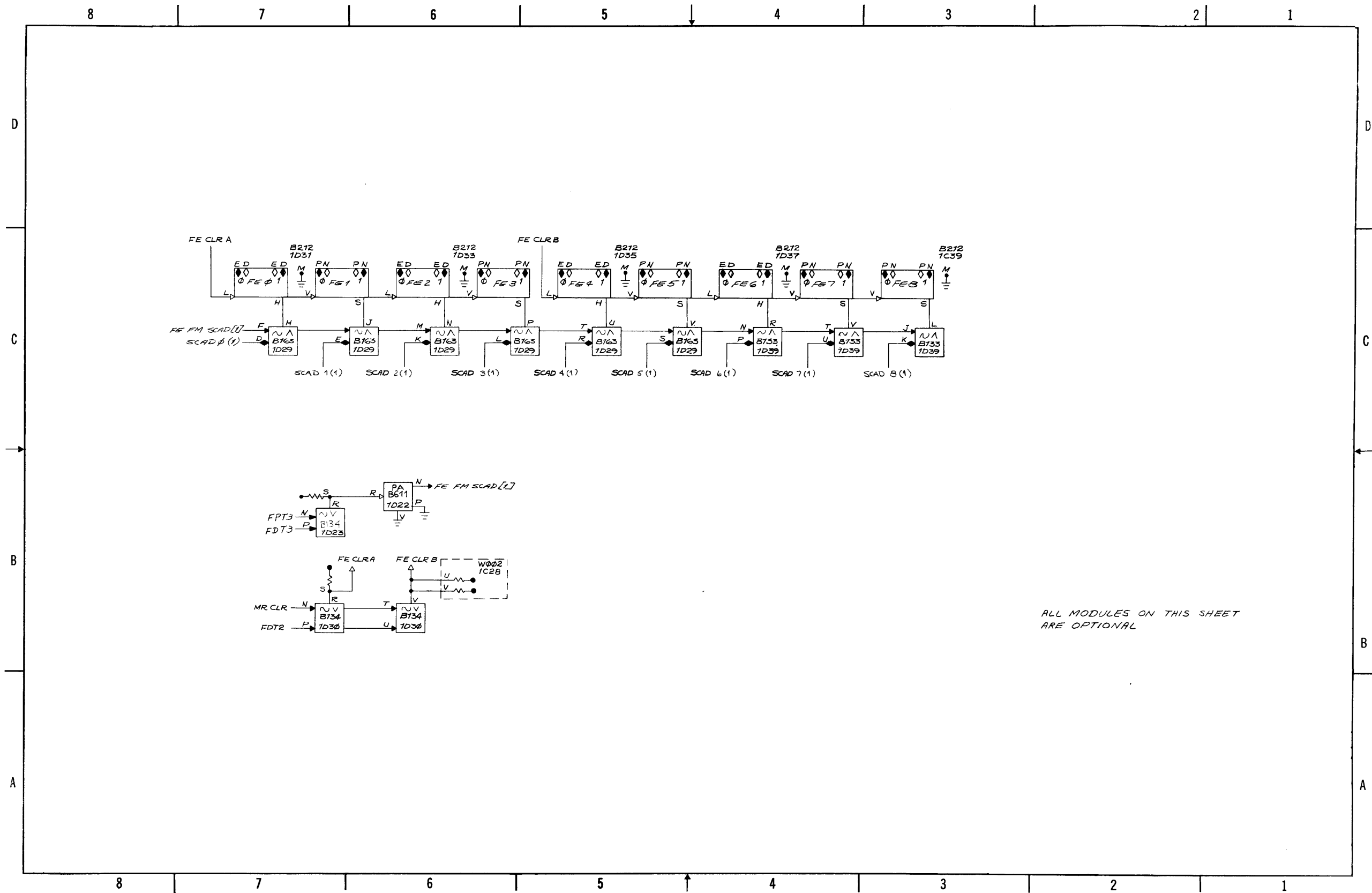
ALL MODULES ON THIS SHEET ARE OPTIONAL

D-BS-KA10-0-FA Floating Add Instruction

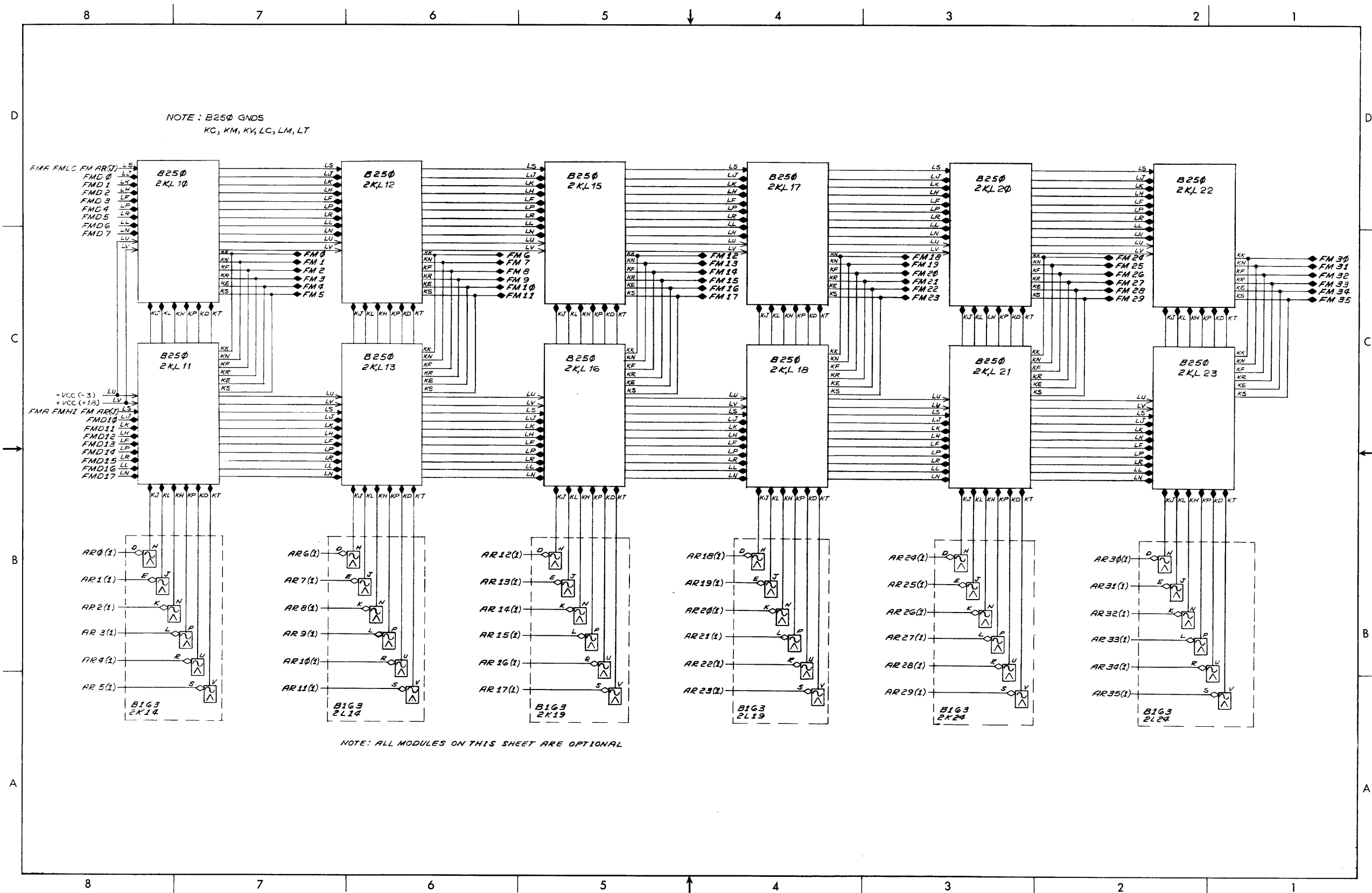


ALL MODULES ON THIS SHEET ARE
OPTIONAL

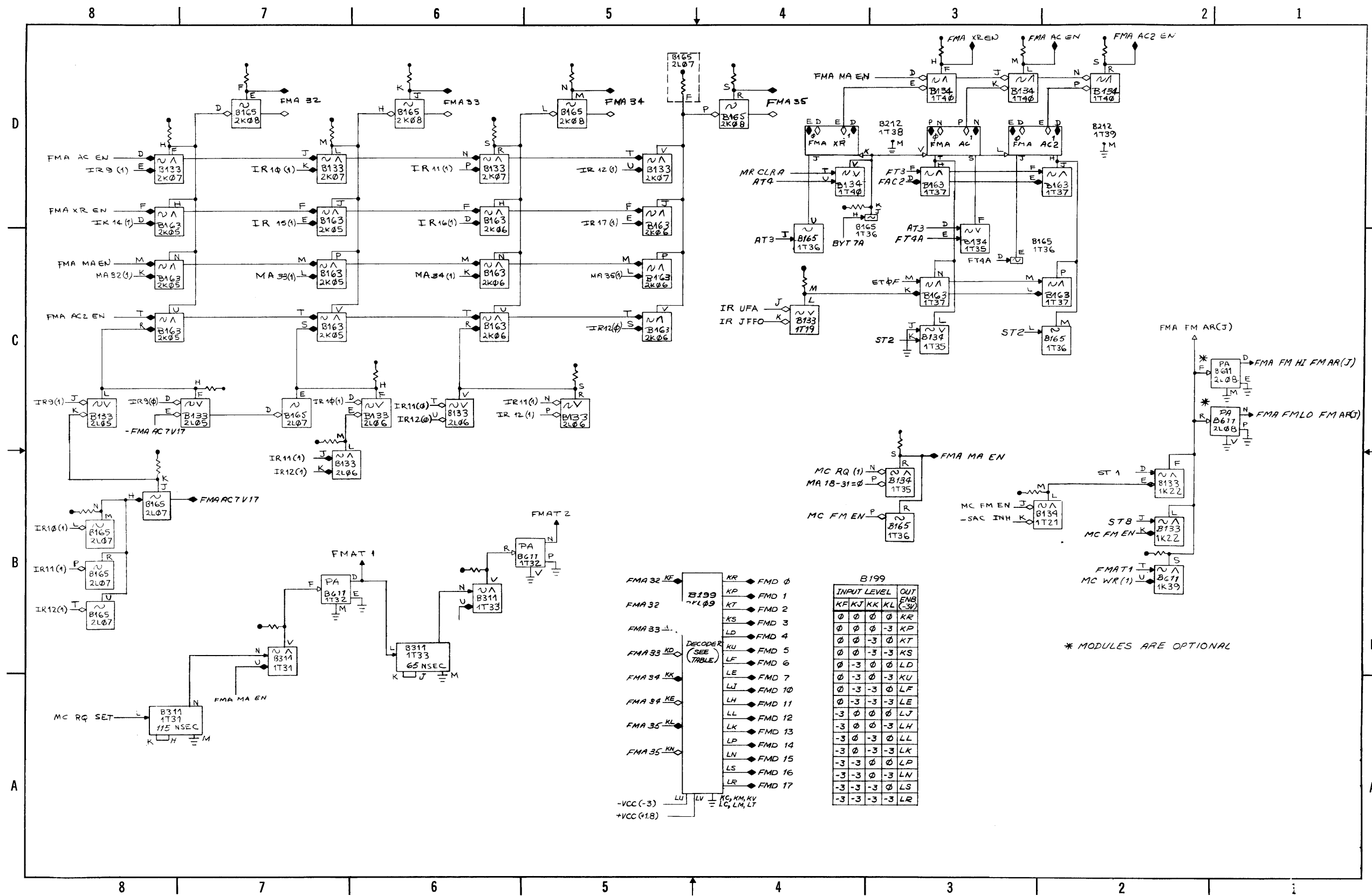
D-BS-KA10-0-FDV Floating Divide



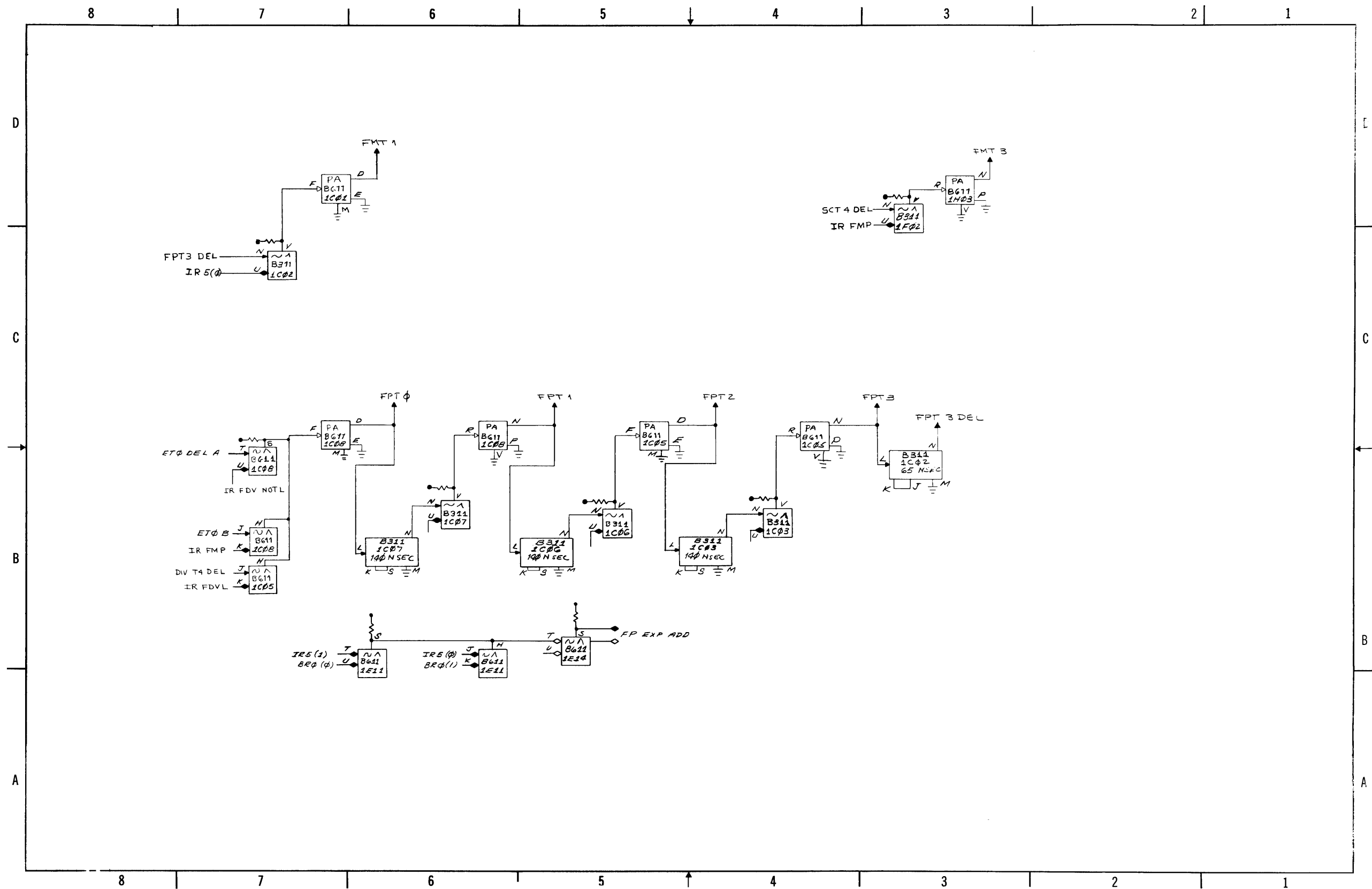
D-BS-KA10-0-FE Floating Exponent Reg and Control



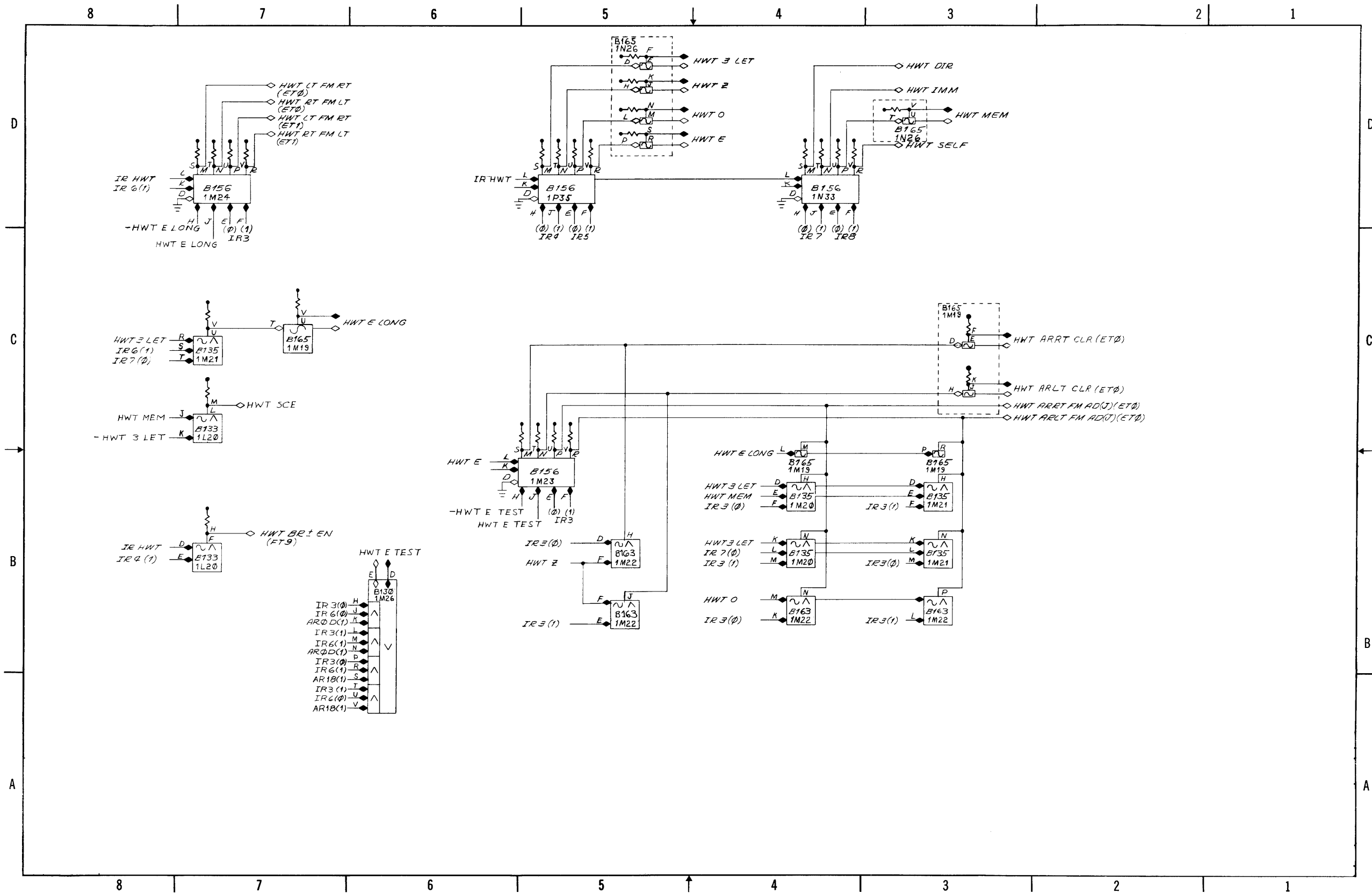
D-BS-KA10-0-FM Fast Memory



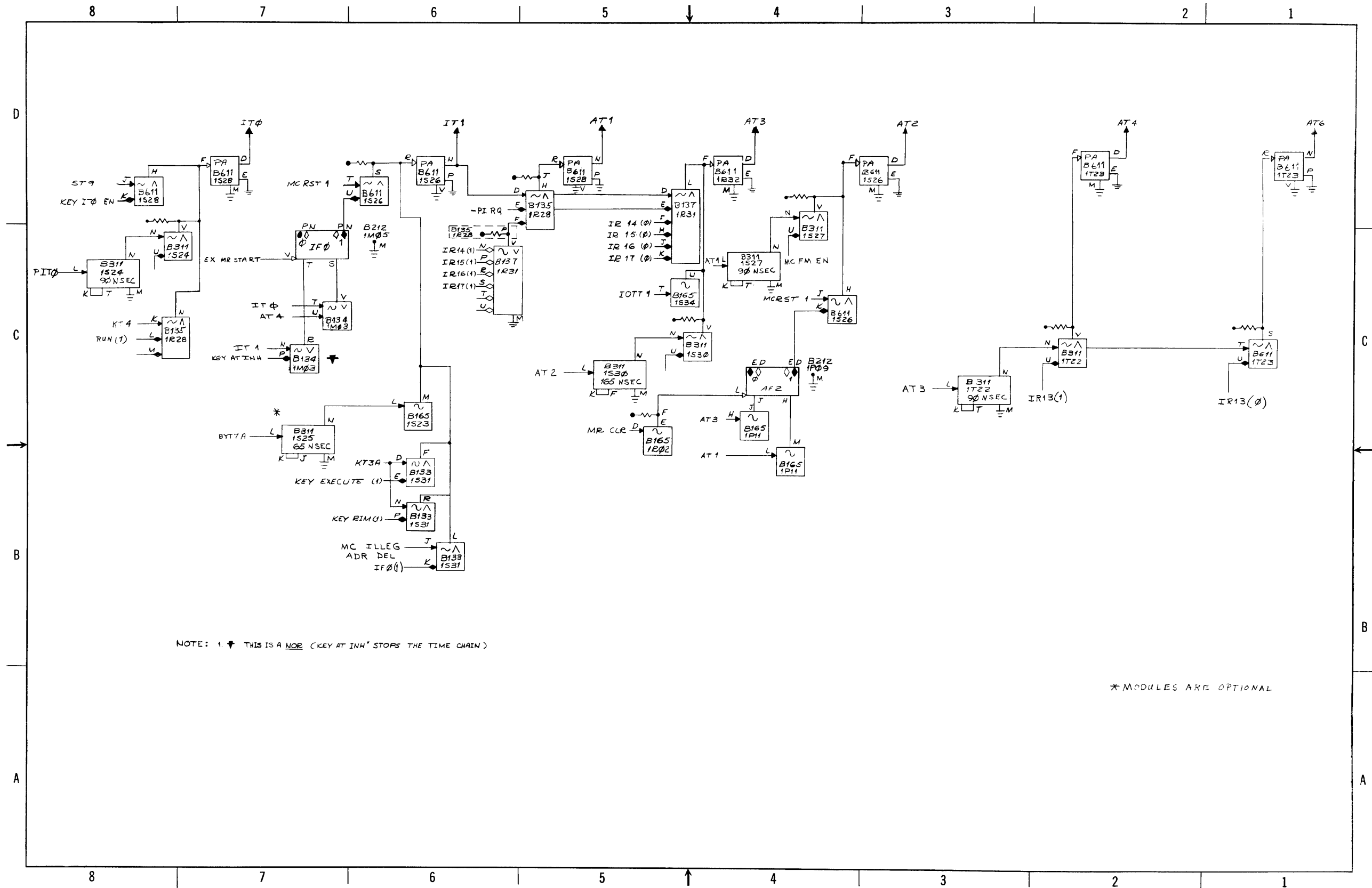
D-BS-KA10-0-FMA Fast Memory Address



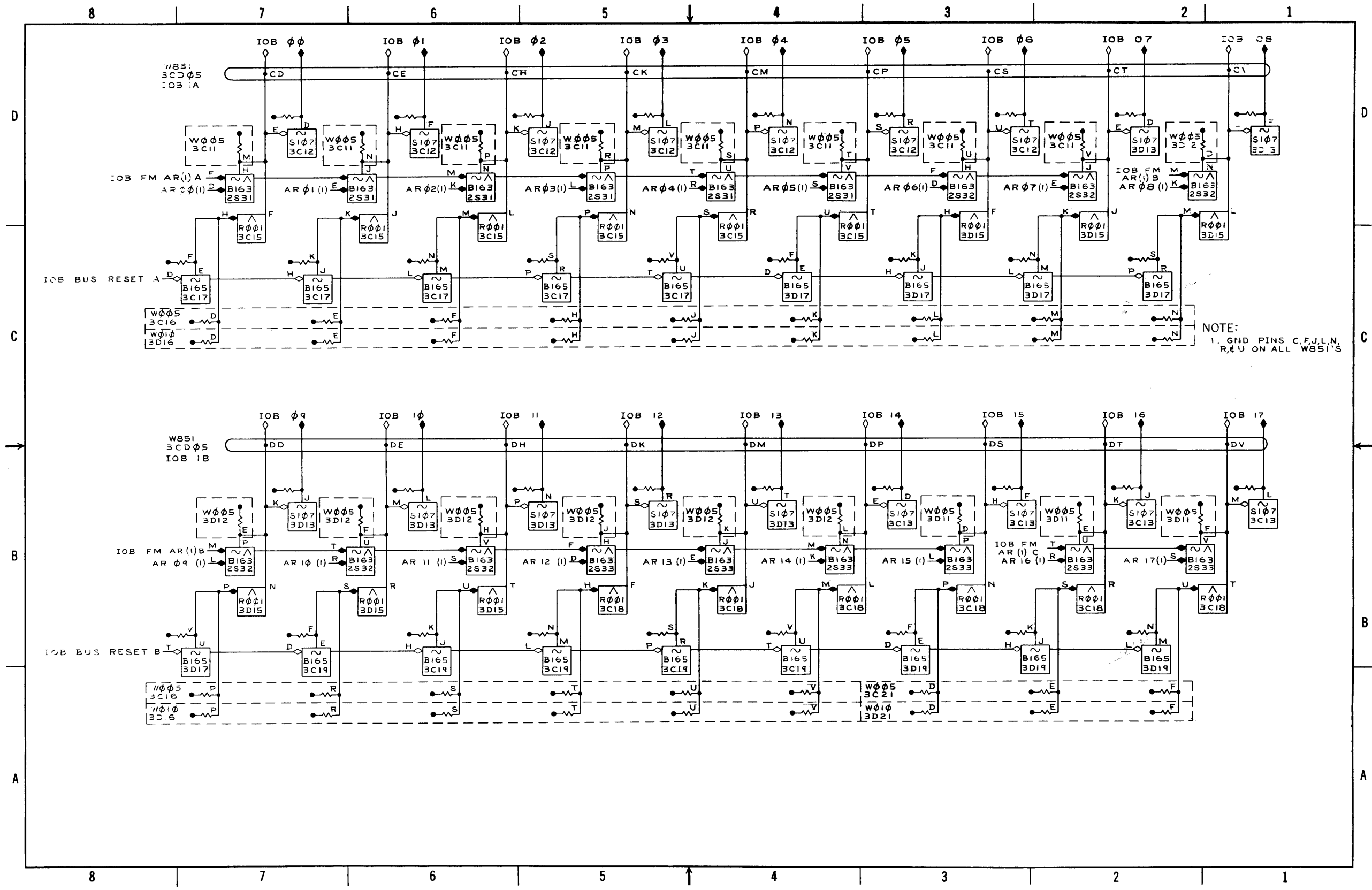
D-BS-KA10-0-PPFM EXP CALC Floating Multiply



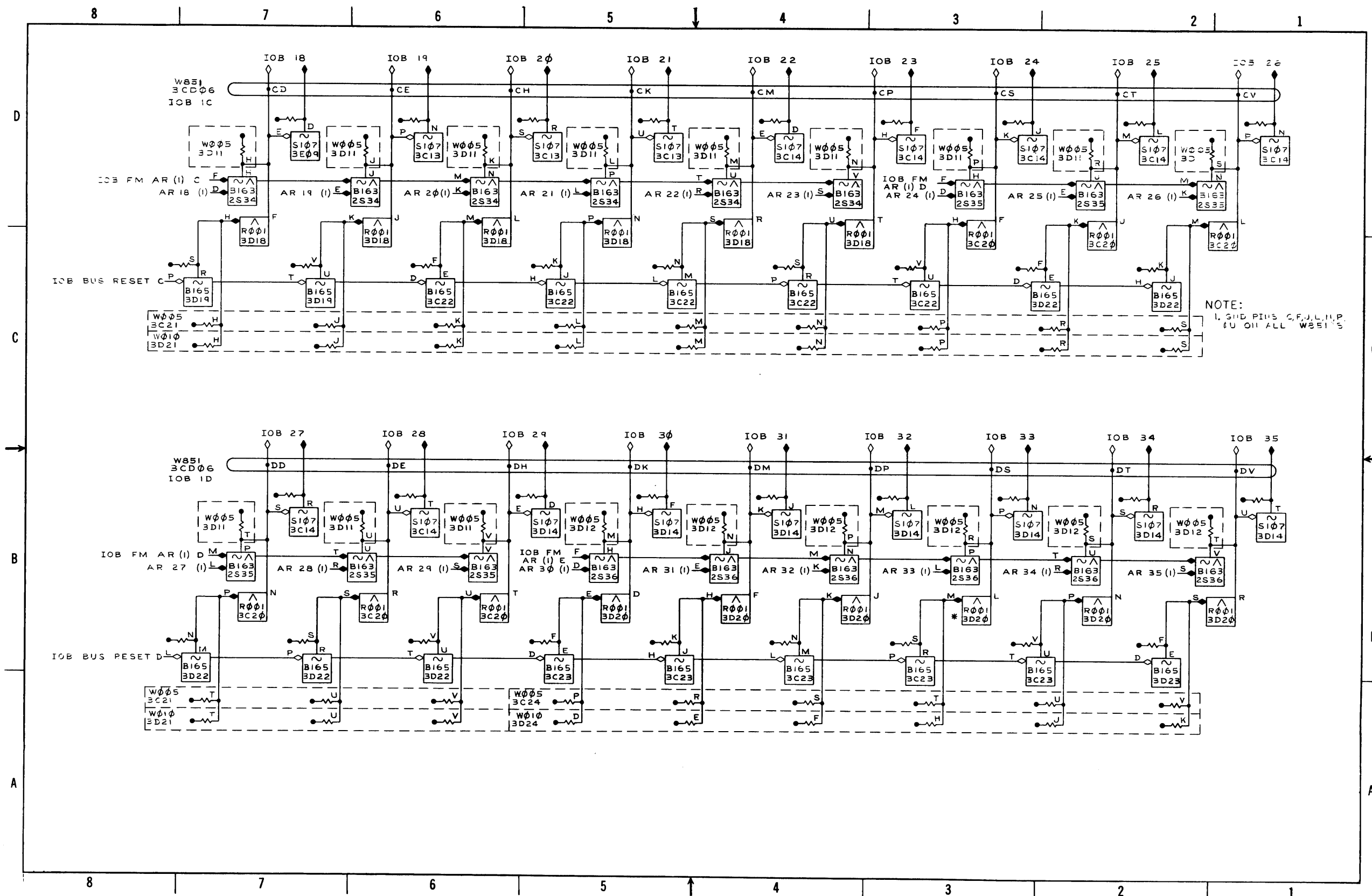
D-BS-KA10-0-HWT Half Word Transfer



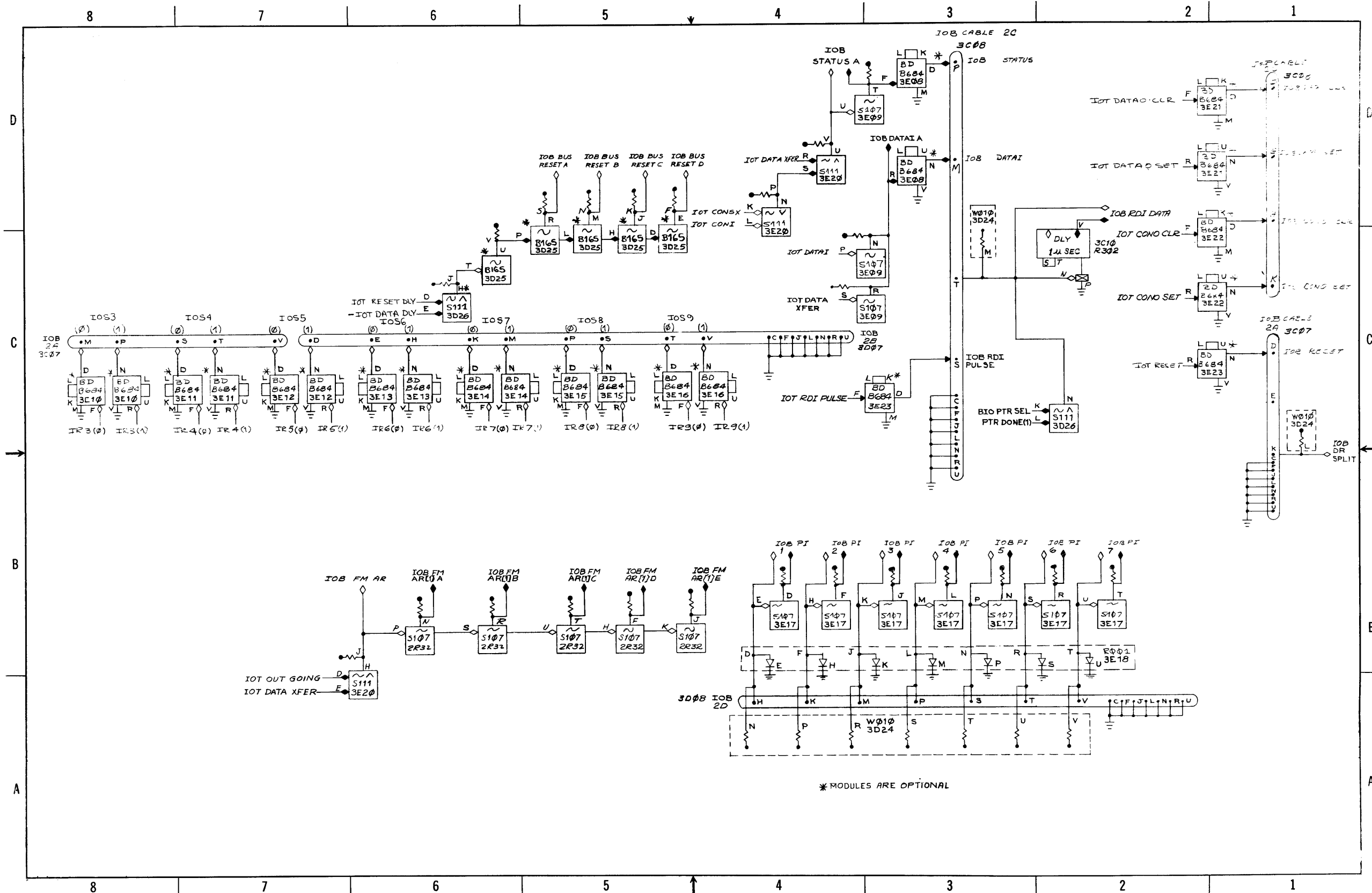
D-BS-KA10-0-IA Instruction and Address Cycles



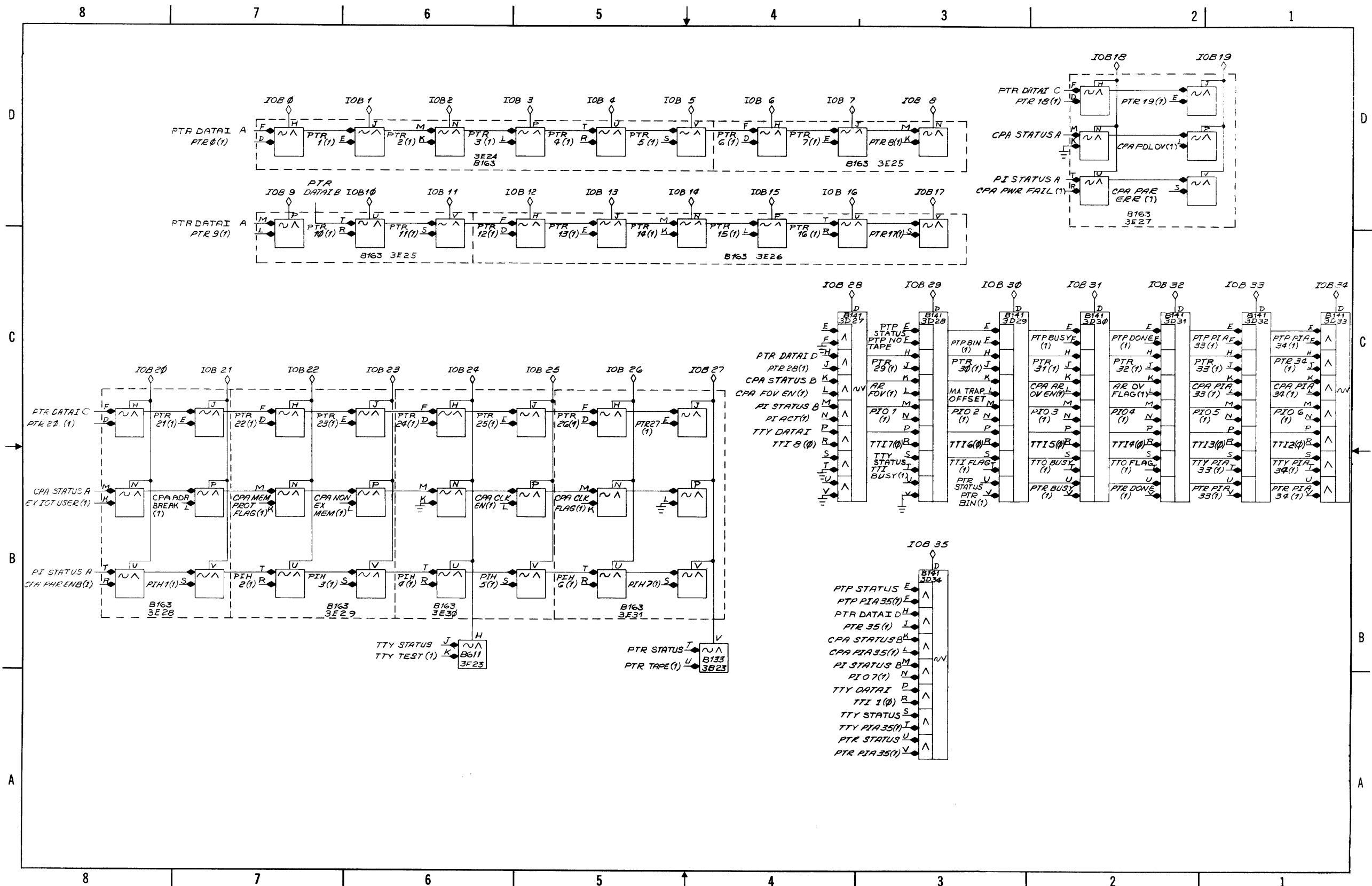
D-BS-KA10-0-IOB1 I/O Bus 0-17



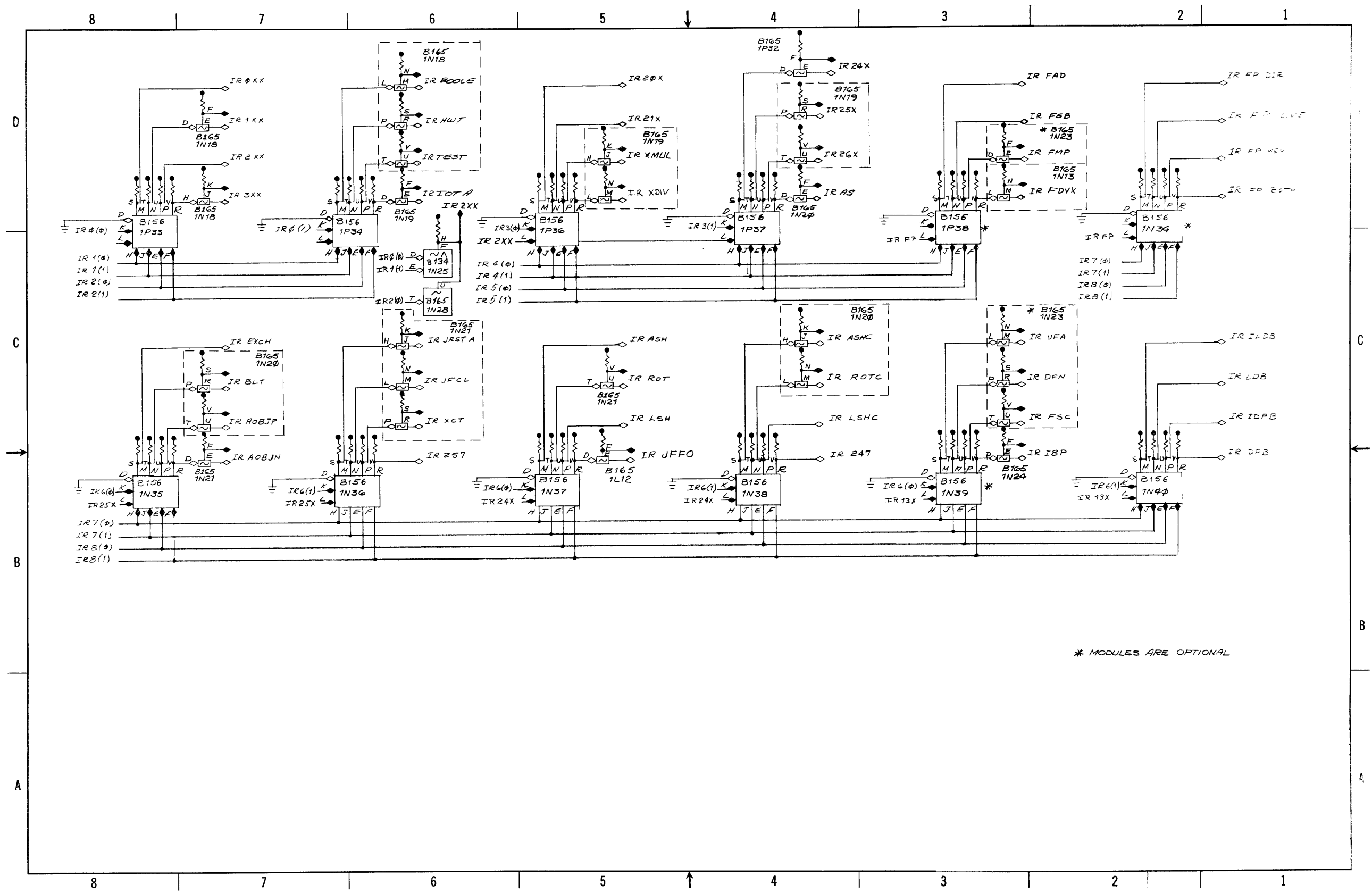
D-BS-KA10-0-IOB2 I/O Bus 18-35



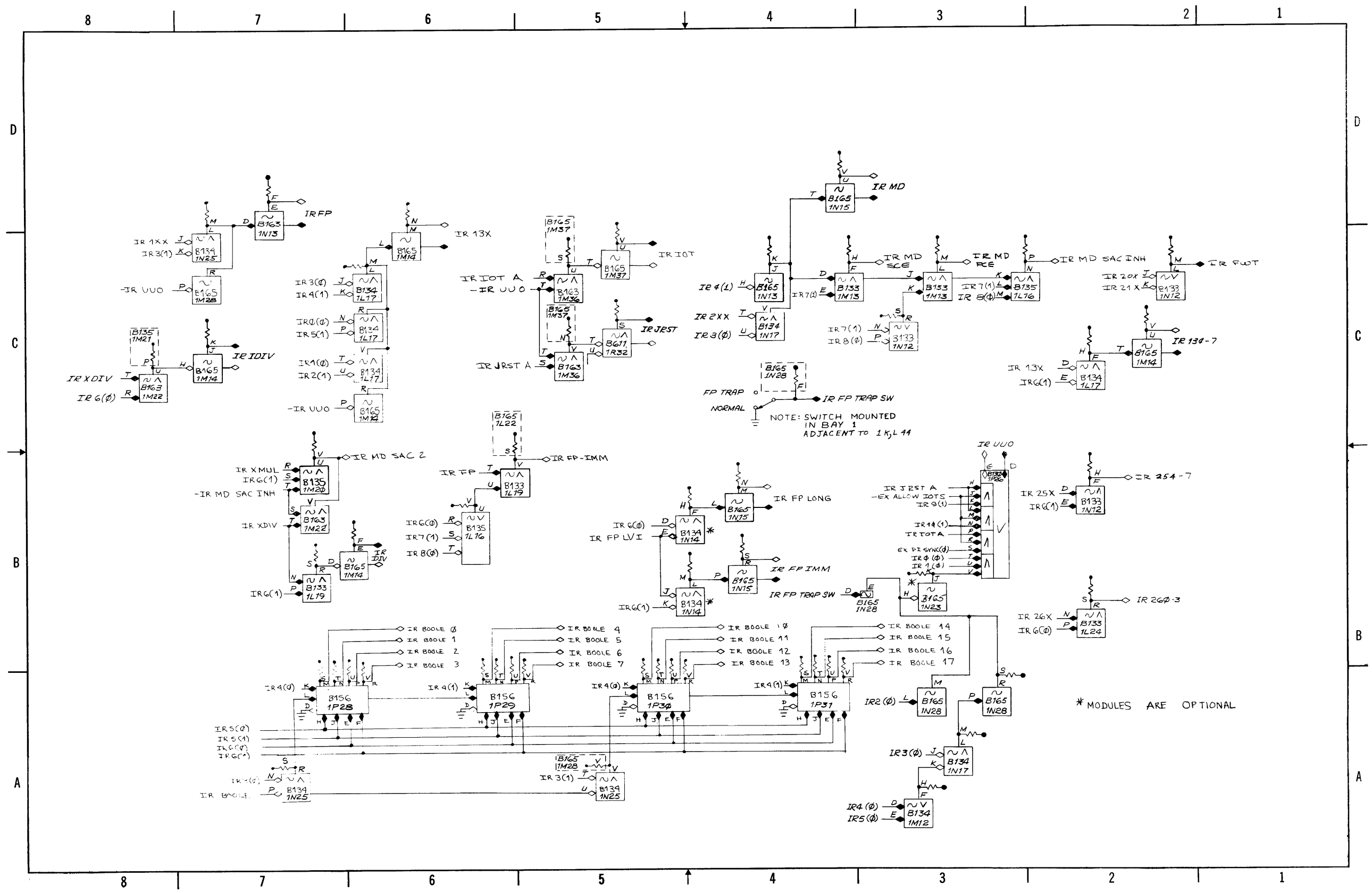
D-FD-KA10-0-IOBC I/O Bus Control and IO Selection



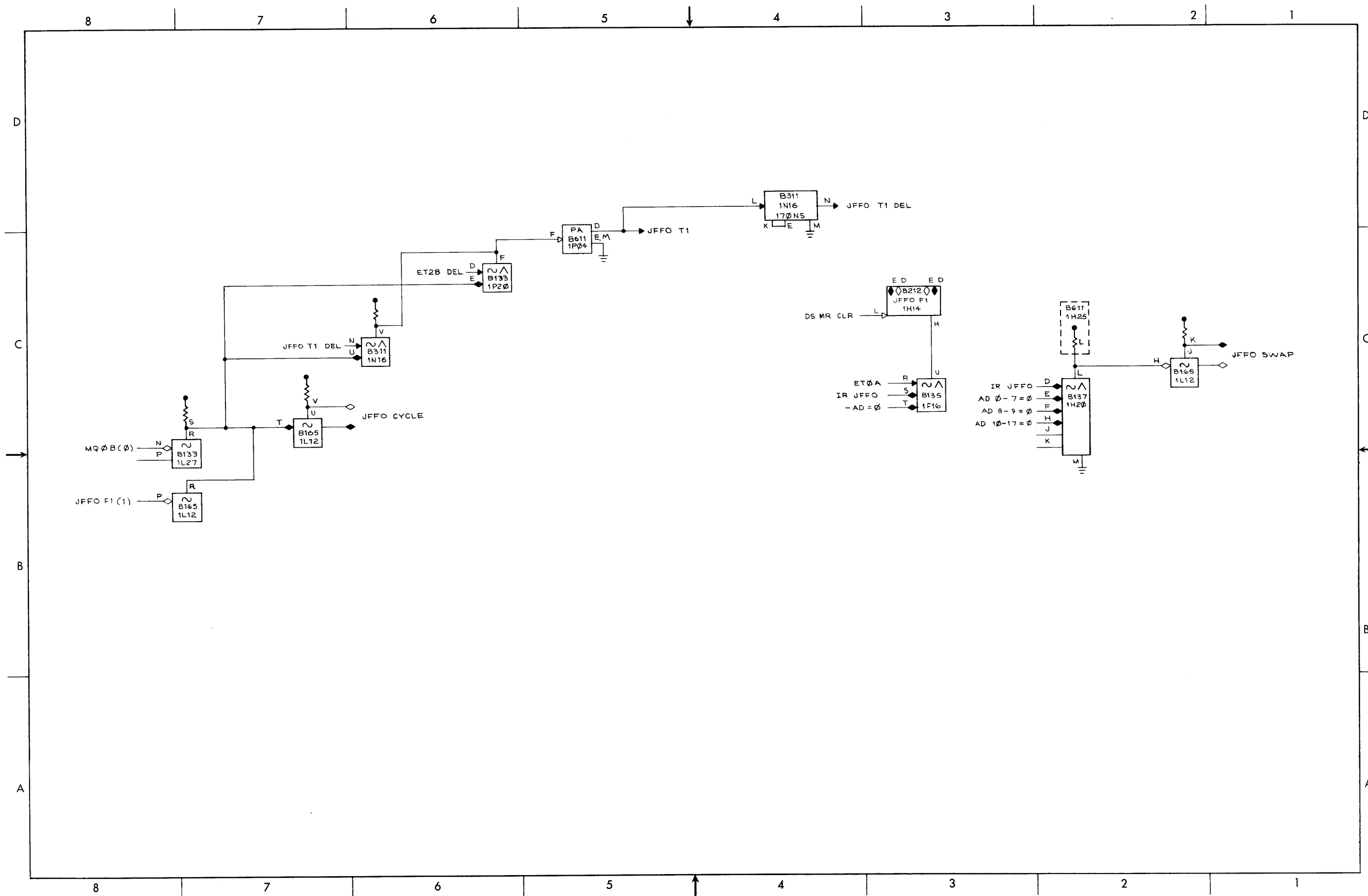
D-BS-KA10-0-IOBI IOB Inputs



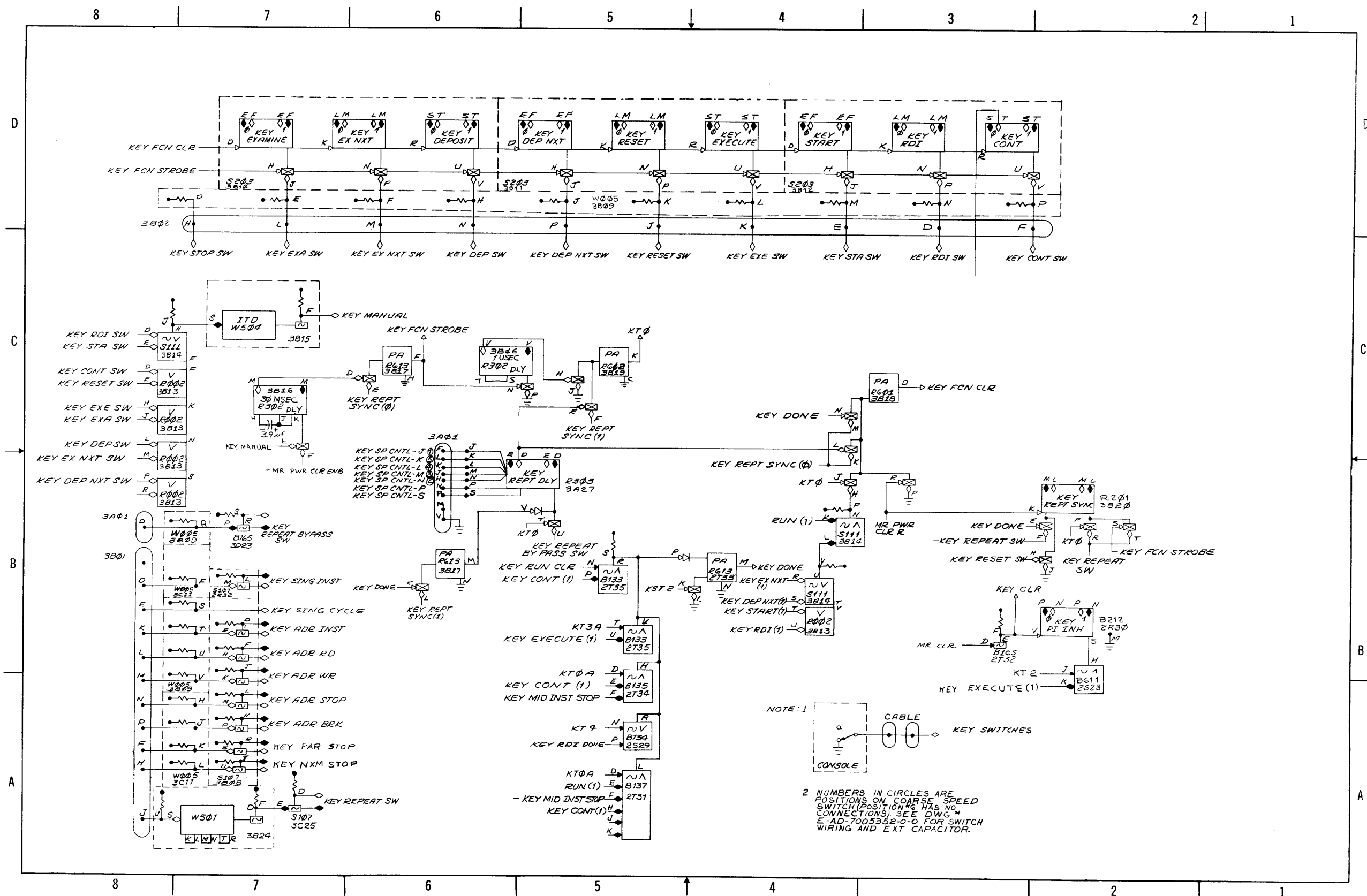
D-BS-KA10-0-IR1 IR Decoding



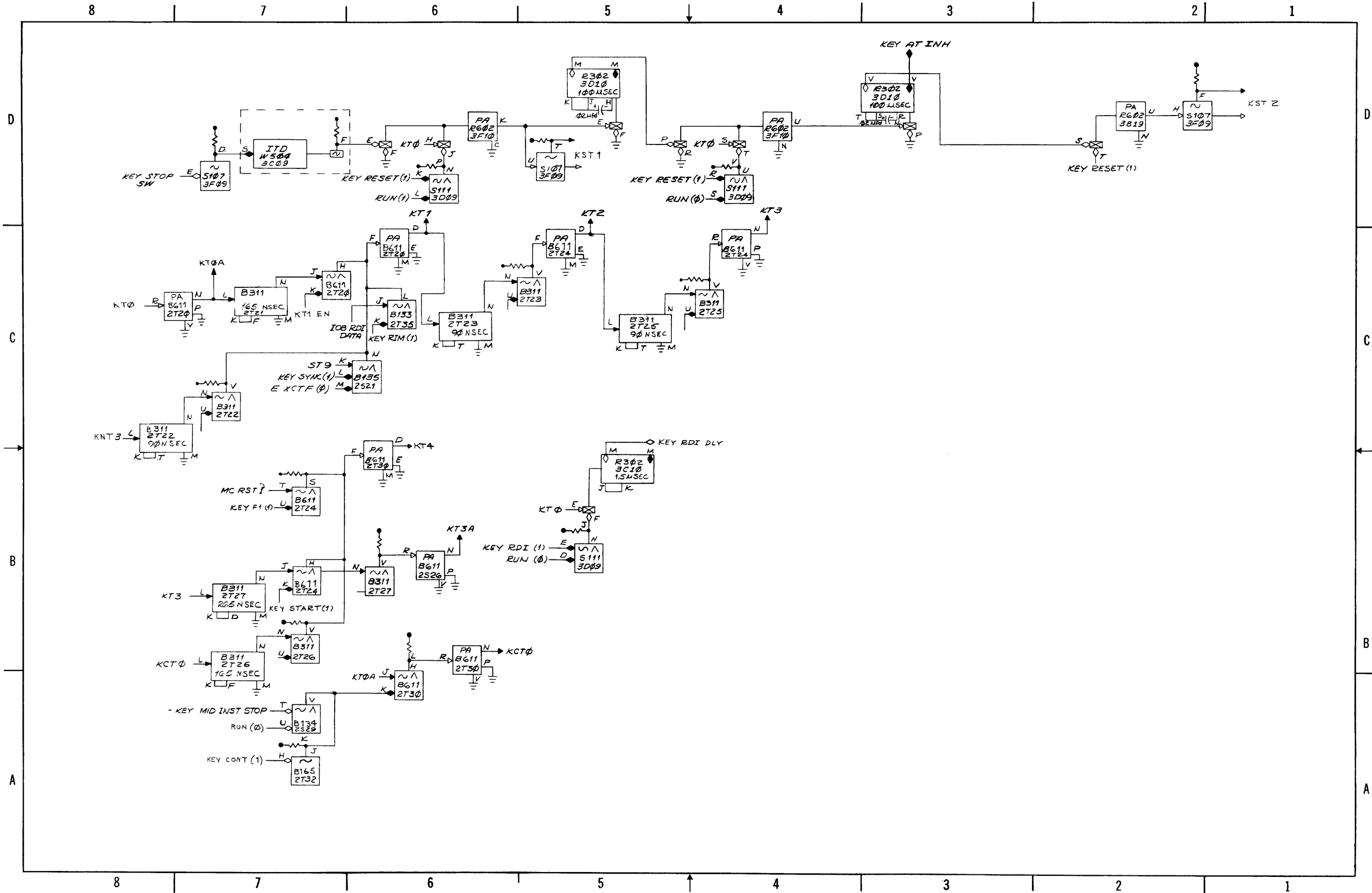
D-BS-KA10-0-IR2 IR Decoding



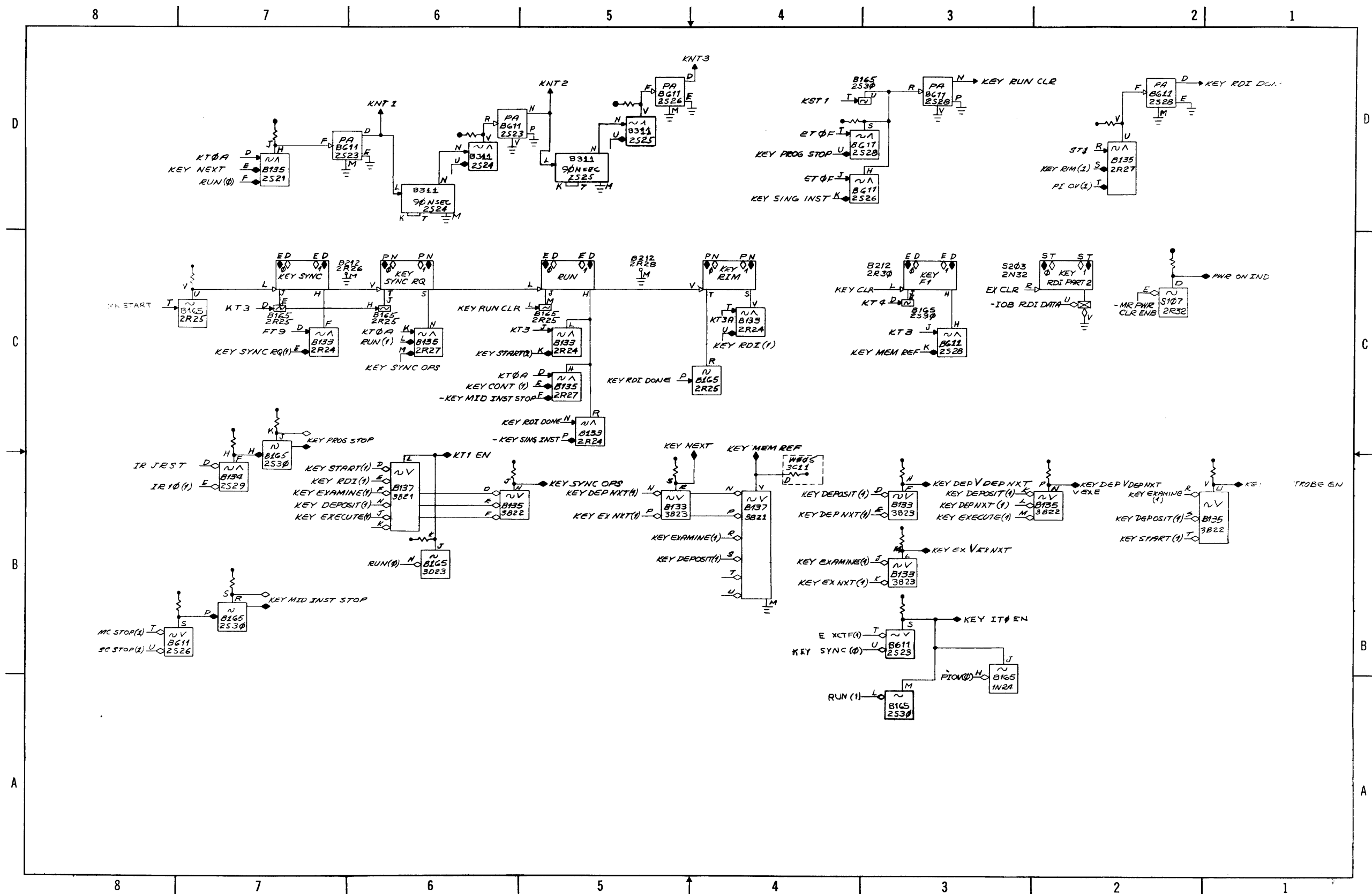
D-BS-KA10-0-JFFO JFFO Instruction Control



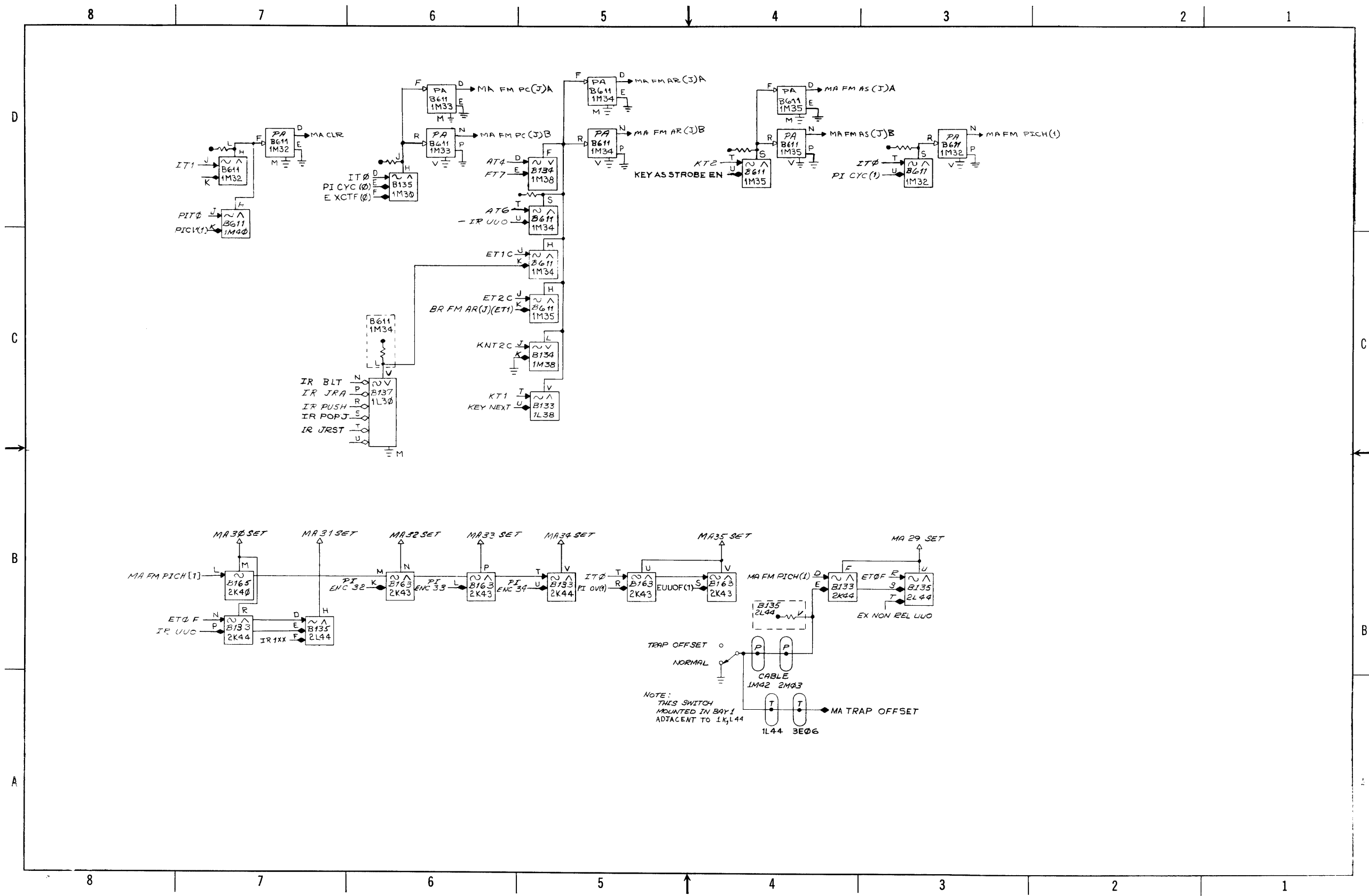
D-BS-KA10-0-KEY1 Key and Switches Controls



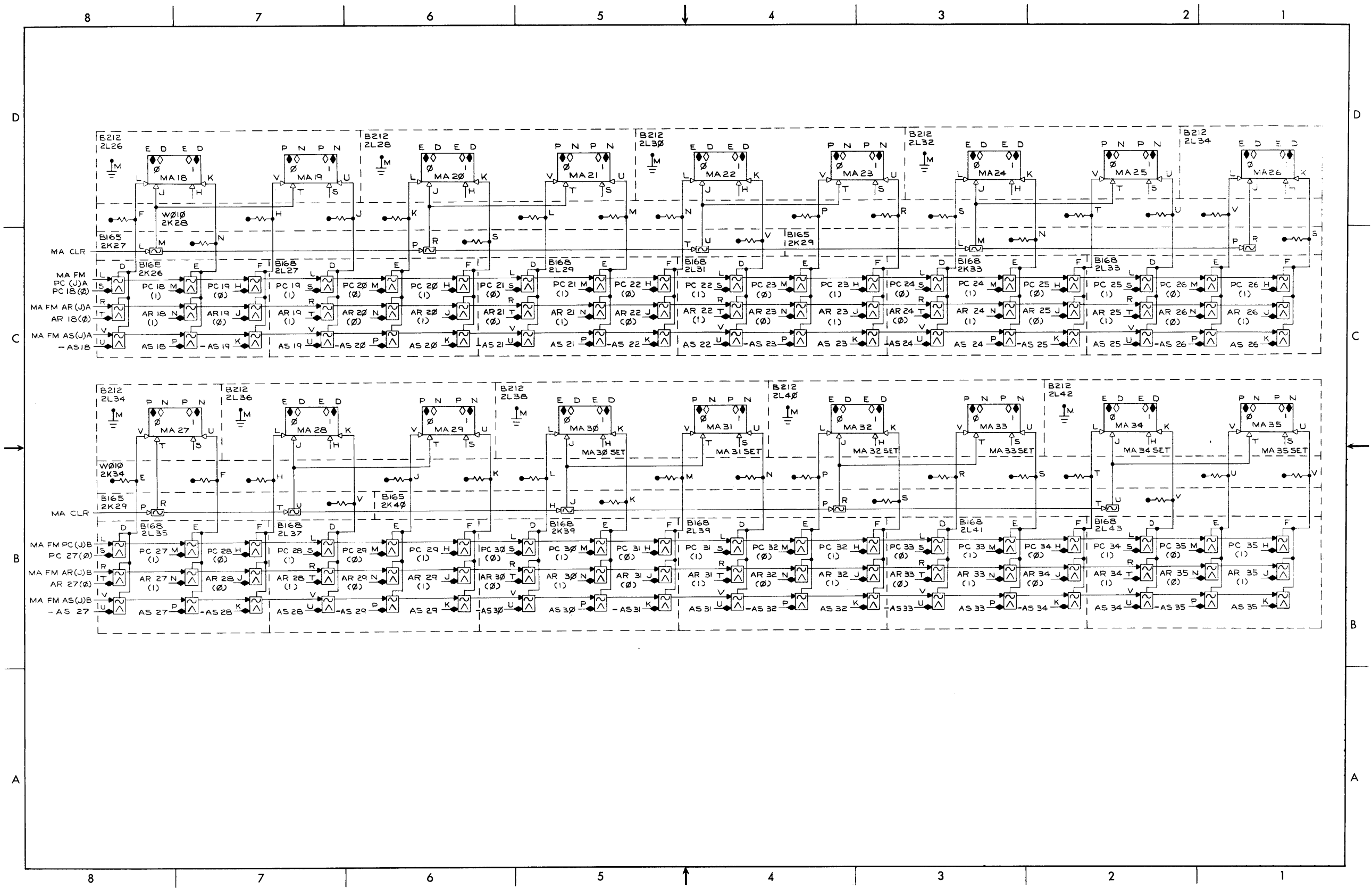
D-BS-KA10-0-KEY2 Keys and Switches Controls



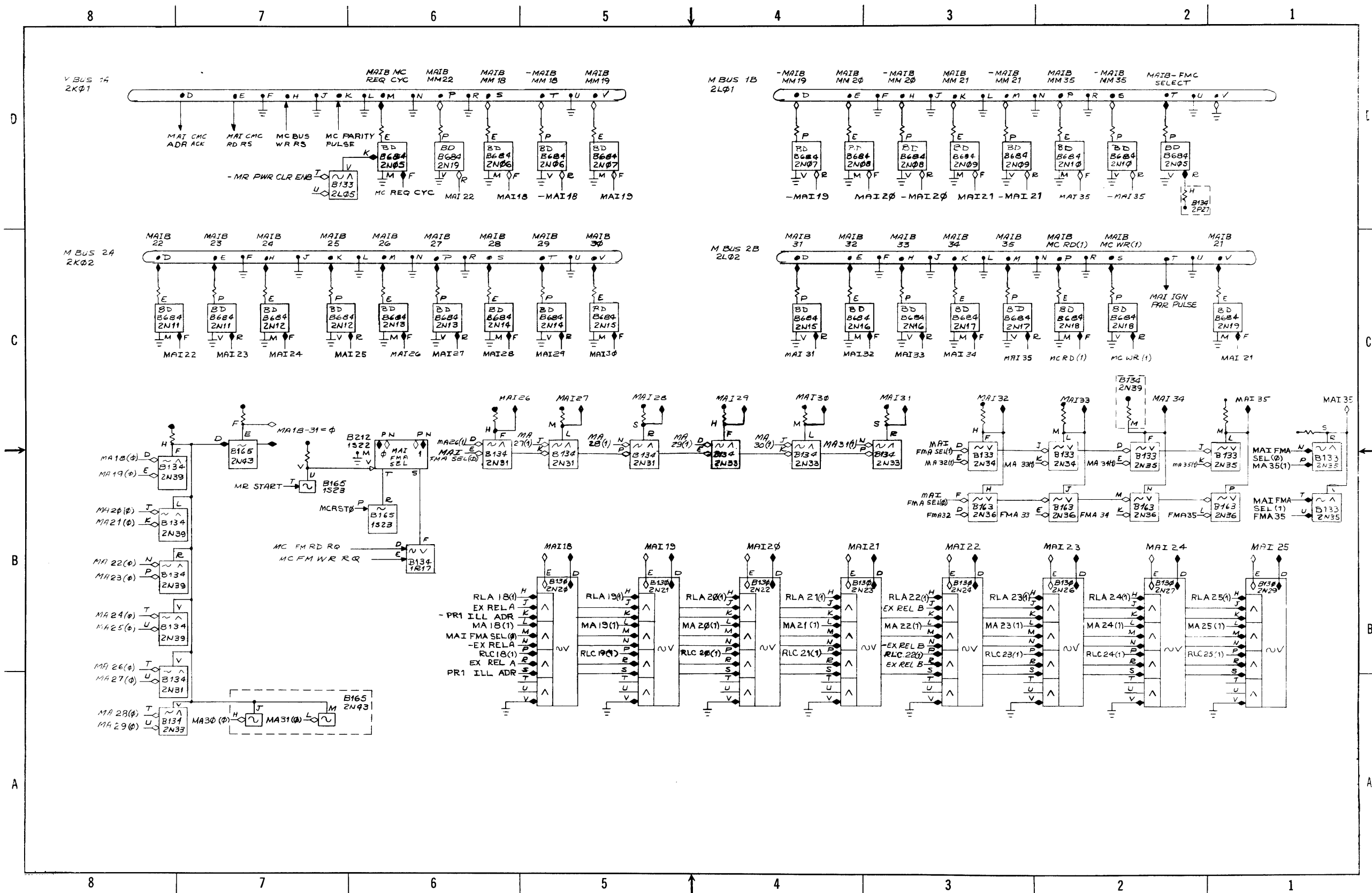
D-BS-KA10-0-KEY3 Keys and Switches Controls



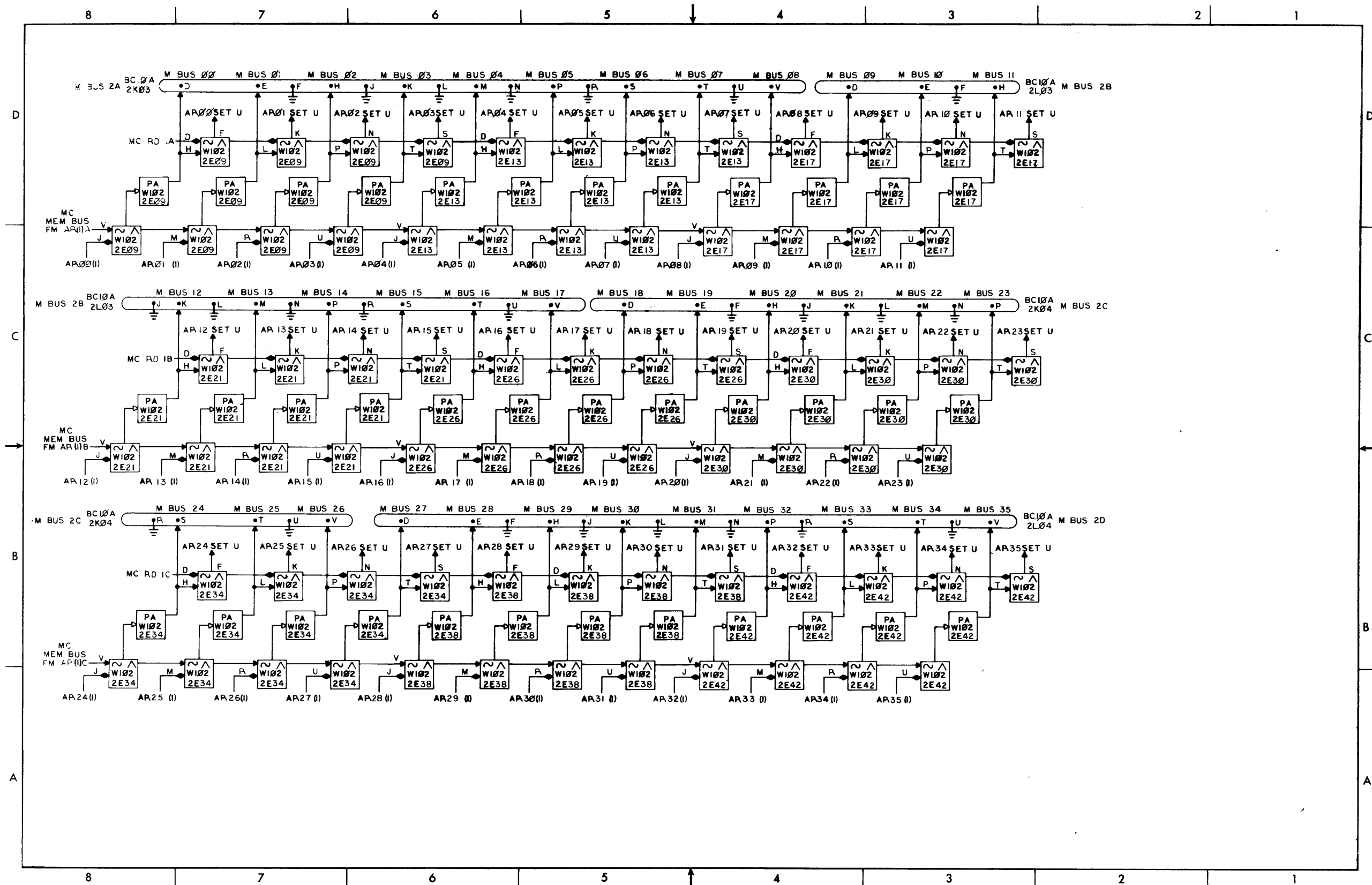
D-BS-KA10-0-MA1 MA Control



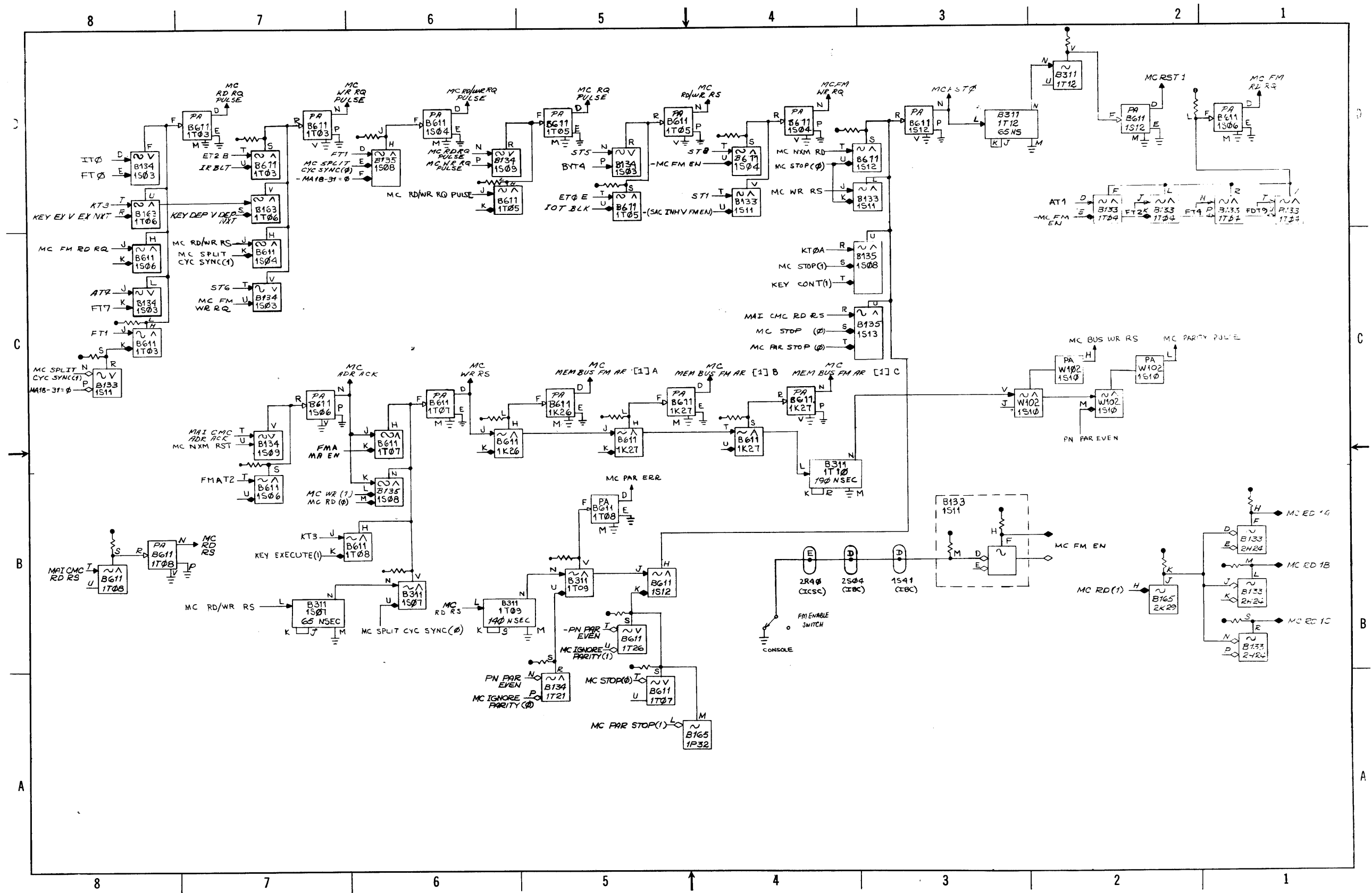
D-BS-KA10-0-MA2 MA Register



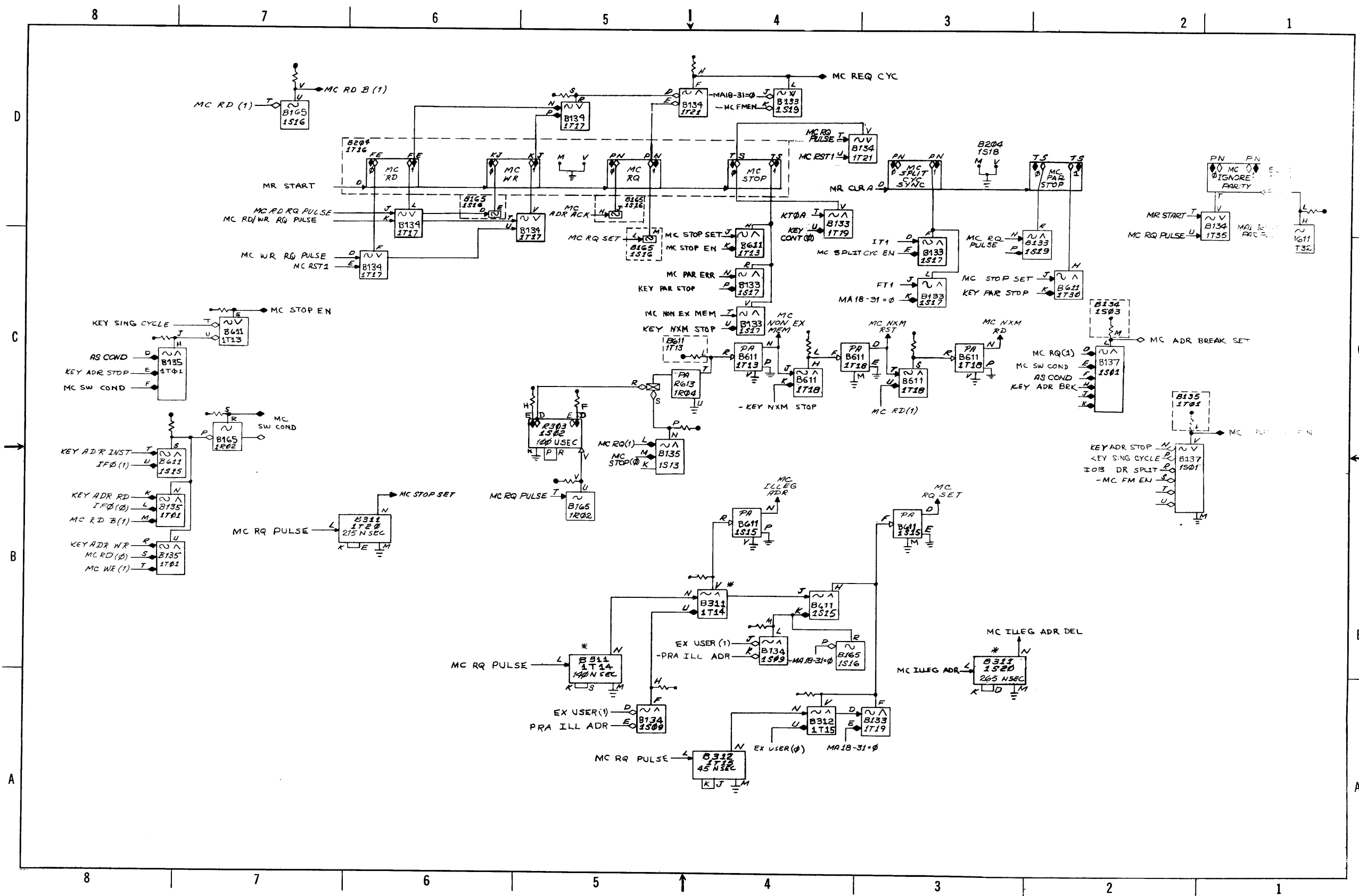
D-BS-KA10-0-MAI Memory Address Interface



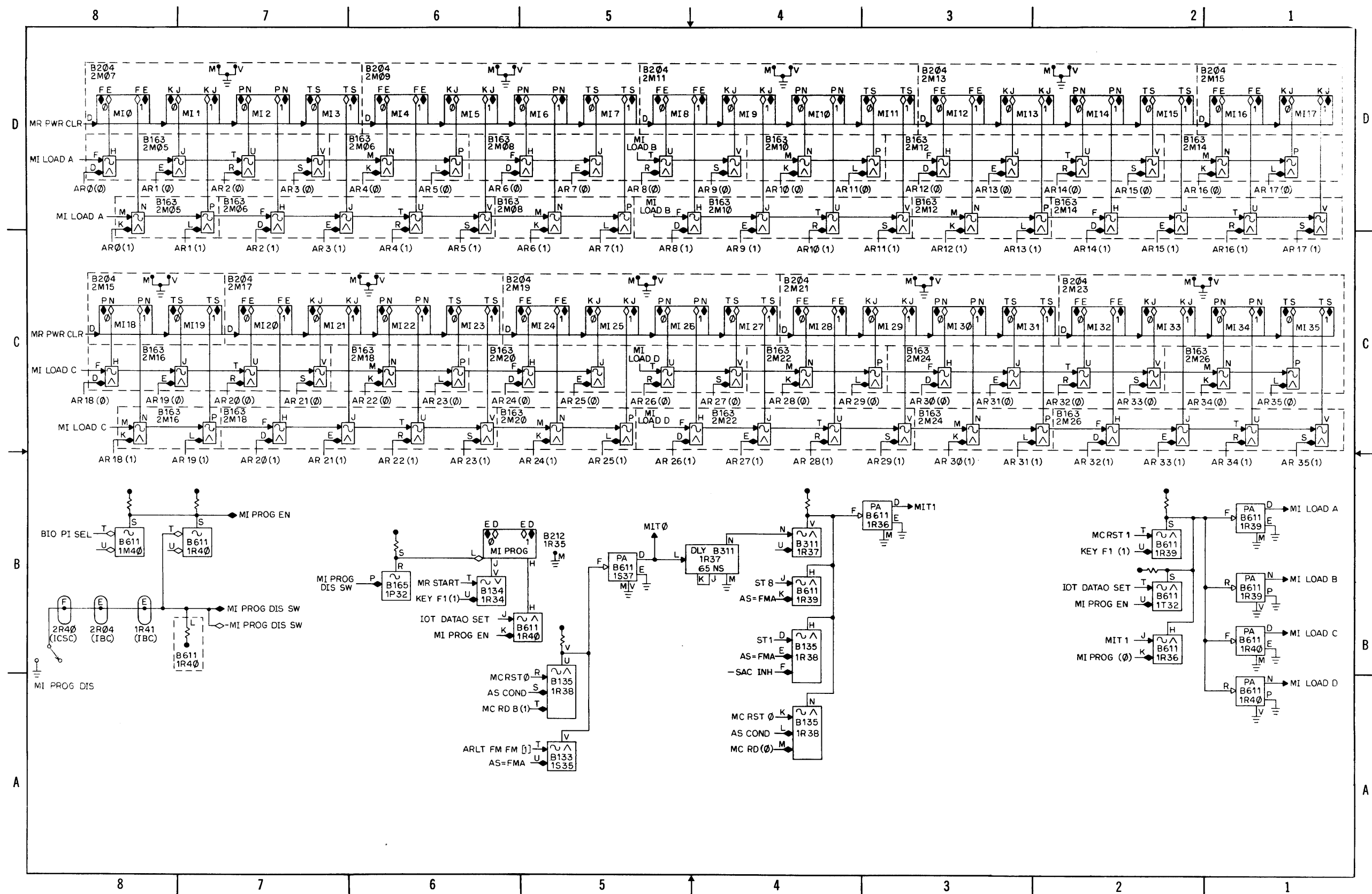
D-BS-KA10-0-MBDI Memory Bus Data Interface



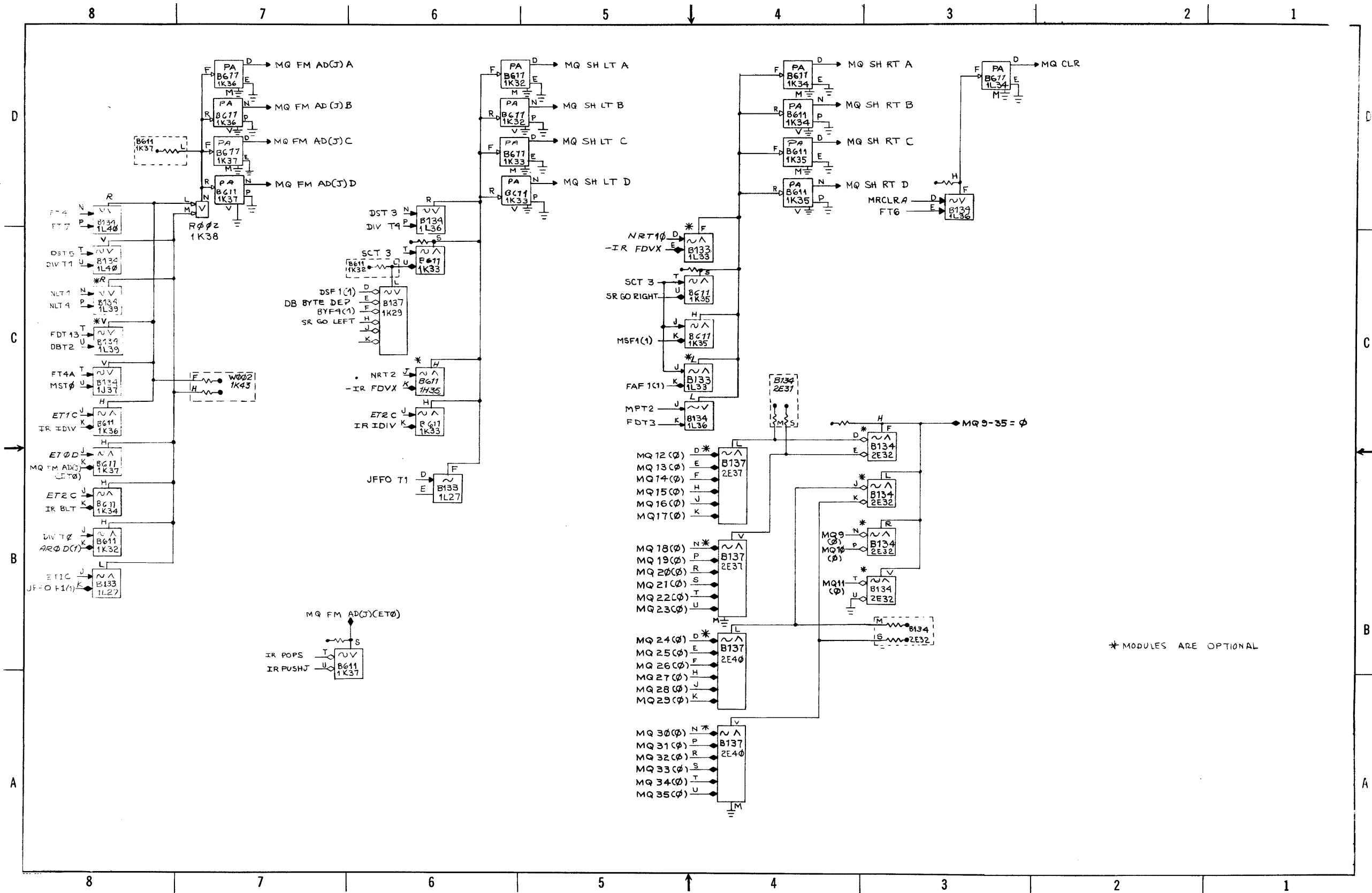
D-BS-KA10-0-MCI Memory Control



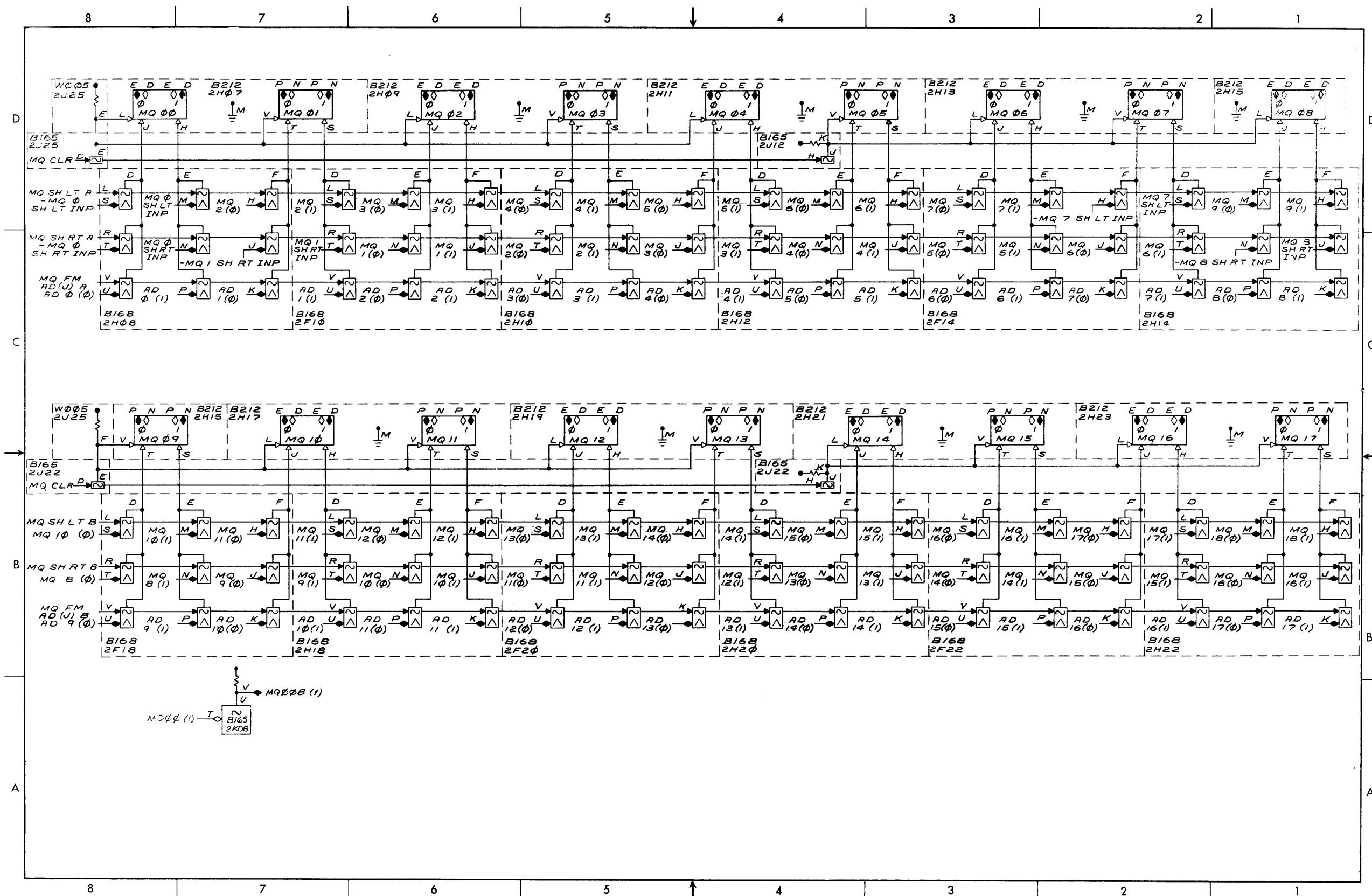
D-BS-KA10-0-MC2 Memory Control



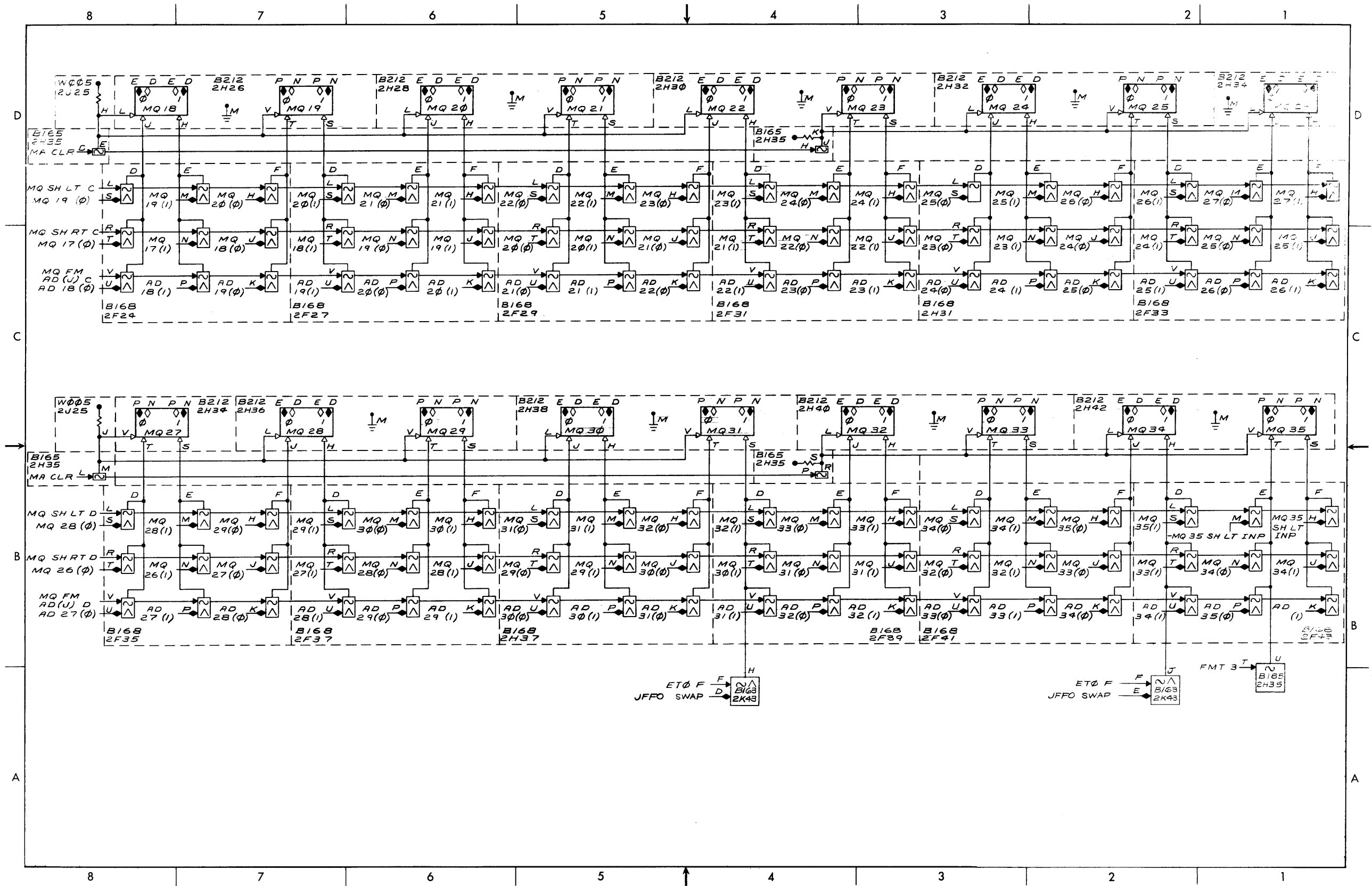
D-BS-KA10-0-MI Memory Indicator



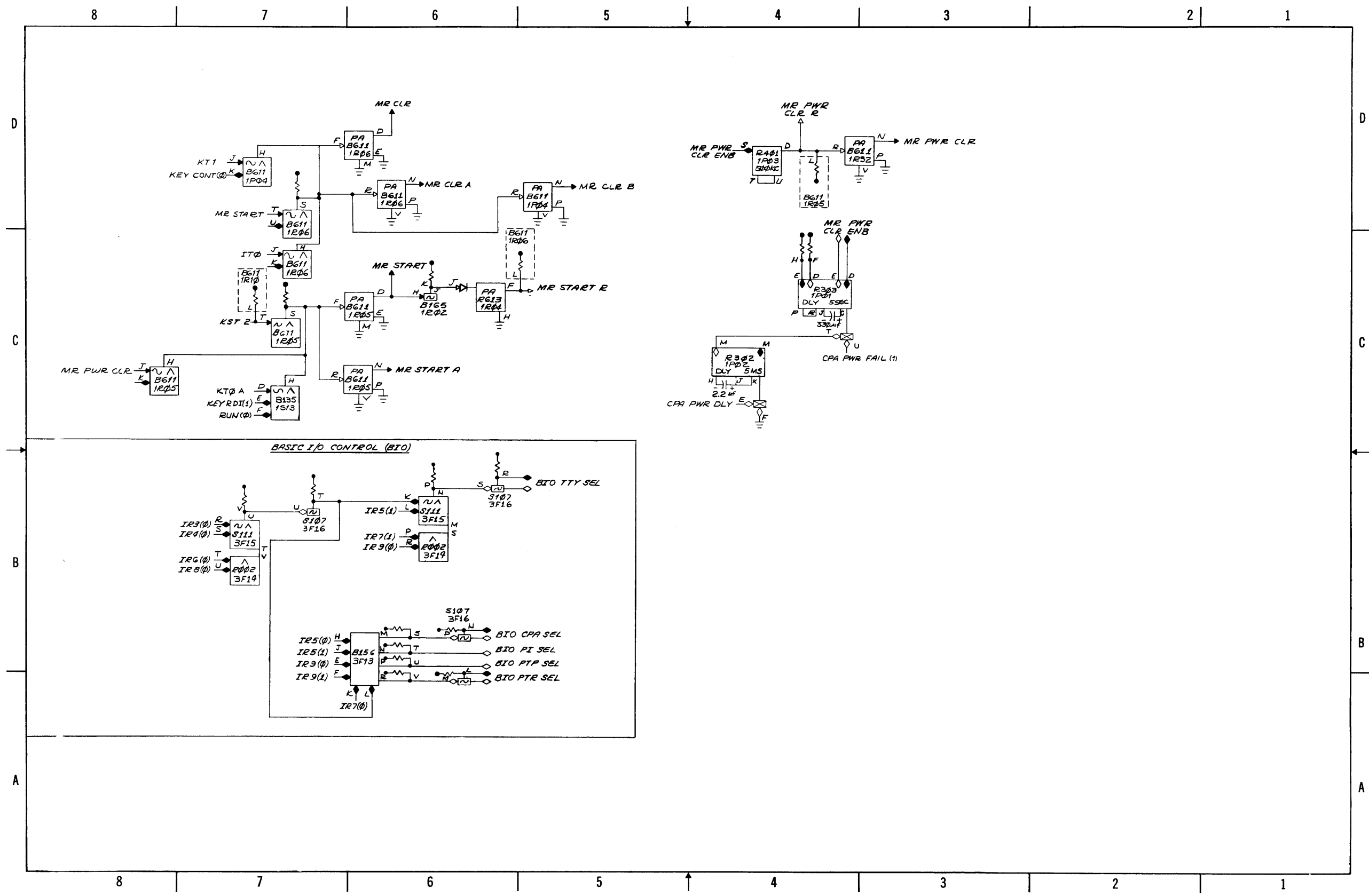
D-BS-KA10-0-MQ1 MQ Control



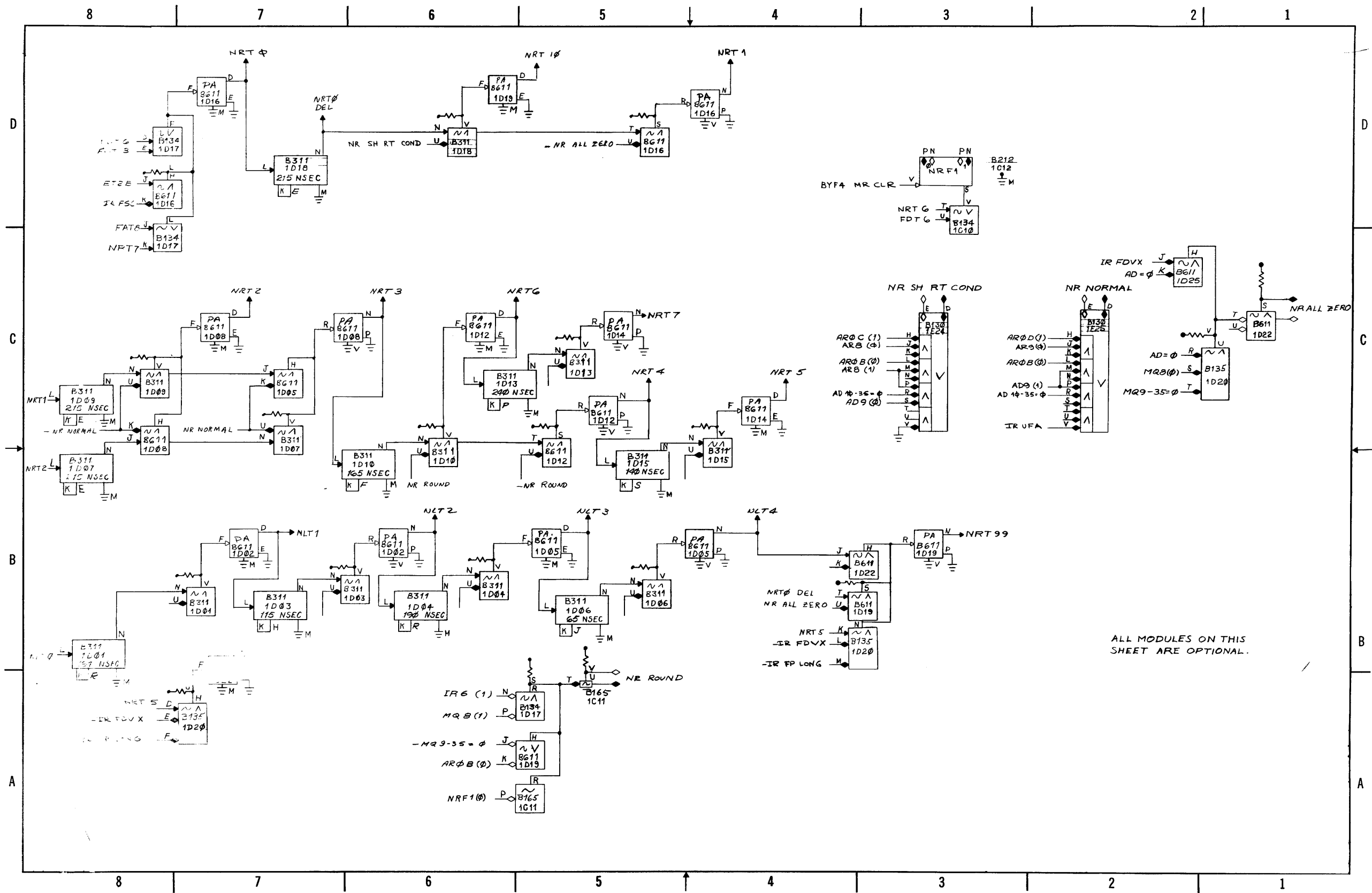
D-BS-KA10-0-MQ2 Multiplier Quotient (MQ 00-17)



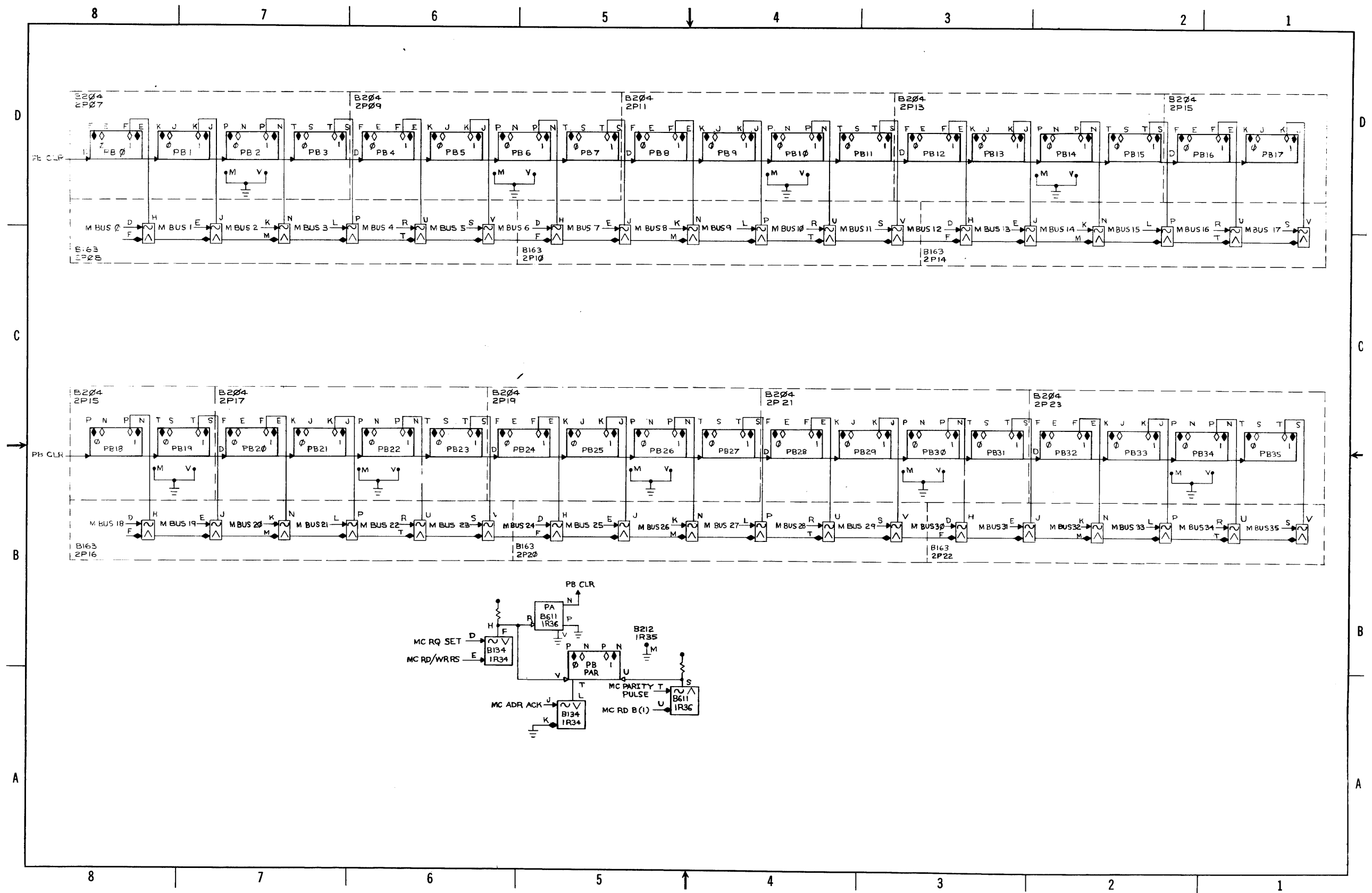
D-BS-KA10-0-MQ3 Multiplier Quotient (MQ 18-35)



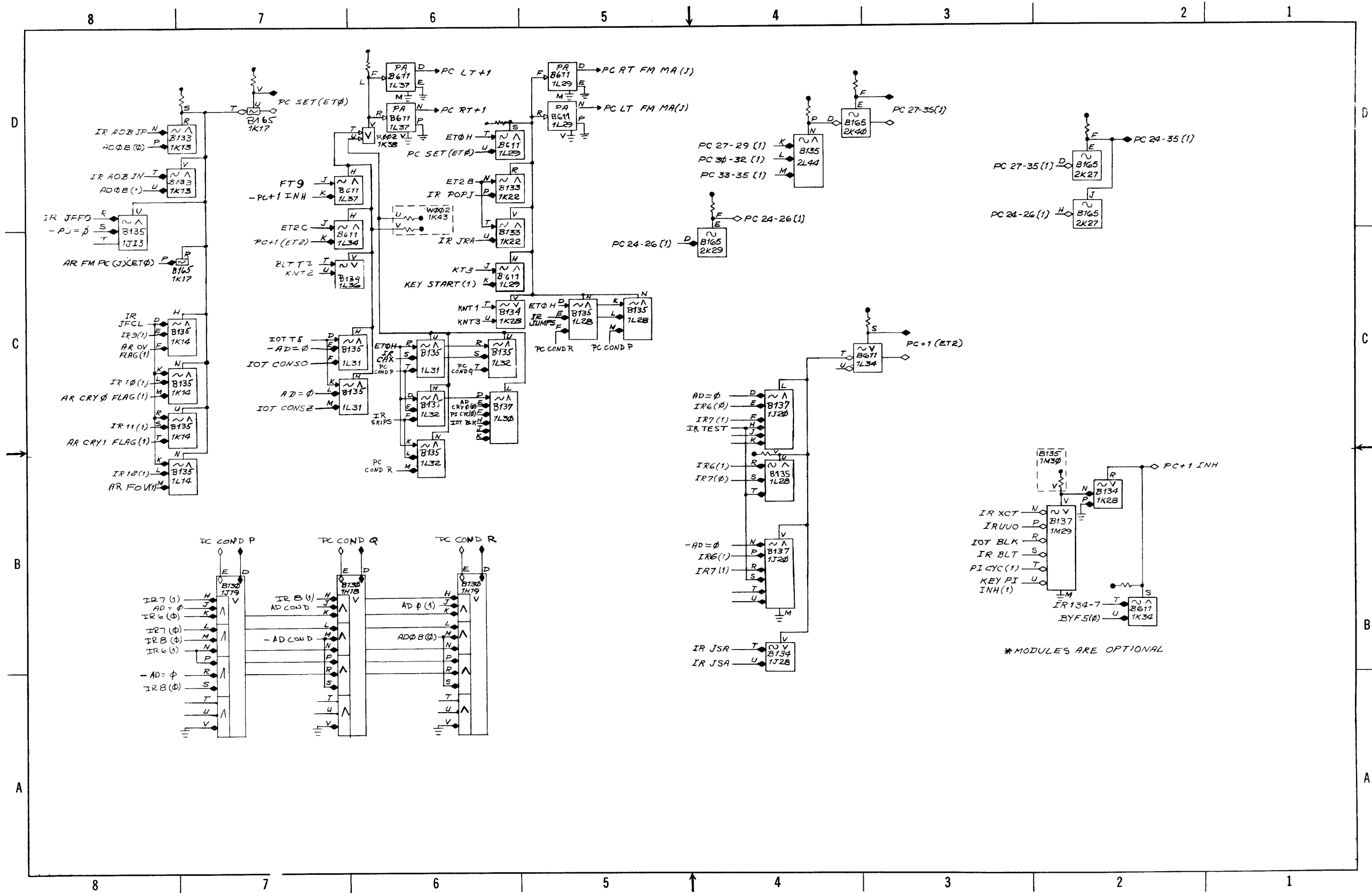
D-BS-KA10-0-MR Master Clear and Power Clear



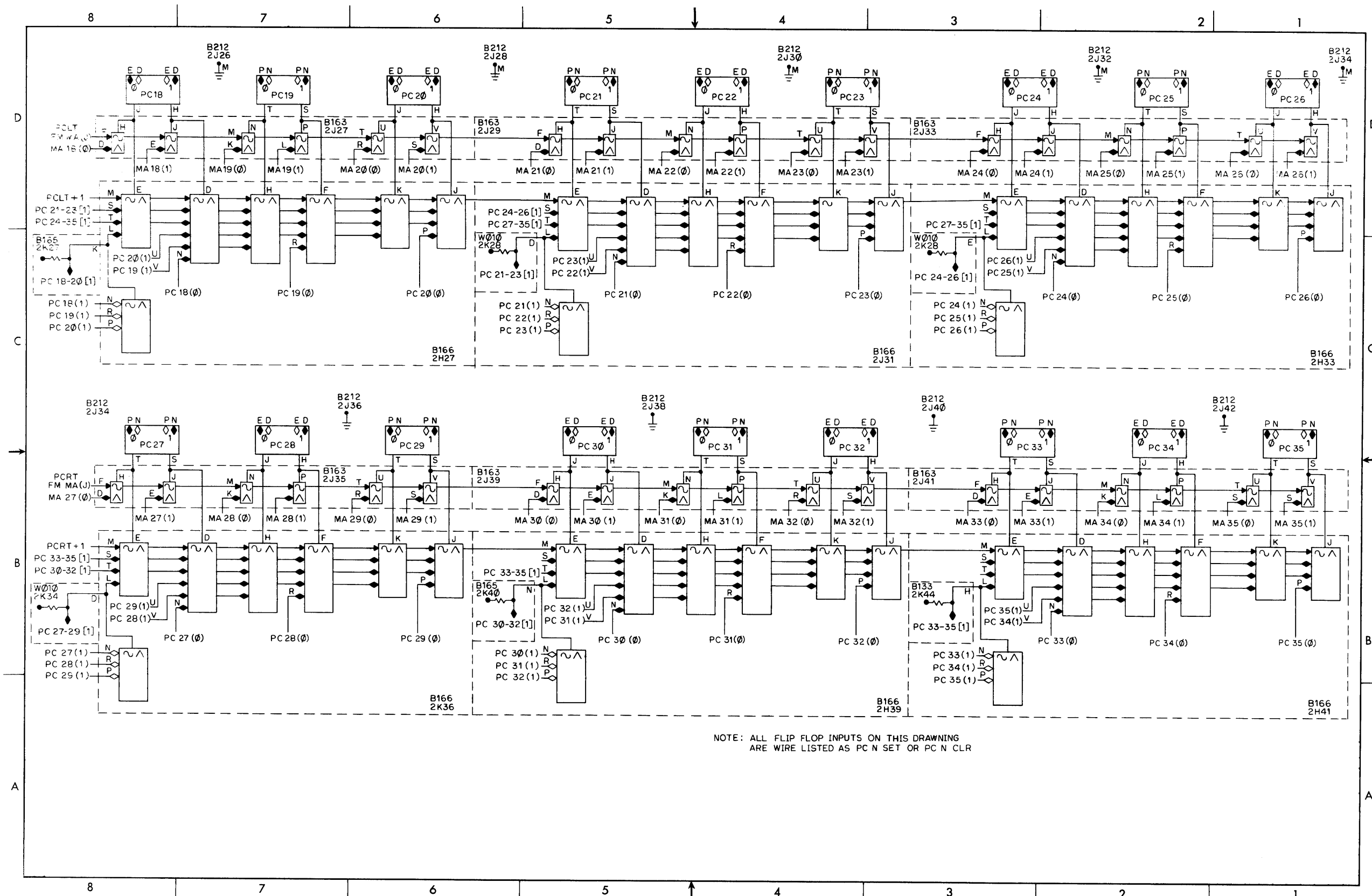
D-BS-KA10-0-NRNL Normalize Return and NR Long



D-BS-KA10-0-PB Parity Buffer Register

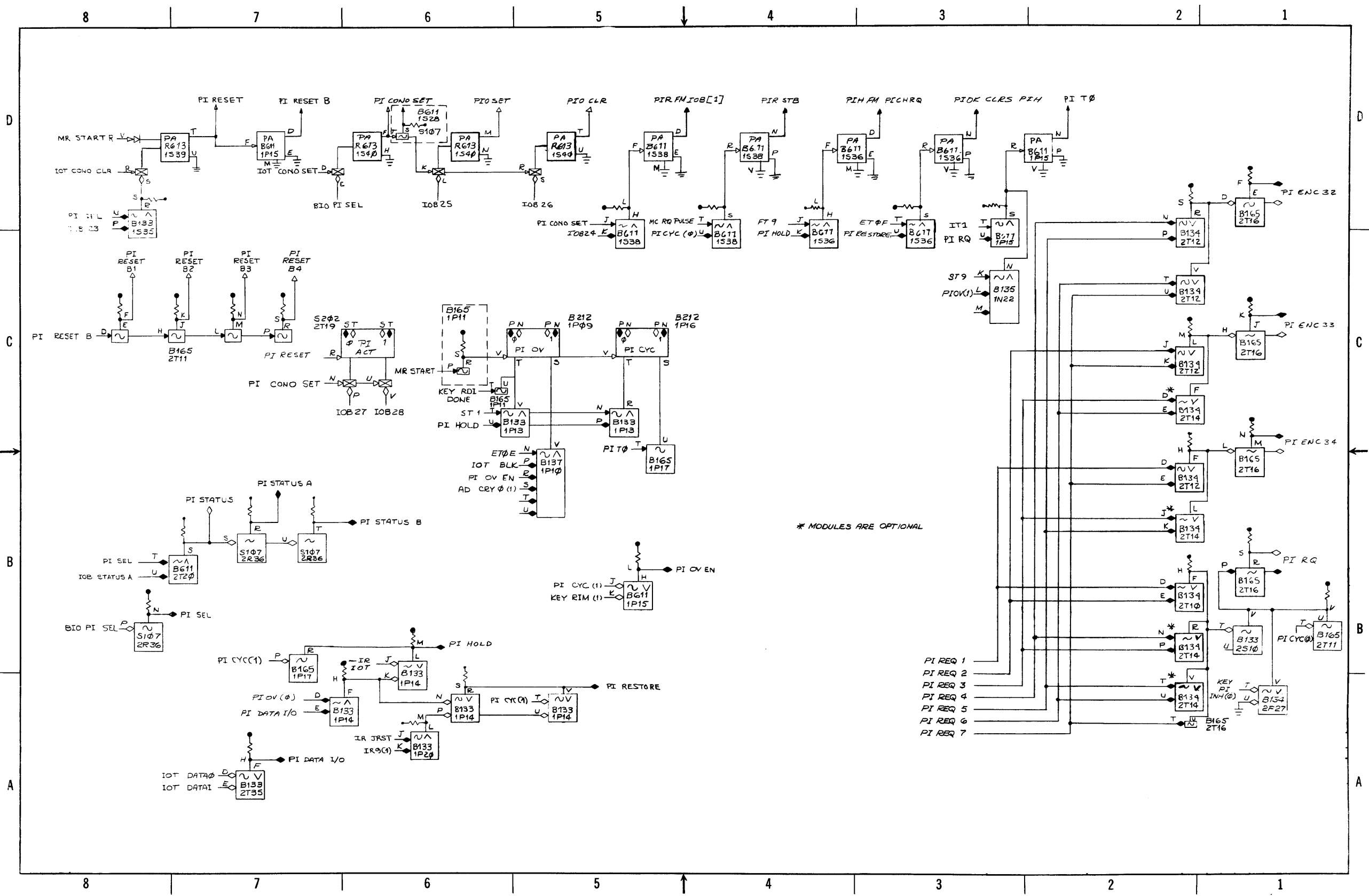


D-BS-KA10-0-PC1 Program Counter Control

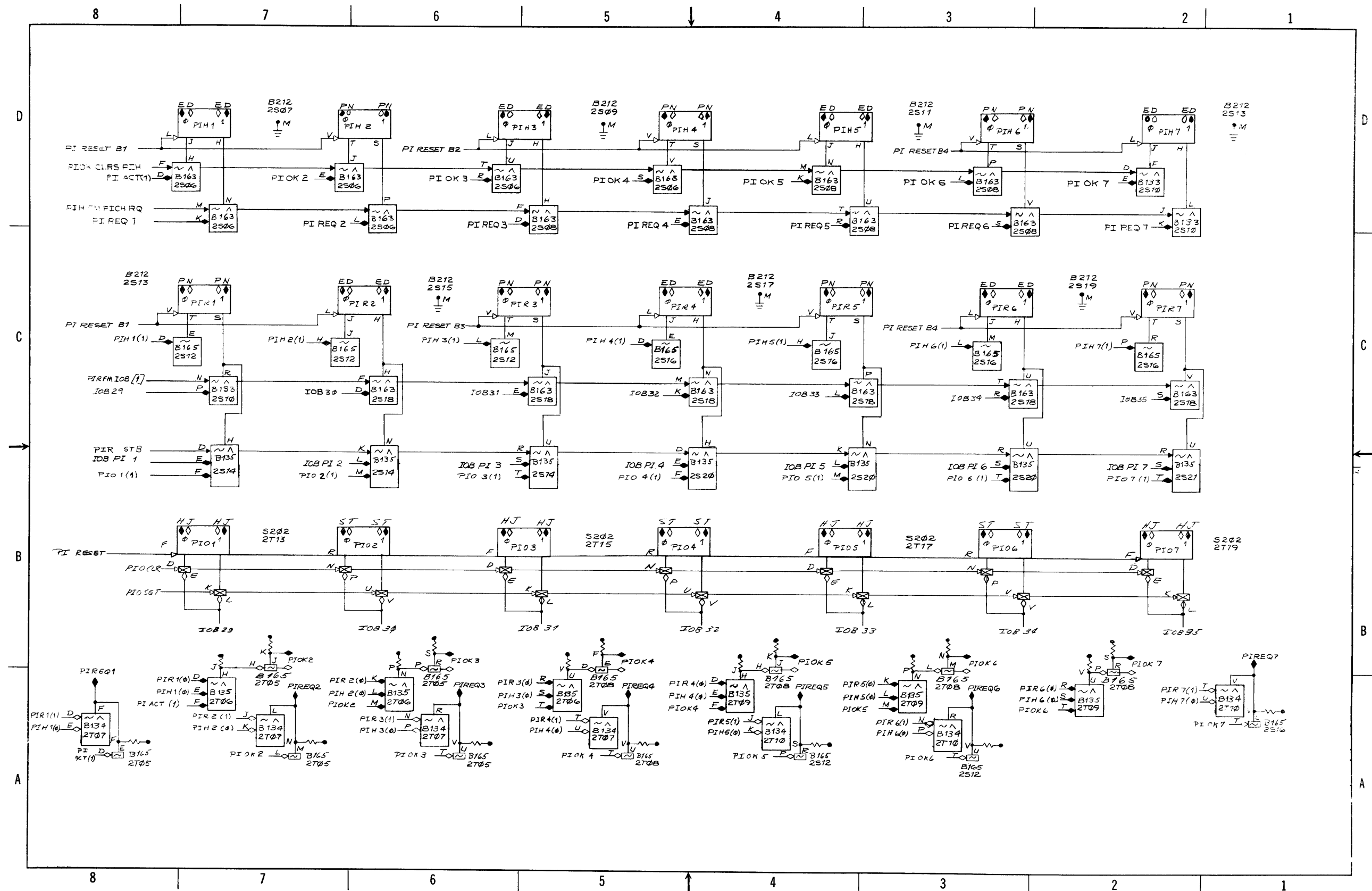


NOTE: ALL FLIP FLOP INPUTS ON THIS DRAWING
ARE WIRE LISTED AS PC N SET OR PC N CLR

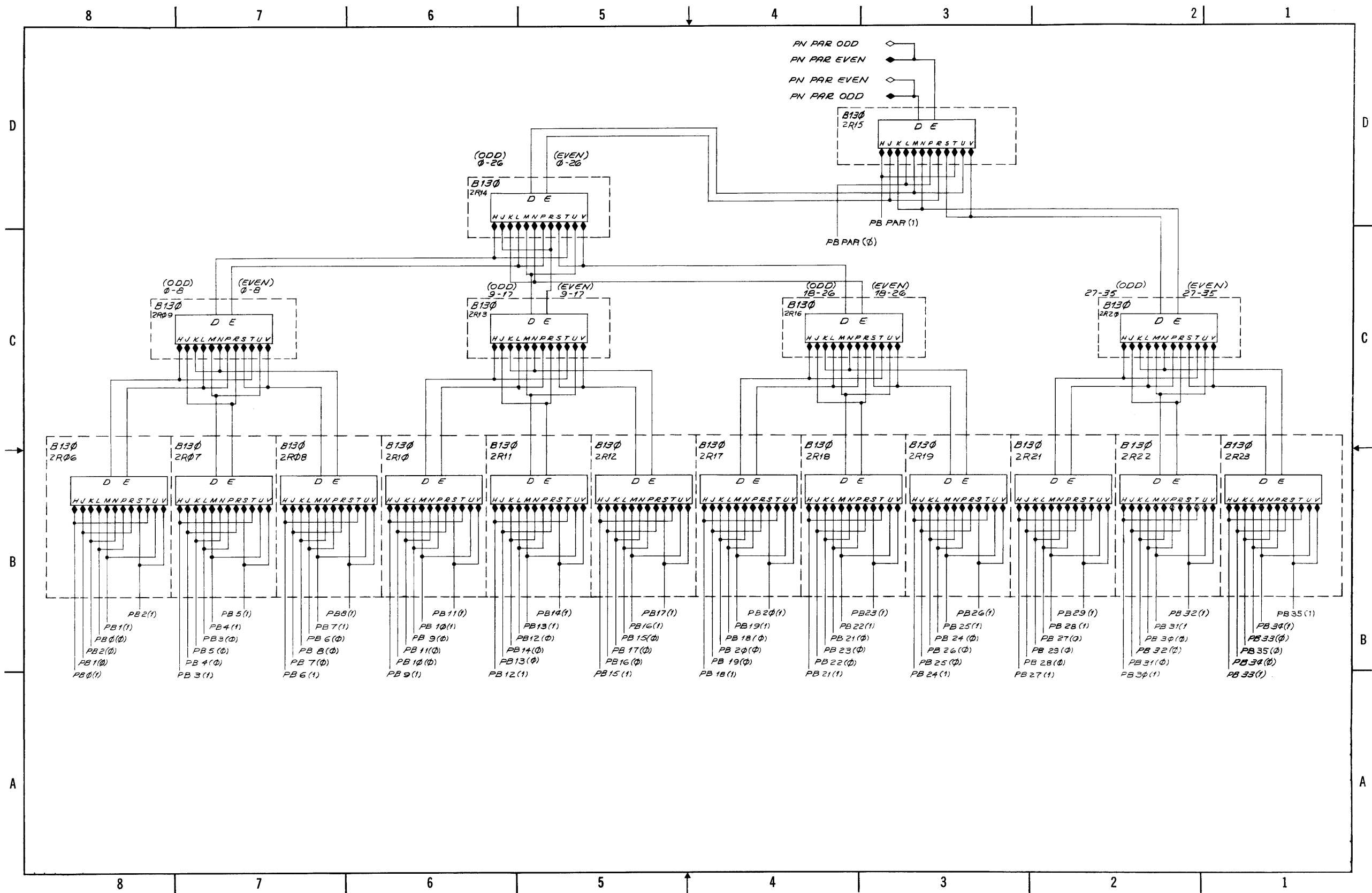
D-BS-KA10-0-PC2 Program Counter Register



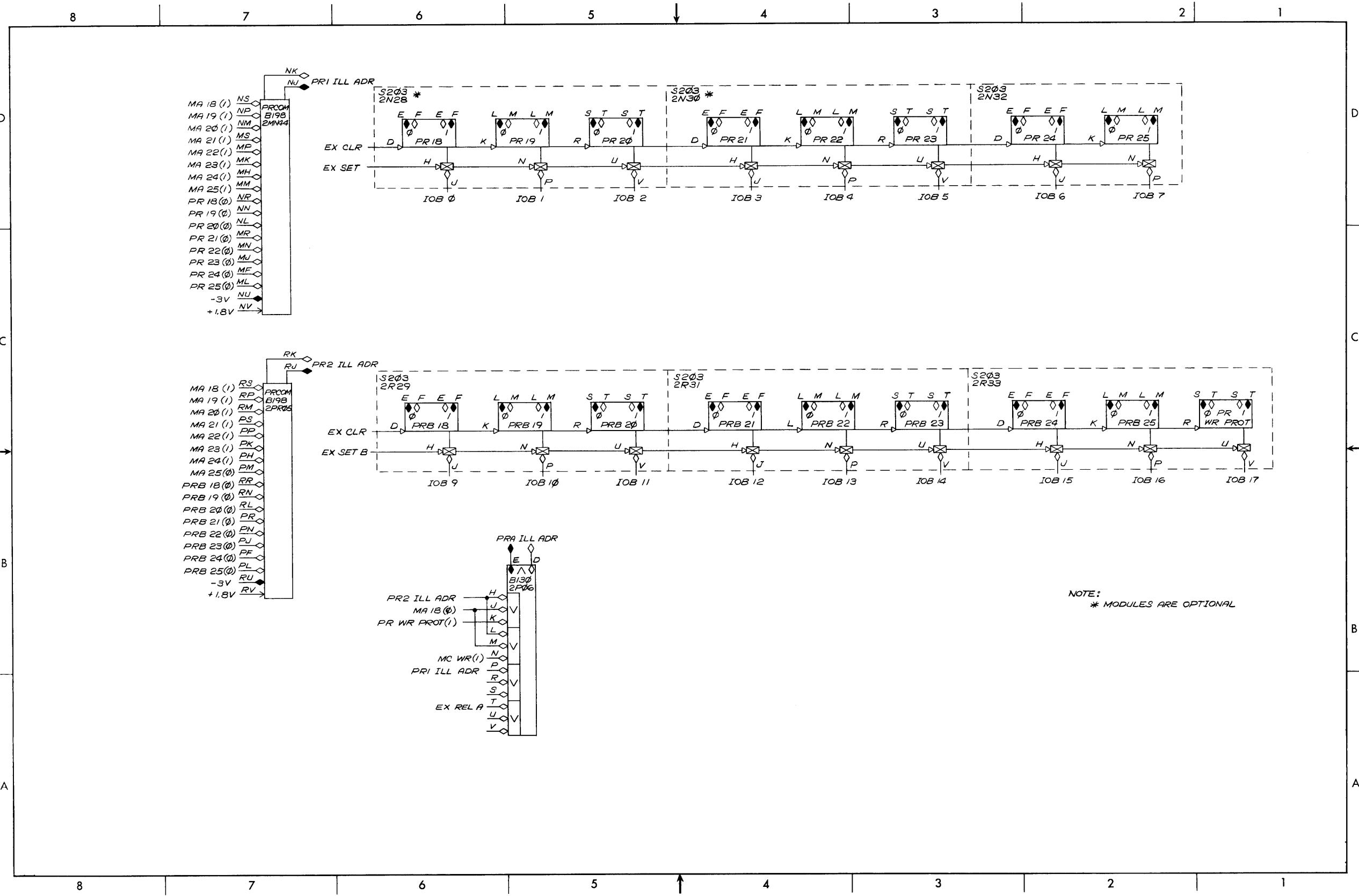
D-BS-KA10-0-PI1 PI Control



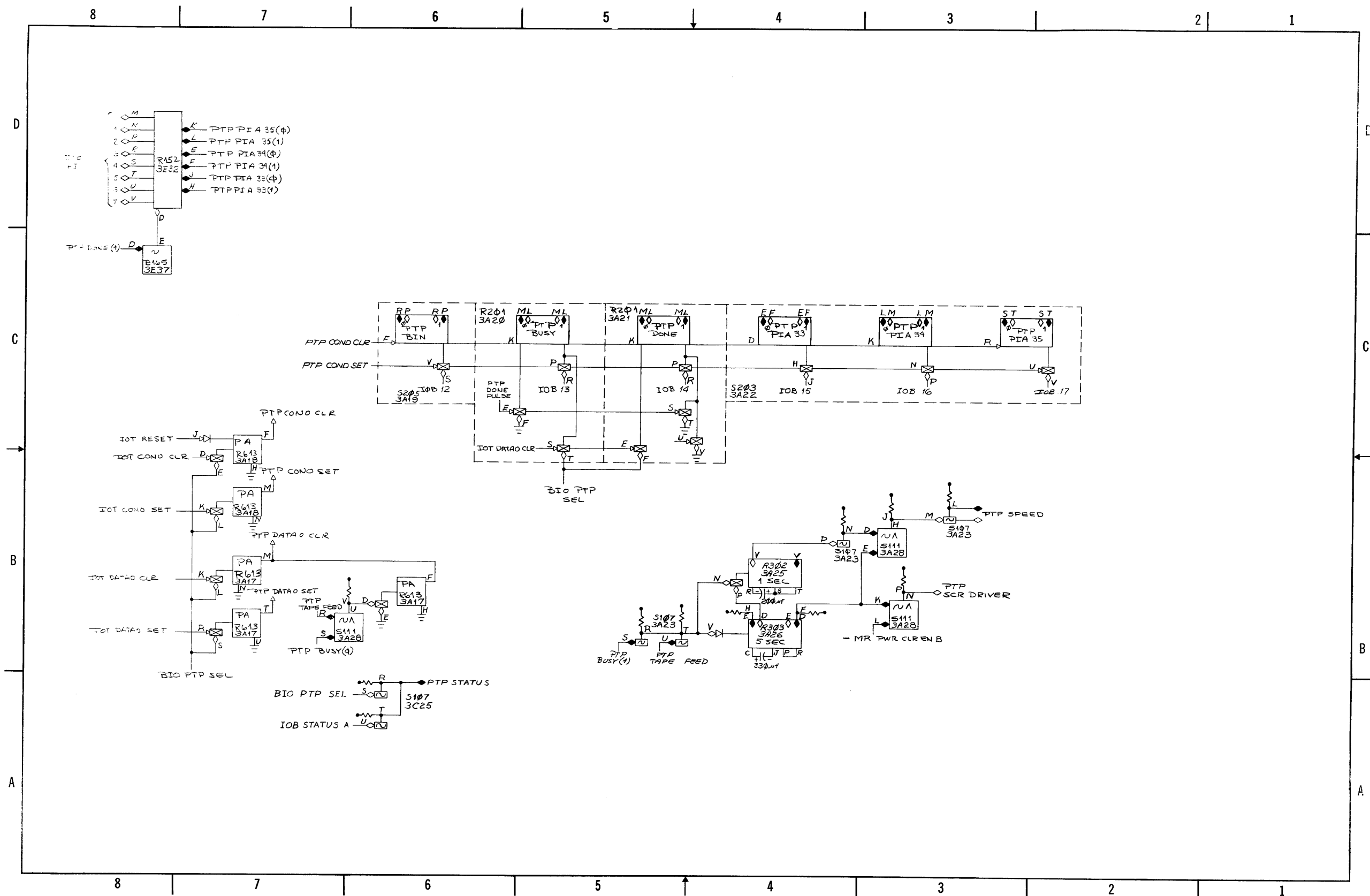
D-BS-KA10-0-P12 Priority Interrupt PIH, PIR, PIO



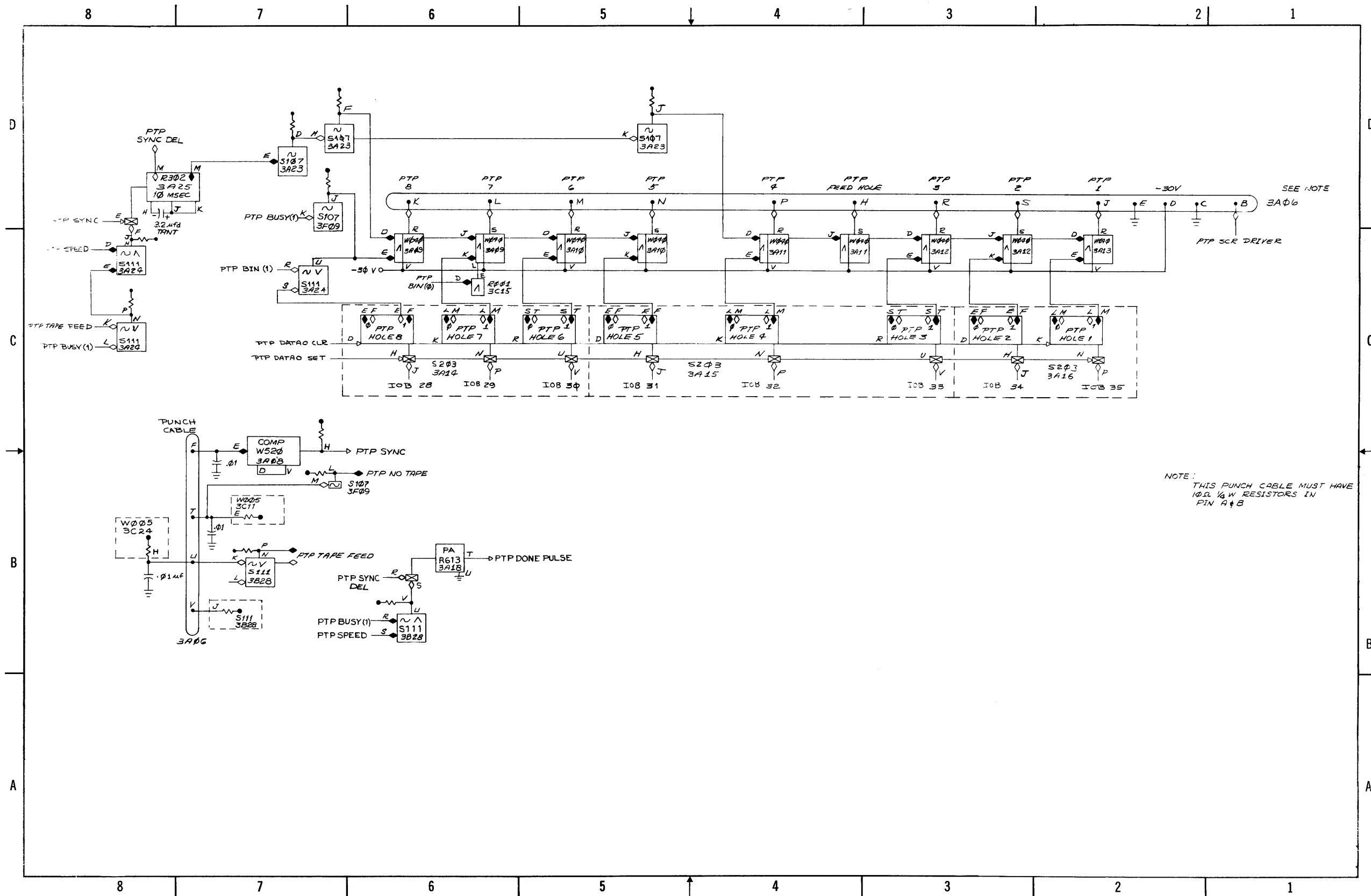
D-BS-KA10-0-PN Parity Network



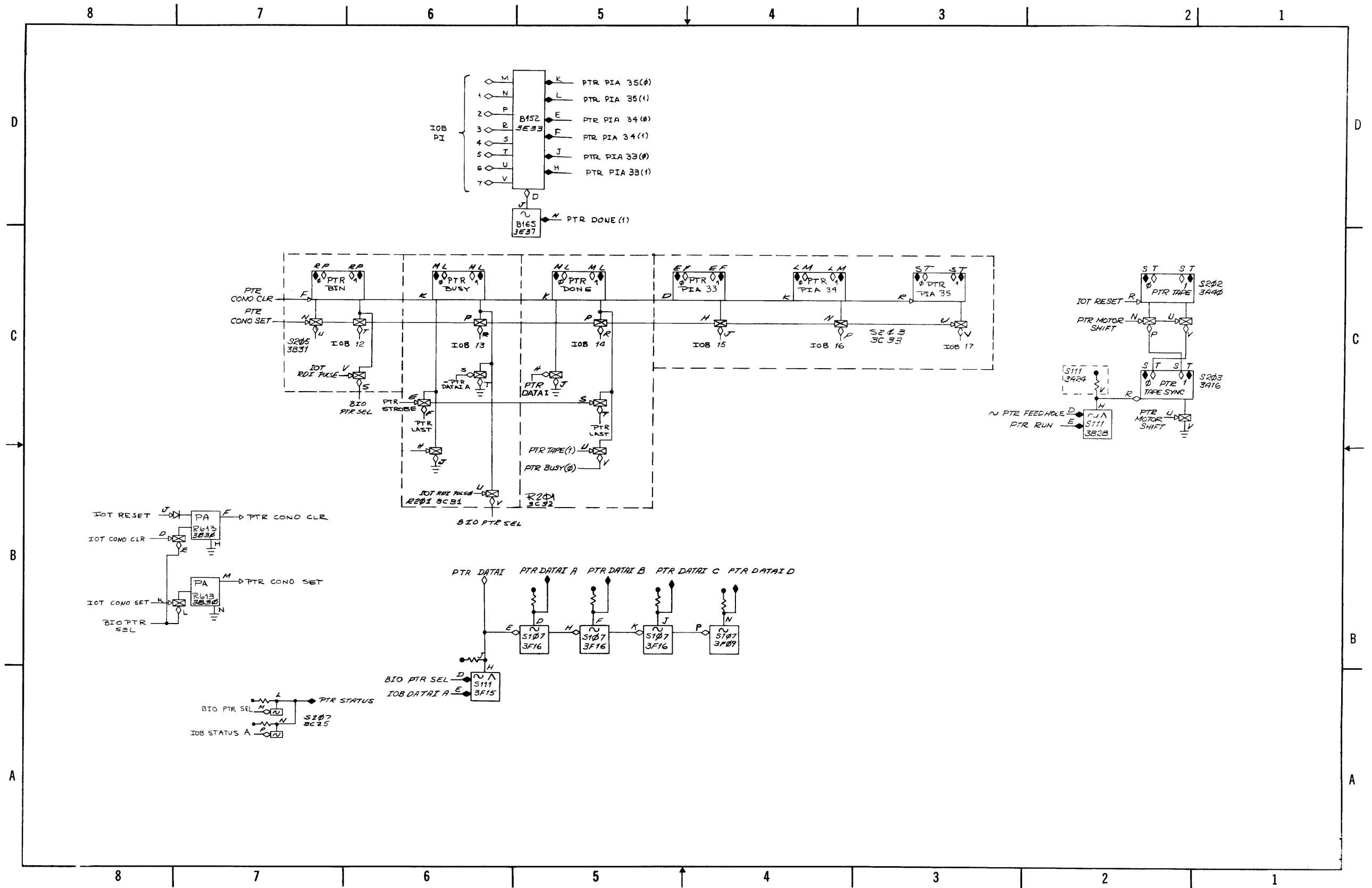
D-BS-KA10-0-PR Protect Register



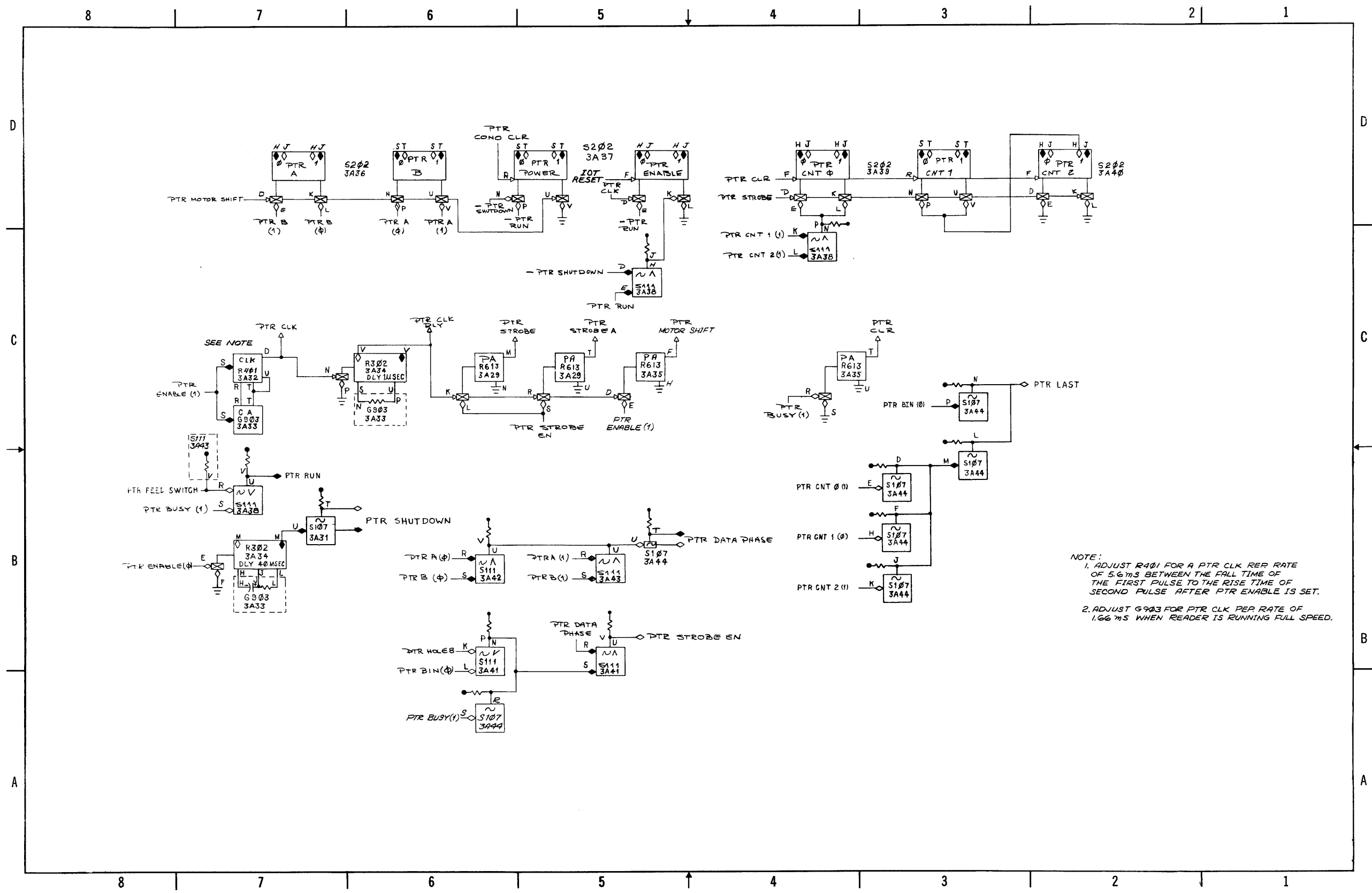
D-BS-KA10-0-PTP1 Paper Tape Punch Control 1



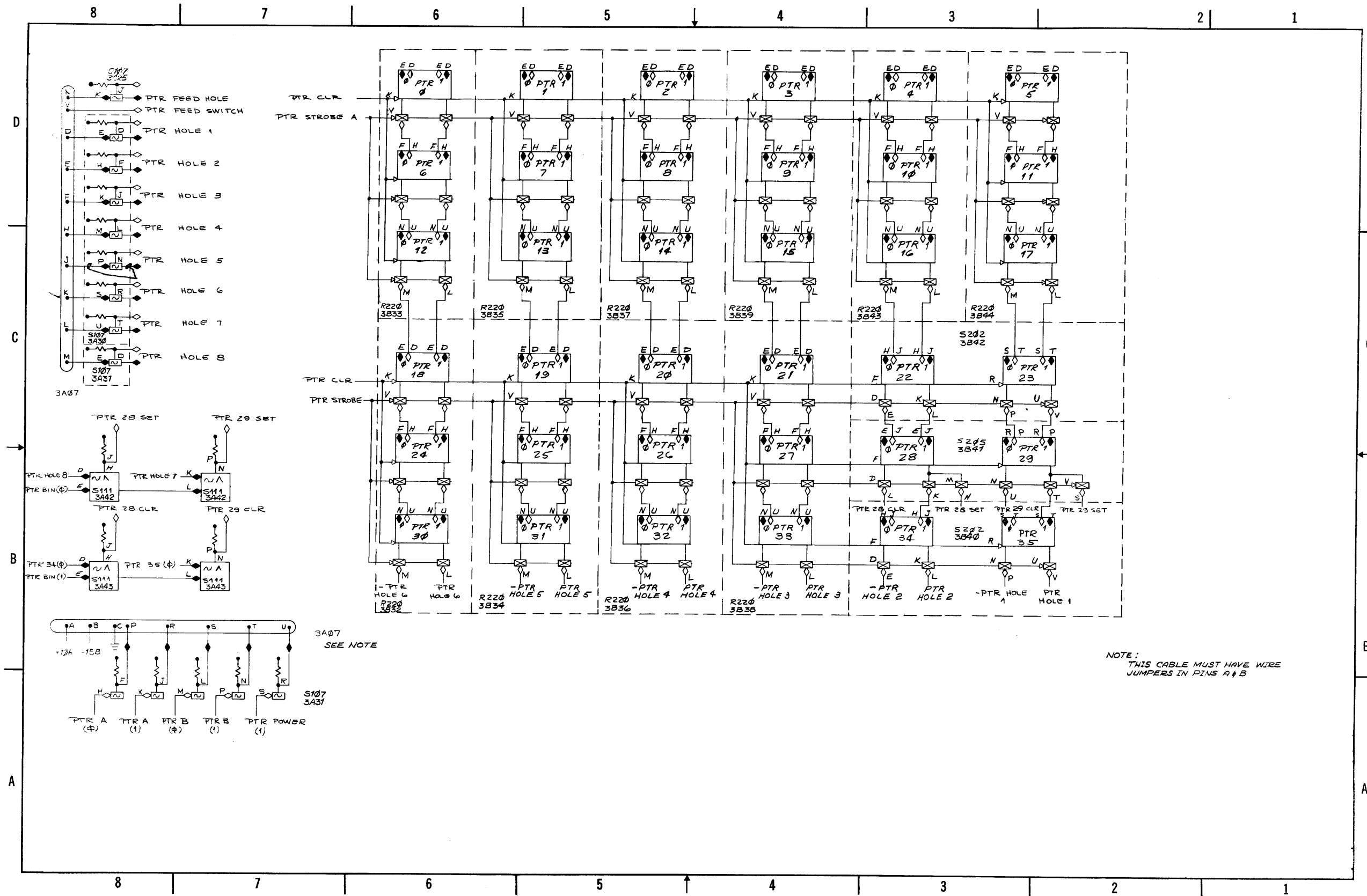
D-BS-KA10-0-PTP2 Paper Tape Punch Control 2



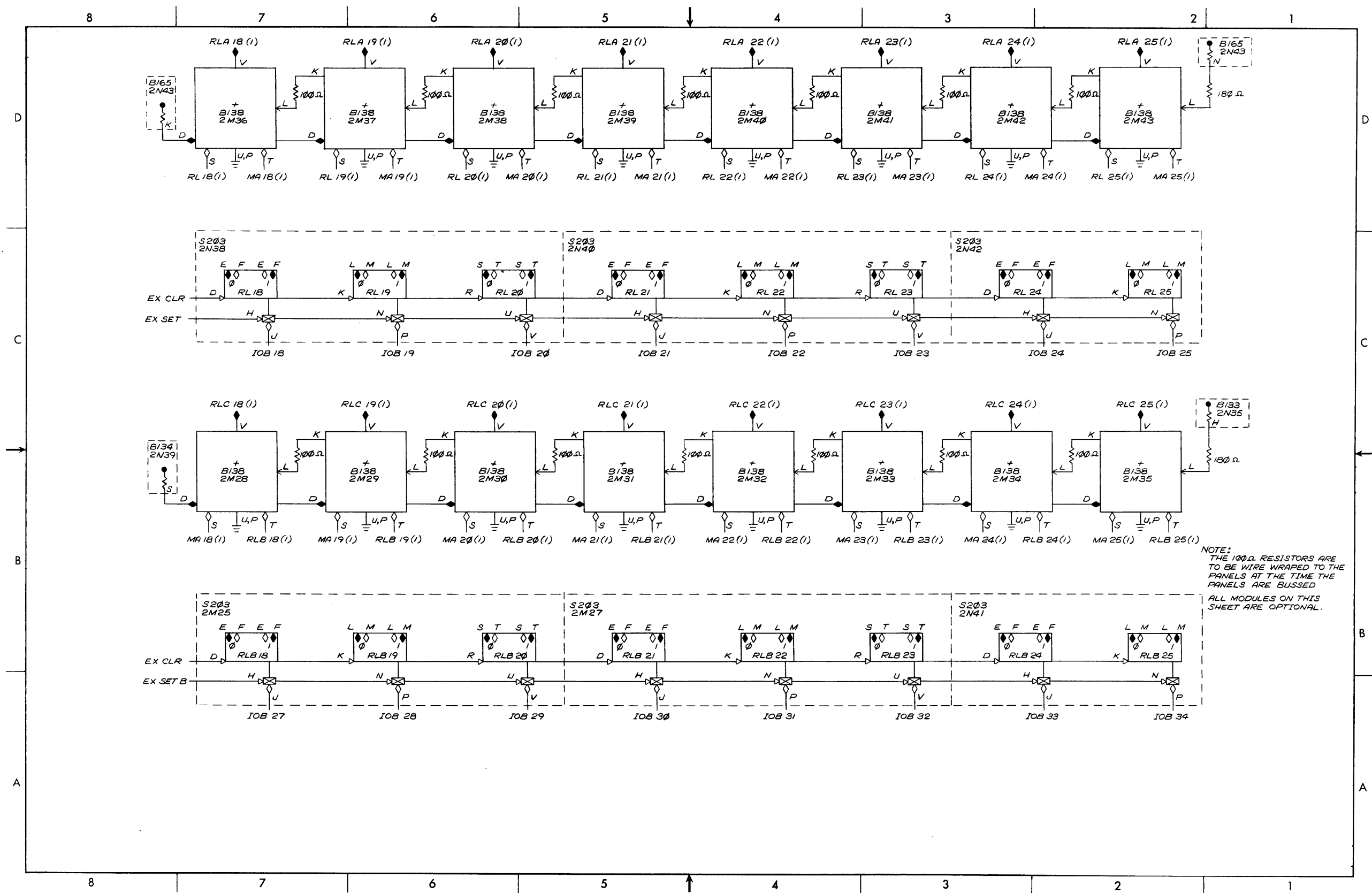
D-BS-KA10-0-PTR1 Paper Tape Reader Control



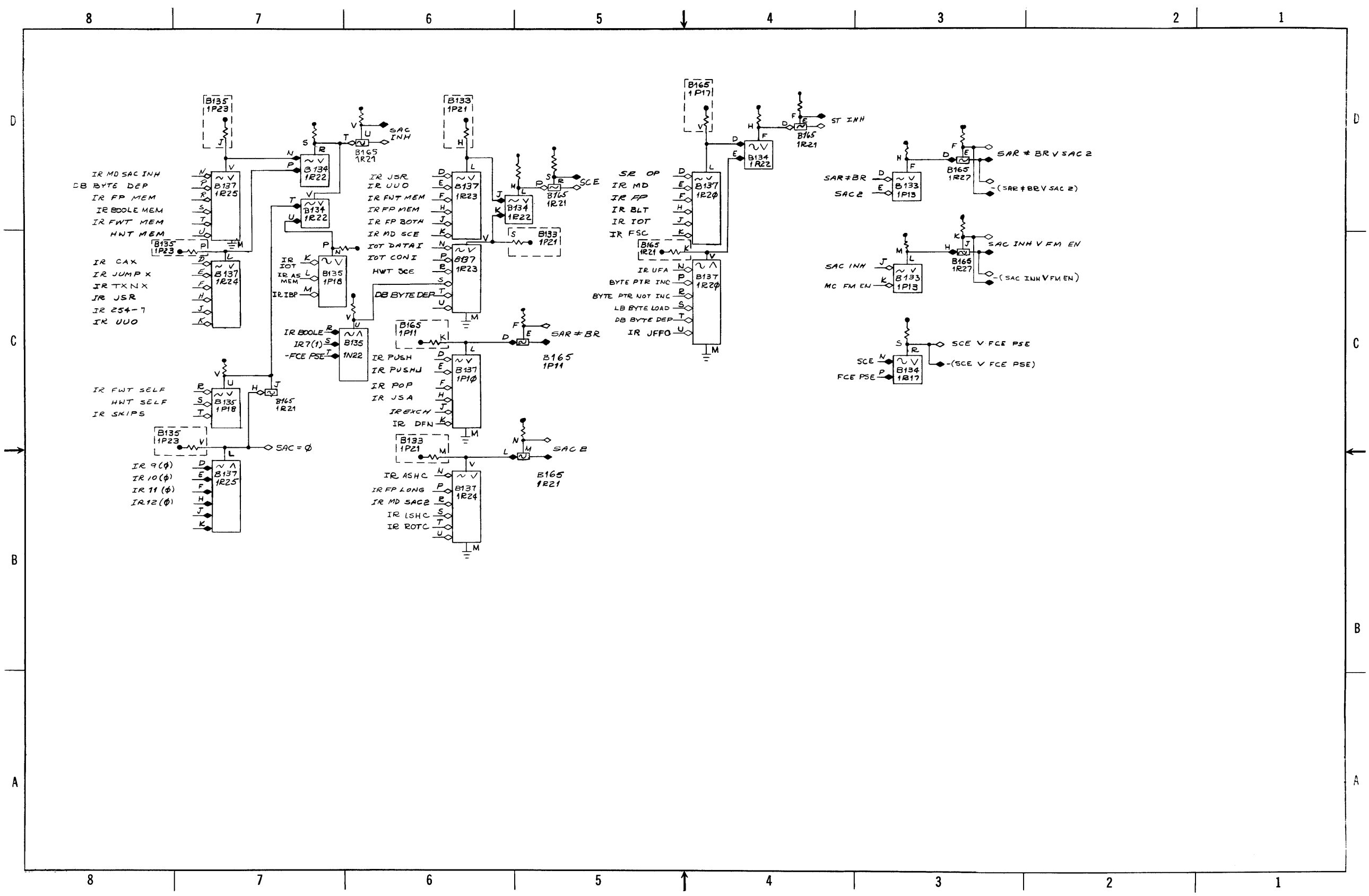
D-BS-KA10-0-PTR2 Paper Tape Reader Control



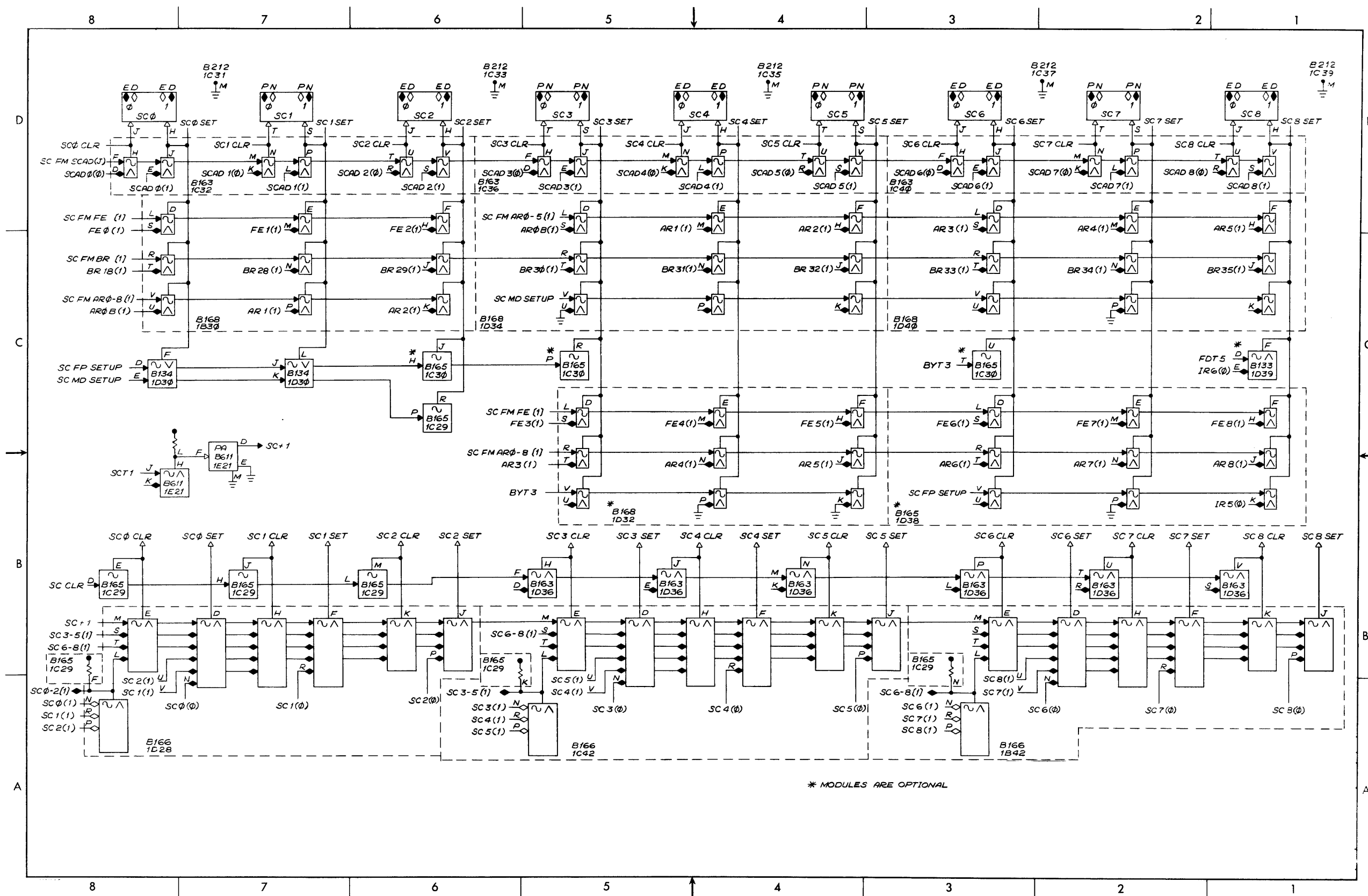
D-BS-KA10-0-PTR3 Paper Tape Reader Control



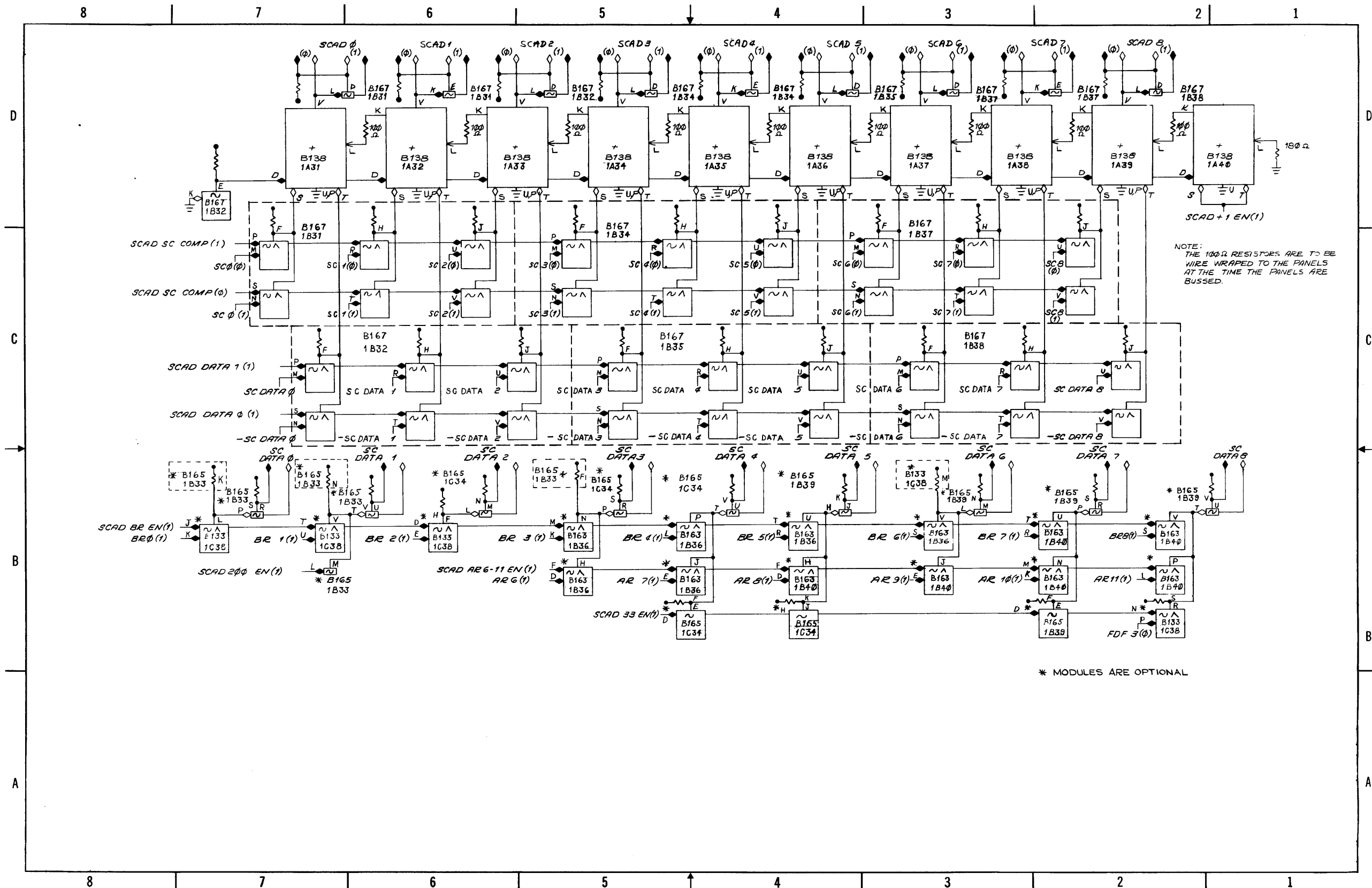
D-BS-KA10-0-RL Relocate Register



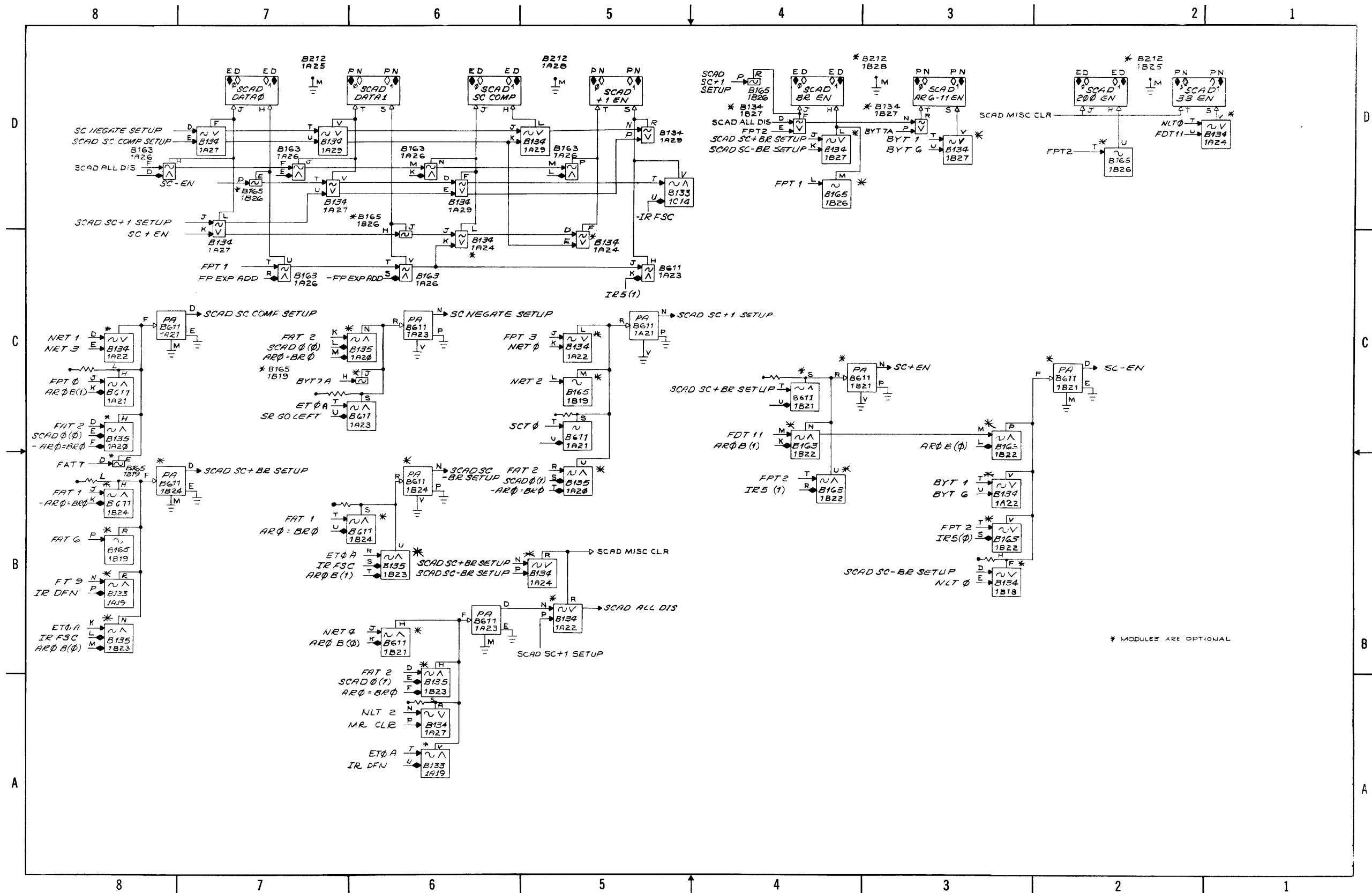
D-BS-KA10-0-S2 Store Cycle Levels



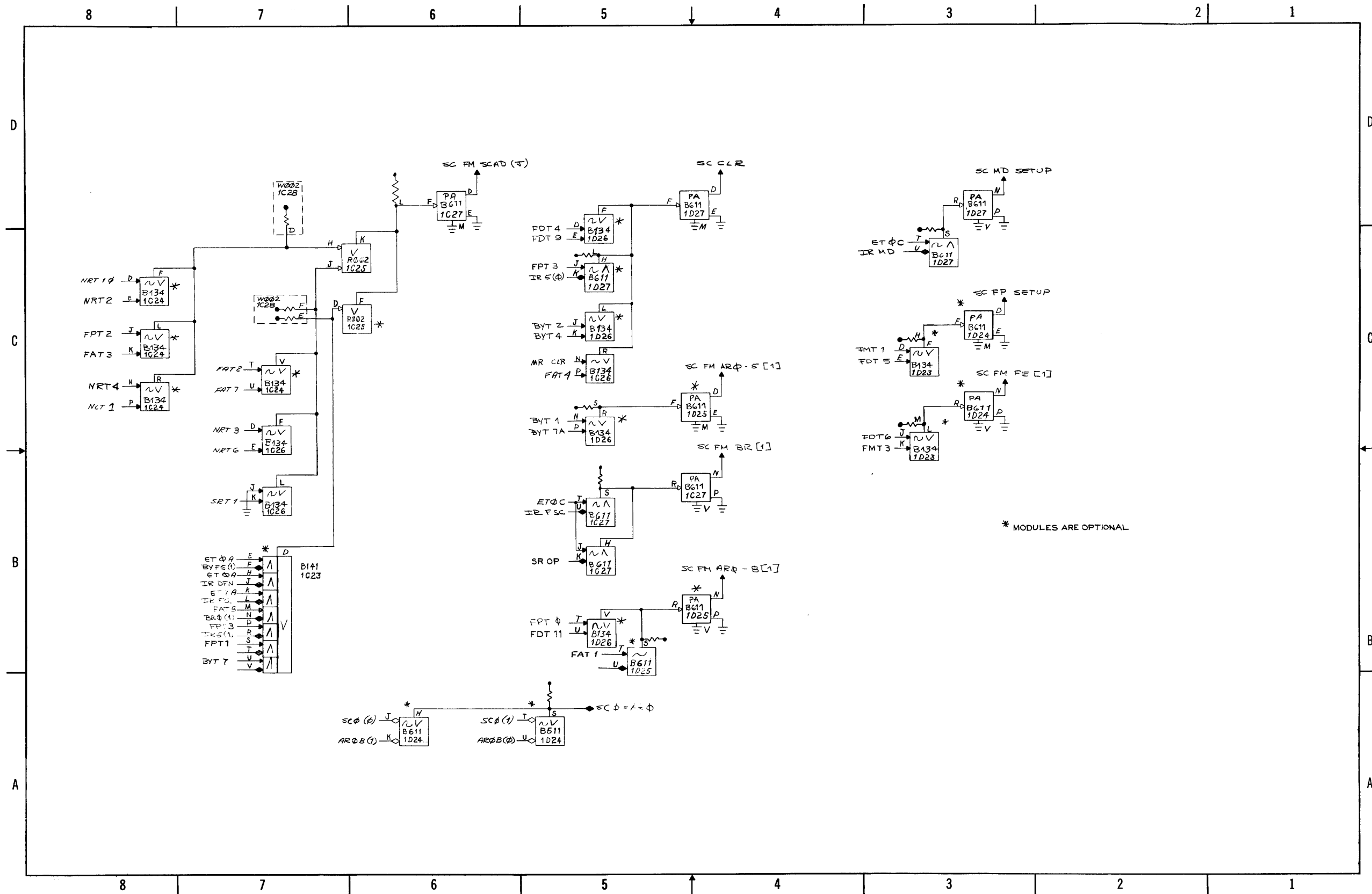
D-BS-KA10-0-SC Shift Count Register



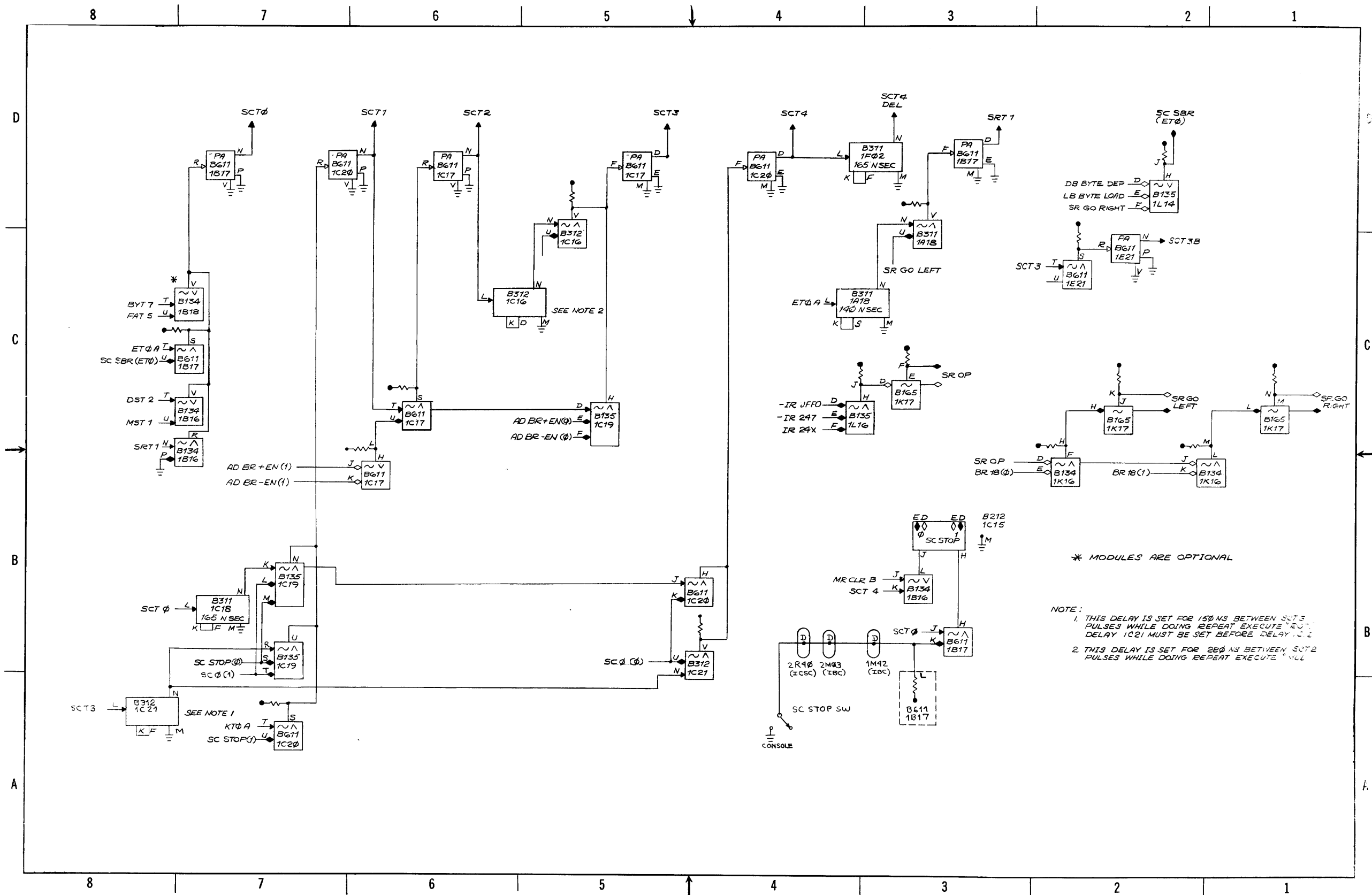
D-BS-KA10-0-SCAD Shift Count Adder



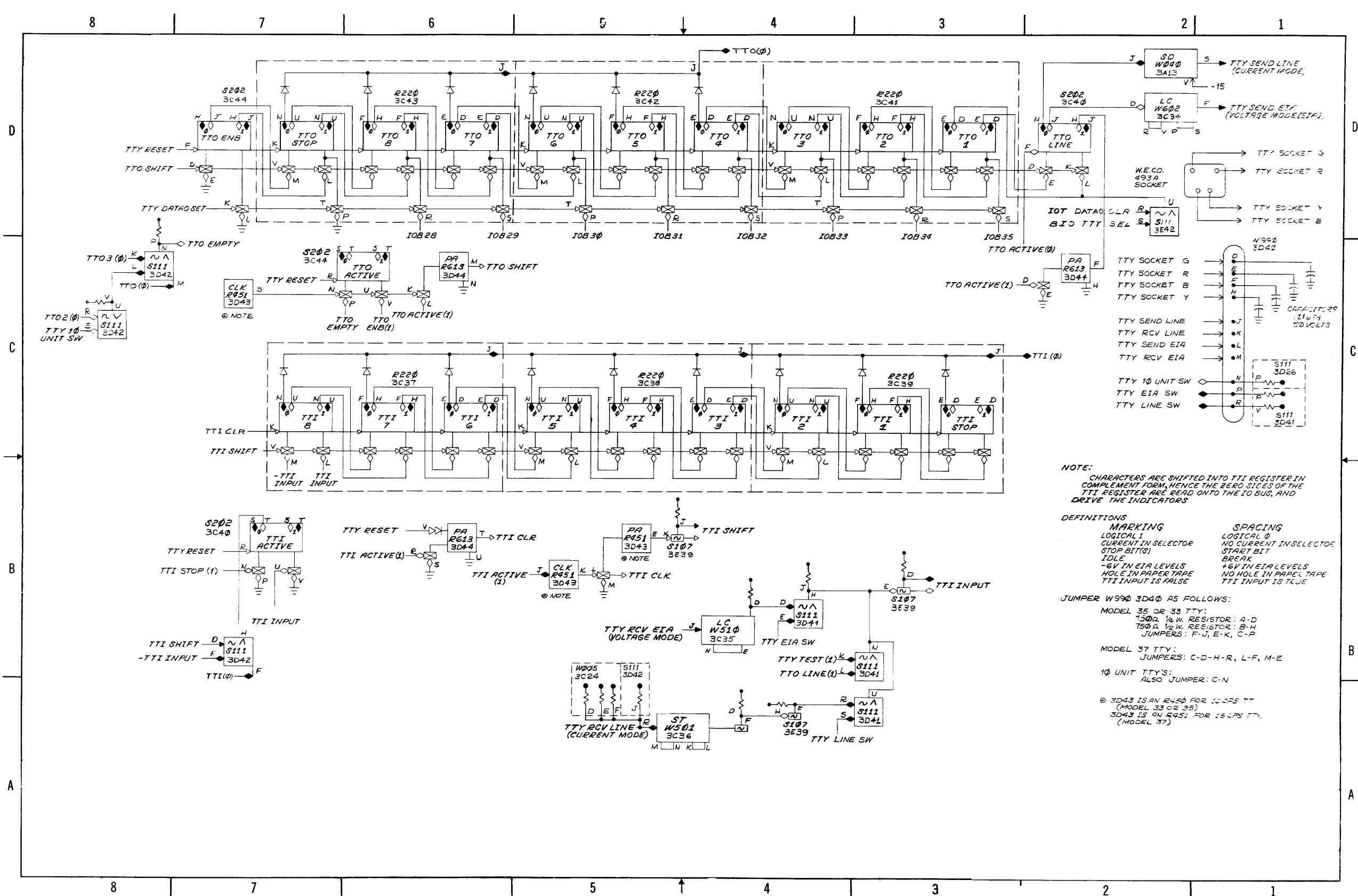
D-BS-KA10-0-SCC1 Shift Counter Control



D-BS-KA10-0-SCC2 Shift Counter Control



D-BS-KA10-0-SCSR Shift and Cnt Subrtn and Shift Inst



NOTE:
 CHARACTERS ARE SHIFTED INTO TTI REGISTER IN
 COMPLEMENT FORM, HENCE THE ZERO SIDES OF THE
 TTI REGISTER ARE READ ONTO THE IO BUS, AND
 DRIVE THE INDICATORS

DEFINITIONS

| MARKING | SPACING |
|---------------------|------------------------|
| LOGICAL 1 | LOGICAL 0 |
| CURRENT IN SELECTOR | NO CURRENT IN SELECTOR |
| STOP BIT(0) | START BIT |
| IDLE | BREAK |
| -6V IN EIA LEVELS | +6V IN EIA LEVELS |
| HOLE IN PAPER TAPE | NO HOLE IN PAPER TAPE |
| TTI INPUT IS FALSE | TTI INPUT IS TRUE |

JUMPER W990 3D40 AS FOLLOWS:
 MODEL 35 OR 33 TTY:
 150Ω 1/2 W. RESISTOR: A-D
 750Ω 1/2 W. RESISTOR: B-H
 JUMPERS: F-J, E-K, C-P
 MODEL 37 TTY:
 JUMPERS: C-D-H-R, L-F, M-E
 10 UNIT TTY'S:
 ALSO JUMPER: C-N

⊗ 3D43 IS AN R450 FOR 10 CPS TT
 (MODEL 33 OR 35)
 3D43 IS AN R451 FOR 15 CPS TT
 (MODEL 37)

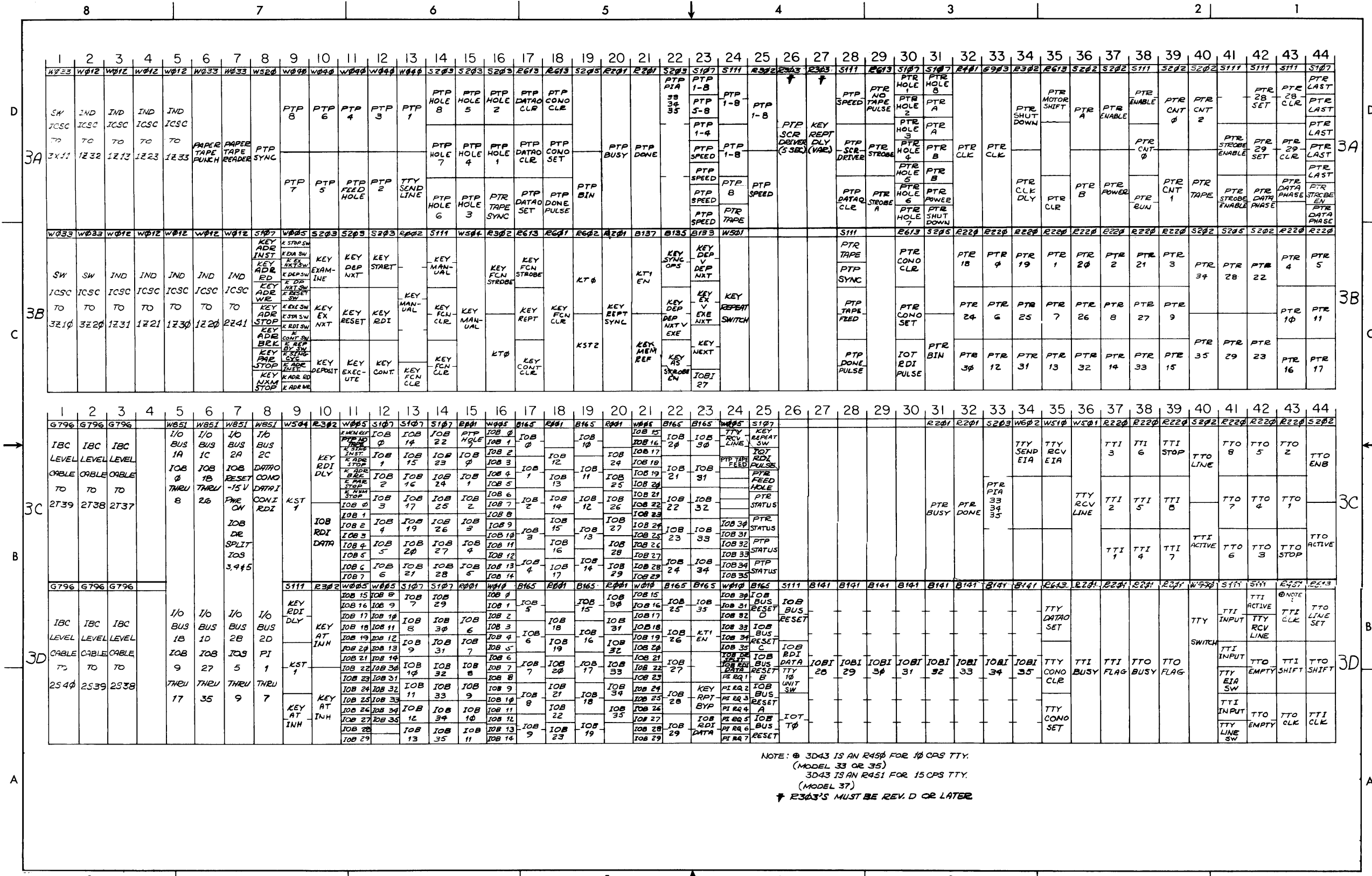
D-BS-KA10-0-TTY2 Teletype Control

| | | 8 | | 7 | | 6 | | 5 | | 4 | | 3 | | 2 | | 1 | | |
|---|----|------|-------|-------|-------|-------|----|----|----|----|----|----|----|----|----|----|----|----|
| D | 2A | IND | IBC | IBC | AD | AR | | | | | | | | | | | | |
| | | ICSC | LEVEL | LEVEL | AR-EN | AR-EN | AD | AD | AD | AD | AD | AD | AD | AD | AD | AD | AD | AD |
| C | 2B | IND | IBC | IBC | AD | AR | | | | | | | | | | | | |
| | | ICSC | CABLE | CABLE | AD | AR | | | | | | | | | | | | |
| B | 2C | IND | IBC | IBC | AD | AR | | | | | | | | | | | | |
| | | ICSC | CABLE | CABLE | AD | AR | | | | | | | | | | | | |
| A | 2D | IND | IBC | IBC | AD | AR | | | | | | | | | | | | |
| | | ICSC | CABLE | CABLE | AD | AR | | | | | | | | | | | | |

D-MU-KA10-0-2A2D Module Utilization PDP-10 (Panels 2A-2D)

| | 8 | | | | 7 | | | | 6 | | | | 5 | | | | 4 | | | | 3 | | | | 2 | | | | 1 | | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| D | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
| | MEM | MEM | MEM | MEM | FMA | FMA | FMA | FMA | ADR | DATA | DATA | DATA | DATA | DATA | DATA | DATA | DATA | DATA | DATA | DATA | DATA | DATA | DATA | DATA | LEVEL | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA |
| C | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
| | MEM | MEM | MEM | MEM | FMA | FMA | FMA | FMA | ADR | ADR | ADR | ADR | ADR | ADR | ADR | ADR | ADR | ADR | ADR | ADR | ADR | ADR | ADR | ADR | LEVEL | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA | MA |
| B | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
| | IND | IBC | IBC | IBC | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI | MI |
| A | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
| | IND | IND | IBC | IBC | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI | MAI |

D-MU-KA10-0-2K2N Module Utilization PDP-10 (Panels 2K-2N)



D-MU-KA10-0-3A3D Module Utilization PDP-10 (Panels 3A-3D)

| PARTS LIST | | DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS | | | REVISIONS | | |
|------------|-----------|---|--|-------------------|------------|---------|------|
| PART NO. | DRWG. NO. | NO. REQD. | DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG. | DEC. STOCK NO. | CHANGE NO. | DATE | ENG. |
| | | 48 | 3 BIT PARITY CIRCUIT | B130 ² | A-29 | 5-20-68 | PC |
| | | 45 | DIODE GATE | B133 ² | | | |
| | | 66 | DIODE GATE | B134 ² | | | |
| | | 45 | DIODE GATE | B135 ² | | | |
| | | 40 | DIODE GATE | B137 ² | | | |
| | | 64 | ADDER | B138 ² | | | |
| | | 25 | DIODE GATE | B141 ² | | | |
| | | 4 | BINARY TO OCTAL DECODER | B152 | | | |
| | | 31 | HALF BINARY TO OCTAL DECODER | B156 ² | | | |
| | | 89 | DIODE GATE | B163 ² | | | |
| | | 85 | DIODE INVERTER | B165 ² | | | |
| | | 9 | COUNTING GATE | B166 | | | |
| | | 31 | ADDER GATE | B167 | | | |
| | | 113 | DIODE GATE | B168 ² | | | |
| | | 2 | PROTECTION COMPARATOR | B198 ² | | | |
| | | 1 | FM ADDR. SS DECODER | B199 ² | | | |
| | | 20 | FOUR FLIP FLOPS | B204 | | | |

A-PL-KA10-0-MC Module Count (Sheet 1)

| PARTS LIST | | DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS | | | REVISIONS | | |
|------------|-----------|---|--|-------------------|------------|------|------|
| PART NO. | DRWG. NO. | NO. REQD. | DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG. | DEC. STOCK NO. | CHANGE NO. | DATE | ENG. |
| | | 136 | DUAL R-S FLIP FLOP | B212 ² | | | |
| | | 12 | FM MODULE | B250 ² | | | |
| | | 91 | TAPPED DELAY LINE | B311 ² | | | |
| | | 5 | VARIABLE DELAY LINE | B312 ² | | | |
| | | 144 | PULSE AMPLIFIER | B611 ² | | | |
| | | 26 | TWO BUS DRIVERS | B684 | | | |
| | | 39 | 100Ω TERMINATOR | G700 | | | |
| | | 15 | 2 MA LEVEL TERMINATOR | G704 | | | |
| | | 1 | CLOCK ACCELERATOR | G903 | | | |
| | | 7 | DIODE NETWORK | R001 | | | |
| | | 10 | DIODE CLUSTER | R002 | | | |
| | | 9 | 2 MC FLIP FLOP | R201 | | | |
| | | 16 | 3 BIT SHIFT REGISTER | R220 | | | |
| | | 8 | DELAY | R302 | | | |
| | | 5 | INTEGRATING ONE-SHOT | R303 | | | |
| | | 2 | CLOCK | R401 | | | |

A-PL-KA10-0-MC Module Count (Sheet 2)

| PARTS LIST | | DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS | | | REVISIONS | | |
|------------|-----------|---|--|-------------------|------------|------|------|
| PART NO. | DRWG. NO. | NO. REQD. | DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG. | DEC. STOCK NO. | CHANGE NO. | DATE | ENG. |
| | | 1 | VARIABLE CLOCK | R450 ¹ | | | |
| | | 1 | PULSE AMPLIFIER | R601 | | | |
| | | 7 | PULSE AMPLIFIER | R602 | | | |
| | | 14 | PULSE AMPLIFIER | R613 | | | |
| | | 22 | INVERTER | S107 | | | |
| | | 18 | DIODE GATE | S111 | | | |
| | | 19 | DUAL FLIP FLOP | S202 | | | |
| | | 22 | TRIPLE FLIP FLOP | S203 ² | | | |
| | | 3 | DUAL FLIP FLOP | S205 | | | |
| | | 4 | CLAMP LOADS | W002 | | | |
| | | 12 | CLAMPED LOADS | W005 | | | |
| | | 8 | CLAMPED LOADS | W010 | | | |
| | | 5 | SOLENOID DRIVER | W040 | | | |
| | | 10 | PULSED BUS TRANSCIEVER | W102 | | | |
| | | 3 | SCHMITT TRIGGER | W501 | | | |
| | | 2 | INITIAL TRANSIENT DETECTOR | W504 | | | |

A-PL-KA10-0-MC Module Count (Sheet 3)

| PARTS LIST | | DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS | | | REVISIONS | | |
|------------|-----------|---|---|----------------|------------|------|------|
| PART NO. | DRWG. NO. | NO. REQD. | DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG. | DEC. STOCK NO. | CHANGE NO. | DATE | ENG. |
| | | 1 | PULSE LEVEL CONVERTER | W510 | | | |
| | | 1 | COMPARATOR | W520 | | | |
| | | 1 | BIPOLAR LEVEL AMPLIFIER | W602 | | | |
| | | 1 | SPLIT LUG BOARD | W990 | | | |
| | | | NOTES: | | | | |
| | | 1. | THE R450 IS USED WITH A MODEL 33 OR 35 TELETYPE | | | | |
| | | | A R451 IS USED WITH A MODEL 37 TELETYPE | | | | |
| | | 2. | THE MODULE COUNT INDICATED FOR THESE MODULES INCLUDE | | | | |
| | | | THE MODULE COUNT FOR THE INTERNAL OPTIONS (KE10, KM10, KM10). | | | | |
| | | | THE FOLLOWING IS A BREAK DOWN OF THE MODULES IN | | | | |
| | | | THESE OPTIONS BUT THESE ARE NOT ADDITIONAL MODULES AS | | | | |
| | | | THEY ARE ALREADY INCLUDED IN THE ABOVE MODULE COUNT. | | | | |
| | | | KE10 | | | | |
| | | 2 | 3 BIT PARITY CIRCUIT | B130 | | | |

A-PL-KA10-0-MC Module Count (Sheet 4)

8 7 6 5 4 3 2 1

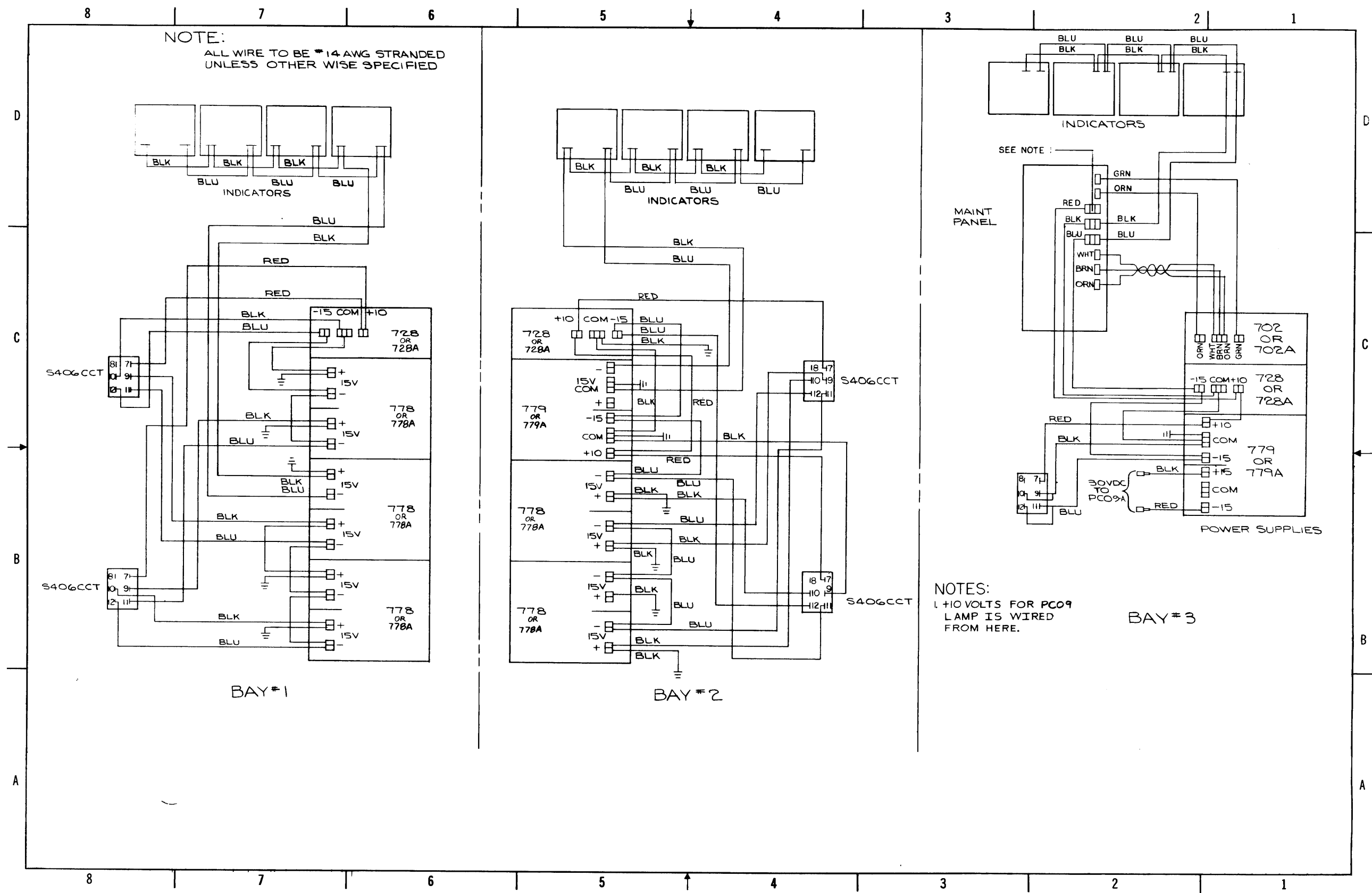
| PARTS LIST ITEM NO. | MARK END | CONN. TYPE | TO | CONN. TYPE | MARK END | LENGTH | PART NO./DWG. NO. | PARTS LIST | MARK | CONN. | TO | CONN. | MARK | LENGTH | PART NO. / DWG. NO. |
|---------------------|----------|------------|----|------------|----------|-------------|-------------------|------------|-----------------|-----------------|----|-----------------|-----------------|-------------------|----------------------|
| 1 | 2A01 | WO12 | - | W250 | 2Z12 | 18 IN. | 7005459-1 | 24 | 1D41 | G796 | - | G796 | 2D04 | 10 IN. | 7005469-3 |
| 2 | 1C44 | WO12 | - | W250 | 1Z40 | 29 IN. | 7005459-2 | 24 | 1D42 | G796 | - | G796 | 2D03 | 10 IN. | 7005469-3 |
| 2 | 2B01 | WO12 | - | W250 | 2Z22 | 29 IN. | 7005459-2 | 24 | 1F42 | G796 | - | G796 | 2F03 | 10 IN. | 7005469-3 |
| 2 | 2P40 | WO12 | - | W250 | 3Y21 | 29 IN. | 7005459-2 | 24 | 1F43 | G796 | - | G796 | 2F02 | 10 IN. | 7005469-3 |
| 2 | 2P44 | WO12 | - | W250 | 3Y22 | 29 IN. | 7005459-2 | 24 | 1M42 | G796 | - | G796 | 2M03 | 10 IN. | 7005469-3 |
| 3 | 1E44 | WO12 | - | W250 | 1Z42 | 30-1/2 IN. | 7005459-3 | 24 | 1N41 | G796 | - | G796 | 2N04 | 10 IN. | 7005469-3 |
| 3 | 2D01 | WO12 | - | W250 | 2Z10 | 30-1/2 IN. | 7005459-3 | 24 | 1B43 | G796 | - | G796 | 2B02 | 10 IN. | 7005469-3 |
| 3 | 2P37 | WO12 | - | W250 | 3Y10 | 30-1/2 IN. | 7005459-3 | 24 | 1S41 | G796 | - | G796 | 2S04 | 10 IN. | 7005469-3 |
| 4 | 2E01 | WO12 | - | W250 | 2Z11 | 34 IN. | 7005459-4 | 24 | 1R42 | G796 | - | G796 | 2R03 | 10 IN. | 7005469-3 |
| 4 | 2H01 | WO12 | - | W250 | 2Z13 | 34 IN. | 7005459-4 | 24 | 1R41 | G796 | - | G796 | 2R04 | 10 IN. | 7005469-3 |
| 5 | 2C01 | WO12 | - | W250 | 2Z32 | 37 IN. | 7005459-5 | 24 | 1M41 | G796 | - | G796 | 2M04 | 10 IN. | 7005469-3 |
| 5 | 2P41 | WO12 | - | W250 | 3Y31 | 37 IN. | 7005459-5 | 25 | 1B41 | G796 | - | G796 | 2B04 | 12-1/2 IN. | 7005469-4 |
| 5 | 2R41 | WO12 | - | W250 | 3Y32 | 37 IN. | 7005459-5 | 25 | 1F41 | G796 | - | G796 | 2F04 | 12-1/2 IN. | 7005469-4 |
| 6 | 1A44 | WO12 | - | W250 | 1Z11 | 39-1/2 IN. | 7005459-6 | 25 | 1P41 | G796 | - | G796 | 2P04 | 12-1/2 IN. | 7005469-4 |
| 6 | 2E03 | WO12 | - | W250 | 2Z21 | 39-1/2 IN. | 7005459-6 | 25 | 1P42 | G796 | - | G796 | 2P05 | 12-1/2 IN. | 7005469-4 |
| 7 | 1B44 | WO12 | - | W250 | 1Z10 | 42-1/2 IN. | 7005459-7 | 26 | 1D43 | G796 | - | G796 | 2A02 | 20-1/2 IN. | 7005469-5 |
| 7 | 1D44 | WO12 | - | W250 | 1Z12 | 42-1/2 IN. | 7005459-7 | 27 | 1N43 | G796 | - | G796 | 2H02 | 29-1/2 IN. | 7005469-6 |
| 7 | 1M44 | WO12 | - | W250 | 1Z41 | 42-1/2 IN. | 7005459-7 | 28 | 1P44 | G796 | - | G796 | 2H03 | 35-1/2 IN. | 7005469-7 |
| 7 | 2E02 | WO12 | - | W250 | 2Z20 | 42-1/2 IN. | 7005459-7 | 29 | 3C01 | G796 | - | G796 | 2T39 | 47 IN. | 7005469-9 |
| 7 | 2R42 | WO12 | - | W250 | 3Y42 | 42-1/2 IN. | 7005459-7 | 29 | 3E03 | G796 | - | G796 | 2T40 | 47 IN. | 7005469-9 |
| 8 | 2J01 | WO12 | - | W250 | 2Z23 | 44-1/2 IN. | 7005459-8 | 29 | 3D01 | G796 | - | G796 | 2S40 | 47 IN. | 7005469-8 |
| 8 | 2P39 | WO12 | - | W250 | 3Y40 | 44-1/2 IN. | 7005459-8 | 30 | 3C02 | G796 | - | G796 | 2T38 | 49 IN. | 7005469-9 |
| 8 | 2P42 | WO12 | - | W250 | 3Y41 | 44-1/2 IN. | 7005459-8 | 30 | 3D03 | G796 | - | G796 | 2S39 | 49 IN. | 7005469-9 |
| 9 | 1M44 | WO12 | - | W250 | 1Z43 | 47-1/2 IN. | 7005459-9 | 30 | 3D02 | G796 | - | G796 | 2S39 | 49 IN. | 7005469-9 |
| 9 | 1N44 | WO12 | - | W250 | 1Z44 | 47-1/2 IN. | 7005459-9 | 30 | 3E02 | G796 | - | G796 | 2T41 | 49 IN. | 7005469-9 |
| 9 | 2E04 | WO12 | - | W250 | 2Z30 | 47-1/2 IN. | 7005459-9 | 30 | 3C03 | G796 | - | G796 | 2T37 | 49 IN. | 7005469-9 |
| 9 | 2F01 | WO12 | - | W250 | 2Z31 | 47-1/2 IN. | 7005459-9 | 31 | 3F01 | G796 | - | G796 | 2S42 | 56 IN. | 7005469-10 |
| 9 | 2P43 | WO12 | - | W250 | 3Y51 | 47-1/2 IN. | 7005459-9 | 31 | 3F02 | G796 | - | G796 | 2S41 | 56 IN. | 7005469-10 |
| 10 | 1J44 | WO12 | - | W250 | 1Z22 | 49-1/2 IN. | 7005459-10 | 32 | 3E04 | G796 | - | G796 | 1S43 | 92 IN. | 7005469-11 |
| 10 | 2P39 | WO12 | - | W250 | 3Y50 | 49-1/2 IN. | 7005459-10 | 32 | 3E05 | G796 | - | G796 | 1S44 | 92 IN. | 7005469-11 |
| 10 | 2R43 | WO12 | - | W250 | 3Y52 | 49-1/2 IN. | 7005459-10 | 33 | 3E06 | G796 | - | G796 | 1L44 | 111 IN. | 7005469-12 |
| 11 | 2R01 | WO12 | - | W250 | 2Z14 | 52-1/2 IN. | 7005459-11 | 34 | 1M43 | G799 | - | G799 | 2M02 | 12 IN. | 7005463-1 |
| 12 | 2M01 | WO12 | - | W250 | 2Z33 | 56-1/2 IN. | 7005459-12 | 34 | 1J43 | G799 | - | G799 | 2T02 | 12 IN. | 7005463-1 |
| 12 | 3E07 | WO12 | - | W250 | 3Y30 | 56-1/2 IN. | 7005459-12 | 34 | 1P43 | G799 | - | G799 | 2P02 | 12 IN. | 7005463-1 |
| 13 | 2S01 | WO12 | - | W250 | 2Z24 | 63-1/2 IN. | 7005459-13 | 34 | 1R42 | G799 | - | G799 | 2R03 | 12 IN. | 7005463-1 |
| 14 | 2N01 | WO12 | - | W250 | 2Z42 | 68-1/2 IN. | 7005459-14 | 34 | 1S42 | G799 | - | G799 | 2S03 | 12 IN. | 7005463-1 |
| 14 | 2N02 | WO12 | - | W250 | 2Z43 | 68-1/2 IN. | 7005459-14 | 34 | 1N42 | G799 | - | G799 | 2N03 | 12 IN. | 7005463-1 |
| 15 | 2T01 | WO12 | - | W250 | 2Z34 | 71 IN. | 7005459-15 | 35 | 1L43 | G799 | - | G799 | 2J02 | 11 IN. | 7005463-11 |
| 15 | 2P01 | WO12 | - | W250 | 2Z44 | 71 IN. | 7005459-15 | 34 | 1L42 | G799 | - | G799 | 2J03 | 12 IN. | 7005463-1 |
| 16 | 1R44 | WO12 | - | W250 | 2Z40 | 77-1/2 IN. | 7005459-16 | 37 | 1H41 | G799 | - | G799 | 2D02 | 23 IN. | 7005463-4 |
| 17 | 3B03 | WO12 | - | W250 | 1Z31 | 142 IN. | 7005459-17 | 36 | 1L41 | G799 | - | G799 | 2J04 | 13 IN. | 7005463-10 |
| 17 | 3A02 | WO12 | - | W250 | 1Z32 | 142 IN. | 7005459-17 | 36 | 1K41 | G799 | - | G799 | 2H04 | 13 IN. | 7005463-10 |
| 18 | 3B05 | WO12 | - | W250 | 1Z30 | 144 IN. | 7005459-18 | 39 | 1H42 | G799 | - | G799 | 2C03 | 26 IN. | 7005463-6 |
| 19 | 3A05 | WO12 | - | W250 | 1Z33 | 144 IN. | 7005459-18 | 39 | 1H44 | G799 | - | G799 | 2B03 | 26 IN. | 7005463-6 |
| 19 | 2S44 | WO12 | - | W250 | 1Z34 | 144 IN. | 7005459-18 | 40 | 1H43 | G799 | - | G799 | 2C02 | 28 IN. | 7005463-7 |
| 19 | 3B04 | WO12 | - | W250 | 1Z21 | 145-1/2 IN. | 7005459-19 | 41 | 2T42 | G796 | - | G796 | 3E01 | 56 IN. | 7005469-10 |
| 20 | 3B06 | WO12 | - | W250 | 1Z20 | 148 IN. | 7005459-20 | 42 | 1R43 | WO31 | - | WO31 | 3F03 | 82 IN. | 7405553-6 |
| 20 | 3A04 | WO12 | - | W250 | 1Z23 | 148 IN. | 7005459-20 | 43 | 3B01 | WO33 | - | WO33 | 3Z10 | 28 IN. | 7405553-21 |
| 21 | 2S43 | WO12 | - | W250 | 1Z24 | 150-1/2 IN. | 7005459-21 | 44 | 3B02 | WO33 | - | WO33 | 3Z20 | 30-1/2 IN. | 7405553-22 |
| 22 | 3A03 | WO12 | - | W250 | 1Z13 | 153-1/2 IN. | 7005459-22 | 45 | 2R37 | WO33 | - | WO33 | 3Z30 | 44 IN. | 7405553-23 |
| 23 | 2R44 | WO12 | - | W250 | 1Z14 | 156-1/2 IN. | 7005459-23 | 45 | 2R38 | WO33 | - | WO33 | 3Z40 | 44 IN. | 7405553-23 |
| 23 | 3B07 | WO12 | - | W250 | 2Z41 | 156-1/2 IN. | 7005459-23 | 46 | 2S37 | WO33 | - | WO33 | 3Z50 | 48-1/2 IN. | 7405553-25 |
| 24 | 1A43 | G796 | - | G796 | 2A03 | 10 IN. | 7005469-3 | 47 | 2R39 | WO33 | - | WO33 | 3Z60 | 53 IN. | 7405553-24 |
| 24 | 1C43 | G796 | - | G796 | 2C04 | 10 IN. | 7005469-3 | 48 | 2R40 | WO33 | - | WO33 | 3X10 | 39-1/2 IN. | 7405553-26 |
| | | | | | | | | 45 | 3A01 | WO33 | - | WO33 | 3X11 | 44 IN. | 7405553-23 |
| | | | | | | | | * 45 | 3A06 | WO33 | - | WO33 | PUNCH | 44 IN. | 7405553-23 |
| | | | | | | | | * 45 | 3A07 | WO33 | - | WO33 | READER | 44 IN. | 7405553-23 |

NOTES
 1. * WHEN INSTALLING THESE TWO CABLES, 3A06 TO THE PUNCH, REQUIRES 10 Ω ¼ W PINS A,B. 3A07 TO THE READER REQUIRES JUMPERS PINS A,B.
 2. ITEM #49 (B-DC-7406488-C-0) WILL BE PUT ON CABLES AT THE TIME OF ASSEMBLY.

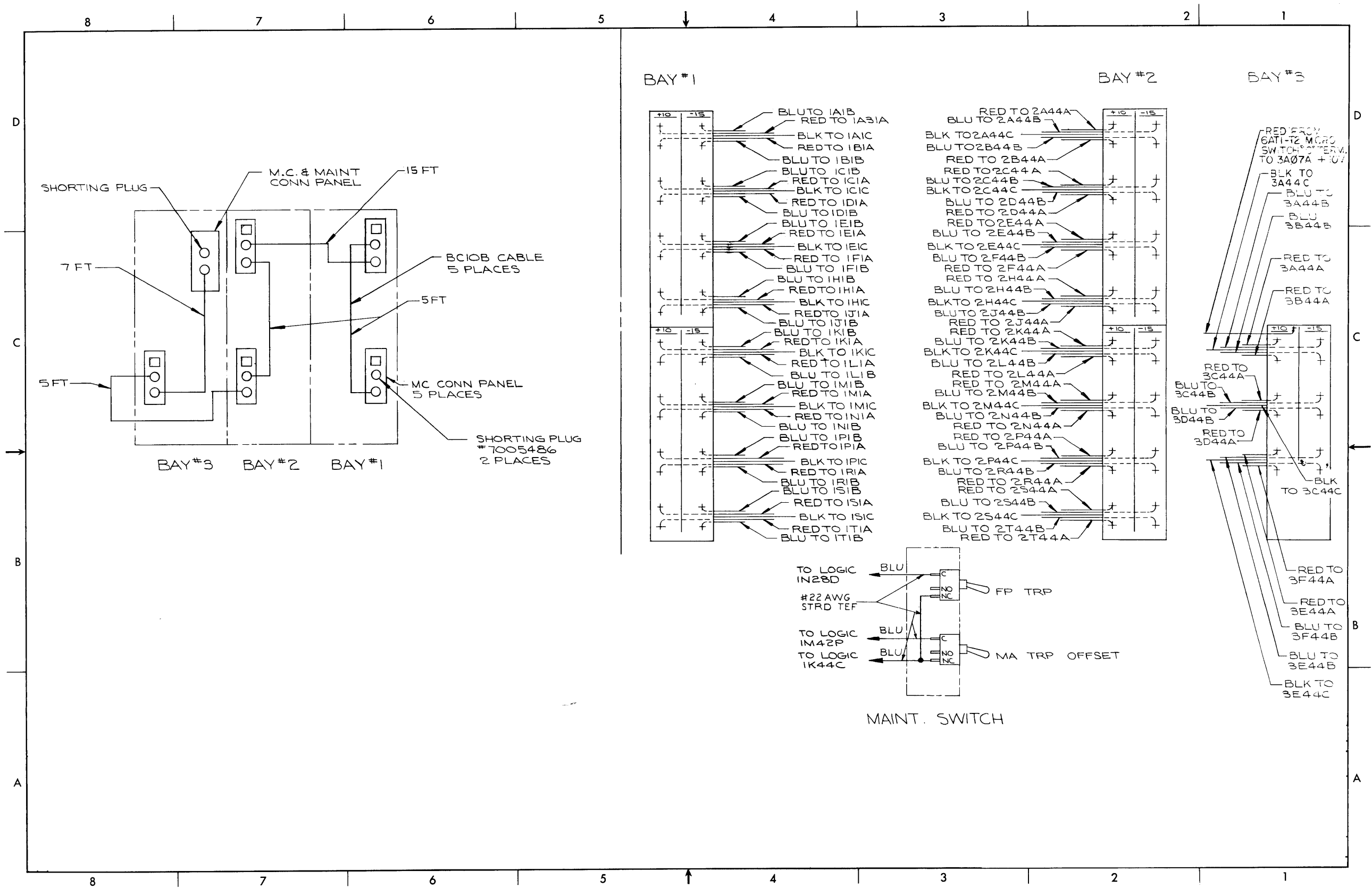
D
C
B
A

D
C
B
A

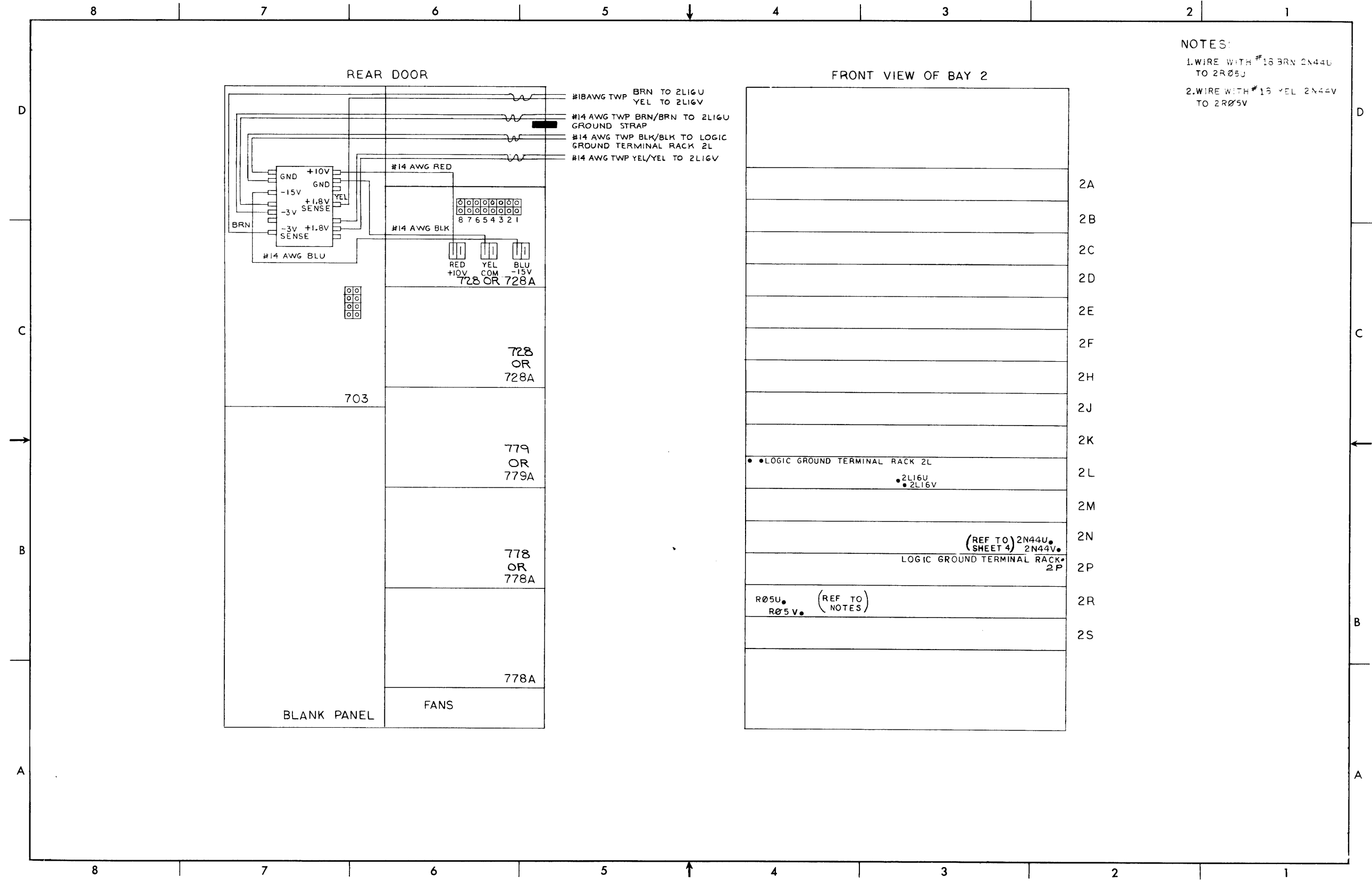
8 7 6 5 4 3 2 1



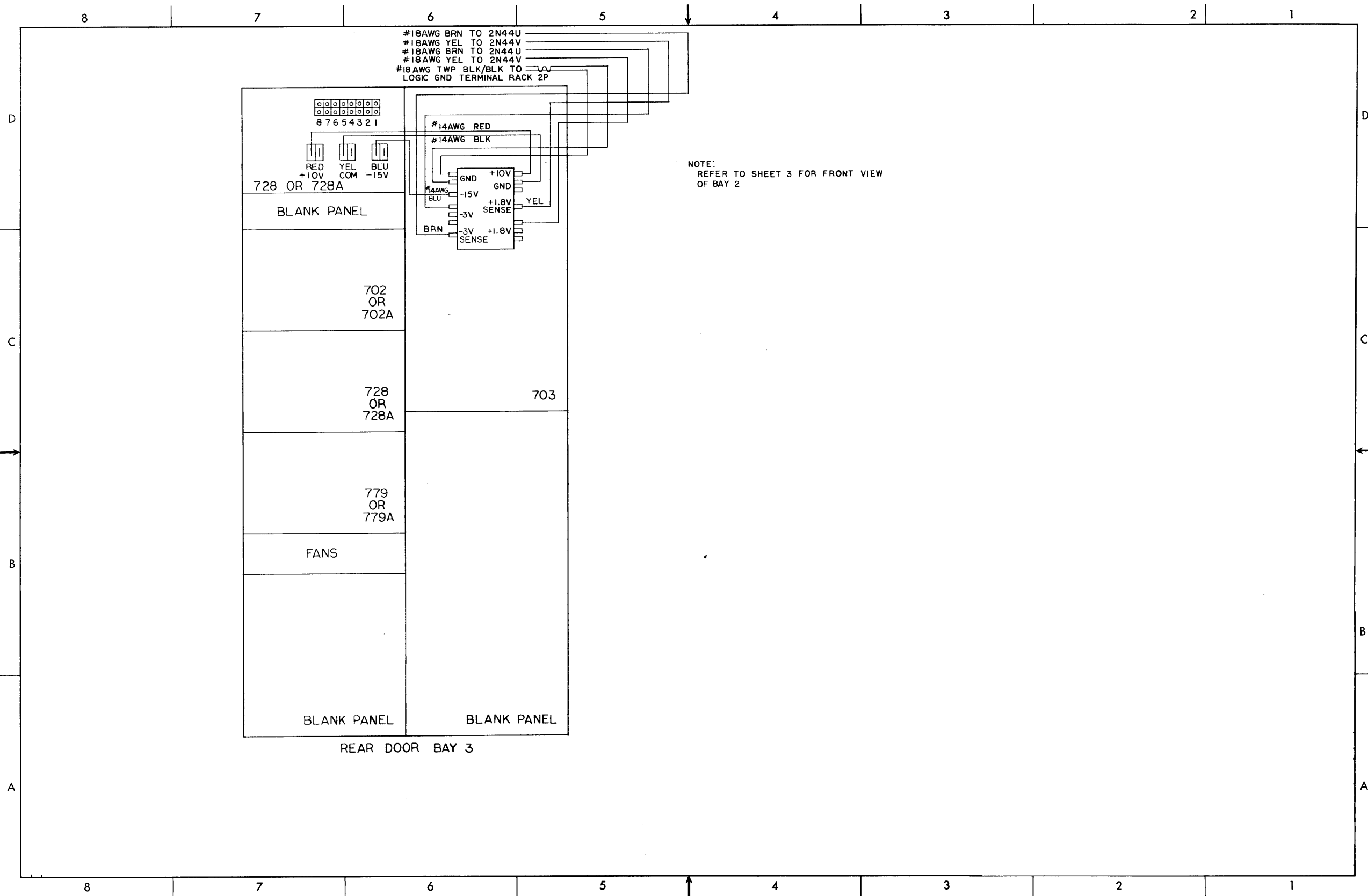
D-IC-KA10-0-1 DC Power Wiring (Sheet 1)



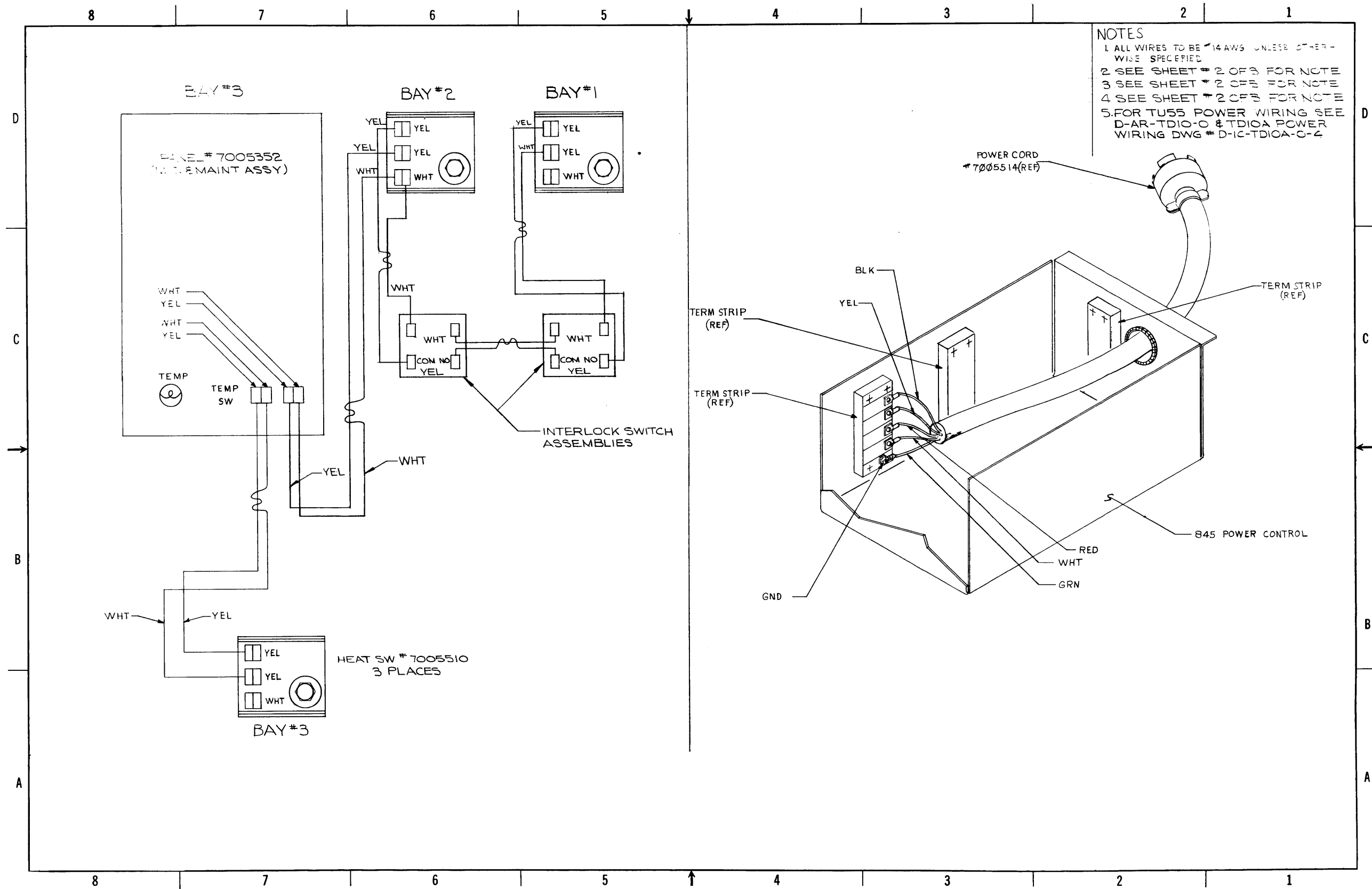
D-IC-KA10-0-1 DC Power Wiring (Sheet 2)



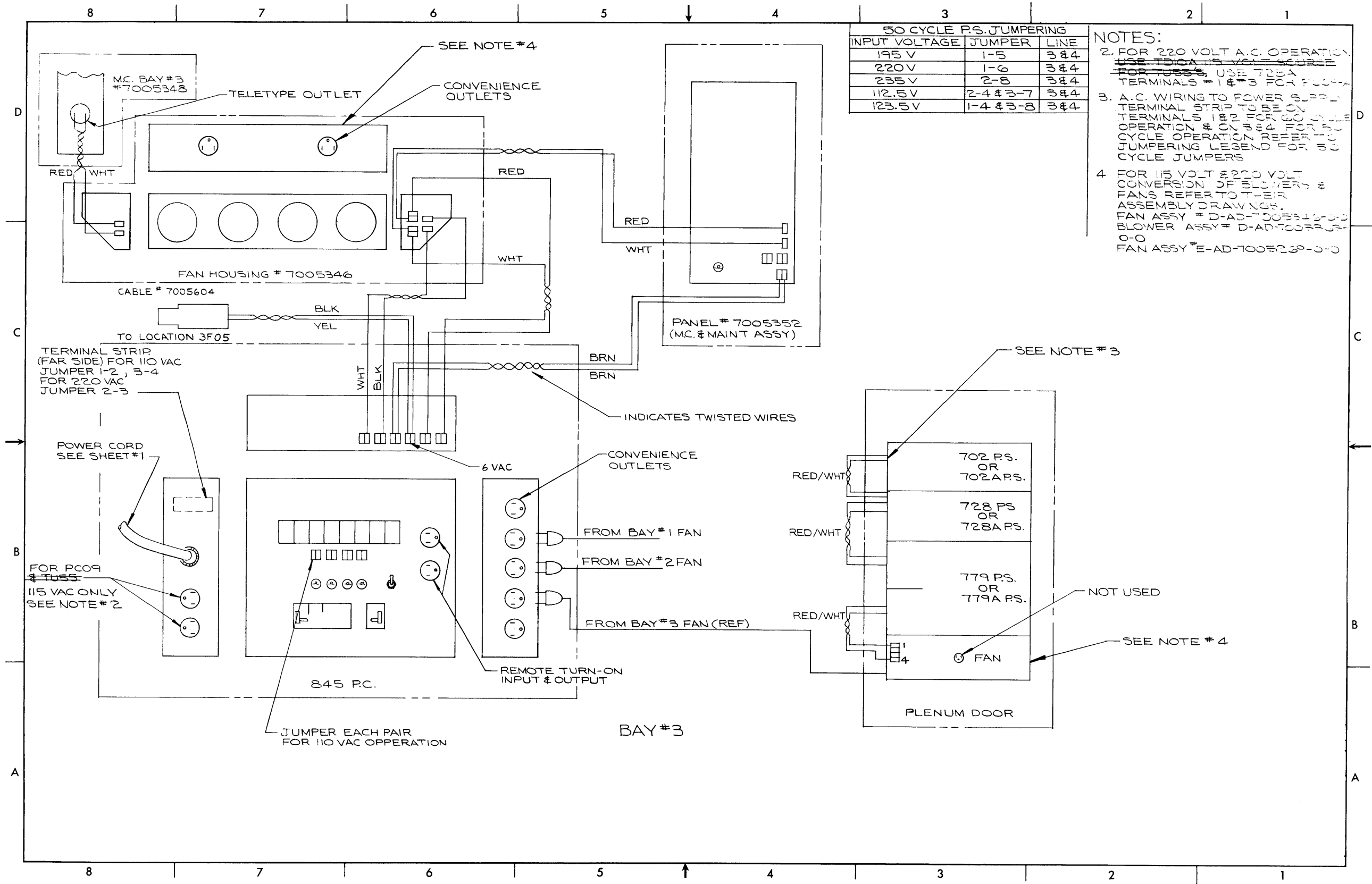
D-IC-KA10-0-1 DC Power Wiring (Sheet 3)



D-IC-KA10-0-1 DC Power Wiring (Sheet 4)



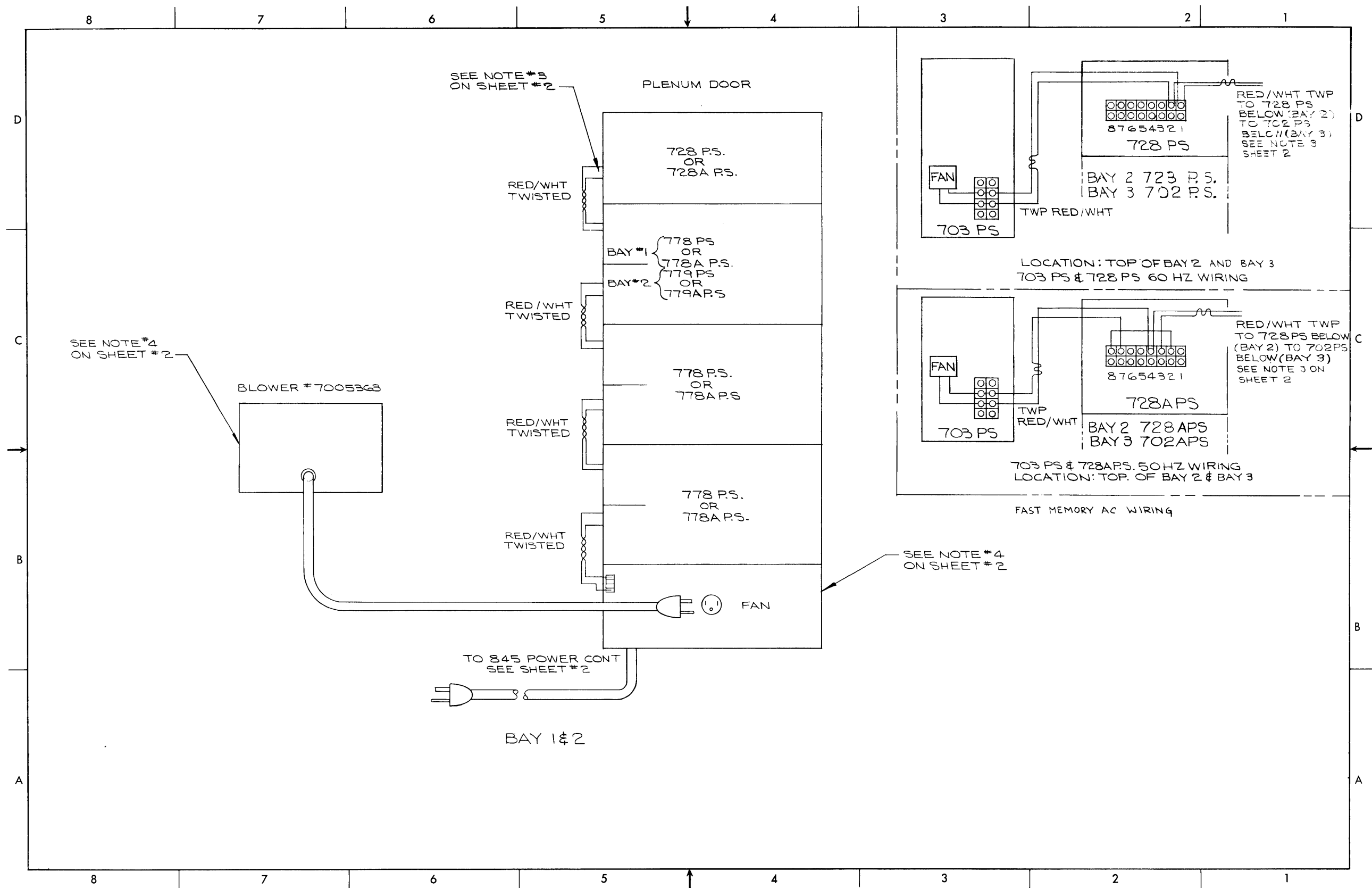
D-IC-KA10-0-2 AC Power Wiring (Sheet 1)



| 50 CYCLE P.S. JUMPING | | |
|-----------------------|-----------|------|
| INPUT VOLTAGE | JUMPER | LINE |
| 195 V | 1-5 | 3#4 |
| 220 V | 1-6 | 3#4 |
| 235 V | 2-8 | 3#4 |
| 112.5 V | 2-4 & 3-7 | 3#4 |
| 123.5 V | 1-4 & 3-8 | 3#4 |

- NOTES:
- FOR 220 VOLT A.C. OPERATION, USE TYPICAL 115 VOLT SOURCE. FOR TUBES, USE 725A. TERMINALS #1 & 3 FOR 110V.
 - A.C. WIRING TO POWER SUPPLY TERMINAL STRIP TO BE ON TERMINALS 1 & 2 FOR 110 VOLT OPERATION. # ON 3 & 4 FOR 220 VOLT OPERATION. REFER TO 50 CYCLE JUMPING LEGEND FOR 50 CYCLE JUMPERS.
 - FOR 115 VOLT & 220 VOLT CONVERSION OF BLOWERS & FANS REFER TO THEIR ASSEMBLY DRAWINGS. FAN ASSY # D-AD-7005340-0-0 BLOWER ASSY # D-AD-7005340-0-0 FAN ASSY # E-AD-7005330-0-0

D-IC-KA10-0-2 AC Power Wiring (Sheet 2)



D-IC-KA10-0-2 AC Power Wiring (Sheet 3)

K-WL-KA10-0-4 Wire List KA10 (to be supplied)

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| COMPONENT NAME PART # | VALUE | POL. | FROM PIN | TO PIN | POL. |
|--------------------------|---------------|------|----------|--------|------|
| RES 74-4654 | 1500Ω 1/4W5% | | 1A31R | 1A31V | |
| ↑ | ↑ | | 1A32R | 1A32V | |
| ↑ | ↑ | | 1A33R | 1A33V | |
| | | | 1A34R | 1A34V | |
| | | | 1A35R | 1A35V | |
| | | | 1A36R | 1A36V | |
| | | | 1A37R | 1A37V | |
| | | | 1A38R | 1A38V | |
| | | | 1A39R | 1A39V | |
| | | | 1A40R | 1A40V | |
| | | | 2A06R | 2A06V | |
| | | | 2A07R | 2A07V | |
| | | | 2A08R | 2A08V | |
| | | | 2A09R | 2A09V | |
| | | | 2A10R | 2A10V | |
| | | | 2A11R | 2A11V | |
| | | | 2A12R | 2A12V | |
| | | | 2A13R | 2A13V | |
| | | | 2A14R | 2A14V | |
| | | | 2A15R | 2A15V | |
| | | | 2A16R | 2A16V | |
| | | | 2A17R | 2A17V | |
| | | | 2A18R | 2A18V | |
| | | | 2A19R | 2A19V | |
| | | | 2A20R | 2A20V | |
| RES 74-4654 | 1500Ω 1/4W 5% | | 2A21R | 2A21V | |

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A-CP-KA10-0-CP External Component List For KA10 (Sheet 1)

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| COMPONENT NAME PART # | VALUE | POL. | FROM PIN | TO PIN | POL. |
|--------------------------|--------------|------|----------|--------|------|
| RES 74-4654 | 1500Ω 1/4W5% | | 2A22R | 2A22V | |
| ↑ | ↑ | | 2A23R | 2A23V | |
| | | | 2A24R | 2A24V | |
| | | | 2A26R | 2A26V | |
| | | | 2A27R | 2A27V | |
| | | | 2A28R | 2A28V | |
| | | | 2A29R | 2A29V | |
| | | | 2A30R | 2A30V | |
| | | | 2A31R | 2A31V | |
| | | | 2A32R | 2A32V | |
| | | | 2A33R | 2A33V | |
| | | | 2A34R | 2A34V | |
| | | | 2A35R | 2A35V | |
| | | | 2A36R | 2A36V | |
| | | | 2A37R | 2A37V | |
| | | | 2A38R | 2A38V | |
| | | | 2A39R | 2A39V | |
| | | | 2A40R | 2A40V | |
| | | | 2A41R | 2A41V | |
| | | | 2A42R | 2A42V | |
| | | | 2A43R | 2A43V | |
| | | | 2M36R | 2M36V | |
| | | | 2M37R | 2M37V | |
| | | | 2M38R | 2M38V | |
| | | | 2M39R | 2M39V | |
| RES 74-4654 | 1500Ω 1/4W5% | | 2M40R | 2M40V | |

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A-CP-KA10-0-CP External Component List For KA10 (Sheet 2)

| COMPONENT NAME | VALUE | POL. | FROM PIN | TO PIN | POL. |
|--|------------|------|----------|--------|------|
| RES. | 100Ω 1% MF | | 2A07K | 2A06L | |
| | | | 2A08K | 2A07L | |
| | | | 2A09K | 2A08L | |
| | | | 2A10K | 2A09L | |
| | | | 2A11K | 2A10L | |
| | | | 2A12K | 2A11L | |
| | | | 2A13K | 2A12L | |
| | | | 2A14K | 2A13L | |
| | | | 2A15K | 2A14L | |
| | | | 2A16K | 2A15L | |
| | | | 2A17K | 2A16L | |
| | | | 2A18K | 2A17L | |
| | | | 2A19K | 2A18L | |
| | | | 2A20K | 2A19L | |
| | | | 2A21K | 2A20L | |
| | | | 2A22K | 2A21L | |
| | | | 2A23K | 2A22L | |
| | | | 2A24K | 2A23L | |
| | | | 2A26K | 2A24L | |
| | | | 2A27K | 2A26L | |
| | | | 2A28K | 2A27L | |
| | | | 2A29K | 2A28L | |
| | | | 2A30K | 2A29L | |
| RES. | 100Ω 1% MF | | 2A31K | 2A30L | |
| NOTE: These Res. are to be wire wrapped to the panels at the time the panels are Bussed and before the panels are wired. | | | | | |

A-CP-KA10-0-CP External Component List For KA10 (Sheet 5)

| COMPONENT NAME | VALUE | POL. | FROM PIN | TO PIN | POL. |
|--|------------|------|----------|--------|------|
| RES. | 100Ω 1% MF | | 2A32K | 2A31L | |
| | | | 2A33K | 2A32L | |
| | | | 2A34K | 2A33L | |
| | | | 2A35K | 2A34L | |
| | | | 2A36K | 2A35L | |
| | | | 2A37K | 2A36L | |
| | | | 2A38K | 2A37L | |
| | | | 2A39K | 2A38L | |
| | | | 2A40K | 2A39L | |
| | | | 2A41K | 2A40L | |
| | | | 2A42K | 2A41L | |
| | | | 2A43K | 2A42L | |
| | | | 2A44K | 2A43L | |
| | | | | | |
| | | | 2M29K | 2M28L | |
| | | | 2M30K | 2M29L | |
| | | | 2M31K | 2M30L | |
| | | | 2M32K | 2M31L | |
| | | | 2M33K | 2M32L | |
| | | | 2M34K | 2M33L | |
| | | | 2M35K | 2M34L | |
| | | | 2M37K | 2M36L | |
| | | | 2M38K | 2M37L | |
| RES. | 100Ω 1% MF | | 2M39K | 2M38L | |
| NOTE: these Res. are to be wire wrapped to the panels at the time the panels are Bussed and before the panels are wired. | | | | | |

A-CP-KA10-0-CP External Component List For KA10 (Sheet 6)

| COMPONENT NAME PARTS# | VALUE | POL. | FROM PIN | TO PIN | POL. |
|--------------------------|-------------|------|----------|--------|------|
| RES.-74-4644 | 100Ω 1/4W5% | | 1K21F | 1K18C | |
| Res -74-4644 | 100Ω 1/4W5% | | 1R27T | 1R27C | |
| Res -74-4644 | 100Ω 1/4W5% | | 2J20T | 2K21C | |
| Diode-74-4914 | D664 | | 2D06L | 2D06C | |
| Diode 74 4914 | D664 | | 2H16M | 2H16C | |
| Diode-74-4914 | D664 | | 2J20E | 2J21C | |
| Res-74-4644 | 100Ω 1/4W5% | | 2H41M | 2H41C | |
| Res-74-4644 | 100Ω 1/4W5% | | 2D14L | 2D14C | |
| Res-74-4644 | 100Ω 1/4W5% | | 2D33L | 2D33C | |
| Cap-74-4657 | .01uFd | | 3A06F | 3A06C | |
| Cap | .01uFd | | 3A06T | 3A07C | |
| Cap | .01uFd | | 3D40D | 3D38C | |
| Cap | .01uFd | | 3D40E | 3D39C | |
| Cap | .01uFd | | 3D40F | 3D40C | |
| Cap-74-4657 | .01uFd | | 3D40H | 3D41C | |
| Res-74-4644 | 100Ω 1/4W5% | | 1K21T | 1K21C | |
| Res | 100Ω 1/4W5% | | 1C14J | 1C14C | |
| Res | 100Ω 1/4W5% | | 1B27U | 1C27C | |
| Res | 100Ω 1/4W5% | | 1S34T | 1T34C | |
| Res | 100Ω 1/4W5% | | 1R37L | 1S37C | |
| Res | 100Ω 1/4W5% | | 1R36J | 1R36C | |
| Res 74 4644 | 100Ω 1/4W5% | | 1L22L | 1L22C | |

A-CP-KA10-0-CP External Component List For KA10 (Sheet 9)

| COMPONENT NAME PART# | VALUE | POL. | FROM PIN | TO PIN | POL. |
|-------------------------|-------------|------|----------|--------|------|
| RES 74-4644 | 100Ω 1/4W5% | | 2J12T | 2J12C | |
| | 100Ω 1/4W5% | | 2J22T | 2K22C | |
| | 100Ω 1/4W5% | | 2E13V | 2F13C | |
| | 100Ω 1/4W5% | | 2E26V | 2F25C | |
| | 100Ω 1/4W5% | | 2E38V | 2F39C | |
| | 100Ω 1/4W5% | | 1J22R | 1J23M | |
| | 100Ω 1/4W5% | | 3F03E | 3F03C | |
| RES 74-4644 | 100Ω 1/4W5% | | 3F03H | 3F03F | |
| CAP 74-4657 | .01MF | | 3A06U | 3B06C | |

A-CP-KA10-0-CP External Component List For KA10 (Sheet 10)

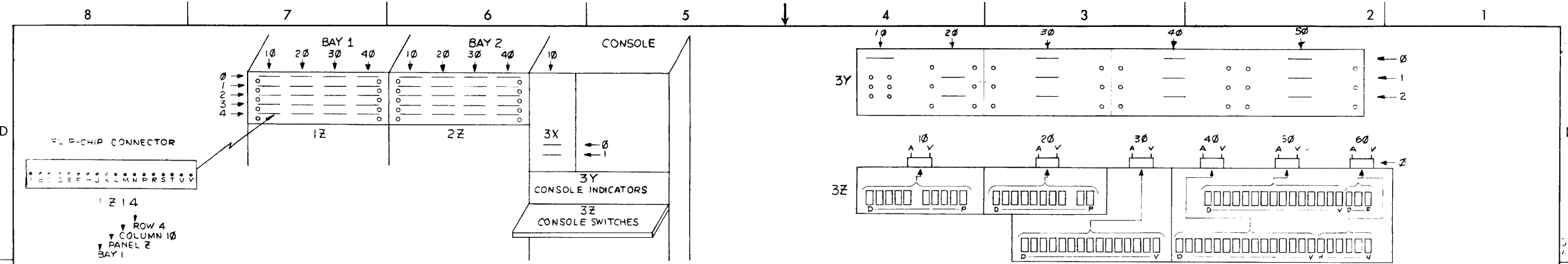
| | | CABLE PINS | | | | | | | | | | | | | | | | | | | | | | | |
|------|------|------------------------|------------------------|---------------------|------------------------|----------------------|--------------------|------------------|----------------------|-------------------|-----------------------|-------------------|--------------------|----------------------|-----------------|------------------|------------------|--|--|--|--|--|--|--|--|
| | | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| FROM | TO | D | E | F | H | J | K | L | M | N | P | R | S | T | U | V | | | | | | | | | |
| 1441 | 2D02 | ARRT FM AD (0) | ARRT FM MQ (1) | GND | ARRT FM AD (1) | GND | ARRT FM MQ (1) | GND | ARLT FM FM (1) | GND | AR0-5 FM SCAD 3-8(J) | GND | AR1-8 FM AR (J) | AR1-8 FM SCAD 1-8(J) | GND | ARRT FM PC (J) B | ARRT FM PC (J) A | | | | | | | | |
| 1442 | 2C03 | ARLT FM IOB (1) | ARRT FM IOB (1) | GND | ARLT FM AD (0) | GND | ARLT FM MQ (0) | GND | ARLT FM AD (1) | GND | ARLT FM MQ (1) | GND | ARLT FM IR (1) | ARLT FM IR (1) | GND | ARLT FM DS (1) | ARLT FM DS (1) | | | | | | | | |
| 1443 | 2C02 | ARRT SH RT A | ARRT SH RT B | GND | ARRT SH LT A | GND | ARRT SH LT B | GND | ARRT CLR | GND | ARRT FM FM (1) | GND | ARLT SH RT A | ARLT SH RT A | GND | ARRT FM AR (1) | ARRT FM AR (1) | | | | | | | | |
| 1444 | 2B03 | ARLT CLR | ARLT (J) B | GND | ARLT SH LT B | GND | ARLT SH RT B | GND | ARLT FM AR (J) A | GND | ARLT SH LT A | GND | ARLT SH RT A | ARLT SH RT A | GND | ARRT FM AR (1) | ARRT FM AR (1) | | | | | | | | |
| 1K41 | 2M04 | MC MEM BUS FM AR (1) A | MC MEM BUS FM AR (1) B | GND | MC MEM BUS FM AR (1) C | GND | BR 1-8 CLR | GND | BR 1-8 SET | GND | BRLT FM AR (0) | GND | BRLT FM AR (1) | BRLT FM AR (1) | GND | BRET FM AR (1) | BRET FM AR (1) | | | | | | | | |
| 1L41 | 2J04 | MQ CLR | MQ SH LT A | GND | MQ SH LT B | GND | MQ SH RT A | GND | MQ SH RT B | GND | MQ FM AD (J) A | GND | MQ FM AD (J) B | MQ SH LT C | GND | MQ SH RT C | MQ SH RT C | | | | | | | | |
| 1L42 | 2J03 | MQ SH LT D | MQ SH RT D | GND | MQ FM AD (J) C | GND | MQ FM AD (J) D | GND | FMT 3 | GND | IR LT CLR | GND | IR RT CLR | IR RT CLR | GND | IR RDI SETUP | IR RDI SETUP | | | | | | | | |
| 1L43 | 2J02 | ET0F | ST 1 | GND | PCLT FM MA (J) | GND | PCRT FM MA (J) | GND | PCLT +1 | GND | PCRT +1 | GND | MA FM PICH (1) | MA FM PICH (1) | GND | IT0 | IT0 | | | | | | | | |
| 1M43 | 2M02 | MA CLR | MA FM PC (J) A | GND | MA FM PC (J) B | GND | MA FM AR (J) A | GND | MA FM AR (J) B | GND | MA FM AS (J) A | GND | MA FM AS (J) B | MA FM AS (J) C | GND | MI LOAD D | MI LOAD D | | | | | | | | |
| 1N42 | 2N03 | KNT 2 | KEY RDI DONE | GND | MR PWR CLR | GND | MI LOAD A | GND | MI LOAD B | GND | MI LOAD C | GND | MI LOAD D | MI LOAD D | GND | KT 2 | KT 2 | | | | | | | | |
| 1P43 | 2P02 | FT 9 | MAI CMC RD RS | GND | EX CLR | GND | EX SET | GND | PB CLR | GND | PI RESET B | GND | KNT 1 | KNT 3 | GND | *IR UO IND | *IR UO IND | | | | | | | | |
| 1542 | 2B03 | MR START | ST 9 | GND | PI OK CLRS PTH | GND | PIH FM PICH EQ | GND | PIR FM IOB (1) | GND | PIR STB | GND | PI RESET | PI RESET | GND | PFO CLR | PFO CLR | | | | | | | | |
| 1T43 | 2T02 | KT 4 | MR CLR | GND | KT0A | GND | MC NON EX MEM | GND | MC ILLEG ADR | GND | MC PAR ERR | GND | MCRST 1 | KT 3 | GND | PFO SET | PFO SET | | | | | | | | |
| 3E01 | 2T42 | KEY DONE | KT0 | GND | KST 1 | GND | KST 2 | GND | PI CONVO SET | GND | CPA MEM PROT FLAG SET | GND | CPA NON EX MEM SET | CPA PAR ERR SET | GND | CPA PDL OV SET | CPA PDL OV SET | | | | | | | | |
| 1A43 | 2A03 | AD CRY 36(1) | AD BR+EN (0) | AD BR-EN (0) | SCAD 2(1) | SCAD 3(0) | SCAD 3(1) | SCAD 4(0) | SCAD 4(1) | AD 09(1) | AD CLR A | AD 0 CLR U | AD 0 SET U | AD 0 CLR | AR 0 SET | AR 0 CLR | AR 0 SET | | | | | | | | |
| 1B43 | 2B02 | SCAD 1(0) | SCAD 1(1) | AD CRY 0(1) | AD CRY 1(1) | AD CRY 0(0) | AD CRY 1(0) | AD 0-7=0 | AD 8-9=0 | SCAD 5(2) | SCAD 6(1) | SCAD 6(0) | SCAD 7(1) | SCAD 7(0) | SCAD 7(0) | SCAD 7(1) | SCAD 7(1) | | | | | | | | |
| 1C43 | 2C04 | SCAD 8(0) | SCAD 8(1) | AD AR+EN CLR | AD AR-EN SET | AD BR+EN CLR | AD BR-EN SET | AD -1 LH(0) | AD -1 LH(1) | AD 10-17=0 | AD 18-19=0 | AD 20-27=0 | AD 28-35=0 | AD 0(1) | AD 0(0) | AD 0(0) | AD 0(0) | | | | | | | | |
| 1D41 | 2D04 | MQ 8(0) | MQ 35(0) | MQ 35(1) | MQ 34(0) | MQ 34(1) | ARMQ PRESERVE SIGN | ARMQ MULV ASHVFP | ARMQ AR35 FM MQ 0 EN | ARMQ FP SH EN | AD AR+EN(1) | AD AR-EN(1) | AD BR+EN(1) | AD BR-EN(1) | AD BR-EN(1) | AD BR-EN(1) | AD BR-EN(1) | | | | | | | | |
| 1D42 | 2D03 | AR FXU (0) | AR FXU (1) | AR DCK (0) | AR DCK (1) | AR OV FLAG (0) | AR OV FLAG (1) | AR FOV (0) | AR FOV (1) | AR CRY 0 FLAG (0) | AR CRY 1 FLAG (1) | AR CRY 1 FLAG (0) | BYF 6 (0) | BYF 6 (1) | BYF 6 (1) | BYF 6 (1) | BYF 6 (1) | | | | | | | | |
| 1F41 | 2F04 | BR 35(1) | EX USER (0) | EX USER (1) | EX IOT USER (0) | EX IOT USER (1) | ARI DFN CLR | ARI DFN SET | AR 8 (0) | AR 9 (0) | IR ROT | IR ROTC | ARMQ FDN NDRN | IR ASHC | IR ASHC | IR ASHC | IR ASHC | | | | | | | | |
| 1F42 | 2F03 | BR 8(4) | BR 11(0) | BR 11(1) | BR 12(0) | BR 12(1) | BR 13(0) | BR 13(1) | BR 14(0) | BR 14(1) | BR 15(0) | BR 15(1) | BR 16(0) | BR 16(1) | BR 16(1) | BR 16(1) | BR 16(1) | | | | | | | | |
| 1F43 | 2F02 | BR 0(0) | BR 0(1) | BR 1(0) | BR 1(1) | BR 2(0) | BR 2(1) | BR 3(0) | BR 3(1) | BR 4(0) | BR 4(1) | BR 5(0) | BR 5(1) | BR 6(0) | BR 6(1) | BR 7(0) | BR 7(1) | | | | | | | | |
| 1N43 | 2H02 | ARMQ LEC VMUL | ARMQ FP SH EN | ARMQ ASHC VMUL LAST | ARMQ BYTE MASK | DSF 1(1) | IR 7(0) | IR 7(1) | IR 8(0) | IR 8(1) | IR 9(0) | IR 9(1) | IR 10(0) | IR 10(1) | IR 11(0) | IR 11(1) | IR 11(1) | | | | | | | | |
| 1P44 | 2H03 | IR 0(1) | IR 0(0) | IR 1(0) | IR 1(1) | IR 2(0) | IR 2(1) | IR 3(0) | IR 3(1) | IR 4(0) | IR 4(1) | IR 5(0) | IR 5(1) | IR 6(0) | IR 6(1) | IR 6(1) | IR 6(1) | | | | | | | | |
| 1M41 | 2M04 | IR 11(1) | IR 12(0) | IR 12(1) | IR 13(0) | IR 13(1) | IR 14(0) | IR 14(1) | IR 15(0) | IR 15(1) | IR 16(0) | IR 16(1) | IR 17(0) | IR 17(1) | IR 17(1) | IR 17(1) | IR 17(1) | | | | | | | | |
| 1M42 | 2M03 | SC STOP SW | SC STOP (0) | FMA AC EN | FMA AC EN | FMA MA EN | FMA XR EN | FMA FM AR (J) | AD 17(1) | AD 17(0) | MA TRAP OFFSET | EX NON REL UO | JFFO SWAP | IR 1XX | AR 18(1) | AR 18(1) | AR 18(1) | | | | | | | | |
| 1N41 | 2N04 | KEY PROG STOP | KEY PI INH (0) | EXCT F(0) | EX REL A | EX REL A | EX REL B | EX REL B | MA 18-31=0 | MA 18-31=0 | MAI FMA SEL (1) | MAI FMA SEL (0) | MC REQ CYC | MC RD (1) | MC WR (1) | MC WR (1) | MC WR (1) | | | | | | | | |
| 1P42 | 2P03 | PARILLADR | PARILLADR | KEY START (1) | IR PUSH | IR PUSH | IR POPS | IR JST | PI RQ | PI RQ | PI OV (1) | PB PAR (0) | PB PAR (1) | MQ 0 B(1) | | | | | | | | | | | |
| 1R41 | 2R04 | KEY RIM (0) | MI PROG DIS SW | AS=ELA | AS=FMA | KEY F1(1) | RUN (1) | RUN (0) | KEY CONT (1) | PI CYC (1) | KEY RDI (1) | PV PAR ODD | PV PAR EVEN | PI DATA I/O | KEY NEXT | KEY NEXT | KEY NEXT | | | | | | | | |
| 1S41 | 2S04 | MC FM EN | PI SEL | KEY RIM (1) | KEY ITO EN | MC IGNORE PARITY (1) | | BIO PI SEL | IOT DATA 0 | IOT DATA 1 | KEY CONT (0) | IOT BLK | | MC STOP (0) | KEY EXECUTE (1) | KEY EXECUTE (1) | KEY EXECUTE (1) | | | | | | | | |
| 3C01 | 2T39 | IOB 0 | IOB 1 | IOB 2 | IOB 3 | IOB 4 | IOB 5 | IOB 6 | IOB 7 | IOB 8 | IOB 9 | IOB 10 | IOB 11 | IOB 12 | IOB 13 | IOB 13 | IOB 13 | | | | | | | | |
| 3C02 | 2T38 | IOB 14 | IOB 15 | IOB 16 | IOB 17 | IOB 18 | IOB 19 | IOB 20 | IOB 21 | IOB 22 | IOB 23 | IOB 24 | IOB 25 | IOB 26 | IOB 27 | IOB 27 | IOB 27 | | | | | | | | |
| 3C03 | 2T37 | RUN (1) | RUN (0) | IOB RDI DATA | KEY CONT (1) | KEY CONT (0) | KEY SING INST | IOB 28 | IOB 29 | IOB 30 | IOB 31 | IOB 32 | IOB 33 | IOB 34 | IOB 35 | IOB 35 | IOB 35 | | | | | | | | |

NOTES: 1.*

| NAME | ORIGIN |
|-----------------|--------|
| IR UO IND | 1P26F |
| MC PAR STOP IND | 1S1BU |
| MC STOP IND | 1T16U |

| | | CABLE PINS | | | | | | | | | | | | | | | |
|------|------|-------------|--------------|--------------|--------------|-----------|-------------|-------------|-------------|----------------|-------------|-----------|------------|----------------|------------|-------------|--|
| | | D | E | F | H | J | K | L | M | N | P | R | S | T | U | V | |
| FROM | TO | I0B 0 | I0B 1 | I0B 2 | I0B 3 | I0B 4 | I0B 5 | I0B 6 | I0B 7 | I0B 8 | I0B 9 | I0B 10 | I0B 11 | I0B 12 | I0B 13 | GND | |
| 3001 | 2590 | I0B 14 | I0B 15 | I0B 16 | I0B 17 | I0B 18 | I0B 19 | I0B 20 | I0B 21 | I0B 22 | I0B 23 | I0B 24 | I0B 25 | I0B 26 | I0B 27 | GND | |
| 3002 | 2599 | KEY SING | KEY START(1) | KEY EXECUTE | KEY SYNC OPS | KT 1 EN | I0B STATUS | I0B 28 | I0B 29 | I0B 30 | I0B 31 | I0B 32 | I0B 33 | I0B 34 | I0B 35 | GND | |
| 3003 | 2598 | INST | | (1) | | | A | | | | | | | | | GND | |
| 3F01 | 2542 | IR 3 (0) | IR 3 (1) | IR 4 (0) | IR 4 (1) | IR 5 (0) | IR 5 (1) | IR 6 (0) | IR 6 (1) | IR 7 (0) | IR 7 (1) | IR 8 (0) | IR 8 (1) | IR 9 (0) | IR 9 (1) | GND | |
| 3F02 | 2541 | IR 10 (0) | IR 10 (1) | IR 11 (0) | IR 11 (1) | IR 12 (0) | IR 12 (1) | I0B FM AR | AR FOV (1) | AR OV FLAG | IOT DATAI | IOT DATAO | PI STATUS | PI STATUS | PI ACT (1) | GND | |
| 3E02 | 2741 | PIH 1 (1) | PIH 2 (1) | PIH 3 (1) | PIH 4 (1) | PIH 5 (1) | PIH 6 (1) | PIH 7 (1) | PIO 1 (1) | PIO 2 (1) | PIO 3 (1) | PIO 4 (1) | PIO 5 (1) | PIO 6 (1) | PIO 7 (1) | GND | |
| 3E03 | 2740 | KEY F1 (1) | KEY SYNC | KEY SYNC (1) | KEY MEM | KEY NEXT | KEY RDI (1) | I0B PI 1 | I0B PI 2 | I0B PI 3 | I0B PI 4 | I0B PI 5 | I0B PI 6 | I0B PI 7 | IOT BLK | GND | |
| 3E04 | 1543 | KEY ADR | KEY ADR | KEY ADR RD | KEY ADR | KEY ADR | KEY ADR | KEY AS | KEY SING | KEY DEP V | KEY DEP V | KEY EX V | KEY NYM | KEY NYM | KEY PAR | GND | |
| 3E05 | 1544 | MR PWR CLR | MR PWR CLR | IOT CONO | IOT CONO | IOT DATAO | IOT DATAO | STROBE EN | CYCLE | NXT VEKE | NXT | NXT | STOP | STOP | STOP | GND | |
| 3E06 | 1144 | ENB | ENB | SET | CLR | SET | CLR | I0B DATAI | I0B DATAI | I0B DR SPLIT | | EX IOT | CRA PWR | BIO CRA | BIO PI SEL | GND | |
| 3F06 | 2P01 | IOT BLK | IOT CONI | IOT CONO | IOT CONSO | IOT CONSX | IOT CONSX | A | IOT T2 | CRA CONO SET | IOT 90 (1) | IR IOT | KEY AT INH | MA TRAP OFFSET | MC ADR BRK | GND | |
| 3F07 | 2P02 | I0B 23 | I0B 24 | I0B 25 | I0B 26 | I0B 29 | I0B 32 | MI PROG (0) | MI PROG (1) | MR PWR CLR ENB | MC STOP IND | | | | SET | GND | |
| 3F08 | 2R03 | MC BUS WIRS | MC BUS WIRS | GND | MC PARITY | GND | KT 3A | MC PAR STOP | MC PAR STOP | GND | GND | GND | | | GND | PI CONO SET | |
| 3F09 | 6799 | ACK | | | | | | IND | | | | | | | | | |
| 3F03 | 1R43 | IOT T3B | IOT T4 | GND | IOT T5 | GND | | GND | | GND | | GND | KST 2 | MR PWR CLR R | GND | MR START R | |

D-CL-KA10-0-IBC2 Inter-Bay Cables



CABLE PINS

| FROM | TO | D | ORIGIN | E | ORIGIN | F | ORIGIN | H | ORIGIN | J | ORIGIN | K | ORIGIN | L | ORIGIN | M | ORIGIN | N | ORIGIN | P | ORIGIN | R | ORIGIN | S | ORIGIN | T | ORIGIN | U | ORIGIN | V | ORIGIN | | |
|------|------|------------------|--------|-------------------|--------|---------------------|--------|-----------------|--------|----------------|--------|-----------------------|--------|--------------------|--------|--------------------|--------|------------------|--------|-------------------|--------|-----------------|--------|----------------|--------|------------|--------|------------|--------|------------|--------|------------|-------|
| 1894 | 1210 | SCB IND | 1C31F | SC1 IND | 1C31R | SC2 IND | 1C33F | SC3 IND | 1C33R | SC4 IND | 1C35F | SC5 IND | 1C35R | SC6 IND | 1C37F | SC7 IND | 1C37R | SC8 IND | 1C39F | SC STOP IND | 1C15F | LB BYTE LOAD | 1B23T | DB BYTE DEF | 1B29D | | | | | | | | |
| 3B06 | 1220 | CPA PWR FAIL (1) | 3F40T | CPA ADR BREAK (1) | 3F40T | CPA PAR ERR (1) | 3F41J | CPA PAR OV (1) | 3F41T | CPA PDL (1) | 3F42J | CPA MEM PROT FLAG (1) | 3F42T | CPA NON EX MEM (1) | 3F43J | CPA CLK EN (1) | 3F43T | CPA CLK FLAG (1) | 3F44T | PTP HOLE 8 (1) | 3A14F | ATP HOLE 7 (1) | 3A14M | PTP HOLE 6 (1) | 3A14T | | | | | | | | |
| 3B05 | 1230 | PTP HOLE 5 (1) | 3A15F | PTP HOLE 4 (1) | 3A15M | PTP HOLE 3 (1) | 3A15T | PTP HOLE 2 (1) | 3A15J | PTP HOLE 1 (1) | 3A16M | PTP NO TAPE | 3F09L | PTP BIN (1) | 3A19P | PTP BUSY (1) | 3A20L | PTP DONE (1) | 3A21L | PTP PIA 33 (1) | 3A22F | PTP PIA 34 (1) | 3A22M | PTP PIA 35 (1) | 3A22T | | | | | | | | |
| 1444 | 1211 | SCAD08 IND | 1A31R | SCAD1 IND | 1A32E | SCAD2 IND | 1A33R | SCAD3 IND | 1A34R | SCAD4 IND | 1A35R | SCAD5 IND | 1A36R | SCAD6 IND | 1A37E | SCAD7 IND | 1A38E | SCAD8 IND | 1A39E | NR SH RT COND IND | 1E24F | NR NORMAL IND | 1E25F | NR ROUND | 1C11T | | | | | | | | |
| 3B04 | 1221 | CPA FOV EN (1) | 3F44T | CPA AR OVEN (1) | 3E43J | CPA PIA 34 (1) | 3E43T | CPA PIA 35 (1) | 3E44J | CPA PIA 36 (1) | 3E44T | - | - | TTY TEST (1) | 3E41F | TTY TTI ACTIVE (1) | 3C40T | TTY TTD (1) | 3C44T | TTY TTI 8 (0) | 3C37M | TTY TTI 7 (0) | 3C37F | TTY TTI 6 (0) | 3C37E | | | | | | | | |
| 3B03 | 1231 | TTY TTI 5 (0) | 3C38M | TTY TTI 4 (0) | 3C38F | TTY TTI 3 (0) | 3C38E | TTY TTI 2 (0) | 3C39M | TTY TTI 1 (0) | 3C39F | TTY TTI BUSY (1) | 3D36L | TTY TTI FLAG (1) | 3D37L | TTY TTD BUSY (1) | 3D38L | TTY TTD FLAG (1) | 3D39L | TTY PIA 33 (1) | 3E40F | TTY PIA 34 (1) | 3E40M | TTY PIA 35 (1) | 3E40T | | | | | | | | |
| 1444 | 1241 | NR F1 IND | 1C12E | KEY RIM (1) | 2A28T | 107 F1 IND | 1B36F | 107 GO IND | 1B36R | - | - | AR OV FLAG IND | 1K18F | AR CRY 0 FLAG IND | 1K18R | AR CRY 1 FLAG IND | 1K20F | AR FOV IND | 1K20R | AR FXU IND | 1K23F | AR DCK IND | 1K23R | AR OV COND | 1F25F | | | | | | | | |
| 1044 | 1212 | FE 1 IND | 1D31F | FE 1 IND | 1D31E | FE 2 IND | 1D32F | FE 2 IND | 1D32E | FE 3 IND | 1D33F | FE 3 IND | 1D33E | FE 4 IND | 1D34F | FE 4 IND | 1D34E | FE 5 IND | 1D35F | FE 5 IND | 1D35E | FE 6 IND | 1D36F | FE 6 IND | 1D36E | | | | | | | | |
| 1J44 | 1222 | SCAD4 EN IND | 1A28R | SCAD BE EN IND | 1B28F | SCAD AR 6-11 EN IND | 1B28R | SCAD 308 EN IND | 1B25F | SCAD 33 EN IND | 1B25R | AS+RLA | 2W374 | AS+FMA | 2P21E | EX ILL OP IND | 1P22R | EX PI SYNC IND | 1P16F | EX MODE SYNC IND | 1P25R | EX IOT USER IND | 1P25F | EX REL A | 1B34H | | | | | | | | |
| 3A02 | 1232 | PTP ENB (1) | 3A37J | PTP PWR (1) | 3A37T | PTP TAPE (1) | 3A40T | PTP BIN (1) | 3B31D | PTP BUSY (1) | 3C31L | PTP DONE (1) | 3C32L | PTP CNT 0 (1) | 3A39T | PTP CNT 1 (1) | 3A39T | PTP CNT 2 (1) | 3A40J | PTP PIA 33 (1) | 3C33F | PTP PIA 34 (1) | 3C33M | PTP PIA 35 (1) | 3C33T | | | | | | | | |
| 1E44 | 1242 | - | - | AD AR+EN (1) | 1D42E | AD AR-EN (1) | 1D42S | AD BR+EN (1) | 1D42T | AD BR-EN (1) | 1D42U | AD CRY 36 IND | 1E39E | AD CRY 17S IND | 1E39F | AD+2 LH IND | 1E39R | AD-2 LH IND | 1E33F | AD MD+ IND | 1F26F | AD MD- IND | 1F27F | AD COND IND | 1F25F | | | | | | | | |
| 3A03 | 1213 | PTP 0 (1) | 3B33D | PTP 1 (1) | 3B33J | PTP 2 (1) | 3B33L | PTP 3 (1) | 3B33M | PTP 4 (1) | 3B33N | PTP 5 (1) | 3B33P | PTP 6 (1) | 3B33Q | PTP 7 (1) | 3B33R | PTP 8 (1) | 3B33S | PTP 9 (1) | 3B33T | PTP 10 (1) | 3B33U | PTP 11 (1) | 3B33V | PTP 12 (1) | 3B33W | PTP 13 (1) | 3B33X | PTP 14 (1) | 3B33Y | PTP 15 (1) | 3B33Z |
| 3A04 | 1223 | PTP 16 (1) | 3B34D | PTP 17 (1) | 3B34J | PTP 18 (1) | 3B34L | PTP 19 (1) | 3B34M | PTP 20 (1) | 3B34N | PTP 21 (1) | 3B34P | PTP 22 (1) | 3B34Q | PTP 23 (1) | 3B34R | PTP 24 (1) | 3B34S | PTP 25 (1) | 3B34T | PTP 26 (1) | 3B34U | PTP 27 (1) | 3B34V | PTP 28 (1) | 3B34W | PTP 29 (1) | 3B34X | PTP 30 (1) | 3B34Y | PTP 31 (1) | 3B34Z |
| 3A05 | 1233 | PTP 32 (1) | 3B35D | PTP 33 (1) | 3B35J | PTP 34 (1) | 3B35L | PTP 35 (1) | 3B35M | PTP 36 (1) | 3B35N | PTP 37 (1) | 3B35P | PTP 38 (1) | 3B35Q | PTP 39 (1) | 3B35R | PTP 40 (1) | 3B35S | PTP 41 (1) | 3B35T | PTP 42 (1) | 3B35U | PTP 43 (1) | 3B35V | PTP 44 (1) | 3B35W | PTP 45 (1) | 3B35X | PTP 46 (1) | 3B35Y | PTP 47 (1) | 3B35Z |
| 1M44 | 1243 | - | - | FCE | 1K09E | FCE PSE | 1L134 | FAC INH | 1L130 | FACE | 1M09V | FCC ACCT | 1K13L | FCC ACET | 1K13F | SCE | 1R21R | ST INH | 1R21E | SAC 2 | 1R24V | SAC INH | 1R24L | SAC+BR | 1P10L | | | | | | | | |
| 2E04 | 1219 | IOB 0 | 2C12D | IOB 1 | 2C12F | IOB 2 | 2C12H | IOB 3 | 2C12J | IOB 4 | 2C12L | IOB 5 | 2C12M | IOB 6 | 2C12N | IOB 7 | 2C12P | IOB 8 | 2C12R | IOB 9 | 2C12T | IOB 10 | 2C12V | IOB 11 | 2C12W | IOB 12 | 2C12X | IOB 13 | 2C12Y | IOB 14 | 2C12Z | | |
| 2E04 | 1224 | IOB 15 | 2C13D | IOB 16 | 2C13F | IOB 17 | 2C13H | IOB 18 | 2C13J | IOB 19 | 2C13L | IOB 20 | 2C13M | IOB 21 | 2C13N | IOB 22 | 2C13P | IOB 23 | 2C13R | IOB 24 | 2C13T | IOB 25 | 2C13V | IOB 26 | 2C13W | IOB 27 | 2C13X | IOB 28 | 2C13Y | IOB 29 | 2C13Z | | |
| 2E04 | 1234 | IOB 30 | 2C14D | IOB 31 | 2C14F | IOB 32 | 2C14H | IOB 33 | 2C14J | IOB 34 | 2C14L | IOB 35 | 2C14M | IOB 36 | 2C14N | IOB 37 | 2C14P | IOB 38 | 2C14R | IOB 39 | 2C14T | IOB 40 | 2C14V | IOB 41 | 2C14W | IOB 42 | 2C14X | IOB 43 | 2C14Y | IOB 44 | 2C14Z | | |
| 2E04 | 1244 | IOB 45 | 2C15D | IOB 46 | 2C15F | IOB 47 | 2C15H | IOB 48 | 2C15J | IOB 49 | 2C15L | IOB 50 | 2C15M | IOB 51 | 2C15N | IOB 52 | 2C15P | IOB 53 | 2C15R | IOB 54 | 2C15T | IOB 55 | 2C15V | IOB 56 | 2C15W | IOB 57 | 2C15X | IOB 58 | 2C15Y | IOB 59 | 2C15Z | | |
| 2E02 | 2210 | AR 1 IND | 2C19F | AR 1 IND | 2C19E | AR 2 IND | 2C19F | AR 2 IND | 2C19E | AR 3 IND | 2C19F | AR 3 IND | 2C19E | AR 4 IND | 2C19F | AR 4 IND | 2C19E | AR 5 IND | 2C19F | AR 5 IND | 2C19E | AR 6 IND | 2C19F | AR 6 IND | 2C19E | AR 7 IND | 2C19F | AR 7 IND | 2C19E | AR 8 IND | 2C19F | AR 8 IND | 2C19E |
| 2E02 | 2220 | AR 9 IND | 2C19F | AR 9 IND | 2C19E | AR 10 IND | 2C19F | AR 10 IND | 2C19E | AR 11 IND | 2C19F | AR 11 IND | 2C19E | AR 12 IND | 2C19F | AR 12 IND | 2C19E | AR 13 IND | 2C19F | AR 13 IND | 2C19E | AR 14 IND | 2C19F | AR 14 IND | 2C19E | AR 15 IND | 2C19F | AR 15 IND | 2C19E | AR 16 IND | 2C19F | AR 16 IND | 2C19E |
| 2E04 | 2230 | AR 17 IND | 2C19F | AR 17 IND | 2C19E | AR 18 IND | 2C19F | AR 18 IND | 2C19E | AR 19 IND | 2C19F | AR 19 IND | 2C19E | AR 20 IND | 2C19F | AR 20 IND | 2C19E | AR 21 IND | 2C19F | AR 21 IND | 2C19E | AR 22 IND | 2C19F | AR 22 IND | 2C19E | AR 23 IND | 2C19F | AR 23 IND | 2C19E | AR 24 IND | 2C19F | AR 24 IND | 2C19E |
| 1Q04 | 2240 | PI OV IND | 1P69R | PI CYC IND | 1P16R | MC RQ IND | 1T16R | MC RQ IND | 1T16L | MC RQ IND | 1T16L | MC RQ IND | 1T16L | MC RQ IND | 1T16L | MC RQ IND | 1T16L | MC RQ IND | 1T16L | MC RQ IND | 1T16L | MC RQ IND | 1T16L | MC RQ IND | 1T16L | MC RQ IND | 1T16L | MC RQ IND | 1T16L | MC RQ IND | 1T16L | MC RQ IND | 1T16L |
| 2E01 | 2211 | BR 0 IND | 2F07F | BR 1 IND | 2F07R | BR 2 IND | 2F07F | BR 2 IND | 2F07E | BR 3 IND | 2F07F | BR 3 IND | 2F07E | BR 4 IND | 2F07F | BR 4 IND | 2F07E | BR 5 IND | 2F07F | BR 5 IND | 2F07E | BR 6 IND | 2F07F | BR 6 IND | 2F07E | BR 7 IND | 2F07F | BR 7 IND | 2F07E | BR 8 IND | 2F07F | BR 8 IND | 2F07E |
| 2E01 | 2221 | BR 9 IND | 2F07F | BR 9 IND | 2F07E | BR 10 IND | 2F07F | BR 10 IND | 2F07E | BR 11 IND | 2F07F | BR 11 IND | 2F07E | BR 12 IND | 2F07F | BR 12 IND | 2F07E | BR 13 IND | 2F07F | BR 13 IND | 2F07E | BR 14 IND | 2F07F | BR 14 IND | 2F07E | BR 15 IND | 2F07F | BR 15 IND | 2F07E | BR 16 IND | 2F07F | BR 16 IND | 2F07E |
| 2E01 | 2231 | BR 17 IND | 2F07F | BR 17 IND | 2F07E | BR 18 IND | 2F07F | BR 18 IND | 2F07E | BR 19 IND | 2F07F | BR 19 IND | 2F07E | BR 20 IND | 2F07F | BR 20 IND | 2F07E | BR 21 IND | 2F07F | BR 21 IND | 2F07E | BR 22 IND | 2F07F | BR 22 IND | 2F07E | BR 23 IND | 2F07F | BR 23 IND | 2F07E | BR 24 IND | 2F07F | BR 24 IND | 2F07E |
| 3B07 | 2241 | KEY A (1) | 3E03F | KEY B (1) | 3E03F | KEY C (1) | 3E03F | KEY D (1) | 3E03F | KEY E (1) | 3E03F | KEY F (1) | 3E03F | KEY G (1) | 3E03F | KEY H (1) | 3E03F | KEY I (1) | 3E03F | KEY J (1) | 3E03F | KEY K (1) | 3E03F | KEY L (1) | 3E03F | KEY M (1) | 3E03F | KEY N (1) | 3E03F | KEY O (1) | 3E03F | KEY P (1) | 3E03F |
| 2A01 | 2212 | AD 0 IND | 2A07R | AD 1 IND | 2A07R | AD 2 IND | 2A07R | AD 3 IND | 2A07R | AD 4 IND | 2A07R | AD 5 IND | 2A07R | AD 6 IND | 2A07R | AD 7 IND | 2A07R | AD 8 IND | 2A07R | AD 9 IND | 2A07R | AD 10 IND | 2A07R | AD 11 IND | 2A07R | AD 12 IND | 2A07R | AD 13 IND | 2A07R | AD 14 IND | 2A07R | AD 15 IND | 2A07R |
| 2A01 | 2222 | AD 16 IND | 2A07R | AD 17 IND | 2A07R | AD 18 IND | 2A07R | AD 19 IND | 2A07R | AD 20 IND | 2A07R | AD 21 IND | 2A07R | AD 22 IND | 2A07R | AD 23 IND | 2A07R | AD 24 IND | 2A07R | AD 25 IND | 2A07R | AD 26 IND | 2A07R | AD 27 IND | 2A07R | AD 28 IND | 2A07R | AD 29 IND | 2A07R | AD 30 IND | 2A07R | AD 31 IND | 2A07R |
| 2A01 | 2232 | AD 32 IND | 2A07R | AD 33 IND | 2A07R | AD 34 IND | 2A07R | AD 35 IND | 2A07R | AD 36 IND | 2A07R | AD 37 IND | 2A07R | AD 38 IND | 2A07R | AD 39 IND | 2A07R | AD 40 IND | 2A07R | AD 41 IND | 2A07R | AD 42 IND | 2A07R | AD 43 IND | 2A07R | AD 44 IND | 2A07R | AD 45 IND | 2A07R | AD 46 IND | 2A07R | AD 47 IND | 2A07R |
| 2A01 | 2242 | AD 48 IND | 2A07R | AD 49 IND | 2A07R | AD 50 IND | 2A07R | AD 51 IND | 2A07R | AD 52 IND | 2A07R | AD 53 IND | 2A07R | AD 54 IND | 2A07R | AD 55 IND | 2A07R | AD 56 IND | 2A07R | AD 57 IND | 2A07R | AD 58 IND | 2A07R | AD 59 IND | 2A07R | AD 60 IND | 2A07R | AD 61 IND | 2A07R | AD 62 IND | 2A07R | AD 63 IND | 2A07R |
| 2J01 | 2213 | MQ 0 IND | 2A17F | MQ 1 IND | 2A17F | MQ 2 IND | 2A17F | MQ 3 IND | 2A17F | MQ 4 IND | 2A17F | MQ 5 IND | 2A17F | MQ 6 IND | 2A17F | MQ 7 IND | 2A17F | MQ 8 IND | 2A17F | MQ 9 IND | 2A17F | MQ 10 IND | 2A17F | MQ 11 IND | 2A17F | MQ 12 IND | 2A17F | MQ 13 IND | 2A17F | MQ 14 IND | 2A17F | MQ 15 IND | 2A17F |
| 2J01 | 2223 | MQ 16 IND | 2A17F | MQ 17 IND | 2A17F | MQ 18 IND | 2A17F | MQ 19 IND | 2A17F | MQ 20 IND | 2A17F | MQ 21 IND | 2A17F | MQ 22 IND | 2A17F | MQ 23 IND | 2A17F | MQ 24 IND | 2A17F | MQ 25 IND | 2A17F | MQ 26 IND | 2A17F | MQ 27 IND | 2A17F | MQ 28 IND | 2A17F | MQ 29 IND | 2A17F | MQ 30 IND | 2A17F | MQ 31 IND | 2A17F |
| 2M01 | 2273 | MA 32 | 2A08E | MA 33 | 2A08E | MA 34 | 2A08E | MA 35 | 2A08E | MA 36 | 2A08E | MA 37 | 2A08E | MA 38 | 2A08E | MA 39 | | | | | | | | | | | | | | | | | |

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|---------------------|----------|--------|---------|---------|
| ARF FLAGS FM BR (J) | 1K19F | 1C14N | WHT TWP | |
| | 1K19C | 1C15M | BLK | |
| ARLT CLR | 1H28D | 1H44D | | |
| | 1H28E | 1H44C | | |
| ARLT FM DS (1) | 1J25N | 1H43T | | |
| | 1J25P | 1H44U | | |
| ARLT FM FLAGS (J)A | 1H42S | 1C14D | | |
| | 1H42N | 1C13C | | |
| ARLT FM FLAGS (J)A | 1C14D | 1J24D | | |
| | 1C15C | 1J24E | | |
| ARLT FM FLAGS (J)B | 1J24N | 1H42V | | |
| | 1J24P | 1H42U | | |
| ARLT FM IOB (1) | 1J23N | 1H42D | | |
| | 1J23P | 1H42C | | |
| ARLT FM IR (1) | 1H23N | 1H43S | | |
| | 1H23P | 1H44R | | |
| ARLT SHLT A | 1H24D | 1H44P | | |
| | 1H24C | 1H44L | | |

A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 1)

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-----------------|----------|--------|---------|---------|
| ARLT SHLT B | 1H24N | 1H44H | WHT TWP | |
| | 1H24P | 1H44F | BLK | |
| ARLT SHRT A | 1H26D | 1H44S | | |
| | 1H26E | 1H44N | | |
| ARLT SHRT B | 1H26N | 1H44K | | |
| | 1H26P | 1H44J | | |
| ARRT CLR | 1H28N | 1H43M | | |
| | 1H28P | 1H43N | | |
| ARRT FM DS (1) | 1J25D | 1H43V | | |
| | 1J25E | 1H43U | | |
| ARRT FM FM (1) | 1J26N | 1H43P | | |
| | 1J26P | 1H43R | | |
| ARRT FM IOB (1) | 1J23D | 1H42E | | |
| | 1J23E | 1H42F | | |
| ARRT FM PC (J)A | 1H29D | 1H42T | | |
| | 1H29E | 1H42R | | |
| ARRT FM PC (J)B | 1H29N | 1H41V | | |
| | 1H29P | 1H41U | | |

A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 2)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-----------------------|----------|--------|---------|---------|
| ARRT SHLT A | 1H25D | 1H43H | WHT TWP | |
| | 1H25E | 1H43J | BLK | |
| ARRT SHLT B | 1H25N | 1H43K | | |
| | 1H25P | 1H43L | | |
| ARRT SHRT A | 1H27D | 1H43D | | |
| | 1H27E | 1H43C | | |
| ARRT SHRT B | 1H27N | 1H43E | | |
| | 1H27P | 1H43F | | |
| ARLT FM FM (1) | 1H41M | 1J26D | | |
| | 1H41C | 1J26C | | |
| ARLT FM FM (1) | 1J26D | 1S35T | | |
| | 1J26E | 1S35C | | |
| ARØ-5 FM SCAD 3-8 (J) | 1H23D | 1H41P | | |
| | 1H23E | 1H41L | | |
| AR1-8 FM ARØ (J) | 1H21D | 1H41S | | |
| | 1H21E | 1H41N | | |
| AR1-8 FM SCAD 1-8 (J) | 1H21N | 1H41T | | |
| | 1H21P | 1H41R | | |

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A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 3)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| AT1 | 1S28N | 1L40D | WHT TWP | |
| | 1S28P | 1L40C | BLK | |
| AT3 | 1R32D | 1L40E | | |
| | 1R32E | 1L39C | | |
| AT4 | 1T40U | 1M38U | | |
| | 1T40C | 1M38K | | |
| AT4 | 1M38D | 1F30U | | |
| | 1M38C | 1H30C | | |
| AT4 | 1M03U | 1F30U | | |
| | 1N03C | 1F31T | | |
| AT6 | 1T23N | 1M34T | | |
| | 1T23P | 1M34V | | |
| AT6 | 1L08T | 1M36M | | |
| | 1M08C | 1M37C | | |
| BLT T1 | 1J07T | 1J32N | | |
| | 1J06M | 1J31K | | |
| BLT T2 | 1R14T | 1J02D | | |
| | 1R14V | 1J02E | | |

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A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 4)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| BLT T2 | 1L36T | 1J02D | WHT TWP | |
| | 1M36C | 1J02C | BLK | |
| BYT2 | 1B06L | 1D26J | | |
| | 1B06M | 1D26C | | |
| BYT2 | 1D26J | 1J39E | | |
| | 1D25C | 1J39C | | |
| BYT4 | 1F22P | 1S03P | | |
| | 1F23M | 1S02K | | |
| BYT7A | 1E39D | 1T36H | | |
| | 1E39C | 1T36C | | |
| DBT2 | 1A04L | 1E35S | | |
| | 1A04M | 1E35V | | |
| DBT3 | 1A03L | 1E36T | | |
| | 1A03M | 1F36C | | |
| DBT5 | 1A02N | 1J39U | | |
| | 1A02P | 1J39P | | |
| DBT5 | 1J39U | 1N10H | | |
| | 1K39C | 1N09C | | |

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A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 5)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| DIVT5 | 1F17N | 1N10K | WHT TWP | |
| | 1F17P | 1N10C | BLK | |
| DIVT5 | 1N10K | 1J40M | | |
| | 1P10C | 1J40C | | |
| DST3 | 1F08L | 1E31K | | |
| | 1F08M | 1E31C | | |
| DST4 | 1F12H | 1E31H | | |
| | 1F12C | 1E32C | | |
| DST7 | 1F06N | 1L22P | | |
| | 1F06P | 1L23C | | |
| DST7 | 1L22T | 1R17J | | |
| | 1M22C | 1R17K | | |
| ET∅ | 1F19T | 1K25T | | |
| | 1F19V | 1K25M | | |
| ET∅ | 1K25T | 1R32J | | |
| | 1K25V | 1R32M | | |
| ET∅ | 1R28R | 1M10T | | |
| | 1R28C | 1M10M | | |

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A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 6)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| ETØA | 1F19N | 1C23H | WHT TWP | |
| | 1F19P | 1C22C | BLK | |
| ETØB | 1J09J | 1E10R | | |
| | 1J09M | 1F10C | | |
| ETØD | 1K25N | 1E32M | | |
| | 1K25P | 1E33M | | |
| ETØE | 1T05T | 1M10N | | |
| | 1T05V | 1M10P | | |
| ETØF | 1T37M | 1L43D | | |
| | 1T38M | 1L43C | | |
| ETØH | 1R26D | 1M30K | | |
| | 1R26E | 1M31C | | |
| ETØH | 1L25F | 1J31L | | |
| | 1L25C | 1J31C | | |
| ET1 | 1T29L | 1K26T | | |
| | 1T29M | 1K26V | | |
| ET1B | 1R10N | 1H21J | | |
| | 1R10P | 1H21M | | |

A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 7)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| ET1C | 1R26N | 1L24T | WHT TWP | |
| | 1R26P | 1L24C | BLK | |
| ET2 | 1S32T | 1M10J | | |
| | 1S32V | 1M10C | | |
| ET2A | 1T30N | 1H37V | | |
| | 1T30P | 1H37U | | |
| ET2B | 1J01J | 1T03T | | |
| | 1J01M | 1T03V | | |
| FMT3 | 1H03N | 1L42M | | |
| | 1H03V | 1L42L | | |
| ET2C | 1S32N | 1M35J | | |
| | 1S32P | 1M35M | | |
| FAT3A | 1B14N | 1J38N | | |
| | 1B14P | 1J38C | | |
| FAT7 | 1C24U | 1L33N | | |
| | 1D24E | 1L33C | | |
| FAT8 | 1C23M | 1J38P | | |
| | 1C23C | 1J37C | | |

A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 8)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| FDT9 | 1L39K | 1T04T | WHT TWP | |
| | 1L39E | 1T06C | BLK | |
| FDT11 | 1F19J | 1J33D | | |
| | 1F19M | 1J33C | | 1 |
| FMA T1 | 1T33L | 1K39T | | |
| | 1T33M | 1K39V | | |
| FMT1 | 1C01D | 1J04L | | |
| | 1C01E | 1J04M | | |
| FMT1 | 1J04L | 1D23D | | |
| | 1J04C | 1D23C | | |
| FMT3 | 1H03N | 1D17E | | |
| | 1H03P | 1D17C | | |
| FMT3 | 1D23K | 1J39D | | |
| | 1D22M | 1H38C | | |
| FPT3 | 1C02L | 1A22J | | |
| | 1C02M | 1A22C | | |
| FT1 | 1M03E | 1T03J | | |
| | 1M03C | 1T03M | | |

A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 9)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| FT3 | 1L09D | 1J26J | WHT TWP | |
| | 1L09E | 1J26M | BLK | |
| FT3 | 1J26J | 1T37F | | |
| | 1J26V | 1T37C | | |
| FT4 | 1M03J | 1J28K | | |
| | 1M04C | 1J28C | | |
| FT4 | 1L40N | 1T04N | | |
| | 1M39M | 1T04C | | |
| FT4A | 1K08P | 1J34E | | |
| | 1K09M | 1J34C | | |
| FT4A | 1J37T | 1T36D | | |
| | 1K37M | 1S36V | | |
| FT6 | 1M01L | 1J37N | | |
| | 1M01M | 1K37C | | |
| FT7 | 1S03K | 1M38E | | |
| | 1S03C | 1M39C | | |
| FT7 | 1M03K | 1S03K | | |
| | 1L03C | 1R03C | | |

A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 10)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| FT9 | 1K03N | 1A19N | WHT TWP | |
| | 1K03P | 1A19C | BLK | |
| FT9 | 1L37J | 1E38E | | |
| | 1L37M | 1E38C | | |
| FT9 | 1K03N | 1P43D | | |
| | 1K03M | 1P43C | | |
| IOT T3B | 1R43D | 1J23T | | |
| | 1R43C | 1J23V | | |
| ITØ | 1M30D | 1M03T | | |
| | 1M30C | 1M04M | | |
| IT1 | 1M32J | 1M07L | | |
| | 1M32M | 1M07C | | |
| IT1 | 1R31D | 1M37H | | |
| | 1R31C | 1M35C | | |
| KTØA | 1S13D | 1C20T | | |
| | 1S13C | 1C20V | | |
| KT3 | 1T43T | 1L37T | | |
| | 1T43U | 1L37C | | |

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A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 11)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------------|----------|--------|---------|---------|
| KT3 | 1L29J | 1T08J | WHT TWP | |
| | 1L29M | 1T08M | BLK | |
| LBT1 | 1B16D | 1J33K | | |
| | 1B16C | 1H33V | | |
| LBT1 | 1J33K | 1N10E | | |
| | 1K33C | 1M10V | | |
| MAI CMC ADR ACK | 1S09T | 1R42D | | |
| | 1T09C | 1R42C | | |
| MAI CMC RD RS | 1S13R | 1P43E | | |
| | 1S12M | 1P43F | | |
| MAI CMC RD RS | 1S13R | 1T08T | | |
| | 1T13C | 1T08C | | |
| MAI CMC RD RS | 1T08T | 1T11V | | |
| | 1T08P | 1T11U | | |
| MAI CMC ADR ACK | 1S09T | 1T11D | | |
| | 1T10C | 1T12C | | |
| MAI IGN PAR PULSE | 1M43V | 1T32J | | |
| | 1M43U | 1T32C | | |

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A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 12)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------------|----------|--------|---------|---------|
| MAI IGN PAR PULSE | 1T32J | 1S21P | WHT TWP | |
| | 1T32E | 1S21N | BLK | |
| MC BUS WR RS | 1S10H | 1T11E | | |
| | 1S10C | 1T11F | | |
| MC BUS WR RS | 1T11E | 1R42E | | |
| | 1T12M | 1R42J | | |
| MC ILLEG ADR | 1S20L | 1T43M | | |
| | 1S20M | 1T43L | | |
| MC NON EX MEM | 1S17T | 1T43K | | |
| | 1T17C | 1T43G | | |
| MC PAR ERR | 1S17N | 1T43P | | |
| | 1S17C | 1T43N | | |
| MC PARITY PULSE | 1R36T | 1T11H | | |
| | 1R36M | 1T11J | | |
| MC PARITY PULSE | 1T11H | 1S10L | | |
| | 1T11L | 1S09C | | |
| MC PARITY PULSE | 1R42H | 1R36T | | |
| | 1R42L | 1R36V | | |

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A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 13)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------------|----------|--------|---------|---------|
| MC RD RQ PULSE | 1S16D | 1J28N | BLK TWP | |
| | 1S16C | 1K28C | WHT | |
| MC RD/WR RQ PULSE | 1T17K | 1J28P | | |
| | 1T18M | 1K27C | | |
| MC WR RS | 1S11J | 1K27T | | |
| | 1S11C | 1K27V | | |
| MPT2 | 1J14T | 1N09E | | |
| | 1J14C | 1M09M | | |
| MPT2 | 1N09E | 1M30R | | |
| | 1M09C | 1M29M | | |
| MPT3 | 1H01L | 1E29T | | |
| | 1H01M | 1E29C | | |
| MPT4 | 1J01N | 1N09P | | |
| | 1J01P | 1N06V | | |
| MR CLR | 1R06D | 1F37U | | |
| | 1R06E | 1H36C | | |
| MR CLR | 1T43E | 1R02D | | |
| | 1T43F | 1R02C | | |

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A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 14)

↓

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| MR CLR A | 1R06N | 1P17H | WHT TWP | |
| | 1R06P | 1P17C | BLK | |
| MR CLR B | 1M06D | 1J07L | | |
| | 1M06C | 1J07C | | |
| MR CLR B | 1F12D | 1C11D | | |
| | 1F13C | 1C11C | | |
| MR START | 1M07D | 1B16E | | |
| | 1L07M | 1B16P | | |
| MR START | 1T35T | 1S42D | | |
| | 1T35C | 1S42C | | |
| MR START R | 1R06L | 1S39D | | |
| | 1R06C | 1S39C | | |
| NLT1 | 1D02D | 1C24P | | |
| | 1D02E | 1C25C | | |
| NLT1 | 1C24P | 1J29D | | |
| | 1D24C | 1J29C | | |
| NLT2 | 1A27N | 1J27K | | |
| | 1A27C | 1J27C | | |

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A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 15)

↓

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| NRT4 | 1C24N | 1L21D | WHT TWP | |
| | 1C24C | 1L20C | BLK | |
| NRT99 | 1D19N | 1N09S | | |
| | 1D19P | 1N08V | | |
| PI RESET B | 1P15D | 1P43P | | |
| | 1P15E | 1P43N | | |
| STØ | 1N08N | 1F30N | | |
| | 1N08M | 1F30C | | |
| ST1 | 1L43E | 1K22D | | |
| | 1L42F | 1J21U | | |
| ST1 | 1K22D | 1R29J | | |
| | 1K23C | 1R29M | | |
| ST1 | 1R38D | 1S11T | | |
| | 1R38C | 1T11C | | |
| ST1A | 1R13L | 1C10E | | |
| | 1R13M | 1C10C | | |
| ST2 | 1N02D | 1J40F | | |
| | 1N02E | 1J41C | | |

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A-WL-KA10-0-TWP1 General Wiring Sheet For TWP List KA10 Bay 1 (Sheet 16)

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|--------------------|----------|--------|-------|---------|
| ARLT CLR | 2B03D | 2C14T | WHT | TWP |
| | 2B03C | 2C15M | BLK | |
| ARLT FM ARRT (J)B | 2B03E | 2B18L | | |
| | 2B03F | 2B18C | | |
| ARLT FM FLAGS (J)B | 2C03V | 2D16L | | |
| | 2C03R | 2D16C | | |
| ARLT FM FM (1) | 2D02M | 2E15F | | |
| | 2D02N | 2E15C | | |
| ARLT SFLT B | 2B03H | 2C20R | | |
| | 2B03J | 2C19M | | |
| ARLT SHRT B | 2B03K | 2C20V | | |
| | 2B03L | 2C21M | | |
| ARRT CLR | 2C02M | 2C29T | | |
| | 2C02N | 2C30M | | |
| ARRT FM AD (∅) | 2D02D | 2D26R | | |
| | 2D02C | 2D26C | | |
| ARRT FM AD (1) | 2D02H | 2D27R | | |
| | 2D02J | 2D27C | | |

A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 1)

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------------|----------|--------|-------|---------|
| ARRT FM ARLT (J)A | 2B03T | 2B28L | WHT | TWP |
| | 2B03R | 2B28C | BLK | |
| ARRT FM ARLT (J)B | 2B03V | 2B37L | | |
| | 2B03U | 2B37C | | |
| ARRT FM DS (1) | 2C02V | 2D28V | | |
| | 2C02U | 2E28C | | |
| ARRT FM FM (1) | 2C02P | 2D28L | | |
| | 2C02R | 2D28C | | |
| ARRT FM IOB (1) | 2C03E | 2D28R | | |
| | 2C03F | 2D29C | | |
| ARRT FM MQ (∅) | 2D02E | 2D26V | | |
| | 2D02F | 2E25C | | |
| ARRT FM MQ (1) | 2D02K | 2D27V | | |
| | 2D02L | 2E27C | | |
| ARRT FM PC (J)A | 2C03T | 2D26L | | |
| | 2C03U | 2D25C | | |
| ARRT FM PC (J)B | 2D02V | 2D35L | | |
| | 2D02U | 2D35C | | |

A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 2)

↓

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|----------------|----------|--------|---------|---------|
| ARRT SHLT A | 2C02H | 2B28V | WHT TWP | |
| | 2C02J | 2C28C | BLK | |
| ARRT SHLT B: | 2C02K | 2B37V | | |
| | 2C02L | 2C37C | | |
| ARRT SHRT A | 2C02D | 2B28R | | |
| | 2C02C | 2B29C | | |
| ARRT SHRT B | 2C02E | 2B37R | | |
| | 2C02F | 2B38C | | |
| AR ∅∅ BB (∅-) | 2B11D | 2E10J | | |
| | 2B11C | 2E11C | | |
| AR ∅∅ BB (1-) | 2E12J | 2B14D | | |
| | 2E12C | 2B14C | | |
| BRRT FM AR (∅) | 2H04T | 2E27T | | |
| | 2H04R | 2F28C | | |
| BRRT FM AR (1) | 2H04V | 2E29T | | |
| | 2H04U | 2F29C | | |
| ET∅F | 2J02D | 2T34R | | |
| | 2J02C | 2T34C | | |

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A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 3)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|--------------|----------|--------|---------|---------|
| ET∅F | 2S28T | 2K43F | WHT TWP | |
| | 2S28P | 2K44C | BLK | |
| ET∅F | 2L44D | 2J20J | | |
| | 2L44C | 2J20C | | |
| FMT3 | 2J03M | 2H35T | | |
| | 2J03N | 2H36M | | |
| FT9 | 2P02D | 2R24D | | |
| | 2P02C | 2R24C | | |
| IRRT CLR | 2J03S | 2J22P | | |
| | 2J03R | 2J22C | | |
| IT∅ | 2M02T | 2K43T | | |
| | 2M02U | 2K43C | | |
| KEY RDI DONE | 2N03E | 2S29P | | |
| | 2N03F | 2S29C | | |
| KNT1 | 2P02S | 2S24L | | |
| | 2P02R | 2S24M | | |
| KNT2 | 2N03D | 2S25L | | |
| | 2N03C | 2S25M | | |

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A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 4)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|---------------|----------|--------|---------|---------|
| KNT3 | 2P02T | 2S26D | WHT TWP | |
| | 2P02U | 2S26E | BLK | |
| KTØA | 2T02H | 2R27D | | |
| | 2T02J | 2R27C | | |
| KT1 | 2N03V | 2T23L | | |
| | 2N03U | 2T23C | | |
| KT2 | 2N03T | 2S23J | | |
| | 2N03N | 2S23E | | |
| KT3 | 2T02T | 2R25D | | |
| | 2T02U | 2R25C | | |
| KT3A | 2R03K | 2R24T | | |
| | 2R04C | 2S24C | | |
| KT4 | 2T02D | 2S29N | | |
| | 2T02C | 2S28V | | |
| MA CLR | 2M02D | 2K27T | | |
| | 2M02C | 2K27C | | |
| MA FM AR (J)A | 2M02K | 2K26R | | |
| | 2M02L | 2K26C | | |

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A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 5)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------------|----------|--------|---------|---------|
| MA FM AR (J)B | 2M02M | 2K39R | WHT TWP | |
| | 2M02N | 2K41C | BLK | |
| MA FM AS (J)A | 2M02P | 2K26V | | |
| | 2M02R | 2L26C | | |
| MA FM AS (J)B | 2M02S | 2K39V | | |
| | 2N02C | 2K39C | | |
| MA FM PC (J)A | 2M02E | 2K26L | | |
| | 2M02F | 2K25C | | |
| MA FM PC (J)B | 2M02J | 2K39L | | |
| | 2M02K | 2K38C | | |
| MA FM PICH (1) | 2J02S | 2K40L | | |
| | 2J02U | 2K40C | | |
| MAI IGN PAR PULSE | 2M02V | 2L02T | | |
| | 2M01V | 2M03C | | |
| MAI CMC RD RS | 2K01E | 2P02E | | |
| | 2K01F | 2P02N | | |
| MAIB MC REQ CYC | 2K01M | 2N05E | | |
| | 2K01N | 2N05M | | |

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A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 6)

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| MAIB MM 18 | 2K01S | 2N06E | WHT TWP | |
| | 2K01R | 2N06M | BLK | |
| -MAIB MM 18 | 2K01T | 2N06P | | |
| | 2J01V | 2N06V | | |
| MAIB MM 19 | 2K01V | 2N07E | | |
| | 2L01U | 2N07M | | |
| -MAIB MM 19 | 2L01D | 2N07P | | |
| | 2L01C | 2N07V | | |
| MAIB MM 20 | 2L01E | 2N08E | | |
| | 2L01F | 2N08M | | |
| -MAIB MM 20 | 2L01H | 2N08P | | |
| | 2L01J | 2N08V | | |
| MAIB MM 21 | 2L01K | 2N09E | | |
| | 2L01L | 2N09M | | |
| -MAIB MM 21 | 2L01M | 2N09P | | |
| | 2L01N | 2N09V | | |
| MAIB MM 35 | 2L01P | 2N10E | | |
| | 2L01R | 2N10M | | |

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-----------------|----------|--------|---------|---------|
| -MAIB MM 35 | 2L01S | 2N01P | WHT TWP | |
| | 2L01V | 2N10V | BLK | |
| MAIB FMC SELECT | 2L01T | 2N05P | | |
| | 2L01U | 2N05V | | |
| MAIB 22 | 2K02D | 2N11E | | |
| | 2K02C | 2N11M | | |
| MAIB 23 | 2K02E | 2N11P | | |
| | 2K02F | 2N11V | | |
| MAIB 24 | 2K02H | 2N12E | | |
| | 2K02J | 2N12M | | |
| MAIB 25 | 2K02K | 2N12P | | |
| | 2K02L | 2N12V | | |
| MAIB 26 | 2K02M | 2N13E | | |
| | 2K02N | 2N13M | | |
| MAIB 27 | 2K02P | 2N13P | | |
| | 2K02R | 2N13V | | |
| MAIB 28 | 2K02S | 2N14E | | |
| | 2K05C | 2N14M | | |

A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 7)

A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 8)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|----------------|----------|--------|---------|---------|
| MAIB 29 | 2K02T | 2N14P | WHT TWP | |
| | 2K06C | 2N14V | BLK | |
| MAIB 30 | 2K02V | 2N15E | | |
| | 2K02U | 2N15M | | |
| MAIB 31 | 2L02D | 2N15P | | |
| | 2L02C | 2N15V | | |
| MAIB 32 | 2L02E | 2N16E | | |
| | 2L02F | 2N16M | | |
| MAIB 33 | 2L02H | 2N16P | | |
| | 2L02J | 2N16V | | |
| MAIB 34 | 2L02K | 2N17E | | |
| | 2L02L | 2N17M | | |
| MAIB 35 | 2L02M | 2N17P | | |
| | 2L02N | 2N17V | | |
| MAIB MC RD (1) | 2L02P | 2N18E | | |
| | 2L02R | 2N18M | | |
| MAIB MC WR (1) | 2L02S | 2N18P | | |
| | 2L06C | 2N18V | | |

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A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 9)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|----------------------------|----------|--------|---------|---------|
| MAIB 21 | 2L02V | 2N19E | WHT TWP | |
| | 2L02U | 2N19M | BLK | |
| MAI CMC ADR ACK | 2R03D | 2K01D | | |
| | 2R03C | 2K01C | | |
| MC BUS WR RS | 2R03E | 2K01H | | |
| | 2R03F | 2K01J | | |
| MC PARITY PULSE | 2R03H | 2K01K | | |
| | 2R03J | 2K01L | | |
| MAIB MM 22 | 2N19P | 2K01P | | |
| | 2N19C | 2J01C | | |
| M BUS $\emptyset\emptyset$ | 2K03D | 2P08D | | |
| | 2K03C | 2P08C | | |
| | 2P08D | 2J08D | | |
| | 2P07C | 2J08C | | |
| | 2J08D | 2E09H | | |
| | 2J07C | 2E09C | | |
| M BUS $\emptyset 1$ | 2K03E | 2P08E | | |
| | 2K03F | 2P09C | | |
| | 2P08E | 2J08E | | |
| | 2N06C | 2J09C | | |

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A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 10)

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-----------------|----------|--------|---------|---------|
| M BUS Ø1 (CONT) | 2J08E | 2E09L | WHT TWP | |
| | 2J07M | 2E10C | BLK | |
| M BUS Ø2 | 2K03H | 2P08K | | |
| | 2K03J | 2P05C | | |
| | 2P08K | 2J08R | | |
| | 2P06C | 2J06C | | |
| | 2J08R | 2E09P | | |
| | 2J05V | 2E08C | | |
| M BUS Ø3 | 2K03K | 2P08L | | |
| | 2K03L | 2P09M | | |
| | 2P08L | 2J08S | | |
| | 2P07M | 2K07C | | |
| | 2J08S | 2E09T | | |
| | 2K08C | 2F09C | | |
| M BUS Ø4 | 2K03M | 2P08R | | |
| | 2K03N | 2R08C | | |
| | 2P08R | 2J10K | | |
| | 2P12F | 2J10C | | |
| | 2J10K | 2E13H | | |
| | 2J09M | 2E13C | | |
| M BUS Ø5 | 2K03P | 2P08S | | |
| | 2K03R | 2P12J | | |

A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 11)

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-----------------|----------|--------|---------|---------|
| M BUS Ø5 (CONT) | 2P08S | 2J10L | WHT TWP | |
| | 2R07C | 2J11M | BLK | |
| | 2J10L | 2E13L | | |
| | 2J13M | 2E14M | | |
| M BUS Ø6 | 2K03S | 2P10D | | |
| | 2J05C | 2P10C | | |
| | 2P10D | 2J14D | | |
| | 2P11C | 2J14C | | |
| | 2J14D | 2E13P | | |
| | 2J13C | 2E14H | | |
| M BUS Ø7 | 2K03T | 2P10E | | |
| | 2L07C | 2P12C | | |
| | 2P10E | 2J14E | | |
| | 2P12U | 2J15C | | |
| | 2J14E | 2E13T | | |
| | 2J15M | 2E14S | | |
| M BUS Ø8 | 2K03V | 2P10K | | |
| | 2K03U | 2P07V | | |
| | 2P10K | 2J18D | | |
| | 2P11M | 2J18C | | |
| | 2J18D | 2E17H | | |
| | 2J17C | 2E17C | | |

A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 12)

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| M BUS 09 | 2L03D | 2P10L | WHT TWP | |
| | 2L03C | 2P11V | BLK | |
| | 2P10L | 2J18E | | |
| | 2P13M | 2J19C | | |
| | 2J18E | 2E17L | | |
| M BUS 10 | 2L03E | 2P10R | | |
| | 2L03F | 2R10C | | |
| | 2P10R | 2J18K | | |
| | 2R09C | 2J19M | | |
| | 2J18K | 2E17P | | |
| M BUS 11 | 2L03H | 2P10S | | |
| | 2L03J | 2R11C | | |
| | 2P10S | 2J18L | | |
| | 2P09V | 2K20C | | |
| | 2J18L | 2E17T | | |
| M BUS 12 | 2K19C | 2E16S | | |
| | 2L03K | 2P14D | | |
| | 2L03L | 2P14C | | |
| | 2P14D | 2J18R | | |
| | 2P13C | 2K18C | | |

A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 13)

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-----------------|----------|--------|---------|---------|
| M BUS 12 (CONT) | 2J18R | 2E21H | WHT TWP | |
| | 2K17C | 2E21C | BLK | |
| M BUS 13 | 2L03M | 2P14E | | |
| | 2L03N | 2P12L | | |
| | 2P14E | 2J24E | | |
| | 2P12N | 2J24C | | |
| | 2J24E | 2E21L | | |
| | 2J23C | 2E20C | | |
| M BUS 14 | 2L03P | 2P14K | | |
| | 2L03R | 2P12R | | |
| | 2P14K | 2J24K | | |
| | 2P13V | 2J23M | | |
| | 2J24K | 2E21P | | |
| | 2H25U | 2F21C | | |
| M BUS 15 | 2L03S | 2P14L | | |
| | 2M05C | 2P15M | | |
| | 2P14L | 2J24L | | |
| | 2P15V | 2H25R | | |
| | 2J24L | 2E21T | | |
| | 2H25N | 2F20C | | |
| M BUS 16 | 2L03T | 2P14R | | |
| | 2M06C | 2R14C | | |

A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 14)

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-----------------|----------|--------|---------|---------|
| M BUS 16 (CONT) | 2P14R | 2J24R | WHT TWP | |
| | 2R13C | 2H25L | BLK | |
| | 2J24R | 2E26H | | |
| | 2H25J | 2E26C | | |
| M BUS 17 | 2L03V | 2P14S | | |
| | 2L03U | 2R15C | | |
| | 2P14S | 2J24S | | |
| | 2P17M | 2K24C | | |
| | 2J24S | 2E26L | | |
| | 2H25F | 2E25F | | |
| M BUS 18 | 2K04D | 2P16D | | |
| | 2K04C | 2P16C | | |
| | 2P16D | 2E26P | | |
| | 2P15C | 2F26C | | |
| M BUS 19 | 2K04E | 2P16E | | |
| | 2K04F | 2P17C | | |
| | 2P16E | 2E26T | | |
| | 2P17V | 2F27C | | |
| M BUS 20 | 2K04H | 2P16K | | |
| | 2K04J | 2P19M | | |
| | 2P16K | 2E30H | | |
| | 2P19V | 2E30C | | |

A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 15)

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-------------|----------|--------|---------|---------|
| M BUS 21 | 2K04K | 2P16L | WHT TWP | |
| | 2K04L | 2P18C | BLK | |
| | 2P16L | 2E30L | | |
| | 2R18C | 2E31C | | |
| M BUS 22 | 2K04M | 2P16R | | |
| | 2K04N | 2R16C | | |
| | 2P16R | 2E30P | | |
| | 2P18V | 2E29C | | |
| M BUS 23 | 2K04P | 2P16S | | |
| | 2K04R | 2R17C | | |
| | 2P16S | 2E30T | | |
| | 2N16C | 2F30C | | |
| M BUS 24 | 2K04S | 2P20D | | |
| | 2L08C | 2P20C | | |
| | 2P20D | 2E34H | | |
| | 2P21C | 2E34C | | |
| M BUS 25 | 2K04T | 2P20E | | |
| | 2J03U | 2P19C | | |
| | 2P20E | 2E34L | | |
| | 2N20V | 2E33C | | |
| M BUS 26 | 2K04V | 2P20K | | |
| | 2K04U | 2N21V | | |

A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 16)

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-----------------|----------|--------|---------|---------|
| M BUS 26 (CONT) | 2P20K | 2E34P | WHT TWP | |
| | 2P25C | 2E35C | BLK | |
| M BUS 27 | 2L04D | 2P20L | | |
| | 2L04C | 2P24C | | |
| | 2P20L | 2E34T | | |
| | 2P21M | 2F34C | | |
| M BUS 28 | 2L04E | 2P20R | | |
| | 2L04F | 2R20C | | |
| | 2P20R | 2E38H | | |
| | 2R21C | 2E38C | | |
| M BUS 29 | 2L04H | 2P20S | | |
| | 2L04J | 2R19C | | |
| | 2P20S | 2E38L | | |
| | 2P21V | 2E37C | | |
| M BUS 30 | 2L04K | 2P22D | | |
| | 2L04L | 2P22C | | |
| | 2P22D | 2E38P | | |
| | 2P23C | 2E39C | | |
| M BUS 31 | 2L04M | 2P22E | | |
| | 2L04N | 2P26C | | |

A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 17)

| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|-----------------|----------|--------|---------|---------|
| M BUS 31 (CONT) | 2P22E | 2E38T | WHT TWP | |
| | 2N22V | 2F38C | BLK | |
| M BUS 32 | 2L04P | 2P22K | | |
| | 2L04R | 2P23M | | |
| | 2P22K | 2E42H | | |
| M BUS 33 | 2P23V | 2E42C | | |
| | 2L04S | 2P22L | | |
| | 2M07C | 2N20C | | |
| M BUS 34 | 2P22L | 2E42L | | |
| | 2N21C | 2E41C | | |
| | 2L04T | 2P22R | | |
| M BUS 35 | 2M04C | 2N22C | | |
| | 2P22R | 2E42P | | |
| | 2N23C | 2E43C | | |
| MC ILLEG ADR | 2L04V | 2P22S | | |
| | 2L04U | 2R23C | | |
| | 2P22S | 2E42T | | |
| MC ILLEG ADR | 2R22C | 2E44U | | |
| | 2T02M | 2T32L | | |
| MC ILLEG ADR | 2T02N | 2T32C | | |

A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 18)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|----------------------|----------|--------|---------|---------|
| MC MEM BUS FM AR(1)A | 2H04D | 2E09V | WHT TWP | |
| | 2H04C | 2F10C | BLK | |
| MC MEM BUS FM AR(1)B | 2H04E | 2E21V | | |
| | 2H04F | 2F22C | | |
| MC MEM BUS FM AR(1)C | 2H04H | 2E34V | | |
| | 2H04J | 2F34M | | |
| MC NON EX MEM | 2T02K | 2T32P | | |
| | 2T02L | 2T33C | | |
| MC PAR ERR | 2T02P | 2T32T | | |
| | 2T02R | 2T31M | | |
| MCRST1 | 2T02S | 2T24T | | |
| | 2T01V | 2T24V | | |
| MI LOAD C | 2N03P | 2M16F | | |
| | 2N03R | 2M16C | | |
| MI LOAD D | 2N03S | 2M20T | | |
| | 2N03L | 2M19M | | |
| MQ FM AD (J)A | 2J04P | 2F14V | | |
| | 2J04R | 2H14C | | |

↓

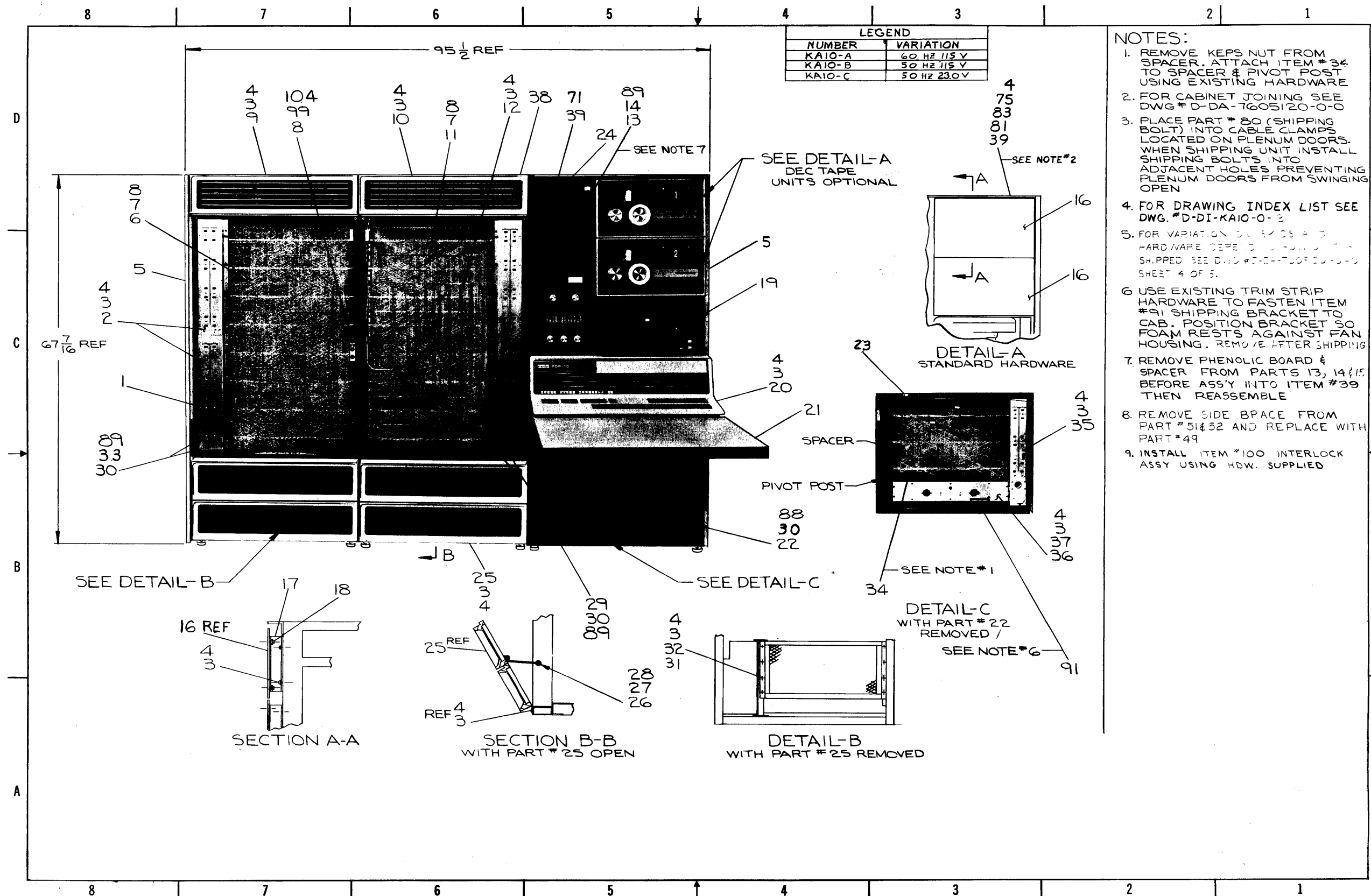
A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 19)

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| SIGNAL NAME | FROM PIN | TO PIN | COLOR | REMARKS |
|---------------|----------|--------|---------|---------|
| MQ FM AD (J)B | 2J04S | 2F18V | WHT TWP | |
| | 2J06S | 2H18C | BLK | |
| MQ FM AD (J)C | 2J03H | 2F24V | | |
| | 2J03J | 2H23C | | |
| MQ FM AD (J)D | 2J03K | 2F37V | | |
| | 2J03L | 2F37C | | |
| MQ SHLT A | 2J04E | 2F14L | | |
| | 2J04F | 2F14C | | |
| MQ SHLT B | 2J04H | 2F18L | | |
| | 2J04J | 2F19M | | |
| MQ SHLT C | 2J04T | 2F24L | | |
| | 2J06V | 2F24C | | |
| MQ SHLT D | 2J03D | 2H37L | | |
| | 2J03C | 2H38M | | |
| MQ SHRT A | 2J04K | 2F14R | | |
| | 2J04L | 2F15M | | |
| MQ SHRT B | 2J04M | 2F18R | | |
| | 2J04N | 2F17M | | |

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A-WL-KA10-0-TWP2 General Wiring Sheet For TWP List KA10 Bay 2 (Sheet 20)



| LEGEND | |
|--------|-------------|
| NUMBER | VARIATION |
| KA10-A | 60 HZ 115 V |
| KA10-B | 50 HZ 115 V |
| KA10-C | 50 HZ 230 V |

- NOTES:
1. REMOVE KEPS NUT FROM SPACER. ATTACH ITEM #34 TO SPACER & PIVOT POST USING EXISTING HARDWARE
 2. FOR CABINET JOINING SEE DWG # D-DA-7605120-0-0
 3. PLACE PART # 80 (SHIPPING BOLT) INTO CABLE CLAMPS LOCATED ON PLENUM DOORS. WHEN SHIPPING UNIT INSTALL SHIPPING BOLTS INTO ADJACENT HOLES PREVENTING PLENUM DOORS FROM SWINGING OPEN
 4. FOR DRAWING INDEX LIST SEE DWG. #D-DI-KA10-0-3
 5. FOR VARIATION ON 34, 35 AND HARDWARE DEPENDS ON HOW IT IS SHIPPED. SEE DWG #D-DA-7605120-0-0 SHEET 4 OF 5.
 6. USE EXISTING TRIM STRIP HARDWARE TO FASTEN ITEM #91 SHIPPING BRACKET TO CAB. POSITION BRACKET SO FOAM RESTS AGAINST FAN HOUSING. REMOVE AFTER SHIPPING
 7. REMOVE PHENOLIC BOARD & SPACER FROM PARTS 13, 14 & 15 BEFORE ASS'Y INTO ITEM #39 THEN REASSEMBLE
 8. REMOVE SIDE BRACE FROM PART #51 & 52 AND REPLACE WITH PART #49
 9. INSTALL ITEM #100 INTERLOCK ASSY USING HDW. SUPPLIED