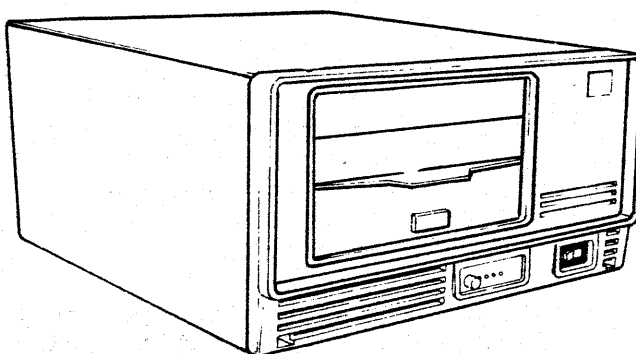




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**CDC® PLATO® FLEXIBLE DISK SUBSYSTEM**



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**HARDWARE MAINTENANCE MANUAL  
(SITE AND SUPPORT INFORMATION)**

REVISION RECORD

REVISION	DESCRIPTION
D1 (08-13-80)	Preliminary release.
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MANUAL TO EQUIPMENT LEVEL CORRELATION SHEET

This manual reflects the equipment configurations listed below.

EXPLANATION: Locate the equipment type and series number, as shown on the equipment FCO log, in the list below. Immediately to the right of the series number is an FCO number. If that number and all of the numbers underneath it match all of the numbers on the equipment FCO log, then this manual accurately reflects the equipment.

EQUIPMENT TYPE	SERIES	WITH FCO'S	COMMENTS
FA501-A	01	-	ECOs 14328, 14376, 14454
	01	-	ECO 14165 (S/N 141)
	02	-	ECO 14468 (S/N 274)
	03	14571	S/N 401
	04	-	ECO 14663 (S/N 701)
	05	-	ECO 14985 (S/N 1115)
	06	-	ECO 15771 (S/N 4635)
	07	-	
FA501-B	01	-	ECOs 14238, 14376, 14454
	01	-	ECO 14165 (S/N 141)
	02	14571	S/N 401
	03	-	ECO 14663 (S/N 701)
	04	-	ECO 14985 (S/N 1115)
	05	-	ECO 15771 (S/N 4635)
	06	-	
FA501-C	01	-	ECO 14985, 15043
	01	-	ECO 15771 (S/N 4635)
	02	-	
FA501-D	01	-	ECO 14985
	01	-	ECO 15771 (S/N 4635)
	02	-	
BR810-A	01	-	ECOs 14240, 14165, 14328, 14403
	01	-	ECO 14468 (S/N 274)
	02	-	ECO 14985 (S/N 391)
	03	-	
BR810-B	01	-	ECOs 14240, 14165, 14328
	01	-	ECO 14985 (S/N 391)
	02	-	

MANUAL TO EQUIPMENT LEVEL CORRELATION SHEET (CONTD)

EQUIPMENT TYPE	SERIES	WITH FCO'S	COMMENTS
XA243-A	01		
FT116-A	01		

LIST OF EFFECTIVE PAGES

New features, as well as changes, deletions, and additions to information in this manual are indicated by bars in the margins or by a dot near the page number if the entire page is affected. A bar by the page number indicates pagination rather than content has changed.

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6A-4	A	Mailer	-		



## PREFACE

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This manual provides information to aid in the installation, checkout, and maintenance of the CDC® PLATO® Flexible Disk Subsystem. Information is provided for both on-site and technical support use. The subsystem provides flexible disk storage capability to an Information Systems Terminal (IST-II and IST-III).

Product number correlation for the various subsystem configurations and associated memory options is as follows:

<u>Equipment Number</u>	<u>Description</u>
FA501-A	Primary Flexible Disk Subsystem, 60 Hz, 120 V ac.
BR810-A	Secondary Flexible Disk Drive, 60 Hz, 120 V ac.
FA501-B	Primary Flexible Disk Subsystem, 50 Hz, 220/240 V ac.
BR810-B	Secondary Flexible Disk Drive, 50 Hz, 220/240 V ac.
FA501-C	Control Data 110 Primary FD Subsystem, 60 Hz, 120 V ac.
FA501-D	Control Data 110 Primary FD Subsystem, 50 Hz, 220/240 V ac.
XA243-A	Additional 16K by 8-bit RAM Option (up to three RAM options may be added to the FA501-A/B). The FA501-C/D has 64K RAM standard.
FT116-A	Terminator assembly for IST parallel I/O channel.

Organization of this manual is divided into eight major sections:

- Section 1 - General Description
- Section 2 - Operation
- Section 3 - Installation and Checkout
- Section 4 - Theory of Operation
- Section 5 - Diagrams
- Section 6 - Maintenance
- Section 7 - Parts Data
- Section 8 - Wire Lists

Other manuals providing reference and operator information on the flexible disk subsystem, maintenance information on the flexible disk drive assembly, and maintenance information on the IST terminal are listed as follows. All manuals may be ordered from:

Control Data Corporation  
Literature and Distribution Services  
308 North Dale Street  
St. Paul, Minnesota 55103

<u>Title</u>	<u>Publication Number</u>
PLATO® Flexible Disk Subsystem Operators Guide	62940005
9406 Flexible Disk Drive Assembly Hardware Maintenance Manual	77614903
Information Systems Terminal II Hardware Maintenance Manual (IST-II)	82100083
Information Systems Terminal III Hardware Maintenance Manual (IST-III)	62940007
Engineering Services Diagnostic Disk for PLATO® Flexible Disk Subsystem Operators Manual	62940015
Control Data 110 Microcomputer System Installation and Diagnostics Manual	62940024
Control Data 110 Software Users Manual	62940025
In addition to these publications, an instructional flexible disk and user's installation guide are available as follows:	
Micro Plato Instructional Flexible Disk	76773000 A
Micro Plato User's Installation Guide	76368339

The disk and the guide may be ordered, using an Education Order Form, from:

Order Administrator  
Education Company  
8100 34th Avenue South  
P.O. Box 0  
Minneapolis, Minnesota 55440

Diagnostic disks to support CD110 and Micro Plato are available as follows:

CD110 Users Diagnostic Flexible Disk	66314929
Engineering Services Diagnostic Disk	76774999

Control Data Corporation  
Software Development and Distribution (ARH230)  
4201 Lexington Avenue North  
Arden Hills, Minnesota 55112

Or telephone:

Gerald J. Ferber, ARH230,  
Software Distribution  
Phone 612-482-3744  
Control Net 235-3747

The IST II and the IST III have been approved by the Federal Communications Commission (FCC) as not being harmful to the telephone network when connected directly to the telephone lines. Instructions for fully complying with Part 68, FCC Docket 19528 can be found in the Site and Support manuals that accompany the particular terminal being used.

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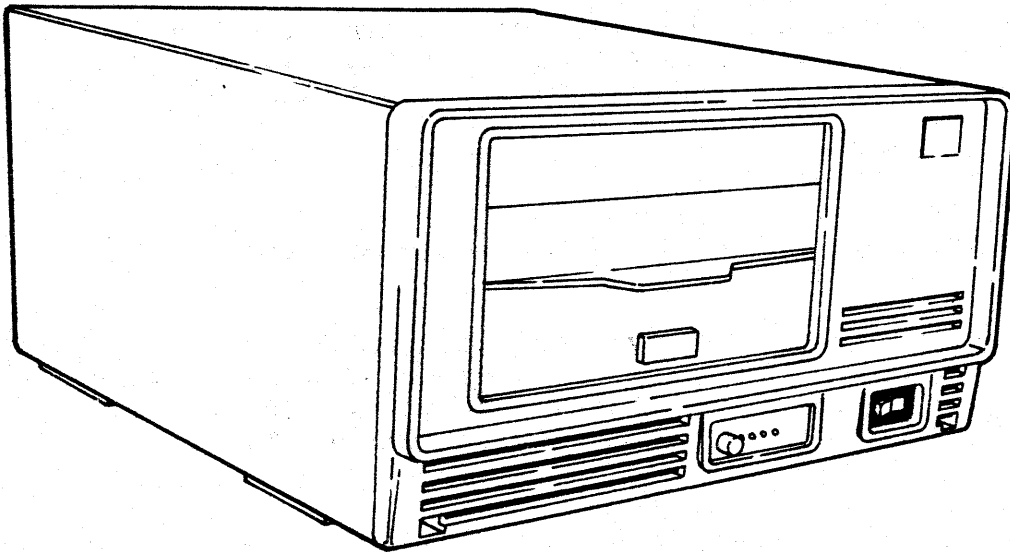


Should difficulties be encountered in installing, testing, or running this equipment, you may obtain assistance by contacting your CDC sales representative for the telephone number applicable to your installation. After obtaining the number, write it here for future reference:

TELEPHONE NUMBER \_\_\_\_\_



This section provides a general description of the PLATO Flexible Disk Subsystem (PFDS) configuration including the related equipment specifications. The PFDS is a Z80 microprocessor-based programmable storage subsystem that is intended for use by an Information Systems Terminal. The subsystem interfaces with the terminal via the PLATO parallel I/O channel. Refer to figure 1-1 for an exterior view of the subsystem.



03892

Figure 1-1. PLATO Flexible Disk Subsystem

#### SUBSYSTEM CONFIGURATION

The PFDS is configured as two basic versions:

- Primary Flexible Disk Subsystem
- Secondary Flexible Disk Drive

Each version is available as either a 60-Hz or 50-Hz product/equipment. Refer to the preface for product/equipment number correlation.

The subsystem can consist of a single primary unit or a primary unit and one secondary unit. The two units (primary and secondary) are interfaced by attaching the signal lines of both 9406 Disk Drives together via a 50-pin interconnecting I/O cable. The net effect is that the controller logic board of the primary unit is interfaced to both 9406 Disk Drives connected in parallel as shown in figure 1-2.

#### PRIMARY FLEXIBLE DISK SUBSYSTEM

The Primary Flexible Disk Subsystem contains a CDC 9406 Flexible Disk Drive, a 50-Hz or 60-Hz ac power entry panel, a mother-board backplane, a dc power supply, and a Z80-based controller logic board.

#### CONTROL DATA 110 PRIMARY FLEXIBLE DISK SUBSYSTEM

The Control Data 110 Primary Flexible Disk Subsystem contains a CDC 9406 Flexible Disk Drive, a 50-Hz or 60-Hz ac power entry panel, a mother-board backplane, a dc power supply, and a Z80-based controller logic board with 64K of RAM.

#### SECONDARY FLEXIBLE DISK DRIVE

The Secondary Flexible Disk Drive is identical to a primary unit except that the Z80-based controller logic board is removed.

#### RAM EXPANSION FEATURE

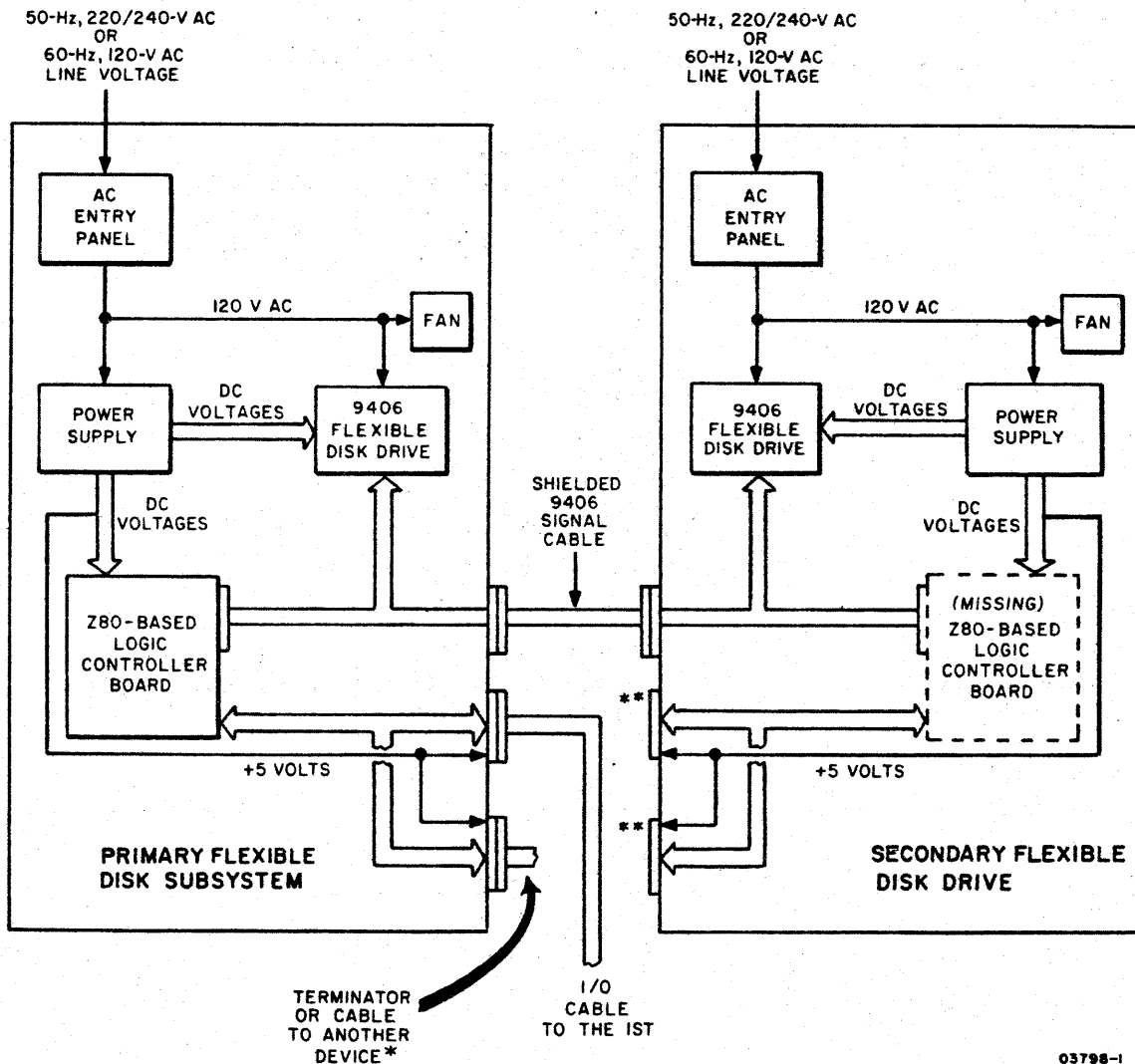
The standard subsystem random-access memory consists of 16K 8-bit words in the FA501-A/B. The RAM size may be expanded to a total of 64K 8-bit words in 16K-word increments. Each 16K RAM option consists of eight 16-pin integrated circuits (ICs). IC sockets are provided on the controller logic board for installation of the RAM chips. The FA501-C/D has 64K as standard.



## MEDIA

The recommended media for use in the subsystem is a good commercial flexible disk (double-sided, double-density). These flexible disks have the following characteristics:

- Index - 1
- Sectors - Programmable
- Cylinders - 77
- Tracks per cylinder - 1 for single-sided disk, 2 for double-sided disk.
- Surfaces - 2
- Tracks per inch 48
- Bits per inch - 6816 double density



- \*The other device could be another Primary Flexible Disk Subsystem, Graphic Printer, etc.
- \*\*These connectors are not used.

Figure 1-2. PFDS Primary and Secondary Unit Details

## EQUIPMENT SPECIFICATIONS

Equipment specifications for the subsystem are listed in table 1-1.

TABLE 1-1. EQUIPMENT SPECIFICATIONS

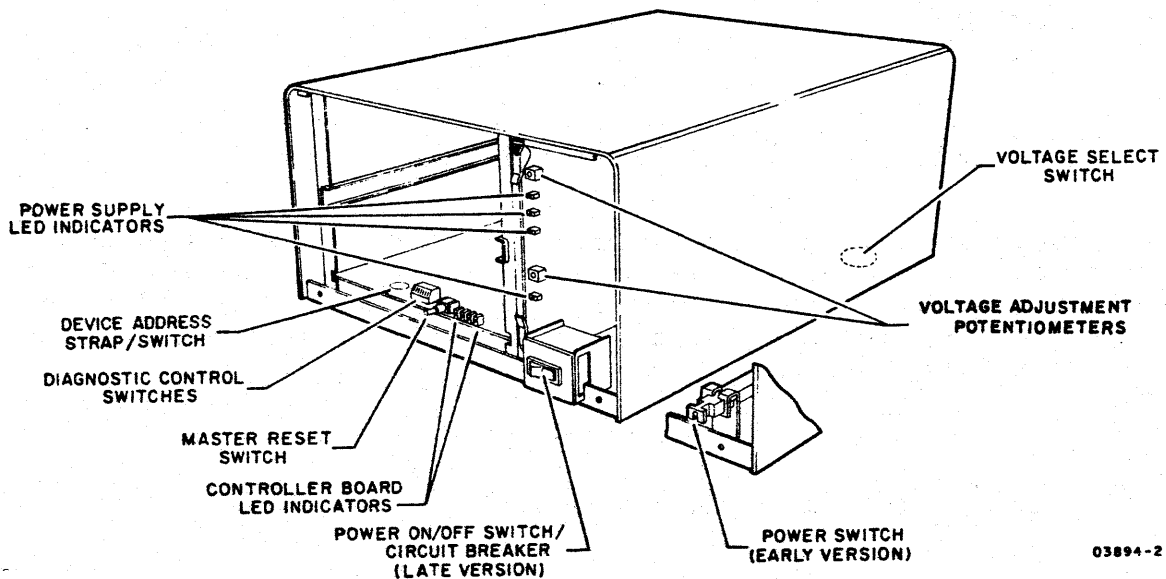
CHARACTERISTIC	SPECIFICATION
Dimensions: Height Width Depth	202.85 mm (7.99 in) 381 mm (14.99 in) 502.5 mm (19.78 in)
Weight: FA501-A/C (60-Hz primary) FA501-B/D (60-Hz primary) BR810-A (60-Hz secondary) BR810-B (50-Hz secondary)	16.78 kg (37 lb) maximum 20.19 kg (44.51 lb) maximum 16.33 kg (36 lb) maximum 19.73 kg (43.5 lb) maximum
Power Requirements: (Nominal) FA501-A/C FA501-B/D  BR810-A  BR810-B	120 V ac, 60 Hz, 1.4 A, 0.18 kW maximum 220/240 V ac, 50 Hz, 0.8 A, 0.19 kW maximum  120 V ac, 60 Hz, 1.2 A, 0.16 kW maximum  220/240 V ac, 50 Hz, 0.68 A, 0.16 kW maximum
Temperature: Operating Nonoperating Change/h	10°C to 32°C (50°F to 90°F) -34°C to 66°C (-30°F to 150°F) 6.7°C (12°F)
Relative Humidity: Operating Nonoperating Change/h	10% to 80% 5% to 95% 10%
Operating Altitude:	3000 m (9850 ft) maximum
Heat Dissipation (Air):	555 Btu/h (161.3 W) maximum, fan cooled

TABLE 1-1. EQUIPMENT SPECIFICATIONS (CONTD)

CHARACTERISTIC	SPECIFICATION
Disk Storage Capacity:*	<u>Double Density</u>
Bytes/Track	10 416
Bytes/Cylinder**	20 832
Bytes/Surface	802 032
Bytes/Disk**	1 604 064
Bits/Byte	8
Transfer Rate:*	<u>Double Density</u>
	500 k b/s
	62.5 bytes/s
Seek Time:	3 ms
Head Stabilization Time:	20 ms
Head Load Time:	40 ms
Disk Rotation:	360 r/min <u>+3.5%</u>
Latency:	
Maximum	166.7 ms
Average	83.3 ms
Recording Method:	Modified Frequency Modulation (MFM)
<p>*Storage capacity and data transfer rates are a function of the formatting used on the disk and the programming of the controller.</p> <p>**Applies to double-sided disk only.</p>	



This section describes the controls and indicators of the flexible disk subsystem. Locations are shown in figure 2-1. Refer to the Micro Plato user's installation guide and Micro Plato instructional flexible disk or the Control Data 110 Microcomputer System User Installation and Diagnostics Manual for information on associated operating programs (see preface for publication/part numbers).



03894-2

Figure 2-1. Control and Indicator Locations

### VOLTAGE SELECT SWITCH

The voltage select switch is present on 220/240-V, 50-Hz units only. The switch is located on the bottom of the cabinet and selects taps on the transformer primary winding to match the input site voltage available. A metal plug covers the access hole.

### POWER ON/OFF SWITCH/CIRCUIT BREAKER

Two versions of the Power On/Off switch/circuit breaker exist. Early units have the switch/circuit breaker mounted toward the

rear of the unit with a connecting rod attached to a push/pull control knob at the front of the unit. Power is applied by pulling the knob forward and power is removed by pressing the knob in. Later units have a rocker switch/circuit breaker mounted on the front of the unit.

A power application initializes all internal control logic circuits, and if bit 27 of the diagnostic control switches is down, initiates the self-test diagnostics.

The circuit breaker provides necessary overload protection for the subsystem.

#### DEVICE ADDRESS STRAP (PRIMARY UNITS ONLY)

The subsystem device address is wired to position 7 by the device address strap at the front of the controller board. In early units the subsystem device address is established by a 10-position binary-coded-decimal rotary switch at the front of the controller board.

#### MASTER RESET SWITCH (PRIMARY UNITS ONLY)

Pressing the Master Reset switch reinitializes the operating program. Holding the switch pressed more than three seconds, reinitiates the self-test diagnostics (if selected), and reloads the operating program into RAM memory. The operating program is loaded from the flexible disk if available. If a flexible disk is not present, the flexible disk subsystem tries to load from the PLATO system.

#### DIAGNOSTIC CONTROL SWITCHES (PRIMARY UNITS ONLY)

There are eight switches on the front of the controller board that provide manual control of the program and self-test diagnostics. Diagnostic test descriptions are provided in section 6. Control functions selected by these switches are as follows:

SWITCH 2<sup>0</sup> - Not used

SWITCH 2<sup>1</sup>

- Up - Allows result of detailed memory test to be displayed in LEDs per switch 2<sup>2</sup> setting.
- Down - Bypasses displaying result of detailed memory test selected by switch 2<sup>2</sup>.

SWITCH 2<sup>2</sup>

- Up - Allows failing memory IC within a RAM bank to be displayed in LEDs. Switch 2<sup>1</sup> must be in up position to view this display. Also note that for subsystems having more than 16K of RAM, failing memory bank must first be determined by having switch 2<sup>2</sup> down.
- Down - Allows failing memory bank to be displayed in LEDs. Switch 2<sup>1</sup> must be in up position to view this display.

SWITCH 2<sup>3</sup>

- Up - Bypasses test 7 (write/read on disk) of diagnostics.
- Down - Enables execution of diagnostic test 7.

SWITCH 2<sup>4</sup> and 2<sup>5</sup>

These switches define what banks of RAM are installed:

<u>Switch 2<sup>5</sup></u>	<u>Switch 2<sup>4</sup></u>	<u>RAM BANKS AVAILABLE</u>	<u>ADDRESS RANGE (HEX)</u>
Down	Down	1 (16K)	4000 - 7FFF
Down	Up	1, 2 (32K)	4000 - BFFF
Up	Down	1, 2, 3 (48K)	4000 - FFFF
Up	Up	0, 1, 2, 3 (64K)	0000 - FFFF

All FA501-C/D units have 64K RAM; both switches 2<sup>4</sup> and 2<sup>5</sup> must be up.

## SWITCH 26

- Up - Allows looping on diagnostic tests.
- Down - Does not loop on diagnostics.

## SWITCH 27

- Up - Bypasses diagnostic test execution.
- Down - Enables execution of the diagnostics except when switch 20 is up.

## LED INDICATORS

Primary units have four red LED indicators on the controller board that are visible through holes in the front panel. The LEDs are used by the self-test diagnostics to indicate detected errors. LED 23 (leftmost) indicates a diagnostic error and LEDs 20 through 22 identify the failing memory bank or IC as determined by the settings of switch 20, 21, 22, and 27 of the diagnostic control switches.\* At successful completion of the diagnostics, LED 20 is assigned as the power-on indicator. These LEDs are also user programmable.\*\*

Both primary and secondary units have four red voltage LEDs on the power supply PC board. The front panel must be removed to view the indicators. These LEDs indicate presence of +24 V, +12 V, +5 V, and -5 V at the power supply outputs. Note that a lit LED does not conclusively indicate that the correct voltage is present, only that there is sufficient voltage to bias the device on.

Two adjustment potentiometers are also on the power supply PC board. These provide for adjusting the +24-V and +5-V power supply outputs.

---

\*LEDs 20 through 22 define which test section has failed. If diagnostic control switch 21 is up and there is a memory error, then LEDs 20 through 22 identify the failing memory bank or IC depending on setting of switch 22.

\*\*After completion of the self-test diagnostics, the operating system uses LED 23 as an Error indicator, LED 22 as a Read indicator, LED 21 as a Write indicator, and LED 20 as a Power-on indicator.



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This section provides information on packaging, installation, and checkout of the flexible disk subsystem.

CAUTION

Control Data 110 Terminal Subsystem users must use installation, checkout, and diagnostics procedures described in Control Data 110 Microcomputer System User Installation and Diagnostics Manual.

CAUTION

Observe MOS circuit handling precautions (described in section 6 of this manual) when handling or packaging the controller board.

PACKAGING

The flexible disk subsystem is packaged for shipment using foam-in-place chemicals (figure 3-1). If the subsystem is to be reshipped it must be packaged as it was originally received from the factory. Use the existing packing materials or if not available, order new packing materials from CDC Corporate Traffic. Request pre-formed packing materials for the FA501/BR810 per packing instructions 41039800. Packaging materials may be obtained from:

Control Data Corporation  
Corporate Traffic  
8100 34th Avenue South  
Minneapolis, Minnesota 55440

When returning other assemblies for repair, use the packaging material that the spared assembly was shipped in.

NOTE

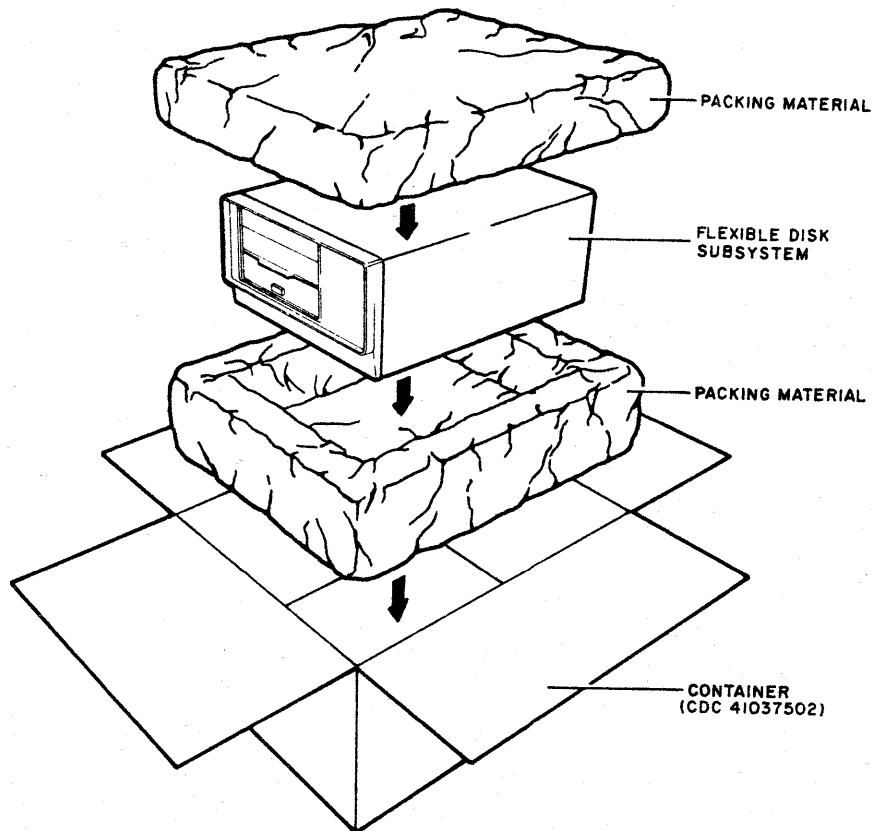
When shipping any disk drive be sure to insert the cardboard head-protect flexible disk into the drive unit.

## INSTALLATION

This subsection provides information for installing the flexible disk subsystem (primary and secondary units) and for field installation of the RAM options if applicable to the primary unit.

### NOTE

Selective FCO CD14283 must be installed if the disk is to be used on an IST-II with a serial number below 3000. This FCO provides a new ROM with a disk loader. The part number for FCO CD14283 is 66202932.



03896-1

Figure 3-1. Flexible Disk Subsystem Packaging

#### SUBSYSTEM INSTALLATION

Install the flexible disk subsystem per the following. Procedure numbers used in the steps refer to specific procedures contained in section 6B of this manual.

1. Unpackage subsystem (refer to figure 3-1), and move to desired location. Remove cardboard head-protective flexible disk from drive unit and store with subsystem packaging materials. Note that secondary unit may be stacked on top of primary unit or primary unit may be stacked on top of secondary unit or units may be placed side-by-side if desired.
2. Inspect for any shipping damage.
3. For 50-Hz units, verify that Voltage Select switch (bottom of cabinet, metal plug covers access hole) is set



correctly to match site ac primary input voltage as follows:

<u>Switch Position</u>	<u>Voltage Range</u>
120 V	Not Used
220 V	191 V to 235 V
240 V	208 V to 257 V

NOTE

Cover unused voltage designation on ID plate (figure 3-4) with black tape.

4. This step applies to primary flexible disk units only. Remove front panel of unit (procedure 3) and locate switches at front of controller board (figure 3-2).
  - Check that device address strap is wired to address 7 as in figure 6B-4. (Set device address switch to address 7 if unit has switch.)
  - Set Diagnostic Control Switches as follows:

Switch 2<sup>0</sup> - Not used

Switch 2<sup>1</sup> - Down (bypasses displaying result of detailed memory test selected by switch 2<sup>2</sup>).

NOTE

Switch 2<sup>1</sup> must be down to display the failing test number in the LEDs. If a test 1 (memory test) failure is detected, place switch 2<sup>1</sup> up to display the specific memory bank or IC failure as selected by switch 2<sup>2</sup>.

Switch 2<sup>2</sup> - Down (allows failing memory bank to be displayed in LEDs).

Switch 2<sup>3</sup> - Up (disables running test 7 of resident diagnostics).

Switch 2<sup>4</sup> and 2<sup>5</sup> - For FA501-C/D set both switches up. For FA501-A/B set to RAM memory size available as follows (each XA243-A option adds 16K of RAM):

<u>Switch 2<sup>5</sup></u>	<u>Switch 2<sup>4</sup></u>	<u>RAM Size</u>
Down	Down	16K (Standard)
Down	Up	32K (Option)
Up	Down	48K (Option)
Up	Up	64K (Option)

Switch 26 - Down (does not loop on diagnostics).

Switch 27 - Down (enables running diagnostic tests).

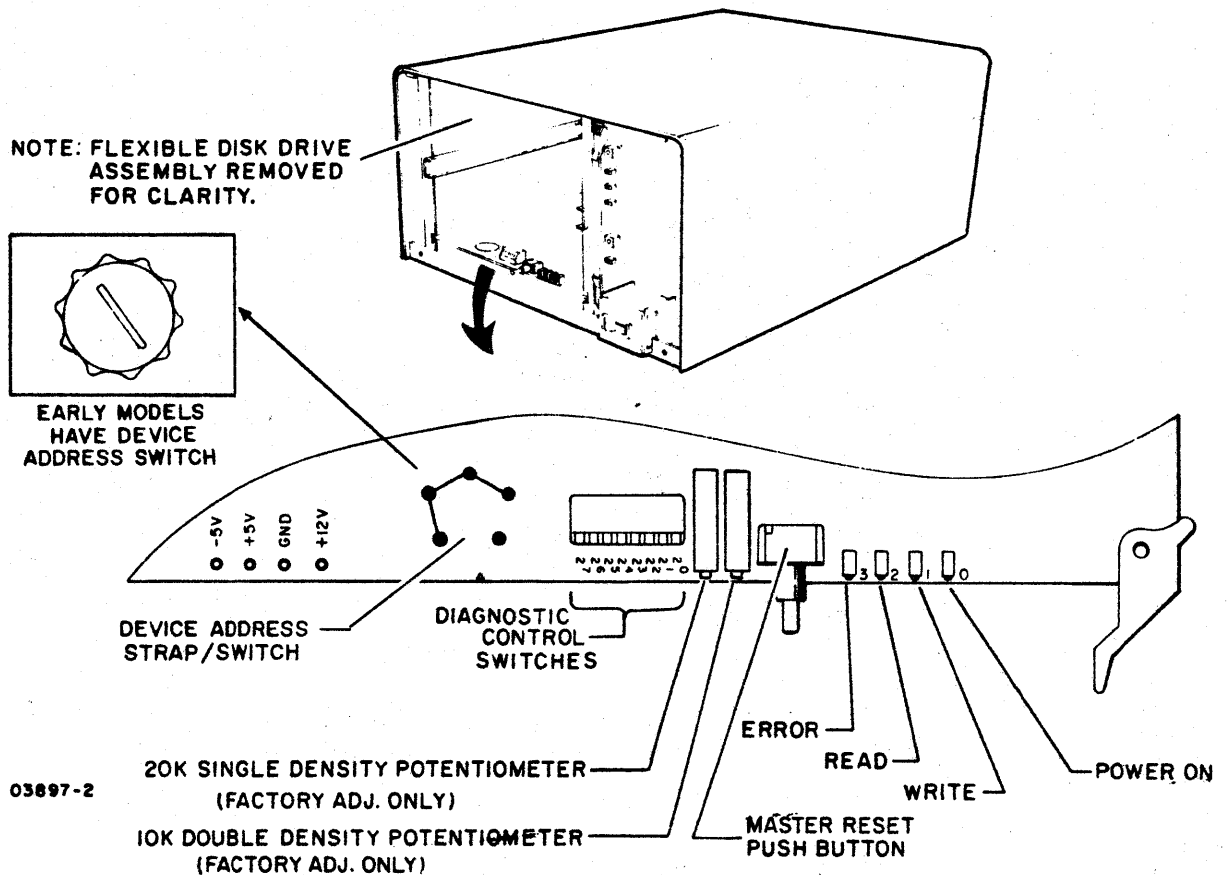


Figure 3-2. Controller Board Switches and Indicators

5. Refer to figure 3-3 and install I/O cable and terminator assembly per the following as applicable:

NOTE

A standard 25-pin RS-232-C compatible cable CANNOT be substituted for the specified I/O cable.

- Primary flexible disk unit - If there are no other devices attached to IST parallel interface channel, connect 25-pin I/O cable (CDC 61408865) from parallel interface channel of IST terminal to either 25-pin I/O connector at rear of flexible disk unit. Connect terminator assembly (type FT116-A) to other 25-pin I/O connector of drive unit. Tighten retaining screws to hold cable connectors in place.

If other devices are already attached to IST parallel interface channel, remove terminator assembly from last device on channel and connect 25-pin I/O cable (CDC 61408865) between last device and either 25-pin connector at rear of flexible disk unit. Install the terminator assembly to other I/O connector of drive unit. Tighten retaining screws to hold cable connectors in place.

- Secondary flexible disk unit - Connect 50-pin I/O cable (CDC 61408976) between 50-pin connectors of primary and secondary flexible disk units. Note that 25-pin I/O connectors are not used on secondary unit.
- Verify that no flexible disk is installed in drive unit(s).

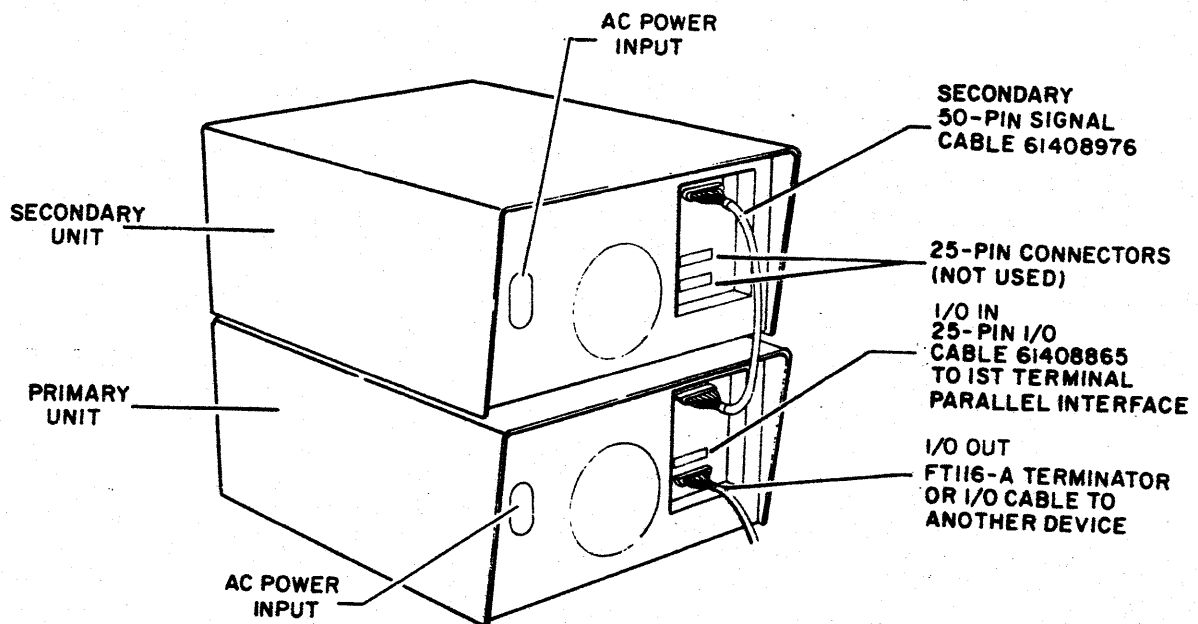


Figure 3-3. I/O Cable and Terminator Installation

6. Connect ac power cord to rear of unit, check that power on/off switch is in off position and plug ac line cord into site outlet.

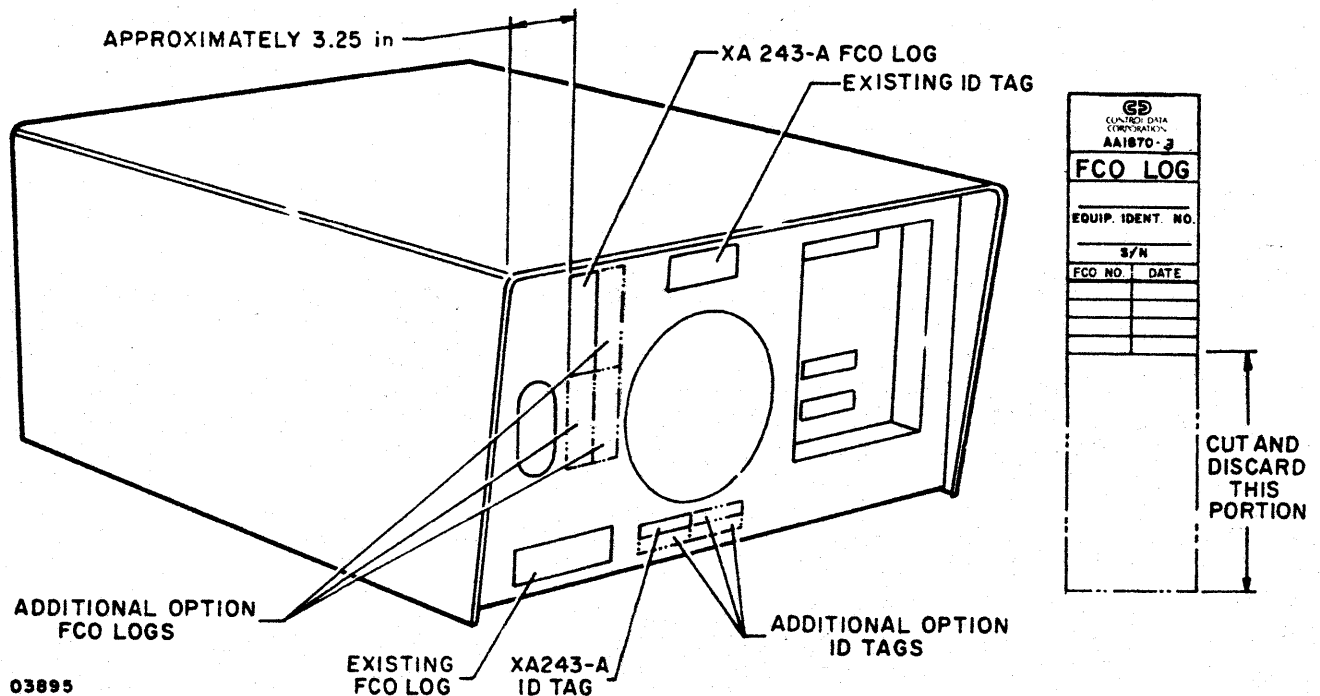
**WARNING**

Applying improper voltage to the flexible disk subsystem can damage components. Read label on back of unit for proper voltage and frequency.

**RAM OPTION INSTALLATION (Applies to FA501-A/B Only)**

Perform the following steps to install a 16K by 8-bit RAM option (XA243-A). Up to three RAM options can be installed in a primary unit to expand the memory size to a total of 64K 8-bit words. Observe MOS circuit handling precautions described in section 6 when installing RAM ICs.

1. Remove controller board from unit.
2. Install RAM ICs in existing sockets on controller board as follows:
  - First RAM option in locations C1, C2A, C2B, C3, C4A, C4B, C5, and C6.
  - Second RAM option in locations D1, D2A, D2B, D3, D4A, D4B, D5, and D6.
  - Third RAM option in locations A1, A2A, A2B, A3, A4A, A4B, A5, and A6.
3. Set Diagnostic Controls Switches 2<sup>4</sup> and 2<sup>5</sup> to total RAM size available (see step 4 of Subsystem Installation for required switch settings).
4. Reinstall controller board in unit.
5. Afix FCO log and equipment identification tag to rear of unit as shown in figure 3-4.



**Figure 3-4. RAM Option FCO Log and ID Tag Placement**



## CHECKOUT

Perform the following steps to checkout the operational capability of the flexible disk subsystem including any installed options. If any problems are encountered, refer to the SAM listings in section 6A for corrective action.

1. Apply power to disk subsystem (procedure 1) and verify that four LEDs on power supply are lit (figure 3-5).
2. Observe four LEDs at front of controller board (figure 3-2). Immediately after turning power on (at start of diagnostic test execution) all four LEDs are turned on for a short period of time as an LED test. As the self-test diagnostic executes, the lower three LEDs indicate which test is in process. LED 2<sup>3</sup> lit indicates a diagnostic test error. Note that with no flexible disk installed, LEDs 2<sup>0</sup>, 2<sup>1</sup>, and 2<sup>2</sup> should be lit and LED 2<sup>3</sup> should be unlit indicating that diagnostic is at test 7 but drive is not ready.

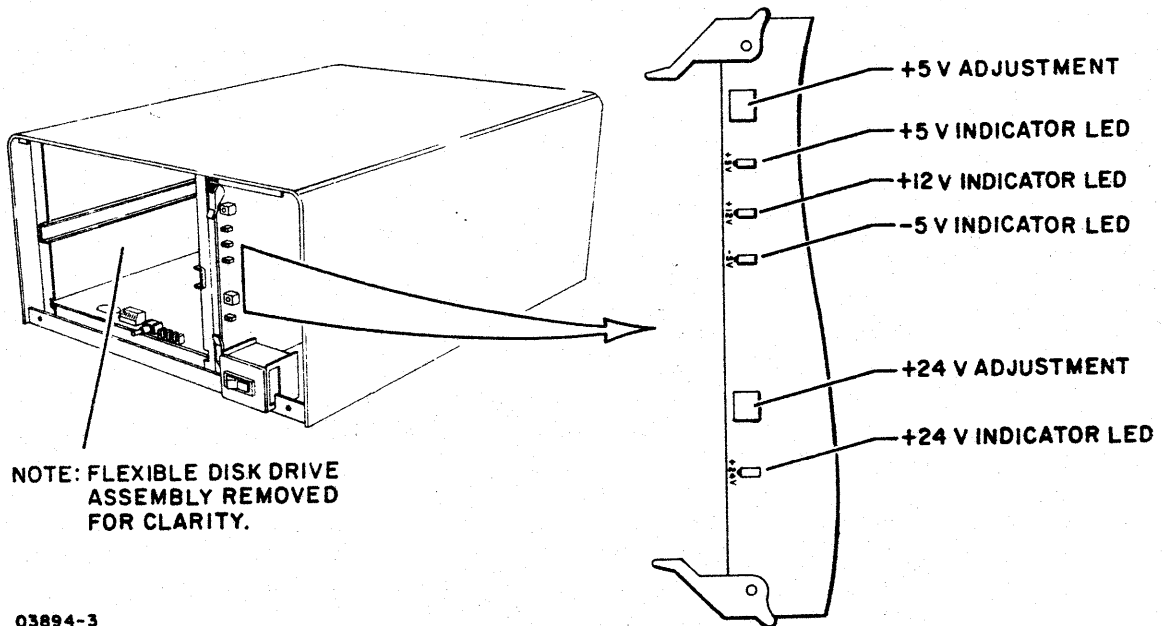


Figure 3-5. Power Supply Voltage Indicators

3. Install Micro Plato instructional flexible disk (CDC part number 76773000 A) in drive unit (procedure 2). This initiates write/read checks of test 7 (last resident diagnostic test). Upon successful completion, LED 2<sup>0</sup> remains lit and functions as a power-on indicator.
4. Remove Micro Plato instructional flexible disk from drive unit.
5. Verify that power is applied to last peripheral device connected to parallel interface channel. Note that last device must be powered on for correct operation of parallel interface channel as this device provides +5 volts to terminator.
6. Load and execute DIAG Flexible Disk Diagnostics from IST terminal as follows:

NOTE

For FA501-A/B terminals, the DIAG Flexible Disk Diagnostics only work with terminals having a 16K memory option.

NOTE

There are two modes of operation in the flexible disk subsystem that allow the terminal to load information into subsystem memory. One mode is via DMA operations and the other mode is via interrupt routines. Both operating modes are tested by the DIAG Flexible Disk Diagnostics.

For terminal log-in or diagnostic loading problems, refer to the applicable terminal hardware maintenance manual (see preface for publication number).

- a. Log into PLATO system by use of procedures outlined in Information System Terminals II and III manuals (see Preface for publication numbers).
- b. Select the Flexible Disk Diagnostic found under DIAG.
- c. Follow the DIAG instructions for test desired.

7. After successful completion of preceding tests, check that all diagnostic control switches on controller board are set as required and reinstall front panel of unit (procedure 3). If Micro Plato instructional flexible disk (CDC part number 76773000 A) is being used, additional testing can be performed through use of stored programs on this disk. Refer to Micro Plato User's Installation Guide for test information (see preface for publication number).

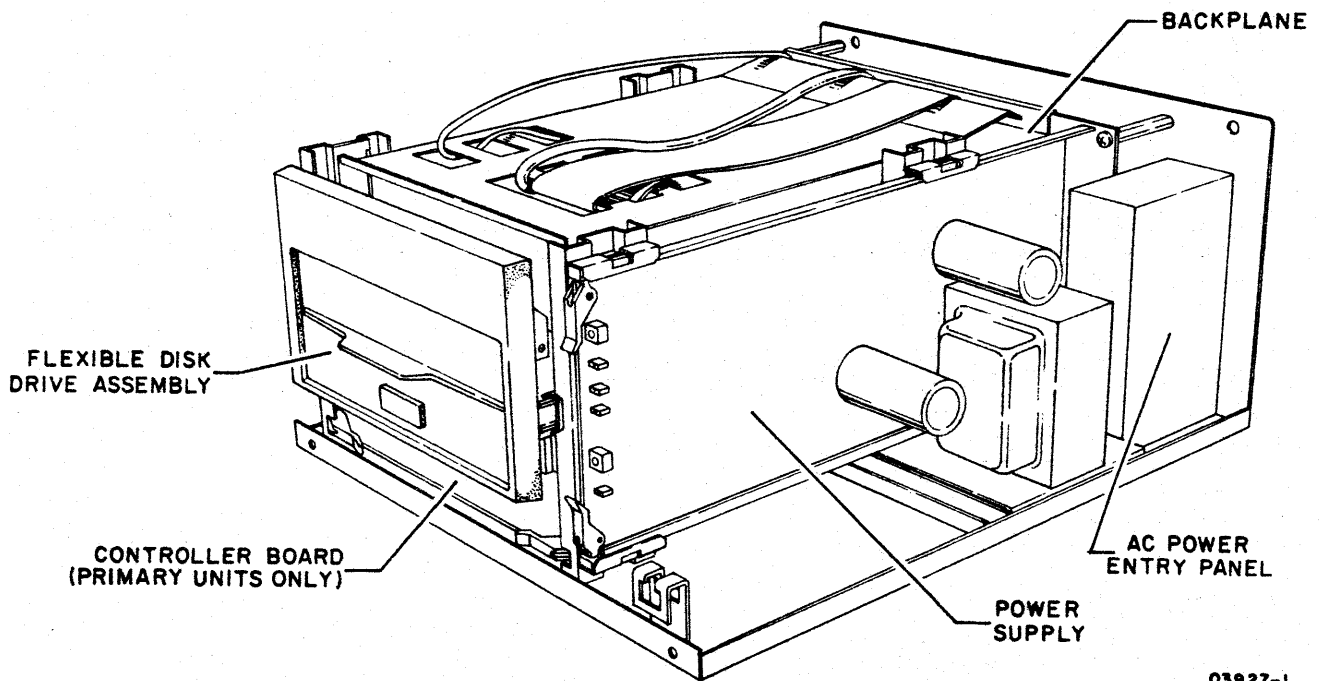


This section provides a functional description of the five major elements of the flexible disk subsystem:

- AC Power Entry Panel
- Power Supply
- Backplane
- Flexible Disk Drive (FDD) Assembly
- Controller Board (Primary Units Only)

Also provided are the connector pin assignments for the external parallel I/O channel and secondary flexible disk unit interfaces, and the connector pin assignments for the internal signals of the flexible disk subsystem.

Refer to figure 4-1 for location of the major elements within the subsystem and to figure 4-2 for a block diagram of the subsystem configuration.



03927-1

NOTE: COVER AND FRONT  
PANEL REMOVED  
FOR CLARITY.

Figure 4-1. Major Elements of Subsystem

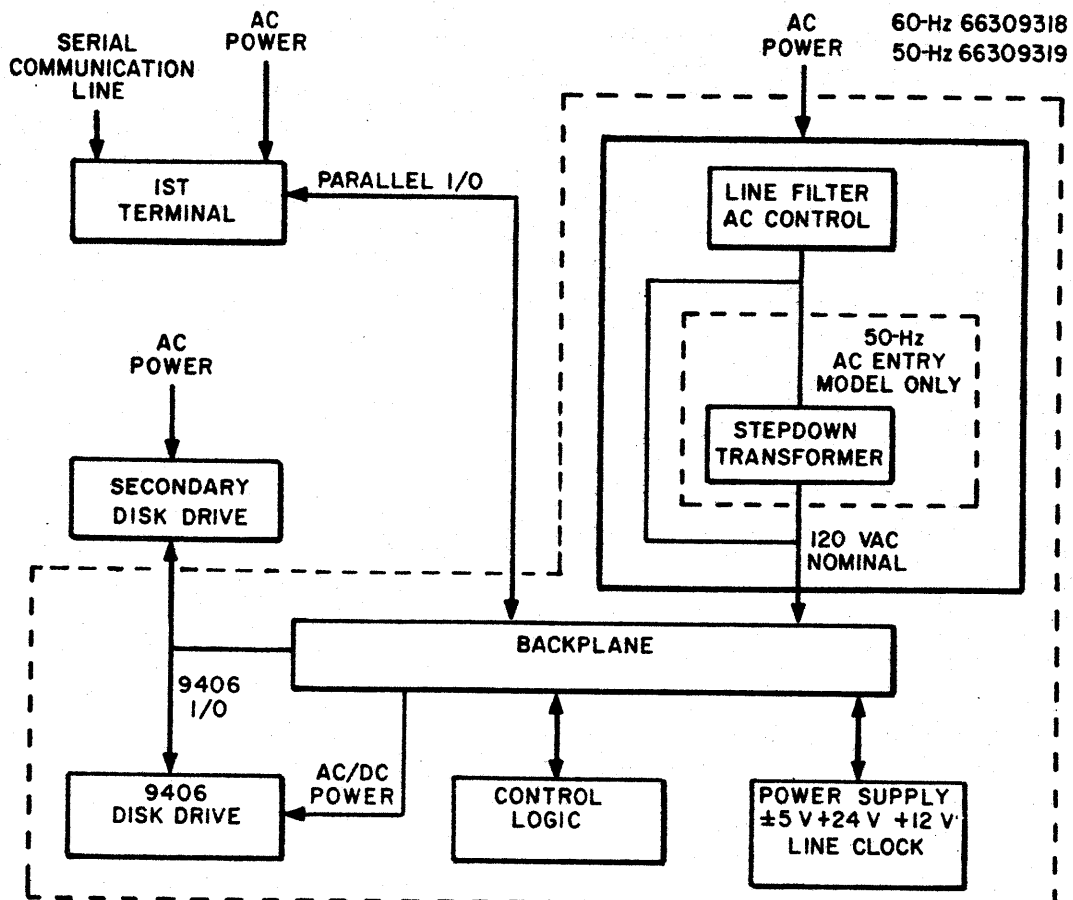


Figure 4-2. Subsystem Block Diagram

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### AC POWER ENTRY PANEL

The ac power entry panel contains an RFI line filter and a detachable ac power cord. A separate ac power entry panel is used for the 60-Hz and 50-Hz equipments. The 50-Hz panel also contains a step-down transformer and a 220/240-volt selector switch. Early versions of both the 60-Hz and 50-Hz panels contained the primary power circuit breaker. Later versions have the circuit breaker mounted at the front of the unit.

### POWER SUPPLY

The power supply is a switching supply contained on a single PC card. Input voltage is 120 V ac nominal. The 50-Hz units require an external step-down transformer (provided by the 50-Hz ac entry panel) to lower the 220-V/240-V ac input voltage to 120 V. The power supply provides the following nominal dc output voltages and full-load currents:

- +12 V at 0.45 A
- -5 V at 0.1 A
- +5 V at 5 A
- +24 V at 2 A

The power supply is divided into two basic sections, a +24-V section, and a logic voltage section for the +12-V, +5-V, and -5-V output voltages. All dc outputs have over-current protection and are not damaged by short circuits. The +5-V output has an over-voltage sensing circuit that shuts off all outputs when the +5-V output rises between +5.5 V to +6.0 V. No other outputs have over-voltage protection.

The input ac line voltage is full-wave rectified and is chopped at a high-frequency rate (25 to 40 kHz) through the primary of the input transformer by a switching transistor. The transformer steps down the high-frequency ac to the secondary windings. These ac voltages are then rectified and filtered to provide the various power supply outputs.

Voltage control is performed in each power supply section by a regulator IC that compares a sample of the output voltage to an internal reference voltage. A resulting error difference is used to control the conduction time of a switching transistor through an optical coupler. Only the +24-V and +5-V output voltages are sensed to control the switching transistor pulse width in their respective power supply section. All other outputs have 3-pin IC regulators to regulate their output voltages.

The power supply contains four red board-edge LEDs that indicate the presence of the +24-V, +12-V, +5-V, and -5-V outputs. Two adjustment potentiometers are also provided for adjusting the +24-V and +5-V outputs. Test points on the board edge of the controller board are to be used when performing the +5-V alignment procedure. The +12-V, +5-V, and -5-V test points are available on the controller board edge.

#### BACKPLANE

A printed-circuit mother-board backplane provides the internal signal and power connections for the various modules of the disk subsystem and provides the external I/O channel interface connections.

## FLEXIBLE DISK DRIVE (FDD) ASSEMBLY

The flexible disk drive (FDD) assembly is a random-access, data-storage device that writes and reads data from a rotating flexible disk. All input/output data and control operations are performed under microprocessor control from the controller board. The basic function of the drive assembly is to indicate to the controller when it is ready for operation, and respond to controller commands to:

- Receive and generate control signals
- Position the read/write heads to selected tracks
- Write or read data on the flexible disk when selected

Signals received and transmitted by the FDD are shown in figure 4-3. All signals received by the FDD are gated with Unit Select so that no stepping, reading, or writing can be performed on an unselected FDD. Also, all signals generated within the FDD, except the Ready signal, are gated with Unit Select so that no signals can be transmitted from an unselected FDD.

Controller Step and Direction commands initiate a track-seek operation on a selected FDD. The FDD transmits Index pulses as long as it is selected. The selected FDD also transmits a Track 00 signal to the controller whenever the read/write heads are at Track 00.

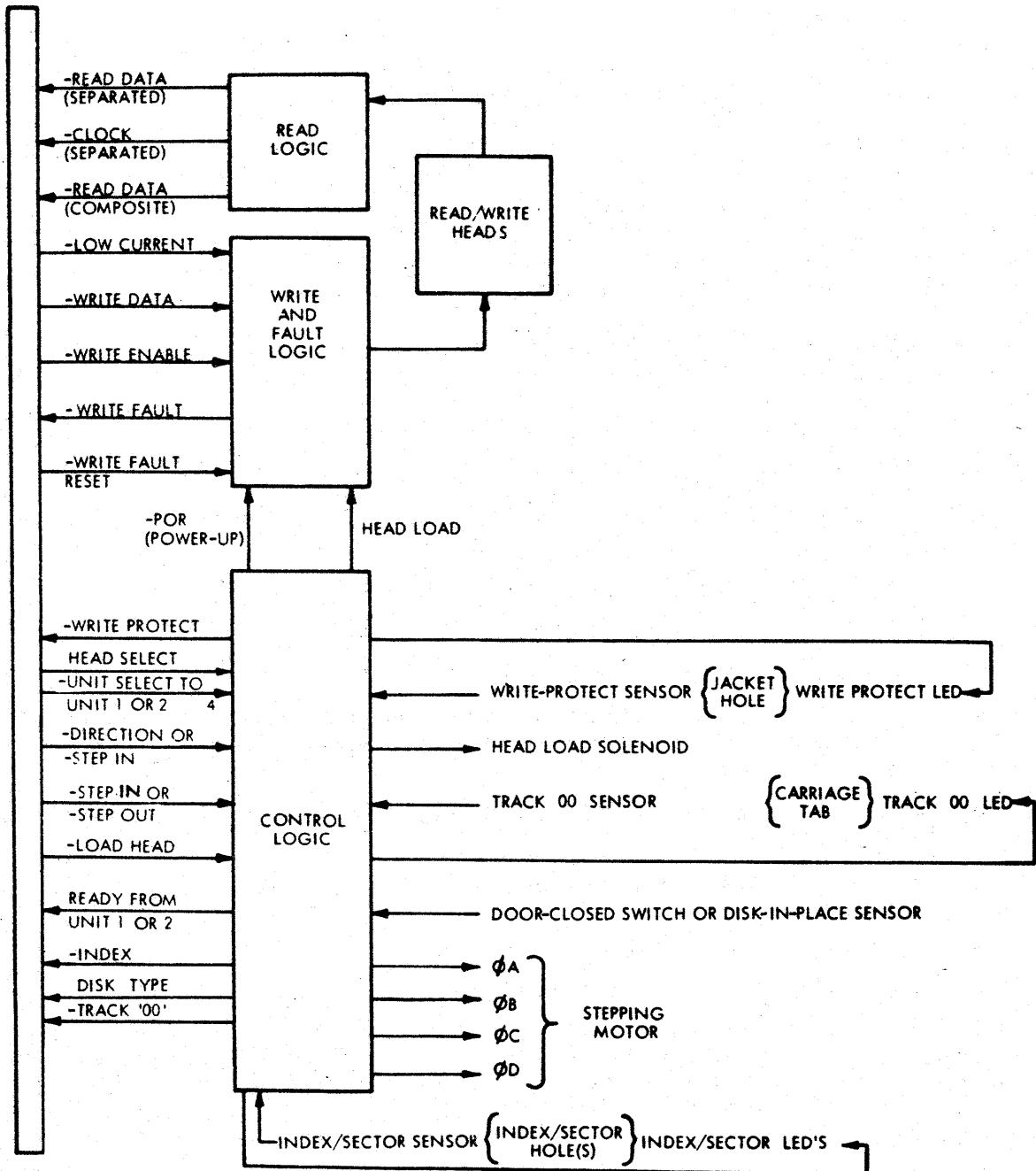
Positioning of the carriage-mounted read/write heads is accomplished by a band-driven stepper motor. Each step command increments the stepper motor which moves the band. The band increments the read/write heads one track position for each step command.

During a write operation, the selected FDD receives Head Select, Write Enable, Write Data, and Low Current (Track 43 or greater) signals. If a write fault occurs, a Write Fault signal is transmitted to the controller. During a read operation, the selected FDD receives a Head-Load command. The Write Enable line remains high thereby specifying a read operation and the FDD transmits Composite Read Data signals to the controller.

A read or write operation begins by placing the read/write heads in contact with the flexible disk with a Head-Load command at the desired track. To write on the disk, a Write Enable is sent by the controller to condition the write logic. The write current then in the head reverses polarity synchronously with



the low-to-high transitions of the Write-Data pulses from the controller. The current reversals cause magnetic flux reversals on the desired disk track. Erasure of previously recorded data is simultaneously accomplished during the writing operation in addition to a delayed-tunnel erase, which ensures disk interchangeability.



03856-1

Figure 4-3. Drive Assembly Functional Block Diagram

To read from the flexible disk, magnetized bits in the format of the pre-recorded data are sensed by the read/write heads. This signal is amplified, digitized, and transmitted to the controller.

Refer to the 9406 Flexible Disk Drive Assembly Hardware Maintenance manual for additional information (see preface for publication number).

#### CONTROLLER BOARD (PRIMARY UNITS ONLY)

The controller board is present only in the primary units. A single controller board provides control and directs all operations of both a primary and optional secondary unit. This is accomplished by interfacing the controller board to both 9406 Disk Drive assemblies (primary and secondary) connected in parallel via an external 50-pin signal cable.

Large-scale integrated circuits (LSI) are used in all major areas of the controller's operation. This includes:

- A Z80A microprocessor clocked at 4 MHz.
- A 9517A-4 direct-memory-access (DMA) controller.
- A 1791A-02 flexible-disk controller (FDC).
- Two 2716 (2K by 8-bit) erasable programmable read-only memories (EPROM).
- A Z80 Counter/timer circuit (CTC).
- A 9519A interrupt controller.
- 16K by 8-bit bytes of random access memory (RAM). IC sockets are available for expansion to 64K by 8-bits for the FA501-A/B.
- 64K by 8-bit bytes of random access memory (RAM) for the FA501-C/D.
- Three 74LS374 8-bit data latches for I/O data, status, and commands.

The controller board also includes eight switches that can be read by the microprocessor for control and option-available information, a device address strap for the PLATO parallel I/O channel, a master reset switch that provides its status to the control program, and four LEDs that provide visual status indications.

A detailed block diagram of the controller board is shown in figure 4-4. The following paragraphs describe the major logic circuits. Refer to the applicable vendor manuals for details of operation as required.

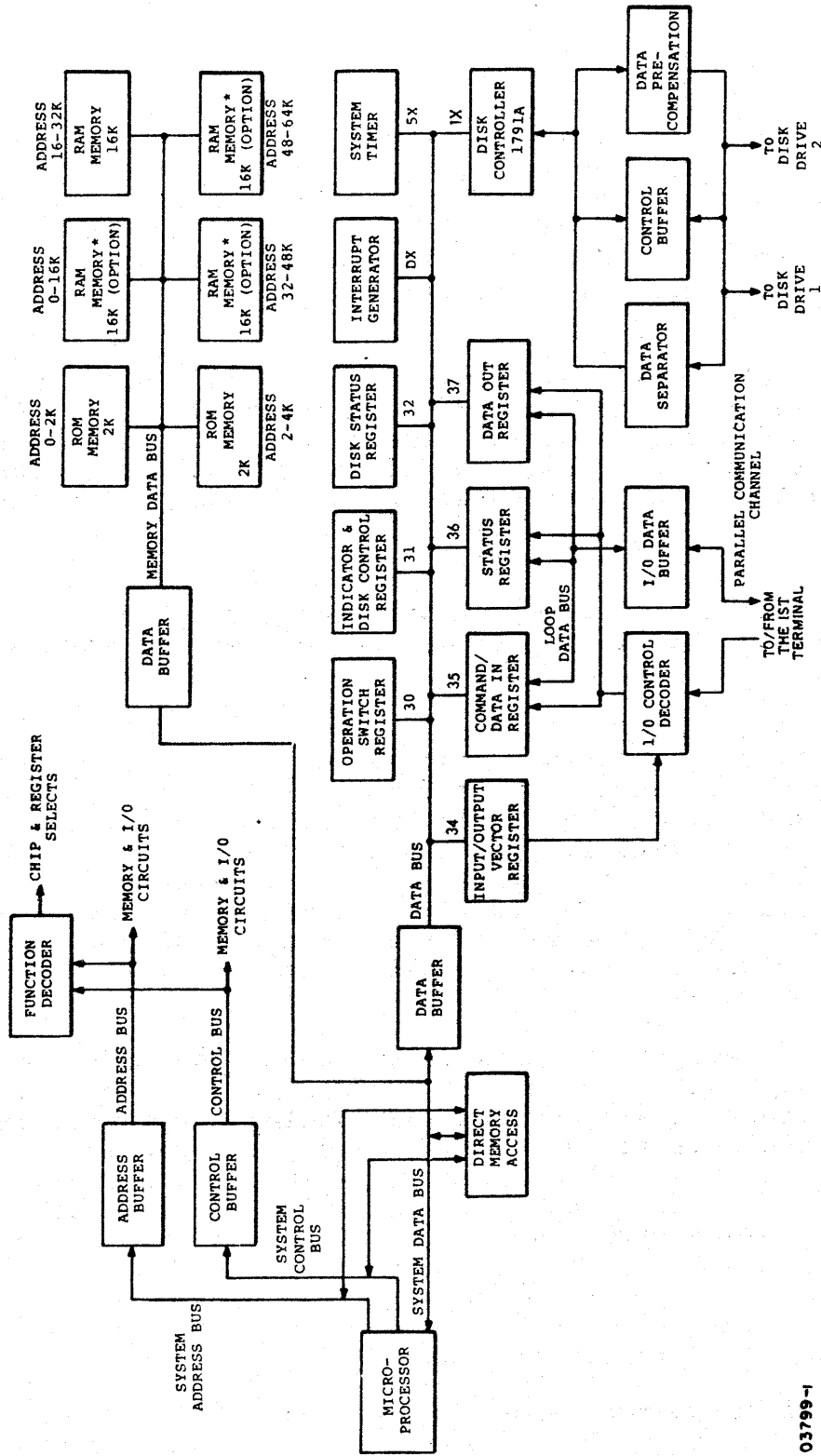


Figure 4-4. Controller Board Block Diagram

03799-1  
 \*STANDARD ON FA501-C/D

## Z80A MICROPROCESSOR

A Z80A microprocessor is used as the major control element of the module. The Z80 provides three major buses (16-bit address bus, 8-bit bi-directional data bus, 13-line control bus); 158 different instructions; 208 bits of read/write memory; two sets of data, control, and address registers; an arithmetic and logic unit (ALU); and necessary instruction decode and control logic.

As each instruction is read from memory, it is placed in an instruction register and decoded. The internal control logic performs this function and then generates all the necessary control signals to read/write data from or to the registers, controls the ALU, and provides all required external control signals.

All instructions are executed by stepping through a specific series of basic control operations applicable to a given instruction.

Each basic control operation - such as OP code fetch, memory read, memory write, etc. - takes from three to six clock periods to complete and may be lengthened to synchronize the CPU to the speed of external devices. The additional clock periods are termed wait states and increase the total instruction execution time accordingly. The CPU examines the Wait line during T2 (and every subsequent TW) of each machine cycle and adds in a wait state of one clock period if the Wait signal is active.

Accessing RAM memory on the controller board does not require any addition of wait states. The EPROM memory, used only for the initial power-on diagnostics and autoloading, requires the addition of one wait state for each memory reference. The 1791A flexible disk controller requires one wait state for each reference made to it by the Z80. The Write Fault Reset to the 9406 Flexible Disk Drive assembly requires one wait state.

### 9517A-4 DIRECT-MEMORY-ACCESS (DMA) CONTROLLER

The 9517A-4 direct-memory-access (DMA) controller is a peripheral interface IC that allows direct memory access to the subsystem RAM. Four independent DMA channels are provided. Each channel is designed to enable an external device to transfer information to or from the subsystem memory. In the flexible disk subsystem design, however, only three channels are wired for external device use. Channels 1 and 3 are both used by the 1791 flexible disk controller IC, and channel 2 is used by the PLATO parallel I/O channel. Channel 0 is not used.

Separate internal registers are provided in each channel for mode control, current address, base address, current word count, and base word count.

#### 1791A-02 FLEXIBLE DISK CONTROLLER (FDC)

The 1791A-02 flexible disk controller (FDC) performs the functions of a flexible disk formatter and controller in a single integrated circuit. The FDC controls both single-density and double-density formatting. The FDC provides a 16-bit cyclic redundancy check (CRC) with the polynomial:  $G(X) = X^{16} + X^{12} + X^5 + 1$ . The IC is designed for bidirectional one's-complemented data transfers. Therefore, all commands sent to the FDC, and status read from the FDC, must be transmitted and received by the Z80 as one's-complemented data. Data is complemented when written on the flexible disk and complemented when read off the flexible disk. Therefore, true data written to the FDC is also read from the FDC as true data.

It is possible to read and write to/from the FDC on a byte-by-byte basis for single-density storage. However, to operate in double density it is necessary to use the 9517A-02 DMA controller to maintain the proper data rate for flexible disk read/write operations.

#### 2716 ERASABLE PROGRAMMABLE READ-ONLY MEMORY (EPROM)

The 2716 EPROM is a 16 384-bit (2K by 8-bit) ultraviolet erasable and electrically programmable read-only memory. The read access time for the IC is 450 ns. The standard subsystem EPROMs uses memory addresses  $0000_{16}$  through  $0FFF_{16}$ .

The stored program in the EPROMs provides subsystem diagnostics that include LED testing, ROM checksum, LSI device testing, memory testing, disk read/write testing, autoloader, and initial PLATO parallel I/O channel interfacing with the host terminal.

## Z80 COUNTER/TIMER CIRCUIT (CTC)

The Z80 counter/timer circuit is a programmable IC with four 8-bit internal independent channels that provide counting and timing functions under control of the Z80 microprocessor. The Z80 can configure the CTC channels to operate under various modes and conditions as required. In either timer or counter mode, an 8-bit, Z80-readable down-counter indicates the number of counts-to-go until zero. Interrupts can be programmed to occur on the zero count of any channel. The interrupt logic provides automatic interrupt vectoring.

All four of the counter timer circuits have external enables that can be selected by the Z80. Three of the counters have count-zero outputs. Two of the outputs are wired to the inputs of two of the other counters. This provides the ability to cascade the network into two 8-bit counters or essentially one 16-bit counter for each two CTCs used. Each of the CTCs used as an enable to one of the other has an external logic signal wired to its own input (figure 4-5). One external input is the Head-Down-Load (HDL) signal that indicates the disk was instructed to lower its read/write head. The counters can then be programmed to time out the mechanical delay that will take place in the 9406 drive (approximately 40 milliseconds). The zero-count output is sent to the 1791 flexible disk controller IC as a status bit. This status input means that the read/write head should be on the disk surface. This status bit is called Head-Load Timing (HLT).

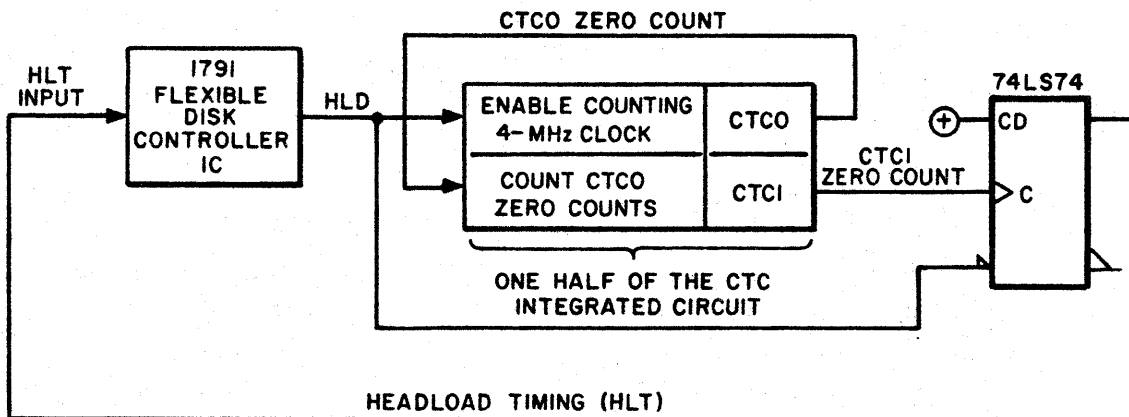


Figure 4-5. External Wiring of the CTC for Head-Load Timing

The other two CTCs of the integrated circuit are wired to allow them to be used for timing as a real-time clock. There is a circuit in the power supply that generates a pulse for every period of line voltage that occurs. This pulse is wired to the input of one of the CTCs (CTC2). The output of this CTC (CTC2) is wired as the input of the fourth CTC (CTC3). Together, these two CTCs provide a programmable down-counter 16 bits long (figure 4-6).

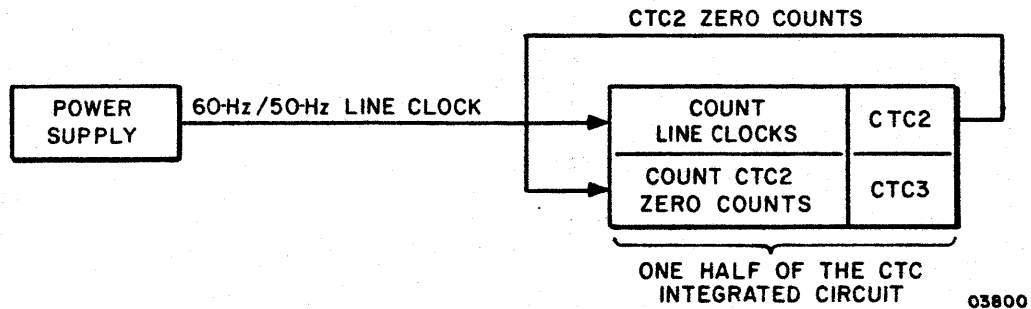


Figure 4-6. External Wiring of the CTC for Real-Time Clock

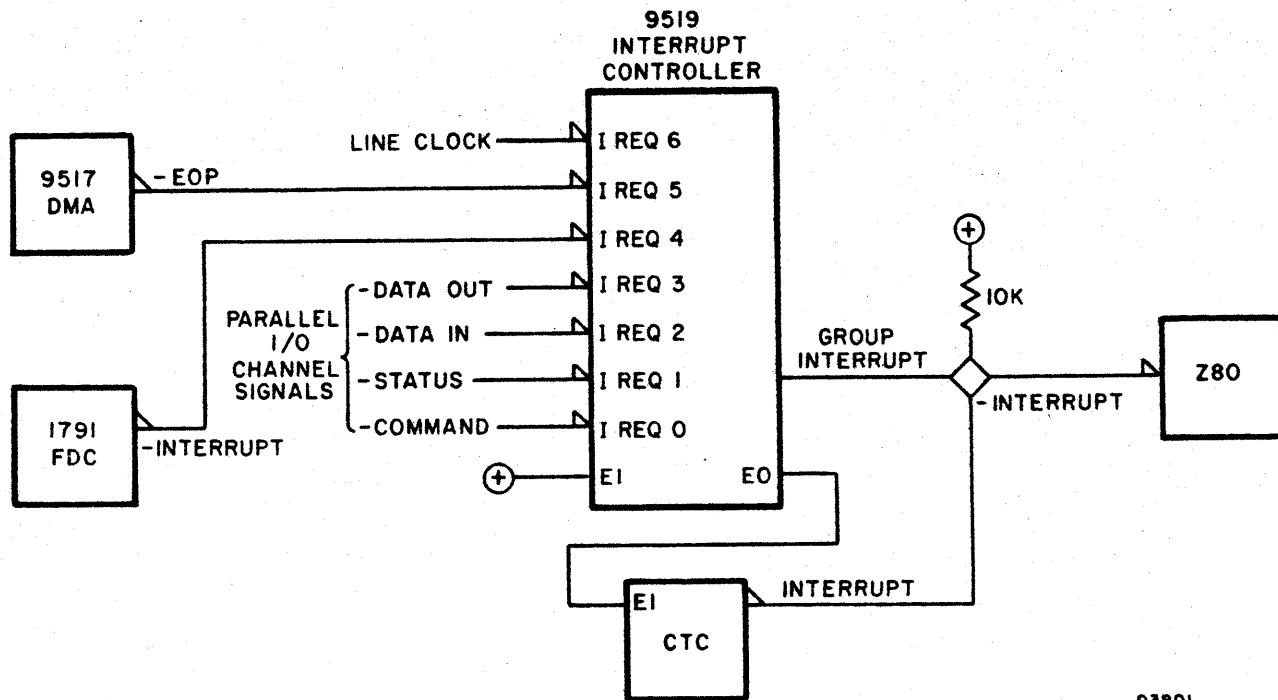
Note that it is possible to use the four CTC circuits in the CTC IC as four distinct timers by ignoring the input enables (selected only by program control) and use the four CTCs to count down the 4-MHz clock input to the IC.

#### 9519 INTERRUPT CONTROLLER

The 9519 interrupt controller can manage up to eight maskable interrupt request inputs, resolve priorities, and supply up to four bytes of programmable response for each interrupt. The controller board only uses seven of these interrupts. They are:

- IREQ7 Not Used
- IREQ6 Line Clock
- IREQ5 DMA End of Processes
- IREQ4 1791 FDC Interrupt
- IREQ3 Parallel I/O Data Out (to the terminal)
- IREQ2 Parallel I/O Data In (from the terminal)
- IREQ1 Read Status (to the terminal)
- IREQ0 Write Command (from the terminal)

The interrupt network is shown in block diagram form in figure 4-7.



03801

Figure 4-7. Flexible Disk Interrupt Network

#### EXTERNAL INTERFACE PIN ASSIGNMENTS

Tables 4-1 and 4-2 list the external interface pin assignments for the parallel I/O channel and secondary drive unit channel, respectively. Both of the interfaces use standard TTL-to-TTL circuits and logic levels. For external signal definitions, refer to the applicable hardware maintenance manual listed in the preface.

#### INTERNAL CONNECTOR PIN ASSIGNMENTS

Figure 4-8 shows the internal connector pin assignments for the flexible disk subsystem. For signal definitions, refer to the 9406 Flexible Disk Drive Hardware Maintenance Manual (publication number is listed in the preface).



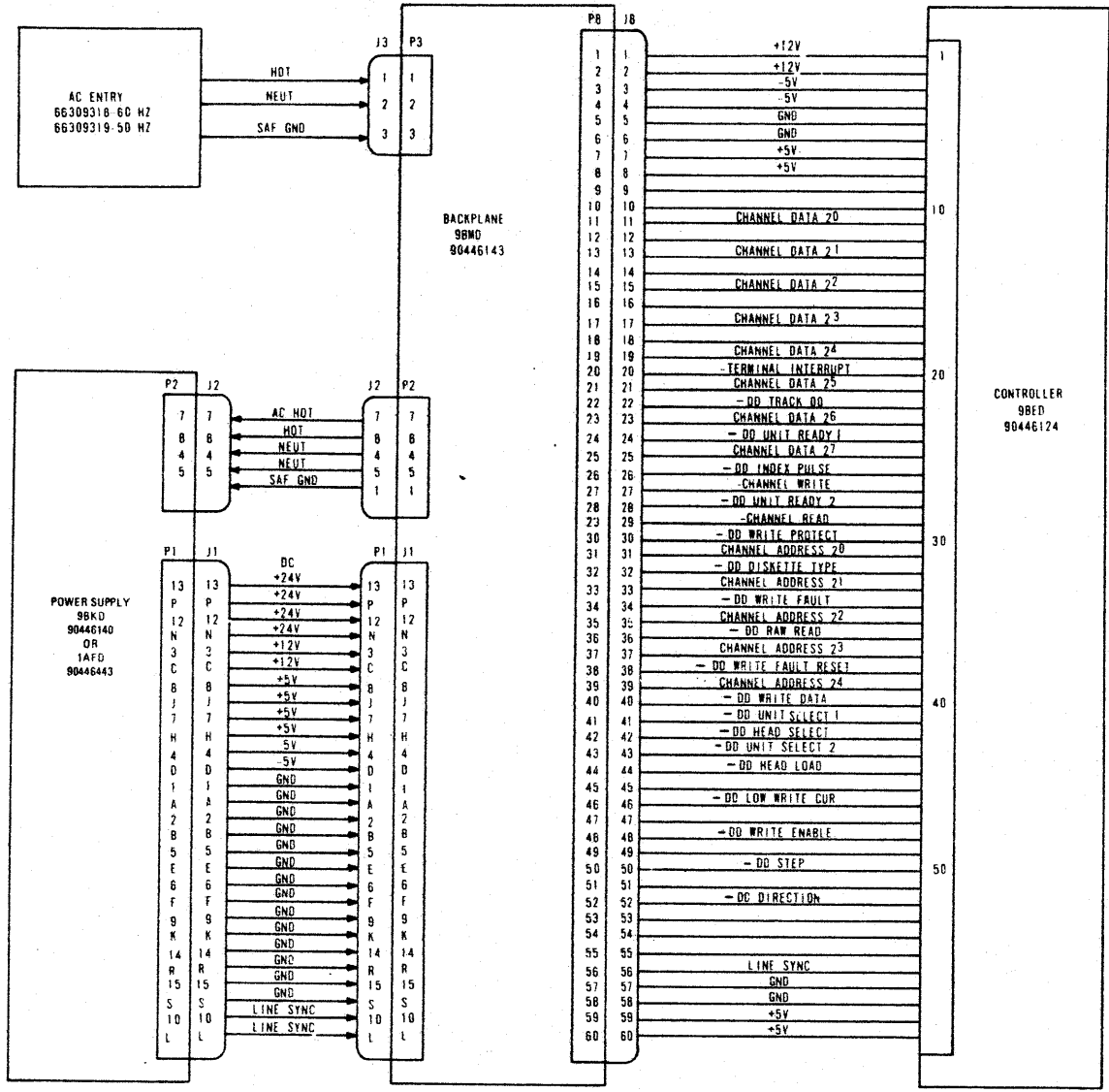
TABLE 4-1. PARALLEL I/O CHANNEL PIN ASSIGNMENTS

Signal	In/Out	Active Level	Pin Number
Data 20	Both	High	J6, J7-15
Data 21	Both	High	J6, J7-16
Data 22	Both	High	J6, J7-17
Data 23	Both	High	J6, J7-18
Data 24	Both	High	J6, J7-21
Data 25	Both	High	J6, J7-22
Data 26	Both	High	J6, J7-23
Data 27	Both	High	J6, J7-24
+5 V (Terminator only)			J6, J7-13
Address 20	In	High	J6, J7-2
Address 21	In	High	J6, J7-3
Address 22	In	High	J6, J7-4
Address 23	In	High	J6, J7-5
Address 24	In	High	J6, J7-6
Not Used (in this device)			J6, J7-7
Not Used (in this device)			J6, J7-9
-External Write	In	Low	J6, J7-8
-External Read	In	Low	J6, J7-10
-External Interrupt	Out	Low	J6, J7-12
Not Used (in this device)			J6, J7-11
Ground			J6, J7-1
Ground			J6, J7-14
Ground			J6, J7-19
Ground			J6, J7-20
Ground			J6, J7-25

TABLE 4-2. SECONDARY DRIVE UNIT CHANNEL PIN ASSIGNMENTS

Signal	In/Out	Active Level	Pin Number*
-Read Data Composite	In	Low	J5-2
-Head Load	Out	Low	J5-4
-Track 00	In	Low	J5-6
-Index	In	Low	J5-8
-Low Write Current	Out	Low	J5-10
-Step	Out	Low	J5-12
-Direction (Increase)	Out	Low	J5-14
-Write Enable	Out	Low	J5-16
-Write Data	Out	Low	J5-31
-Unit Select 1	Out	Low	J5-33
-Unit Select 2	Out	Low	J5-29
-Unit Ready Status 1	In	Low	J5-50
-Unit Ready Status 2	In	Low	J5-48
-Write Protect	In	Low	J5-42
-Head Select (low = head 1; high = head 0)	Out	Low	J5-40
-Write Fault	In	Low	J5-38
-Write Fault Reset	Out	Low	J5-36
-Diskette Type (Two Sided)	In	Low	J5-34

\*Pins 1, 3, 5, 7, 9, 11, 13, 15, 17, 18, 20, 22, 24, 26, 28, 30, 32, 35, 37, 39, 41, 43, 45, 47, and 49 are at logic ground; pins 19, 21, 23, 25, 27, 44, and 46 are open.



03932

Figure 4-8. Internal Connector Pin Assignments

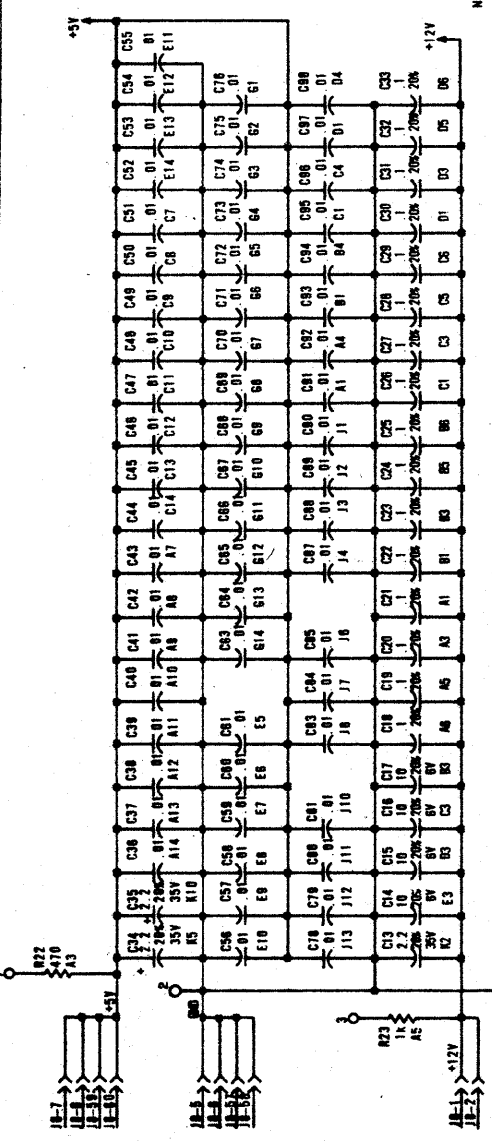


## DIAGRAMS

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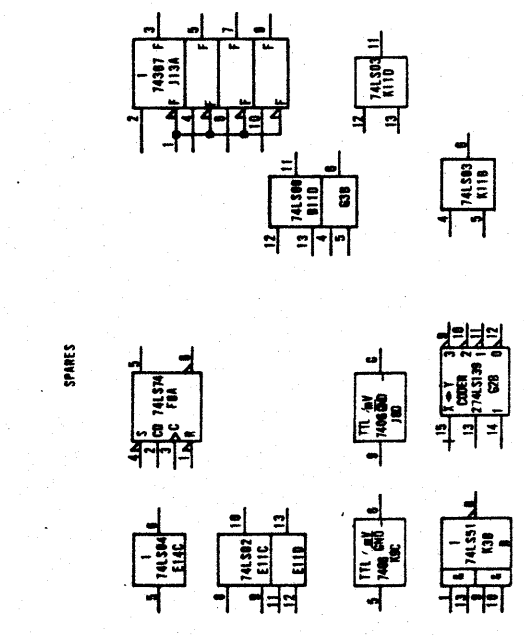
This section contains logic and schematic diagrams for the controller board (9BED), power supply (9BKD), backplane (9BMD), and ac power wiring of the flexible disk subsystem. For logic diagrams on the drive unit, refer to the 9406 Flexible Disk Drive Hardware Maintenance Manual (publication number is listed in the preface).

SHEET REVISION STATUS										REVISION RECORD				
NO	DATE	BY	REV	CO	DESCRIPTION	DATE	CHKD	APP	REV	CO	DESCRIPTION	DATE	CHKD	APP
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01	00/00													
02	00/00													
03	00/00													
04	00/00													
05	00/00													
06	00/00													
07	00/00													
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25	00/00													
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27	00/00													
28	00/00													
29	00/00													
30	00/00													



NOTES:

- OPTIONAL RAM EXPANSION IS STANDARD ON FAS01 C/D. UNLESS OTHERWISE SPECIFIED POWER AND GROUND PINS OF INTEGRATED CIRCUITS ARE AS LISTED BELOW:  
 14 PIN INTEGRATED CRTS: PIN 14 = +5V, PIN 7 = GND.  
 16 PIN INTEGRATED CRTS: PIN 16 = +5V, PIN 8 = GND.  
 24 PIN INTEGRATED CRTS: PIN 24 = +5V, PIN 12 = GND.
- CONTROL BLOCK INPUTS ARE SHOWN ONLY ONCE. BUT ARE CONNECTED IDENTICALLY TO MEN LOCATED AT B7 & C7.
- CONTROL BLOCK INPUTS ARE SHOWN ONLY ONCE. BUT ARE CONNECTED IDENTICALLY TO MEN LOCATED AT A1, A2, A3, A4, A5, & A6.
- CONTROL BLOCK INPUTS ARE SHOWN ONLY ONCE. BUT ARE CONNECTED IDENTICALLY TO MEN LOCATED AT B1, B2, B3, B4, B5, & B6.
- CONTROL BLOCK INPUTS ARE SHOWN ONLY ONCE. BUT ARE CONNECTED IDENTICALLY TO MEN LOCATED AT C1, C2, C3, C4, C5 & C6.
- CONTROL BLOCK INPUTS ARE SHOWN ONLY ONCE. BUT ARE CONNECTED IDENTICALLY TO MEN LOCATED AT D1, D2, D3, D4, D5, & D6.
- UNLESS OTHERWISE NOTED ALL LEADS TO BE P W/8171201.



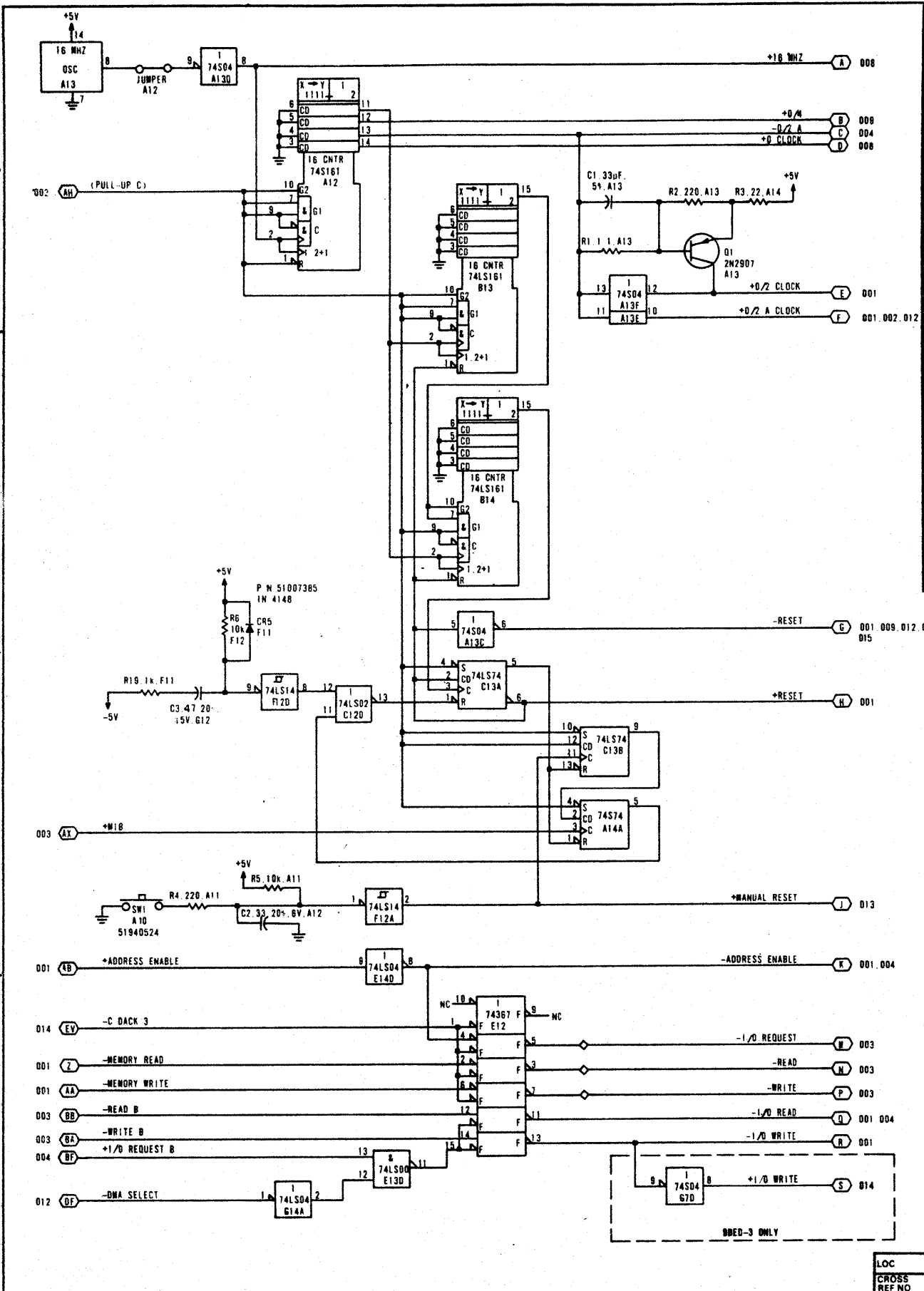
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	90446258	USED ON	07/15/80
	90446258	DWN	07/15/80
	90446258	CHKD	07/15/80
	90446258	ENGR	07/15/80
	90446258	MFG	07/15/80
	90446258	APP	07/15/80
COMPONENTS, EXCEPT AS NOTED		STATUS	
RES - 5%	ORIG	DATE	1/4/80
CAP - 10% - 20%	BT	BY	257

SCHEMATIC DIAGRAM, 9BED

DRAWING NO  
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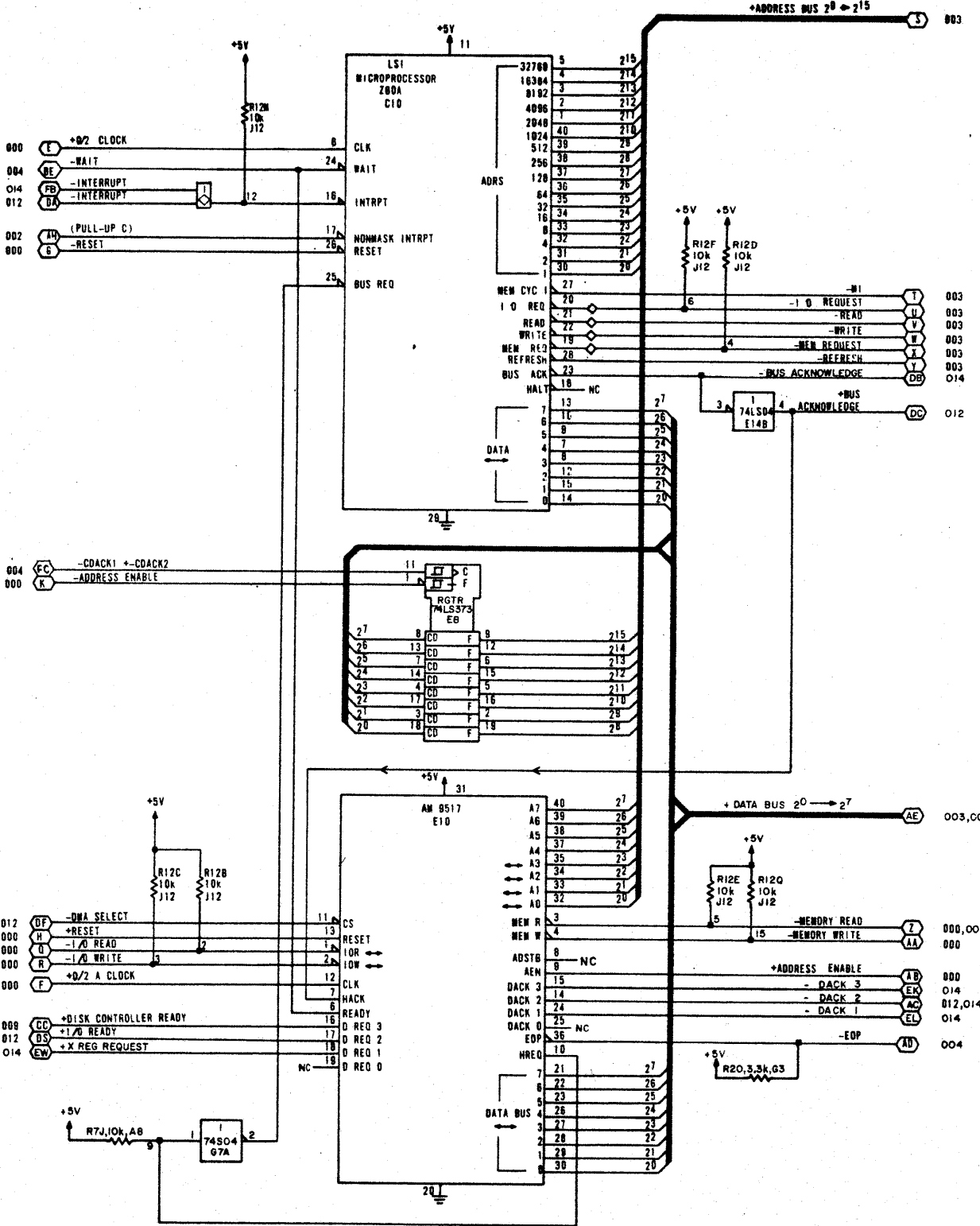
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SHEET 1 OF 18



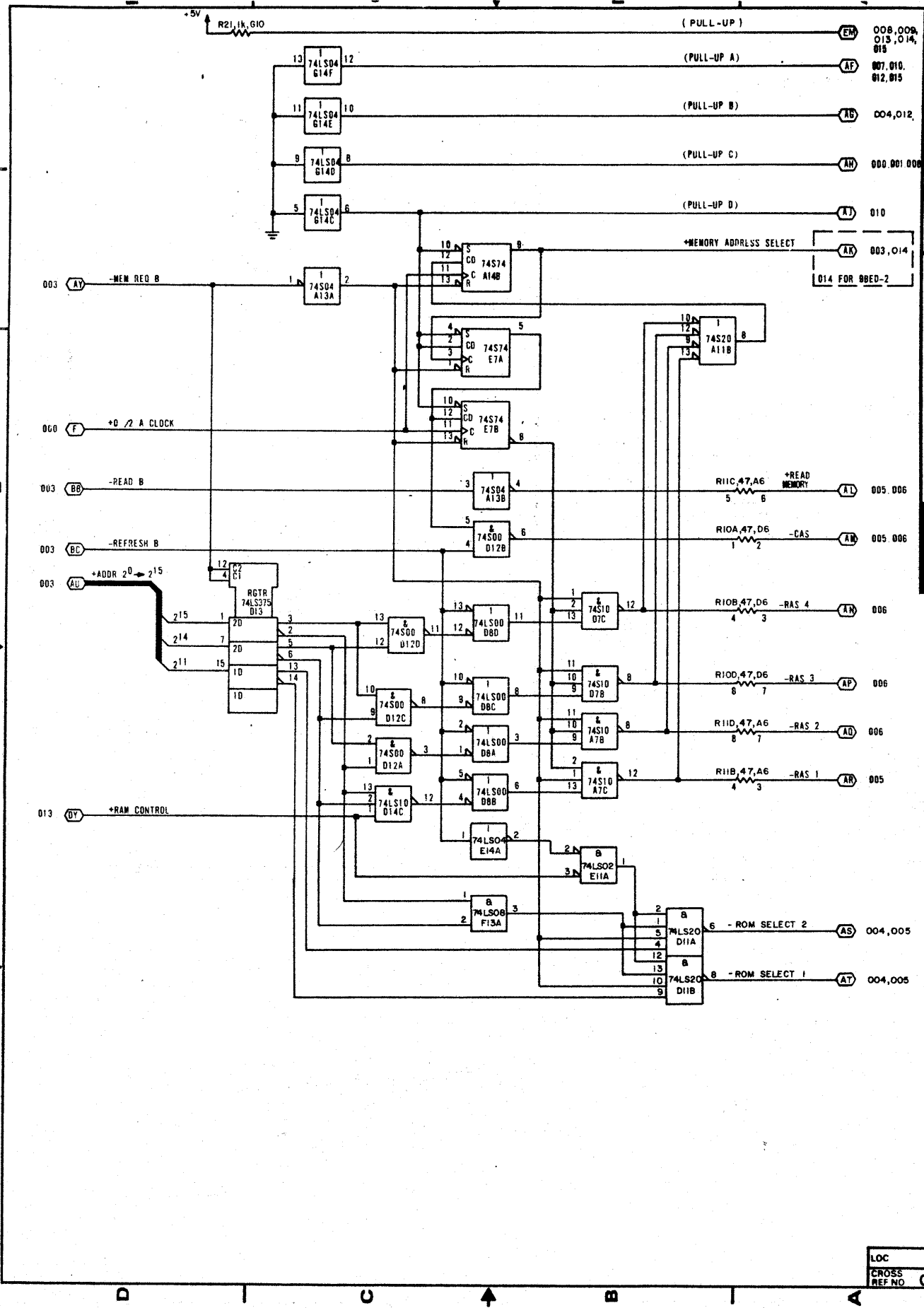
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 CROSS REF NO 000  
 SHEET 2

LOC CROSS REF NO 000

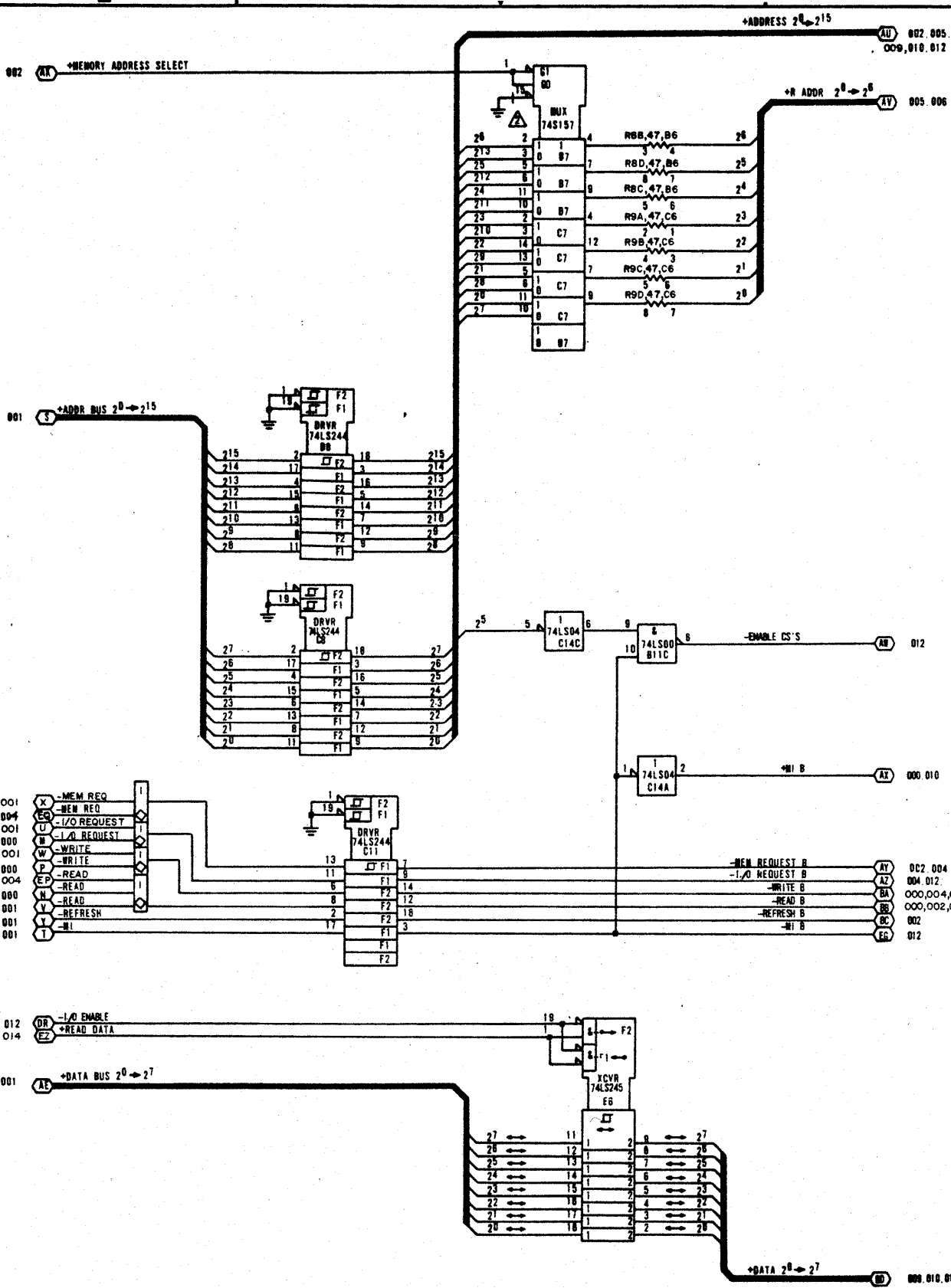




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 CODE PRINT **15920**  
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 (GB)

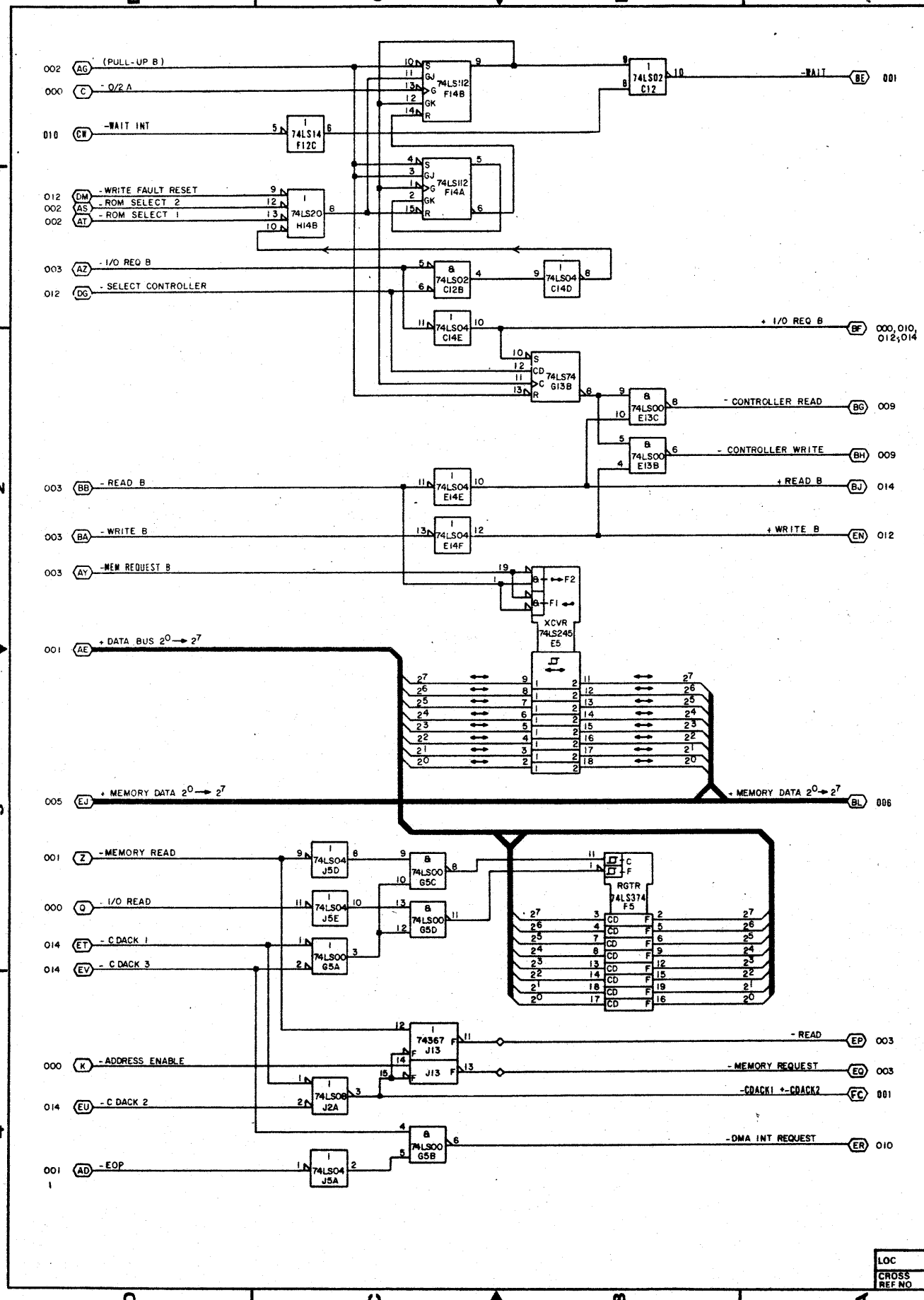


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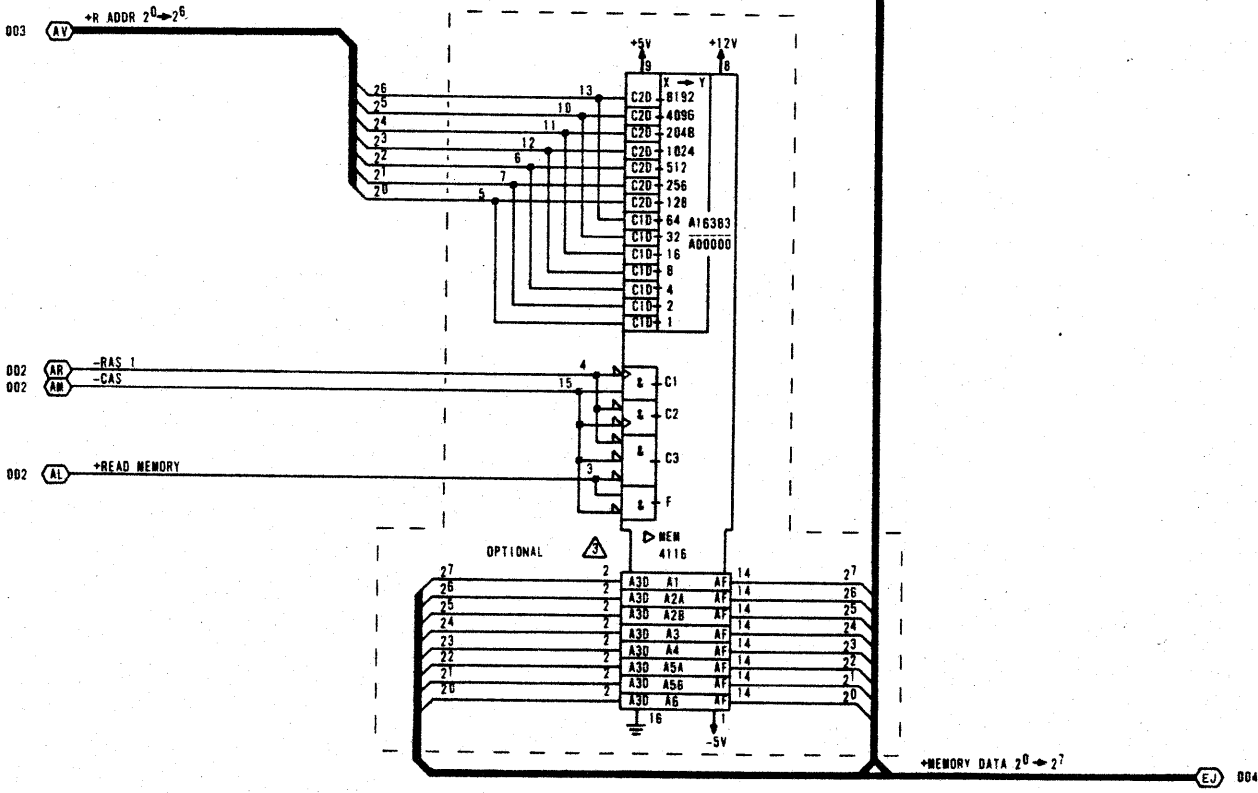
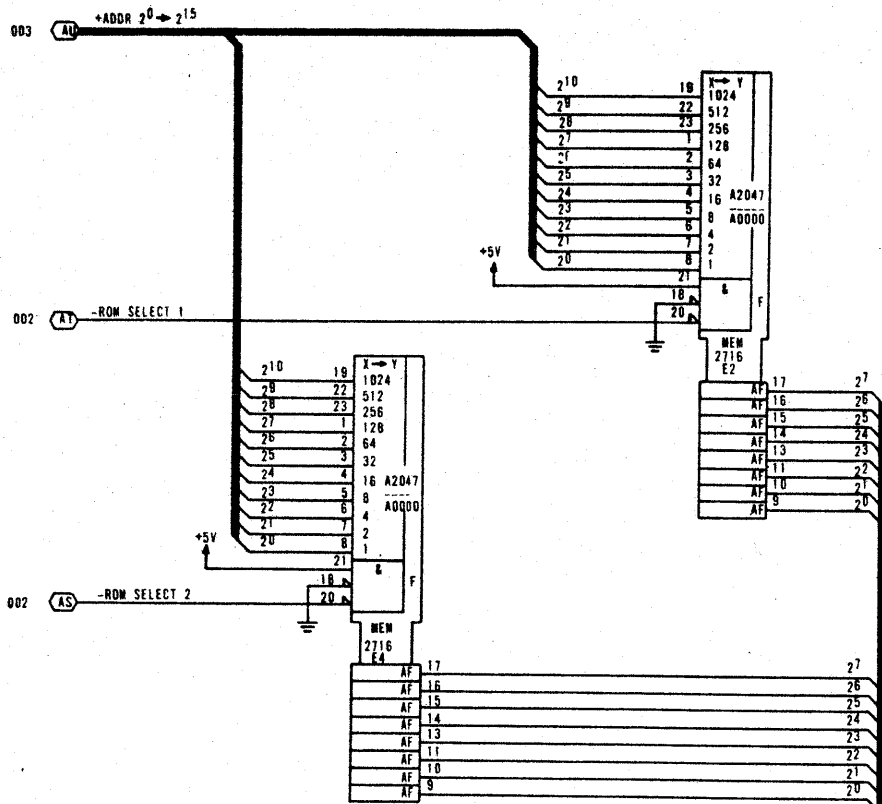


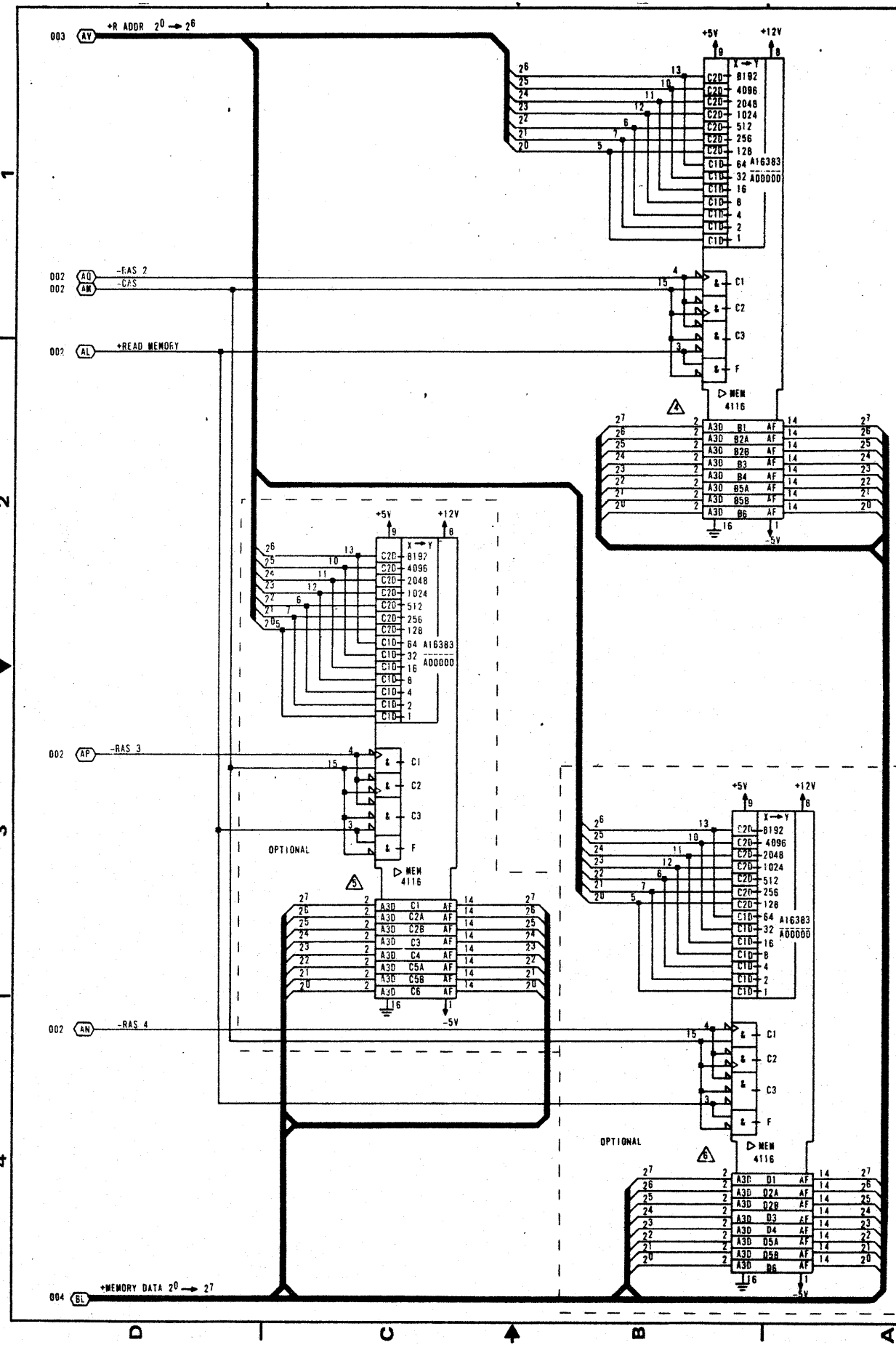
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 SHEET 5  
 SCHEMATIC DIAGRAM, 98BED  
 (E)

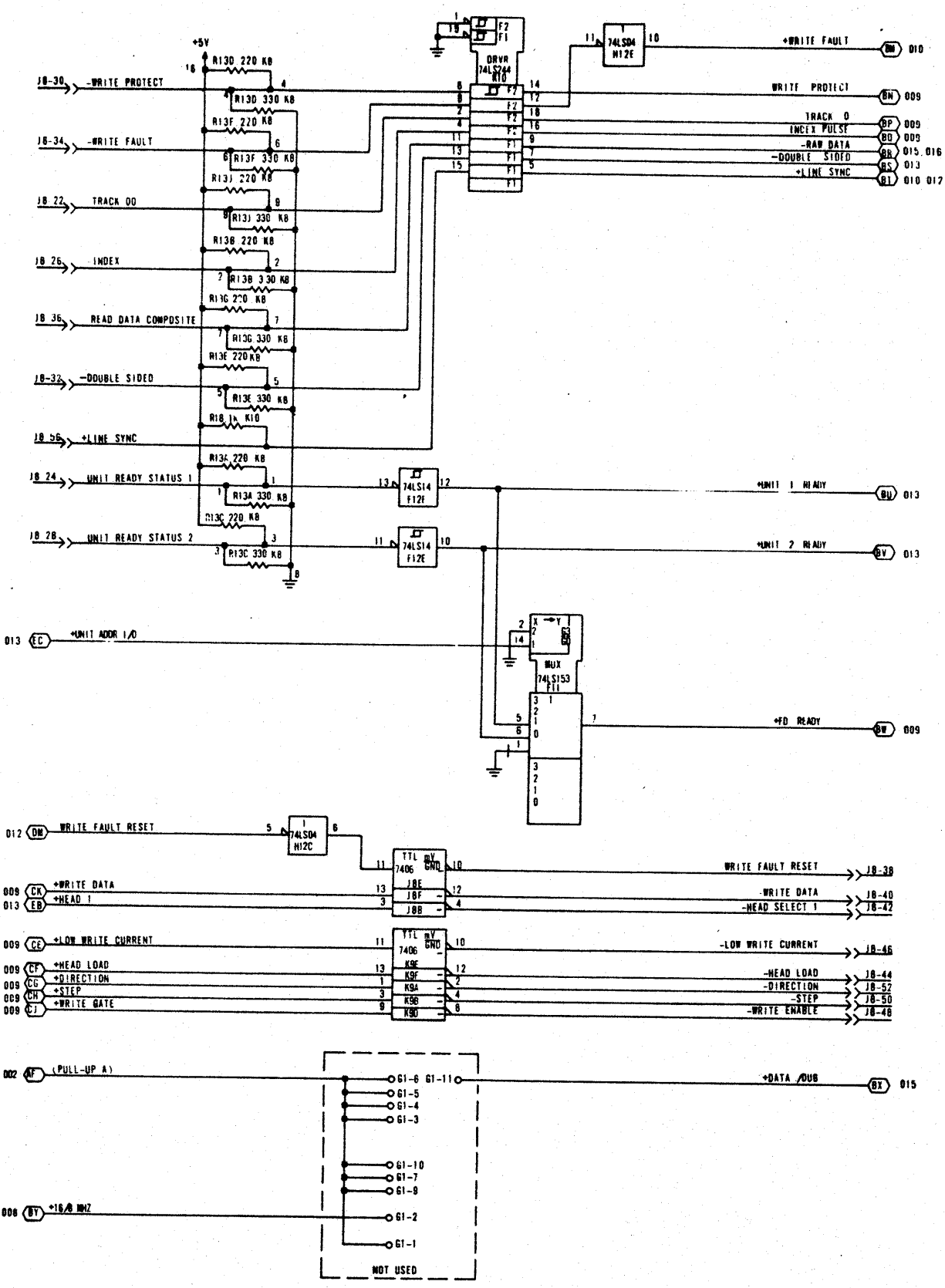
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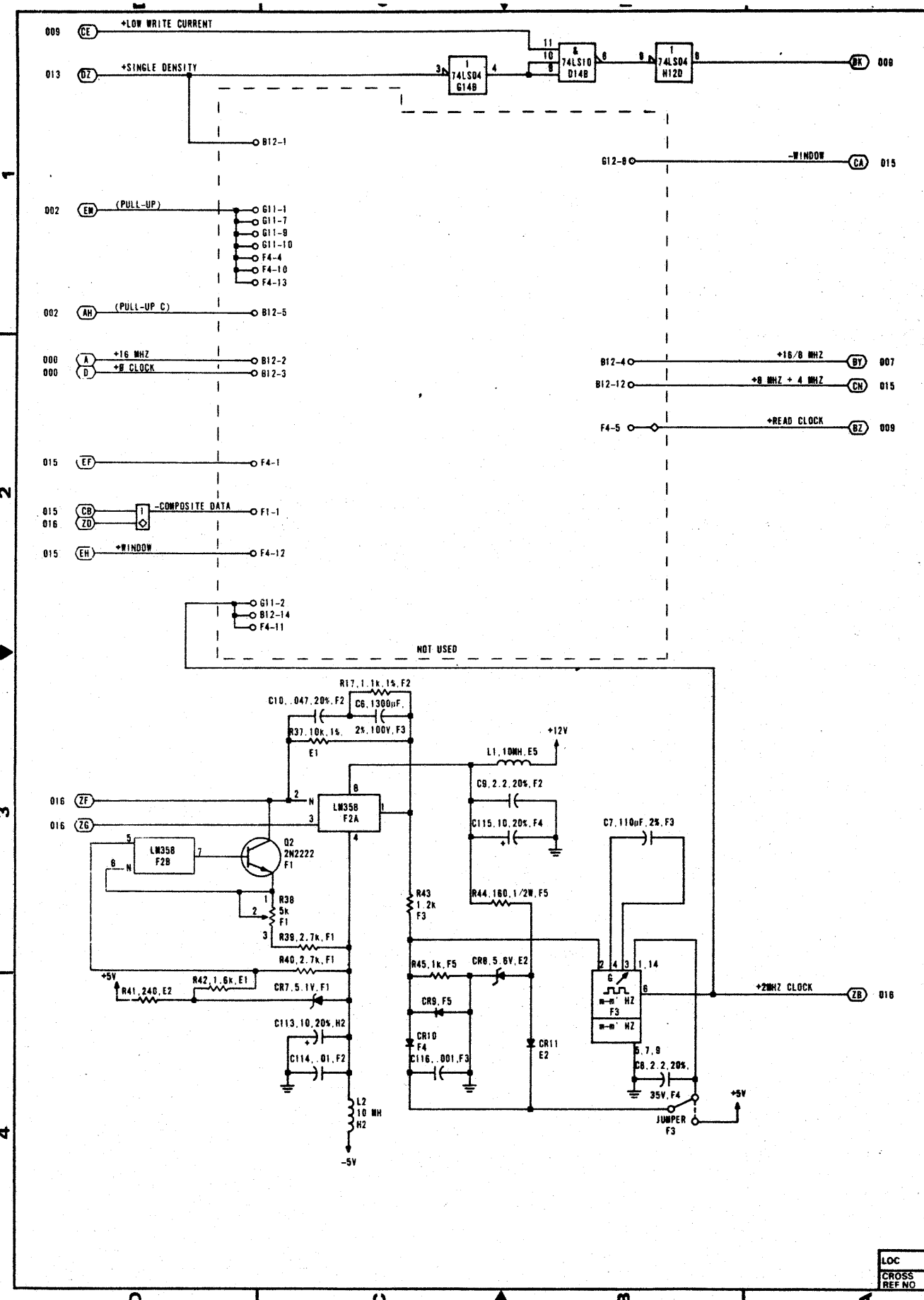
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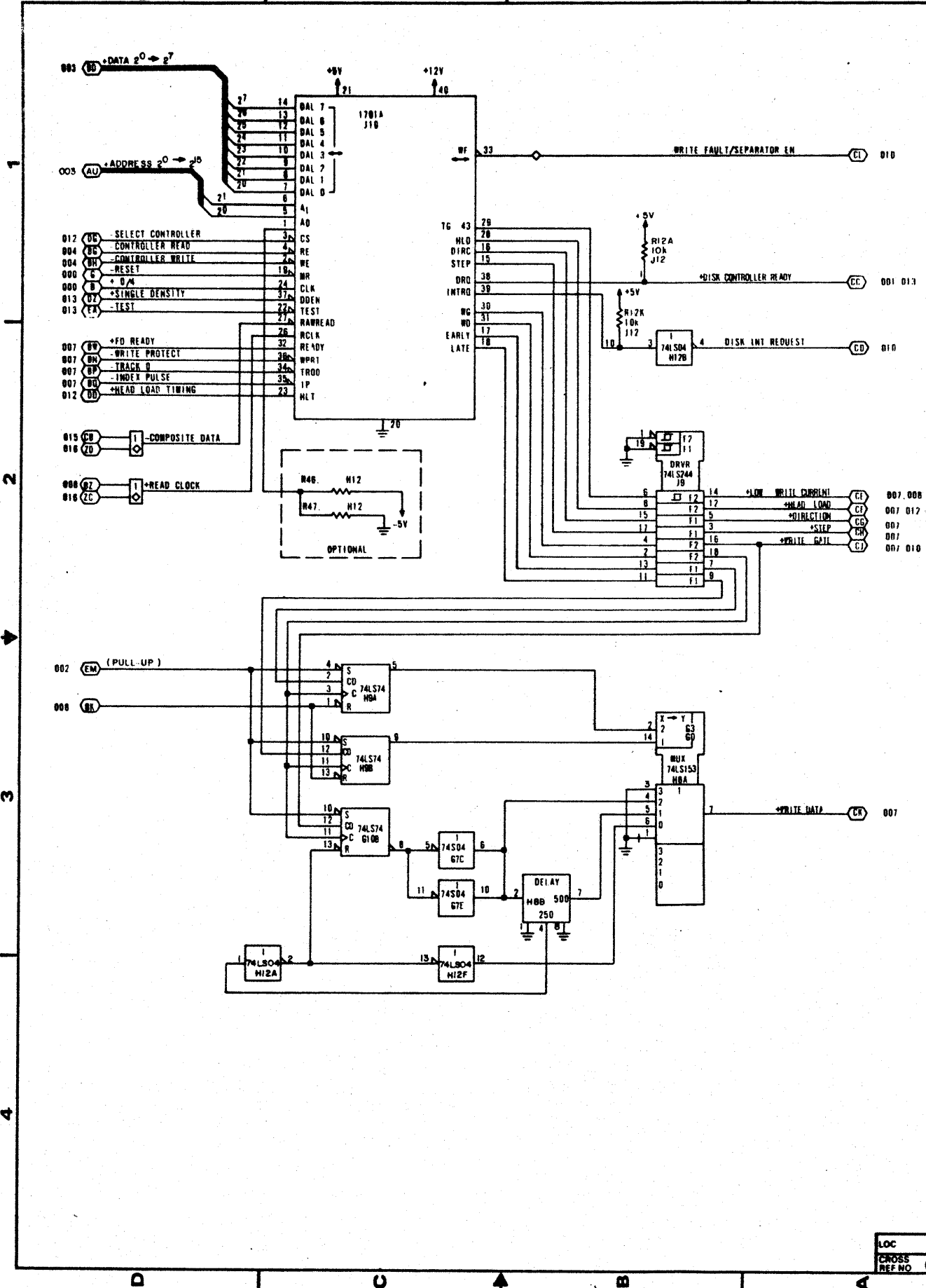






LOC  
 CROSS REF NO 007





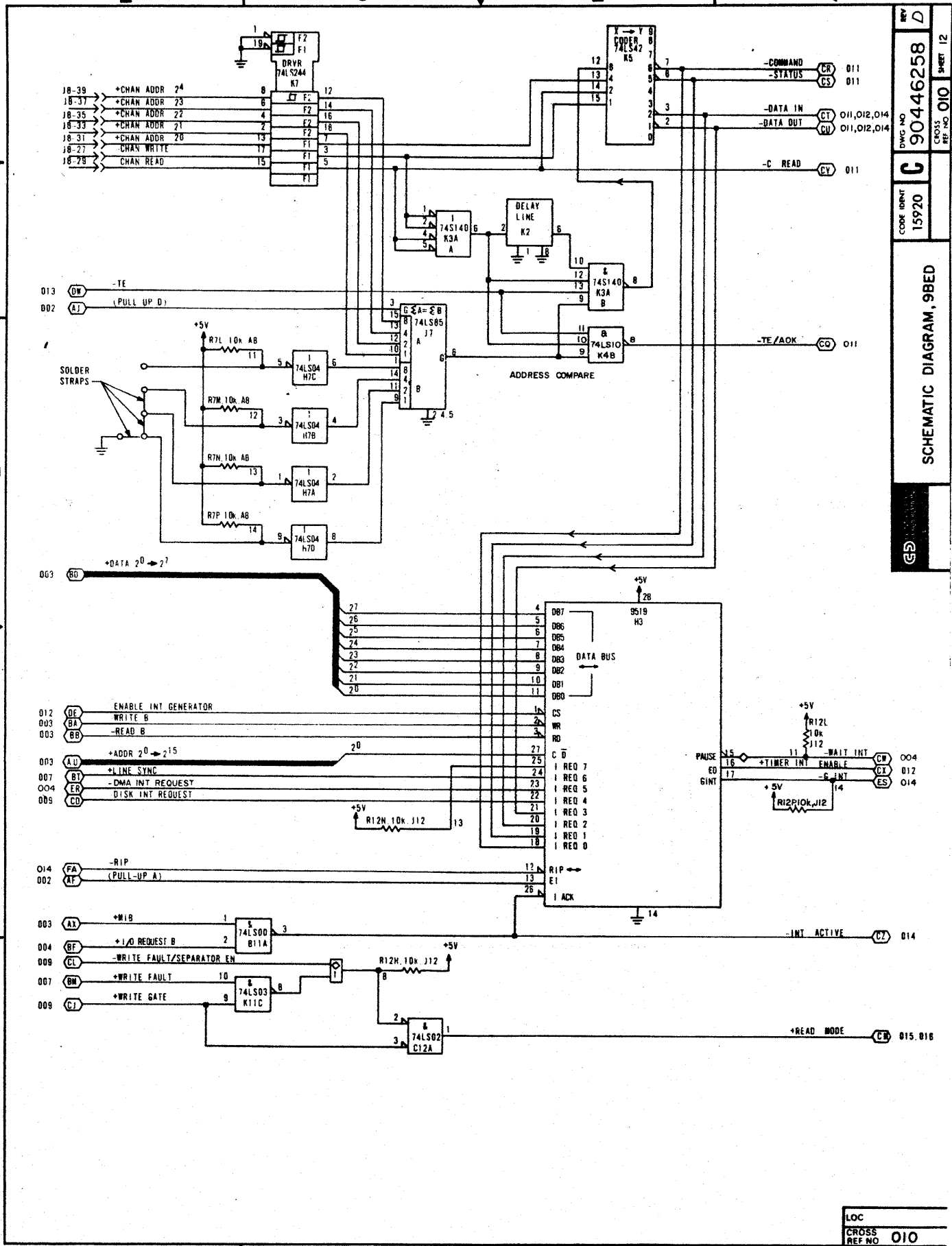
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 CODE IDENT **15920** **C**  
 CROSS REF NO **009** SHEET **11**

**SCHEMATIC DIAGRAM, 9BED**

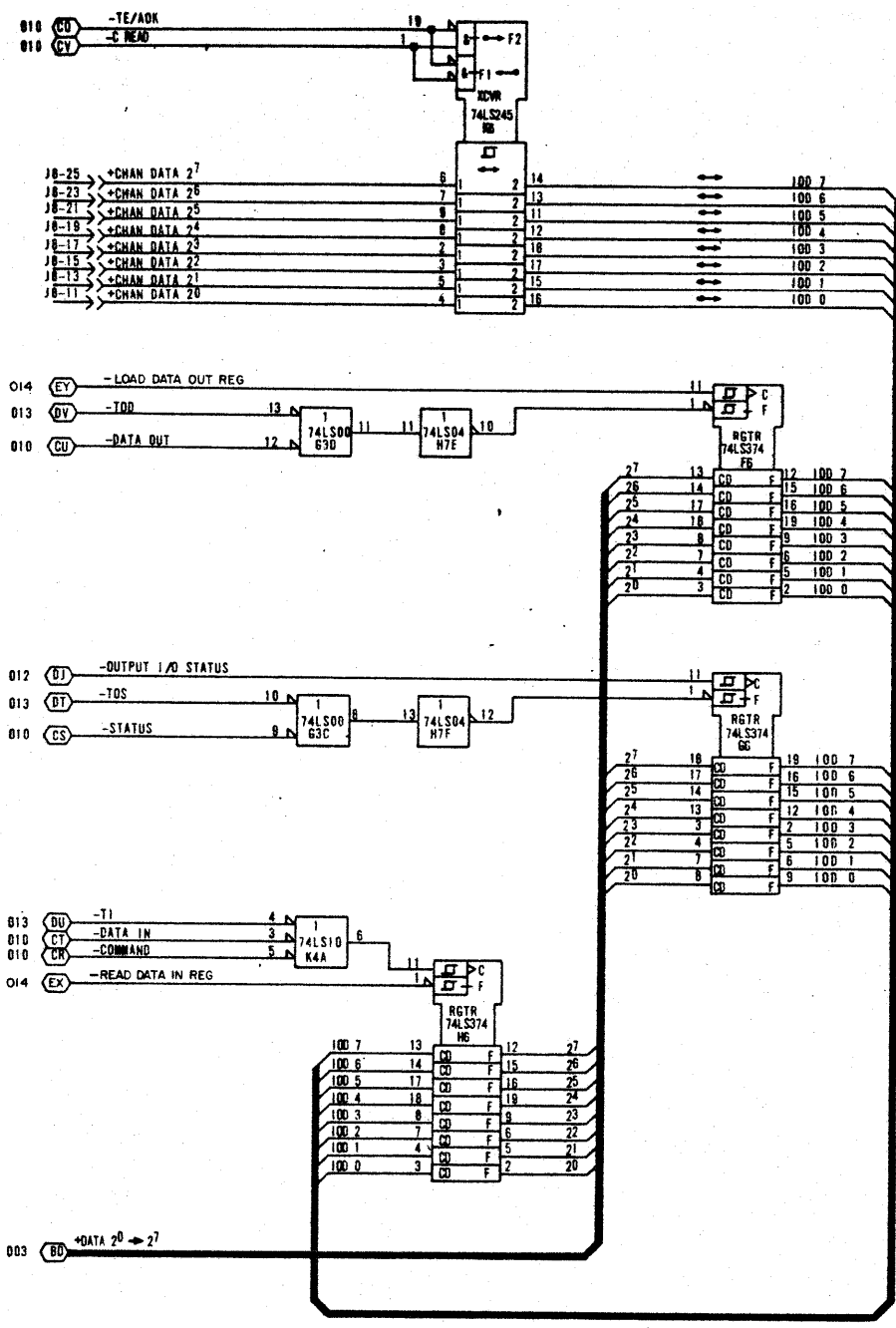
007 008  
 007 017  
 007  
 007 010

LOC  
 CROSS REF NO **009**



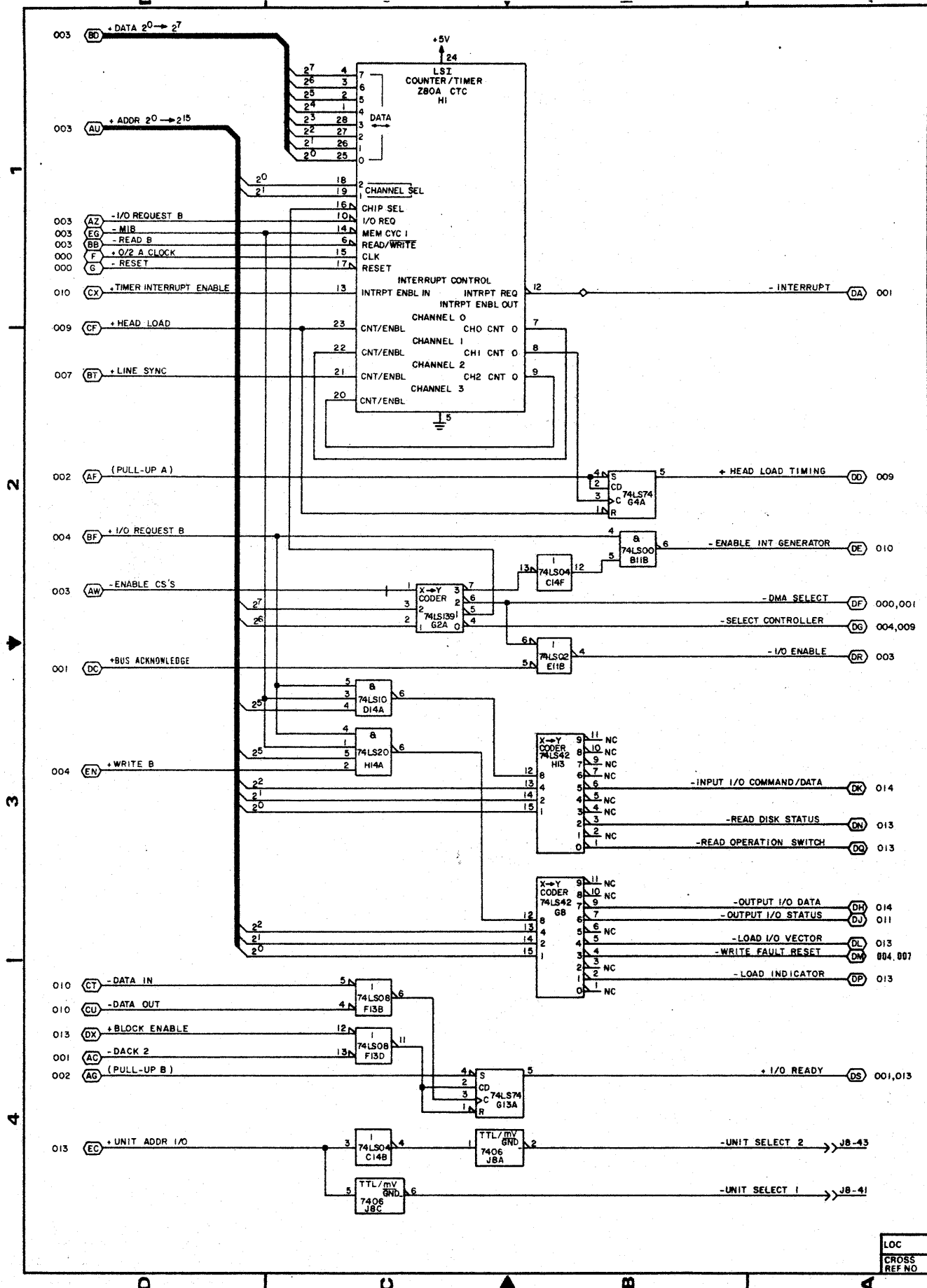


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CROSS REF NO	010
SHEET	12
CODE IDENT	15920
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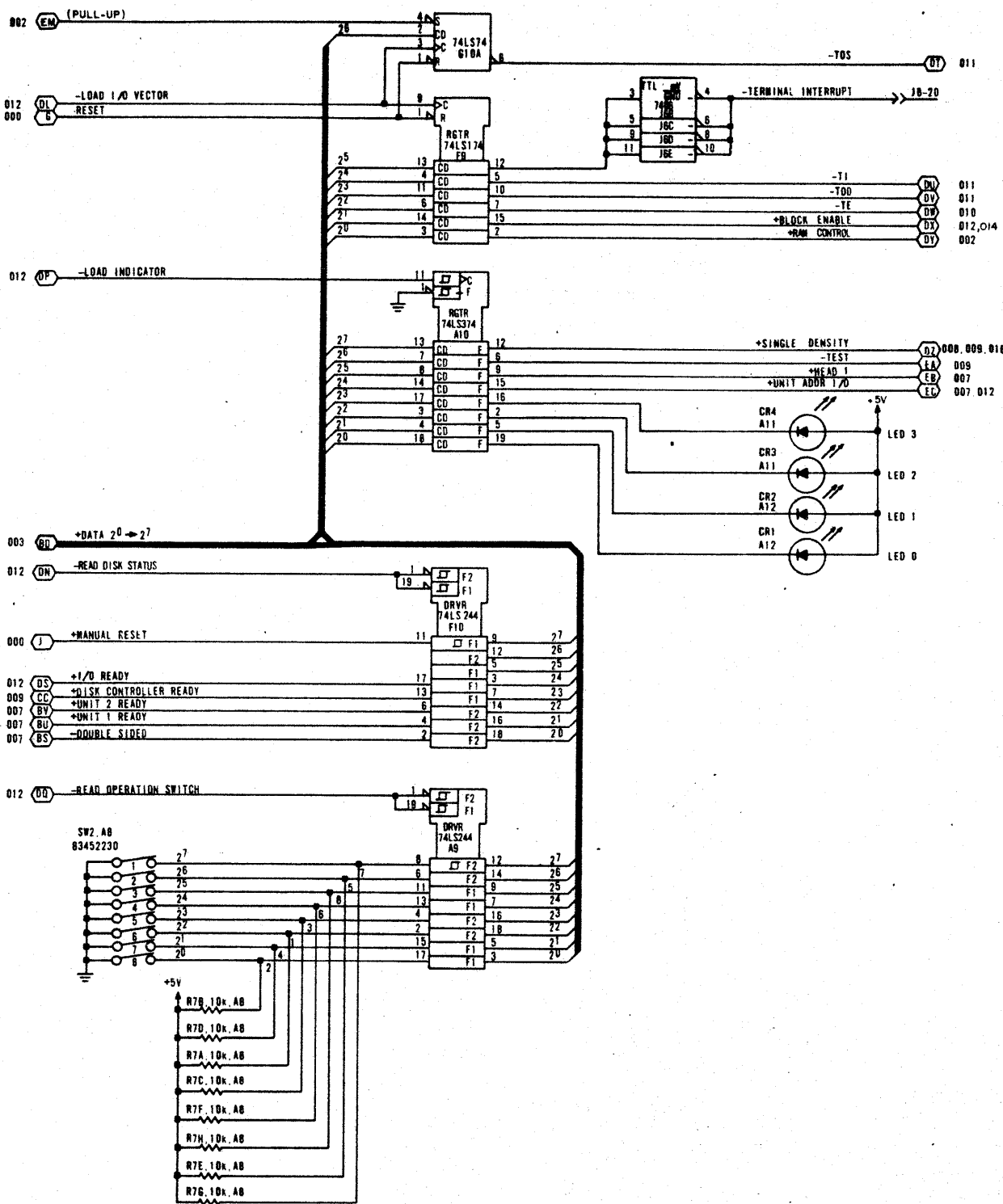


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 CODE IDENT 15920  
 SCHEMATIC DIAGRAM, 98BD  
 GE

LOC  
 CROSS REF NO 011

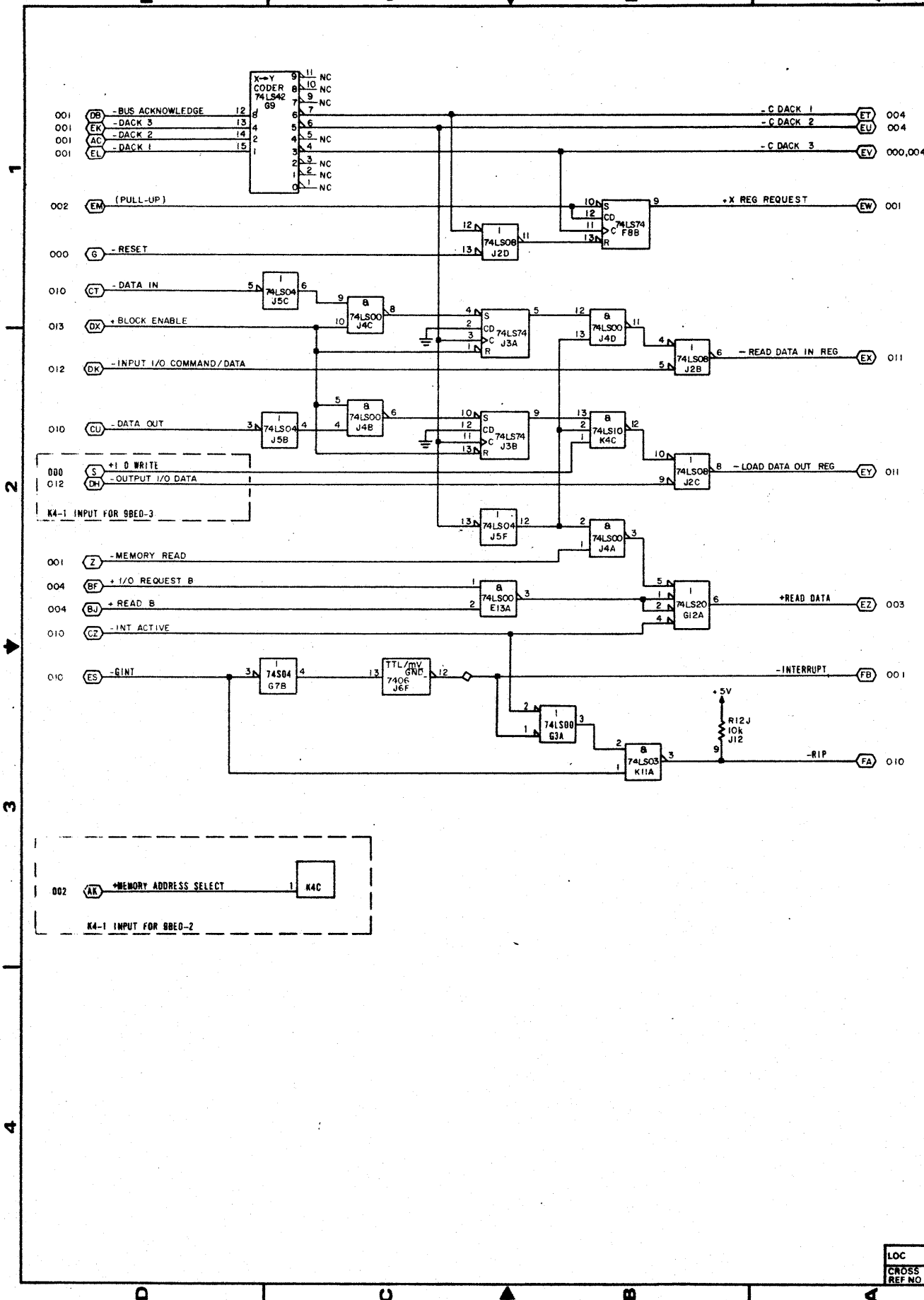


1  
 2  
 3  
 4

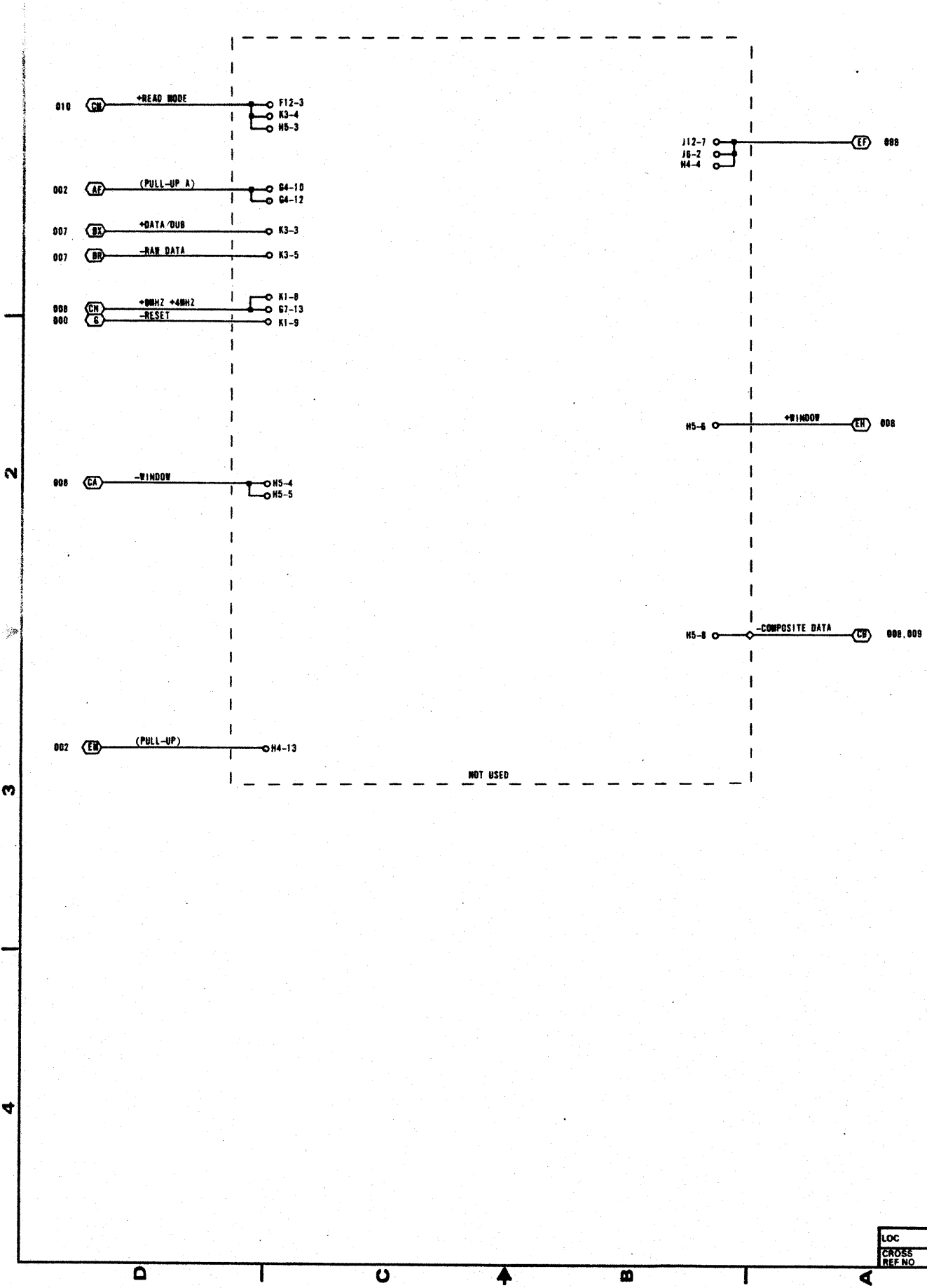


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 CODE IDENT **C**  
 CROSS REF NO. **013** SHEET **15**  
 15920  
**SCHMATIC DIAGRAM, 9BED**  
 GE

LOC  
 CROSS REF NO **013**



LOC  
 CROSS REF NO. **014**

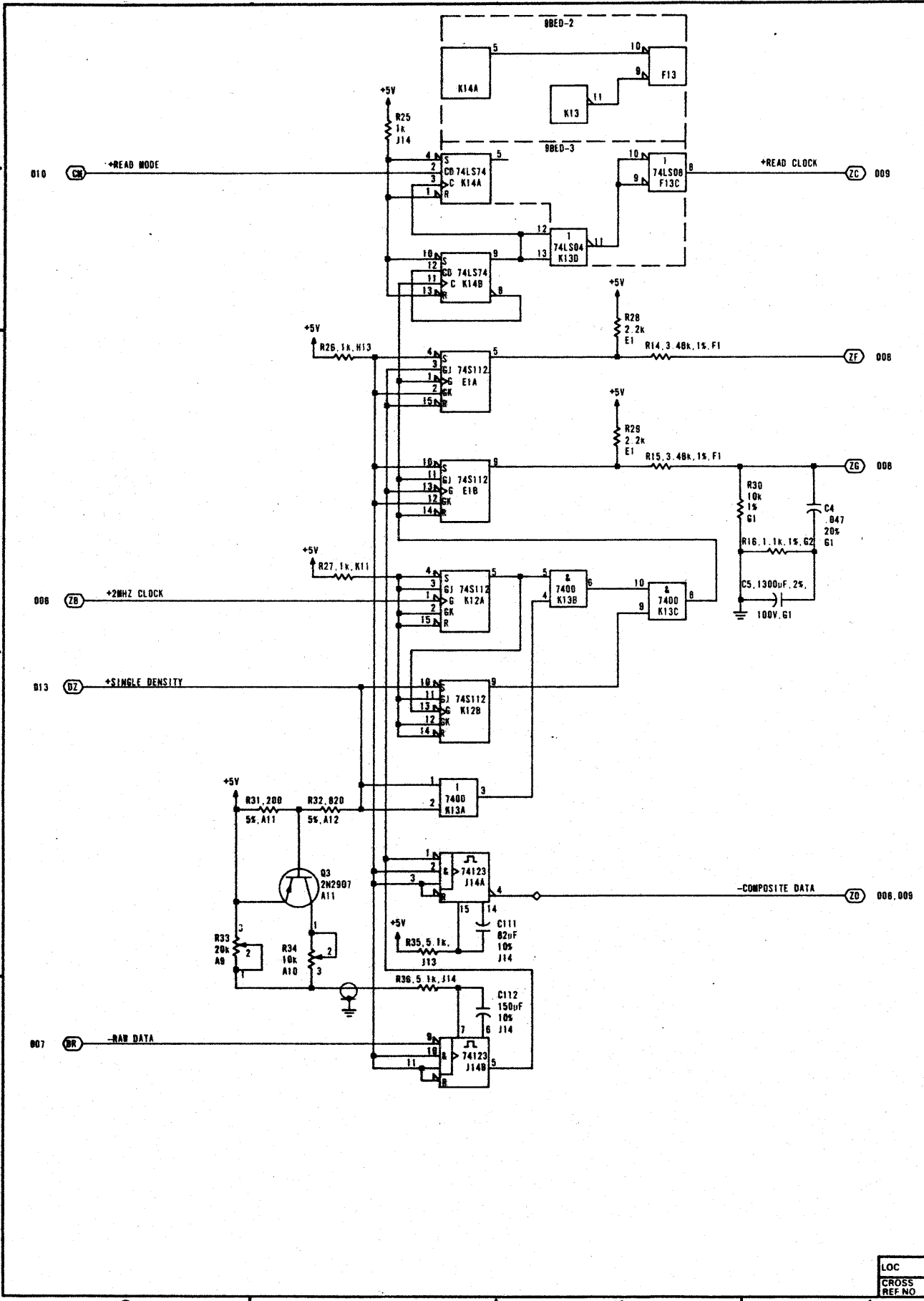


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15920	
CROSS REF NO	015
SHEET	17
SCHEMATIC DIAGRAM, 9BED	

LOC  
CROSS REF NO 015

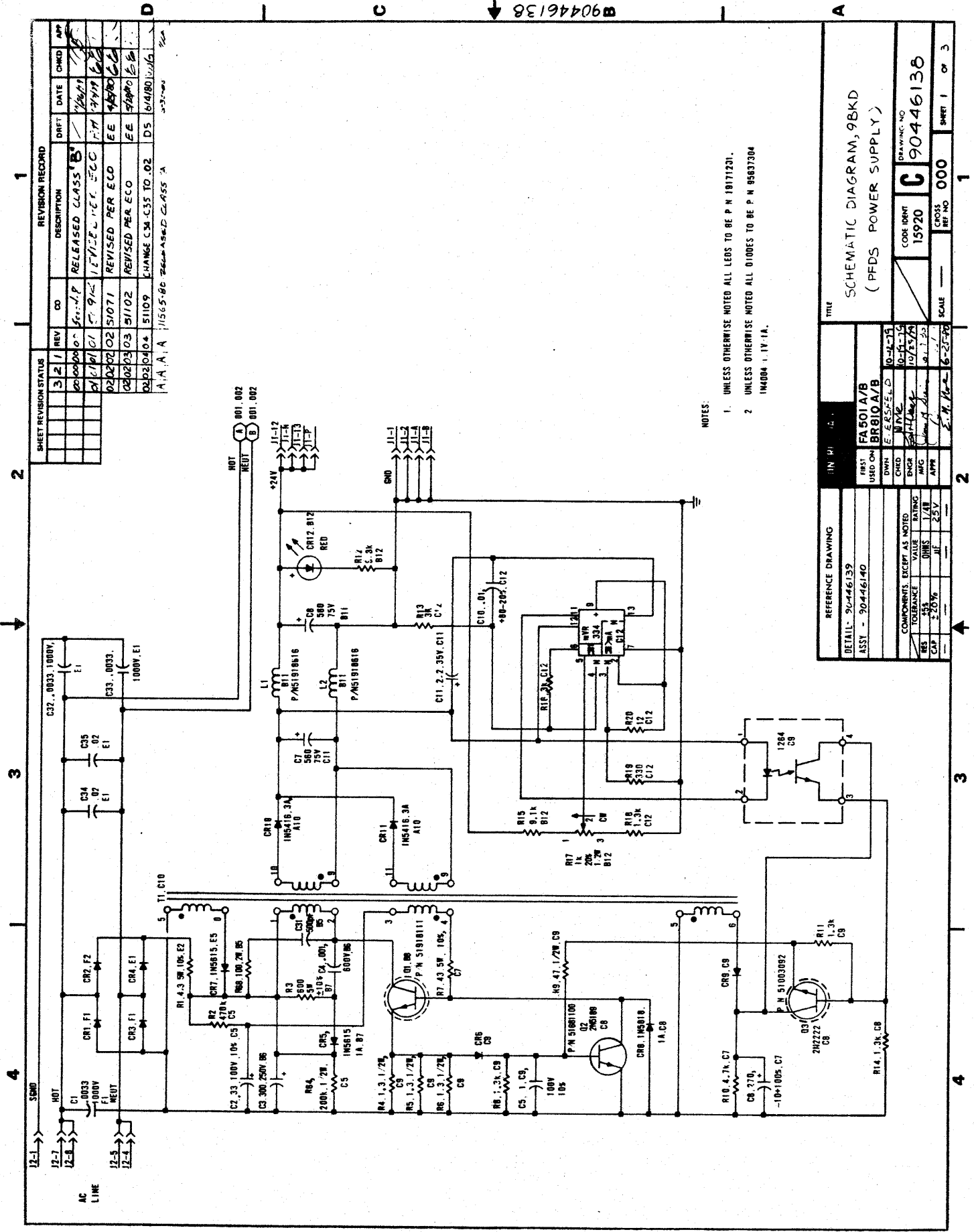
2  
3  
4

D I O A B I A



REV F  
 DWG NO 90446258  
 CODE IDENT 15920  
 CROSS REF NO 016 SHEET 1B  
 SCHEMATIC DIAGRAM, 9BED  
 GE

LOC  
 CROSS REF NO 016



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1	0	REV	REVISED PER ECO	1/17/61	W.P.
0	0	REV	CHANGE CSA -CS5 TO .02	1/17/61	W.P.

NO.	REV.	CO.	DESCRIPTION	DATE	CHKD.
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0	0	REV	CHANGE CSA -CS5 TO .02	1/17/61	W.P.
0	0	REV	CHANGE CSA -CS5 TO .02	1/17/61	W.P.

NOTES:  
 1. UNLESS OTHERWISE NOTED ALL LEADS TO BE P N 1811231.  
 2. UNLESS OTHERWISE NOTED ALL DIODES TO BE P N 95637304  
 1M400A 1.1V-1A.

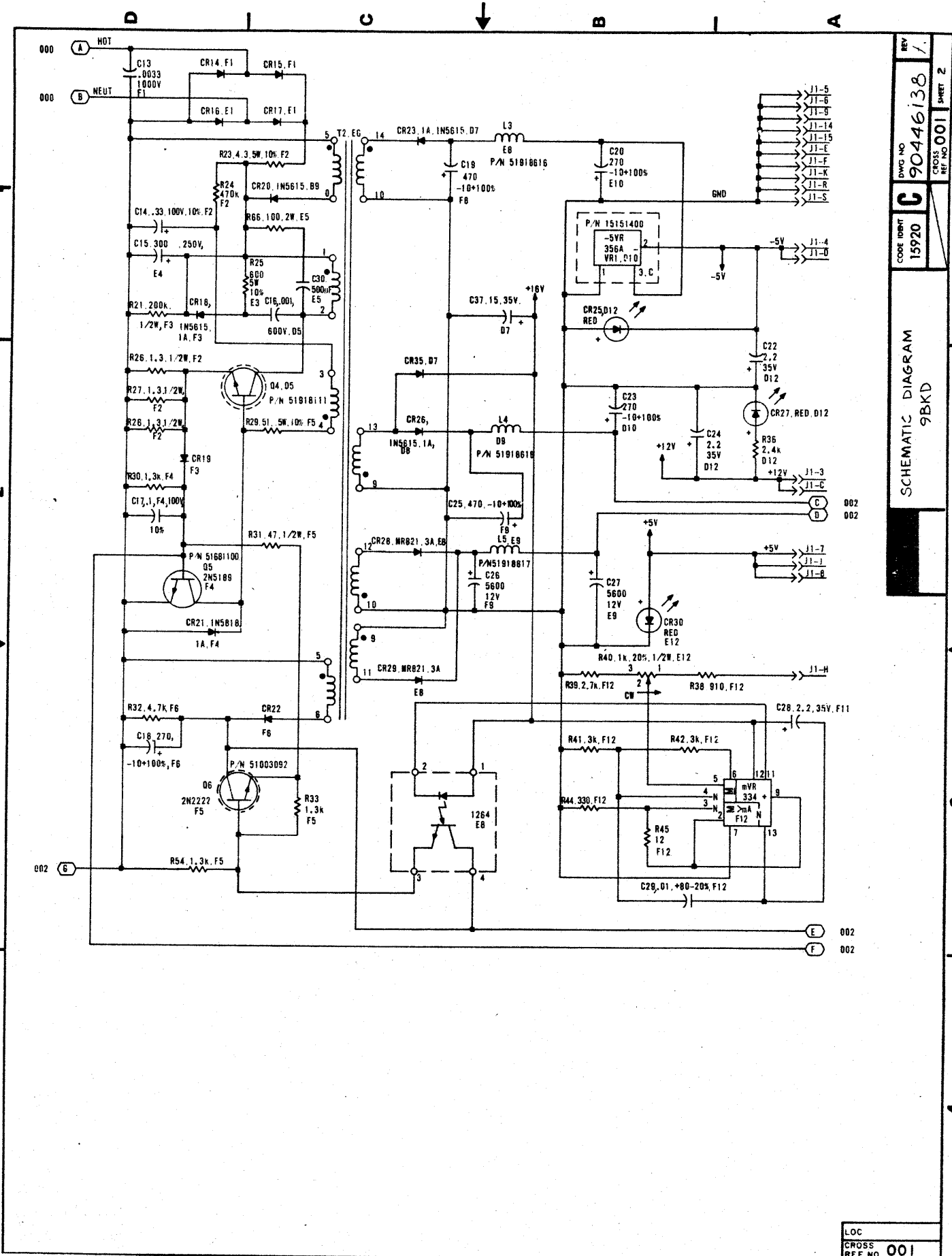
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TOLERANCE	1/10	COIL PART	DRAWING NO
RES	5%	15920	C 90446138
CAP	±20%	CROSS REF NO	SHEET 1 OF 3
		SCALE	1

1  
2  
3  
4

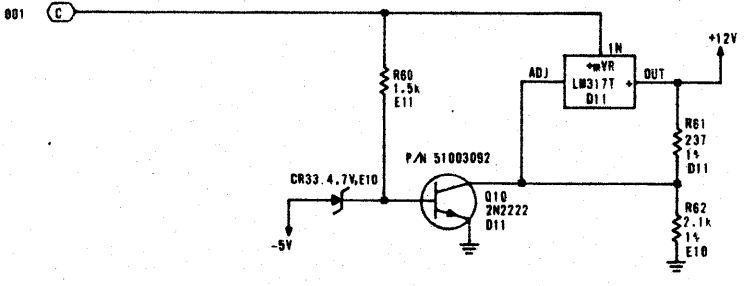
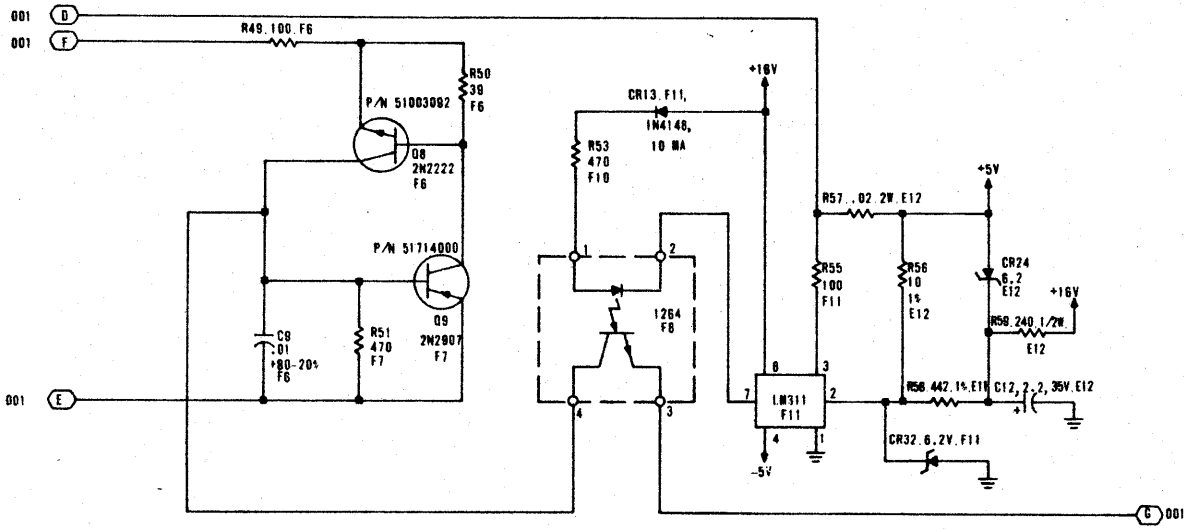
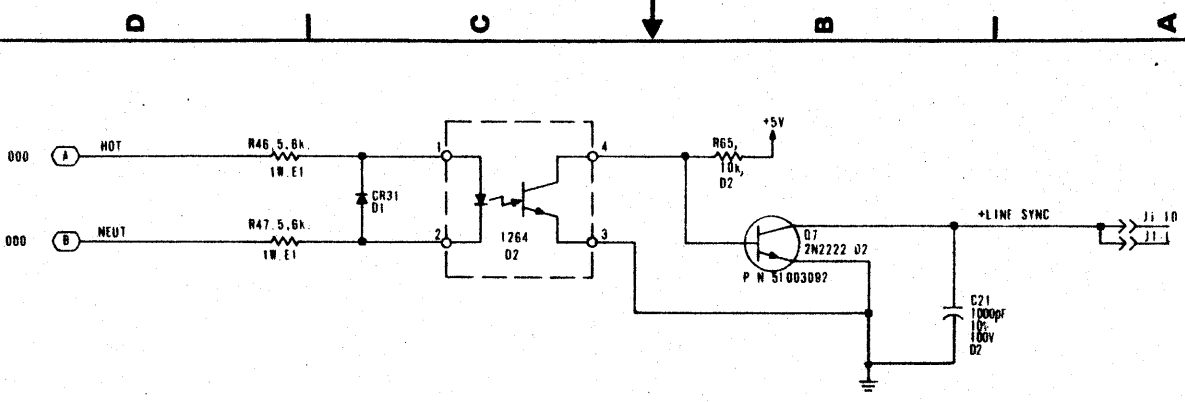
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2  
3  
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B90446138



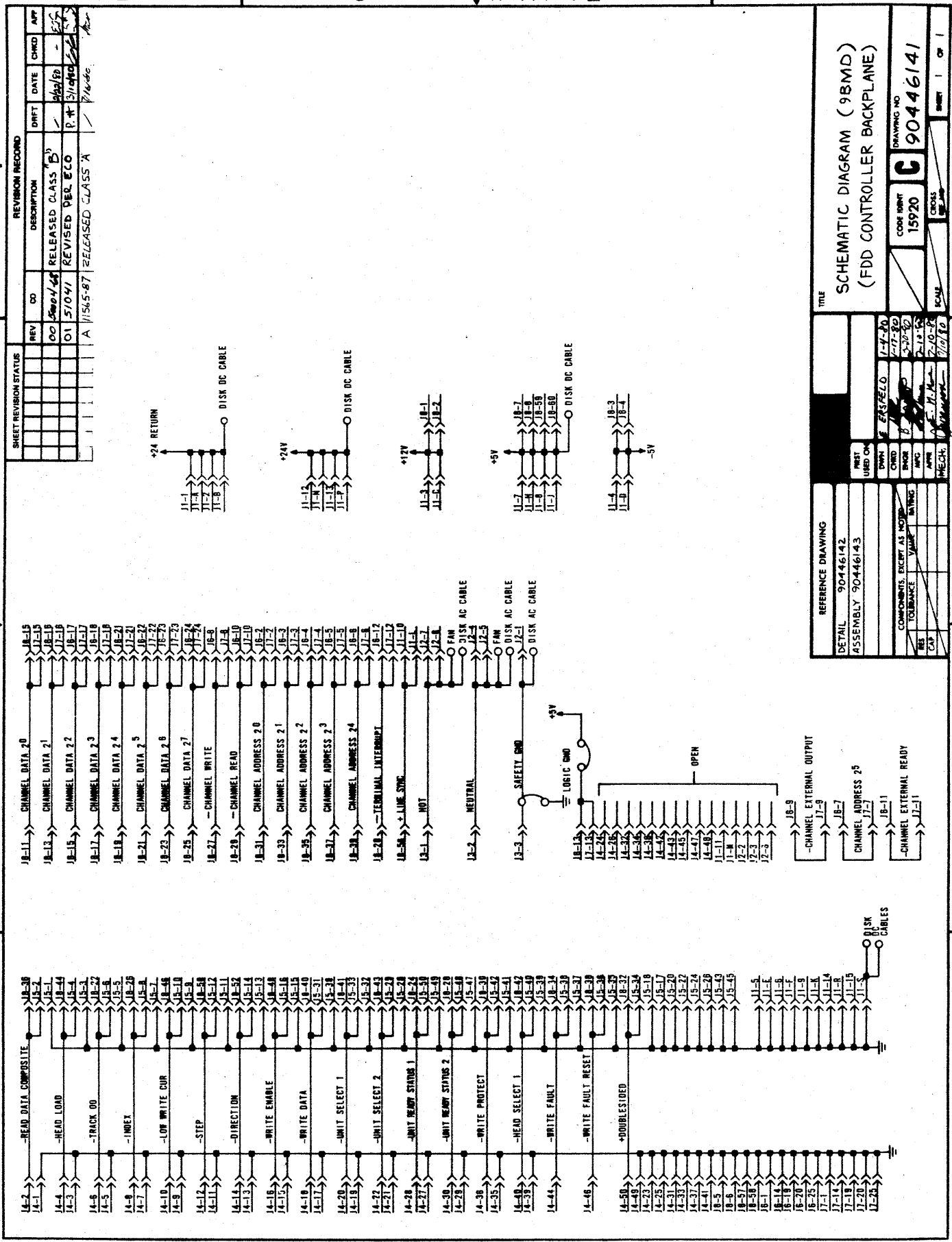


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CODE IDENT	C
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CROSS REF NO	001
SHEET	2
SCHEMATIC DIAGRAM 9BKD	



REV	
DWG NO	90446138
CODE IDENT	C
15920	
CROSS REF NO	002
SHEET	3
SCHEMATIC DIAGRAM	
98KD	
GP	

LOC  
CROSS REF NO 002



**TITLE**  
SCHEMATIC DIAGRAM (9BMD)  
(FDD CONTROLLER BACKPLANE)

**CODE IDENT**  
15920

**DRAWING NO**  
90446141

**SCALE**  
AS SHOWN

**SHEET** 1 OF 1

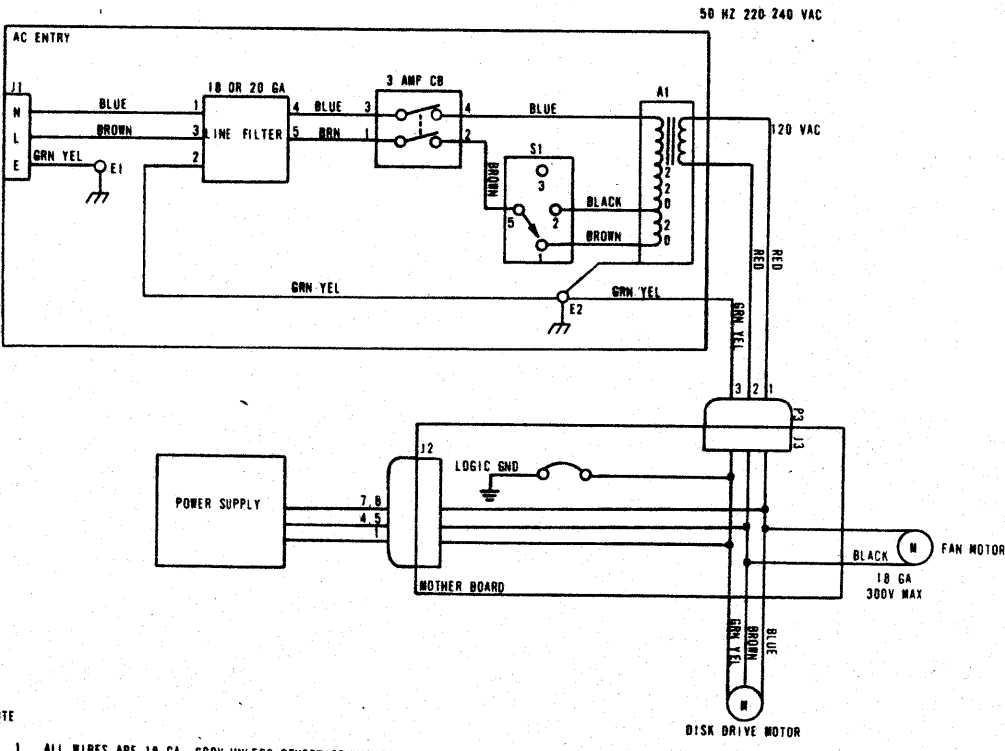
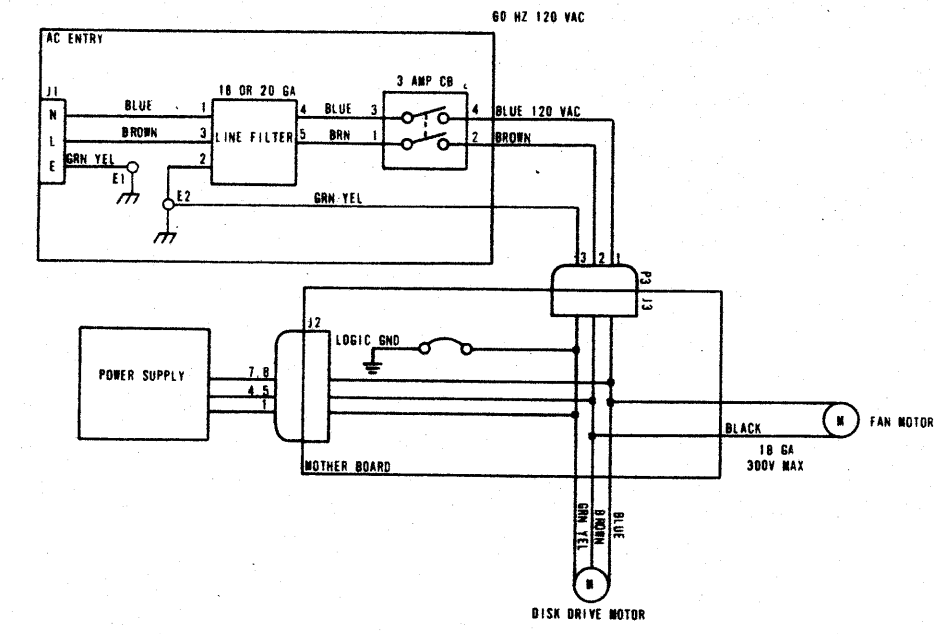
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ASSEMBLY 90446143

**COMPONENTS EXCEPT AS NOTED**

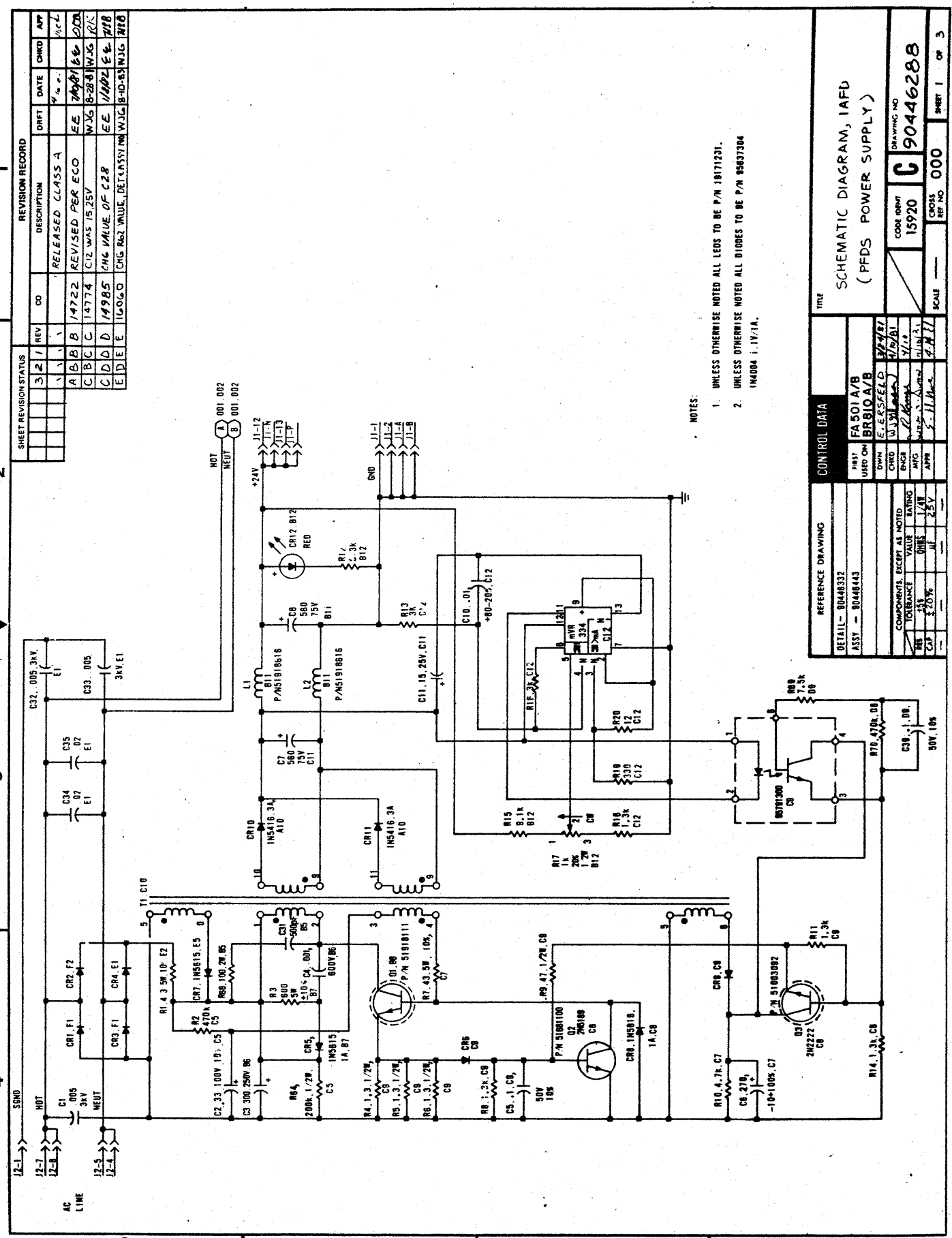
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1A-11	1A-12	1A-13	1A-14	1A-15
1A-16	1A-17	1A-18	1A-19	1A-20
1A-21	1A-22	1A-23	1A-24	1A-25
1A-26	1A-27	1A-28	1A-29	1A-30
1A-31	1A-32	1A-33	1A-34	1A-35
1A-36	1A-37	1A-38	1A-39	1A-40
1A-41	1A-42	1A-43	1A-44	1A-45
1A-46	1A-47	1A-48	1A-49	1A-50
1A-51	1A-52	1A-53	1A-54	1A-55
1A-56	1A-57	1A-58	1A-59	1A-60
1A-61	1A-62	1A-63	1A-64	1A-65
1A-66	1A-67	1A-68	1A-69	1A-70
1A-71	1A-72	1A-73	1A-74	1A-75
1A-76	1A-77	1A-78	1A-79	1A-80
1A-81	1A-82	1A-83	1A-84	1A-85
1A-86	1A-87	1A-88	1A-89	1A-90
1A-91	1A-92	1A-93	1A-94	1A-95
1A-96	1A-97	1A-98	1A-99	1A-100

REVISION RECORD				
REV	CD	DESCRIPTION	DRFT	DATE
A		RELEASED CLASS A		1-3-60



NOTE  
1 ALL WIRES ARE 18 GA. 300V UNLESS OTHERWISE MARKED

TITLE 50/60 HZ A.C. POWER WIRING			DRAWING NO 62201057		
M.I.E.I.T.Z FA501-A/B			CODE REV 15920		
DWN 19-2-60			SCALE OF 1		
ENGR 1-3-60			SHEET 1 OF 1		
CHKD 1-3-60			CROSS REF NO		
APP 1-3-60			REF NO		
REFERENCE DRAWING					
COMPONENTS EXCEPT AS NOTED					
RES TOLERANCE		VALUE		RATING	



SHEET REVISION STATUS				REVISION RECORD			
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2	1	1				B	001,002
1	1	1					

REV	NO	DESCRIPTION	DATE	CHKD	APP
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B	C	C	1/27/52	EE	WJS
C	D	D	1/27/52	EE	WJS
D	E	E	1/27/52	EE	WJS
E	F	F	1/27/52	EE	WJS

REV	NO	DESCRIPTION	DATE	CHKD	APP
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B	C	C	1/27/52	EE	WJS
C	D	D	1/27/52	EE	WJS
D	E	E	1/27/52	EE	WJS
E	F	F	1/27/52	EE	WJS

REV	NO	DESCRIPTION	DATE	CHKD	APP
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B	C	C	1/27/52	EE	WJS
C	D	D	1/27/52	EE	WJS
D	E	E	1/27/52	EE	WJS
E	F	F	1/27/52	EE	WJS

REV	NO	DESCRIPTION	DATE	CHKD	APP
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B	C	C	1/27/52	EE	WJS
C	D	D	1/27/52	EE	WJS
D	E	E	1/27/52	EE	WJS
E	F	F	1/27/52	EE	WJS

REV	NO	DESCRIPTION	DATE	CHKD	APP
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B	C	C	1/27/52	EE	WJS
C	D	D	1/27/52	EE	WJS
D	E	E	1/27/52	EE	WJS
E	F	F	1/27/52	EE	WJS

REV	NO	DESCRIPTION	DATE	CHKD	APP
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B	C	C	1/27/52	EE	WJS
C	D	D	1/27/52	EE	WJS
D	E	E	1/27/52	EE	WJS
E	F	F	1/27/52	EE	WJS

REV	NO	DESCRIPTION	DATE	CHKD	APP
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B	C	C	1/27/52	EE	WJS
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D	E	E	1/27/52	EE	WJS
E	F	F	1/27/52	EE	WJS

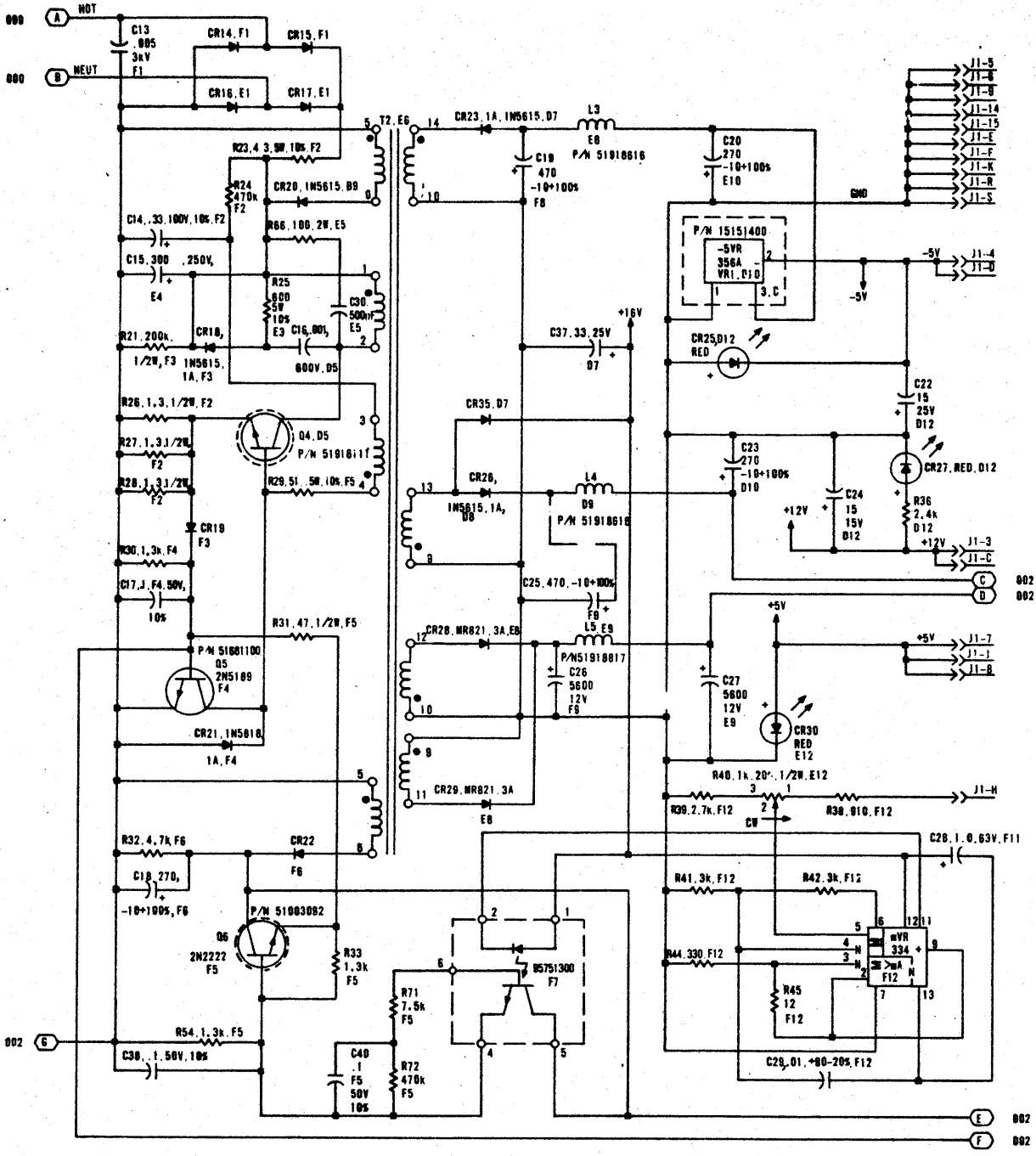
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D	E	E	1/27/52	EE	WJS
E	F	F	1/27/52	EE	WJS

REV	NO	DESCRIPTION	DATE	CHKD	APP
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B	C	C	1/27/52	EE	WJS
C	D	D	1/27/52	EE	WJS
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E	F	F	1/27/52	EE	WJS

NOTES:  
 1. UNLESS OTHERWISE NOTED ALL LEADS TO BE P/N 19171201.  
 2. UNLESS OTHERWISE NOTED ALL DIODES TO BE P/N 95937304  
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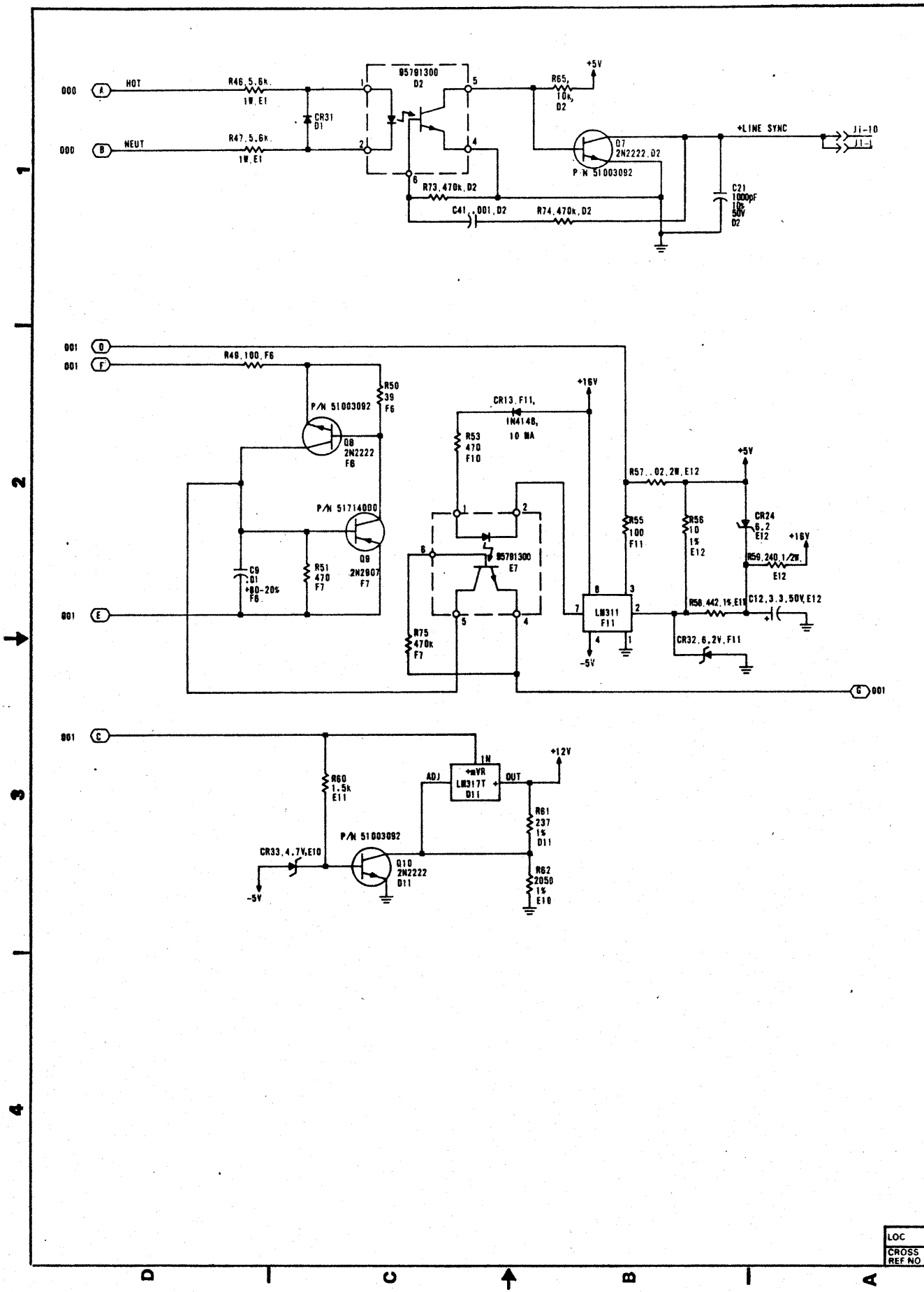
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ASSY -	80448443	DOWN	BR810 A/B
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		TOLERANCE	VALUE
		RES	1% 1/4W
		CAP	5% .25V

TITLE		DRAWING NO	
SCHEMATIC DIAGRAM, IAFD ( PFDS POWER SUPPLY )		CODE IDENT	15920
		CROSS REF NO	000
		SCALE	1 OF 3



DWD NO 90446288  
 CODE SHEET 15920  
 CROSS REF NO 001 SHEET 2  
 SCHEMATIC DIAGRAM, IAFD  
 CONTROL DATA

LOC  
 CROSS REF NO 001







---

This section provides information necessary to perform on-site maintenance on the flexible disk subsystem. The material presented assumes familiarity with the PLATO system and basic maintenance techniques including use of common CE tools and test equipment. The maintenance information covers checks, adjustments, removal, and replacement of the field-replaceable components as directed by the associated structured analysis method (SAM) listings for the subsystem. Information is organized under the following major headings:

- General Maintenance Information
- Diagnostic and Corrective Maintenance

#### GENERAL MAINTENANCE INFORMATION

The following paragraphs provide information that the customer engineer should be familiar with before performing maintenance on the terminal. Topics discussed are:

- Suggested Emergency Maintenance Procedure
- Safety Precautions
- Maintenance Tools and Materials
- MOS Circuit-Handling Precautions
- Maintenance Aids
- Location of Major Assemblies

#### SUGGESTED EMERGENCY MAINTENANCE PROCEDURE

The following procedure provides suggested steps for the customer engineer (CE) to follow when responding to a customer request for maintenance on the subsystem.

## Before Leaving For Customer Site

Before leaving for the customer site, the CE should call the customer and talk to the person operating the subsystem at the time the malfunction occurred, then:

1. Determine the following:
  - a. Type of symptoms subsystem exhibited to indicate that a malfunction occurred.
  - b. Whether subsystem is operating and what symptoms, if any, are present when an attempt is made to operate.
2. Decide course of action to take, for example:
  - a. Go to customer site and begin troubleshooting.
  - b. Deduce that subsystem itself is probably not at fault and most likely cause of problem is either terminal communication lines or a power reduction or loss. In either case, CE can notify responsible party (common carrier or customer) of problem.
  - c. Decide that an error in operating procedure, rather than equipment failure, is probably cause of malfunction, and notify customer of correct operating procedure.
3. If a site maintenance trip is required, CE should try to determine a probable cause for failure and gather necessary tools, manuals, and spare parts that may be needed.

## Upon Arriving At Customer Site

Upon arriving at the customer site, the CE should locate the appropriate supervisory personnel and again talk to the subsystem operator concerning the malfunction, then:

1. Visually inspect subsystem for correct input/output and power cable connections.
2. Verify that a malfunction does exist, and then begin to troubleshoot subsystem.

3. After source of malfunction is corrected, CE should:
  - a. Run diagnostic self-test routines and appropriate PLATO DIAG tests to ensure that subsystem is operational.
  - b. Demonstrate to customer that subsystem is now operating properly within system.

#### SAFETY PRECAUTIONS

##### WARNING

Observe the following safety precautions at all times. Failure to do so may cause equipment damage and/or personal injury.

- Hazardous voltages exist in the subsystem. Do not attempt repair unless qualified to do so.
- Exercise caution any time checks or adjustments are being made to terminal when power is applied.
- Always turn power off and disconnect ac power cord when removing/replacing components or cables.

#### MAINTENANCE TOOLS AND MATERIALS

The maintenance procedures require the use of metric tools and common CE test equipment. No special materials are required.

#### MOS CIRCUIT-HANDLING PRECAUTIONS

Special handling procedures are necessary for printed-circuit cards containing metal-oxide semiconductor (MOS) integrated circuits. These ICs are susceptible to damage from static electricity. Observe the following precautions when handling the controller board:

- Turn power off before removing/installing or otherwise connecting/disconnecting any circuits.

- Ensure that any item that comes in contact with card is electrically grounded.
- Touch metal chassis frame to bleed off any accumulated static charge before handling card and continue to touch chassis while removing/installing card.
- Handle card only by a noncircuit portion. Connector pins and circuit paths must not be touched.
- Place card in a special conductive envelope whenever card is removed from chassis.

#### MAINTENANCE AIDS

There is no scheduled maintenance for the subsystem. In the event of failure, the primary maintenance aids are the voltage LED indicators, self-test routines, and DIAG Flexible Disk Diagnostic tests. These aids in conjunction with the SAM troubleshooting listings are structured to isolate the failure to a field-replaceable component/assembly and to provide a procedure number reference to the applicable maintenance procedure to be used for correcting the malfunction. Refer to the Diagnostic and Corrective Maintenance heading for organization of this material.

#### LOCATION OF MAJOR ASSEMBLIES

Figure 6-1 shows the location of the major assemblies within the subsystem.

#### DIAGNOSTIC AND CORRECTIVE MAINTENANCE

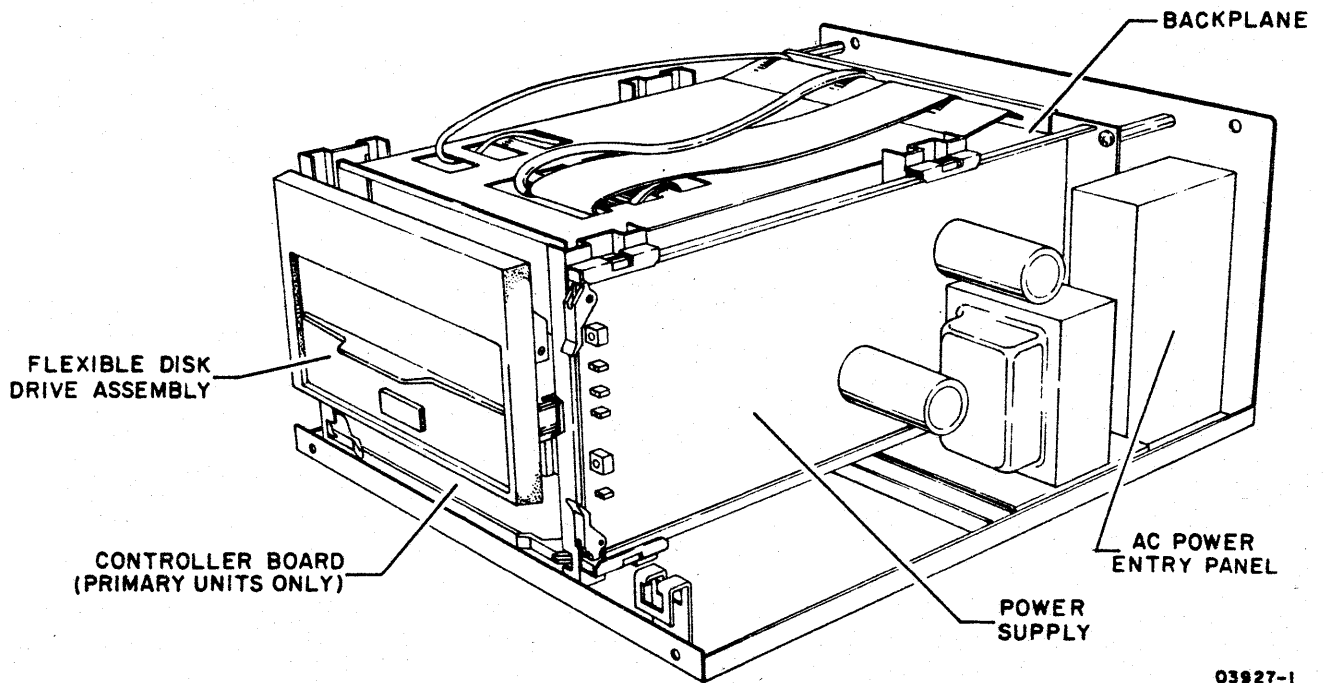
The following paragraphs describe routines tests, and procedures used to maintain the subsystem.

- Diagnostic Self-Test Routines
- Engineering Services Diagnostic Disk
- DIAG Flexible Disk Diagnostic Disk Tests
- Explanation of SAM Format
- Organization of SAMs and Procedures

#### DIAGNOSTIC SELF-TEST ROUTINES

The subsystem contains nine diagnostic tests stored in ROM. The starting address is at 0000<sub>16</sub>. Diagnostic execution is under control of the diagnostic control switches on the controller

board. Status of the diagnostic tests is indicated by the four LEDs also located on the controller board. Refer to section 2 for a detailed description of the diagnostic control switches and LED indicators. The following paragraphs provide a description of the various test routines.



NOTE: COVER AND FRONT  
PANEL REMOVED  
FOR CLARITY.

Figure 6-1. Location of Assemblies in Subsystem

### LED Test

All four LEDs light momentarily following a power application and after a master reset to test the indicators.

### Test 0 - ROM Checksum

The ROM checksum routine tests ROM for the correct checksum value of the stored contents.

### Test 1 - RAM Test

Test 1 checks RAM memory (as specified by the diagnostic control switches) for correct operation. This test uses the diagnostic control switches and LEDs to isolate to a failing RAM chip. The first level of error detection is to a specific RAM bank, then to the failing chip within that bank.

### Test 2 - Interrupt Generator

Test 2 checks for interrupts by performing writes and reads to the available registers in the interrupt controller IC.

### Test 3 - Flexible Disk Controller

Test 3 checks the flexible disk controller IC by performing writes and reads to all available registers in the IC.

### Test 4 - DMA Test -

Test 4 reads data from the flexible disk controller IC data register to memory using DMA channels 1 and 3.

### Test 5 - I/O Loopback Test

Test 5 tests the basic I/O capabilities by interfacing the input/output registers and transferring data via the I/O data bus and checking status.

### Test 6 - CTC Test

Test 6 checks the counter/timer circuit by loading a count value and determining that the proper interrupt is generated at count 0.

## Test 7 - Writing and Reading the Disk

Test 7 checks for a ready disk drive, then seeks side 1, track 76, last sector and executes writes and reads using the disk DMA channel. This surface area is reserved on all disks; therefore, no alteration is made to stored disk data.

### ENGINEERING SERVICES DIAGNOSTIC DISK

This disk provides off-line testing that is similar to the diagnostics found in DIAG. For additional information on diagnostics and where to order the disks, refer to manual titled Engineering Services Diagnostics Disk for PLATO Disk (see Preface for publication number).

### DIAG FLEXIBLE DISK DIAGNOSTIC TESTS

Testing can be performed using downline-loaded diagnostics from the PLATO system. Use lesson DIAG to call up the flexible disk diagnostic tests. This diagnostic loads and tests information via the terminal parallel I/O channel. Two modes are tested, DMA operations and interrupt routines. Refer to checkout information in section 3 for details of diagnostic operation.

### EXPLANATION OF SAM FORMAT

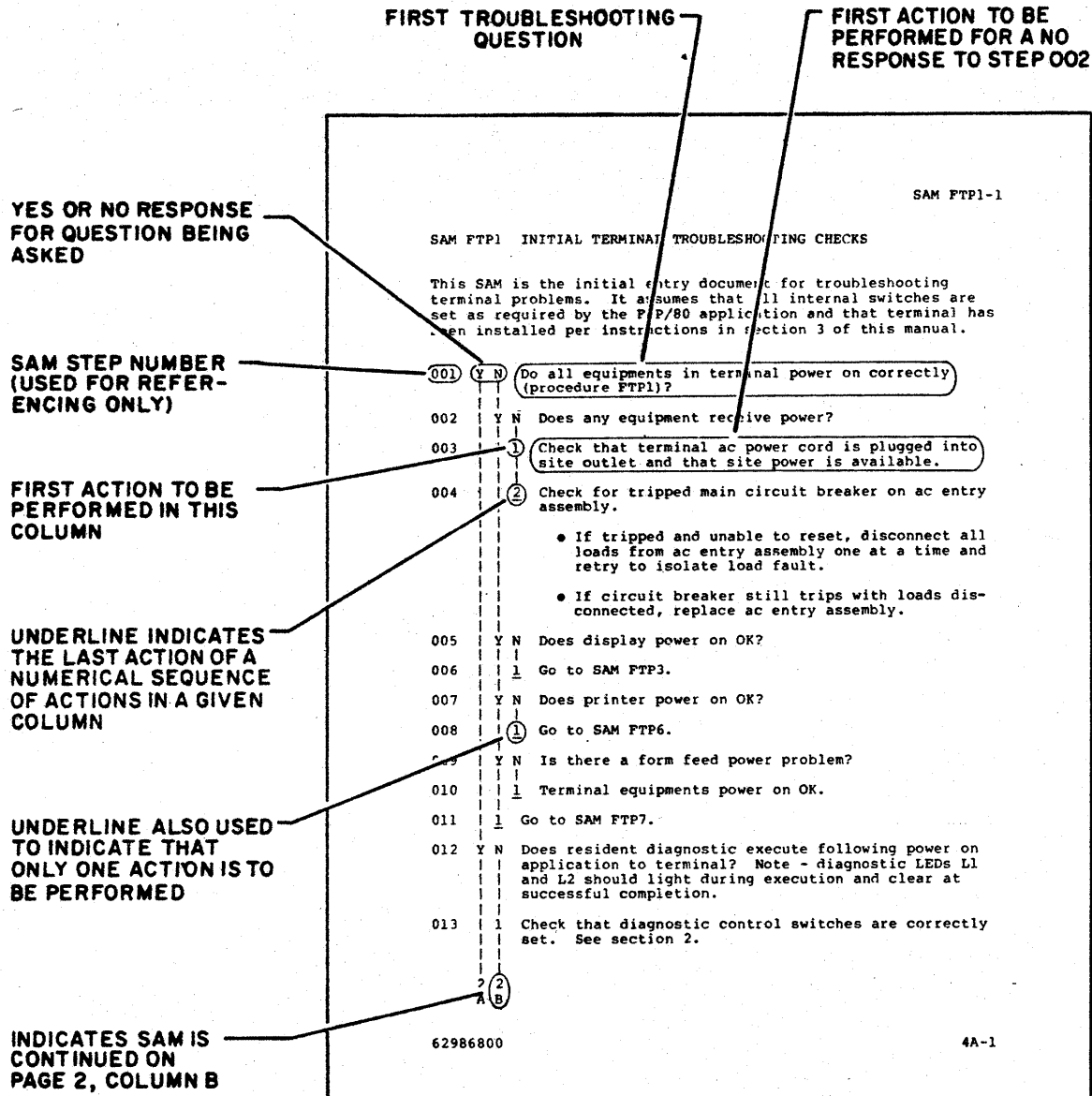
A SAM listing is a specialized format used to present troubleshooting information in a logical manner. Figure 6-2 illustrates the basic SAM format. Any applicable assumptions or advisory information is provided in the header information of the SAM.

To interpret a SAM, start at the top of the page and determine the response for the first question posed. Then follow the appropriate dashed line beneath the Y or N response. Answer the next question, etc. until the action numbers are reached. Perform the action(s) listed in that column in numerical order to correct the problem.

### ORGANIZATION OF SAMs AND PROCEDURES

The SAMs and maintenance procedures are organized in two separate subsections of this manual as follows:

- SAM Listings (section 6A)
- Maintenance Procedures (section 6B)



03680

Figure 6-2. SAM Example



SAMS  
SECTION 6A



SAM 1 POWER FAULT ISOLATION

This SAM assumes that the ac power cord is plugged into a live site outlet and is firmly seated at the rear ac connector of the unit.

- 001 Y N Does unit circuit breaker trip when power is applied?  
 | | Allow time to cool and retry before proceeding with  
 | | additional steps.
  - 002 Y N Are fan and drive motor running?  
 | |
  - 003 | | 1 Check that connector J3 from ac entry panel is  
 | | plugged into backplane.
  - 004 | | 2 Check internal ac wiring connections (see ac power  
 | | wiring schematic in section 5).
  - 005 | | 3 Check power cord for continuity.
  - 006 | | 4 Check/replace circuit breaker.
  - 007 | | 5 Replace fan or drive unit (procedure 6) as applicable.
  - 008 Y N Are all LEDs on power supply lit?  
 | |
  - 009 | | 1 Replace power supply (procedure 5).
  - 010 | 1 Check that correct power supply voltages are present.  
 | | Voltages should be:  
 | |     ● +5 V  $\pm 0.1$  V } Test points at front edge of  
 | |     ● -5 V  $\pm 0.1$  V } controller board.  
 | |     ● +12 V  $\pm 0.1$  V }  
 | |     ● +24 V  $\pm 0.5$  V } Check at J4 of drive unit (see  
 | | procedure 5)
- NOTE
- The +5-V and +24-V outputs are adjustable. Refer to procedure 5. If correct voltages are not obtained, replace power supply (procedure 5).
- 2 2  
A B

	A	B	
	1	1	
011	Y	N	Is Power indicator (LED 20) lit on controller board (primary units only)?
012		<u>1</u>	Replace controller board (procedure 4).
013		<u>1</u>	Internal power checks are OK.
014	1		Check internal wiring visually for shorts.
015	2		Unseat power supply board and retry. If circuit breaker no longer trips, replace power supply (procedure 5).
016	3		Unseat controller board (primary units only) and retry. If circuit breaker no longer trips, replace controller board (procedure 4).
017	4		Disconnect J4 from disk drive unit and retry. If circuit breaker no longer trips, replace disk drive unit (procedure 6).
018	<u>5</u>		Refer to ac power wiring schematic in section 5 and disconnect wiring/connectors from ac entry panel, line filter, and transformer back to circuit breaker to isolate load fault. Replace defective item.

## SAM 2 INTERNAL DIAGNOSTIC CHECKS (MASTER UNITS ONLY)

This SAM isolates faults detected by the internal diagnostic tests. Refer to sections 2 and 3 for information on Diagnostic Control Switches and LED Indicators, and to the Diagnostic Self-Test Routines heading in section 6 for test descriptions.

001 Y N Do all four LEDs at front of controller board light momentarily following a power application or a master reset?

002 | 1 If no LEDs light, check for power fault per SAM 1.

003 | 2 Replace controller board (procedure 4).

004 N Y Is Error LED (2<sup>3</sup>) lit and other LEDs off? (Indicates a ROM Checksum Test 0 error.)

005 | 1 Replace ROM chips, Z80 chip, or controller board (procedure 4).

006 N Y Is Error LED (2<sup>3</sup>) and Power LED (2<sup>0</sup>) lit? (Indicates a RAM memory Test 1 error.)

## NOTE

Verify that switches 2<sup>4</sup> and 2<sup>5</sup> are set correctly for number of RAM banks present. See section 3, Sub-system Installation.

007 | 1 Replace controller board (procedure 4), or isolate and replace bad RAM chip as follows:

o Place switch 2<sup>1</sup> up and switch 2<sup>2</sup> down to display failing RAM bank in LEDs 2<sup>0</sup> through 2<sup>2</sup> (bank 0 is row A, bank 1 is row B, bank 2 is row C, and bank 3 is row D).

o Place switch 2<sup>2</sup> up to display failing bit (chip) within bank in LEDs 2<sup>0</sup> through 2<sup>2</sup> (bit 0 is at location 6, bit 7 is at location 1. See figure 6B-4 for board layout).

o Replace failing RAM chip and rerun internal diagnostic tests.

2  
A

- A  
1
- 008 N Y Is Error LED (23) and Write LED (21) lit? (Indicates an Interrupt Generator Test 2 error.)
  - 009 1 Replace controller board (procedure 4). Problem with 9519 Interrupt Controller IC or support logic.
  - 010 N Y Is Error LED (23), Write LED (21), and Power LED (20) lit? (Indicates a Flexible Disk Controller Test 3 error.)
  - 011 1 Replace controller board (procedure 4). Problem with 1791 Flexible Disk Controller IC or support logic.
  - 012 N Y Is Error LED (23) and Read LED (22) lit? (Indicates a DMA Test 4 error.)
  - 013 1 Replace controller board (procedure 4). Problem with 9517 DMA IC or support logic.
  - 014 N Y Is Error LED (23), Read LED (22), and Power LED (20) lit? (Indicates an I/O Loopback Test 5 error.)
  - 015 1 Replace controller board (procedure 4). Problem with support logic.
  - 016 N Y Is Error LED (23), Read LED (22), and Write LED (21) lit? (Indicates a CTC Test 6 error.)
  - 017 1 Replace controller board (procedure 4). Problem with Z80 CTC IC.
  - 018 N Y Is Error LED (23), Read LED (22), Write LED (21), and Power LED (20) lit? (Indicates a Writing and Reading the Disk Test 7 error.)
  - 019 1 Verify correct diagnostic control switch settings (see section 3 of manual).
  - 020 2 Verify that flexible disk is properly formatted.
  - 021 3 Verify that flexible disk is Write Protected (slot covered). If not Write Protected, set diagnostic control switch 23 up.
  - 022 4 Replace controller board (procedure 4).
  - 023 5 Replace disk drive unit (procedure 6).
- 3  
A

	A	B	
	<u>2</u>		
024	N	Y	Is Error LED (23) off, and Read LED (22), Write LED (21), and Power LED (20) lit? (Indicates that controller logic is communicating with drive unit, but test is not complete).
025		<u>1</u>	Check that flexible disk is installed in drive unit (procedure 2) and access door is closed.
026		<u>2</u>	Replace controller board (procedure 4).
027		<u>3</u>	Disconnect secondary unit (if applicable).
028		<u>4</u>	Replace disk drive unit (procedure 6)
029	N	Y	Is Power LED (20) lit and other LEDs off?
030		<u>1</u>	Indicates successful completion of resident diagnostic.
031	<u>1</u>		Diagnostic test error. Begin at step 001 of this SAM to isolate failure.

### SAM 3 DIAG FLEXIBLE DISK DIAGNOSTIC CHECKS

This SAM provides fault isolation information for problems detected by the DIAG Flexible Disk Diagnostics. Use of this SAM assumes that the internal self-test diagnostics execute without error. Refer to section 3, Checkout, for the procedure to be used to load and execute the DIAG Flexible Disk Diagnostics.

- 001 N Y Is there a terminal log-in or diagnostic loading problem?
- 002 1 Refer to applicable terminal hardware maintenance manual for troubleshooting information (see preface for publication number).
- 003 N Y Is there a Disk System Not Ready to Load or Incorrect Load message displayed?
- 004 1 Try loading again by entering option 10 of display prompts.
- 005 2 Check that power is applied to flexible disk subsystem and last peripheral device connected to parallel I/O channel.
- 006 3 Check that no flexible disk is installed in drive unit of primary or secondary and perform a long master reset (press and hold Master Reset switch longer than three seconds). (1)
- 007 4 Check that device address strap/switch of flexible disk subsystem is set correctly.
- 008 5 Check seating of I/O cable between terminal and flexible disk subsystem and check that terminator is installed at last peripheral device.
- 009 6 Reseat controller board.
- 010 7 Replace controller board (procedure 4).
- 011 8 Refer to applicable terminal hardware maintenance manual for troubleshooting information (see preface for publication number).
- 012 N Y Is there a Bad Seek message displayed?  
2 2  
A B



	A	B	
	1	1	
013	1	1	Verify that side of flexible disk entered for seek and track number are valid.
014	2	2	Check that a correctly formatted flexible disk is being used.
015	3	3	Possible bad flexible disk, try a different one.
016	4	4	Reseat controller board.
017	5	5	Replace controller board (procedure 4).
018	6	6	Replace disk drive unit (procedure 6).
019	7	7	Refer to applicable terminal hardware maintenance manual for additional troubleshooting information.
020	N	Y	Does a switch-test error message appear?
021	1	1	Verify that switch being toggled is one being referenced on terminal.
022	2	2	Verify that toggling switch does not change switch position indicated on terminal.
023	3	3	Reseat controller board.
024	4	4	Replace controller board (procedure 4).
025	N	Y	Does a send-interrupt-to-terminal error message appear?
026	1	1	Reseat controller board.
027	2	2	Check seating of parallel I/O cable and terminator assembly.
028	3	3	Verify correct terminal operation. If other devices are connected to parallel I/O channel, verify that interrupts work correctly to those devices.
029	4	4	Replace controller board (procedure 4).
030	N	Y	Does an index-pulse error message appear?
031	1	1	Reseat controller board.
032	2	2	Replace controller board (procedure 4).
033	2	2	Replace power supply (procedure 5).
	3	3	
	A	B	

	A	B	
	2	2	
034	N	Y	Does a line-sync error message appear?
035		1	Reseat controller board.
036		2	Check seating of internal cable connectors.
037		3	Replace controller board (procedure 4).
038		4	Replace power supply (procedure 5).
039	N	Y	Is there a test-disk error (wrong density, number of sides, etc.)?
040		1	Check flexible disk part number to ensure disk being test has assumed characteristics (density, number of sides, etc.).
041		2	Reseat controller board.
042		3	Replace controller board (procedure 4).
043		4	Replace disk drive unit (procedure 6).
044	N	Y	Does error occur during read-a-sector test?
045		1	Try another flexible disk to verify that media is okay.
046		2	Replace controller board (procedure 4).
047		3	Replace disk drive unit (procedure 6).
048	N	Y	Does a device-address error message appear?
049		1	Ensure that device-address entry being made matches setting of device-address strap/switch.
050		2	Replace controller board (procedure 4).
051		1	DIAG Flexible Disk Diagnostics executed OK.

---

(1) If a long master reset or power application is performed with a system flexible disk installed, internal diagnostics will autoload from disk instead of terminal. Therefore, flexible disk must be removed from drive unit(s), or Switch 2<sup>3</sup>, or Switch 2<sup>7</sup> must be up in order to bypass test 7 or to bypass internal diagnostic execution, respectively.

**PROCEDURES  
SECTION 6B**



## Procedure 1 - Power Application/Removal

This procedure assumes that the flexible disk subsystem is plugged into the site ac outlet.

### WARNING

Applying improper voltage to the flexible disk subsystem can damage components. Read label on back of unit for proper voltage and frequency.

### NOTE

Correct operation of the IST parallel interface channel requires that power be applied to the last peripheral device on the channel. Last device supplies +5 V to the terminator.

1. First apply power to terminal. Then apply power to disk subsystem by pulling forward on Power On/Off switch connecting rod (early units) or by pressing Power ON/OFF switch to ON position (later units). See figure 6B-1.

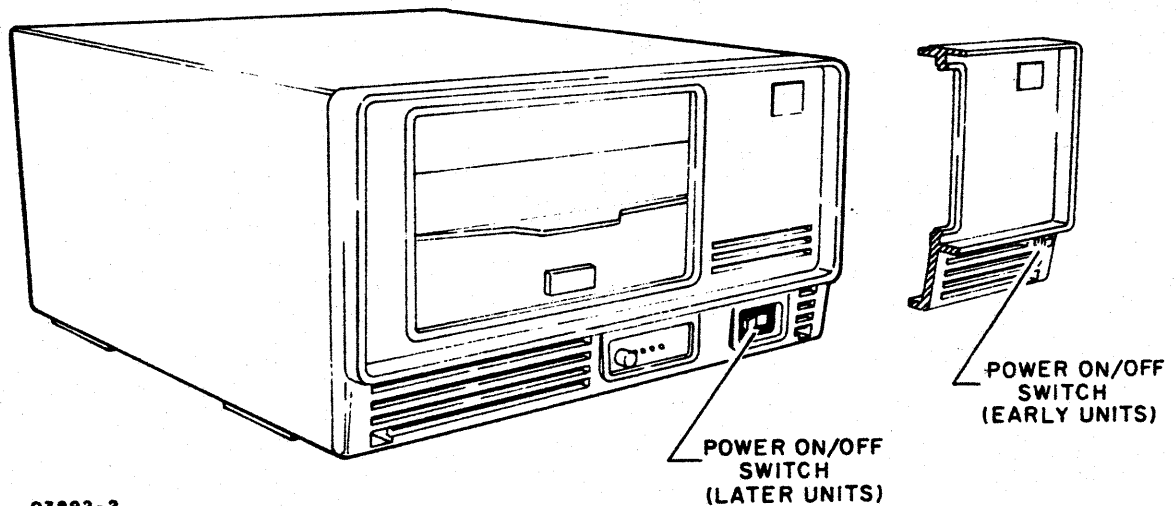


Figure 6B-1. Power On/Off Switch Location

2. Power on is indicated by LED 20 being lit (primary units only).

3. Remove power by pushing Power On/Off switch connecting rod in (early units) or by pressing Power On/Off switch to Off position (later units).

### Procedure 2 - Flexible Disk Installation/Removal

Install flexible disk in drive unit per the following:

1. Apply power to disk subsystem (procedure 1).
2. Press door latch to open access door (figure 6B-2).

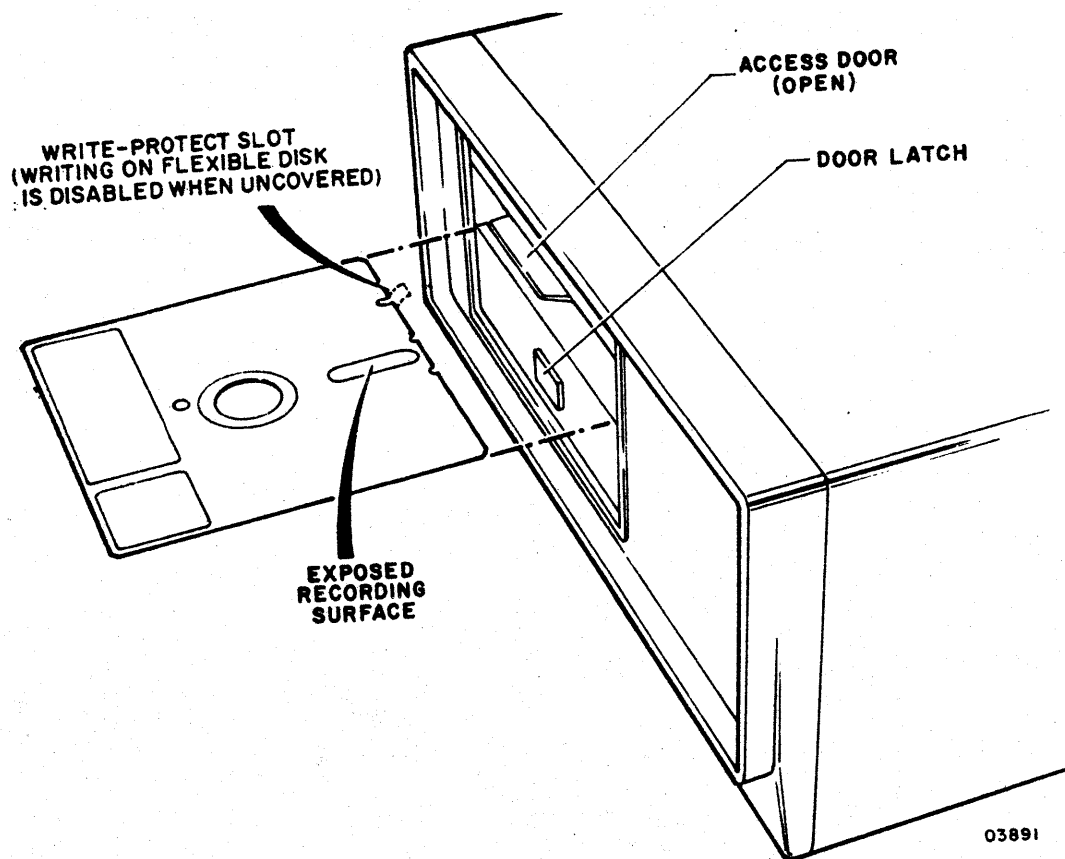


Figure 6B-2. Disk Installation/Removal

3. Remove flexible disk from storage envelope.

NOTE

If information is to be written onto disk, Write-Protect slot must be covered with tape that is opaque to infrared light.

4. Hold flexible disk so that Write-Protect slot is to left and slide disk into drive unit until solidly seated.
5. Close drive access door by pressing down on door until latched.
6. To remove disk, press door latch to open door and remove disk from drive. Place flexible disk in storage envelope.

NOTE

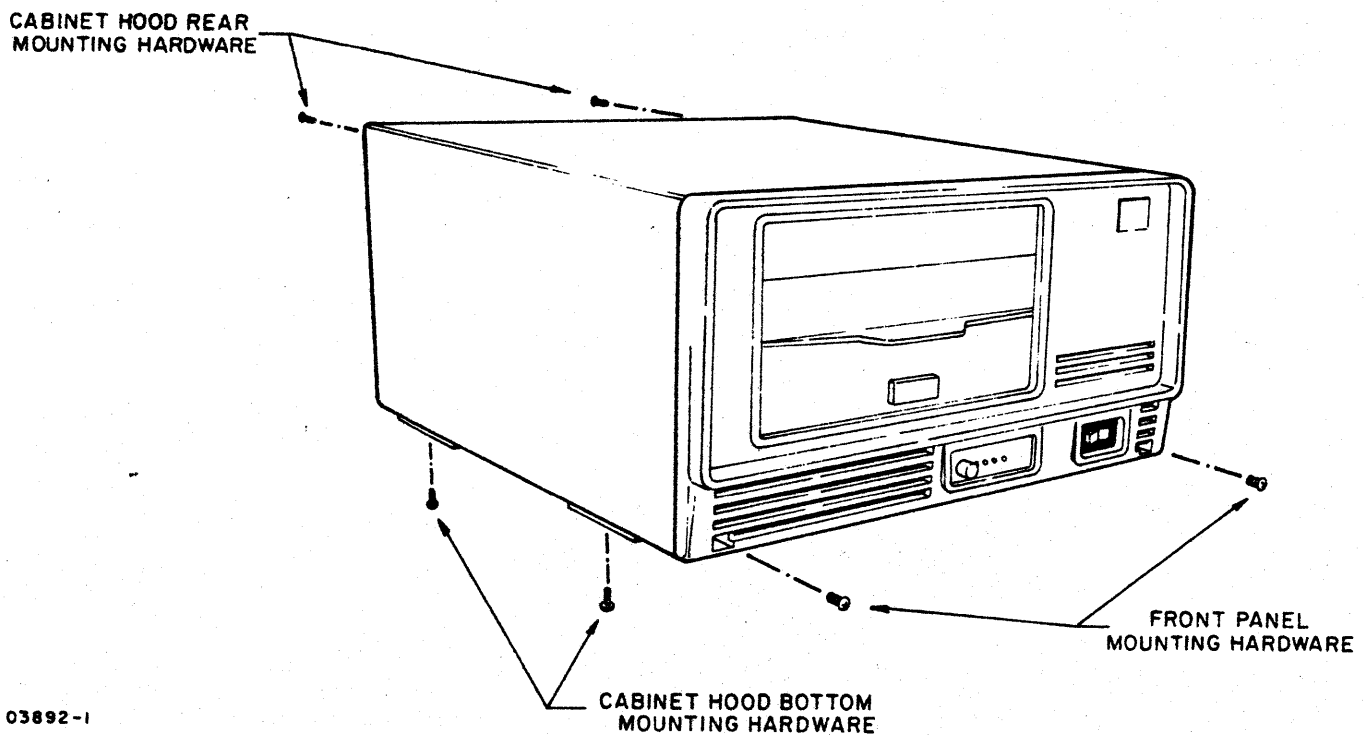
Care should be taken in handling the flexible disks. Recommendations are:

- Do not use lead or grease pencils when writing on flexible disk jacket label as these items deposit flakes. Remove flexible disk before writing on jacket.
- Do not fasten paper clips to flexible disk jacket edges.
- Do not touch disk surface exposed by jacket slot.
- Do not attempt to clean disk surface in any manner.
- Keep flexible disk away from magnetic fields and ferromagnetic materials that may be magnetized.
- Protect flexible disk from liquids, dust, and metallic substances.
- Always place flexible disk in its protective jacket when not in use.
- Store flexible disks loosely in a vertical position, not stacked.

### Procedure 3 - Front Panel and Cabinet Hood Removal/Replacement

To remove the front panel or cabinet hood, refer to figure 6B-3 and perform the following:

1. Turn subsystem power off (procedure 1).
2. To remove front panel, remove two screws from panel and tip bottom of panel forward to release.
3. To reinstall front panel, engage retaining slots at top of panel, then tip panel down and install mounting screws.
4. To remove cabinet hood, first remove front panel, then remove four screws from Nylon feet at bottom of unit and two screws at rear of unit.
5. When reinstalling cabinet hood, install two screws at rear of unit first before installing bottom screws and Nylon feet.



03892-1

Figure 6B-3. Front Panel and Cabinet Hood Mounting Details



## Procedure 4 - Controller Board Removal/Replacement

Perform the following steps to remove/replace the controller board and/or RAM, EROM, and Z80 chips. See figure 6B-4 for board layout.

1. Turn subsystem power off (procedure 1).
2. Remove front panel (procedure 3).
3. Release controller board extractors and slide pc board out of unit.
4. Remove master reset push button and install on replacement board. This button is eccentric which allows for some adjustment. This adjustment is performed in step 6 of this procedure.

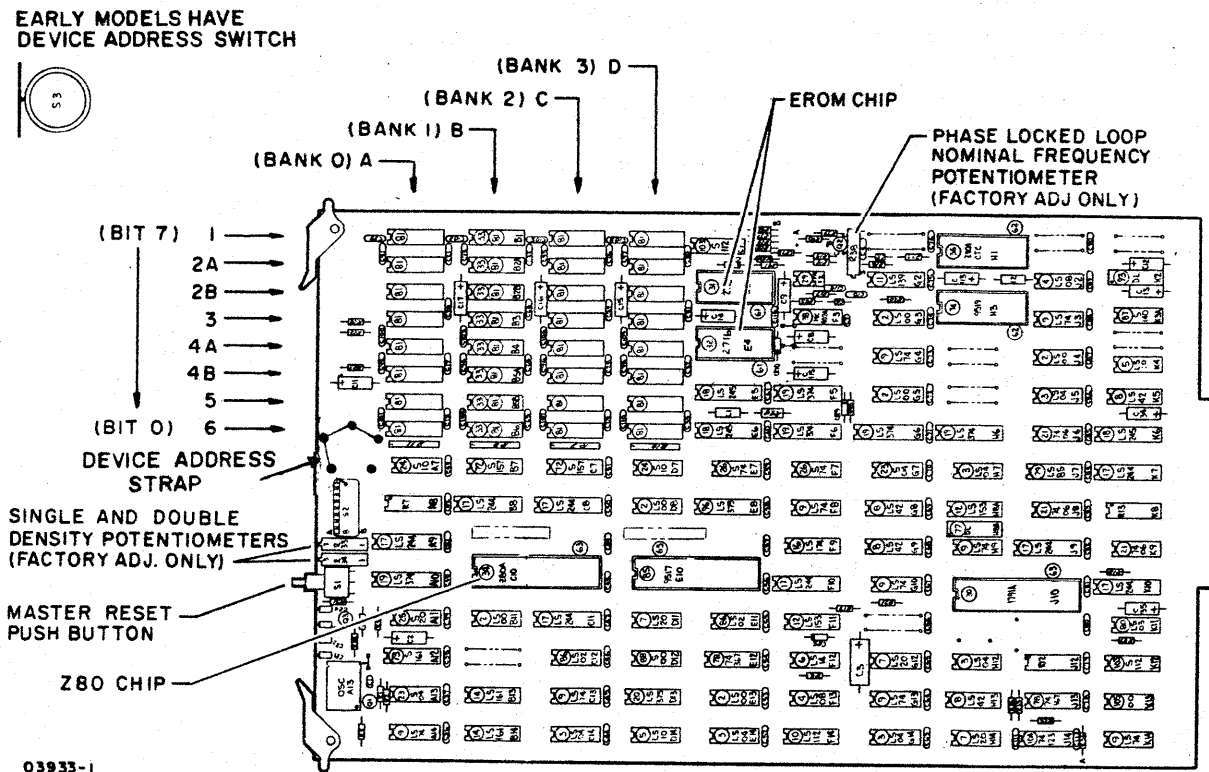


Figure 6B-4. Controller Board Layout

5. When installing a replacement controller board, verify that device address strap\* is wired to 7 and diagnostic

\*If unit has device address switch, it must be set to address 7.

control switches are set correctly for subsystem operation (see section 3 for switch settings). For FA501-A/B only, if RAM options are installed on a controller board that is being replaced, transfer RAM chips to new controller board. Locations for RAM options are:

- 1st RAM option - locations C1, C2A, C2B, C3, C4A, C4B, C5, and C6.
  - 2nd RAM option - locations D1, D2A, D2B, D3, D4A, D4B, D5, and D6.
  - 3rd RAM option - locations A1, A2A, A2B, A3, A4A, A4B, A5, and A6.
6. Slide controller board in and replace front panel (procedure 3).
  7. Rotate master reset push button unit until best fit is achieved.

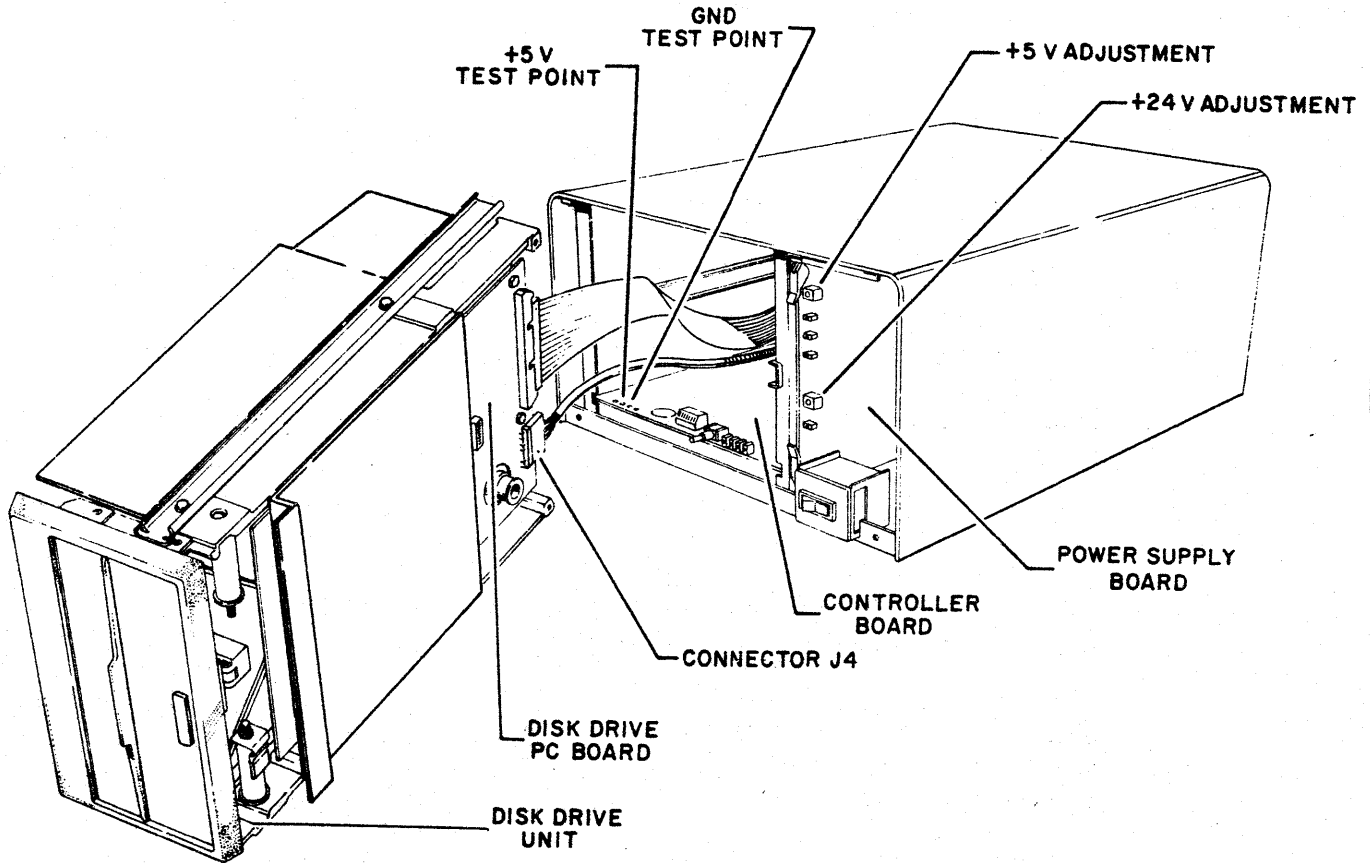
#### Procedure 5 - Power Supply Removal/Replacement

This procedure describes removal/replacement of the power supply assembly. See figure 6B-5.

1. Turn subsystem power off (procedure 1).
2. Remove front panel (procedure 3).
3. Release power supply board extractors and slide assembly out of unit.
4. After installing a replacement power supply assembly, perform voltage adjustments as follows:
  - +5-V Adjustment
    - a. Connect meter leads as follows:
      - Primary units - Attach meter leads to +5-V and GND test points at left front edge of controller board.
      - Secondary units - Remove disk drive unit from cabinet by pulling drive unit forward until free of slides. Set drive unit on its side, rotated to the left, to allow access to connector J4 at rear of drive PC board. Check that board connectors are seated firmly. Connect + meter lead to J4 pin 2 (+5 V) and - meter lead to J4 pin 3 (ground)

b. Apply power to unit.

c. Adjust top potentiometer on power supply board for  $+5\text{ V} \pm 0.1\text{ V}$ .



03931-1

Figure 6B-5. Power Supply Voltage Adjustments

● **+24-V Adjustment**

a. Turn power off.

b. Remove disk drive unit from cabinet by pulling drive unit forward until free of slides but cables remain firmly attached. Set drive unit on its side, rotated  $90^\circ$  to the left, to allow access to connector J4 at rear of drive PC board.

c. Connect + meter lead to J4 pin 4 (+24 V) and - lead to J4 pin 6 (+24-V return).

- d. Apply power to unit.
- e. Adjust bottom potentiometer on power supply board for +24 V +0.5 V.
- f. Turn power off, disconnect meter leads, and reinstall drive unit. Check that cables do not bind when installing drive unit.

### Procedure 6 - Disk Drive Unit Removal/Replacement

Refer to figure 6B-6 and perform the following steps to remove/replace the disk drive unit.

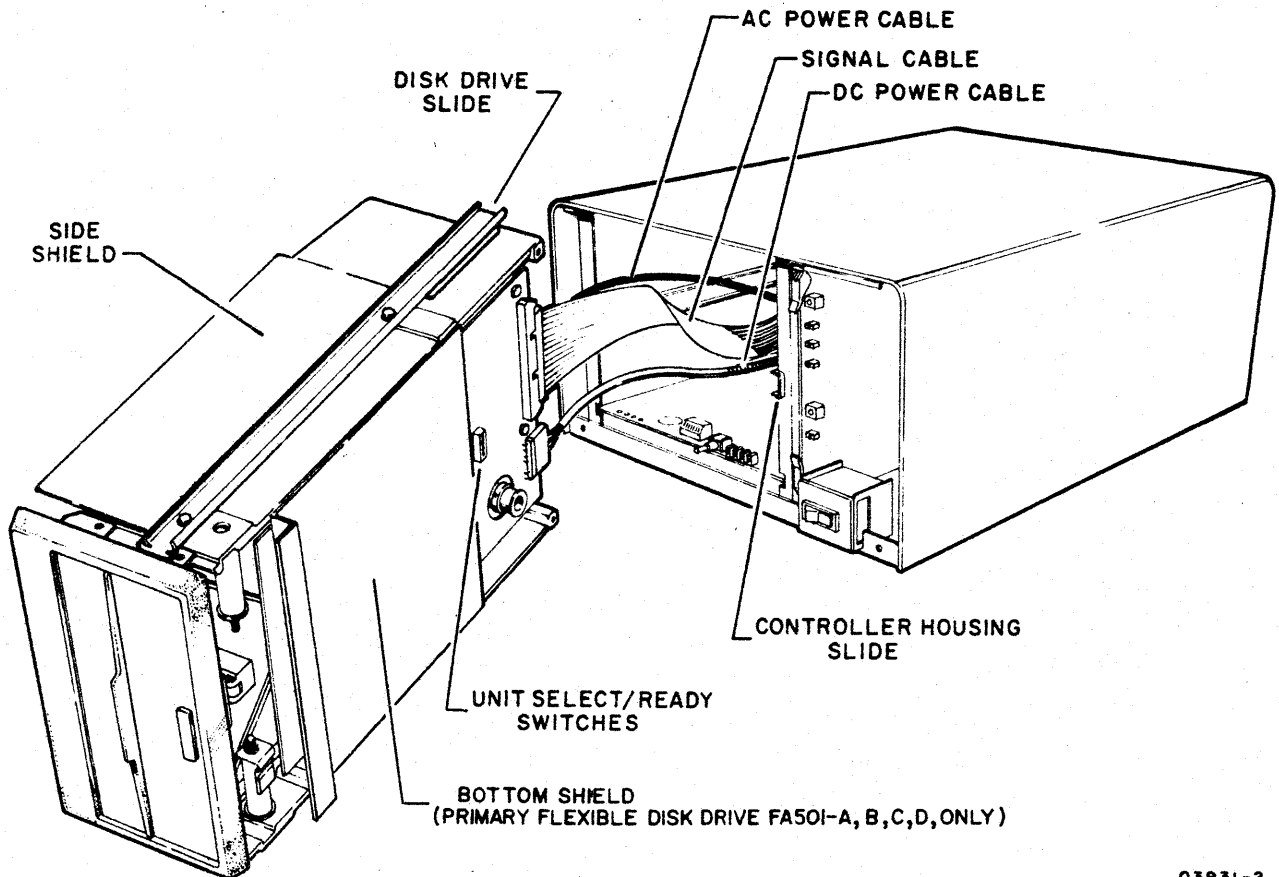
1. Turn subsystem power off (procedure 1).
2. Remove front panel (procedure 3).

#### CAUTION

Do not set disk drive unit down with PC board at bottom. Damage to PC components may occur.

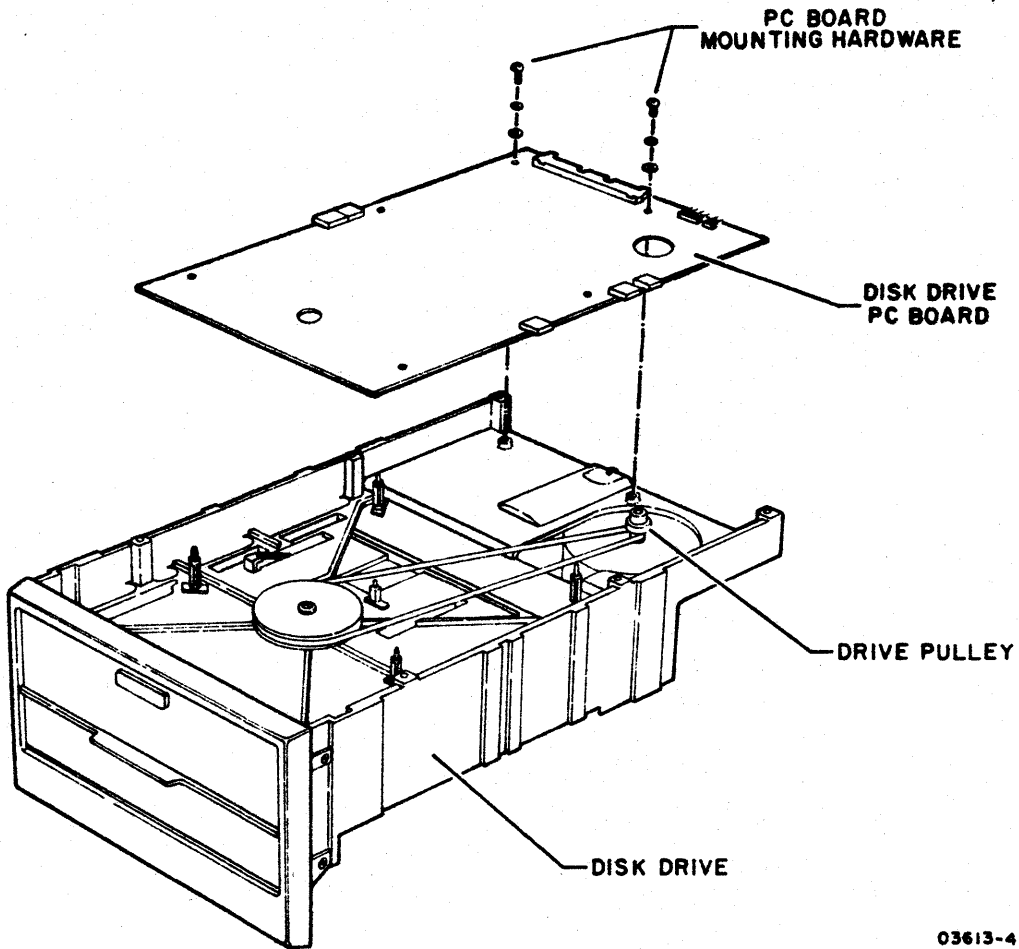
3. Remove disk drive unit from cabinet by pulling drive unit forward until free of slides. Set drive unit on its side and disconnect three cables from rear of unit.
4. Remove slides and shields (figure 6B-6) from existing drive unit. The shields are to be installed on the replacement drive as follows:
  - When replacement drive is a primary unit (FA501-A/B/C/D Primary Flexible Drive), both side and bottom shields must be replaced.
  - When using the secondary unit as the replacement (BR801-A,B Secondary Flexible Drive), only the side shield must be replaced (figure 6B-6).
5. Verify that drive pulley on replacement drive unit is installed correctly for 50-Hz/60-Hz operation as required. Pulley must be reversed to change the rotating speed of drive unit. Refer to figure 6B-7 for details.

6. Verify that Unit Select switch (DIP switches 1, 2, 3, and 4) and Ready switch (DIP switches 5, 6, 7, and 8) are set as follows:
  - o Primary Unit - DIP switch 1 and 5 ON, remaining switches OFF.
  - o Secondary Unit - DIP switch 2 and 6 ON, remaining switches OFF.
7. Remove cardboard head-protective flexible disk from drive unit if replacement unit is being installed.



03931-2

Figure 6B-6. Disk Drive Unit Installation



03613-4

Note - Refer to the 9406 Flexible Disk Drive Assembly Hardware Maintenance manual for additional information if needed (see preface for publication number).

Figure 6B-7. Drive Pulley Details

This section contains the spare parts lists, genealogy charts, and assembly drawings for the flexible disk subsystem. Parts data for the 9406 Flexible Disk Drive unit is contained in a separate publication (see the preface for publication number).

## NOTE

Parts list information is provided under separate dividers for the pre-production and production units. Common parts list information is also provided under a separate divider.

Table 7-1 explains the column headings on the assembly parts lists.

TABLE 7-1. EXPLANATION OF COLUMN HEADINGS ON ASSEMBLY PARTS LISTS

COLUMN HEADING	EXPLANATION
FIND NO.	Identifies an electrical or mechanical part on an assembly drawing. If more than one listing appears for a find number, refer to LI, WK IN, and WK OUT.
LI (Line Item)	Gives a chronological or historical record of the addition of a new part to a find number. For example, 01 indicates that the part was the first one used, and 02 indicates the second, etc. See also WK IN and WK OUT.
PART NUMBER	Gives the Control Data Corporation part identification. Use this number when ordering replacements.
CD (Check Digit)	Gives the information-control system a means of cross-checking the correctness of a part number.
QUANTITY	Lists the total number of a part required to complete an assembly. The vertical line near the center of the column acts as a decimal point. Numbers to the left of the line are whole numbers. Those to the right of the line are tenths, hundredths, and thousandths.
U/M (Unit of Measure)	Indicates how the information-control system counts or supplies a part.
PART DESCRIPTION	Describes the physical appearance, type, or name of a part.
MC (Material Code)	Supplies additional descriptive data to the information-control system.
YLD (Yield)	A 2-digit number that indicates the usable portion of any quantity of parts expressed as a percentage.
ECO NO. IN	Engineering Change Order that adds a new part to an assembly. See also WK IN.
ECO NO. OUT	Engineering Change Order that deletes a part from an assembly. See also WK OUT.
S/N (Serial Number)	Used to specify an ECO's effectivity by serial number.
WK IN (Week In)	Lists the date when manufacturing begins using a new part and when it is available for parts replacement. For example, 7222 means a part is available of the 22nd week of 1972.
WK OUT (Week Out)	Lists the date when manufacturing no longer uses a part in building an assembly. See also WK IN. Do not order a part after its week-out date.

0643-2A





PARTS DATA FOR PRE-PRODUCTION UNITS ONLY



DWN	R. Trautman	P/AD	CONTROL DATA	TITLE	SPL	PREFIX	DOCUMENT NO	REV	J
CHKD	R. Trautman	2-6-80		PRIMARY FLEXIBLE DISK SUBSYSTEM	SPL		66308923		
ENG	P. Whelan	7-6-80		FIRST USED ON					
MFG	N/A			FAS01A/B				SHEET	1 OF 3
APPR	S. V. Vora	7-16-80	CODE IDENT						
	G. R. Miller	2-16-80	15920						

SHEET REVISION STATUS				REVISION RECORD						
3	2	1	REV	ECO	DESCRIPTION	DRFT	DATE	APP		
			00	00	00	5000-62	RELEASED CLASS B		2/1/80	RAM
			01	01	01	51009	ADDED FIN 18 & NOTE 9	WJG	2/19/80	RAM
			02	01	02	51011	FIN 18 WAS 66312007	WJG	2-19-80	RAM
			03	03	03	51168	FIN 12 WAS 66139318 FIN 13 WAS 66139319	D.S. 7/17/80	7-15-80	RAM
			A	A	A	11565-80	RELEASED CLASS "A"		7/23/80	RAM
			B	A	B	14165	REVISED PER ECO	WJG	9/15/80	RAM
			C	C	C	14376	REVISED PER ECO	EE	11/2/81	RAM
			D	D	D	14571	CHG 1, 15, 19, DELETE NOTE 3	WJG	3-2-81	RAM
			E	D	E	14721	FIN 16 WAS 90446190	EE	7/13/81	RAM
			F	D	F	14663	ADDED FIN 20	EE	7/14/81	RAM
			G	G	G	14838	ADDED NOTE 10	EE	10/24/81	RAM
			G	H	H	14820	REVISED PER ECO	WJG	11-6-81	RAM
			J	J	J	15867	INACTIVE SERVICE USE ONLY, SUPERSEDED BY 46313407	MED	3-28-83	RAM

INACTIVE

NOTES:

EQUIPMENT	EQUIPMENT CONFIGURATOR	TOP LEVEL ASSEMBLY
FAS01A 60HZ	15632205	15632209
FAS01B 50HZ	15632206	15632210

THIS SPL APPLIES ONLY TO A/B01 EQUIPMENTS

DETACHED LISTS

AA3180 REV. 8-71

PRINTED IN U.S.A.

CONTROL DATA CORPORATION	CODE IDENT	SHEET	DOCUMENT NO.	REV.
	15920	2	SPL 66308923	J

NOTES:

- These parts are the total required for a unit with no options installed.
- A unit could have 3 RAM options of 8 RAM ICs for each option for a total of 32 RAM ICs in the unit.

4. Find Numbers 1 thru 7 and 19 are for the 98ED Controller Board.

5. Use Find Number 8 for the FAS01A (60HZ unit and use Find Number 9 for the FAS01B (50HZ unit).

6. Find Number 10 is for the 50HZ AC Entry only.

8. Find Number 11 is the signal cable used to connect the Primary Flexible Disk Subsystem to the IST Terminal.

9. One of these devices is required on the last device on the Plato IST Parallel I/O channel daisy chain configuration.

10. Original production units were built with P/N 90446140. Current production units are built with P/N 90446290. These cards are interchangeable.

AA3180

PRINTED IN U.S.A.

CONTROL DATA			CODE IDENT		SHEET		SPL		DOCUMENT NO.		REV				
			15420		3				66308723		J				
FIND NO.	PART IDENTIFICATION	QUANTITY REQUIRED										UNIT OF MEAS	NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL	
		60 HZ	50 HZ												
1	66312070	1	1											2716 2KX8 ROM	△4
2	15153821	8	8											4116 16K RAM	△4
3	15163201	1	1											Z80 Processor	△4
4	15163444	1	1											FD1791 Disk Controller	△4
5	15163458	1	1											9517 DMA	△4
6	15163459	1	1											9519 Interrupt Cont.	△4
7	15164429	1	1											Z80A-CTC	△4
8	15165425	1	0											60Hz Power Cord	△5
9	15165426	0	1											50Hz Power Cord	△5
10	51918789	0	1											Step down Transformer	△6
11	61408865	1	1											25 Pin I/O Cable	△8
12	75587103	1	1											Circuit Breaker	
13	15164356	1	1											Line Filter	
14	77618000	1	1											Flexible Disk Assembly	
15	90446284	1	1											98ED Controller Board	
16	90446290	1	1											1AFD Power Supply	△10
17	90446143	1	1											98MD Backplane	
18	15632316	1	1											FT116A Terminator	△9
19	66312071	1	1											2716 2KX8 Rom	
20	71493364	1	1											SCR Shoulder Nylon	

PRINTED IN U.S.A.

DWN	R. Trautman	2-60	CONTROL DATA	TITLE	SPL SECONDARY FLEXIBLE DISK	PREFIX	DOCUMENT NO	REV
CHKD	R. Trautman	2-6-80			SPL	66308921	E	
ENG	P. Maguire	2-6-80			FIRST USED ON	BR810A/B	SHEET	1 of 3
MFG	M/A	7-16-80		CODE IDENT	15920			
APPR	E. J. M...	7-16-80						

SHEET REVISION STATUS				REVISION RECORD					
3	2	1	REV	ECO	DESCRIPTION	DRFT	DATE	APP	
			00	00	00	500044	Released Class B	WJG 2-11-80	2-11-80
			01	00	01	51004	F/N 4 WAS 51097345	WJG 6-6-80	6-6-80
			02	01	02	51114	F/N 4 WAS 51940854	WJG 6-6-80	6-6-80
			03	03	03	51168	F/N 5 WAS 66309319 F/N 6 WAS 66309318	WJG 7-18-80	7-18-80
			A	A	A	11565-88	RELEASED CLASS 'A'	WJG 7-23-80	7-23-80
			B	A	B	14165	REVISED PER ECO	WJG 9-15-80	9-15-80
			C	A	C	14721	F/N 9 WAS 90446140	EE 7-13-81	7-13-81
			D	D	D	14838	ADDED F/N 2 AND NOTE 5	EE 11-17-81	11-17-81
			E	D	E	14820	REVISED PER ECO	WJG 11-3-81	11-3-81

NOTES:

EQUIPMENT	EQUIPMENT CONFIGURATOR	TOP LEVEL ASSEMBLY
BR810A 60HZ	15632207	15632211
BR810B 50HZ	15632208	15632212

THIS SPL APPLIES ONLY TO A/80% EQUIPMENTS.

DETACHED LISTS

AA3180 REV. 8-71

PRINTED IN U.S.A.

	CODE IDENT	SHEET	PREFIX	DOCUMENT NO.	REV
	15920	2	SPL	66308921	D

NOTES:

1. These parts are the total required for a unit with no options installed
2. Use find number 1 (60HZ Power Cord) for the BR810A (60HZ unit) and find number 2 (50HZ Power Cord) for the BR810B (50HZ unit).
3. Use find number 3 for the 50HZ AC Entry only.
4. Find number 4 is the Signal Cable used to connect the BR810A or BR810B to the FA501A or FA501B.
5. Original production units were built with P/N 90446140. Current production units are built with P/N 90446290. These cards are interchangeable.

AA3185

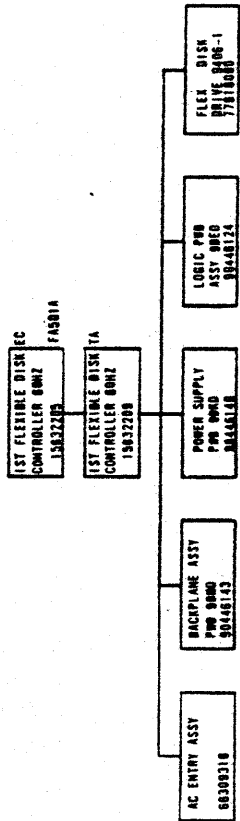
PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT		SHEET		DOCUMENT NO.		REV.				
		15920		3		SPL 66308921		E				
FIND NO.	PART IDENTIFICATION	QUANTITY REQUIRED								UNIT OF MEAS	NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
		60 HZ	50 HZ									
1	15165425	1	0								60Hz Power Cord	△ E
2	15165426	0	1								50Hz Power Cord	△ E
3	51918789	0	1								Step down Transformer	△ 3
4	61408976	1	1								Secondary Signal Cable	△ 4
5	95587103	1	1								Circuit Breaker	
6	15164356	1	1								Line filter	
7	77618000	1	1								Flexible Disk Assembly	
8	90446140	REF	REF								9BKD Power Supply	△ 5
9	90446290	1	1								1AFD Power Supply	Interchangable with F/N 8
10	90446143	1	1								9BMD Backplane	

AAS101 REV. 8/71

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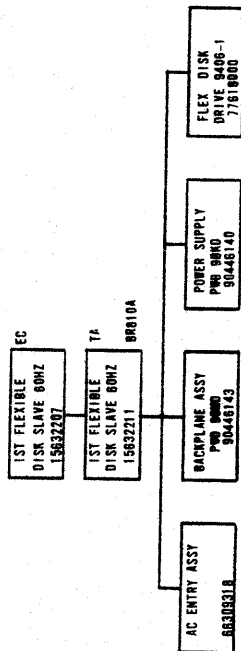
SHEET REVISION STATUS		REVISION RECORD			
REV	CO	DESCRIPTION	DRFT	DATE	CHKD APP
01	5110	RELEASED CLASS B	WJG	6-23-88	WJG
02	5110	DELETE 9046147	WJG	6-23-88	WJG
A	1585-88	RELEASED CLASS A	WJG	7-22-88	WJG



- REFERENCE DOCUMENTS
- ENGINEERING SPECIFICATION 6542272
  - SPARE PARTS LIST 68309323
  - SCHEMATIC DIAGRAM (8880) 90446130
  - SCHEMATIC DIAGRAM (8880) 90446141
  - SCHEMATIC DIAGRAM (8880) 90446122

REFERENCE DRAWING		TITLE	
FIRST USED ON	FA 501A	GENEALOGY CHART	
DWN	WJG	PLATO MASTER FLEXIBLE DISK	
CHG	WJG	SUBSYSTEM 60 HZ	
ENGR	WJG	CODE DRFT	15920
WJG	WJG	DRAWING NO	C 66310611
APPR	WJG	CROSS REF	
RES		SCALE	
CAP		SHEET	OF

SHEET REVISION STATUS		REVISION RECORD				
REV	CO	DESCRIPTION	DRFT	DATE	CHKD	APP
00	00001/12	RELEASED CLASS B		7/1/79		
01	51118	DELETE 90446147	WJG	6-9-80	WJG	
1		A 11/565-00 RELEASED CLASS W		11-25-82		



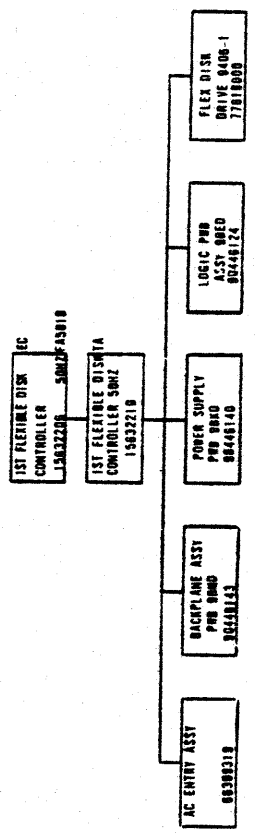
REFERENCE DOCUMENTS

- ENGINEERING SPECIFICATION..... 6242254
- SPARE PARTS LIST..... 86308921
- SCHEMATIC DIAGRAM (9980)..... 90446138
- SCHEMATIC DIAGRAM (9980)..... 90446141

REFERENCE DRAWING		TITLE	
BRBIOA		GENEALOGY CHART	
FIRST USED ON		PLATO SLAVE FLEXIBLE DISK DRIVE 60HZ	
DRAWN	BY	DATE	SCALE
BY	BY	7-12-79	
CHKD	CHKD	7-22-79	
ENGR	ENGR	7-16-80	
APP	APP	7-15-80	
COMPONENTS, EXCEPT AS NOTED		CODE BENT	DRAWING NO
RES	VALUE	15920	66310612
CAP	RATING	C	
		CROSS REF. NO.	SHEET / OF
			1 / 1



SHEET REVISION STATUS		REVISION RECORD				
REV	CO	DESCRIPTION	DRFT	DATE	CHKD	APP
00	5000/12	RELEASED CLASS B	✓	4/2/66		
01	51118	DELETE 50496147	WXS	5-80	UJL	
02	51172	SPL WAS 66303922	WXS	5-80	UJL	
A 1/15/65-68		RELEASED CLASS A	WXS	2-20-61	L	

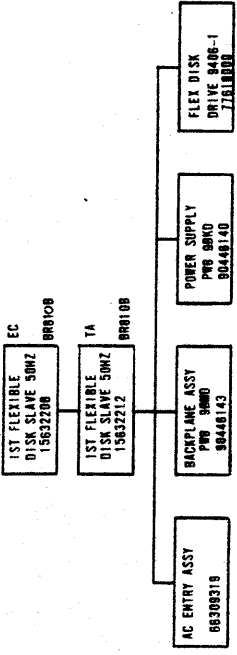


REFERENCE DOCUMENTS

- ENGINEERING SPECIFICATION 1804284
- SPARE PARTS LIST 86308923
- SCHEMATIC DIAGRAM 9880 90448138
- SCHEMATIC DIAGRAM 9880 90448141
- SCHEMATIC DIAGRAM 9880 90448122

REFERENCE DRAWING		CONTROL DATA		TITLE	
FIRST USED ON		FASOIB		GENEALOGY CHART	
DWN	ENGR	CHKD	APPR	PLATO MASTER FLEXIBLE DISK	
7-11-66	7-11-66	7-11-66	7-11-66	SUBSYSTEM SCHZ	
COMPONENTS, EXCEPT AS NOTED		CODE INST		DRAWING NO	
TOLERANCE	VALUE	RATING	15920	C 66310613	
RES	CAP		SCALE	CROSS REF NO	SHEET / OF

SHEET REVISION STATUS		REVISION RECORD				
REV	CO	DESCRIPTION	DRFT	DATE	CHKD	APP
00	5000/10	RELEASED CLASS B		15/1/80		
01	51118	DELETE 90446143	WJG	8-9-80		
02	51172	SPL WAS 66308220	WJG	7-22-80		
N		11/1-80 RELEASED CLASS A				



REFERENCE DOCUMENTS

ENGINEERING SPECIFICATION..... 16042854

SPARE PARTS LIST..... 66308321

SCHEMATIC DIAGRAM (9880)..... 90446138

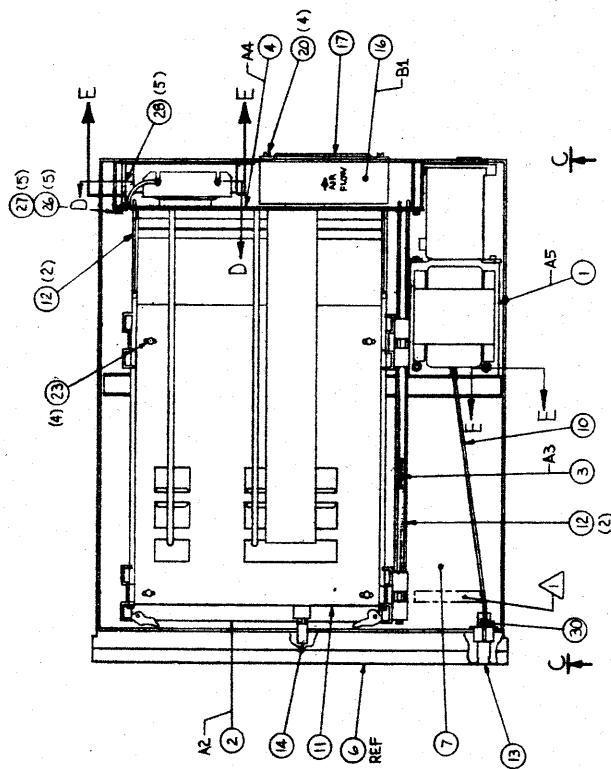
SCHEMATIC DIAGRAM (9880)..... 90446141

REFERENCE DRAWING		TITLE	
JUN 81		GENEALOGY CHART	
FIRST USED ON		PLATO SLAVE FLEXIBLE DISK DRIVE ECHZ	
DWN	BY	DATE	SCALE
BY	BY	BY	BY
CHKD	CHKD	CHKD	CHKD
ENGR	ENGR	ENGR	ENGR
APPR	APPR	APPR	APPR
COMPONENTS EXCEPT AS NOTED		CODE IDENT	DRAWING NO
TOLERANCE	VALUE	15920	C 66310614
RES		CROSS REF NO	SHEET / OF
CAP			

15632209	CONTROLLER 60 HZ
15632210	CONTROLLER 50 HZ
15632211	SLAVE 60 HZ
15632212	SLAVE 50 HZ

15632209/12

REV	NO	DESCRIPTION	DATE	BY	CHKD	APP
1	1	ISSUED FOR ECD	10/17/68	WJG	WJG	
2	1	REVISED FOR ECD	11/20/68	WJG	WJG	
3	1	7/11 53 WIRE REVISION	11/20/68	WJG	WJG	
4	1	CHANGE TITLE	11/20/68	WJG	WJG	
5	1	FOR PWS 34, 15, 36	11/20/68	WJG	WJG	
6	1	REVISIONS	11/20/68	WJG	WJG	
7	1	UNACTIVE SERVICE USE ONLY	11/20/68	WJG	WJG	
8	1	SUPPRESSED BY 15632209	11/20/68	WJG	WJG	



(TOP VIEW SHOWN WITH ITEMS 9, 8, 9, & 18 REMOVED)

NOTES:

- MARK ASSY 156322YX IN AREA SHOWN PER CDC SPEC 10121508.
- CONNECT SUBASSEMBLIES AS FOLLOWS:  
 PLUG A4P1 INTO A4J9  
 PLUG A4P2 INTO A4J4  
 PLUG A4P3 INTO A4J1  
 PLUG A4P4 INTO B4J1  
 PLUG A4P1 INTO A4J3

INACTIVE

METRIC

PLATO FLEXIBLE DISK (TLA)	
DATE	19820
ISSUED BY	15632209 THRU 15632212
REV	1/2
FASO1	
DATE	11/20/68
ISSUED BY	WJG
CHKD BY	WJG
APP	WJG
DO NOT SCALE DIMENSIONS	
DETACHED LISTS	
THRU 15632212	
APL 15632209	



BUILD ARC 440

**ASSEMBLY PARTS LIST**

PRINT DATE 09-04-80 PAGE 1 FILE CHANGE NO. 00014165

DIV.		ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION		MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE		
0860		15632209	1	B	D	REPLACED BY 15632572 14165		G	INA	09-04-80	FAS01A	09-04-80		
TRND NO	LI	PART NUMBER	CD	AM	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
001	01	66309318	5		1		PC REPLACED BY 61409021 14165	A						
002	01	90446124	1		1		PC CD ASSY 98ED DISK CONTR	S						
003	01	90446140	7		1		PC CD ASSY 98KD PWR SPLY	A						
004	01	90446143	1		1		PC CD ASSY 98MD BACKPLANE	A						
005	01	71493032	8		1		PC COVER METAL AL	P						
006	01	71493037	7		1		PC FACE PLATE (SH) PAINTED	P						
007	01	71493050	0		1		PC BASE METAL CRS	P						
008	01	71492950	2		2		PC TRACK DISK MTG	P						
009	01	71492951	0		2		PC SLIDE DISK MTG	P						
010	01	71492954	4		1		PC ROD ACTUATOR	P						
011	01	71492955	1		1		PC PANEL CABLE SUPPORT	P						
012	01	71492966	8		4		PC GUIDE CARD	P						
013	01	71493189	6		1		PC BUTTON, HINGED #PLATIC-BLK)	P						
014	01	71492966	4		1		PC BUTTON SWITCH	P						
015	01	71493053	4		1		PC PANEL SWITCH/INDICATOR	P						
016	01	51886600	9		1		PC FAN, 58CFM 115V 50/60HZ 1PH	P						
017	01	94375401	0		1		PC GUARD, FAN 50/60HZ	P						
018	01	77618000	2		1		PC FLOPPY DISK ASSY	V						
019	01	71493064	1		4		PC FOOT	P						
020	01	91976649	3		4		PC MSCR PAN PHL M4X40MM	B						
021	01	91975724	5		8		PC NUT HEXAGON S2 5MM	B						

BUILD ARC 440

**ASSEMBLY PARTS LIST**

PRINT DATE 09-04-80 PAGE 2 FILE CHANGE NO. 00014165

DIV.		ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION		MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE		
0860		15632209	1	B	D	REPLACED BY 15632572 14165		G	INA	09-04-80	FAS01A	09-04-80		
TRND NO	LI	PART NUMBER	CD	AM	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
022	01	15164911	8		4		PC MSCR HEX=LK PLN MAX8MM STL ZP	B						
023	01	15164917	5		7		PC MSCR HEX=LK PLN M5X8MM STL Z	B						
024	01	91976758	2		2		PC MSCR PNH M5X10MM	B						
025	01	91976864	8		4		PC MSCR MACH FLN M5X10MM	B						
026	01	91976652	7		5		PC MSCR PAN PHL M5X10MM	B						
027	01	91975706	2		5		PC WASHER LK METRIC M5	B						
028	01	71493078	1		5		PC STANDOFF HEX METRIC CRS	B						
029	01	51918435	2		1		PC EMBLEM, CDC ID	P						
030	01	51918188	7		1		PC SPG, COMP	P						
031	01	93109381	9		2		PC STOFF, NO. 1/4 .250L RD ZINC	B						
032	01	91975684	1		7		PC WSHR METRIC SZ 5 SCREW	B						
033	01	93522018	6		1		PC PLUG, SNAP BUTTON 1 1/4 DIA MO	P						
034	01	94374900	2		125		PC STRIP CONTACT	P						
035	01	89040204	1		8		PC WSHR, NO. 10 DISHED LOCK STL	B						
036	01	51885700	5		4		PC BUMPER SELF STICKING	P						
							0036 TOTAL LINES							

BUILD ARC 440

**ASSEMBLY PARTS LIST**

BUILD ARC 440										PRINT DATE		PAGE		FILE CHANGE NO.	
										09-08-80		1		00014165	
QTY	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE		ENG. RESP.		FILE DATE			
0060	15632210	9	B	D	REPLACED BY 15632973 14165	6	INA	09-04-80		FAS018		09-08-80			
ITEM NO	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT		
001	01	66309319	3	1		PC REPLACED BY 61409022 14165	A								
002	01	90446124	1	1		PC CD ASSY 9BED DISK CONTR	S								
003	01	90446140	7	1		PC CD ASSY 9BKD PWR SPLY	A								
004	01	90446143	1	1		PC CD ASSY 9BMD BACKPLANE	A								
005	01	71493032	8	1		PC COVER METAL AL	P								
006	01	71493037	7	1		PC FACE PLATE (SM) PAINTED	P								
007	01	71493050	0	1		PC BASE METAL CRS	P								
008	01	71492950	2	2		PC TRACK DISK M70	P								
009	01	71492951	0	2		PC SLIDE DISK M70	P								
010	01	71492954	4	1		PC ROD ACTUATOR	P								
011	01	71492955	1	1		PC PANEL CABLE SUPPORT	P								
012	01	71492966	8	4		PC GUIDE CARD	P								
013	01	71493189	6	1		PC BUTTON, HINGED (PLASTIC-BLK)	P								
014	01	71492968	4	1		PC BUTTON SWITCH	P								
015	01	71493053	4	1		PC PANEL SWITCH/INDICATOR	P								
016	01	51886600	9	1		PC FAN, 50CFM 115V 50/60HZ 1PH	P								
017	01	94375401	0	1		PC GUARD, FAN 50/60HZ	P								
018	01	77618000	2	1		PC FLOPPY DISK ASSY	V								
019	01	71493064	1	4		PC FOOT	P								
020	01	91976649	3	4		PC MSCR PAN PHL M4X40MM	B								
021	01	91975724	5	8		PC NUT HEXAGON SZ 5MM	B								

BUILD ARC 440

**ASSEMBLY PARTS LIST**

BUILD ARC 440										PRINT DATE		PAGE		FILE CHANGE NO.	
										09-08-80		2		00014165	
QTY	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE		ENG. RESP.		FILE DATE			
0060	15632210	9	B	D	REPLACED BY 15632973 14165	6	INA	09-04-80		FAS018		09-08-80			
ITEM NO	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT		
022	01	15164911	8	4		PC MSCR HEX-LK PLN M4X8MM STL ZP	B								
023	01	15164917	5	7		PC MSCR HEX-LK PLN M5X8MM STL Z	B								
024	01	91976758	2	2		PC MSCR PNH M5X10MM	B								
025	01	91976864	8	4		PC MSCR MACH FLW M5X10MM	B								
026	01	91976652	7	5		PC MSCR PAN PHL M5X10MM	B								
027	01	91975706	2	5		PC WASHER LK METRIC M5	B								
028	01	71493078	1	5		PC STANDOFF HEX METRIC CRS	B								
029	01	51918435	2	1		PC EMBLEM, CDC ID	P								
030	01	51918188	7	1		PC SP6, COMP	P								
031	01	93109381	9	2		PC STOFF, NO. 1/4 .250L RD ZINC	B								
032	01	91975684	1	7		PC WSHR METRIC SZ 5 SCREW	B								
033	01	93522018	6	1		PC PLUG, SNAP BUTTON 1 1/4 DIA HO	P								
034	01	94374900	2	125		PC STRIP CONTACT	P								
035	01	09040204	1	8		PC WSHR, NO. 10 DISHED LOCK STL	B								
036	01	51805700	5	4		PC BUMPER SELF STICKING	P								
0036 TOTAL LINES															

BUILD ARC 440

### ASSEMBLY PARTS LIST

BUILD ARC 440										ASSEMBLY PARTS LIST		PRINT DATE	PAGE	FILE CHANGE NO.
										09-08-80		1	00014165	
DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE				
0860	15632211	7	B	D	REPLACED BY 15632574 14165	0	INA	09-04-80	BR810A	09-08-80				
TRND NO.	LI	PART NUMBER	CD	MC	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	I/N	WK IN	WK OUT
001	01	66309318	5		1		PC REPLACED BY 61409021 14165	A						
003	01	90446140	7		1		PC CD ASSY 9BKD PWR SPLY	A						
004	01	90446143	1		1		PC CD ASSY 9BMD BACKPLANE	A						
005	01	71493032	8		1		PC COVER METAL AL	P						
006	01	71493037	7		1		PC FACE PLATE (SM) PAINTED	P						
007	01	71493050	0		1		PC BASE METAL CRS	P						
008	01	71492950	2		2		PC TRACK DISK MTG	P						
009	01	71492951	0		2		PC SLIDE DISK MTG	P						
010	01	71492954	4		1		PC ROD ACTUATOR	P						
011	01	71492955	1		1		PC PANEL CABLE SUPPORT	P						
012	01	71492966	8		2		PC GUIDE CARD	P						
013	01	71493189	6		1		PC BUTTON, HINGED #PLATIC-BLK)	P						
014	01	71492968	4		1		PC BUTTON SWITCH	P						
015	01	71493054	2		1		PC PANEL SWITCH INDICATOR	P						
016	01	51886600	9		1		PC FAN, 50CFM 115V 50/60HZ 1PW	P						
017	01	94375401	0		1		PC GUARD, FAN 50/60HZ	P						
018	01	77418000	2		1		PC FLOPPY DISK ASSY	V						
019	01	71493064	1		4		PC FOOT	P						
020	01	91976649	3		4		PC MSCR PAN PHL M4X40MM	B						
021	01	91975724	5		8		PC NUT HEXAGON SZ 5MM	B						
022	01	15164911	8		4		PC MSCR HEX-LK PLN M4X8MM STL ZP	B						

BUILD ARC 440

### ASSEMBLY PARTS LIST

BUILD ARC 440										ASSEMBLY PARTS LIST		PRINT DATE	PAGE	FILE CHANGE NO.
										09-08-80		2	00014165	
DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE				
0860	15632211	7	B	D	REPLACED BY 15632574 14165	0	INA	09-04-80	BR810A	09-08-80				
TRND NO.	LI	PART NUMBER	CD	MC	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	I/N	WK IN	WK OUT
023	01	15164917	5		7		PC MSCR HEX-LK PLN M5X8MM STL Z	B						
024	01	91976758	2		2		PC MSCR PNH M5X10MM	B						
025	01	91976864	8		4		PC MSCR NACH FLH M5X10MM	B						
026	01	91976652	7		5		PC MSCR PAN PHL M5X10MM	B						
027	01	91975706	2		5		PC WASHER LK METRIC M5	B						
028	01	71493078	1		4		PC STANDOFF HEX METRIC CRS	B						
029	01	51918435	2		1		PC EMBLEM, CDC ID	P						
030	01	51918188	7		1		PC SPG, COMP	P						
031	01	93109381	9		2		PC STOFF, NO. 1/4 .250L RD ZINC	B						
032	01	91975684	1		7		PC WSHR METRIC SZ 5 SCREW	B						
033	01	93522018	6		1		PC PLUG, SNAP BUTTON 1 1/4 DIA HO	P						
034	01	94374900	2		125		PC STRIP CONTACT	P						
035	01	09040204	1		8		PC WSHR, NO. 10 DISHED LOCK STL	B						
036	01	51805700	5		4		PC BUMPER SELF STICKING	P						
0035 TOTAL LINES														

BUILD ARC 440

**ASSEMBLY PARTS LIST**

BUILD ARC 440										PRINT DATE		PAGE		FILE CHANGE NO.	
										09-08-80		1		00014165	
SHV	ASSEMBLY NUMBER	CD	REV.	DRG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE					
0860	15632212	5	B	D	REPLACED BY 15632575 14165	0	INA	09-04-80	BR8108	09-08-80					
TP/IND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT		
001	01	66309319	3	1		PC REPLACED BY 61409022 14165	A								
003	01	90446140	7	1		PC CD ASSY 98KD PWR SPLY	A								
004	01	90446143	1	1		PC CD ASSY 98MD BACKPLANE	A								
005	01	71493032	8	1		PC COVER METAL AL	P								
006	01	71493037	7	1		PC FACE PLATE (SM) PAINTED	P								
007	01	71493050	0	1		PC BASE METAL CRS	P								
008	01	71492950	2	2		PC TRACK DISK MT6	P								
009	01	71492951	0	2		PC SLIDE DISK MT6	P								
010	01	71492954	4	1		PC ROD ACTUATOR	P								
011	01	71492955	1	1		PC PANEL CABLE SUPPORT	P								
012	01	71492966	8	2		PC GUIDE CARD	P								
013	01	71493189	6	1		PC BUTTON, HINGED (PLATIC-BLK)	P								
014	01	71492968	4	1		PC BUTTON SWITCH	P								
015	01	71493054	2	1		PC PANEL SWITCH INDICATOR	P								
016	01	51886600	9	1		PC FAN, 50CFM 115V 50/60HZ 1PH	P								
017	01	94375401	0	1		PC GUARD, FAN 50/60HZ	P								
018	01	77618000	2	1		PC FLOPPY DISK ASSY	V								
019	01	71493064	1	4		PC FOOT	P								
020	01	91976649	3	4		PC MSCR PAN PHL M4X40MM	B								
021	01	91975724	5	8		PC NUT HEXAGON SZ 5MM	B								
022	01	15164911	8	4		PC MSCR HEX-LK PLN M4X8MM STL ZP	B								

BUILD ARC 440

**ASSEMBLY PARTS LIST**

BUILD ARC 440										PRINT DATE		PAGE		FILE CHANGE NO.	
										09-08-80		2		00014165	
SHV	ASSEMBLY NUMBER	CD	REV.	DRG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE					
0860	15632212	5	B	D	REPLACED BY 15632575 14165	0	INA	09-04-80	BR8108	09-08-80					
TP/IND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT		
023	01	15164917	5	7		PC MSCR HEX-LK PLN M5X8MM STL Z	B								
024	01	91976758	2	2		PC MSCR PNH M5X10MM	B								
025	01	91976864	8	4		PC MSCR MACH FLH M5X10MM	B								
026	01	91976652	7	5		PC MSCR PAN PHL M5X10MM	B								
027	01	91975706	2	5		PC WASHER LK METRIC M5	B								
028	01	71493078	1	5		PC STANDOFF HEX METRIC CRS	B								
029	01	51918435	2	1		PC EMBLEM, CDC 10	P								
030	01	51918188	7	1		PC SPG, COMP	P								
031	01	93109381	9	2		PC STOFF,NO.1/4 .250L RD ZINC	B								
032	01	91975684	1	7		PC WSHR METRIC SZ 5 SCREW	B								
033	01	93522018	6	1		PC PLUG,SNAP BUTTON 1 1/4 DIA HO	P								
034	01	94374960	2	125		PC STRIP CONTACT	P								
035	01	09040204	1	8		PC WSHR, NO.10 DISHED LOCK STL	B								
036	01	51805700	5	4		PC BUMPER SELF STICKING	P								
0035 TOTAL LINES															





BUILD ARC 230				ASSEMBLY PARTS LIST				PRINT DATE	PAGE	FILE CHANGE NO.				
				REPLACED BY 61409021 14165				03-12-81	1	00014502				
Q800	ASSEMBLY NUMBER	CD	REV	REV	DESCRIPTION	MC	STATUS	STATUS DATE	ENG DESG	FILE DATE				
0800	66309318	5	U	D		A	INA	09-04-80	FA501A	03-12-81				
T	REV NO	U	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	PLD	ECO NO IN	ECO NO OUT	S/N	WK IN	WK OUT
001	01		71497952	8	1		PC BRACKET SWITCH/FILTER/XFORM		P					
002	01		71497953	6	1		PC COVER SWITCH/FILTER		P					
003	01		95507103	3	1		PC CB D-P 250 VAC 3 AMP		P					
004	01		15164356	6	1		PC FILTER RFI		P					
005	01		15012408	9	1		PC RSMG, SNAP-IN .500 H/H .38TD		B					
007	01		44674034	2	1		PC CONN POWER RECEP		P					
008	01		15164917	5	2		PC MSCR HEX-LK PLN M5X8MM STL Z		B					
009	01		91976625	3	4		PC MSCR PAN PHL M3X6MM		B					
010	01		10125803	6	2		PC WSHR, NO.6 SPG LOCK STL 7P		B					
011	01		10127111	2	2		PC MSCR PAN PHL 6-32X.250 STL ZP		B					
014	01		91975669	2	2		PC WSHR METRIC SCREW SZ 3		B					
015	01		44674036	7	3		PC CONN PWR RECPT		P					
016	01		51797218	8	4		PC LUG, NO.10 CRNP-R 22-18AWG		B		14199	14199		8030
016	02		51797218	8	3		PC LUG, NO.10 CRNP-R 22-18AWG		B				8030	
017	01		24534707	5	249		FT SLV, 3/16 HT/SHRINK BLK UL		B		14199	14199		8030
017	02		51758103	9	249		FT INS SLV+CLR,PVC HEAT SHRINK		B				8030	
018	01		51906200	4	3		PC CONT, SKT 20-140A .130IT STR		P					
019	01		52810001	9	333		FT WIR 18GA STRD BRN 600V UL PVC		W		14199	14199		8030
019	02		57810001	9	458		FT WIR 18GA STRD BRN 600V UL PVC		W				8030	
020	01		52810005	0	708		FT WIR 18GA STRD GRN 600V UL PVC		W		14199	14199		8030
020	02		57810005	0	833		FT WIR 18GA STRD GRN 600V UL PVC		W				8030	
021	01		51906001	6	1		PC CONN, 3 SKT PLUG FIG 1 NYLON		P					
024	01		91975724	5	2		PC NUT HEXAGON SZ 5MM		B					

BUILD ARC 230				ASSEMBLY PARTS LIST				PRINT DATE	PAGE	FILE CHANGE NO.				
				REPLACED BY 61409021 14165				03-12-81	2	00014502				
Q800	ASSEMBLY NUMBER	CD	REV	REV	DESCRIPTION	MC	STATUS	STATUS DATE	ENG DESG	FILE DATE				
0800	66309318	5	D	D		A	INA	09-04-80	FA501A	03-12-81				
T	REV NO	U	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	PLD	ECO NO IN	ECO NO OUT	S/N	WK IN	WK OUT
025	01		91975671	8	6		PC WASHER EX TOOTH SZ 5		B					
026	01		61408888	8	REF		PC REPLACED BY 61409023 14165		D					
027	01		52810006	8	417		FT WIR 18GA STRD BLU 600V UL PVC		W		14199			8030
028	01		10125605	5	2		PC WSHR, NO.6 TYP A PLN STL ZP		B		14199			8030
0027 TOTAL LINES														

BUILD ARC 230

**ASSEMBLY PARTS LIST**

PRINT DATE 03-12-81 PAGE 1 FILE CHANGE NO. 00014582

REV	ASSEMBLY NUMBER	CD	REV	DRG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. DESG.	FILE DATE			
0860	66309319	3	D	D	REPLACED BY 61409022 14165	A	INA	09-04-80	FA5018	03-12-81			
ITEM NO.	U	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
001	01	71492952	8	1		PC BRACKET SWITCH/FILTER/XFORM	P						
002	01	71492953	6	1		PC COVER SWITCH/FILTER	P						
003	01	95587103	3	1		PC CB D-P 250 VAC 3 AMP	P						
004	01	15164356	6	1		PC FILTER RFI	P						
005	01	15012408	9	1		PC BSHG. SNAP-IN .500 M/H .38ID	B						
007	01	44674034	2	1		PC CONN POWER RECEPT	P						
008	01	15164917	5	2		PC MSCR HEX-LK PLN M5X6MM STL Z	B						
009	01	91976625	3	4		PC MSCR PAN PHL M3X6MM	B						
010	01	10125803	6	2		PC WSHR, NO.6 SP6 LOCK STL ZP	B						
011	01	10127111	2	2		PC MSCR PAN PHL 6-32X.250 STL ZP	B						
012	01	51919789	2	1		PC XFMR STEP DOWN 220/240V	P						
013	01	15165001	7	4		PC NUT METRIC HEX-LK M5	B						
014	01	91975669	2	2		PC WSHR METRIC SCREW SZ 3	B						
015	01	44674036	7	3		PC CONN PWR RECEPT	P						
016	01	51797218	8	3		PC LUG, NO.10 CRMP-R 22-18AWG	B						
017	01	24534707	5	583	FT	SLVG, 3/16 MT/SHRINK BLK UL	B			14199		8030	8030
017	02	51758103	9	249	FT	INS SLV+CLR,PVC HEAT SHRINK	B		14199			8030	8030
018	01	51906200	4	1		PC CONT, SKT 20-14GA .130IT STR	P						
019	01	52810001	9	250	FT	WIR 18GA STRD BRN 600V UL PVC	W			14199		8030	8030
019	02	52810001	9	458	FT	WIR 18GA STRD BRN 600V UL PVC	W		14199			8030	8030
020	01	52810005	0	708	FT	WIR 18GA STRD GRN 600V UL PVC	W			14199		8030	8030
020	02	52810005	0	833	FT	WIR 18GA STRD GRN 600V UL PVC	W		14199			8030	8030

BUILD ARC 230

**ASSEMBLY PARTS LIST**

PRINT DATE 03-12-81 PAGE 2 FILE CHANGE NO. 00014582

REV	ASSEMBLY NUMBER	CD	REV	DRG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. DESG.	FILE DATE			
0860	66309319	3	D	D	REPLACED BY 61409022 14165	A	INA	09-04-80	FA5018	03-12-81			
ITEM NO.	U	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
022	01	51918969	0	1		PC SWITCH VOLTAGE SELECTOR	P						
023	01	51873600	4	001	OZ	VARNISH INSUL RED GLPT	B						
024	01	91975724	5	2		PC NUT HEXAGON SZ 5MM	B						
025	01	91975671	8	6		PC WASHER EX TOOTH SZ 5	B						
026	01	61408889	6	REF		PC REPLACED BY 61409024 14165	D						
028	01	10125605	5	2		PC WSHR, NO.6 TYP A PLN STL ZP	B		14199			8030	8030
029	01	51758101	3	188	FT	INS SLV CLR PVC HEAT SHRINK	B		14199			8030	8030
						0029 TOTAL LINES							



PARTS DATA FOR PRODUCTION UNITS ONLY



DWN	W. Glaser	6/80	CONTROL DATA	TITLE	SPL 50/60 HZ PRIMARY FLEXIBLE DISK SUBSYSTEM	PREFIX	DOCUMENT NO.	REV.
CHKD	D. Carr	8/70				SPL	66313407	L
ENG	A. H. H. H.	8/70						
MFG	A. H. H. H.	8/70		FIRST USED ON	FA501A-D			SHEET 1 of 4
APPR	S. H. H. H.	8/70	CODE IDENT					
			15920					

SHEET REVISION STATUS				REVISION RECORD						
4	3	2	1	REV	ECO	DESCRIPTION	DRFT	DATE	APP	
				A	A	A	12754-76	RELEASED CLASS A	9-3-80	Net
				B	A	B	14292	ADD F/N 16	DS	9-80
				C	C	C	14376	REVISED PER ECO	EE	11/2/81
				D	D	D	14571	CHG F/N 1,12,17, DELETE NOTE 3	WJG 2-2-81	5-2-81
				E	D	E	14663	ADDED F/N 18	EE	7/16/81
				F	F	F	14838	ADDED F/N 19 AND NOTE 7	EE	11/19/81
				F	G	G	14820	REVISED PER ECO	RF (11-3-81)	11-2-81
				H	H	H	14885	ADD FA501K CONFIG	WJG 12-2-81	12-21-81
				J	J	J	14985	REVISED PER ECO	EE	1/6/82
				K	J	K	15771	CHANGED F/N 12 & 20	EE	3/19/83
				L	L	L	15867	REVISED & ADDED SA 4 PER ECO	MD	5-18-83

NOTES: 1. Quantities shown are those used per equipment. Quantities used for FA501A are under Heading A. FA501B are under Heading B. FA501C are under Heading C. FA501D are under Heading D.

EQUIPMENT	EQUIPMENT CONFIGURATOR	TOP LEVEL ASSY
FA501A 60 HZ	15632205	15632572
FA501B 60 HZ (CD110)	15632206	15632573
FA501C 60 HZ (CD110)	15632895	15632983
FA501D 50 HZ (CD110)	15632981	15632982

DETACHED LISTS

AA318C REV. 8-71

PRINTED IN U.S.A.

CONTROL DATA CORPORATION	CODE IDENT	15920	SHEET 2	PREFIX	DOCUMENT NO.	66313407	REV.	L
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NOTES:

- These parts are the total required for a unit with no options installed.
- The FA501A/B could have 3 RAM options of 8 RAM IC's for each option for a total of 32 RAM IC's in the unit. This is standard equipment for the FA501C/D.

4. Find Numbers 1 thru 7 and 17 are for the 98ED Controller Board.
5. Find Number 9 is the signal cable used to connect the Primary Flexible Disk Subsystem to the IST Terminal.
6. One of these devices is required on the last device on the Plato IST Parallel I/O channel daisy chain configuration.
7. Original production units were built with P/N 90446140. Current production units are built with P/N 90446443. These cards are interchangeable.

AA318B

PRINTED IN U.S.A.





DWN	W. Glaser	B/B	CONTROL DATA	TITLE	SPL 50 HZ	PREFIX	DOCUMENT NO.	REV.
CHKD	D. [unclear]	9-80		PRIMARY	FLEXIBLE DISK SUBSYSTEM	SPL	66313408	K
ENG	[unclear]	7-80		FIRST USED ON	FA501B/D			
MFG	[unclear]	4-80						
APPR	S. H. Ho	9-3-80	CODE IDENT					
	[unclear]	9-3-80	15920					SHEET 1 of 3

SHEET REVISION STATUS					REVISION RECORD				
3	2	1	REV	ECO	DESCRIPTION	DRFT	DATE	APP	
			A	A	12754-76	RELEASED CLASS "A"	9-3-80	[unclear]	
			B	B	14376	REVISED PER ECO	1-12-81	[unclear]	
			C	C	14571	CHG F/N 1,13,17, DELETE NOTE 3	WJG 3-2-81	3-2-81	
			D	C	14663	ADDED F/N 18	EE	7/14/81	
			E	E	14938	ADDED F/N 19 AND NOTE 7	EE	11/4/81	
			E	F	14820	REVISED PER ECO	11-6-81	[unclear]	
			G	G	14885	ADD FA501D CONFIG	WJG 12-21-81	12-21-81	
			H	H	14985	REVISED PER ECO	EE	1/12/82	
			J	H	15771	CHANGED F/N 13 & 20	EE	3/14/82	
			K	K	15867	INACTIVE, SERVICE USE ONLY, SUPERSEDED BY 66313407	MD	5/14/82	

INACTIVE

NOTES: 1. Quantities shown are those used per equipment. Quantities used for FA501B are under Heading A. Quantities used for FA501D are under Heading B.

EQUIPMENT	EQUIPMENT CONFIGURATOR	TOP LEVEL ASSY
FA501B 50 HZ	15632206	15632573
FA501D 50 HZ (CD110)	15632981	15632982

DETACHED LISTS

AA3180 REV. B 71

PRINTED IN U.S.A.

CONTROL DATA CORPORATION	CODE IDENT	15920	SHEET 2	PREFIX	DOCUMENT NO.	66313408	REV.	K
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NOTES:

- These parts are the total required for a unit with no options installed.
- The FA501B could have 3 RAM options of 8 RAM IC's for each option for a total of 32 RAM IC's in the unit. This is standard equipment for the FA501D.
- 4. Fine Numbers 1 thru 7 and 17 are for the 9BED Controller Board.
  - 5. Fine Number 10 is the signal cable used to connect the Primary Flexible Disk Subsystem to the IST Terminal.
  - 6. One of these devices is required on the last device on the PLATO IST Parallel I/O Channel daisy chain configuration.
  - 7. Original production units were built with P/N 90446140. Current production units are built with P/N 90446443. These cards are interchangeable.

AA3180

PRINTED IN U.S.A.

CONTROL DATA			CODE IDENT		SHEET		SPL		DOCUMENT NO.		REV.				
			15920		3				66313408						
FIND NO.	PART IDENTIFICATION	QUANTITY REQUIRED										UNIT OF MEAS	NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL	
		A	B												
1	66312070	1	1											2716 2KX8 ROM	△4
2	15153821	8	32											4116 16K RAM	△4
3	15163201	1	1											Z80 Processor	△4
4	15163444	1	1											F01791 Disk Controller	△4
5	15163458	1	1											9517 DMA	△4
6	15163459	1	1											9519 Interrupt Cont.	△4
7	15164429	1	1											Z80A-CTC	△4
8	15165426	1	1											50HZ Power Cord	
9	61409022	1	1											AC Entry Assy	
10	61408865	1	1											25 pin I/O Cable	△5
11	96837907	1	1											Circuit Breaker	
12	77618000	1	1											Flexible Disk Assy	
13	90446570	1	0											9BED-3 Controller Board	
14	90446140	REF	REF											9BKD Power Supply	△7
15	90446143	1	1											9BMD Backplane	
16	15632316	1	1											F116A Terminator	△6
17	66312071	1	1											2716 2KX8 Rom	△4
18	71493364	1	1											SCR Shoulder Nylon	
19	90446443	1	1											1AFD Power Supply	Interchangable with F/V 14
20	90446571	0	1											Controller Board	W/Full Memory

AA9101 REV. 9/71

PRINTED IN U.S.A.

DWN	W. Glaser	8/80	CONTROL DATA	TITLE	60 HZ	PREFIX	DOCUMENT NO.	REV.
CHKD	D. Sear	8/80		SPL SECONDARY FLEXIBLE DISK		SPL	66313409	E
ENG	<i>[Signature]</i>	8-2-80		FIRST USED ON				
MFG	<i>[Signature]</i>	8-2-80		BR810A			SHEET 1 of 3	
APPR	E. H. H.	9-3-80	CODE IDENT					
	<i>[Signature]</i>	9/3/80	15920					

SHEET REVISION STATUS				REVISION RECORD						
	3	2	1	REV	ECO	DESCRIPTION	DRFT	DATE	APP	
	A	A	A	A	12754-76	RELEASED CLASS 'A'	✓	9-3-80	Met	
	B	A	B	B	14292	ADD F/N 7	DS	9-80	SM	
	C	C	C	C	14838	ADDED F/N 8 AND NOTE 3	EE	11-2-81		
	D	C	D	D	14820	REVISED PER ECO	R	11-6-81	CH	
	E	E	E	E	14999	F/N 8 WAS 90446290	EE	1/11/82	BIS	

NOTES: EQUIPMENT CONFIGURATOR - 15632207  
TOP LEVEL ASSEMBLY ----- 15632574

DETACHED LISTS

	CONTROL DATA CORPORATION	CODE IDENT	15920	SHEET	2	PREFIX	DOCUMENT NO.	66313409	REV.	E
--	--------------------------	------------	-------	-------	---	--------	--------------	----------	------	---

NOTES:

- These parts are the total required for a unit with no options installed.
- Find number 2 is the Signal Cable used to connect the BR810A or BR810B to the FA501A or FA501B.
- Original production units were built with P/N 90446140. Current production units are built with P/N 90446443. These cards are interchangeable.

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DWN	W. Glaser	8/80	CONTROL DATA	TITLE	50 HZ	PREFIX	DOCUMENT NO.	REV.
CHKD	D. Reid	8-50		SPL SECONDARY FLEXIBLE DISK		SPL	66313410	D
ENG	D. Reid	8-50		FIRST USED ON				
MFG	D. Reid	8-50		BR810B				SHEET 1 of 3
APPR	E. J. Mac	7-2-90	CODE IDENT					
	D. Reid	8/3/80	15920					


  

SHEET REVISION STATUS				REVISION RECORD						
3	2	1	REV	ECO	DESCRIPTION	DRFT	DATE	APP		
			A	12754-76	RELEASED CLASS "A"		9-3-80	Net		
			B	14838	ADDED FN 8 AND NOTE 3	EE	10/14/81	JE		
			C	14820	REVISED PER ECO	ET	11-2-91	11-6-81 JBL		
			D	14999	FN 8 WAS 90446290	EE	2/14/82	WIS		

NOTES:  
EQUIPMENT CONFIGURATOR - 15632208  
TOP LEVEL ASSEMBLY ----- 15632575

DETACHED LISTS

AA3180 REV. 8 71

	CODE IDENT	SHEET 2	PREFIX	DOCUMENT NO.	REV.
	15920		SPL	66313410	D

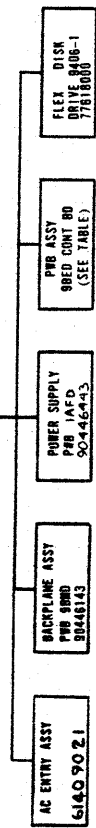
NOTES:

1. These parts are the total required for a unit with no options installed.
2. Find number 3 is the Signal Cable used to connect the BR810A or BR810B to the FA501A or FA501B.
3. Original production units were built with P/N 90446140. Current production units are built with P/N 90446443. These cards are interchangeable.

CONTROL DATA		CODE IDENT	SHEET	S PL	DOCUMENT NO.	REV.						
		15920	3		66313410	Δ						
FIND NO.	PART IDENTIFICATION	QUANTITY REQUIRED								UNIT OF MEAS	NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
1	15165426	1									50HZ Power Cord	
2	61409022	1									AC Entry Assy	
3	61408976	1									Secondary Signal Cable	⚠
4	96837907	1									Circuit Breaker	
5	77618000	1									Flexible Disk Assembly	
6	90446140	REF									9BKD Power Supply	⚠
7	90446143	1									9BMD Backplane	
8	90446443	1									1AFD Power Supply	Interchangable with F/N 6

PRINTED IN U.S.A.

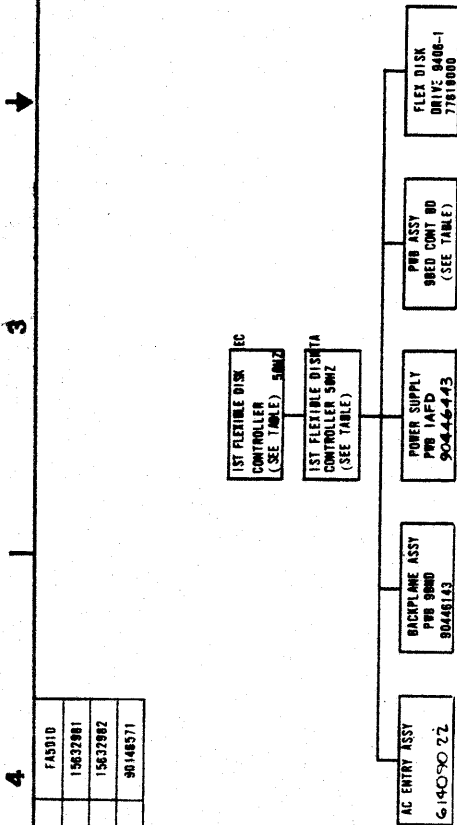
SHEET REVISION STATUS				REVISION RECORD			
REV	CD	DESCRIPTION	DRFT	DATE	CHKD	APP	
01	51718	DRFT 90446124	WJG	6-20-80	WJG		
B	14165	REVISED PER ECO	WJG	9/17/80	WJG		
C	14376	LOGIC WAS 90446124	EE	1/16/81	EE		
D	14571	MALD PWB WAS 90446124	WJG	12-81	WJG		
E	14721	REVISED PER ECO	EE	7/21/81	EE		
F	14820	REVISED TITLE		12-81			
G	14885	ADD TABLE	WJG	2/19/81	WJG		
H	14985	PWB INF0 WAS 90446290	EE	1/14/82	EE		
J	15771	REVISED PER ECO	EE	8/10/83	EE		



REFERENCE DOCUMENTS  
 ENGINEERING SPECIFICATION ..... 1-04 2854  
 SPACE PARTS LIST ..... 66 313407  
 SCHEMATIC DIAGRAM (INF0) ..... 90446288  
 SCHEMATIC DIAGRAM (908D) ..... 90448141  
 SCHEMATIC DIAGRAM (908E) ..... 90448258  
 SCHEMATIC WIRING ..... 62201057

REFERENCE DRAWING	CONTROL DATA	TITLE
		<b>GENEALOGY CHART</b>
		PRIMARY FLEXIBLE DISK
		SUBSYSTEM 60 HZ
PWB 9080 90446143	FA 5014JC	DRAWING NO 66310611
PWB 1A5D 90446143	DRWN E. H. HANSEN	CODE IDENT 15920
PWB 908D 90446143	ENGR E. H. HANSEN	SCALE
POWER SUPPLY PWB 1A5D 90446143	CHKD W. J. GARDNER	SHEET / OF
PWB ASSY 908D CONT 80 (SEE TABLE)	APPR E. H. HANSEN	
FLEX DISK DRIVE 6108-1 7010080		
1ST FLEXIBLE DISK EC CONTROLLER 80HZ (SEE TABLE)		
1ST FLEXIBLE DISK TLA CONTROLLER 80HZ (SEE TABLE)		
AC ENTRY ASSY 6140 90 2 I		
BACKPLANE ASSY PWB 9080 90446143		

EC	FAS01B	FAS01D
TLA	15632206	15632881
PRB ASSY 98ED	15632513	15632882
	90446570	90148571



SHEET	REVISION STATUS

REV	CO	DESCRIPTION	DRFT	DATE	CHKD	APP
00		RELEASED CLASS B				
01	5111B	DELETE SCALING	WJG	7-22-80	WJG	WJG
02	5117Z	SPL WAS 4630852Z	WJG	7-22-80	WJG	WJG
A	11545-88	RELEASED CLASS X				
B	14165	REVISED PER ECO	WJG	7-11-80	WJG	WJG
C	14376	LOGIC WAS 904446124	EE	11/20/79	EE	EE
D	14571	98ED PRB WAS 904446260	WJG	3-2-81	WJG	WJG
E	14721	REVISED PER ECO	EE	7/17/81	EE	EE
F	14880	REVISED PER ECO	R	11-3-81	R	R
G	14885	ADD TABLE	WJG	12-19-81	WJG	WJG
H	14985	PRB 1AFD WAS 904446290	EE	10/12/81	EE	EE
J	15771	REVISED PER ECO	EE	3/10/82	EE	EE
K	15867	REVISED PER ECO	MR	5-10-82	MR	MR

ENGINEERING SPECIFICATION  
 SPARE PARTS LIST  
 SCHEMATIC DIAGRAM 1AFD  
 SCHEMATIC DIAGRAM 98ND  
 SCHEMATIC DIAGRAM 98ED  
 SCHEMATIC WIRING

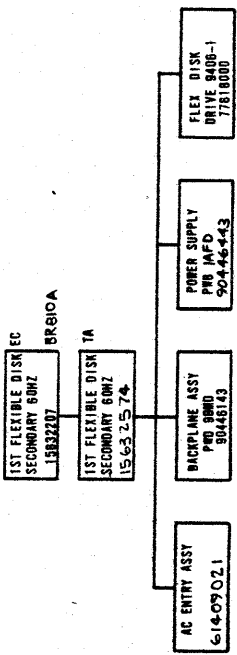
REFERENCE DOCUMENTS  
 ENGINEERING SPECIFICATION 16042854  
 SPARE PARTS LIST 66313407  
 SCHEMATIC DIAGRAM 1AFD 90446286  
 SCHEMATIC DIAGRAM 98ND 80448141  
 SCHEMATIC DIAGRAM 98ED 90448258  
 SCHEMATIC WIRING 6220 CS-

REFERENCE DRAWING		CONTROL DATA		TITLE	
		FAS01B/D		GENEALOGY CHART	
		DWG		PRIMARY FLEXIBLE DISK	
		CHKD		SUBSYSTEM SOHZ	
		ENGR		DRAWING NO	
		APPROV		13920	
		DATE		CODE BENT	
				66310613	
				DRAWING NO	
				66310613	
				SCALE	
				SHEET / OF	



REV	CO	DESCRIPTION	DATE	DRFT	CHKD	APP
00	60000112	RELEASED CLASS B	9/1/77			
01	51118	DELETE 9046147	6-9-80	WJG		
A	11545-89	RELEASED CLASS 'A'	7-23-89			
B	14165	REVISED PER ECO	9/14/80	WJG		
C	14721	REVISED PER ECO	7/30/82	EE		
D	14820	REVISED PER ECO	10-3-81	EE		
E	14985	PMB INF'D WMS 90446290	1/17/82	EE		

SHEET	REVISION STATUS
1	
2	
3	
4	



REFERENCE DOCUMENTS

ENGINEERING SPECIFICATION..... 16042854

SPARE PARTS LIST..... 66313409

SCHEMATIC DIAGRAM (INF'D)..... 90446288

SCHEMATIC DIAGRAM (88MD)..... 90448141

SCHEMATIC WIRING..... 63201057

TITLE		GENEALOGY CHART	
CON NO. 3A		SECONDARY FLEXIBLE DISK DRIVE 60HZ	
REV	DATE	BY	CHKD
1	7-22-77	WJG	WJG
2	7-18-80	WJG	WJG
3	7-15-80	WJG	WJG

COORDINATOR	15920
DRAWING NO	66310612
CROSS REF NO	

66310612 ↓

A

1

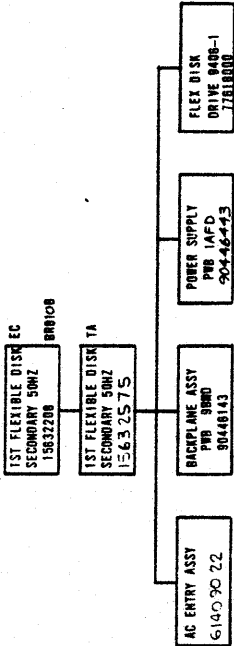
A

1

2

REVISION RECORD

REV	CO	DESCRIPTION	DRFT	DATE	CHKD	APP
00	66310614	RELEASED CLASS B		11/14		
01	51118	DELETE 90446147	WJG	11-19-80	WJG	
02	51172	SPL WAS 66310620	WJG	7-22-80	WJG	
A	11565-08	RELEASED CLASS A		11-19-80		
B	14665	REVISED PER ESS	WJG	11-19-80	WJG	
C	14721	REVISED PER ECO	EE	7/30/81	EE	
D	14820	REVISED PER ECO	R	11-19-80	R	
E	14885	PWB IAFD WAS 90446200	EE	11/12/81	EE	



REFERENCE DOCUMENTS

- ENGINEERING SPECIFICATION..... 18042854
- SPARE PARTS LIST..... 1-10
- SCHEMATIC DIAGRAM (WFD)..... 90446200
- SCHEMATIC DIAGRAM (8080)..... 90448141
- SCHEMATIC M-2:16..... 625505

**REFERENCE DRAWING**

DATE: 11-19-80

BY: WJG

CHECKED: WJG

APPROVED: WJG

SCALE: AS SHOWN

TITLE: **GENEALOGY CHART**  
**SECONDARY FLEXIBLE DISK DRIVE 50HZ**

CODE: 15920

DRAWING NO: **66310614**

CROSS REF. NO.

SHEET: 1 OF 1

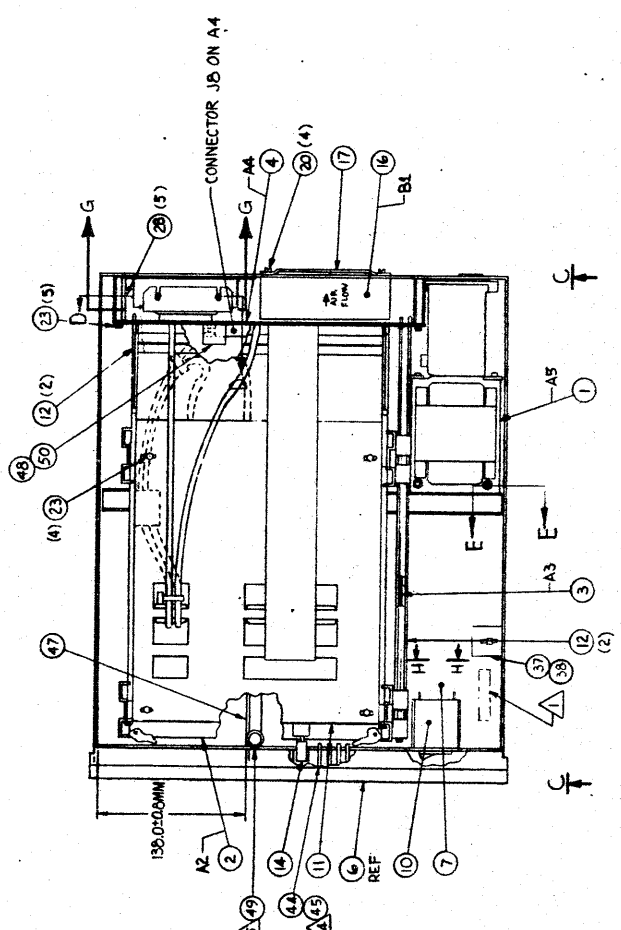
7-32

62949100 G

66310614

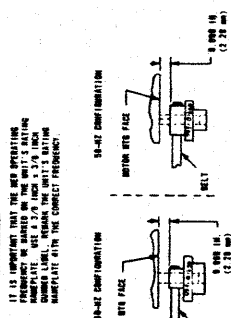
15632572	PRIMARY	60 HZ
15632573	PRIMARY	50 HZ
15632574	SECONDARY	60 HZ
15632575	SECONDARY	50 HZ

REV	DATE	DESCRIPTION	BY	CHK
1		RELEASED CLASS 'A'	MS	MS
2		REVISIONS TO DRAWING	MS	MS
3		REVISED PER EGO	EE	MS
4		REVISED PER EGO	EE	MS
5		REVISED PER EGO	EE	MS
6		REVISED PER EGO	EE	MS
7		REVISED PER EGO	EE	MS
8		REVISED PER EGO	EE	MS
9		REVISED PER EGO	EE	MS
10		REVISED PER EGO	EE	MS
11		REVISED PER EGO	EE	MS
12		REVISED PER EGO	EE	MS
13		REVISED PER EGO	EE	MS
14		REVISED PER EGO	EE	MS
15		REVISED PER EGO	EE	MS
16		REVISED PER EGO	EE	MS
17		REVISED PER EGO	EE	MS
18		REVISED PER EGO	EE	MS
19		REVISED PER EGO	EE	MS
20		REVISED PER EGO	EE	MS
21		REVISED PER EGO	EE	MS
22		REVISED PER EGO	EE	MS
23		REVISED PER EGO	EE	MS
24		REVISED PER EGO	EE	MS
25		REVISED PER EGO	EE	MS
26		REVISED PER EGO	EE	MS
27		REVISED PER EGO	EE	MS
28		REVISED PER EGO	EE	MS
29		REVISED PER EGO	EE	MS
30		REVISED PER EGO	EE	MS



(TOP VIEW SHOWN WITH ITEMS 5, 8, 9, & 18 REMOVED)

- PRELIMINARY CONNECTION PROCEDURE**
- REMOVE AC POWER
  - DISCONNECT THE CABLE FROM THE PLATED-CONNECT BOARD
  - REMOVE THE SCREW FROM THE PLATED-CONNECT BOARD ADJACENT TO CONNECTOR J1.
  - REMOVE THE BUSH FROM THE SPACER FROM THE WIRE-IN CLIPS
  - ACCESSIBLE FROM THE UNDER SIDE OF THE UNIT.
  - REMOVE THE PLATE AND RELEASE THE WIRE FROM THE PLATED-CONNECT BOARD
  - POSITION THE PLATE ALONG THE UNDER SIDE OF THE UNIT
  - REPLACE THE SCREW ADJACENT TO CONNECTOR J1
  - REPLACE THE SCREW ADJACENT TO CONNECTOR J1
  - RECONNECT THE CABLE TO THE PLATED-CONNECT BOARD
  - RECONNECT THE CABLE TO THE PLATED-CONNECT BOARD
  - RECONNECT THE CABLE TO THE PLATED-CONNECT BOARD
  - RECONNECT THE CABLE TO THE PLATED-CONNECT BOARD
  - RECONNECT THE CABLE TO THE PLATED-CONNECT BOARD
  - RECONNECT THE CABLE TO THE PLATED-CONNECT BOARD



WIRE-PLATE INTERNAL

- NOTES:**
- MARK ASSY 1563257X IN AREA SHOWN PER CDC SPEC 1012150B.
  - CONNECT SUBASSEMBLIES AS FOLLOWS:  
 PLUG A4P1 INTO AJ9  
 PLUG A4P2 INTO AJ4  
 PLUG A4P3 INTO AJ1  
 PLUG A4P4 INTO BJ1  
 PLUG A5P3 INTO AJ3
  - MARK NO'S ONLY PER CDC SPEC 1012150B, .12 HIGH, WHITE, IN LOCATION APPROX AS SHOWN.
  - OPTIC RODS (F/N A4) TO BE INSTALLED FROM BACK OF FACE PLATE (F/N 6). INSTALL RODS UNTIL THEY ARE FLUSH WITH FRONT OF UNIT (LESS THAN 1/8"). THEN APPLY VERY SMALL AMOUNT OF ADHESIVE (F/N 45) AROUND EACH ROD ON BACKSIDE OF FACE PLATE. WIRE OFF EXCESS.
  - TIGHTEN SCREW F/N 49 BY HAND, DO NOT USE ANY TOOLS.

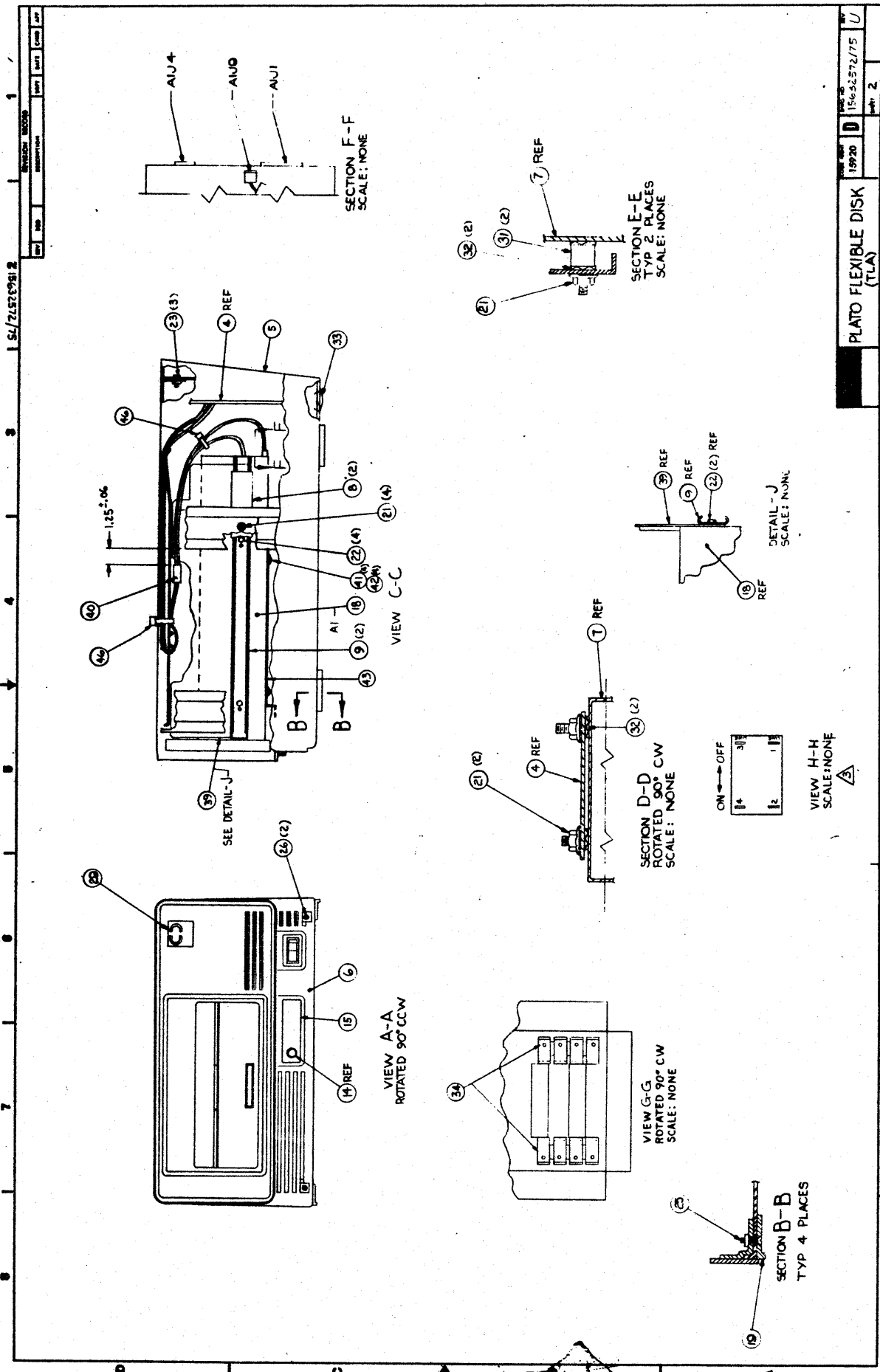
**METRIC**

PLATO FLEXIBLE DISK (TLA)

APL 15632572 THRU 15632575

DATE 1/72

15632572 THRU 15632575



BUILD ARC 440

### ASSEMBLY PARTS LIST

PRINT DATE: 03-31-83  
PAGE: 1  
FILE CHANGE NO.: 00015612

DIV.		ASSEMBLY NUMBER		CD	REV.	DWG.	DESCRIPTION		MC	STATUS	STATUS DATE	ENG. DESP.	FILE DATE	
0060		15632572		2	W	D	FD Sbs, PRIMARY 60HZ (TA)		G	REL	09-03-80	FAS01A	03-31-83	
TRFNO	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION		MC	YLR	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
001	01	61409021	5	1		PC AC ENTRY, FLEX DISK 60HZ		A						
002	03	90446284	3	1		PC REPLACED BY 90446570 15771		N		14571	15771		8113	8314
002	04	90446570	5	1		PC CD ASSY 9BED-3		N					8314	
003	03	90446443	5	1		PC PC CD ASSY 1AFD		A		14985			8209	
004	01	90446143	1	1		PC CD ASSY 9BMD BACKPLANE		A						
005	01	71493032	8	1		PC COVER METAL AL		P						
006	01	71493185	4	1		PC FACE PLATE		P						
007	01	71493188	8	1		PC BASE		P						
008	02	71493295	1	2		PC TRACK DISK MTG		P		14539			8143	
009	02	71493296	9	2		PC SLIDE DISK MTG		P		14539			8143	
010	01	96837907	3	1		PC CKT BRKR MAGNETIC 3.0 AMPS		P						
011	01	71492955	1	1		PC PANEL CABLE SUPPORT		P						
012	01	71492966	8	4		PC GUIDE CARD		P						
014	02	71492968	4	1		PC BUTTON SWITCH		P			15812			8321
014	03	61409606	3	1		PC SWITCH BUTTON ASSY		N		15812			8321	
015	01	71493055	9	1		PC PANEL SWITCH 1ND		P						
016	01	51886600	9	1		PC FAN, 50CFM 1PH 115VAC 50/60HZ		P						
017	01	94375401	0	1		PC GUARD, FAN 50/60HZ		P						
018	01	77018000	2	1		PC FLEX DISK DRV, 9406 2-SIDED		V						
019	02	71493350	4	4		PC FOOT		P		14853			8147	
020	01	91976649	3	4		PC MSCR PAN PHL 44X40MM STL ZP		B						
021	01	91975724	5	8		PC NUT, HEX M5 STL ZP		B			15786			8320

BUILD ARC 440

### ASSEMBLY PARTS LIST

PRINT DATE: 03-31-83  
PAGE: 2  
FILE CHANGE NO.: 00015612

DIV.		ASSEMBLY NUMBER		CD	REV.	DWG.	DESCRIPTION		MC	STATUS	STATUS DATE	ENG. DESP.	FILE DATE	
0060		15632572		2	W	D	FD SBS, PRIMARY 60HZ (TA)		G	REL	09-03-80	FAS01A	03-31-83	
TRFNO	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION		MC	YLR	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
021	02	15165001	7	8		PC NUT, HEX/FLG-LK M5 STL ZP		B		15786			8320	
022	01	15164911	8	4		PC MSCR HEX/W-LK PLN 44X8MM STL		B						
023	01	15164917	5	4		PC MSCR HEX/W-LK PLN M5X8MM STL		B			15289		8238	
023	02	15164917	5	12		PC MSCR HEX/W-LK PLN M5X8MM STL		B		15289			8238	
024	01	91976758	2	5		PC MSCR PAN PHL M5X10MM SST PASS		B			15289		8238	
025	01	91976864	8	4		PC MSCR FLT PHL M5X10MM STL ZP		B						
026	01	91976652	7	5		PC MSCR PAN PHL M5X10MM STL ZP		B			15289		8238	
026	02	91976652	7	2		PC MSCR PAN PHL M5X10MM STL ZP		B		15289			8238	
027	01	91975706	2	5		PC WSHR, M5 LOCK SST PASS		B			15289		8238	
028	01	71493078	1	5		PC STANDOFF HEX METRIC CRS		P						
029	03	51918435	2	1		PC EMBLEM, CDC ID		P		14742			8136	
031	01	93109381	9	2		PC STOFF, NO. 1/4 .025L RD ZINC		P						
032	01	91975684	1	6		PC WSHR, M5 EXT/T SST PASS		B			15786		8320	
032	02	91975671	8	6		PC WSHR, M5 EXT/T SP0-STL 7P		B		15786			8320	
033	01	93522018	6	1		PC PLUG, SNAP BUTTON 1 1/4 DIA HO		P						
034	01	94374900	2	125		PC STRIP CONTACT		P						
035	01	09040204	1	8		PC WSHR, NO. 10 DISHED LOCK STL		B			15786		8320	
037	01	62044200	4	1		PC CLAMP-CABLE ADHESIVE BACK		B						
038	04	94277400	1	1		PC STRAP, CBL TIE TYP-1 TO 5/A		B		14539			8143	
039	02	71493294	4	1		PC SHIELD		P		14539			8143	
040	02	94952302	1	1		PC CLIP CORD TYPE 3 NYLON		P		14742A			8136	
041	01	10127103	9	4		PC MSCR PAN PHL 4-40X.312 STL ZP		B		14454			8041	

BUILD ARC 440

### ASSEMBLY PARTS LIST

PRINT DATE		PAGE		FILE CHANGE NO.									
03-31-83		3		00015812									
DIV.	ASSEMBLY NUMBER	CD	REV	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENCL RESP	FILE DATE			
0860	15632572	2	W	D	FD SBS, PRIMARY 60HZ (TA)	8	REL	09-03-80	FA501A	03-31-83			
TRND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
042	01	10126400	0	4		PC WSHR, (4) EXT/T LK STL ZP	B		14454			8041	
043	01	71493269	6	1		PC SHIELD	P		14454			8041	
044	01	71493297	7	4		PC ROD OPTIC	P		14591			8114	
045	01	94850711	6	001		OZ SEAL, EASTMAN CLR (910)	B		14591			8114	
046	01	94277411	8	2		PC STRAP, CRL TIE TYP-1 TO 1-1/8	B		145394			8133	
047	01	71493354	6	1		PC RAIL SUPPORT PC CD	P		14663			8133	
048	01	71493360	3	1		PC GUIDE-PC CONN	P		14663			8133	
049	01	71493364	5	1		PC SCREW SHLDR NYLON	P		14663			8133	
050	01	91976507	3	1		PC MSCR PAN SLT M3X10MM NYL NAT	B		14663			8133	
						0053 TOTAL LINES							

BUILD ARC 440

# ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
03-31-83	1	00015012

DIV	ASSEMBLY NUMBER	CD	REV	QWQ	DESCRIPTION	QTY	STATUS	STATUS DATE	ENG. DESP.	FILE DATE		
0860	15632573	0	W	D	FD SBS, PRIMARY 50HZ (TA)	6	REL	09-03-80	FA501B	03-31-83		
TRND NO.	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	QTY	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
001	01	61409022	3	1		PC AC ENTRY, FLEX DISK 50HZ	A					
002	03	90446284	3	1		PC REPLACED BY 90446570 15771	N	14571	15771		8113	8314
002	04	90446570	5	1		PC CD ASSY 98E0-3	N	15771			8314	
003	03	90446443	5	1		PC PC CD ASSY 1APD	A	14985			8209	
004	01	90446143	1	1		PC CD ASSY 98MD BACKPLANE	A					
005	01	71493032	8	1		PC COVER METAL AL	P					
006	01	71493185	4	1		PC FACE PLATE	P					
007	01	71493188	8	1		PC BASE	P					
008	02	71493295	1	2		PC TRACK DISK MTG	P	14539			8143	
009	02	71493296	9	2		PC SLIDE DISK MTG	P	14539			8143	
010	01	96837907	3	1		PC CKT BRKR MAGNETIC 3.0 AMPS	P					
011	01	71492955	1	1		PC PANEL CABLE SUPPORT	P					
012	01	71492966	8	4		PC GUIDE CARD	P					
014	02	71492968	4	1		PC BUTTON SWITCH	P		15812			8321
014	03	61489606	3	1		PC SWITCH BUTTON ASSY	N	15812			8321	
015	01	71493055	9	1		PC PANEL SWITCH 1ND	P					
016	01	51886600	9	1		PC FAN, 50CFM 1PH 115VAC 50/60HZ	P					
017	01	94375401	0	1		PC GUARD, FAN 50/60HZ	P					
018	01	77618000	2	1		PC FLEX DISK DRV, 9406 2-SIDED	V					
019	02	71493350	4	4		PC FOOT	P	14853			8147	
020	01	91976649	3	4		PC MSCR PAN PHL M4X40MM STL ZP	B					
021	01	91975724	5	8		PC NUT, HEX M5 STL ZP	B		15786			8320

BUILD ARC 440

# ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
03-31-83	2	00015012

DIV	ASSEMBLY NUMBER	CD	REV	QWQ	DESCRIPTION	QTY	STATUS	STATUS DATE	ENG. DESP.	FILE DATE		
0860	15632573	0	W	D	FD SBS, PRIMARY 50HZ (TA)	6	REL	09-03-80	FA501B	03-31-83		
TRND NO.	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	QTY	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
021	02	15165001	7	8		PC NUT, HEX/FLG-LK M5 STL ZP	B	15786			8320	
022	01	15164911	8	4		PC MSCR HEX/W-LK PLN M4X8MM STL	B					
023	01	15164917	5	4		PC MSCR HEX/W-LK PLN M5X8MM STL	B		15289		8238	8238
023	02	15164917	5	12		PC MSCR HEX/W-LK PLN M5X8MM STL	B	15289			8238	
024	01	91976758	2	5		PC MSCR PAN PHL M5X10MM SST PASS	B		15289		8238	
025	01	91976864	8	4		PC MSCR FLT PHL M5X10MM STL ZP	B					
026	01	91976652	7	5		PC MSCR PAN PHL M5X10MM STL ZP	B		15289		8238	8238
026	02	91976652	7	2		PC MSCR PAN PHL M5X10MM STL ZP	B	15289			8238	
027	01	91975706	2	5		PC WSHR, M5 LOCK SST PASS	B		15289		8238	
028	01	71493078	1	5		PC STANDOFF HEX METRIC CRS	P					
029	03	51918435	2	1		PC EMBLEM, CDC ID	P	14742			8136	
031	01	93109381	9	2		PC STOFF, NO. 1/4 .250L RD ZINC	P					
032	01	91975684	1	6		PC WSHR, M5 EXT/T SST PASS	B		15786		8320	8320
032	02	91975671	8	6		PC WSHR, M5 EXT/T SP6-STL ZP	B	15786			8320	
033	01	93522018	6	1		PC PLUG+SNAP BUTTON 1 1/4 DIA HO	P					
034	01	94374900	2	125		PC STRIP CONTACT	P					
035	01	09040204	1	8		PC WSHR, NO. 10 DISHED LOCK STL	B		15786		8320	
037	01	62044200	4	1		PC CLAMP-CABLE ADHESIVE BACK	B					
038	04	94277400	1	1		PC STRAP, CRL TIE TYP-1 TO 5/8	B	14539			8143	
039	02	71493294	4	1		PC SHIELD	P	14539			8143	
040	02	94952302	1	1		PC CLIP CORD TYPE 3 NYLON	P	14742A			8136	
041	01	10127103	9	4		PC MSCR PAN PHL 4-40X.312 STL ZP	B	14454			8041	

GUILD ARC 440

### ASSEMBLY PARTS LIST

PRINT DATE 03-31-83 PAGE 3 FILE CHANGE NO. 00015812

DIV		ASSEMBLY NUMBER		CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG RESP.	PLS DATE	
0060		15632573		C	W	D	FD SBS, PRIMARY 50Hz (TA)	8	NEL	09-03-80	FAS018	03-31-83	
TRND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
042	01	10126400	0	4		PC WSHR, (4) EXT/T LK STL ZP	B		14454			8041	
043	01	71493269	6	1		PC SHIELD	P		14454			8041	
044	01	71493297	7	4		PC ROD OPTIC	P		14591			8114	
045	01	94850711	6	001		OZ SEAL, EASTMAN CLR (910)	B		14591			8114	
046	01	94277411	8	2		PC STRAP, CBL TIE TYP-1 TO 1-1/8	B		14539A			8133	
047	01	71493354	6	1		PC RAIL SUPPORT PC CD	P		14663			8133	
048	01	71493360	3	1		PC GUIDE-PC CONN	P		14663			8133	
049	01	71493364	5	1		PC SCREW SHLDR NYLON	P		14663			8133	
050	01	91976507	3	1		PC MSCR PAN SLT M3X10MM NYL NAT	B		14663			8133	
							0053 TOTAL LINES						



**ASSEMBLY PARTS LIST**

DIV.		ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE		
0860		15632574	8	W	D	FD SBS, SECONDARY 60HZ (TA)	0	REL	09-03-80	BR810A	03-31-83		
ITEM NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
001	01	61609021	5	1		PC AC ENTRY, FLEX DISK 60HZ	A						
003	03	90446443	5	1		PC PC CD ASSY 1AFD	A		14985			8209	
004	01	90446143	1	1		PC CD ASSY 98ND BACKPLANE	A						
005	01	71493032	8	1		PC COVER METAL AL	P						
006	01	71493185	4	1		PC FACE PLATE	P						
007	01	71493188	8	1		PC BASE	P						
008	02	71493295	1	2		PC TRACK DISK MTG	P		14539			8143	
009	02	71493296	9	2		PC SLIDE DISK MTG	P		14539			8143	
010	01	96837907	3	1		PC CKT BRKR MAGNETIC 3.0 AMPS	P						
011	01	71492955	1	1		PC PANEL CABLE SUPPORT	P						
012	02	71492966	8	4		PC GUIDE CARD	P		14984			8204	
014	01	71492968	4	1		PC BUTTON SWITCH	P			15812			8321
015	01	71493054	2	1		PC PANEL SWITCH INDICATOR	P						
016	01	51886600	9	1		PC FAN, 50CFM 1PH 115VAC 50/60HZ	P						
017	01	94375401	0	1		PC GUARD, FAN 5 <sub>0</sub> /6 <sub>0</sub> HZ	P						
018	01	77618000	2	1		PC FLEX DISK DRV, 94 <sub>0</sub> 6 2-SIDED	V						
019	02	71493350	4	4		PC FOOT	P		14853			8147	
020	01	91976649	3	4		PC MSCR PAN PHL M4X40MM STL ZP	B						
021	01	91975724	5	8		PC NUT, HEX M5 STL ZP	B			15786			8320
021	02	15165001	7	8		PC NUT, HEX/FLG-LK M5 STL ZP	B		15786			8320	
022	01	15164911	6	4		PC MSCR HEX/W-LK PLN M6X8MM STL	B						

**ASSEMBLY PARTS LIST**

DIV.		ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE		
0860		15632574	8	W	D	FD SBS, SECONDARY 60HZ (TA)	0	REL	09-03-80	BR810A	03-31-83		
ITEM NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
023	01	15164917	5	4		PC MSCR HEX/W-LK PLN M5X8MM STL	B			15289			8238
023	02	15164917	5	12		PC MSCR HEX/W-LK PLN M5X8MM STL	B		15289			8238	
024	01	91976758	2	5		PC MSCR PAN PHL M5X10MM SST PASS	B			15289			8238
025	01	91976864	8	4		PC MSCR FLT PHL M5X10MM STL ZP	B						
026	01	91976652	7	5		PC MSCR PAN PHL M5X10MM STL ZP	B			15289			8238
026	02	91976652	7	2		PC MSCR PAN PHL M5X10MM STL ZP	B		15289			8238	
027	01	91975706	2	5		PC WSHR, M5 LOCK SST PASS	B			15289			8238
028	01	71493078	1	4		PC STANDOFF HEX METRIC CRS	P						
029	03	51918435	2	1		PC EMBLEM, CDC ID	P		14742			8136	
031	01	93109381	9	2		PC STOFF, NO. 1/4 .025 <sub>0</sub> L RD ZINC	P						
032	01	91975684	1	6		PC WSHR, M5 EXT/T SST PASS	B			15786			8320
032	02	91975671	8	6		PC WSHR, M5 EXT/T SPG-STL ZP	B		15786			8320	
033	01	93522018	6	1		PC PLUG, SNAP BUTTON 1/4 DIA HO	P						
034	01	94374900	2	125		PC STRIP CONTACT	P						
035	01	09040204	1	8		PC WSHR, NO.10 DISHED LOCK STL	B			15786			8320
037	01	62044200	4	1		PC CLAMP-CABLE ADHESIVE BACK	B						
038	04	94277400	1	1		PC STRAP, CBL TIE TYP-1 TO 5/A	B		14539			8143	
039	02	71493294	4	1		PC SHIELD	P		14539			8143	
040	02	94952302	1	1		PC CLIP CORD TYPE 3 NYLON	P		14742A			8136	
046	01	94277411	8	2		PC STRAP, CBL TIE TYP-1 TO 1-1/B	B		14539A			8133	



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### ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
03-31-83	1	00018012

DIV		ASSEMBLY NUMBER	CD	REV.	DRWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENGR. DESIG.	FILE DATE		
0000		15632575	S	M	D	FD 885, SECONDARY 50HZ (TA)	G	REL	09-03-80	BR0108	03-31-83		
TYPE NO.	LT	PART NUMBER	CD	QUANTITY	U/W	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
001	01	61409022	3	1		PC AC ENTRY, FLEX DISK 50HZ	A						
003	03	90446443	5	1		PC PC CD ASSY 1APD	A		14985			8209	
004	01	90446143	1	1		PC CD ASSY 98HD BACKPLANE	A						
005	01	71493032	8	1		PC COVER METAL AL	P						
006	01	71493185	4	1		PC FACE PLATE	P						
007	01	71493188	8	1		PC BASE	P						
008	02	71493295	1	2		PC TRACK DISK MTO	P		14839			8143	
009	02	71493296	9	2		PC SLIDE DISK MTO	P		14839			8143	
010	01	96837907	3	1		PC CKT BRKR MAGNETIC 3.0 AMPS	P						
011	01	71492955	1	1		PC PANEL CABLE SUPPORT	P						
012	02	71492966	8	4		PC GUIDE CARD	P		14984			8204	
014	01	71492968	4	1		PC BUTTON SWITCH	P			15812			8321
015	01	71493054	2	1		PC PANEL SWITCH INDICATOR	P						
016	01	51886680	9	1		PC FAN, 80CFM 1PH 115VAC 50/60HZ	P						
017	01	94375401	0	1		PC GUARD, FAN 50/60HZ	P						
018	01	77618000	2	1		PC FLEX DISK DRV, 940, 2-SIDED	V						
019	02	71493350	4	4		PC FOOT	P		14893			8147	
020	01	91976649	3	4		PC NSCR PAN PHL M4X40MM STL ZP	B						
021	01	91975724	5	8		PC NUT, HEX M5 STL ZP	B			15786			8320
021	02	15165001	7	8		PC NUT, HEX/FLG-LK M5 STL ZP	B		15786			8320	
022	01	15164911	8	4		PC NSCR HEX/W-LK PLN M4X20MM STL	B						

BUILD ARC 440

### ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
03-31-83	2	00018012

DIV		ASSEMBLY NUMBER	CD	REV.	DRWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENGR. DESIG.	FILE DATE		
0060		15632575	S	M	D	FD 885, SECONDARY 50HZ (TA)	G	REL	09-03-80	BR0108	03-31-83		
TYPE NO.	LT	PART NUMBER	CD	QUANTITY	U/W	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
023	01	15164917	5	4		PC NSCR HEX/W-LK PLN M5X8MM STL	B						8238
023	02	15164917	5	12		PC NSCR HEX/W-LK PLN M5X8MM STL	B		15289			8238	
024	01	91976758	2	5		PC NSCR PAN PHL M5X10MM SST PASS	B			15289			8238
025	01	91976864	8	4		PC NSCR FLT PHL M5X10MM STL ZP	B						
026	01	91976652	7	5		PC NSCR PAN PHL M5X10MM STL ZP	B			15289		8238	8238
026	02	91976652	7	2		PC NSCR PAN PHL M5X10MM STL ZP	B		15289			8238	
027	01	91975706	2	5		PC WSHR, M5 LOCK SST PASS	B			15289			8238
028	01	71493078	1	5		PC STANDOFF HEX METRIC CRS	P						
029	03	51918435	2	1		PC EMBLEM, CDC ID	P		14742			8136	
031	01	93109381	9	2		PC STOFF, NO. 1/4 .250L RD ZINC	P						
032	01	91975684	8	6		PC WSHR, M5 EXT/T SST PASS	B			15786			8320
032	02	91975671	8	6		PC WSHR, M5 EXT/T SP8-STL ZP	B		15786			8320	
033	01	93522018	6	1		PC PLUG, SNAP BUTTON 1 1/4 DIA HD	P						
034	01	94374900	2	125		PC STRIP CONTACT	P						
035	01	09040204	1	8		PC WSHR, NO. 10 DISHED LOCK STL	B			15786			8320
037	01	62044200	4	1		PC CLAMP-CABLE ADHESIVE BACK	B						
038	04	94277400	1	1		PC STRAP, CBL TIE TYP-1 TO 5/A	B		14939			8143	
039	02	71493294	4	1		PC SHIELD	P		14939			8143	
040	02	94952302	1	1		PC CLIP CORD TYPE 3 NYLON	P		14742A			8136	
046	01	94277411	8	2		PC STRAP, CBL TIE TYP-1 TO 1-1/8	B		14939A			8133	

BUILD ARC 440

# ASSEMBLY PARTS LIST

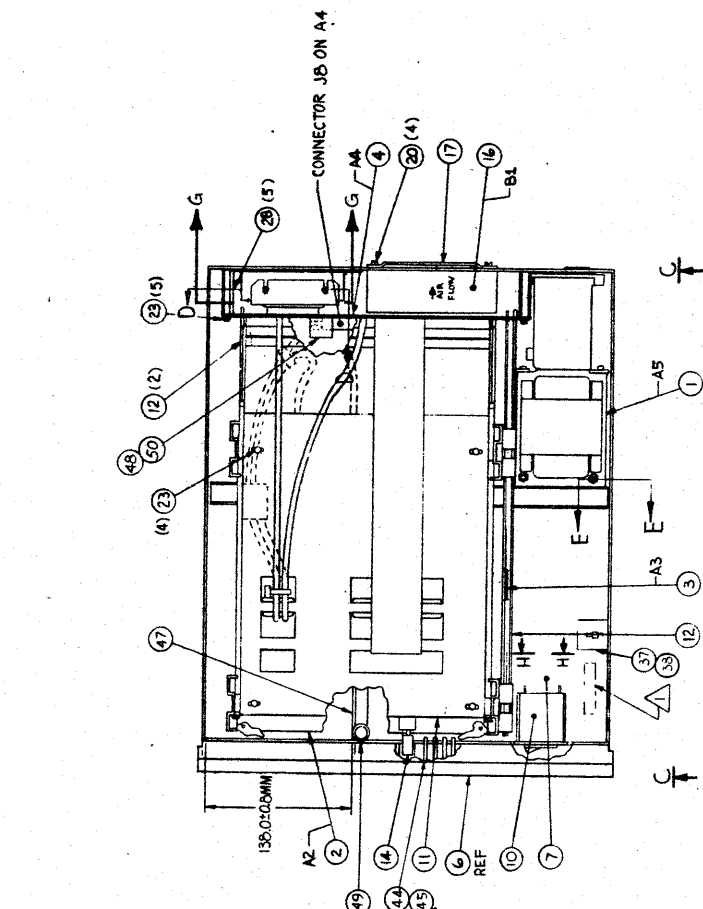
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PAGE: 3  
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REV.	ASSEMBLY NUMBER	CD	REV.	QTY.	DESCRIPTION	ACC	STATUS	STATUS DATE	REQ. QTY.	PLD DATE			
0000	15632575	5	M	D	FD SBS, SECONDARY 50HZ (TA)	6	REL	09-03-80	000100	03-31-83			
TYPE NO.	LI	PART NUMBER	CD	QTY.	U/M	PART DESCRIPTION	ACC	PLD	CCD. NO. IN	CCD. NO. OUT	S/N	WE IN	WE OUT
						0001 TOTAL LINES							

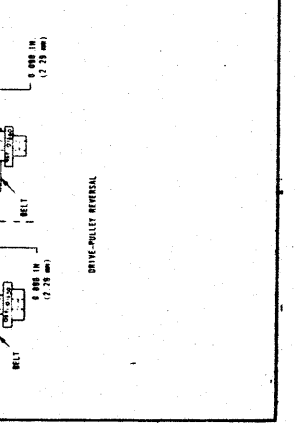
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REV	DATE	BY	DESCRIPTION
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(TOP VIEW SHOWN WITH ITEMS 5, 8, 9, & 18 REMOVED)



- EMERGENCY CORRECTION PROCEDURES**
- THIS PROCEDURE IS TO BE USED TO CORRECT THE FOR UNIT FROM 88 OR 55 OPERATION TO 55 OR 88. REFER TO THE OPERATOR'S MANUAL FOR THE CORRECT PROCEDURES TO BE FOLLOWED.
1. REMOVE AC POWER.
  2. DISCONNECT WIRE CONNECTIONS ON PRINTED-CIRCUIT BOARD.
  3. REMOVE PULLEY FROM THE DRIVE MOTOR PULLEY.
  4. REMOVE PULLEY FROM THE DRIVE MOTOR PULLEY.
  5. REMOVE PULLEY FROM THE DRIVE MOTOR PULLEY.
  6. REMOVE PULLEY FROM THE DRIVE MOTOR PULLEY.
  7. REMOVE PULLEY FROM THE DRIVE MOTOR PULLEY.
  8. REMOVE PULLEY FROM THE DRIVE MOTOR PULLEY.
  9. REMOVE PULLEY FROM THE DRIVE MOTOR PULLEY.
  10. REMOVE PULLEY FROM THE DRIVE MOTOR PULLEY.
  11. REMOVE PULLEY FROM THE DRIVE MOTOR PULLEY.
  12. RECONNECT WIRE CONNECTIONS ON PRINTED-CIRCUIT BOARD.
- CAUTION**
- IT IS IMPORTANT THAT THE NEW OPERATING MODE BE USED TO CORRECT THE DRIVE MOTOR PULLEY. REFER TO THE OPERATOR'S MANUAL FOR THE CORRECT PROCEDURES.

- NOTES:**
1. MARK ASSY 1563298X IN AREA SHOWN PER CDC SPEC 1012150B.
  2. CONNECT SUBASSEMBLIES AS FOLLOWS:  
 PLUG A4P1 INTO A4I9  
 PLUG A4P2 INTO A4I4  
 PLUG A4P3 INTO A4I1  
 PLUG A4P4 INTO B4J1  
 PLUG A5P3 INTO A4J3
  3. MARK NO'S ONLY PER CDC SPEC 1012150B, .12 HIGH, WHITE, IN LOCATION APPROX AS SHOWN.
  4. OPTIC RODS (F/N A4) TO BE INSTALLED FROM BACK OF FACE PLATE (F/N 4). INSTALL RODS UNTIL THEY ARE FLUSH WITH FRONT OF FACE PLATE, THEN APPLY VERY SMALL AMOUNT (LESS THAN A DROP) OF ADHESIVE (F/N 45) AROUND EACH ROD, ON BACKSIDE OF FACE PLATE. WIPE OFF EXCESS.
  5. TIGHTEN SCREW F/N 49 BY HAND, DO NOT USE ANY TOOLS.

**METRIC**

CD110 FLEXIBLE DISK (TLA)

15632982 THRU 15632983

15920 D

15632983

1/2

1 of 2

REV	NO	DESCRIPTION	DATE	BY

2862512

1

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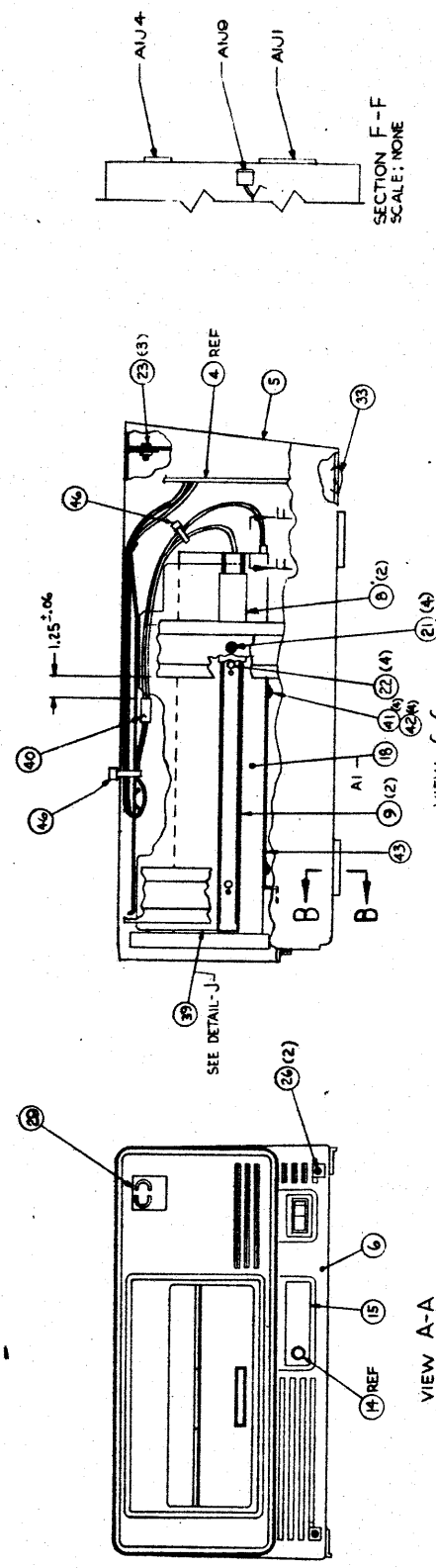
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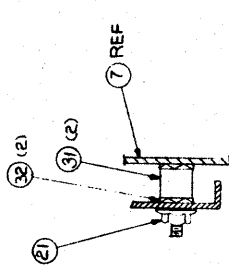
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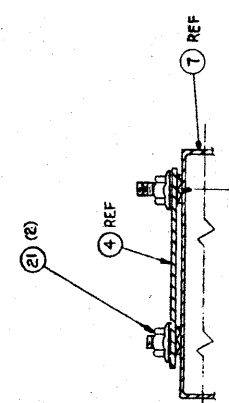
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SCALE: NONE

VIEW C-C

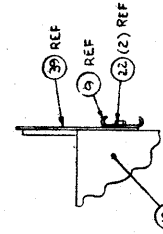
VIEW A-A  
ROTATED 90° CCW



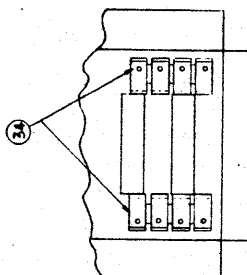
SECTION E-E  
TYP 2 PLACES  
SCALE: NONE



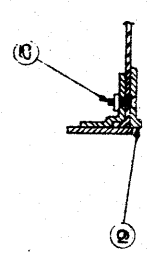
SECTION D-D  
ROTATED 90° CW  
SCALE: NONE



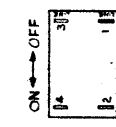
DETAIL - J  
SCALE: NONE



VIEW G-G  
ROTATED 90° CW  
SCALE: NONE



SECTION B-B  
TYP 4 PLACES



VIEW H-H  
SCALE: NONE

REV	NO	DESCRIPTION	DATE	BY

CD110 FLEXIBLE DISK  
(TLA)

15462982

19920

2

E

BUILD ARC 440

### ASSEMBLY PARTS LIST

										PRINT DATE	PAGE	FILE CHANGE NO.	
										03-31-83	1	00015812	
DIV.	ASSEMBLY NUMBER	CD	REV.	ENGR.	DESCRIPTION	MC	STATUS	STATUS DATE	ENGR. RESP.	FILE DATE			
0860	15632982	3	G	D	FDD, CD110 PRIMARY 50HZ (TA)	G	REL	12-18-81	FA5010	03-31-83			
ITEM NO	LT	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
001	01	61409022	3	1		PC AC ENTRY, FLEX DISK 50HZ	A						
002	01	90446396	5	1		PC REPLACED BY 90446571 15771	S			15771	15771	8314	8314
002	02	90446571	3	1		PC CD ASSY CONT MOD W/FULL MEM	S		15771			8314	
003	02	90446443	5	1		PC PC CD ASSY 1APD	A		14985			8209	
004	01	90446143	1	1		PC CD ASSY 98HD BACKPLANE	A						
005	01	71493032	8	1		PC COVER METAL AL	P						
006	01	71493185	4	1		PC FACE PLATE	P						
007	01	71493188	8	1		PC BASE	P						
008	01	71493295	1	2		PC TRACK DISK MTG	P						
009	01	71493296	9	2		PC SLIDE DISK MTG	P						
010	01	96837907	3	1		PC CKT BRKR MAGNETIC 3.0 AMPS	P						
011	01	71492955	1	1		PC PANEL CABLE SUPPORT	P						
012	01	71492966	8	4		PC GUIDE CARD	P						
014	02	71492968	4	1		PC BUTTON SWITCH	P		15812	15812		8321	8321
014	03	61409606	3	1		PC SWITCH BUTTON ASSY	N					8321	
015	01	71493055	9	1		PC PANEL SWITCH IND	P						
016	01	51886600	9	1		PC FAN, 50CFM 1PH 115VAC 50/60HZ	P						
017	01	94375401	0	1		PC GUARD, FAN 50/60HZ	P						
018	01	77618000	2	1		PC FLEX DISK DRV, 9406 2-SIDED	V						
019	01	71493350	4	4		PC FOOT	P						
020	01	91976649	3	4		PC MSCR PAN PHL M4X40MM STL ZP	B						
021	01	91975724	5	8		PC NUT, HEX M5 STL ZP	B			15786			8320

BUILD ARC 440

### ASSEMBLY PARTS LIST

										PRINT DATE	PAGE	FILE CHANGE NO.	
										03-31-83	2	00015812	
DIV.	ASSEMBLY NUMBER	CD	REV.	ENGR.	DESCRIPTION	MC	STATUS	STATUS DATE	ENGR. RESP.	FILE DATE			
0860	15632982	3	G	D	FDD, CD110 PRIMARY 50HZ (TA)	G	REL	12-18-81	FA5010	03-31-83			
ITEM NO	LT	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
021	02	15165001	7	8		PC NUT, HEX/FLG-LK M5 STL ZP	B		15786				8320
022	01	15164911	8	4		PC MSCR HEX/W-LK PLN M4X8MM STL	B						
023	01	15164917	5	4		PC MSCR HEX/W-LK PLN M5X8MM STL	B			15289	15289	8238	8238
023	02	15164917	5	12		PC MSCR HEX/W-LK PLN M5X8MM STL	B					8238	
024	01	91976758	2	5		PC MSCR PAN PHL M5X10MM SST PASS	B			15289			8238
025	01	91976864	8	4		PC MSCR FLT PHL M5X10MM STL ZP	B						
026	01	91976652	7	5		PC MSCR PAN PHL M5X10MM STL ZP	B			15289	15289	8238	8238
026	02	91976652	7	2		PC MSCR PAN PHL M5X10MM STL ZP	B		15289			8238	
027	01	91975706	2	5		PC WSHR, M5 LOCK SST PASS	B			15289			8238
028	01	71493078	1	5		PC STANDOFF HEX METRIC CRS	P						
029	01	51918435	2	1		PC EMBLEM, CDC ID	P						
031	01	93109381	9	2		PC STOFF, NO. 1/4 .250L RD ZINC	P						
032	01	91975684	1	6		PC WSHR, M5 EXT/T SST PASS	B			15786	15786	8320	8320
032	02	91975671	8	6		PC WSHR, M5 EXT/T SP8-STL ZP	B					8320	
033	01	93522016	6	1		PC PLUG, SNAP BUTTON 1 1/4 DIA HO	P						
034	01	94374900	2	125		PC STRIP CONTACT	P						
035	01	09040204	1	8		PC WSHR, NO.10 DISHED LOCK STL	B			15786			8320
036	01	51805700	5	4		PC BUMPER SELF STICKING	P			15669			8301
037	01	62044200	4	1		PC CLAMP-CABLE ADHESIVE BACK	B						
038	01	94277400	1	1		PC STRAP, CRL TIE TYP-1 TO 5/8	B						
039	01	71493294	4	1		PC SHIELD	P						
040	01	94952302	1	1		PC CLIP CORD TYPE 3 NYLON	P						

BUILD ARC 440

# ASSEMBLY PARTS LIST

DIV.		ASSEMBLY NUMBER		CD	REV.	DWG.	DESCRIPTION	REV.	STATUS	STATUS DATE	DWG. DESG.	PLI DATE	
0000		15032982		3	6	D	FDD: CD110 PRIMARY 50HZ (TA)	6	REL	12-18-81	FA501D	03-31-83	
TYPE NO.	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	REV.	PLI	DCD. NO. IN	DCD. NO. OUT	A/N	WE IN	WE OUT
041	01	10127103	9	4		PC MSCR PAN PHL 4-40X.312 STL ZP		B					
042	01	10126408	0	4		PC WSHR. (4) EXT/T LK STL ZP		B					
043	01	71493269	6	1		PC SHIELD		P					
044	01	71493297	7	4		PC ROD OPTIC		P					
045	01	94850711	6	001		OZ SEAL. EASTMAN CLR (910)		B					
046	01	94277411	8	2		PC STRAP. CAR TIE TYP-1 TO 1-1/8		B					
047	01	71493354	6	1		PC RAIL SUPPORT PC CD		P					
048	01	71493360	3	1		PC GUIDE-PC CONN		P					
049	01	71493364	5	1		PC SCREW SHLDR NYLON		P					
050	01	91976507	3	1		PC MSCR PAN SLT M3X10MM NYL NAT		B					
							0054 TOTAL LINES						



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**ASSEMBLY PARTS LIST**

PRINT DATE	PAGE	FILE CHANGE NO.
03-31-83	1	00015812

DIV.		ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE		
0860		15632983	1	0	D	FDD, CD110 PRIMARY 60HZ (TA)	0	REL	12-10-81	FA961C	03-31-83		
TP/IND NO.	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLR	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
001	01	61409021	5	1		PC AC ENTRY, FLEX DISK 60HZ		A					
002	01	90446396	5	1		PC REPLACED BY 90446571 15771		S		15771		8314	
002	02	90446571	3	1		PC CD ASSY CONT MOD W/FULL MEM		S	18771			8314	
003	01	90446290	8	1		PC REPLACED BY 90446443 14985		A		14985		8209	8209
003	02	90446443	5	1		PC PC CD ASSY 1AFD		A	14985			8209	
004	01	90446143	1	1		PC CD ASSY 90MD BACKPLANE		A					
005	01	71493032	8	1		PC COVER METAL AL		P					
006	01	71493185	4	1		PC FACE PLATE		P					
007	01	71493188	8	1		PC BASE		P					
008	01	71493295	1	2		PC TRACK DISK MTG		P					
009	01	71493296	9	2		PC SLIDE DISK MTG		P					
010	01	96837907	3	1		PC CKY BRKR MAGNETIC 3.0 AMPS		P					
011	01	71492955	1	1		PC PANEL CABLE SUPPORT		P					
012	01	71492966	8	4		PC GUIDE CARD		P					
014	02	71492968	4	1		PC BUTTON SWITCH		P		15812		8321	8321
014	03	61409666	3	1		PC SWITCH BUTTON ASSY		N	15812			8321	
015	01	71493055	9	1		PC PANEL SWITCH IND		P					
016	01	51866608	9	1		PC FAN, 50CFM 1PH 115VAC 50/60HZ		P					
017	01	94375401	0	1		PC GUARD, FAN 50/60HZ		P					
018	01	77618000	2	1		PC FLEX DISK DRV, 9406 2-SIDED		V					
019	01	71493350	4	4		PC FOOT		P					
020	01	91976649	3	4		PC MSCR PAN PHL M4X40MM STL ZP		B					

BUILD ARC 440

**ASSEMBLY PARTS LIST**

PRINT DATE	PAGE	FILE CHANGE NO.
03-31-83	2	00015812

DIV.		ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE		
0860		15632983	1	0	D	FDD, CD110 PRIMARY 60HZ (TA)	0	REL	12-10-81	FA961C	03-31-83		
TP/IND NO.	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLR	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
021	01	91975724	5	8		PC NUT, HEX M5 STL ZP		B		15786		8320	8320
021	02	15165001	7	8		PC NUT, HEX/FLG-LK M5 STL ZP		B	15786			8320	
022	01	15164911	8	4		PC MSCR HEX/W-LK PLN M4X8MM STL		B		15289		8238	8238
023	01	15164917	5	4		PC MSCR HEX/W-LK PLN M5X8MM STL		B		15289		8238	8238
023	02	15164917	5	12		PC MSCR HEX/W-LK PLN M5X8MM STL		B	15289			8238	
024	01	91976750	2	5		PC MSCR PAN PHL M5X10MM SST PASS		B		15289		8238	8238
025	01	91976864	8	4		PC MSCR FLT PHL M5X10MM STL ZP		B		15289		8238	8238
026	01	91976652	7	5		PC MSCR PAN PHL M5X10MM STL ZP		B		15289		8238	8238
026	02	91976652	7	2		PC MSCR PAN PHL M5X10MM STL ZP		B	15289			8238	
027	01	91975706	2	5		PC WSHR, M5 LOCK SST PASS		B		15289		8238	8238
028	01	71493078	1	5		PC STANDOFF HEX METRIC CRS		P					
029	01	51918435	2	1		PC EMBLEM, CDC ID		P					
031	01	93109381	9	2		PC STOFF, NO. 1/4 .025, L RD ZINC		P					
032	01	91975684	1	6		PC WSHR, M5 EXT/T SST PASS		B		15786		8320	8320
032	02	91975671	8	6		PC WSHR, M5 EXT/T SP6-STL ZP		B	15786			8320	
033	01	93522018	6	1		PC PLUG, SNAP BUTTON 1 1/4 DIA HO		P					
034	01	94374900	2	125		PC STRIP CONTACT		P					
035	01	09040204	1	8		PC WSHR, NO. 10 DISHED LOCK STL		B		15786		8320	8320
036	01	51805700	5	4		PC BUMPER SELF STICKING		P		15469		8301	8301
037	01	62044200	4	1		PC CLAMP-CABLE ADHESIVE BACK		B					
038	01	94277400	1	1		PC STRAP, CBL TIE TYP-1 TO 5/8		B					
039	01	71493294	4	1		PC SHIELD		P					
040	01	94982302	1	1		PC CLIP CORD TYPE 3 NYLON		P					

BUILD ARC 440

### ASSEMBLY PARTS LIST

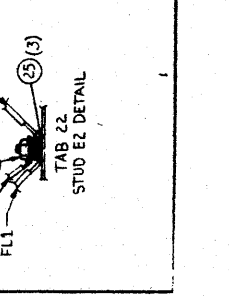
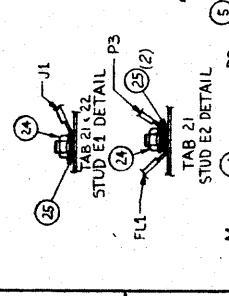
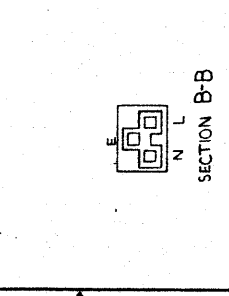
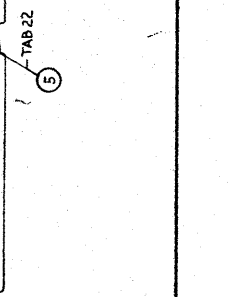
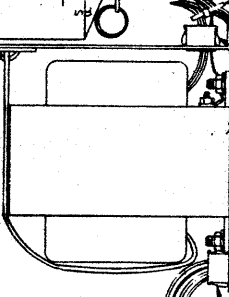
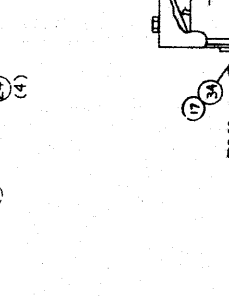
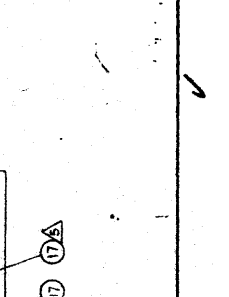
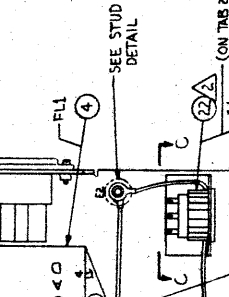
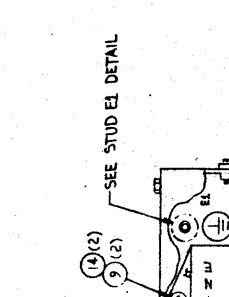
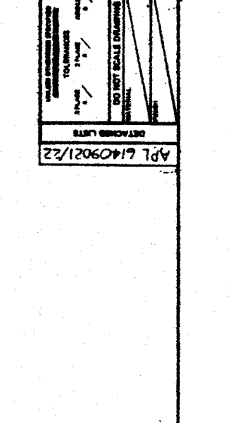
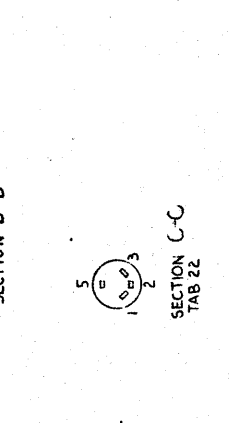
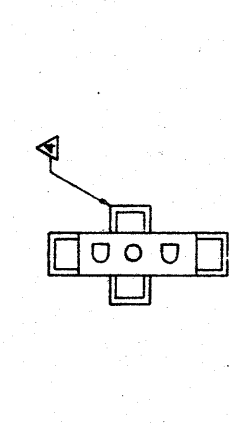
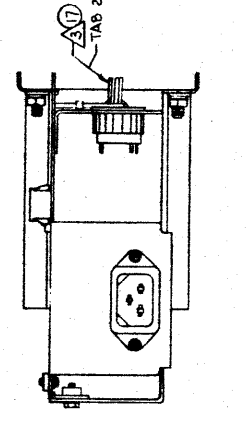
PRINT DATE	PAGE	FILE CHANGE NO
03-31-83	3	00015812

QTY	ASSEMBLY NUMBER	CD	REV.	QTY.	DESCRIPTION	SEC	STATUS	STATUS DATE	ENG. DESIG.	FILE DATE			
0060	15632983	1	G	D	FDD, CD110 PRIMARY 60HZ (TA)	0	REL	12-18-81	FA501C	03-31-83			
QTY	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	SEC	YLR	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
041	01	10127103	9	4		PC MSCR PAN PHL 4-40X.312 STL ZP	B						
042	01	10126400	0	4		PC WSHR, (4) EXT/T LK STL ZP	B						
043	01	71493269	6	1		PC SHIELD	P						
044	01	71493297	7	4		PC ROD OPTIC	P						
045	01	94850711	6	001	OZ	SEAL, EASTMAN CLR (910)	B						
046	01	94277411	8	2		PC STRAP, CBL TIE TYP-1 TO 1-1/8	B						
047	01	71493354	6	1		PC RAIL SUPPORT PC CD	P						
048	01	71493360	3	1		PC GUIDE-PC CONN	P						
049	01	71493364	5	1		PC SCREW SHLDR NYLON	P						
050	01	91976507	3	1		PC MSCR PAN SLT M3X10MM NYL NAT	B						
						0055 TOTAL LINES							

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REV	NO	BY	DATE	DESCRIPTION
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6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
10	10	10	10	10

P/N	HZ	LENGTH A (MM)
61409021	60	50.0 ± 0.6
61409022	50	50.0 ± 0.5



NOTES:

- 1 MARK "ASSY 6140902 X" IN AREA SHOWN PER CDC SPEC 10121508.
- 2 SECURE PLASTIC NUT USING FIN 23.
- 3 ON TAB 21, CENTER WIRES AND STRAP AS SHOWN.
- 4 CLIP OFF TAB.
- 5 INSTALL AROUND ALL WIRES GOING TO P3 TO ALLOW P3 TO STICK OUT 50±6 MM.

METRIC

REV	NO	BY	DATE	DESCRIPTION
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
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10	10	10	10	10

REV	NO	BY	DATE	DESCRIPTION
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10	10	10	10	10

REV	NO	BY	DATE	DESCRIPTION
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REV	NO	BY	DATE	DESCRIPTION
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REV	NO	BY	DATE	DESCRIPTION
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9	9	9	9	9
10	10	10	10	10

REV	NO	BY	DATE	DESCRIPTION
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
10	10	10	10	10

BUILD ARC 230

### ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
03-02-83	1	00015786

DIV	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. DESP.	FILE DATE			
0860	61409021	5	J	D	AC ENTRY, FLEX DISK 60HZ	A	REL	09-03-80	FA501A	03-02-83			
TPNO NO	LT	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
001	01	71492952	8	1		PC BRACKET SWITCH/FILTER/XFORM	P						
002	01	71492953	6	1		PC COVER SWITCH/FILTER	P						
004	01	15164356	6	1		PC FILTER RFI	P						
005	01	15012408	9	2		PC 95M6, SNAP-IN .500 W/H .3810	B						
007	01	44674036	2	1		PC CONN POWER RECEP	P						
008	01	15164917	5	2		PC HSCR HEX/W-LK PLN MSX8MM STL	B						
009	01	91976625	3	4		PC HSCR PAN PHL M3X6MM STL ZP	B		15509	15509		8243	8243
009	02	91976626	1	4		PC HSCR PAN PHL M3X6MM STL ZP	B						
010	01	51809101	2		020	FT TAPE-WIRE MARKING CHAR 1	B						
011	01	51809103	8		020	FT TAPE-WIRE MARKING CHAR 3	B						
014	01	91975669	2	2		PC WSHR, M3 EXT/T SPG-STL ZP	B		15509	15509		8243	8243
014	02	91975669	2	4		PC WSHR, M3 EXT/T SPG-STL ZP	B						
015	01	44674036	7	3		PC CONN PWR RECPT	P						
016	01	51797218	8	3		PC LUG, 22-18GA SS10 INS-RING	B						
017	01	94277400	1	1		PC STRAP, CBL TIE TYP-1 TO 5/8	B		15351	15351		8234	8234
017	02	94277400	1	3		PC STRAP, CBL TIE TYP-1 TO 5/8	B						
018	01	51986200	4	3		PC CONT, SKT 20-14AWG SN STRIP	P						
019	01	52810001	9	2	833	FT WIR 18GA STRD BRN 600V UL PVC	W						
020	01	52810020	9		833	FT WIR 18GA STRD GRN/YEL 600V UL	W						
021	01	51906001	6	1		PC CONN, PLUG 3 CKT NYL/NAT F-1	P						
024	01	91975724	5	2		PC NUT, HEX M5 STL ZP	B		15786	15786		8320	8320
024	02	15165001	7	2		PC NUT, HEX/FLG-LK M5 STL ZP	B						
025	01	91975671	8	6		PC WSHR, M5 EXT/T SPG-STL ZP	B		15786	15786		8320	8320

BUILD ARC 230

### ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
03-02-83	2	00015786

DIV	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. DESP.	FILE DATE			
0860	61409021	5	J	D	AC ENTRY, FLEX DISK 60HZ	A	REL	09-03-80	FA501A	03-02-83			
TPNO NO	LT	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
025	02	91975671	8	3		PC WSHR, M5 EXT/T SPG-STL 7P	B		15786			8320	
026	01	61409023	1		REF	PC W/L AC ENTRY 60HZ	D						
027	01	52810006	8	2	833	FT WIR 18GA STRD BLU 600V UL PVC	W						
028	01	93083004	7	2		PC SPLICES 22-16	W						
029	01	62201057	7		REF	PC SCH DIAG 50/60HZ	D						
030	01	95643231	4	4		PC LUG, G-CONN 22-18AWG FIG 5	P		15634	15634		8313	8313
030	02	95643248	8	4		PC CONN QUICK CONN 22-18 1.00L	P						
031	01	51809102	0		020	FT TAPE-WIRE MARKING CHAR 2	B						
032	01	51809104	6		020	FT TAPE-WIRE MARKING CHAR 4	B						
033	01	24528636	4		333	FT TBG, NO. 2 INS BLK UL PVC	B						
						0033 TOTAL LINES							

BUILD ARC 230

### ASSEMBLY PARTS LIST

PRINT DATE: 03-01-83  
PAGE: 1  
FILE CHANGE NO.: 00015786

DIV		ASSEMBLY NUMBER		CD	REV	DWG	DESCRIPTION		MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE	
0860		61409022		3	J	D	AC ENTRY, FLEX DISK 50HZ		A	REL	09-03-80	FA501A	03-01-83	
TRND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION		MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
001	01	71492952	8	1		PC BRACKET SWITCH/FILTER/XFORM		P						
002	01	71492953	6	1		PC COVER SWITCH/FILTER		P						
004	01	15164356	6	1		PC FILTER RFI		P						
005	01	15012408	9	3		PC BSMG, SNAP-IN .500 W/H .381D		B						
007	01	44674034	2	1		PC CONN POWER RECEPT		P						
008	01	15164917	5	2		PC HSCR HEX/W-LK PLN M3X8MM STL		B						
009	01	91976625	3	4		PC HSCR PAN PHL M3X8MM STL ZP		B		15509	15509		8243	8243
009	02	91976626	1	4		PC HSCR PAN PHL M3X8MM STL ZP		B						
010	01	51809101	2		020	FT TAPE-WIRE MARKING CHAR 1		B						
011	01	51809103	8		020	FT TAPE-WIRE MARKING CHAR 3		B						
012	01	51918789	2	1		PC XFMR STEP DOWN 220/240V		P						
013	01	09040204	1	4		PC WSHR, NO.10 DISHED LOCK STL		B			15786			8320
014	01	91975669	2	2		PC WSHR, M3 EXT/T SPG-STL ZP		B		15509	15509		8243	8243
014	02	91975669	2	4		PC WSHR, M3 EXT/T SPG-STL ZP		B						
015	01	44674036	7	3		PC CONN PWR RECEPT		P						
016	01	51797218	8	2		PC LUG, 22-18GA SS10 INS-RING		B						
017	01	94277400	1	1		PC STRAP, CBL TIE TYP-1 TO 5/8		B		14321	14321		8041	8041
017	02	94277400	1	2		PC STRAP, CBL TIE TYP-1 TO 5/8		B			15351		8234	8234
017	03	94277400	1	4		PC STRAP, CBL TIE TYP-1 TO 5/8		B		15351			8234	8234
019	01	52810001	9	2		FT WIR 18GA STRD BRN 600V UL PVC		B						
020	01	52810020	9		250	FT WIR 18GA STRD GRN/YEL 600V UL		B						
022	01	51918969	0	1		PC SWITCH VOLTAGE SELECTOR		P						
023	01	51873600	4		001	OZ VARNISH INSUL RED GLPT		B						

BUILD ARC 230

### ASSEMBLY PARTS LIST

PRINT DATE: 03-01-83  
PAGE: 2  
FILE CHANGE NO.: 00015786

DIV		ASSEMBLY NUMBER		CD	REV	DWG	DESCRIPTION		MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE	
0860		61409022		3	J	D	AC ENTRY, FLEX DISK 50HZ		A	REL	09-03-80	FA501A	03-01-83	
TRND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION		MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
024	01	91975724	5	6		PC NUT, HEX M5 STL ZP		B						
024	02	15165001	7	6		PC NUT, HEX/FLG-LK M5 STL ZP		B		15786	15786		8320	8320
025	01	91975671	8	6		PC WSHR, M5 EXT/T SPG-STL ZP		B			15786			8320
025	02	91975671	8	4		PC WSHR, M5 EXT/T SPG-STL ZP		B		15786			8320	8320
026	01	61409024	9		REF	PC W/L AC ENTRY 50HZ		D						
027	01	52810006	8	1	166	FT WIR 18GA STRD BLU 600V UL PVC		B						
028	01	93083004	7	2		PC SPLICES 22-16		B						
029	01	51758101	3		188	FT INS SLV CLR PVC HEAT SHRINK		B						
030	01	95643231	4	4		PC LUG, 0-CONN 22-18ANG FIG 5		P						
030	02	95643248	8	4		PC CONN QUICK CONN 22-18 1.00L		P		15634	15634		8313	8313
031	01	62201057	7		REF	PC SCH DIAG 50/60HZ		D						
032	01	51809102	0		020	FT TAPE-WIRE MARKING CHAR 2		B						
033	01	51809104	6		020	FT TAPE-WIRE MARKING CHAR 4		B						
034	01	62044200	4	1		PC CLAMP-CABLE ADHESIVE BACK		B						
0037 TOTAL LINES														



COMMON PARTS DATA APPLICABLE  
TO BOTH PRE-PRODUCTION  
AND PRODUCTION UNITS

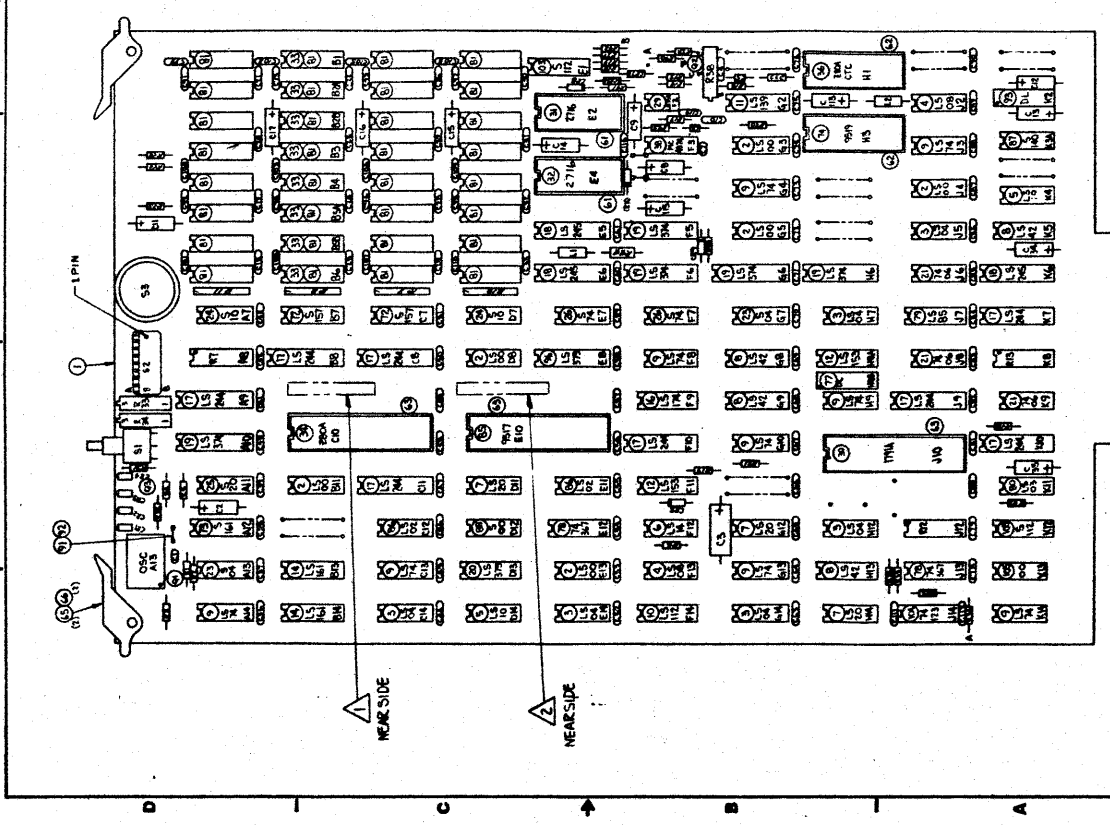




REV	DATE	BY	DESCRIPTION
1	09297006		REPAKED N SIZE ASSY DIMS WITH 'V' SIZE PER ECO
2			REPAKED PER ECO
3			REPAKED PER ECO
4			REPAKED PER ECO
5			REPAKED PER ECO
6			REPAKED PER ECO
7			REPAKED PER ECO
8			REPAKED PER ECO
9			REPAKED PER ECO
10			REPAKED PER ECO
11			REPAKED PER ECO
12			REPAKED PER ECO
13			REPAKED PER ECO
14			REPAKED PER ECO
15			REPAKED PER ECO
16			REPAKED PER ECO
17			REPAKED PER ECO
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39			REPAKED PER ECO
40			REPAKED PER ECO
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93			REPAKED PER ECO
94			REPAKED PER ECO
95			REPAKED PER ECO
96			REPAKED PER ECO
97			REPAKED PER ECO
98			REPAKED PER ECO
99			REPAKED PER ECO
100			REPAKED PER ECO

- NOTES:
- MARK ASST. NO., REV LEVEL, AND LOC CODE IN AREA SHOWN, MARK PER CDC SPEC 10121508, CHARACTER HEIGHT .12 (10 PT) COLOR WHITE.
  - MARK SERIAL NUMBER IN AREA SHOWN PER REVLOPS P/BP NO. 80-20-34 AND PER MARKING REQUIREMENTS IN NOTE (1) ONE.
  - FIND NUMBERS, ELEMENT IDENTIFIERS, AND REFERENCE DESIGNATIONS ARE FOR REFERENCE ONLY AND DO NOT APPEAR ON PART.
  - AFTER ALIGNING R33, R34 AND R38, SEAL THEM WITH GLYPTAL CDC P/N 51873600.

CROSS REFERENCE TABLE	REFERENCE DESIGNATION
37	OSC
39	S1
41	R3
42	R2A
44	R1
47	R5
48	R5
51	C36 THIRD C61 C65 THRU C76
53	C78 THRU C81A
54	C89, C14A, C24, C35
55	C11, C14, C15, C16, C17, C18, C19
56	C1
57	C1, C2, C3, C4
58	C65 (C7, C8, C9, C11)
59	G1, G3
60	S1
61	C2
70	R8, R9, R10, R11
71	S8
75	C18 THRU C33, C37, C40, C110
82	R7, R12
83	R41
90	R19, R19, R21, R23, R25, R26, R27, R28
97	R20
102	C7
106	R35
107	R34
108	R36
110	G2
111	R16, R17
112	R18, R15
113	R35, R34
114	R28, R29
115	R30, R37
116	R39, R40
117	R43
118	R32
119	R31
120	R42
121	R44
122	C116
124	C68
125	C5, C6
126	C9, C10
127	C12
129	C11
130	L11
131	R22, R24
132	C87



CHANGE TABLE	
DELETIONS	ADDITIONS
CUT FOIL:	ADD WIDE SOURCE SIDE
R19 TO R20	118 TO R34-15
R21 TO R22	119 TO R34-15
R23 TO R24	120 TO R34-15
R25 TO R26	121 TO R34-15
R27 TO R28	122 TO R34-15
R29 TO R30	123 TO R34-15
R31 TO R32	124 TO R34-15
R33 TO R34	125 TO R34-15
R35 TO R36	126 TO R34-15
R37 TO R38	127 TO R34-15
R39 TO R40	128 TO R34-15
R41 TO R42	129 TO R34-15
R43 TO R44	130 TO R34-15
R45 TO R46	131 TO R34-15
R47 TO R48	132 TO R34-15
R49 TO R50	133 TO R34-15
R51 TO R52	134 TO R34-15
R53 TO R54	135 TO R34-15
R55 TO R56	136 TO R34-15
R57 TO R58	137 TO R34-15
R59 TO R60	138 TO R34-15
R61 TO R62	139 TO R34-15
R63 TO R64	140 TO R34-15
R65 TO R66	141 TO R34-15
R67 TO R68	142 TO R34-15
R69 TO R70	143 TO R34-15
R71 TO R72	144 TO R34-15
R73 TO R74	145 TO R34-15
R75 TO R76	146 TO R34-15
R77 TO R78	147 TO R34-15
R79 TO R80	148 TO R34-15
R81 TO R82	149 TO R34-15
R83 TO R84	150 TO R34-15
R85 TO R86	151 TO R34-15
R87 TO R88	152 TO R34-15
R89 TO R90	153 TO R34-15
R91 TO R92	154 TO R34-15
R93 TO R94	155 TO R34-15
R95 TO R96	156 TO R34-15
R97 TO R98	157 TO R34-15
R99 TO R100	158 TO R34-15

INACTIVE

APL 9046260

DATE: 19920

REV: 2/1

SCALE: 2/1

WORK: 1 OF 1

PC CARD ASSEMBLY, 9BED  
(DISK CONTROLLED)

FASOIA

D. SAID

15920

9046260

BUILD ARC 214

### ASSEMBLY PARTS LIST

REV		ASSEMBLY NUMBER	CD	REV	SWD	DESCRIPTION	MC	STATUS	STATUS DATE	ORG. DESIG.	REV DATE		
0860		90446260	3	D	D	PW BD ASSY 98ED	S	REVISED BY 90446260	12-17-80	FA501A	02-05-81		
REV NO.	U	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YTD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
001	01	90446259	5	1		PC PW BD 98ED							
002	01	15144900	6	6		PC IC 74LS00 140LS QUAD 2-IMP							
003	01	15145100	2	6		PC IC 74LS04 146LS TTL HEX INV							
004	01	15145400	6	2		PC IC 74LS08 201LS Q2IMP AND							
005	01	15145600	1	2		PC IC 74LS10 141LS TTL 3I/P NAND							
006	01	15148500	0	1		PC IC 74LS14 943LS TTL 6 ND RCVR							
007	01	15145900	5	3		PC IC 74LS20 208LS TTL 4I/P NAND							
008	01	15147600	9	4		PC IC TYPE 74LS42							
009	01	15146300	7	9		PC IC 74LS74 175LS F/F DUAL D							
010	01	15146500	2	1		PC IC 74LS112 243LS TTL DUAL F/F							
011	01	15146600	0	1		PC IC 74LS139 538LS DECODER 10F4							
012	01	15148700	6	2		PC IC 74LS153 TTL DUAL 4I/P							
014	01	15146800	6	2		PC IC 74LS161 158LS 4BIT COUNTER							
016	01	15147500	1	1		PC IC 74LS174 TTL 6 BIT 16 PIN							
017	01	15163414	4	8		PC IC 74LS244 OCTAL BFR 3-5 OP							
018	01	15163324	5	3		PC IC 74LS245 OCTAL BUS XCEIVER							
019	01	15163404	5	5		PC IC 74LS374 OCTAL D-EDGE F-F							
020	01	15163232	0	1		PC IC 74LS375 TTL 4-BIT							
021	01	96744155	1	3		PC IC 7406 DRVR HEX INV BUFFER							
023	01	88883700	2	2		PC IC 74S04 146S TTL HEX INVTR							
024	01	88884200	2	2		PC IC 74S10 141S TTL 3 3-IN NAND							

BUILD ARC 214

### ASSEMBLY PARTS LIST

REV		ASSEMBLY NUMBER	CD	REV	SWD	DESCRIPTION	MC	STATUS	STATUS DATE	ORG. DESIG.	REV DATE		
0860		90446260	3	D	D	PW BD ASSY 98ED	S	REVISED BY 90446260	12-17-80	FA501A	02-05-81		
REV NO.	U	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YTD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
025	01	88885300	9	1		PC IC 74S20 TTL DUAL 4 I/P							
026	01	88923000	9	2		PC I C 74S74 TTL DUAL							
029	01	15157100	7	1		PC IC LM358N 344 DUAL OP-AMP							
030	01	15163444	1	1		PC IC FD1791							
031	01	66312068	1	1		PC FLEXIBLE DISK CODED E-ROM							
032	01	66312069	9	1		PC FLEXIBLE DISK CODED E-ROM							
033	01	15153821	2	8		PC IC 4116 MOS 16384-BIT RAM							
034	01	15163201	5	1		PC IC Z80A MOS 8BIT PPROCESSOR							
036	01	15164429	1	1		PC IC Z80A-CTC SILICON GATE NMOS							
037	01	51904109	9	1		PC OSCILLATOR TTL D I P							
038	01	15105700	7	1		PC IC 4024 582 TTL DL/V CONT MVB							
039	01	83452230	2	1		PC SWITCH DUAL 8POS .88 FIG 2							
041	01	94402116	1	1		PC RES FM 22 OHM 1/4W CARBON							
042	01	94402140	1	2		PC RES FM 220 OHM 1/4W CARBON							
044	01	94402157	5	1		PC RES FM 1.1K OHM 1/4W CARBON							
047	01	94402180	7	2		PC RES FM 10K OHM 1/4W CARBON							
048	01	95894500	8	1		PC RES MOD 16 PINS 28 RESISTORS							
051	01	51001120	8	62		PC CAP CER F-2 .01UF +80-20P 25V							
053	01	24504333	6	6		PC CAP FXD TANT 2.2UF 20P 35VDCW							
054	01	24504369	0	7		PC CAP FXD TANT 10UF 20P 15VDCW							
055	01	24504373	2	1		PC CAP FXD TANT 47UF 20P 15VDCW							

62949100 D

BUILD ARC 214

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
02-05-81	3	14871

REV	ASSEMBLY NUMBER	CR	REV	QTY	DESCRIPTION	INC	STATUS	STATUS DATE	INS. REF.	FILE DATE			
0860	90446260	3	DZ	D	PW 8D ASSY 98ED	S	REPLACED BY 90446264	12-17-80	FA501A	02-05-81			
T PART NO.	LI	PART NUMBER	CR	QTY	U/M	PART DESCRIPTION	INC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	REV IN	REV OUT
056	01	75887677	5	1		PC CAP CER 33PF 5P	P						
057	01	19171201	7	4		PC LIGHT IND	P						
058	01	51007385	1	4		PC DIO IN4148 10MA MICRO SIL 30V	P						
059	01	51714000	0	2		PC XSTR 2N2907 PNP SIL	P						
060	01	51940524	5	1		PC SWITCH PUSH BUTTON RT ANGLE	P						
061	01	51848404	3	2		PC SOCKET, IC 24 POS D-I-L TIN	P						
062	01	51848405	0	2		PC SOCKET, IC 28 POS D-I-L TIN	P						
063	01	51848406	0	3		PC SOCKET, IC 40 POS D-I-L TIN	P						
065	01	82311900	3	2		PC INJECTOR-EJECTOR, NATURAL PCB	P						
066	01	93533118	1	2		PC ROLLPIN, .125D X .250L STL ZP	B						
069	01	24504320	3	1		PC CAP TANT 60CMV 33UF 20P	P						
070	01	94375122	2	4		PC RES 85IP NTWK 470HM 3P	P						
071	01	94789205	5	1		PC SWITCH ROTARY PC 10 POS	P						
072	01	15117400	0	2		PC IC TTL 8MUX 2-1 A 1895 DIC16	P						
073	01	15150400	8	1		PC IC 93S16 TTL 4BIT	P						
074	01	15163459	9	1		PC IC 9519 INT CONT	P						
075	01	94354826	3	28		PC CAP FXD CER 0.10UF 50V	P						
077	01	51918283	6	1		PC DELAY LINE TAP 100 OHM FIG 5	P						
078	01	15140400	1	2		PC IC DM 8097 HEX BUFFER TRI STA	P						
079	01	15147200	8	1		PC IC 74LS85 COMP TTL 4 BIT	P						
080	01	15145200	0	1		PC IC 74LS03 202LS TTL 4 2-I NAND	P						

BUILD ARC 214

ASSEMBLY PARTS LIST

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02-05-81	3	14871

REV	ASSEMBLY NUMBER	CR	REV	QTY	DESCRIPTION	INC	STATUS	STATUS DATE	INS. REF.	FILE DATE			
0860	90446260	3	DZ	D	PW 8D ASSY 98ED	S	REPLACED BY 90446264	12-17-80	FA501A	02-05-81			
T PART NO.	LI	PART NUMBER	CR	QTY	U/M	PART DESCRIPTION	INC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	REV IN	REV OUT
081	01	51848401	9	32		PC SOCKET, IC 16 POS D-I-L TIN	P						
082	01	75738666	9	2		PC RES PAK 10.0K OHM 1.50W FIG 2	P						
083	01	94402141	9	1		PC RES FM 240 OHM 1/4W CARBON	P						
085	01	15163458	1	1		PC IC 9517A MULTIMODE DMA CONT	P						
086	01	15145000	4	2		PC IC 74LS02 14BLS Q2INP NOR	P						
087	01	15158700	3	1		PC IC T74S140 TTL DUAL 4 I/P GAT	P						
088	01	88884500	5	1		PC IC 74S00 140S TTL QD 2IN NAND	P						
090	01	94402156	7	8		PC RES FM 1K OHM 1/4W CARBON	P						
091	01	51903400	3	2		PC PIN, .025 IN SQ PC MTG 2A	P						
092	01	77612624	5	1		PC CONNECTOR, JUMPER	P						
093	01	51918281	0	1		PC DELAY LINE TAP 200 OHM FIG 3	P						
094	01	90446122	5	REF		PC SCH DIAG 98ED	D						
094	02	90446258	7	REF		PC SCH DIAG 98ED	D		14469	14469		8103	8103
095	01	16033208	3	REF		PC FABRICATION SPEC 70 PAK	D						
096	01	15163434	2	1		PC IC 74LS373 OCTAL D LATCH	P						
097	01	94402168	2	1		PC RES FM 3.3K OHM 1/4W CARBON	P						
102	01	94227227	9	1		PC CAP 110 PF DIPPED MICA	P						
103	01	15158600	5	2		PC IC 74S112 TTL DUAL J-K NET	P						
104	01	50254300	2	1		PC IC 74123 193 TTL 2 RETGR MVB	P						
105	01	66299099	3	1		PC IC 7400 TTL QUAD 2-IN NAND	P						
106	01	51908710	0	1		PC RES CERM VAR 20K OHM 10P 3/4W	P						



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**ASSEMBLY PARTS LIST**

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DEV	ASSEMBLY NUMBER	CD	DEV	QTY	DESCRIPTION	MC	STATUS	STATUS DATE	SHG. SHP.	FILE DATE			
0860	90446260	3	D	D	PM 8D ASSY 98ED	S	REL	12-17-80	FA501A	02-05-81			
ITEM NO.	U	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YTD	ECO. NO. IN	ECO. NO. OUT	S/H	WE IN	WE OUT
107	01	51908709	2	1		PC RES VAR 10K OHM							
108	01	51908708	4	1		PC RES CER VAR 5K OHM 10P 3/4W							
110	01	51003092	7	1		PC XSTR 2N2222 HI SPEED NPN SIL							
111	01	94360304	3	2		PC RES 1100 OHMS 1/4W 1P							
112	01	94360352	2	2		PC RES 3480 OHMS 1/4W 1P							
113	01	94402173	2	2		PC RES FM 5.1K OHM 1/4W CARBON							
114	01	94402164	1	2		PC RES FM 2.2K OHM 1/4W CARBON							
115	01	94360400	9	2		PC RES FXD FM 10.0K OHM 1P 1/4W							
116	01	94402166	6	2		PC RES FM 2.7K OHM 1/4W CARBON							
117	01	94402158	3	1		PC RES FM 1.2KOHM 1/4W CARBON							
118	01	94402154	2	1		PC RES FM 820 OHM 1/4W CARBON							
119	01	94402139	3	1		PC RES FM 200 OHM 1/4W CARBON							
120	01	94402161	7	1		PC RES FM 1.6K OHM 1/4W CARBON							
121	01	24500144	1	1		PC RES FXD COMP 160 OHMS 1/2W 5P							
122	01	94402154	0	1		PC CAP FXD CER .001UF 10P 1000V							
124	01	15101109	5	1		PC DIO 1N752A 400MW ZEN VR 5.6V							
125	01	94227253	5	2		PC CAP 1300 PF DIPPED MICA							
126	01	94354824	8	2		PC CAP CER 0.047 UF TYPE 1 20P							
127	01	94240423	7	1		PC CAP CER 150PF 50V 10P							
129	01	94240421	1	1		PC CAP CER 82 PF 50V							
130	01	94356324	7	2		PC INDUCTOR 10 MH							

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**ASSEMBLY PARTS LIST**

PRINT DATE: 02-05-81  
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DEV	ASSEMBLY NUMBER	CD	DEV	QTY	DESCRIPTION	MC	STATUS	STATUS DATE	SHG. SHP.	FILE DATE			
0860	90446260	3	D	D	PM 8D ASSY 98ED	S	REL	12-17-80	FA501A	02-05-81			
ITEM NO.	U	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YTD	ECO. NO. IN	ECO. NO. OUT	S/H	WE IN	WE OUT
131	01	94402148	4	2		PC RES FM 470 OHM 1/4W CARBON							
132	01	15101108	7	1		PC DIO 1N751A 400MW ZEN VR 5.1V							
133	01	51850400	6	1	083	FT CABLE RAD/FRO 26GA STRD RG							
135	01	51873600	4	015	OZ	VARNISH INSUL RED GLPT			14514			8105	
						0109 TOTAL LINES							

190446284

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3

4

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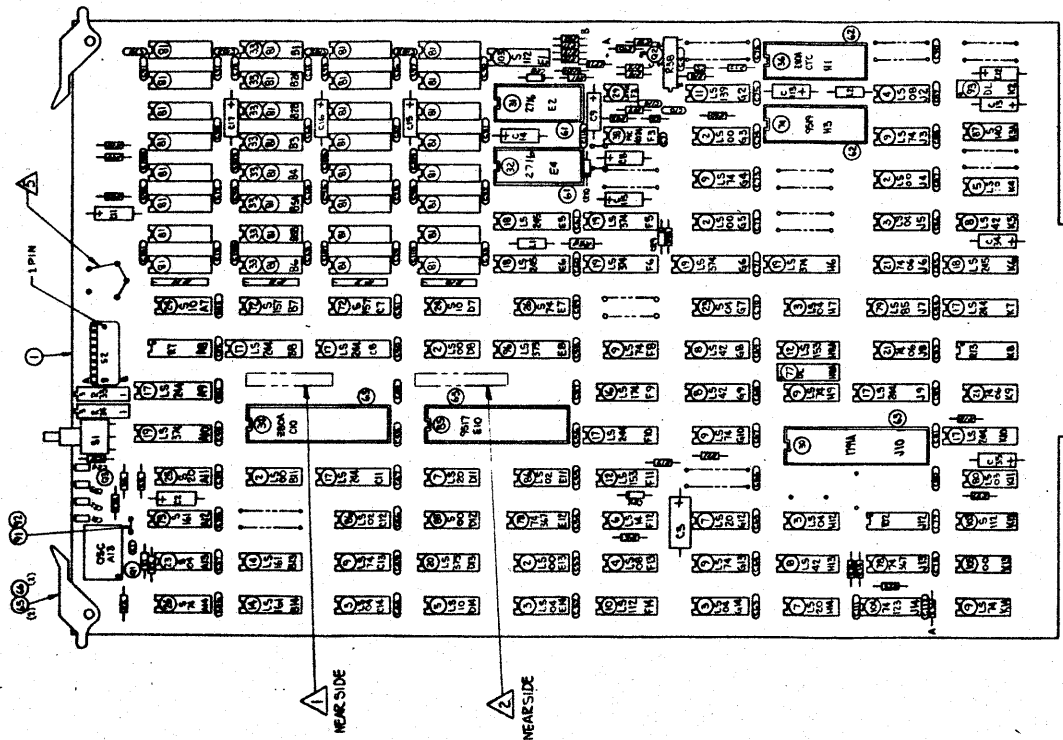
6

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8

REV	NO	DESCRIPTION	DATE	BY
1	1	RELEASED CLASS 'N'		
2	1	REVISED PER ECO		
3	1	ISSUED		
4	1	CHG PIN 18		
5	1	ISSUED BY 9044570		

VIN# NUMBER	REFERENCE DESIGNATION
37	OS5C
37	37
41	R3
42	R2R4
44	R1
47	R5R6
48	R15
51	C56 THRU C61 C65 THRU C76
53	C78 THRU C83 C14
54	C85, C113, C114, C115
55	C3
56	C1
57	CRI CR2 CR3 CR4
58	C85
59	Q1 Q3
60	S1
63	C2
70	R8R9, R10, R11
75	C15 THRU C33 C37 THRU C110
82	R7, R12
83	R31
70	R18R19, R21R23, R25, R26, R27R28
97	R20
102	C7
106	R35
107	R34
108	R36
110	G2
111	R16, R17
112	R14, R15
113	R35R36
114	R18, R27
115	R30, R37
116	R39, R40
117	R43
118	R32
119	R31
120	R42
121	E44
122	C116
124	C28
125	C5, C6
126	C4, C10
127	C12
129	C11
130	E11, E
131	R25, R26
132	CR7



- NOTES:
- △ MARK ASSY NO. AND REV LEVEL, 1/2 HIGH, WHITE IN AREA SHOWN PER CDC SPEC 1021508.
  - △ MARK SERIAL NUMBER IN AREA SHOWN PER REVLOPS RFP NO. 80-20-14 AND PER MARKING REQUIREMENTS IN NOTE (1) ONE.
  - 3. FIND NUMBERS ELEMENT IDENTIFIERS AND REFERENCE DESIGNATIONS ARE FOR REFERENCE ONLY AND DO NOT APPEAR ON PART.
  - 4. AFTER ALIGNING R33, R34 AND R36, SEAL THEM WITH GYPTAL CDC PIN 51875600.
  - △ SOLDER 22GA. BUSS WIRE (F/N 136) IN THIS CONFIGURATION.

DELETIONS	ADDITIONS
CUT FOIL:	ADD WIRE SOLDER SUE
1W3 B4	1W4H TO K3A-13
21R4 B	21R4 B TO E40-A
31R3-1	31R3-1 TO F7-5
4R36-A	4R36-2 TO F7-6
	SUP27 TO Q2-15
	COAX FROM R33-2 TO R36-A
	THRU BRAID SHIELD
	FROM R37-6A TO T14-8
	R EIO-19 TO EIO-20

INACTIVE

APL 90446284		DETAILED LISTS	
TOLERANCE		FASOIA	
DO NOT SCALE DRAWING		15920	
DATE 2/71		90446284	
PC CARD ASSEMBLY, 9BED (DISK CONTROLLER)		D	
REV 1 OF 1		15920	

BUILD ARC 214

### ASSEMBLY PARTS LIST

BUILD ARC 214										PRINT DATE		PAGE		FILE CHANGE NO	
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DIV	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION			MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE			
0860	90446284	3	F	D	REPLACED BY 90446570 15771			N	INA	03-04-83	FA501A	03-09-83			
FOUND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION		MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT	
001	01	90446259	5	1		PC	PW RD 9BED	P							
002	01	15144900	6	6		PC	IC 74LS00 140LS TTL 4 2IN NND	P							
003	01	15145100	2	6		PC	IC 74LS04 146LS TTL HEX INVTR	P							
004	01	15145400	6	2		PC	IC 74LS08 201LS TTL 4 2IN AND	P							
005	01	15145600	1	2		PC	IC 74LS10 141LS TTL 3 3IN NND	P							
006	01	15148500	0	1		PC	IC 74LS14 943LS TTL HEX NAND	P							
007	01	15145900	5	3		PC	IC 74LS20 208LS TTL 2 4IN NND	P							
008	01	15147600	9	4		PC	IC TYPE 74LS42	P							
009	01	15146300	7	8		PC	IC 74LS74 175LS TTL 2 D F/F	P							
010	01	15146500	2	1		PC	IC 74LS112 243LS TTL DUAL F/F	P							
011	01	15146600	0	1		PC	IC 74LS139 538LS DECODER 10F4	P							
012	01	15148700	6	2		PC	IC 74LS153 TTL DUAL 4I/P	P							
014	01	15146800	6	2		PC	IC 74LS161 158LS TTL 4B CNTR	P							
016	01	15147500	1	1		PC	IC 74LS174 519LS TTL 6B LATCH	P							
016	02	95965100	1	1		PC	IC 74LS174 6BIT LATCH	P		15675	15675		8325	8325	
017	01	15163414	4	8		PC	IC 74LS244 TTL 8 3-STATE DRVN	P							
018	01	15163324	5	3		PC	IC 74LS245 TTL 8 BUS XCEIVER	P							
019	01	15163404	5	5		PC	IC 74LS374 TTL 8 D FLIP/FLOP	P							
020	01	15163232	0	1		PC	IC 74LS375 TTL 4-BIT	P							
021	01	96744155	1	3		PC	IC 7406 DRVP HEX INV BUFFER	P							
023	01	88883700	2	2		PC	IC 74S04 146S TTL HEX INVTR	P							

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### ASSEMBLY PARTS LIST

BUILD ARC 214										PRINT DATE		PAGE		FILE CHANGE NO	
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DIV	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION			MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE			
0860	90446284	3	F	D	REPLACED BY 90446570 15771			N	INA	03-04-83	FA501A	03-09-83			
FOUND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION		MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT	
024	01	88884200	2	2		PC	IC 74S10 141S TTL 3 3-IN NAND	P							
025	01	88885300	9	1		PC	IC 74S20 208S TTL 2 4-IN NAND	P							
026	01	88923000	9	2		PC	IC 74S74 175S TTL 2 D-TYP F-F	P							
029	01	15157100	7	1		PC	IC LM358N 344 DUAL OP-AMP	P							
030	01	15163444	1	1		PC	IC FD1791	P							
031	01	66312070	7	1		PC	FLEX DISK CODED E-ROM	G							
032	01	66312071	5	1		PC	FLEX DISK CODED E-ROM	G							
033	01	15153021	2	8		PC	IC 4116 MOS 16384-BIT RAM	P							
034	01	15163201	5	1		PC	IC 780A MOS 8BIT PROCESSOR	P							
036	01	15164429	1	1		PC	IC 780A-CTC SILICON GATE NMOS	P							
037	01	51904109	9	1		PC	OSC, TTL DIP 16.000MHZ 500MW	P							
038	01	15105700	7	1		PC	IC 4024 582 TTL DL/V CONT MVB	P							
039	01	83452230	2	1		PC	SWITCH DUAL 8POS .88 F18 2	P							
041	01	94402116	1	1		PC	RES FXD C FM 22 OHM 5P 1/4W	P							
042	01	94402140	1	2		PC	RES FXD C FM 220 OHM 5P 1/4W	P							
044	01	94402157	5	1		PC	RES FXD C FM 1.1K OHM 5P 1/4W	P							
047	01	94402180	7	2		PC	RES FXD C FM 10K OHM 5P 1/4W	P							
048	01	95894500	8	1		PC	RES MOD 16 PINS 2R RESISTORS	P							
051	02	19115400	4	62		PC	CAP FXD CEP .01UF +80-20P 50V	P		14856			8148		
053	01	24504333	6	6		PC	CAP FXD TANT 2.2UF 20P 35VDCW	P							
054	01	24504369	0	7		PC	CAP FXD TANT 10UF 20P 15VDCW	P							

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DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. DESP.	FILE DATE			
0860	90446284	3	E	D	REPLACED BY 90446570 15771	N	INA	03-04-83	FA501A	03-09-83			
TP/NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
055	01	24504373	2	1		PC CAP FXD TANT 47UF 20P 15VDCM	P						
056	01	75087677	5	1		PC CAP CER 33PF 5P	P						
057	01	19171201	7	4		PC LIGHT IND	P						
058	01	51007305	1	4		PC DIO 1M4140 SIL MICRO 30V 10MA	P						
059	01	51714000	0	2		PC XSTR. 2N2907 BI-POLAR PNP SI	P						
060	01	51040524	5	1		PC SWITCH PUSH BUTTON RT ANGLE	P						
061	01	51048404	3	2		PC SOCKET, IC 24-POS DIL F-1 SN	P						
062	01	51048405	0	2		PC SOCKET, IC 28-POS DIL F-1 SN	P						
063	01	51048406	8	3		PC SOCKET, IC 40-POS DIL F-1 SN	P						
065	01	02311900	3	2		PC INJECTOR-EJECTOR, NATURAL PCB	P						
066	01	93533118	1	2		PC ROLLPIN, .1250 X .250L STL ZP B	P						
069	01	24504320	3	1		PC CAP FXD TANT 33UF 20P 6VDCM	P						
070	01	94375122	2	4		PC RES 85IP NTK 470HM 3P	P						
072	01	15117400	0	2		PC IC TTL 8MUX 2-1 A 1895 DIC16	P						
073	01	15150400	8	1		PC IC 93S16 TTL 4BIT	P						
074	01	15163459	9	1		PC IC 9519 INT CONT	P						
075	01	94354026	3	20		PC CAP FXD CER 0.10UF 50V	P						
077	01	51918283	6	1		PC DELAY LINE TAP 100 OHM FIG 5	P						
078	01	15140400	1	2		PC IC DM 8097 HEX BUFFER TRI STA	P						
079	01	15147200	8	1		PC IC 74LS85 COMP TTL 4 BIT	P						
080	01	15145200	0	1		PC IC 74LS03 202LS TTL 4 2-I NAND	P						

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DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. DESP.	FILE DATE			
0860	90446284	3	E	D	REPLACED BY 90446570 15771	N	INA	03-04-83	FA501A	03-09-83			
TP/NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
081	01	51048401	9	32		PC SOCKET, IC 16-POS DIL F-1 SN	P						
082	01	75738666	9	2		PC RES 16PIN DIP 10K R 2P 1.5W 2	P						
083	01	94402141	9	1		PC RES FXD C FM 240 OHM 5P 1/4W	P						
085	01	15163458	1	1		PC IC 9517A MULTIMODE DMA CONT	P						
086	01	15145000	4	2		PC IC 74LS02 148LS TTL 4 2IN NOR	P						
087	01	15158700	3	1		PC IC 74S140 TTL 2 4IN NAND BFR	P						
088	01	88084500	5	1		PC IC 74S00 140S TTL 4 2-IN NAND	P						
090	01	94402156	7	8		PC RES FXD C FM 1.0K OHM 5P 1/4W	P						
091	01	51903400	3	2		PC PIN, .025 IN SO PC, MTG 2A	P						
092	01	77612624	5	1		PC CONNECTOR, JUMPER	P						
093	01	51018281	0	1		PC DELAY LINE TAP 200 OHM FIG 3	P						
094	01	90446258	7	REF		PC SCH DIAG 9RED	U						
095	01	16033200	3	REF		PC FAB SPEC, MULTI-LAYER PWR	U						
096	01	15163434	2	1		PC IC 74LS373 B D XPARENT LATCH	P						
097	01	94402168	2	1		PC RES FXD C FM 3.3K OHM 5P 1/4W	P						
102	01	94227227	9	1		PC CAP 110 PF DIPPED MICA	P						
103	01	15158600	5	2		PC IC 74S112 243S TTL 2 J-K F/F	P						
104	01	50254300	2	1		PC IC 74123 193 TTL 2 RETGR MVB	P						
105	01	66299099	3	1		PC IC 7400 TTL QUAD 2-IN NAND	P						
106	01	51908710	0	1		PC RES CERM VAR 20K OHM 10P 3/4W	P						
107	01	51908709	2	1		PC RES VAR 10K OHM	P						



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DIV	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE			
0860	90446284	3	F	D	REPLACED BY 90446570 15771	N	INA	03-04-83	FA501A	03-09-83			
FOUND NO.	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YTD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
108	01	51908708	4	1		PC RES CER VAR 5K OHM 10P 3/4W	P						
110	01	51003092	7	1		PC XSTR, 2N2222 HI-SPEED NPN SI	P						
111	01	94360304	3	2		PC RES FXD FM 1100 OHM 1P 1/4W	P						
112	01	94360352	2	2		PC RES FXD FM 3400 OHM 1P 1/4W	P						
113	01	94402173	2	2		PC RES FXD C FM 5.1K OHM 5P 1/4W	P						
114	01	94402164	1	2		PC RES FXD C FM 2.2K OHM 5P 1/4W	P						
115	01	94360400	9	2		PC RES FXD FM 10.0K OHM 1P 1/4W	P						
116	01	94402166	6	2		PC RES FXD C FM 2.7K OHM 5P 1/4W	P						
117	01	94402158	3	1		PC RES FXD C FM 1.2K OHM 5P 1/4W	P						
118	01	94402154	2	1		PC RES FXD C FM 820 OHM 5P 1/4W	P						
119	01	94402139	3	1		PC RES FXD C FM 200 OHM 5P 1/4W	P						
120	01	94402161	7	1		PC RES FXD C FM 1.6K OHM 5P 1/4W	P						
121	01	24500144	1	1		PC RES FXD COMP 160 OHM 5P 1/2W	P						
122	01	94402154	0	1		PC CAP FXD CEP .001UF 10P 1600V	P						
124	01	15101109	5	1		PC DIO 1N752A 400MW ZEN VR 5.6V	P						
125	01	94227253	5	2		PC CAP 1300 PF DIPPED MICA	P						
126	01	94354824	8	2		PC CAP CER 0.047 UF TYPE 1 20P	P						
127	01	94240423	7	1		PC CAP FXD CEP 150PF 10P 50VDCW	P						
129	01	94240421	1	1		PC CAP FXD CER 82PF 10P 50VDCW	P						
130	01	94356324	7	2		PC INDUCTOR 10 MH	P						
131	01	94402148	4	2		PC RES FXD C FM 470 OHM 5P 1/4W	P						

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DIV	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE			
0860	90446284	3	F	D	REPLACED BY 90446570 15771	N	INA	03-04-83	FA501A	03-09-83			
FOUND NO.	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YTD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
132	01	15101108	7	1		PC DIO 1N751A 400MW ZEN VR 5.1V	P						
133	01	51850400	6	1	083	FT CABLE RAD/FRQ 26GA STRD RG	W						
135	01	51873600	4	015	OZ VARNISH INSUL RED GLPT	B							
136	01	24501801	5	333	FT WIRE+ BUSS 22AWG SOLID CU/SN	W		14965				8204	
					0100 TOTAL LINES								



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DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE				
0860	90446570	5	A	D	CD ASSY 98ED-3	N	REL	02-22-83	FAS01A	02-28-83				
TRND NO	LT	PART NUMBER	CD	REV.	QTY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
001	01	90446259	5		1		PC PW BD 98ED	P						
002	01	15144900	6		6		PC IC 74LS00 140LS TTL 4 2IN NMD	P						
003	01	15145100	2		6		PC IC 74LS04 146LS TTL HEX INVTR	P						
004	01	15145400	6		2		PC IC 74LS08 201LS TTL 4 2IN AMD	P						
005	01	15145600	1		2		PC IC 74LS10 141LS TTL 3 3IN NMD	P						
006	01	15148500	0		1		PC IC 74LS14 943LS TTL HEX NAND	P						
007	01	15145900	5		3		PC IC 74LS20 208LS TTL 2 4IN NMD	P						
008	01	15147600	9		4		PC IC TYPE 74LS42	P						
009	01	15146300	7		8		PC IC 74LS74 175LS TTL 2 D F/F	P						
010	01	15146500	2		1		PC IC 74LS112 243LS TTL DUAL F/F	P						
011	01	15146600	0		1		PC IC 74LS139 538LS DECODER 10F4	P						
012	01	15148700	6		2		PC IC 74LS153 TTL DUAL 4I/P	P						
014	01	15146800	6		2		PC IC 74LS161 150LS TTL 4B CNTR	P						
016	01	95965100	1		1		PC IC 74LS174 68IT LATCH	P						
017	01	15163414	4		6		PC IC 74LS244 TTL 8 3-STATE DRVR	P						
018	01	15163324	5		3		PC IC 74LS245 TTL 8 BUS XCEIVER	P						
019	01	15163404	5		5		PC IC 74LS374 TTL 8 D FLIP/FLOP	P						
020	01	15163232	0		1		PC IC 74LS375 TTL 4-BIT	P						
021	01	96744155	1		3		PC IC 7406 DRVR HEX INV BUFFER	P						
023	01	88883700	2		2		PC IC 74S04 146S TTL HEX INVTR	P						
024	01	88884200	2		2		PC IC 74S10 141S TTL 3 3-IN NAND	P						

BUILD ARC 214

**ASSEMBLY PARTS LIST**

PRINT DATE: 02-28-83  
PAGE: 2  
FILE CHANGE NO: 15152-44

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE				
0860	90446570	5	A	D	CD ASSY 98ED-3	N	REL	02-22-83	FAS01A	02-28-83				
TRND NO	LT	PART NUMBER	CD	REV.	QTY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
025	01	88885300	9		1		PC IC 74S20 208S TTL 2 4-IN NAND	P						
026	01	88923000	9		2		PC IC 74S74 175S TTL 2 D-TYP F-F	P						
029	01	15157100	7		1		PC IC LM358N 344 DUAL OP-AMP	P						
030	01	15163444	1		1		PC IC FD1791	P						
031	01	66312070	7		1		PC FLEX DISK CODED E-ROM	G						
032	01	66312071	5		1		PC FLEX DISK CODED E-ROM	G						
033	01	15153821	2		8		PC IC 4116 MOS 16384-BIT RAM	P						
034	01	15163201	5		1		PC IC Z80A MOS 8BIT PROCESSOR	P						
036	01	15164429	1		1		PC IC Z80A-CTC SILICON GATE NMOS	P						
037	01	51904109	9		1		PC OSC. TTL DIP 16.000MHZ 500MW	P						
038	01	15165700	7		1		PC IC 4824 582 TTL DL/V CONT MVB	P						
039	01	83482230	2		1		PC SWITCH DUAL 8POS .08 FIG 2	P						
041	01	94402116	1		1		PC RES FXD C FM 22 OHM 5P 1/4W	P						
042	01	94402140	1		2		PC RES FXD C FM 220 OHM 5P 1/4W	P						
044	01	94402157	5		1		PC RES FXD C FM 1.1K OHM 5P 1/4W	P						
047	01	94402180	7		2		PC RES FXD C FM 10K OHM 5P 1/4W	P						
048	01	95894500	8		1		PC RES MOD 16 PINS 28 RESISTORS	P						
051	01	19115400	4		62		PC CAP FXD CER .01UF +80-20P 50V	P						
053	01	24504333	6		6		PC CAP FXD TANT 2.2UF 20P 35VDCW	P						
054	01	24504369	0		7		PC CAP FXD TANT 10UF 20P 15VDCW	P						
055	01	24504373	2		1		PC CAP FXD TANT 47UF 20P 15VDCW	P						

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### ASSEMBLY PARTS LIST

PRINT DATE: 02-22-83  
PAGE: 3  
FILE CHANGE NO: 15134-44

DIV.		ASSEMBLY NUMBER		CD	REV.	DWG.	DESCRIPTION		SEC.	STATUS	STATUS DATE	ENG. DESP.	FILE DATE	
0860		90446570		5	A	D	CD ASSY 98ED-3		N	REL	02-22-83	FA501A	02-20-83	
IP/ISS NO.	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION		SEC.	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
056	01	75887677	5	1		PC	CAP CER 33PF 5P	P						
057	01	19171201	7	4		PC	LIGHT IND	P						
058	01	51007305	1	4		PC	DIO IM4148 SIL MICRO 30V 10MA	P						
059	01	51714000	0	2		PC	XSTR. 2N2907 BI-POLAR PNP SI	P						
060	01	51040524	5	1		PC	SWITCH PUSH BUTTON RT ANGLE	P						
061	01	51848404	3	2		PC	SOCKET, IC 24-POS DIL F-1 SN	P						
062	01	51848405	0	2		PC	SOCKET, IC 28-POS DIL F-1 SN	P						
063	01	51848406	8	3		PC	SOCKET, IC 40-POS DIL F-1 SN	P						
065	01	82311900	3	2		PC	INJECTOR-EJECTOR, NATURAL PCB	P						
066	01	93533116	1	2		PC	ROLLPIN, .125D X .250L STL ZP	P						
069	01	24504320	3	1		PC	CAP FXD TANT 33UF 20P 6VDCW	P						
070	01	94375122	2	4		PC	RES 8SIP NTWK 470HM 3P	P						
072	01	15117400	0	2		PC	IC TTL 8MUX 2-1 A 1895 DIC16	P						
073	01	15150400	8	1		PC	IC 93516 TTL 4BIT	P						
074	01	15163459	9	1		PC	IC 9519 INT CONT	P						
075	01	94354826	3	20		PC	CAP FXD CER 0.10UF 50V	P						
077	01	51918283	6	1		PC	DELAY LINE TAP 100 OHM FIG 5	P						
078	01	15140400	1	2		PC	IC DM 8097 HEX BUFFER TRI STA	P						
079	01	15147200	8	1		PC	IC 74LS85 COMP TTL 4 BIT	P						
080	01	15145200	0	1		PC	IC 74LS03 202LS TTL 4 2-1 NAND	P						
081	01	51848401	9	32		PC	SOCKET, IC 16-POS DIL F-1 SN	P						

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### ASSEMBLY PARTS LIST

PRINT DATE: 02-28-83  
PAGE: 4  
FILE CHANGE NO: 15152-44

DIV.		ASSEMBLY NUMBER		CD	REV.	DWG.	DESCRIPTION		SEC.	STATUS	STATUS DATE	ENG. DESP.	FILE DATE	
0860		90446570		5	A	D	CD ASSY 98ED-3		N	REL	02-22-83	FA501A	02-20-83	
IP/ISS NO.	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION		SEC.	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
082	01	75738666	9	2		PC	RES 16PIN DIP 10K R 2P 1.5W 2	P						
083	01	94402141	9	1		PC	RES FXD C FM 240 OHM 5P 1/4W	P						
085	01	15163458	1	1		PC	IC 9517A MULTIMODE DMA CONT	P						
086	01	15145000	4	2		PC	IC 74LS02 148LS TTL 4 2IN NOR	P						
087	01	15158700	3	1		PC	IC 74S140 TTL 2 4IN NAND BFR	P						
088	01	88884500	5	1		PC	IC 74S00 1405 TTL 4 2-IN NAND	P						
090	01	94402156	7	8		PC	RES FXD C FM 1.0K OHM 5P 1/4W	P						
091	01	51903400	3	2		PC	PIN, .025 IN SQ PC MTG 2A	P						
092	01	77612624	5	1		PC	CONNECTOR, JUMPER	P						
093	01	51918281	0	1		PC	DELAY LINE TAP 200 OHM FIG 3	P						
094	01	90446258	7	REF		PC	SCH DIAG 98ED	D						
095	01	16033200	3	REF		PC	FAB SPEC, MULTI-LAYER PWB	D						
096	01	15163434	2	1		PC	IC 74LS373 8 D XPARENT LATCH	P						
097	01	94402168	2	1		PC	RES FXD C FM 3.3K OHM 5P 1/4W	P						
102	01	94227227	9	1		PC	CAP 110 PF DIPPED NICA	P						
103	01	15158600	5	2		PC	IC 74S112 2435 TTL 2 J-K F/F	P						
104	01	50254300	2	1		PC	IC 74123 193 TTL 2 RETOR MVB	P						
105	01	66299099	3	1		PC	IC 7400 TTL QUAD 2-IN NAND	P						
106	01	51908710	8	1		PC	RES CERM VAR 20K OHM 10P 3/4W	P						
107	01	51908709	2	1		PC	RES VAR 10K OHM	P						
108	01	51908708	4	1		PC	RES CER VAR 5K OHM 10P 3/4W	P						

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**ASSEMBLY PARTS LIST**

PRINT DATE: 02-28-83 PAGE: 5 FILE CHANGE NO: 15152-44

DIV		ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE		
0860		90446570	5	A	D	CD ASSY 98ED-3	N	REL	02-28-83	FA501A	02-28-83		
TRFND NO	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
110	01	51003092	7	1		PC XSTR: 2N2222 HI-SPEED MPN SI	P						
111	01	94360304	3	2		PC RES FXD FM 1100 OHM 1P 1/4W	P						
112	01	94360352	2	2		PC RES FXD FM 3480 OHM 1P 1/4W	P						
113	01	94402173	2	2		PC RES FXD C FM 5.1K OHM 5P 1/4W	P						
114	01	94402164	1	2		PC RES FXD C FM 2.2K OHM 5P 1/4W	P						
115	01	94360400	9	2		PC RES FXD FM 10.0K OHM 1P 1/4W	P						
116	01	94402166	6	2		PC RES FXD C FM 2.7K OHM 5P 1/4W	P						
117	01	94402158	3	1		PC RES FXD C FM 1.2K OHM 5P 1/4W	P						
118	01	94402154	2	1		PC RES FXD C FM 820 OHM 5P 1/4W	P						
119	01	94402139	3	1		PC RES FXD C FM 200 OHM 5P 1/4W	P						
120	01	94402161	7	1		PC RES FXD C FM 1.6K OHM 5P 1/4W	P						
121	01	24500144	1	1		PC RES FXD COMP 160 OHM 5P 1/2W	P						
122	01	94842154	0	1		PC CAP FXD CER .001UF 10P 1000V	P						
124	01	15101109	5	1		PC DIO IN752A 400MW ZEN VR 5.6V	P						
125	01	94227253	5	2		PC CAP 1300 PF DIPPED MICA	P						
126	01	94354824	8	2		PC CAP CER 0.047 UF TYPE 1 20P	P						
127	01	94240423	7	1		PC CAP FXD CER 150PF 10P 50VDCW	P						
129	01	94240421	1	1		PC CAP FXD CER 82PF 10P 50VDCW	P						
130	01	94356324	7	2		PC INDUCTOR 10 MH	P						
131	01	94402148	4	2		PC RES FXD C FM 470 OHM 5P 1/4W	P						
132	01	15101108	7	1		PC DIO IN751A 400MW ZEN VR 5.1V	P						

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**ASSEMBLY PARTS LIST**

PRINT DATE: 02-28-83 PAGE: 6 FILE CHANGE NO: 15152-44

DIV		ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE		
0860		90446570	5	A	D	CD ASSY 98ED-3	N	REL	02-22-83	FA501A	02-28-83		
TRFND NO	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
133	01	51850400	6	1	083	FT CABLE RAD/FRQ 26GA STRD RG	W						
135	01	51873600	4		015	OZ VARNISH INSUL RED GLPT	B						
136	01	24501801	5		333	FT WIRE: BUSS 22AWG SOLID CU/SN	W						
						0108 TOTAL LINES							

DWN	W. Glaser	11/81	CONTROL DATA	TITLE	CARD ASSEMBLY 9BED CONT MODULE W/FULL MEMORY	PREFIX	DOCUMENT NO.	REV.
CHKD	D. S. G.	11/81		FIRST USED ON	FA501C/D	A	90446396	C
ENG	N. J. G.	12-2-81				NHA		
MFG	E. H. G.	12-2-81	CODE IDENT			15632982	SHEET	1 OF 2
APPR	E. H. G.	12-2-81	15920			15632983		
EC	R. J. G.	12-2-81						

SHEET REVISION STATUS				REVISION RECORD					
REV	ECO	DESCRIPTION	DRFT	DATE	APP				
A	A	13920-68		12-15-81	HJG	RELEASED CLASS A			
B	B	15229	EE	1/1/82	WDR	REVISED PER ECO			
C	C	15771	EE	5/1/83	HJB	INACTIVE, REPAIRED BY 10446571			

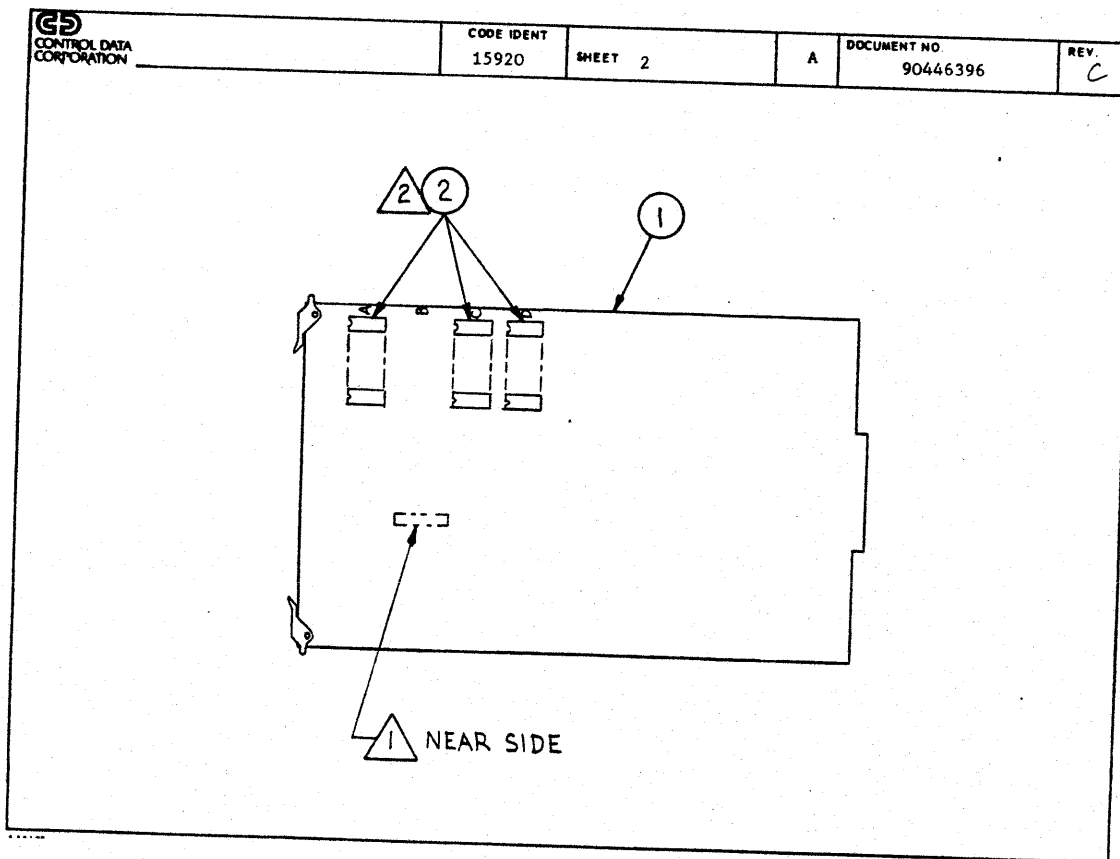
  

NOTES:

- Mark "Assy 90446396" in area shown per CDC SPEC 10121508.
- Mount F/N 2 in sockets located at A1-A6, C1-C6, and D1-D6 on F/N 1.

INACTIVE

APL 90446396
DETACHED LISTS




BUILD ARC 214

# ASSEMBLY PARTS LIST

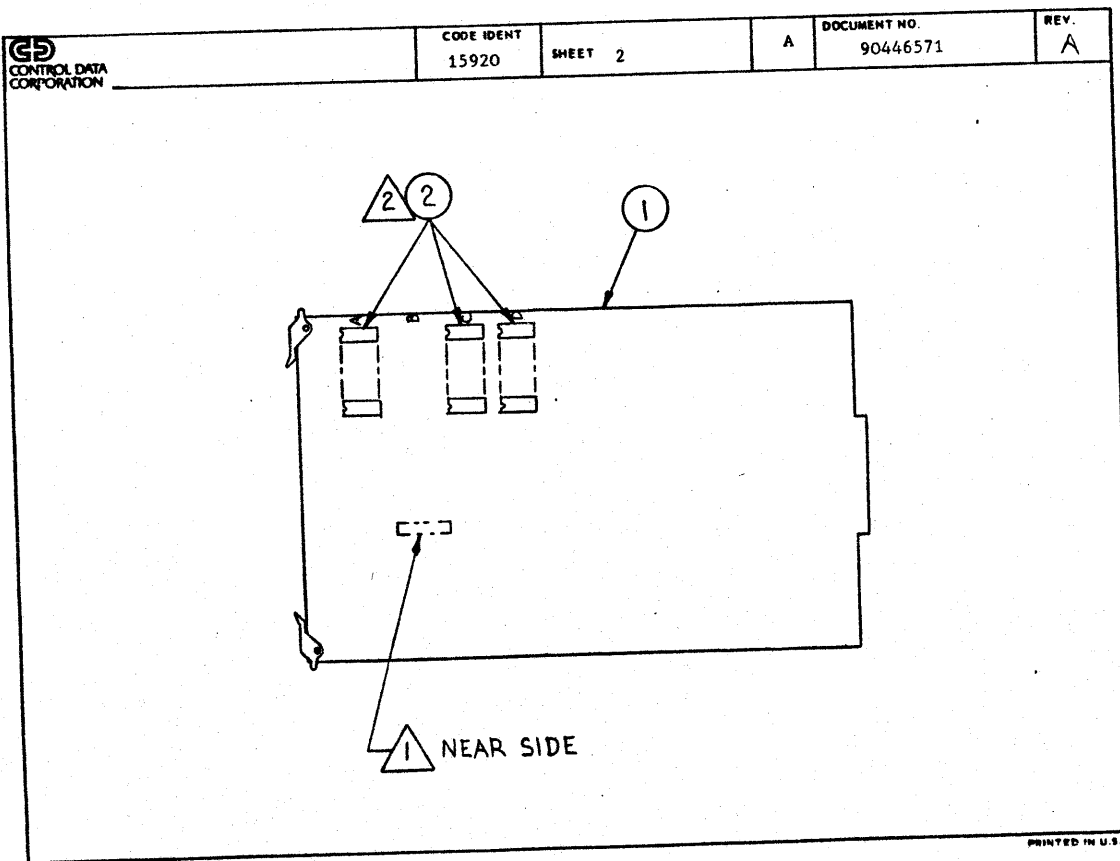
PRINT DATE	PAGE	FILE CHANGE NO.
03-09-83	1	00015771

DIV.		ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	AK	STATUS	STATUS DATE	ENG. RESP.	FILE DATE		
0860		90446396	5	C	A	REPLACED BY 90446571 15771	S	INA	03-04-83	FA501C/D	03-09-83		
LINE NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	AK	VLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
001	01	90446284	3	1		PC REPLACED BY 90446570 15771		N					
002	01	15153821	2	24		PC IC 4116 MOS 16384-BIT RAM		P					
003	01	10121508	5	REF		PC MARKING INK STP-STENCIL-S/C		D					
0003 TOTAL LINES													

DWN	B. Graf	2/83	 CONTROL DATA CORPORATION	TITLE		PREFIX	DOCUMENT NO.	REV.			
CHKD	W. J. [unclear]	2-16-83		CARD ASSEMBLY CONTROLLER		A	90446571	A			
ENG	A. [unclear]	2-11-83		MODULE W/FULL MEMORY		FIRST USED ON					
MFG	[unclear]	2-21-83		FA501C/D		NHA	SHEET 1 of 2				
APPR	[unclear]	2-21-83	CODE IDENT		15632982	15632983					
MECH	[unclear]	2-14-83	15920								
SHEET REVISION STATUS					REVISION RECORD						
				2	1	REV	ECO	DESCRIPTION	DRFT	DATE	APP
				A	A	A	15152-45	RELEASED CLASS 'A'	/	2-22-83	[unclear]
NOTES: <ul style="list-style-type: none"> <li>1 Mark "Assy 90446571" in area shown per CDC SPEC 10121508.</li> <li>2 Mount F/N 2 in sockets located at A1-A6, C1-C6 and D1-D6 on F/N 1.</li> </ul>											
								APL 90446571			
								DETACHED LISTS			

AS1190 REV. 8-71

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BUILD ARC 214

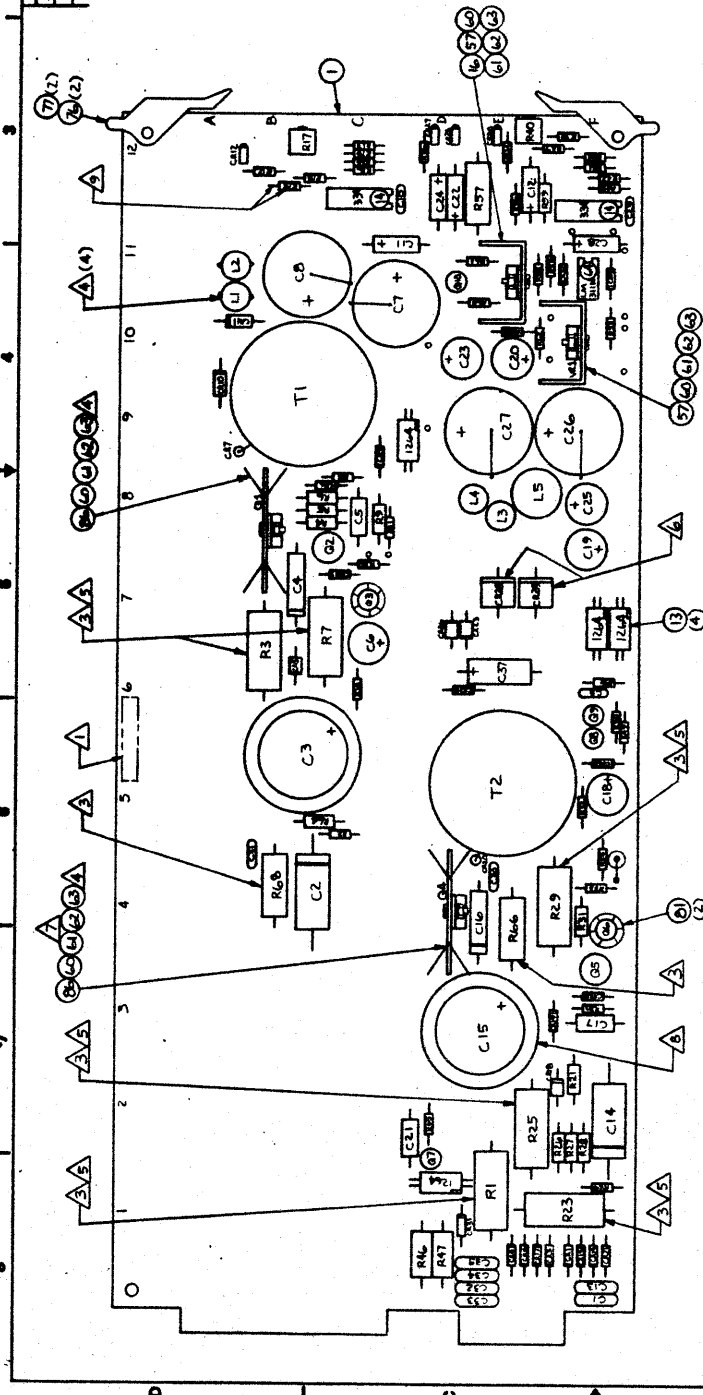
# ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
02-28-83	1	13152-45

DIV.		ASSEMBLY NUMBER		CD	REV.	ENG.	DESCRIPTION		MC	STATUS	STATUS DATE		ENG. RESP.	FILE DATE
0060		90448571		3	A	A	CD ASSY CONT MOD W/FULL MEM		S	REL	02-22-83		FA501C/D	02-28-83
ITEM NO.	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION		MC	TLB	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
001	01	90446570	5	1		PC CD ASSY 9BED-3			N					
002	01	15153621	2	24		PC IC 4116 MOS 16384-BIT RAM			P					
0002 TOTAL LINES														

150446140

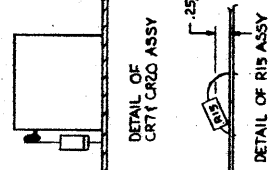
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27				REWORKED PER DRAWING



DELETIONS	ADDITIONS

28888 REFERENCE TABLE

FIND NO	28888 REFERENCE TABLE	28888 REFERENCE TABLE	28888 REFERENCE TABLE	28888 REFERENCE TABLE
1	R1	R2	R3	R4
2	R5	R6	R7	R8
3	R9	R10	R11	R12
4	R13	R14	R15	R16
5	R17	R18	R19	R20
6	R21	R22	R23	R24
7	R25	R26	R27	R28
8	R29	R30	R31	R32
9	R33	R34	R35	R36
10	R37	R38	R39	R40
11	R41	R42	R43	R44
12	R45	R46	R47	R48
13	R49	R50	R51	R52
14	R53	R54	R55	R56
15	R57	R58	R59	R60
16	R61	R62	R63	R64
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23	R89	R90	R91	R92
24	R93	R94	R95	R96
25	R97	R98	R99	R100
26	R101	R102	R103	R104
27	R105	R106	R107	R108
28	R109	R110	R111	R112
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31	R121	R122	R123	R124
32	R125	R126	R127	R128
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34	R133	R134	R135	R136
35	R137	R138	R139	R140
36	R141	R142	R143	R144
37	R145	R146	R147	R148
38	R149	R150	R151	R152
39	R153	R154	R155	R156
40	R157	R158	R159	R160
41	R161	R162	R163	R164
42	R165	R166	R167	R168
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44	R173	R174	R175	R176
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49	R193	R194	R195	R196
50	R197	R198	R199	R200
51	R201	R202	R203	R204
52	R205	R206	R207	R208
53	R209	R210	R211	R212
54	R213	R214	R215	R216
55	R217	R218	R219	R220
56	R221	R222	R223	R224
57	R225	R226	R227	R228
58	R229	R230	R231	R232
59	R233	R234	R235	R236
60	R237	R238	R239	R240
61	R241	R242	R243	R244
62	R245	R246	R247	R248
63	R249	R250	R251	R252
64	R253	R254	R255	R256
65	R257	R258	R259	R260
66	R261	R262	R263	R264
67	R265	R266	R267	R268
68	R269	R270	R271	R272
69	R273	R274	R275	R276
70	R277	R278	R279	R280
71	R281	R282	R283	R284
72	R285	R286	R287	R288
73	R289	R290	R291	R292
74	R293	R294	R295	R296
75	R297	R298	R299	R300
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77	R305	R306	R307	R308
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80	R317	R318	R319	R320
81	R321	R322	R323	R324
82	R325	R326	R327	R328
83	R329	R330	R331	R332
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91	R361	R362	R363	R364
92	R365	R366	R367	R368
93	R369	R370	R371	R372
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96	R381	R382	R383	R384
97	R385	R386	R387	R388
98	R389	R390	R391	R392
99	R393	R394	R395	R396
100	R397	R398	R399	R400



INACTIVE

FA501-A/B	FA501-A/B	FA501-A/B	FA501-A/B

REV	DATE	BY	CHKD	DESCRIPTION
1				RELEASED CLASS B
2				REWORKED PER DRAWING
3				REWORKED PER DRAWING
4				REWORKED PER DRAWING
5				REWORKED PER DRAWING
6				REWORKED PER DRAWING
7				REWORKED PER DRAWING
8				REWORKED PER DRAWING
9				REWORKED PER DRAWING
10				REWORKED PER DRAWING
11				REWORKED PER DRAWING
12				REWORKED PER DRAWING
13				REWORKED PER DRAWING
14				REWORKED PER DRAWING
15				REWORKED PER DRAWING
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17				REWORKED PER DRAWING
18				REWORKED PER DRAWING
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20				REWORKED PER DRAWING
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22				REWORKED PER DRAWING
23				REWORKED PER DRAWING
24				REWORKED PER DRAWING
25				REWORKED PER DRAWING
26				REWORKED PER DRAWING
27				REWORKED PER DRAWING

PC CARD ASSEMBLY, 98KD

15920 D 90446140

DATE NONE

- 8 CAPACITOR C15 MUST BE MOUNTED VERTICAL, PERPENDICULAR TO BOARD PLANE.
- 9 RESISTOR R15 MUST BE MOUNTED APPROX. .25 INCH FROM BOARD SURFACE. SEE DETAIL. ONE RESISTOR LEG FACING INWARDS ON BOARD TO BE RAISED.
- NOTES:
  - 1 APPLY ASSY NO. REV LEVEL, LOC CODE, AND DATE CODE IN AREA SHOWN MARK PER CDC SPEC 1021506; CHARACTER HEIGHT .12 (12 PT) COLOR WHITE.
  - 2. FIND NUMBERS, ELEMENT IDENTIFIERS, AND REFERENCE DESIGNATIONS ARE FOR REFERENCE ONLY AND DO NOT APPEAR ON PART
- 10 MOUNT RESISTORS .350 INCH OFF BOARD. USE TUBING F/W .82, .60 INCH ON EACH LEAD.
- 11 APPLY FIN 83 BETWEEN COMPONENT SIDE OF BOARD & U1, U2, U3, U4 TO KEEP STATIONARY.
- 12 APPLY FIN 85 TO PROTRUDING TABS (2) ON F/W 86 ON SOLDER SIDE OF PCB (2 PLACES).
- 13 RESISTORS TO BE INSTALLED WITH PROTRUSION TOWARD THE BOARD.
- 14 MOUNT DIODES .300 MIN. .500 MAX OFF P.C. BOARD.
- 15 BEND HEAT SINK FIN STRAIGHT TO KEEP FROM SHORTING TO CR20. (2) FIN FROM BOTTOM

BUILD ARC 210

### ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
10-01-81	1	00014838

REV	ASSEMBLY NUMBER	CD	REV	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	QTY. REQ.	FILE DATE			
0860	90446140	7	E	D	REPLACED BY 90446290 14838	A	INA	09-23-81	FA501A/B	10-01-81			
P/NO	U	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLD	CO. NO. IN	CO. NO. OUT	S/N	WK IN	WK OUT
001	01	90446139	9	1		PC PW BD 9BKD PWR SPLY	P						
002	01	51940599	7	1		PC TRANSFORMER FLYBACK 25KHZ	P						
003	01	51940598	9	1		PC TRANSFORMER FLYBACK 25KHZ	P						
004	01	51918111	9	2		PC XSTR NPN 400V 8A TO 220	P						
005	01	51681100	7	2		PC XSTR 2N5189 NPN SIL	P						
006	01	51603092	7	5		PC XSTR 2N2222 HI SPEED NPN SIL	P						
007	01	51714000	6	1		PC XSTR 2N2907 PNP SIL	P						
008	01	95637304	7	14		PC DIO IN4004 400PIV SIL 1.1V/1A	P						
009	01	95691500	3	6		PC RECT, 1N5615 F-R SIL 1 AMP	P						
010	01	77835261	7	2		PC POWER DIODE FAST RECOVER	P						
011	01	19171201	7	4		PC LIGHT IND	P						
012	01	15101110	3	2		PC DIO 1N753A 400MW ZEN VR 6.2V	P						
013	01	15165538	8	4		PC ISOLATOR OPTICALLY COUPLED	P						
014	01	51718400	8	2		PC IC 723C 334 VOLTAGE REGULATOR	P						
015	01	51007385	1	1		PC DIO IN4148 10MA MICRO SIL 30V	P						
016	01	15163403	7	1		PC IC LM317 ADJ +V RGLTR TO-220	P						
017	01	15151400	7	1		PC IC UA7900-5 356A NEG V RGLTR	P						
018	01	51918616	7	4		PC INDUCTOR	P						
019	01	51918617	5	1		PC INDUCTOR	P						
020	01	51918627	4	2		PC CAP ALUM ELECT 300UF 250V 15P	P						
021	01	24506816	8	2		PC CAP FXD MYL .33UF 10P 100VDC	P						

BUILD ARC 210

### ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
10-01-81	2	00014838

REV	ASSEMBLY NUMBER	CD	REV	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	QTY. REQ.	FILE DATE			
0860	90446140	7	E	D	REPLACED BY 90446290 14838	A	INA	09-23-81	FA501A/B	10-01-81			
P/NO	U	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLD	CO. NO. IN	CO. NO. OUT	S/N	WK IN	WK OUT
022	01	36180753	0	2		PC CAP FXD MYL .001MFD 600V	P						
023	01	51839147	9	2		PC CAP FXD CER .100UF 10P 100VDC	P						
023	02	51839147	9	3		PC CAP FXD CER .100UF 10P 100VDC	P		14523	14523		8106	8106
024	01	95691133	3	4		PC CAP ELEC 270UF -10+100P 25VDC	P						
025	01	94842168	0	4		PC CAP FXD CER .0033UF 6MV 1000V	P						
026	01	94397161	4	2		PC CAP AL ELECT 560UF 0HM 75V	P						
027	01	94397162	2	2		PC CAP AL ELECT 560UF 0HM 12V	P						
028	01	51001120	8	3		PC CAP CER F-2 .01UF +80-20P 25V	P						
029	01	94842145	8	2		PC CAP FXD CER 500PF 20P 1K	P						
031	01	24504333	6	5		PC CAP FXD TANT 2.2UF 20P 35VDC	P						
033	01	94360236	7	1		PC RES FXD FM 237 OHM 1P 1/4W	P						
034	01	24507181	6	2		PC RES FXD COMP 5600 OHM 5P 1W	P						
035	01	95596503	3	2		PC RES FXD WW 4.3 OHM 10P 5WATT	P						
036	01	95596520	7	2		PC RES FXD WW 600 OHM 10P 5WATT	P						
037	01	65019518	3	6		PC RES CARB COMP 1/2W 1.3 OHMS	P						
038	01	95596511	6	1		PC RES FXD WW 43 OHM 10P 5WATT	P						
039	01	94402159	1	7		PC RES FM 1.3K OHM 1/4 W CARBON	P						
040	01	94402172	4	2		PC RES FM 4.7K OHM 1/4W CARBON	P						
041	01	94402148	4	2		PC RES FM 470 OHM 1/4W CARBON	P						
042	02	94402166	0	1		PC RES FM 2.7K OHM 1/4W CARBON	P						
043	01	94402220	1	2		PC RES FM 470K OHM 1/4W CARBON	P						

BUILD ARC 210

### ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
10-01-81	3	00014838

REV	ASSEMBLY NUMBER	CD	REV	QTY	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. DESG.	FILE DATE			
0860	90446140	7	E	D	REPLACED BY 90446290 14838								
TRND NO.	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
045	01	94402160	9	1		PC RES FM 1.5K OHM 1/4W CARBON	P						
046	01	94402110	4	2		PC RES FM 12 OHM 1/4W CARBON	P						
047	01	94360331	6	1		PC RES FXD FM 2100 OHM 1P 1/4W	P						
048	01	24504839	2	2		PC RES FXD COMP 100 OHM 5P 2WATT	P						
049	01	94402176	5	1		PC RES FM 6.8K OHM 1/4W CARBON	P						
050	01	94402167	4	4		PC RES FM 3K OHM 1/4W CARBON	P						
051	01	51918846	0	2		PC RES VAR CER 1K OHM 20P 1/2W	P						
052	01	94402155	9	1		PC RES FM 9100HM 1/4W CARBON	P						
053	01	94402165	8	1		PC RES FM 2.4K OHM 1/4W CARBON	P						
054	01	24500148	2	1		PC RES FXD COMP 240 OHM 5P 1/2W	P						
056	01	94402180	7	1		PC RES FM 10K OHM 1/4W CARBON	P						
057	01	51918101	6	2		PC HT/SK PLSTC SEMI FIG1 AND2	P						
058	01	94402179	9	1		PC RES FM 9.1K OHM 1/4W CARBON	P						
060	01	51003962	1		001	OZ PASTE, HEAT XPR CMPD NON-COND	B						
061	01	10127103	9	4		PC MSCR PAN PHL 4-40X.312 STL ZP	B						
062	01	10126400	0	4		PC WSHR, NO.4 EXT/T LK STL ZP	B						
063	01	10125103	1	4		PC NUT, HEX 4-40 MSCR STL ZP	B						
064	01	15163443	3	1		PC IC LM311N VOLT COMP HI IMP	P						
065	01	94402122	9	1		PC RES FM 390HM 1/4W CARBON	P						
066	01	94402132	8	2		PC RES FM 100 OHM 1/4W CARBON	P						
067	01	94360100	5	1		PC RES FXD FM 10 OHM 1P 1/4W	P						

BUILD ARC 210

### ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
10-01-81	4	00014838

REV	ASSEMBLY NUMBER	CD	REV	QTY	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. DESG.	FILE DATE			
0860	90446140	7	E	D	REPLACED BY 90446290 14838								
TRND NO.	LI	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
068	01	15101107	9	1		PC DIO 1N750A 400MV ZEN VR 4.7V	P						
069	01	16006500	9		REF	PC FABRICATION SPECIFICATION	D						
070	01	94360262	3	1		PC RES FXD FM 442 OHM 1P 1/4W	P						
071	01	51903001	9	1		PC RES FXD WW .02 OHM 5P 2WATT	P						
072	01	95691135	8	2		PC CAP ELEC 470UF -10+100P 25VDC	P						
073	01	17720519	2	2		PC RES FXD COMP 0.2MEG .5W 5P	P						
075	01	90446138	1		REF	PC SCH DIAG 9BKD PWR SPLY	D						
076	01	87311900	3	2		PC INJECTOR-EJECTOR, NATURAL PCB	P						
077	01	97533118	1	2		PC ROLLPIN, .125D X .250L STL ZP	B						
078	01	24500131	8	2		PC RES FXD COMP 47 OHM 5P 1/2W	P						
079	01	94402144	3	2		PC RES FM 330 OHM 1/4W CARBON	P						
080	01	95691506	0	2		PC RECT, 1N5416 F-R SIL 3 AMP	P						
081	01	51719600	2	2		PC HEAT SINK ELCTRN COMP FAN TOP	P						
082	01	51797418	4	1		FT TBG INS .059 DIA T/W	B						
083	01	94850716	5		050	OZ SEAL, 3M (4400)	B						
083	02	67019900	0		050	OZ EPOXY, 2-PART 5-MINUTE CLEAR	B	14279	14279			8040	8040
084	01	12081500	6	2		PC DIO SIL SCHOTTKY PWR .55V/1A	P						
085	01	51839124	6	1		PC CAP FXD CER 1000PF 10P 100VDC	P						
086	01	51906601	3	2		PC HT SINK, SEMI FIG 3 ALUM BLK	P						
087	01	95596512	4	1		PC RES FXD WW 51 OHM 10P 5W	P						
088	01	94842184	7	2		PC CAP FXD CER .02UF +80-20P 1K	P						

BUILD ARC 210

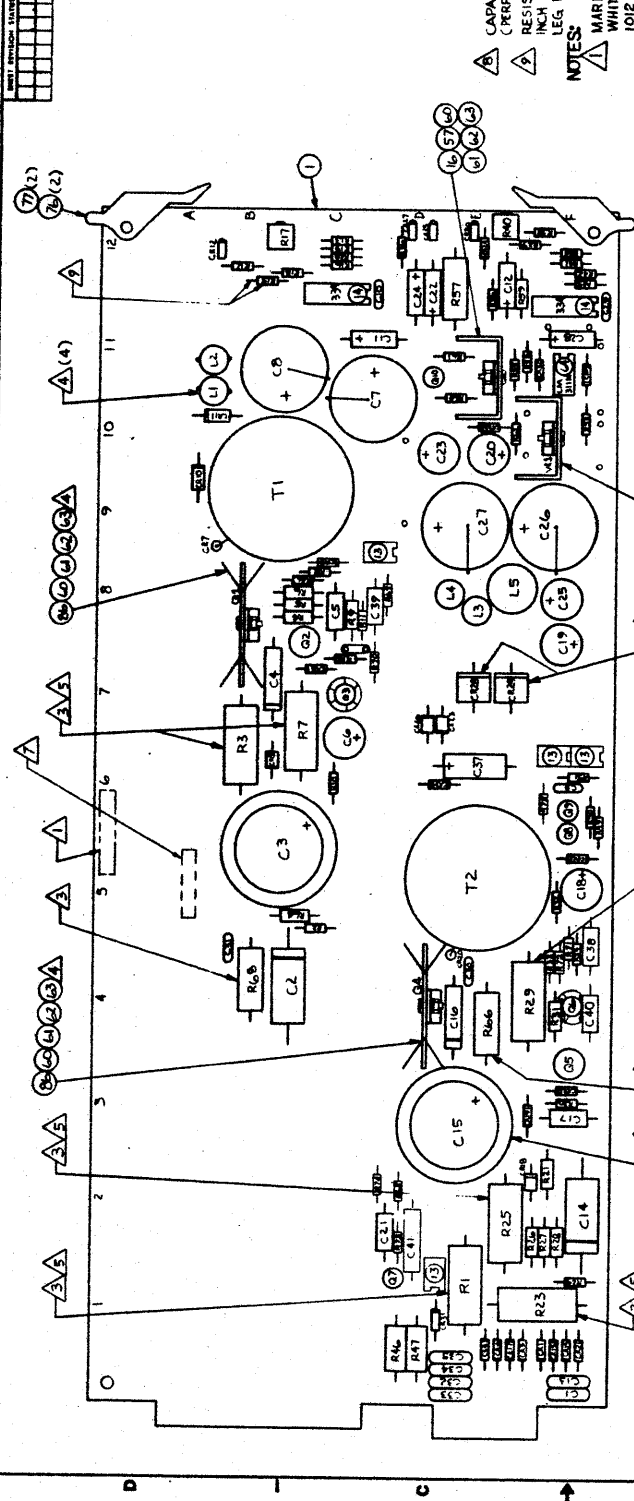
# ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
10-01-81	5	00014838

REV	ASSEMBLY NUMBER	CD	REV	SWO	DESCRIPTION	INC	STATUS	STATUS DATE	ENG. DESP.	FILE DATE				
0000	90446140	7	E	D	REPLACED BY 90446290 14838	A	INA	09-23-81	FA501A/B	10-01-81				
T	REV NO.	U	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	INC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
	089	01	24504343	5	1		PC CAP FXD TANT 15UF 20P 35VDCW	P						
							0085 TOTAL LINES							

190446290

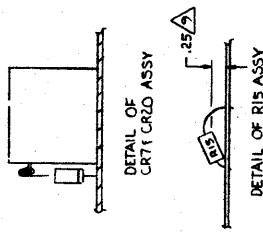
REV	NO	DATE	BY	CHKD	APP	DESCRIPTION
1	1					RELEASED CLASS 3
2	1					90% CRG ONLY
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24	1					90% CRG ONLY
25	1					90% CRG ONLY
26	1					90% CRG ONLY
27	1					90% CRG ONLY



△ CAPACITOR C15 MUST BE MOUNTED VERTICAL, PERPENDICULAR TO BOARD PLANE.  
 △ RESISTOR R15 MUST BE MOUNTED APPROX. .25 INCH FROM BOARD SURFACE. SEE DETAIL. ONE RESISTOR LEG FACING NUMERICS ON BOARD TO BE RAISED.  
 △ MARK ASSY NO AND REVISION LEVEL. 12 HIGH, WHITE, IN AREA SHOWN PER CDC SPEC 1012150B.

2. FIND NUMBERS, ELEMENT IDENTIFIERS, AND REFERENCE DESIGNATIONS ARE FOR PART
- △ MOUNT RESISTORS .250 MIN. .350 MAX OFF BD. USE TUBING F/N 82 .60 INCH ON EACH LEAD.
  - △ APPLY F/N 83 BETWEEN COMPONENT SIDE OF BOARD & L1, L2, L3, L4 TO KEEP STATIONARY.
  - △ APPLY F/N 83 TO PROTRUDING TABS (2) ON F/N 86 ON SOLDER SIDE OF PCB (2 PLACES).
  - △ RESISTORS TO BE INSTALLED WITH PROTRUSION TOWARD THE BOARD.
  - △ MOUNT DIODES .300 MIN. .500 MAX OFF PC BOARDS.
  - △ MARK SERIAL NUMBER IN AREA SHOWN PER RVL0P5 PIP NO. 80:20:34 AND PER MARKING REQ/MTS IN NOTE (1) ONE.

DELETIONS	ADDITIONS



ITEM NO.	REFERENCE DESIGNATION	DESCRIPTION	QTY
1	C1, C10, C12, C13	100P	20
2	C2	100P	2
3	C3	100P	1
4	C4	100P	1
5	C5	100P	1
6	C6	100P	1
7	C7	100P	1
8	C8	100P	1
9	C9	100P	1
10	C10	100P	1
11	C11	100P	1
12	C12	100P	1
13	C13	100P	1
14	C14	100P	1
15	C15	100P	1
16	L1, L2, L3, L4	100P	4
17	L5	100P	1
18	L6	100P	1
19	L7	100P	1
20	L8	100P	1
21	L9	100P	1
22	L10	100P	1
23	L11	100P	1
24	L12	100P	1
25	L13	100P	1
26	L14	100P	1
27	L15	100P	1
28	L16	100P	1
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30	L18	100P	1
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110	L98	100P	1
111	L99	100P	1
112	L100	100P	1

INACTIVE

REV	NO	DATE	BY	CHKD	APP	DESCRIPTION
1	1					RELEASED CLASS 3
2	1					90% CRG ONLY
3	1					90% CRG ONLY
4	1					90% CRG ONLY
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26	1					90% CRG ONLY
27	1					90% CRG ONLY

BUILD ARC 210

### ASSEMBLY PARTS LIST

BUILD ARC 210										PRINT DATE		PAGE		FILE CHANGE NO.	
										01-13-82		1		00014985	
REPLACED BY 90446443 14985										STATUS DATE		ENG. DESP.		FILE DATE	
										01-08-82		FA501A		01-13-82	
QTY	DIV	ASSEMBLY NUMBER	CD	REV	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE		ENG. DESP.		FILE DATE		
QTY	DIV	ASSEMBLY NUMBER	CD	REV	DWG.	DESCRIPTION	MC	STATUS	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT		
001	01	90446289	2	1		PC REPLACED BY 90446332 14778	A	INA							
001	02	90446332	0	1		PC PW 8D 1AFD PWR SPLY	A	INA	14778	14778		8143			
002	01	51940599	7	1		PC TRANSFORMER FLYBACK 25KHZ	A	INA							
003	01	51940598	9	1		PC TRANSFORMER FLYBACK 25KHZ	A	INA							
004	01	51918111	9	2		PC XSTR NPN 400V 8A TO 220	A	INA							
005	01	51681100	7	2		PC XSTR 2N5189 NPN SIL	A	INA							
006	01	51003092	7	5		PC XSTR 2N2222 HI SPEED NPN SIL	A	INA							
007	01	51714000	0	1		PC XSTR 2N2907 PNP SIL	A	INA							
008	01	95637304	7	14		PC DIO IN4004 400PIV SIL 1.1V/1A	A	INA							
009	01	95691500	3	6		PC RECT. 1N5615 F-R SIL 1 AMP	A	INA							
010	01	77635261	7	2		PC POWER DIODE FAST RECOVER	A	INA							
011	01	19171201	7	4		PC LIGHT IND	A	INA							
012	01	50240108	6	2		PC DIODE SIL ZEN 6.2V INT53A	A	INA							
013	01	95791300	7	4		PC OPTICAL ISOLATOR	A	INA							
014	01	51718400	8	2		PC IC 723C 334 VOLTAGE REGULATOR	A	INA							
015	01	51007385	1	1		PC DIO IN4148 10MA MICRO SIL 30V	A	INA							
016	01	15163403	7	1		PC IC LM317 ADJ +V ROLTR TO=220	A	INA							
017	01	15151400	7	1		PC IC UA7900=5 356A NEG V ROLTR	A	INA							
018	01	51918616	7	4		PC INDUCTOR	A	INA							
019	01	51918617	5	1		PC INDUCTOR	A	INA							
020	01	51918627	4	2		PC CAP ALUM ELECT 300UF 250V 15P	A	INA							

BUILD ARC 210

### ASSEMBLY PARTS LIST

BUILD ARC 210										PRINT DATE		PAGE		FILE CHANGE NO.	
										01-13-82		2		00014985	
REPLACED BY 90446443 14985										STATUS DATE		ENG. DESP.		FILE DATE	
										01-08-82		FA501A		01-13-82	
QTY	DIV	ASSEMBLY NUMBER	CD	REV	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE		ENG. DESP.		FILE DATE		
QTY	DIV	ASSEMBLY NUMBER	CD	REV	DWG.	DESCRIPTION	MC	STATUS	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT		
021	01	24506816	8	2		PC CAP FXD MYL .33UF 10P 100VDCW	A	INA							
022	01	36180753	0	2		PC CAP FXD MYL .001MFD 600V	A	INA							
023	01	94240448	4	5		PC CAP CER 100000PF 50V 10P	A	INA							
024	01	95691133	3	4		PC CAP ELEC 270UF +10-100P 25VDC	A	INA							
025	01	94842168	0	4		PC CAP FXD CER .0033UF 0MV 1000V	A	INA		14722		8127	8127		
025	02	51001214	9	4		PC CAP FXD CER .005UF 20P 3000V	A	INA	14722			8127			
026	01	94397161	4	2		PC CAP AL ELECT 560UF OHM 75V	A	INA							
027	01	94397162	2	2		PC CAP AL ELECT 5600UF OHM 12V	A	INA							
028	01	51001120	8	3		PC CAP CER F=2 .01UF +80-20P 25V	A	INA		14886		8148	8148		
028	02	19115400	4	3		PC CAP FXD CER .01MF +80-20P 50V	A	INA	14886			8148			
029	01	94842145	8	2		PC CAP FXD CER 500PF 20P 1K	A	INA							
031	01	94400612	1	5		PC CAP FXD AL 15UF +100-10P 20V	A	INA		14774		8133	8133		
031	02	94400612	1	4		PC CAP FXD AL 15UF +100-10P 20V	A	INA	14774			8133			
033	01	94360236	7	1		PC RES FXD FM 237 OHM 1P 1/4W	A	INA							
034	01	24507181	6	2		PC RES FXD COMP 5600 OHM 5P 1W	A	INA							
036	01	95596503	3	2		PC RES FXD WW 4.3 OHM 10P SWATT	A	INA							
036	01	95596520	7	2		PC RES FXD WW 600 OHM 10P SWATT	A	INA							
037	01	68019518	3	6		PC RES CARB COMP 1/2W 1.3 OHMS	A	INA							
038	01	95596511	6	1		PC RES FXD WW 43 OHM 10P SWATT	A	INA							
039	01	94402159	1	7		PC RES FM 1.3K OHM 1/4 W CARBON	A	INA							
040	01	94402172	4	2		PC RES FM 5.7K OHM 1/4W CARBON	A	INA							
041	01	94402148	4	2		PC RES FM 470 OHM 1/4W CARBON	A	INA							

BUILD ARC 210

**ASSEMBLY PARTS LIST**

										PRINT DATE	PAGE	FILE CHANGE NO.	
										01-13-82	3	00014985	
DIV	ASSEMBLY NUMBER	CD	REV	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE			
086U	9044629U	D	H	D	REPLACED BY 90446443 14985	A	INA	01-08-82	FAS01A	01-13-82			
TP/NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
042	01	94402166	6	1		PC RES FM 2.7K OHM 1/4W CARBON	P						
043	01	94402220	1	7		PC RES FM 470K OHM 1/4W CARBON	P						
048	01	94402160	9	1		PC RES FM 1.5K OHM 1/4W CARBON	P						
049	01	94402110	4	2		PC RES FM 12 OHM 1/4W CARBON	P						
047	01	94360331	6	1		PC RES FXD FM 2100 OHM 1P 1/4W	P						
044	01	24504839	2	2		PC RES FXD COMP 100 OHM 5P 2WATT	P						
049	01	94402176	5	1		PC RES FM 6.8K OHM 1/4W CARBON	P						
050	01	94402167	4	4		PC RES FM 3K OHM 1/4W CARBON	P						
051	01	51918846	0	2		PC RES VAR CER 1K OHM 20P 1/2W	P						
052	01	94402155	9	1		PC RES FM 910OHM 1/4W CARBON	P						
053	01	94402165	8	1		PC RES FM 2.4K OHM 1/4W CARBON	P						
054	01	24500148	2	1		PC RES FXD COMP 240 OHM 5P 1/2W	P						
056	01	94402180	7	1		PC RES FM 10K OHM 1/4W CARBON	P						
057	01	51918101	0	2		PC HT/SK PLSTC SEMI FIG1 AND2	P						
058	01	94402179	9	1		PC RES FM 9.1K OHM 1/4W CARBON	P						
060	01	51003962	1		001	OZ PASTE, HEAT XPR CMPD NON-COND	B						
061	01	10127103	9	4		PC MSCR PAN PHL 4-40X.312 STL ZP	B						
062	01	10126400	0	4		PC WSHR, NO.4 EXT/T LK STL ZP	B						
063	01	10125103	1	4		PC NUT, HEX 4-40 MSCR STL ZP	B						
064	01	15163443	3	1		PC IC LM311N VOLT COMP HI IMP	P						
065	01	94402122	9	1		PC RES FM 390HM 1/4W CARBON	P						

BUILD ARC 210

**ASSEMBLY PARTS LIST**

										PRINT DATE	PAGE	FILE CHANGE NO.	
										01-13-82	4	00014985	
DIV	ASSEMBLY NUMBER	CD	REV	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE			
086U	9044629U	D	H	D	REPLACED BY 90446443 14985	A	INA	01-08-82	FAS01A	01-13-82			
TP/NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
066	01	94402132	8	2		PC RES FM 100 OHM 1/4W CARBON	P						
067	01	94360100	5	1		PC RES FXD FM 10 OHM 1P 1/4W	P						
068	01	50240105	2	1		PC DIODE SIL ZEN 4.7V	P						
069	01	16006500	9		REF	PC FABRICATION SPECIFICATION	D						
070	01	94360262	3	1		PC RES FXD FM 442 OHM 1P 1/4W	P						
071	01	51903001	9	1		PC RES FXD WW .02 OHM 5P 2WATT	P						
072	01	95691135	8	2		PC CAP ELEC 470UF -10+100P 25VDC	P						
073	01	17720519	2	2		PC RES FXD COMP 0.2MEG .5W 5P	P						
078	01	90446288	4		REF	PC SCH DIAG 1AFD (PFDS PWR SUP)	D						
076	01	82311900	3	2		PC INJECTOR-EJECTOR, NATURAL PCB	P						
077	01	93533110	1	2		PC ROLL PIN, .1250 X .250L STL ZP	B						
078	01	24500131	8	2		PC RES FXD COMP 47 OHM 5P 1/2W	P						
079	01	94402144	3	2		PC RES FM 330 OHM 1/4W CARBON	P						
080	01	95691506	0	2		PC RECT, 1N5416 F-R SIL 3 AMP	P						
081	01	51719600	2	2		PC HEAT SINK ELCTRN COMP FAN TOP	P						
082	01	51797418	4	1		FT T80 INS .059 DIA T/W	B						
083	01	62019900	0		050	OZ EPOXY, 2-PART 5-MINUTE CLEAR	B						
084	01	12081500	6	2		PC DIO SIL SCHOTTKY PWR .55V/1A	P						
085	01	94240401	3	2		PC CAP CER 1000PF 50V 10P	P						
086	01	51906601	3	2		PC HT SINK, SEMI FIG 3 ALUM BLK	P						
087	01	95596512	4	1		PC RES FXD WW 51 OHM 10P 5W	P						



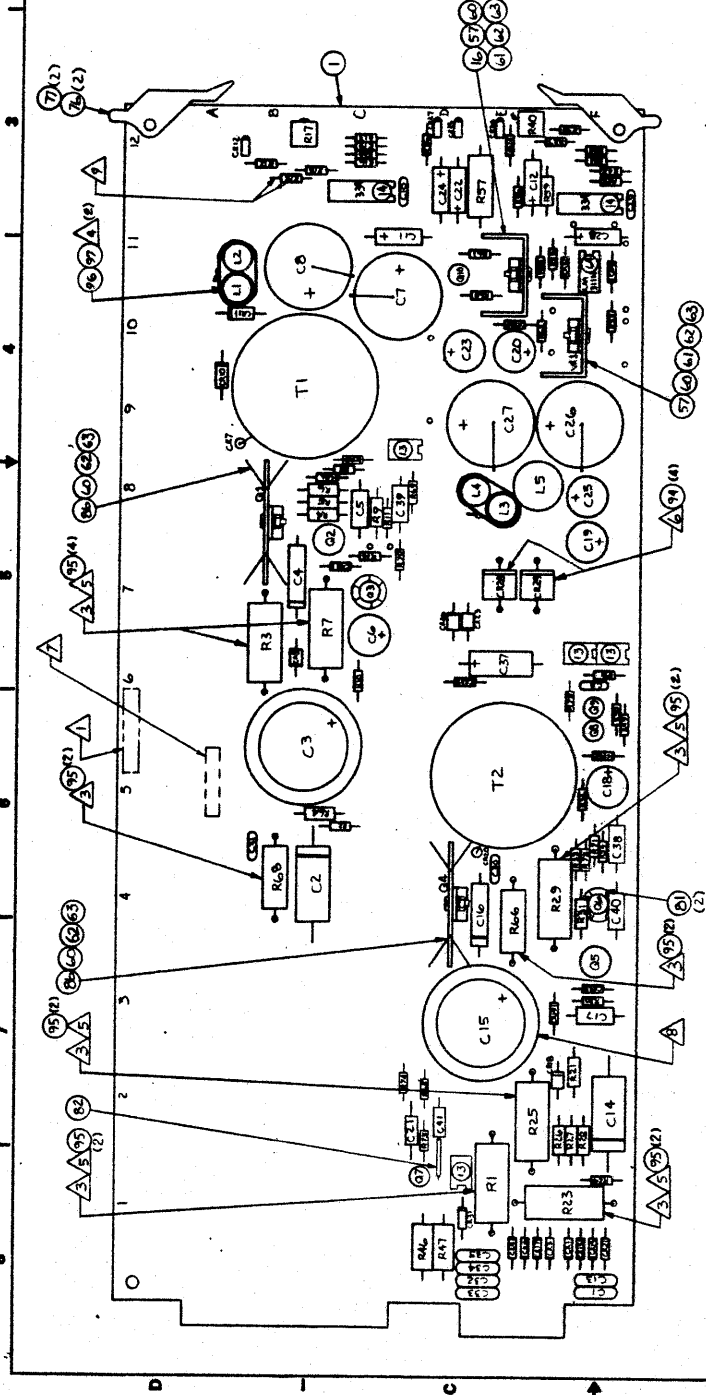
BUILD ARC 210

# ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO
01-13-82	9	00014985

QTY	ASSEMBLY NUMBER	CD	REV.	QTY	DESCRIPTION	MC	STATUS	STATUS DATE	END. STEP.	FILE DATE			
086U	90446290	0	H	0	REPLACED BY 90446443 14985	A	INA	01-08-82	PASDIA	01-13-82			
TYPE NO.	LT	PART NUMBER	CD	QTY	U/M	PART DESCRIPTION	MC	VLB	ECO. NO. IN	ECO. NO. OUT	S/H	WE IN	WE OUT
086	01	94842184	7	2		PC CAP FXD CER .02UF +50-20P 1K	P						
087	01	94400619	6	1		PC CAP ELEC 6-63VDC	P						
090	01	94402177	3	2		PC RES FM 7.5K OHM 1/4W CARBON	P						
091	01	16042865	2	REF		PC PLATO FLEX DISK SUBSYS	D		14754			8130	
092	01	94400603	0	1		PC CAP FXD ALUM 3.3UF 50V	P		14774			8133	
						0090 TOTAL LINES							

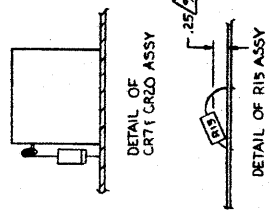
REV	DATE	BY	CHKD	APP
1	10/21/50B			
2	10/21/50B			
3	10/21/50B			
4	10/21/50B			
5	10/21/50B			
6	10/21/50B			
7	10/21/50B			
8	10/21/50B			
9	10/21/50B			
10	10/21/50B			
11	10/21/50B			
12	10/21/50B			



- NOTES
- △ CAPACITOR C15 MUST BE MOUNTED VERTICAL; (PENDICULAR TO BOARD PLANE).
  - △ RESISTOR R15 MUST BE MOUNTED APPROX. .25" HIGH FROM BOARD SURFACE. SEE DETAIL. ONE RESISTOR LEG FACING NUMERICS ON BOARD TO BE RAISED.
  - △ MARK ASSY NO AND REVISION LEVEL .12 HIGH, WHITE, IN AREA SHOWN PER CDC SPEC 1012150B.

2. FIND NUMBERS, ELEMENT IDENTIFIERS, AND REFERENCE DESIGNATIONS ARE FOR PART
- △ MOUNT RESISTORS .250 MIN. .350 MAX OFF BD.
  - △ FN 96 TO BE IF STILLED ON ONE COMPART. IT OF EACH PAIR L1, L2 AND L3, L4. PAIRS TO BE HELD TOGETHER BY F/W 97.
  - △ RESISTORS TO BE INSTALLED WITH PROTRUSION TOWARD THE BOARD.
  - △ MOUNT DIODES .300 MIN. .500 MAX OFF P.C. BOARDS.
  - △ MARK SERIAL NUMBER IN AREA SHOWN PER RYLOP5 PIP NO. 80:20:34 AND PER MARKING RECOM'TS IN NOTE (1).

CHANGES	REVISIONS	ADDITIONS



END NO	REFERENCE DESIGNATION	QTY	DESCRIPTION	QTY	DESCRIPTION
1	C1	1	C1	1	C1
2	C2	1	C2	1	C2
3	C3	1	C3	1	C3
4	C4	1	C4	1	C4
5	C5	1	C5	1	C5
6	C6	1	C6	1	C6
7	C7	1	C7	1	C7
8	C8	1	C8	1	C8
9	C9	1	C9	1	C9
10	C10	1	C10	1	C10
11	C11	1	C11	1	C11
12	C12	1	C12	1	C12
13	C13	1	C13	1	C13
14	C14	1	C14	1	C14
15	C15	1	C15	1	C15
16	C16	1	C16	1	C16
17	C17	1	C17	1	C17
18	C18	1	C18	1	C18
19	C19	1	C19	1	C19
20	C20	1	C20	1	C20
21	C21	1	C21	1	C21
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24	C24	1	C24	1	C24
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70	C70	1	C70	1	C70
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72	C72	1	C72	1	C72
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74	C74	1	C74	1	C74
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78	C78	1	C78	1	C78
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93	C93	1	C93	1	C93
94	C94	1	C94	1	C94
95	C95	1	C95	1	C95
96	C96	1	C96	1	C96
97	C97	1	C97	1	C97
98	C98	1	C98	1	C98
99	C99	1	C99	1	C99
100	C100	1	C100	1	C100

PC CARD ASSEMBLY, 1A1FD	
REV	1
DATE	10/21/50B
BY	
CHKD	
APP	
REV	1
DATE	10/21/50B
BY	
CHKD	
APP	
REV	1
DATE	10/21/50B
BY	
CHKD	
APP	

BUILD ARC 220

**ASSEMBLY PARTS LIST**

PRINT DATE: 08-09-83 PAGE: 1 FILE CHANGE NO: 0016005A

DIV		ASSEMBLY NUMBER		CD	REV.	DWG.	DESCRIPTION		INC	STATUS	STATUS DATE		ENG. RESP.	FILE DATE		
0860		90446443		5	D	D	PC CD ASSY 1AFD		A	REL	01-08-82		FA501A/D	08-09-83		
FOUND NO	LI	PART NUMBER		CD	IN	QUANTITY	U/M	PART DESCRIPTION		INC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
001	01	90446332	0			1		PC	PH BD 1AFD PWR SPLY	P						
002	01	51940599	7			1		PC	TRANSFORMER FLYBACK 25KHZ	P						
003	01	51940598	9			1		PC	TRANSFORMER FLYBACK 25KHZ	P						
004	01	51918111	9			2		PC	XSTR NPN 400V 8A TO 220	P						
005	01	51681100	7			2		PC	XSTR 2N5109 NPN SIL	P						
006	01	51003092	7			5		PC	XSTR 2N2222 HI-SPEED NPN SIL	P						
007	01	51714000	0			1		PC	XSTR, 2N2907 BI-POLAR PNP SI	P						
008	01	95637304	7			14		PC	RECT, SIL 1N4004 1A 400V MIN	P						
009	01	95691500	3			6		PC	RECT, SIL 1N5615 1A 200V F-R	P						
010	01	77835261	7			2		PC	DIO MR021 PWR RECT 100WIV SIO	P						
011	01	19171201	7			4		PC	LIGHT IND	P						
012	01	50240108	6			2		PC	DIO 1N753A ZEN 6.2V 5P 20MA	P						
013	01	95791300	7			4		PC	OPTICAL ISOLATOR	P						
014	01	51718400	8			2		PC	IC 723C 334 VOLTAGE REGULATOR	P						
015	01	51007385	1			1		PC	DIO 1N4148 SIL MICRO 30V 10MA	P						
016	01	15163403	7			1		PC	IC LM317 317 ADJ POS V RGLTR	P						
017	01	15151400	7			1		PC	IC UA7905 356A NEG V RGLTR	P						
018	01	51918616	7			4		PC	IND, RF-CHOKE 100UH 1.5A F-1	P						
019	01	51918617	5			1		PC	IND, RF-CHOKE 70UH 7A F-1	P						
020	01	51918627	4			2		PC	CAP ALUM ELECT 300UF 250V 15P	P						
021	01	24506816	8			2		PC	CAP FXD MYL .33UF 10P 100VDCW	P						

BUILD ARC 220

**ASSEMBLY PARTS LIST**

PRINT DATE: 08-09-83 PAGE: 2 FILE CHANGE NO: 0016005A

DIV		ASSEMBLY NUMBER		CD	REV.	DWG.	DESCRIPTION		INC	STATUS	STATUS DATE		ENG. RESP.	FILE DATE		
0860		90446443		5	D	D	PC CD ASSY 1AFD		A	REL	01-08-82		FA501A/D	08-09-83		
FOUND NO	LI	PART NUMBER		CD	IN	QUANTITY	U/M	PART DESCRIPTION		INC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
022	01	36180753	0			2		PC	CAP MYL FM .001UF 10P 600VDCW	P						
023	01	94240448	4			5		PC	CAP FXD CER 100KPF 10P 50VDCW	P						
024	01	95691133	3			4		PC	CAP ELECT 270UF -10+100P 25V	P						
025	01	51001214	9			4		PC	CAP FXD CER .005UF 20P 3000V	P						
026	01	94397161	4			2		PC	CAP AL ELEC 560UF-10+100P 75V	P						
027	01	94397162	2			2		PC	CAP AL ELEC 5600UF-10+100 12V	P						
028	01	19115400	4			3		PC	CAP FXD CER .01UF +80-20P 50V	P						
029	01	94842145	8			2		PC	CAP FXD CER 500PF 20P 1K	P						
031	01	94400612	1			3		PC	CAP AL ELEC 15UF-10+100P 25V	P						
033	01	94360236	7			1		PC	RES FXD FM 237 OHM 1P 1/4W	P						
034	01	24507181	6			2		PC	RES FXD COMP 5600 OHM 5P 1W	P						
035	01	95596503	3			2		PC	RES FXD WW 4.3 OHM 10P SWATT	P						
036	01	95596520	7			2		PC	RES FXD WW 600 OHM 10P SWATT	P						
037	01	65019518	3			6		PC	RES CARB COMP 1/2W 1.3 OHMS	P						
038	01	95596511	6			1		PC	RES FXD WW 43 OHM 10P SWATT	P						
039	01	94402159	1			7		PC	RES FXD C FM 1.3K OHM 5P 1/4W	P						
040	01	94402172	4			2		PC	RES FXD C FM 4.7K OHM 5P 1/4W	P						
041	01	94402148	4			2		PC	RES FXD C FM 470 OHM 5P 1/4W	P						
042	01	94402166	6			1		PC	RES FXD C FM 2.7K OHM 5P 1/4W	P						
043	01	94402220	1			7		PC	RES FXD C FM 470K OHM 5P 1/4W	P						
045	01	94402160	9			1		PC	RES FXD C FM 1.5K OHM 5P 1/4W	P						

BUILD ARC 220

### ASSEMBLY PARTS LIST

BUILD ARC 220										ASSEMBLY PARTS LIST		PRINT DATE	PAGE	PLS CHANGE NO.
0860 90446443 S D D PC CD ASSY 1AFD										A	REL	01-08-82	FA501A/D	08-09-83
ITEM NO	LI	PART NUMBER	CD	REV.	QTY	U/M	PART DESCRIPTION	MC	YLR	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
046	01	94402110	4		2		PC RES FXD C FM 12 OHM 5P 1/4W	P						
047	01	94360331	6		1		PC RES FXD FM 2100 OHM 1P 1/4W	P						
047	02	94360330	8		1		PC RES FXD FM 2050 OHM 1P 1/4W	P		16060	16060		8330	8330
048	01	24500839	2		2		PC RES FXD COMP 100 OHM 5P 2WATT	P						
049	01	94402170	5		1		PC RES FXD C FM 6.8K OHM 5P 1/4W	P						
050	01	94402167	4		4		PC RES FXD C FM 3.0K OHM 5P 1/4W	P						
051	01	51910840	0		2		PC RES VAR CRW 1K R 20P 1/2W 1	P						
052	01	94402155	9		1		PC RES FXD C FM 910 OHM 5P 1/4W	P						
053	01	94402165	8		1		PC RES FXD C FM 2.4K OHM 5P 1/4W	P						
054	01	24500148	2		1		PC RES FXD COMP 240 OHM 5P 1/2W	P						
056	01	94402180	7		1		PC RES FXD C FM 10K OHM 5P 1/4W	P						
057	01	51910101	0		2		PC HT/SK, SEMICNDCT FIG-18 AL/BL	P						
058	01	94402179	9		1		PC RES FXD C FM 9.1K OHM 5P 1/4W	P						
060	01	51003962	1		1	001	OZ PASTE, HEAT XFR CMPD NON-COND	B						
061	01	10127103	9		4		PC MSCR PAN PHL 4-40X.312 STL ZP	B						
061	02	10127103	9		2		PC MSCR PAN PHL 4-40X.312 STL ZP	B		16005	16005		8350	8350
062	01	10126400	0		4		PC WSHR, (4) EXT/T LK STL ZP	B						
063	01	10125103	1		4		PC NUT, HEX 4-40 MSCR STL ZP	B						
064	01	15163443	3		1		PC IC LM311N 311 VOLT COMPARATOR	P						
065	01	94402122	9		1		PC RES FXD C FM 39 OHM 5P 1/4W	P						
066	01	94402132	8		2		PC RES FXD C FM 100 OHM 5P 1/4W	P						
067	01	94360100	5		1		PC RES FXD FM 10 OHM 1P 1/4W	P						

BUILD ARC 220

### ASSEMBLY PARTS LIST

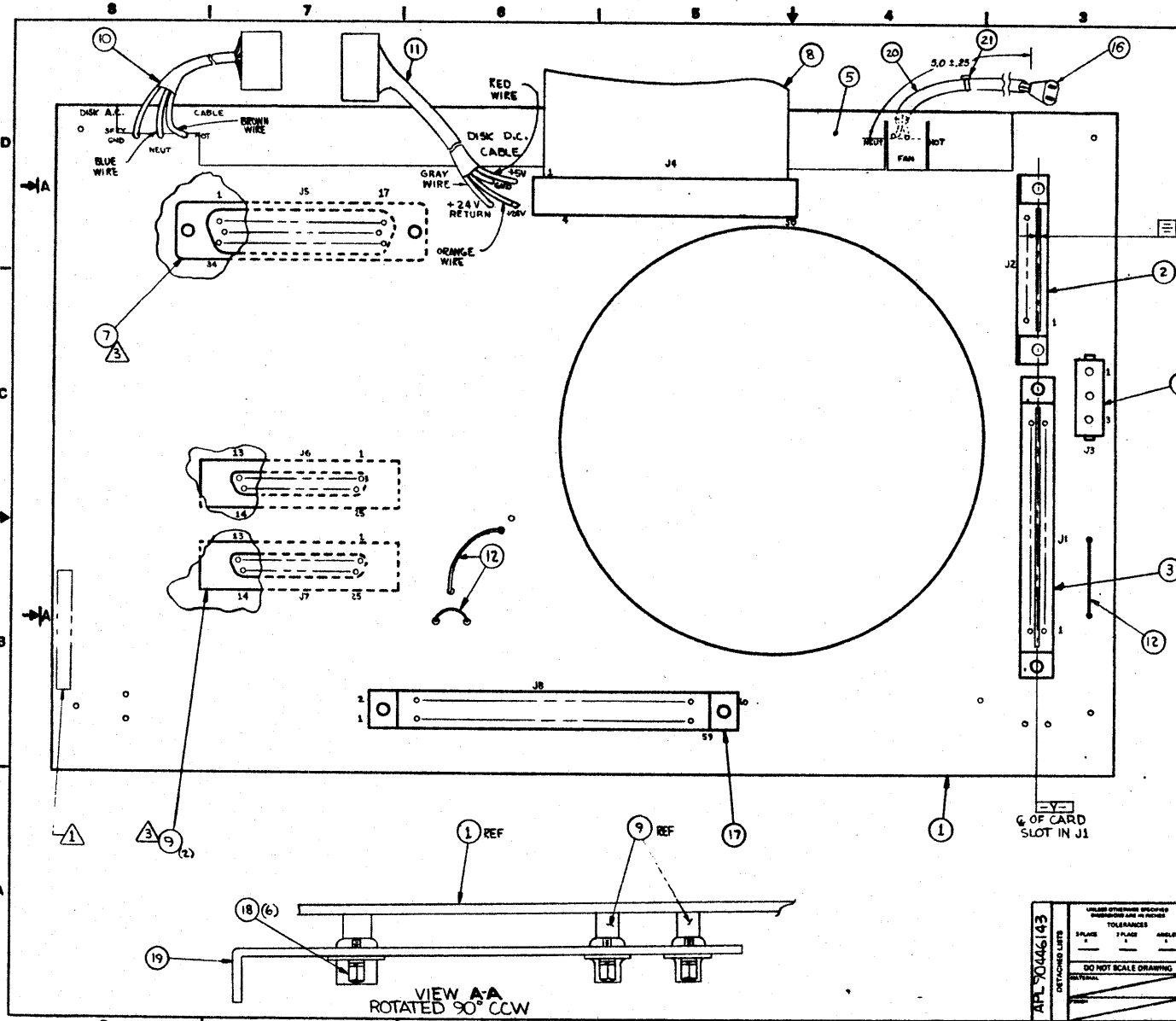
BUILD ARC 220										ASSEMBLY PARTS LIST		PRINT DATE	PAGE	PLS CHANGE NO.
0860 90446443 S D D PC CD ASSY 1AFD										A	REL	01-08-82	FA501A/D	08-09-83
ITEM NO	LI	PART NUMBER	CD	REV.	QTY	U/M	PART DESCRIPTION	MC	YLR	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
068	01	50240105	2		1		PC DIO INT50A ZEN 4.7V 5P 20MA	P						
069	01	10006500	9		REF		PC FABRICATION SPECIFICATION	D						
070	01	94360262	3		1		PC RES FXD FM 442 OHM 1P 1/4W	P						
071	01	51903001	9		1		PC RES FXD WW .02 OHM 5P 2WATT	P						
072	01	95691135	0		2		PC CAP ELECT 470UF -10+100P 25V	P						
073	01	17720519	2		2		PC RES FXD COMP 0.2MEG .5W 5P	P						
075	01	90446208	4		REF		PC SCH DIAG 1AFD (PFDS PWR SUP)	D						
076	01	02311900	3		2		PC INJECTOR-EJECTOR, NATURAL PCB	P						
077	01	93533110	1		2		PC ROLLPIN, .1250 X .250L STL ZP	B						
078	01	24500131	0		2		PC RES FXD COMP 47 OHM 5P 1/2W	P						
079	01	94402144	3		2		PC RES FXD C FM 330 OHM 5P 1/4W	P						
080	01	95691500	0		2		PC RECT, SIL IN5616 3A 100V P-R	P						
081	01	51719000	2		2		PC HEAT SINK ELCTRN COMP FAN TOP	P						
082	01	51797410	4		062		FT T06 INS .059 DIA T/W	B						
083	01	62019900	0		050		OZ EPOXY, 2-PART 5-MINUTE CLEAR	B			16005			8350
084	01	12001500	6		2		PC DIO SIL SCHOTTKY PWR .55V/1A	P						
085	01	94240401	3		2		PC CAP FXD CER 1000PF 10P 50VDCW	P						
086	01	51906601	3		2		PC HT/SK, SEMICNDCT FIG-1 AL/BLK	P						
086	02	51906604	7		2		PC HT/SK, SEMICNDCT FIG-1 AL/BLK	P		16005	16005		8350	8350
087	01	95596512	4		1		PC RES FXD WW 51 OHM 10P 5WATT	P						
088	01	94002106	7		2		PC CAP FXD CER .02UF +80-20P 1K	P						

BUILD ARC 220

# ASSEMBLY PARTS LIST

PRINT DATE	PAGE	PLS CHANGE NO.
08-09-83	5	0018705A

DIV	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENGR. RESP.	PLS DATE			
0060	90446443	5	0	D	PC CD ASSY 1AFD	A	REL	01-08-82	FA50/A/D	08-09-83			
FOUND NO.	LT	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YTD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
009	01	94400619	6	1		PC CAP AL ELEC 33UF-10*100P 25V	P						
090	01	94402177	3	2		PC RES FXD C PH 7.5K OHM 5P 1/4W	P						
091	01	16042865	2	REF		PC PLATO FLEX DISK SUBSYS	D						
092	01	94400603	0	1		PC CAP AL ELEC 3.3UF-10*100P 50V	P						
093	01	94400606	6	1		PC CAP AL ELEC 1.0UF-10*100P 63V	P						
094	01	94864844	9	4		PC SPACER, NYLON .400	B		19945			8325	
095	01	94864845	6	16		PC SPACER, NYLON .500	B		19945			8325	
096	01	24528638	0	166	FT	T86, SZ 3/8 INSUL BLK UL PVC	B		10005A			8350	
097	01	94277400	1	2		PC STRAP, CBL TIE TYP-1 TO 5/8	B		10005A			8350	
						0094 TOTAL LINES							



90446143

REVISION STATUS		REVISION RECORD			
REV	ECO	DESCRIPTION	DATE	CHKD	APP
01	50917	REVISED (REDRAWN) PER ECO	11-28-60	WJH	WJH
02	51063	ADD -Y- TO	12-28-60	WJH	WJH
03	51098	ADD FIN 3	12-28-60	WJH	WJH
04	51176	REVISED PER ECO	12-28-60	WJH	WJH
05	51127	REVISED PER ECO	12-28-60	WJH	WJH
06	51142	ADD DIM ON PAN CARD	12-28-60	WJH	WJH
A	1525-87	RELEASED CLASS A			
B	15208	PL CHANGE ONLY	7-5-60	WJH	WJH
C	15299	REVISED PAN CABLE	4-5-60	WJH	WJH
D	15377	REVISED PER ECO	6-23-60	WJH	WJH

- NOTES:
- △ APPLY ASSY NO, REV LEVEL, LOC CODE, AND DATE CODE IN AREA SHOWN. MARK PER CDC SPEC 1021508; CHARACTER HEIGHT .12 (12 PT) COLOR WHITE.
  2. FIND NUMBERS, ELEMENT IDENTIFIERS, AND REFERENCE DESIGNATIONS ARE FOR REFERENCE ONLY AND DO NOT APPEAR ON PART
  - △ CONNECTORS J6 & J7 R/N 9, J5 R/N 7 TO BE MOUNTED ON SOLDER SIDE OF BOARD IN AREA SHOWN.

90446143 DETACHED LABEL	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		TITLE	
	TOLERANCES		FAS01A	
	PLANE	ANGLE	DATE	11-79
	DO NOT SCALE DRAWING	CHECKED BY: WJH	DESIGNED BY: WJH	11-79
APPROVED BY: WJH		DATE: 11-79	SCALE: 2/1	SHEET 1 OF 1

BUILD ARC 230

### ASSEMBLY PARTS LIST

PRINT DATE		PAGE		PRT CHANGE NO.									
06-14-83		1		00015917									
DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE			
0860	90446143	1	D	D	CD ASSY 98MD BACKPLANE	A	REL	07-16-80	FAS01A	06-14-83			
TRND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
001	01	90446142	3	1		PC PW'BD 98MD BACKPLANE	P						
002	01	51940558	3	1		PC CONN, PC BRD EDGE 8PIN UL	P						
003	01	51940578	1	1		PC CONN, PC BRD EDGE 30PIN	P						
004	01	51906101	4	1		PC CONN, PC-MTD 3 PIN NYL/SN F-1	P						
005	01	71493161	5	1		PC CHANNEL, EXTRUDED PLASTIC	P						
007	01	83465803	1	1		PC CONN+PLUG FEMALE	P		14203	14203		8047	8047
007	02	10129640	8	1		PC CONN RCPT, 50 SKT HSG PC-MTG	P						
008	01	61408892	0	1		PC CABLE SIGNAL PLATO FD	S						
009	01	83434704	9	2		PC CONN 25 PIN	P		14203	14203		8047	8047
009	02	10129648	1	2		PC CONN PLUG, 25 PIN HSG PC-MTG	P		14203			8047	
010	01	61408891	2	1		PC CABLE AC PLATO FD SUBSYSTEM	G						
011	01	61408890	4	1		PC CABLE DC PLATO FD SUBSYSTEM	G						
012	01	24501808	0	250		FT WIRE, BUSS 20AWG SOLID CU/SN	W						
016	02	65642201	1	1		PC CORD, 24.5IN FEM-RCPT 2-CNDCT	P		15294	15294		8312	8312
016	03	61409511	5	1		PC CABLE ASSY AC MUFFIN FAN	A		15917	15917		8337	8337
016	04	65642201	1	1		PC CORD, 24.5IN FEM-RCPT 2-CNDCT	P		15917				
017	01	51863202	1	1		PC CONN, 60POS BD-EDGE FIG-1 AU	P						
018	01	94288024	6	6		PC LKG DEVICE, CONN TYP 4 W/TYP3	P		14453	14453		8051	8051
018	02	10252501	4	6		PC SCR-LOCK, CONNECTOR CONFIG-8	P						
019	01	71493091	4	1		PC PLATE, I/O CONNECTOR	P						
020	01	24528645	5	375		FT TBG, NO. 4 INS CLR UL PVC	B		15917			8337	
021	01	94277400	1	1		PC STRAP, CBL TIE TYP-1 TO 5/8	B		15917			8337	

BUILD ARC 230

### ASSEMBLY PARTS LIST

PRINT DATE		PAGE		PRT CHANGE NO.									
06-14-83		2		00015917									
DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE			
0860	90446143	1	D	D	CD ASSY 98MD BACKPLANE	A	REL	07-16-80	FAS01A	06-14-83			
TRND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
						0022 TOTAL LINES							



No wire lists are contained in this manual. The following wire list document numbers are provided for reference purposes if needed.

<u>Title</u>	<u>Document Number</u>	
	<u>Preproduction Units</u>	<u>Production Units</u>
60-Hz AC Entry Panel Wiring	61408888	61409023
50-Hz AC Entry Panel Wiring	61408889	61409024
DC Cable Wiring (Backpanel)	61408890	61408890
AC Cable Wiring (Backpanel)	61408891	61408891
Signal Cable Wiring (Backpanel)	61408892	61408892