95445077

COMPUTER PERIPHERALS, INC.®

MICROPROCESSOR BASED-
ELECTRONIC VERTICAL FORMAT UNIT (EVFU)

LINE PRINTER OPTION For:
CT103, CT105, CT106, CT1A1D/E/G/H/K/M/R/T/Y,
CT1A6A/E/F/G/J/K/M/T/Y/Z,
CT1B2B/C/D/E/H/K/L/M/N/P,
CT1D7A/F/G/H/J/K/L/M/N/P/R/Y,
CT1D8A/F/G/H/J/K/L/M/N/P/R,
CT1F4C/D/E/F/L, CT1H6A/C, CT1H7A/B/D/E,
CT1A5A (6420-201 with K-034 Kit) and
CT1A7A (6420-101 with K-034 Kit)
CT1J1B, CT1J2B

SPECIAL OPTION MANUAL

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REVISION RECORD

REVISION	DESCRIPTION
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G July, 79	Revised to incorporate ECO s: PH99999-P/L corrections, PH16037-Shrink sleeve, PH16103- Self tapping screw. PH16102-P7 and P8 Reverse polarity.
H OCT. 79	Revised to incorporate ECO's: PH16259-Changed Mtg. Hardware, PH16158-Added label, PH16267- Added new EVFU assy, PH16141 added new EVFU assy.
I APR., 80	Revised to incorporate ECO's: PH16144- Replace Terminal strip with wire splice, PH16320-Auto insertion bd.
J July, 80	Revised to incorporate ECO's: PH16161- Angle iron PC holder, PH16375-format tape.
K OCT., 80	Revised to incorporate ECO's: PH16466-Dip Switch, PH16903-Chg. to Electrolytic capacitors.
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Revision Procedure:

The revision record page is revised for each revision package to reflect the revision sequence: Pre-Release, Release, Rev. A, Rev. B, Rev. C, etc. The revision record page also provides a brief description of each change. A manual update revision package will be available for manuals after the Release revision of the manual. Each page revised in an update revision package will have the month and year printed in the lower right hand corner. This same date would appear in the revision column above, just below the revision identification. An Instruction Sheet cover is with each revision package, explaining page removal and insertion and reason for the change. The instruction sheets for revision packages are then to be placed at the back of the manual as a record of the change.

PREFACE

This publication contains reference and field service information required for the Printer Band Sharing (PBS) and Printer Band (PB) Line Printer. This manual provides installation, operation, principles of operation, maintenance, corrective maintenance, parts replacement, with logic and timing diagrams. This manual is intended to provide operators, customer engineers, and diagnostic engineers with the information required to understand and function the Line Printer with the Electronic Vertical Format Unit (EVFU).

ASSOCIATED PUBLICATIONS

Preparation and Instruction Manual, Publication Numbers:
(Only one applicable per model printer.)

44677815 For Models CT1A1, CT1A6, CT1B2, CT1H6, CT1H7.
44677817 For Models CT103, CT105, CT106.
44677819 For Models CT1A5, CT1A7.
95445081 For Models CT1D7, CT1D8, CT1F4, CT1J1, CT1J2.

Includes Manual Sections:
- Operation
- Installation and Checkout
- General Description
- Principles of Operation

Field Service Manual, Publication Numbers:
(Only one applicable per model printer.)

44677816 For Models CT1A1, CT1A6, CT1B2, CT1H6, CT1H7.
44677818 For Models CT103, CT105, CT106.
44677820 For Models CT1A5, CT1A7.
95445092 For Models CT1D7, CT1D8, CT1F4, CT1J1, CT1J 2.

Parts Identification Manual, Publication Numbers:

95445066 For Models CT1A1, CT1A6, CT1H6, CT1H7.
95445052 For Model CT1B2.
95445067 For Models CT103, CT105.
95445050 For Model CT106.
95445065 For Models CT1A5, CT1A7.
95445083 For Models CT1D7, CT1D8, CT1J1, CT1J2.
95445092 For Model CT1F4.

Interface Adapter Manual (9322 Compatible Interface)
(Publication-Number 95445080 Rev. Release or later)

For Models CT1A1 G/H/T, CT1A6 J/K/T, CT1B2C/R.

7300 Interface Adapter Manual, Publication Number:

95445088 For Models CT1A5, CT1A7.

Computer Peripherals, Key to Logic Symbology
(Publication Number 95390100)

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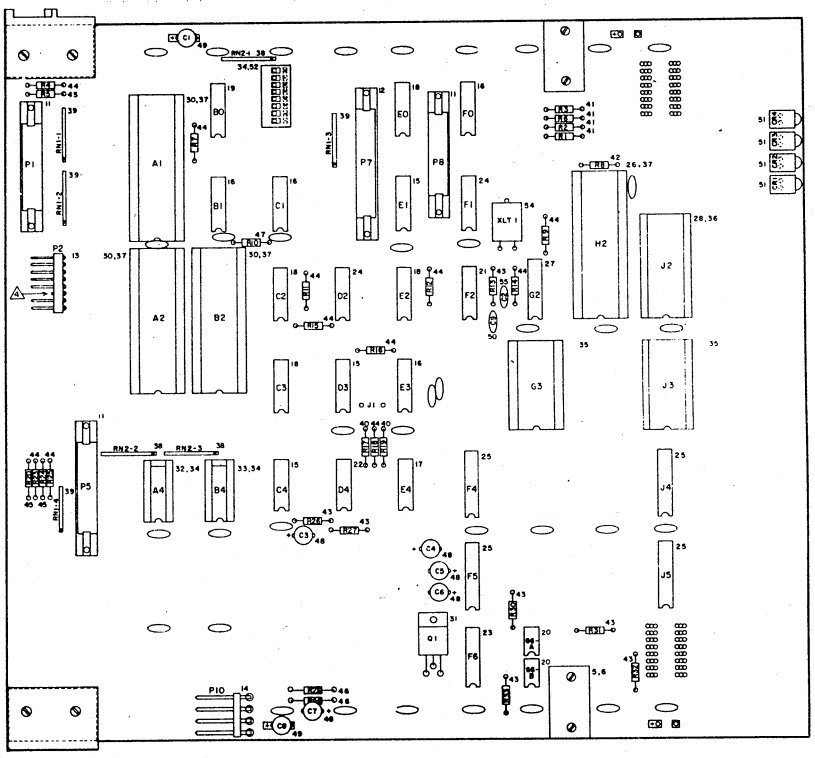
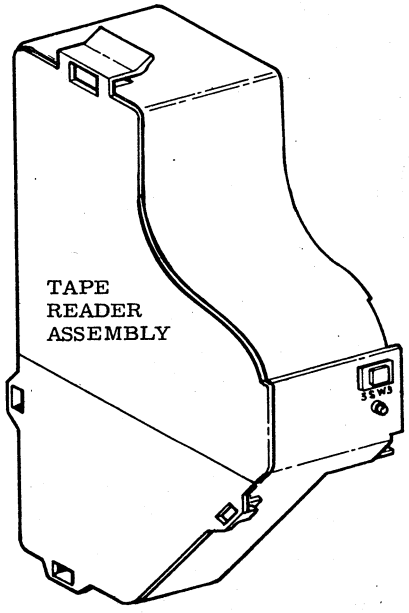


ELECTRONIC VERTICAL FORMAT MICROPROCESSOR ELECTRONICS



ELECTRONIC VERTICAL FORMAT UNIT

INTRODUCTION

GENERAL DESCRIPTION

The four/eight or twelve channel electronic vertical format unit is a microprocessor-based assembly. It is an option which is installed on those printer models listed on the front cover. The assembly uses an optical reader to initially read the format information supplied by a punched tape. This information is then stored in the format tape buffer memory and subsequently addressed by the forms vertical position count to control the vertical motion of the forms being printed. Up to twelve channels may be used to vary the line spacing patterns by punching the format tape for the pattern desired. An alternate mode may be available in the future without the tape reader assembly, whereby the format buffer can be loaded over the interface data lines. Refer to the Principles of Operation, Unique EVFU Assemblies for the number of channels used on different printer models.

OPERATION

INTRODUCTION

This section has been included as an operator's information guide for the electronic vertical format unit. The section describes the operation of both the E. V. F. U. assembly and the format tape reader.

EVFU OPERATION

The printer will print at either six lines per inch or eight lines per inch depending on the position selected by the 6/8 LPI switch on the vertical reader. (The reader is located at the front left of the printer mechanism). Depending on the line spacing mode selected the electronic vertical format unit (EVFU) buffer memory must be loaded initially by a format tape punched for the line spacing mode selected in order to supply the correct formatting information. Before the printer is powered-on a format tape for the correct line spacing mode (6 or 8 LPI) must be installed. Format tapes are punched using the 6 LPI line marks on the tape, even when punching for 8 LPI. The one inch marks across the format tape cannot be used on format tapes punched for 8 LPI use. The 6/8 LPI switch position on the printer must coincide with the format tape pattern installed (6 or 8 LPI). When the printer is powered-on, an initialization of the electronics automatically reads the format tape. When the LED (red) indicator on the front of the EVFU extinguishes, the Start (Stop/Start) switch may be pressed. The format buffer memory may be reloaded manually anytime by pressing the Stop Switch, (Stop/Start or Ready /On Line) installing a different format tape in the reader, and pressing the read button. The format reader is located on the left side of the printer and the Read switch is on the front with the red Read LED indicator. When the I/O Load Mode is made available and the EVFU is incorporated without a reader assembly, then the processor program must initially load the EVFU buffer memory.

Automatic Operation with Tape Reader

1. Printer power off. (Circuit breaker on the lower right part of pedestal in the down position).
2. Raise bonnet and open format reader door downward.
3. Open the format tape retainer by pressing in and turning counter-clockwise on the knurled post next to the reader sprocket.
4. Install the format tape with the direction arrows pointing in the clockwise direction. Refer to the tape installation label on the format reader door for tape positioning.
5. Turn the knurled post clockwise to close the tape retainer.
6. Close the reader door and place the printer's power on/off circuit breaker on the lower right part of pedestal in the up position.
7. Within a few moments the red LED indicator on the front of the reader will come on, the tape will be read and the light will go out. If the light fails to go out within a few minutes refer to the chart on EVFU Fault Recovery.
8. Press the Start switch (Stop/Start or Ready/On Line) and begin data transfer.

Manual Tape Reload

1. If the format tape is not installed, or is to be changed, follow the preceding procedure as far as loading the tape without powering the printer off and on.
2. With the tape loaded, place the printer in a not-ready mode (Stop/Start or Ready/On Line), then press the Read switch on the front of the reader.
3. When the Read LED goes out, press the Start switch (Stop/Start or Ready/On Line), placing the printer in a start condition.

FORMAT TAPE PUNCHING

Format tapes must be punched only at 6 LPI. (Use Format Punch part number 44677817 or equivalent.) When a tape is to be punched for 8 LPI, the punch must be set to 6 LPI on automatic punches, or the 6 LPI format tape marks on the tape must be used for manual punches. Although the tape is punched at 6 LPI, when the printer's 6/8 LPI switch is in the 8 LPI position, the paper motion will be performed at eight lines per inch. When punching a format tape for 8 LPI, the 6 LPI marks must be counted between punches because the half inch indicator lines across the tape will not apply at 8 LPI.

The format tape length must equal the vertical length of the form in inches as counted by the 6 LPI marks on the tape. At 6 LPI, every six marks will equal an inch of form. At 8 LPI, every eight 6 LPI marks will equal an inch of form. On forms with a vertical length less than 11 inches (279mm), the format tape would be too short to go around the reader, so the tape must be made two or more times the vertical length of the form. Each length of form added to the format tape must be punched the same as the first length or an error will be detected. The maximum length of tape that can be installed is 29.33 inches (745mm).

Tape Procedure

The format tape must be spliced to make a loop with a circumference between 11 and 29 inches (279-737mm). The length of the tape must be increased one or more form lengths for forms less than 11 inches (279mm).*

1. Measure the length of the form in inches. Multiply the number of inches by six for 6 LPI, or eight for 8 LPI.

2. Count out the number in step 1 on the 6 LPI marks which are located on the channel 12 side of the format tape (44713800).

3. If a multiple length tape is being made, repeat the count for each length.

4. Check to be sure the 6 LPI marks have been counted and not the 8 LPI. Cut the tape at the point of final count with scissors.

5. Hold each end of the tape with a hand. Position the tape so the direction arrows point in a clockwise direction. Overlap the two tape ends by three 6 LPI marks placing the right hand edge over the left end. Draw a mark on the left side at the end of the overlap.

6. Use a thin coat of rubber cement (Duco cement or a similar pliable, non-brittle adhesive) on the top of the left edge of the tape as marked.

7. Allow the recommended adhesive to air dry until tacky, then fold the right end of the tape over the adhesive and press.

8. Clean off excessive adhesive with Chlorothene-Nu or other suitable solvent. Keep in a well ventilated area.

9. Position the loop so the arrows are going to the right, the channel on the outside is one, the channel on the inside is twelve. Punch a top of page punch in channel 1 (or optional channel 8) at your selected line zero (0). Printer models CT1A6A, CT1H7B, and CT1B2N use channel eight (8) as top of form.

10. If your loop is a multiple of the form length, then count the 6 LPI marks to the left plus one more for the number of lines calculated in step 1. Count the punch as one when counting to the left for the next punch. Place the next top of form mark in channel 1 (or optional channel 8). Repeat for any additional multiples of the form length.

11. If the bottom of form channel is known proceed to the next step. A Customer Engineer must remove the bonnet and its ground strap, the pedestal rear cover and the paper bail. On the 7PC6 board at the top and a little to the left are located a strip of dip switches numbered 1 to 8 from the bottom up. The three top switches determine the bottom of form channel. If switch 7 and 8 are open the channel twelve is bottom of form. If 6 and 8 are open then channel 8 is bottom of form, If 6 and 7 are open then channel 2 is bottom of form.

EQUIPMENT NUMBER	BOTTOM OF FORM
CT103, CT105, CT106	CHAN 2
CT1D7, CT1D8, CT1F4	CHAN 12
CT1A5, CT1A7	CHAN 12
CT1A1Y, CT1A6A,I, CT1B2K/L/P	NONE
CT1B2N	CHAN 2
CT1H6A, CT1H7B	CHAN 2
CT1A1R, CT1H7D/E, CT1H6C	NONE
CT1A6Z, CT1H7A, CT1B2M	CHAN 12
CT1J1B, CT1J2B, CT1F4L	CHAN 12
CT1H6D/E, CT1H7H, CT1B2U	CHAN 12
*All other -check 7PC6	

12. Select the bottom form positioning remembering that with auto perf skip selected, (7PC6 S2 closed) the forms will skip to channel 1 (or optional channel 8) when bottom of form is detected. Count off the 6 LPI marks on the bottom of forms channel and punch in the bottom of forms for each form length on the tape.

13. The other channels may be punched as required in any pattern of skips desired as long as each channel's pattern is exactly repeated for each form length multiple.

CHANNELS FOR PROGRAMMING	
EQUIPMENT NUMBER	CHANNELS
CT103, CT105, CT106	3-12
CT1D7, CT1D8, CT1F4	2-11
CT1A5, CT1A7	2-11
CT1A1Y, CT1B2K/L/P	-0-
CT1A6Z, CT1H7A, CT1B2M	3-12
CT1H6A, CT1H7B, CT1B2N	3-12
CT1A1R, CT1H7D/E, CT1H6C	3
CT1J1B, CT1J2B, CT1F4L	2-11
CT1A6Z, CT1H7A, CT1B2M	2-11
CT1H6D/E, CT1H7H, CT1B2U	2-11

14. A sample, punched, diagnostics format tape (part number 50370404) is included as Figure 2-1.

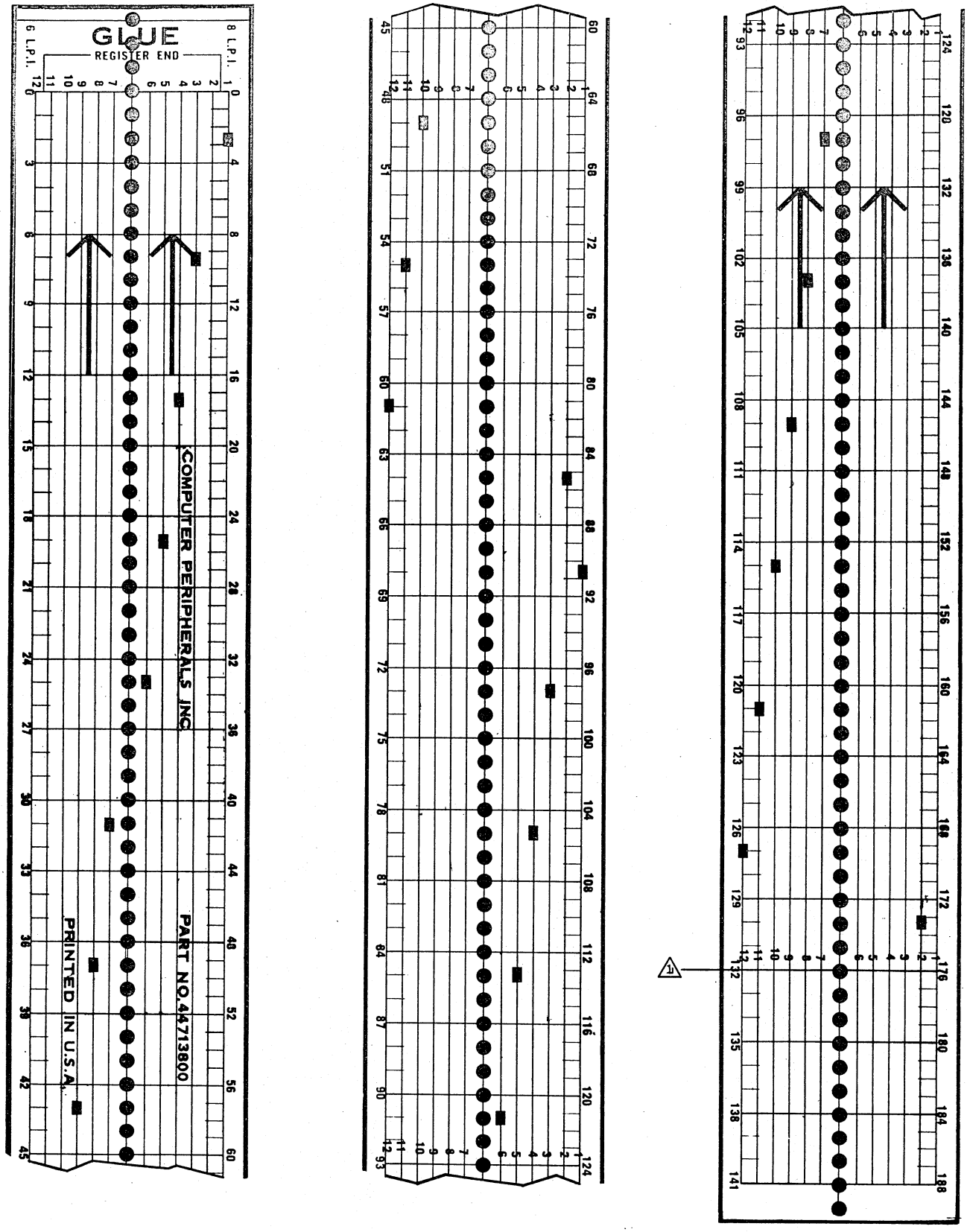


FIGURE 2-1. DIAGNOSTICS FORMAT TAPE (PART NUMBER 50370404)

NOTES:

1. CUT TAPE HERE AND GLUE 132 LINE DIRECTLY OVER THE ZERO LINE. REPUNCH THE HOLES IN THE OVERLAPPED FRAMES. (6 LPI DOUBLE FORM LENGTH)

TABLE 2-1. OPERATOR FAULT ISOLATION
NOTE: ALWAYS REFER TO THE FAULT ISOLATION TABLE IN THE PRINTER MANUAL SUPPLIED

SYMPTOM	PROBABLE CAUSE	ACTION REQUIRED
A. Read LED on Tape reader remains lit after printer is power up and printer will not move paper or go to START. Also refer to B.	A1. Bad program ROM check during power up. A2. Bad RAM check during power up. A3. Problem is not operator correctable.	A1. Power off and repeat power up sequence. A2. Power off and repeat power up sequence. A3. Call Service Representative.
B. Read LED on tape reader remains lit after printer is powered up and printer will not go to START. Pressing PAGE EJECT advances forms only one line. Also refer to A.	B1. No format tape installed. B2. Broken or damaged format B3. No punch made in TOF channel for top of form. B4. Number of 6 LPI marks between TOF punches exceeds 175.	B1. Installed a punched format tape. B2. Replace Tape. B3. Check Tape and punch or replace. B4. Repunch if possible or replace tape.
C. Printer goes to STOP and Read LED is lit, printer will not go to START, depressing PAGE EJECT advances forms one line.	C1. EVFU parity error detected. C2. Problem is not operator correctable.	C1. With tape in EVFU press Read switch, Read LED out, press START. C2. Call the Service Representative.
D. Paper runaway, printer goes to STOP, Read LED lit, printer will not go to START.	D1. Printer received an illegal format control code. D2. Format channel selected that was not punched on the tape used to load the EVFU	D1. Check program for illegal format codes. Reload try again. D2. Check for any unpunched tape channels called out in the program. Reload and try again.
E. Printer goes to STOP, Read LED lit, printer will not go to START, PAGE EJECT doesn't move forms.	E1. No paper motion occured upon command from the data source, printer defect.	E1. Power the printer off, pause power back on, press PAGE EJECT and if forms advance press START. If forms do not move call a Service Representative.
F. Line spacing is incorrect.	F1. Wrong length form installed for program being used. F2. Wrong EVFU Tape for form pattern. F3. Problem is not operator correctable.	F1. Check the form length . F2. Check EVFU Tape against form pattern. Refer to Forms Loading procedure and setup Top Of Forms position. F3. Call the Service Representative.

PRINCIPLES OF OPERATION

ELECTRONIC VERTICAL FORMAT UNIT (EVFU)

The following is a brief description of a four/eight or twelve channel electronic vertical format unit with a format tape reader. The Electronic Vertical Format Unit with Format Tape Reader is a microprocessor based assembly which stores format information from a 12 channel reader assembly in a 176 byte Format Tape Buffer (FTB). When the printer is powered on the format tape is automatically read into the FTB. Further loads are accomplished via a push button switch on the Reader Assembly. The EVFU is designed as a 12 channel unit and the option of four/eight or twelve channels is determined by the printers interface or special interface adapter in conjunction with the selection of the bottom of form channel on the EVFU board. The first line to be used on the forms is called Top Of Form (TOF) and is channel 1 from the format tape. A Top Of Form Option is available using channel 3 as TOF.

Standard features of this option include limited paper runaway detection, FTB parity error detection, ROM checks, RAM checks, Customer Engineering (C.E.) Diagnostic LEDs and Auto Perf. Skip.

The format tape reader is designed to read a format control tape (P/N 44713800) punched per Format Tape Preparation Instruction. The tape must be punched at 6 lines per inch. Printout will be at either 6 or 8 lines/inch depending on the position of the 6/8 line selection switch at the code disc reader of the vertical advance motor. The reader will accommodate tapes up to 29.33 inches (745mm) length, enabling format control of 22 inches (559mm) of paper printing at 8 lines/inch. The tape will be driven by a sprocket coupled to the output shaft of an A. C. timing motor and read by an optical reader.

Control Code Definition (Basic EVFU Assembly 44673008, 44675593, and 44681211 only.)

Data Bit 9 when low indicates to the common controller that the remaining data lines contain control code information. Refer to Table 3-1 for basic EVFU's with DIL (jumpers) networks in 7PC6 board locations A4 and B4. For other EVFU assemblies refer to the back of this section, Unique EVFU Assemblies.

Error Checking:

The EVFU checks for the following errors:

a. Bad Program ROM (Read Only Memory)
b. Bad RAM (Random Access Memory)
c. Improperly Punched Format Tape
d. Format Tape Buffer Parity Error
e. Paper Runaway
f. No Paper Motion Upon Command.

Bad Program ROM

During the Power On Sequence the Program ROMs are verified against a check sum byte. If a bit in Program ROM other than in the ROM check routine has changed, the printer will remain in a Not Ready state. Refer to the Customer Engineer LEDs and ROM Check in the following text. To restart, the printer must be powered off then on. If the problem persists, a CE will be required.

TABLE 3-1. CONTROL CODES

Data Bits	Seven bit line counter with twelve channel EVFU	
9	8 7 6 5 4 3 2 1	
1	0 0 0 0 0 0 0 0	0 Line Skip
1	0 0 0 0 0 0 0 1	1 Line Skip
1	0 0 0 0 0 0 1 0	2 Line Skip
	Thru	
1	0 1 1 1 1 1 1 0	126 Line Skip
1	0 1 1 1 1 1 1 1	127 Line Skip
1	1 x x x 0 0 0 0	Skip to Channel 1 T.O.P.
1	1 x x x 0 0 0 1	Skip to Channel 2 *
1	1 x x x 0 0 1 0	Skip to Channel 3
	Thru	
1	1 x x x 0 0 1 1	Skip to Channel 4
1	1 x x x 0 1 0 0	Skip to Channel 5
1	1 x x x 0 1 0 1	Skip to Channel 6
1	1 x x x 0 1 1 0	Skip to Channel 7
1	1 x x x 0 1 1 1	Skip to Channel 8 *
1	1 x x x 1 0 0 0	Skip to Channel 9
1	1 x x x 1 0 0 1	Skip to Channel 10
1	1 x x x 1 0 1 0	Skip to Channel 11
1	1 x x x 1 0 1 1	Skip to Channel 12 *
1	1 x x x 1 1 0 0	Illegal Cont. Code
1	1 x x x 1 1 0 1	Illegal Cont. Code
1	1 x x x 1 1 1 0	Illegal Cont. Code
1	1 x x x 1 1 1 1	Illegal Cont. Code

Illegal control codes will result in a controlled paper runaway of less than 195 lines.

*Bottom of Forms (BOF) is Channel 2 as the standard. Optionally Channels 8 or 12 may be selected.

Bad RAM

During the Power On sequence all RAM locations are successively checked by writing and reading all "ones" and "zeroes." If a failure occurs, the printer will remain in the Not Ready state. Refer to the Customer Engineer LED's and RAM Check in the following text. To restart, the printer must be powered off then on. If the problem persists, a CE will be required.

Improperly Punched Format Tape

The Controller checks the Format Tape Reader for the following:

a. That the Format Tape is present.
b. That the Format Tape Reader motor turns.
c. That at least one top of form channel 1 or optional 8 is present on the tape.
d. That the number of lines between top of form is not greater than 175. The FTB contains only 176 bytes.
e. Verification that the channel information read into the FTB during the first pass (Load Cycle) is the same as the channel informaiton read into the FTB on the second pass (Verify Cycle).

If for some reason a Load/Verify Cycle differs, up to 5 Load/Verify Cycles will be tried before a fault is given.

NOTE
FOR DOUBLE LOOP FORMAT TAPES (TAPES WHICH HAVE THE CHANNEL INFORMATION REPEATED TWICE), BOTH HALVES OF THE LOOP MUST CONTAIN IDENTICAL CHANNEL INFORMATION.

If an error is detected, the printer will remain in the Not Ready state, (Depression of the Start/Stop switch will not cause the printer to go Ready), the LED on the Reader Assembly will be lit and depression of the Form Feed Switch on the Operators Control Panel will result in a single space. Refer to the following text on Operator switches and Indicators. A restart can be initiated by depressing the switch on the Reader Assembly.

Format Tape Buffer Parity Error

During paper motion the Format Tape Buffer (FTB) is constantly being checked for odd parity. If even parity is detected, the printer will go Not Ready and the light on the Reader Assembly will be lit. Refer to the following text on Operator Switches and Indicators. Depression of the Form Feed switch will cause a single space to occur. Note that since the printer load cycle can overlap the paper motion cycle, a second line will be printed after the occurrence of the parity error, if the print buffer was loaded prior to the detection of the parity error. If the parity error is detected during a Line Count control code, paper motion will continue per the line count command. If the parity error is detected during a Format Channel control code, the paper motion will be terminated at the line in which the parity error occurred.

To cause the printer to go READY, the FTB must be reloaded and the START/STOP switch depressed.

Paper Runaway

A controller paper runaway will result if a Format Control code is received which is either illegal or calls for a channel not loaded in the FTB. Paper will slew a maximum of 195 lines then stop. The printer will go Not Ready and the light on the Reader Assembly will be lit. To cause the printer to go Ready the FTB must be reloaded and the Start/Stop switch depressed. Refer to the following text on Paper Runaway. Refer to the printer manual for fault indicators on paper runaway if incorporated.

No Paper Motion Upon Command

When the paper is commanded to move and no action occurs within a predefined time, a fault is generated. The printer goes to the NOT READY state. To recover the printer must be powered off and then on. Refer in the following text to Printer Broke.

Operator Switches and Indicators

The format Tape Unit Reader assembly contains one push button switch and LED. Refer to the printer manual for other indicators.

The switch, when depressed, causes the contents of the vertical Format Tape to be read into the FTB. Depression of this switch causes the LED to light and it will be extinguished when the FTB has been loaded and checked. If the LED should remain lit after the Format Tape Reader Motor turns off, the Format Tape Buffer is not loaded and the printer can not be made READY depressing the START/STOP switch.

In general, during operation of the printer, any one of the faults listed under Improperly Punched Format Tape will cause the LED to be lit. If the fault is not one of the errors which require the printer to power off and then on as part of the recovery scheme (Bad Program ROM, Bad RAM, or No Paper Motion Upon Command), the printer may be made READY by loading the FTB and then depressing the START/STOP push button.

Note that the push button switch on the Reader Assembly should only be depressed when the printer is in the NOT READY state. If the printer is in the READY state and the push button is depressed, the printer will be put into the NOT READY state.

Customer Engineer LED's

These LEDs provide the Customer Engineer with diagnostic error status. Four binary coded LEDs are mounted on the EVFU controller card. The names associated with the binary decodes are shown in Table 3-2.

TABLE 3-2. LED CODES

LOCATION —— TOP ——→ BOTTOM				
NAME	B3	B2	B1	B0
	CR4	CR3	CR2	CR1
ROM Check	0	0	0	1
RAM Check	0	0	1	0
RDR Load Cycle	0	0	1	1
Paper Runaway	0	1	0	0
FTB Not Loaded	0	1	0	1
Paper Motion	0	1	1	0
FTB Parity Error	0	1	1	1
Printer Broke	1	0	0	0
Reserved	1	0	0	1

ROM Check

When the above status is displayed, a program ROM is bad. Refer back to Control Code Definition.

RAM Check

When the above status is displayed, one or more of the RAM's are bad unless the 8 bit Line Counter Only Option is present. Refer to the following text on Line Counter (8 Bit).

Reader Load Cycle

The above will be displayed whenever the last routine executed is the loading of the FTB from the Vertical Format Tape Reader Assembly. If the above is displayed and the LED on the Reader Assembly is lit, an error, as detailed in the previous text under Improperly Punched Format Tape, has been detected.

Under these conditions, depression of the Form Feed Switch/ Indicator on the Operator's Panel will result in a single space and a status of PAPER MOTION to be displayed.

Paper Runaway

This status will be displayed when a paper runaway is detected. This status will continue to be displayed until the FTB has been reloaded. The PAPER RUNAWAY status is a higher priority on the LED status display than PAPER MOTION and will take precedence when a paper runaway is detected.

Format Tape Buffer Not Loaded

This status will be displayed when the Form Feed switch is depressed and the FTB is not loaded. To cause the printer to go READY the FTB must be loaded and the START/STOP switch depressed.

Paper Motion

This status will be displayed whenever the last routine executed is a Paper Motion unless a FTB PARITY ERROR, PAPER RUNAWAY, or FTB NOT LOADED is present.

FTB Parity Error

This status will be displayed when a FTB Parity Error is detected. This status will continue to be displayed until the FTB has been reloaded. The FTB PARITY ERROR status has priority on the LED status display over the PAPER MOTION or PAPER RUNAWAY status.

Printer Broke

This status will be displayed when a Paper Motion command is executed and paper fails to move. To recover the printer must be powered off and then on.

STANDARD FEATURES

Autoperf Skip (APS)

With this feature, printing is prohibited between Bottom of Form and Top of Form. Any Paper Motion commanded to stop in this area will automatically be terminated at Top Of Form.

If a Line Counter or VFU command indicates a paper slew past Top of Form, paper will stop per the specified command. The Autoperf Skip feature is selectable via a dip switch on the EVFU board assembly.

No Auto perf Skip Option

The Autoperf Skip feature may be disabled-dip switch selectable on the printed circuit board.

Bottom of Forms (BOF) Selection Option

A basic printer uses Channel 2 as BOF. Channels 8 or 12 may be selected as bottom of forms by dip switch. Refer to the Board Dip Switch setting.

Optional Control Code Translator

With the addition of a control code translator PROM, one of two basic translations can be accomplished. Refer to the back of this section for Unique EVFU Assemblies. These are as follows:

1. $\overline{DB9=0}$
   When using $\overline{DB9=0}$ as a bit defining that the contents of the remaining data bits represent a control code, the lower 8 bits of the incoming control code field as defined in Table 3-1 may be altered to any configuration desired.
2. $\overline{DB9}$=1 (DB9 unused)
   By not using DB9, the basic ASCII control codes for CR, LF, FF, and VT may be utilized.

Line Counter

The EVFU board offers a line counter for paper motion when the VFU is not used. A basic printer uses a 2 bit, 4 bit, 6 bit, or 7 bit line counter with an optional 8 bit available. When the line counter is selected by the controlling data bit the code is stored. During paper motion the code is decremented by each vertical line until zero is reached, paper motion is stopped at zero count.

Line Counter (8 Bits)

This option is implemented when the 12 Channel Reader Assembly is not assembled. The control codes for this option are as shown in Table 3-3.

TABLE 3-3. LINE COUNTER CODES

Data Bits	Definition
9 8765 4321	
1 0000 0000	0 Line Skip
1 0000 0001	1 Line Skip
Thru	
1 1111 1110	254 Line Skip
1 1111 1111	255 Line Skip

With this option, the following ERROR CHECKING is not provided:

1. IMPROPERLY PUNCHED FORMAT TAPE
2. FORMAT TAPE BUFFER PARITY ERROR
3. PAPER RUNAWAY

In addition, the following CE LED display patterns will not function:

1. READER LOAD CYCLE
2. PAPER RUNAWAY
3. FTB NOT LOADED
4. FTB PARITY ERROR

With this option, RAM CHECK CE LEDs will remain illuminated after the Power On sequence until a paper motion command is received. This status, "RAM CHECK", indicates a true error only if the printer cannot be placed into READY mode via the START/STOP switch and none of the other detectable faults of the standard printer exists.

BOARD DIP SWITCH SETTING

The operation of the EVFU board can be modified by the positioning of up to eleven DIP switches mounted on the printed circuit board 7PC6. The switches SW1 through SW8 are numbered from the bottom up on the PCB. SW10 and SW11 are optional switches numbered from the top down. (CT1J1B, CT1J2B, and CT1F4L printers only). The board operates in two basic modes; An I/O Load mode (Not Released), in which the format buffer memory is loaded over the interface data lines. A Tape Reader Load mode, in which the format buffer memory is loaded by a punched tape installed in a reader assembly. The DIP switches are positioned per the following paragraphs.

Tape Reader Load Mode. This mode is selected by positioning SW1 open (down on the right). In this mode a tape reader is installed on the left side of the printer to read the format tape installed. Auto. Perf. Skip (APS) is an option selected by positioning SW2 open (down on the right), which prevents printing on the fold of the forms. The bottom of forms channel is selectable by SW6,7 and 8 for format channels 2,8, or 12. Switch SW3 should be open (down on the right), and SW4 should be closed (down on the left). A bottom of forms channel is selected by closing (down on the left) one of the switches, SW6, SW7, or SW8, and leaving the other two open (down on the right). Switch SW6 selects channel 12, SW7 selects channel eight, and SW8 selects channel 2.

An eight bit line counter option can be selected by having SW1, and SW5 open (down on the right) and SW2 closed (down on the left). The bottom of forms switches SW6, 7, and 8 are not functional with eight bit line counter selected. The Auto. Perf. Skip option (SW2) cannot be selected when using this option.

For CT1J1B, CT1J2B, and CT1F4L printers only, paper motion CR=0 is selected by positioning SW11 open and SW10 closed. CR=1 is selected by positioning SW10 open and SW11 open.

(PRE-RELEASE INFORMATION FOR I/O LOAD)

I/O Load Mode. This mode is selected by positioning SW1 closed (down on the left). In this mode a tape reader is not installed. Auto. Perf. Skip is an option selected by positioning SW2 open (down on the right). Switch SW3 is used for test purposes to load either a 6 LPI or 8 LPI pre-programmed pattern for an 11 inch form into the format tape buffer. A pattern of 88 lines is loaded for 8 LPI when SW3 is open (down on the right). For 6 LPI, a pattern of 66 lines is loaded when SW3 is closed (down on the left). Switch SW4 controls the EVFU loaded status to an interface adapter. With SW4 closed (down on the left) status is not reported to the interface adapter. Normally SW4 is open (down on the right) to provide EVFU loaded status.

The setting of the bottom of form switches, SW6,7 and 8 are irrelavent in any I/O Load Mode.

UNIQUE EVFU ASSEMBLIES

The input codes to the EVFU can be modified by the use of Translator ROM's at the input of the EVFU board (7PC6). A standard EVFU board uses DIL network chips, which are straight through jumpers at the EVFU input. Unique code translation is performed by replacing the DIL chips with programmed ROM's. The following EVFU assemblies modify Table 3-1 as shown.

EVFU Assembly 44673263 PBS, 44675594 PB
(For CT103, CT105, CT1A1G/H/T, CT1A6J/K/T, CT106, CT1B2C/R)

A 12 channel EVFU with seven data bit interface, and six bit line counter. See Table 3-4. Data bit 6 is used to select either the line counter or the VFU.

TABLE 3-4. BIT 6 DETECT EVFU

LINE COUNTER

Bit 6	5	4	3	2	1	0	Command
0	0	0	0	0	0	0	Suppress Space
0	0	0	0	0	0	1	Single Space
0	0	0	0	0	1	0	Double Space
			Thru				
0	1	1	1	1	1	1	63 Spaces

EVFU 12 CHANNEL

Bit 6	5	4	3	2	1	0	Command
1	Ø	Ø	0	0	0	0	Channel 1 (Top)
1	Ø	Ø	0	0	0	1	Channel 2 (Bottom)
1	Ø	Ø	0	0	1	0	Channel 3
1	Ø	Ø	1	0	1	1	Channel 12
1	Ø	Ø	1	1	0	0	Illegal Function
1	Ø	Ø	1	1	0	1	Illegal Function
1	Ø	Ø	1	1	1	0	Illegal Function
1	Ø	Ø	1	1	1	1	Illegal Function

Notes:
Ø= Undefined State
Illegal Function = Code is loaded into the line counter and performed, a paper runaway fault is then generated.

EVFU Assembly 44673339 PBS, 44675591 PB
(For CT1D7A/F/G/H/J/K/L/M/N/P/R/Y, CT1D8A/F/G/H/J/K/L/M/N/P/R, CT1F4C/D/E/F, CT1A5A, CT1A7A).

A 12 channel EVFU with seven data bit interface, and four bit line counter. An additional interface line is used to detect the format EVFU code, Vertical Format (VF).

TABLE 3-5. BIT 5 DETECT EVFU

LINE COUNTER

VF	Data Bits 7	6	5	4	3	2	1	Lines Slewed
1	Ø	Ø	1	0	0	0	0	0
1	Ø	Ø	1	0	0	0	1	1
1	Ø	Ø	1	0	0	1	0	2
				Thru				
1	Ø	Ø	1	1	1	1	0	14
1	Ø	Ø	1	1	1	1	1	15

CONTROL CODES

VF	Data Bits 7	6	5	4	3	2	1		Lines Slewed
0	0	0	0	1	0	1	0	(PF)	1
0	0	0	0	1	1	0	0	(FF)	CHAN 1 (TOP)
0	0	0	0	1	1	0	1	(CR)	0

EVFU 12 CHANNEL

VF	Data Bits 7	6	5	4	3	2	1	Channel Selected
1	Ø	Ø	0	0	0	0	0	* (0) 1 (TOP)
1	Ø	Ø	0	0	0	0	1	* (1) 2
				Thru				
1	Ø	Ø	0	1	0	1	0	* (10) 11
1	Ø	Ø	0	1	0	1	1	* (11) 12 (Bottom)
1	Ø	Ø	0	1	1	0	0	Illegal
1	Ø	Ø	0	1	1	0	1	Illegal
1	Ø	Ø	0	1	1	1	0	Illegal
1	Ø	Ø	0	1	1	1	1	Illegal

Notes:
Ø= Undefined State
Illegal-Forms Advance One line
* Logic starts with chan. 0 instead of 1

The VF control code is sent at the end of the Data Transfer in the same manner as the Form Feed (FF) Paper Feed (PF), and carriage Return (CR) control codes which are without the Vertical Format (VF) signal.

EVFU Assembly 44676556 PBS, 44676555 PB
(For CT1A1M, CT1A6M, CT1B2D)

A 12 channel EVFU with nine data bit interface, and seven bit line counter. With this EVFU the ASCII control codes Line Feed (LF), Form Feed (FF), and Carriage Return (CR) will be decoded regardless of the status of data bit nine. See Table 3-6. The EVFU reader codes are the same as the standard printer, shown at the front of Section 3, Table 3-1.

TABLE 3-6. BIT 8 DETECT EVFU

LINE COUNTER

Data Bits 9	8	7	6	5	4	3	2	1	Lines Slewed
1	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	1	1
1	0	0	0	0	0	0	1	0	2
					Thru				
1	0	0	0	0	1	0	0	1	9
*1	0	0	0	0	1	0	1	0	1
1	0	0	0	0	1	0	1	1	11
*1	0	0	0	0	1	1	0	0	Skip to Chan 1
*1	0	0	0	0	1	1	0	1	0
1	0	0	0	0	1	1	1	0	14
1	0	1	1	1	1	1	1	0	126
1	0	1	1	1	1	1	1	1	127

Notes:
*= Changed Codes

EVFU Assembly 44678324 PBS, 44677329 PB
(For CT1A1Y, CT1B2K/L/P, CT1A6Y)

The control codes for paper motion are sent at the end of the Data Transfer. The only paper motion codes responded to are Line Feed (LF, octal 12), Vertical Tab (VT, octal 13), Forms Feed (FF, octal 14), and Carriage Return (CR, octal 15). This EVFU is used with a seven data bit interface which is converted to eight bits by the EVFU ROM's for internal use on the EVFU board. Only two EVFU channels are used along with a one bit line counter. See Table 3-7.

TABLE 3-7- TWO CHANNEL EVFU

LINE COUNTER

Data Bits 8	7	6	5	4	3	2	1	Lines Slewed
Data Code								
0	0	0	1	0	1	0	(LF)	
EVFU Code								
0	0	0	0	0	0	0	1	1
Data Code								
0	0	0	1	1	0	1	(CR)	
EVFU Code								
0	0	0	0	0	0	0	0	0

EVFU 2 CHANNEL

Data Bits 8	7	6	5	4	3	2	1	Channel Selected
Data Code								
0	0	0	1	0	1	1	(VT)	
EVFU Code								
1	0	0	0	0	0	1	0	3
Data Code								
0	0	0	1	1	0	0	(FF)	
EVFU Code								
1	0	0	0	0	0	0	0	1 (Top)

EVFU Assembly 44677330 PBS, 44677332 PB
(For CT1A6Z, CT1H7A, CT1B2M)

An EVFU assembly for a 7 data bit I/O with ASCII control codes. The ROM's on the EVFU board are configured for a 12 channel VFU with a 6 bit line counter. Channel 1 is Top Of Form and Channel 12 is Bottom Of Form. See Table 3-8.

TABLE 3-8. BIT 7 DETECT EVFU

LINE COUNTER

Bit 7	6	5	4	3	2	1	Command
0	0	0	0	0	0	0	Suppress Space
0	0	0	0	0	0	1	Single Space
			thru				thru
0	1	1	1	1	1	1	63 Spaces

EVFU 12 CHANNEL

Bit 7	6	5	4	3	2	1	Command
1	X	X	0	0	0	X	VFU Channel 1 Top
1	X	X	0	0	1	0	VFU Channel 2
1	X	X	0	0	1	1	VFU Channel 3
1	X	X	0	1	0	0	VFU Channel 4
1	X	X	0	1	0	1	VFU Channel 5
1	X	X	0	1	1	0	VFU Channel 6
1	X	X	0	1	1	1	VFU Channel 7
1	X	X	1	0	0	0	VFU Channel 8
1	X	X	1	0	0	1	VFU Channel 9
1	X	X	1	0	1	0	VFU Channel 10
1	X	X	1	0	1	1	VFU Channel 11
1	X	X	1	1	0	0	VFU Channel 12 Bottom

X - Indicates that the bit is ignored

EVFU Assembly 44677331 PBS, 44677333 PB
(For CT1H6A, CT1H7B, CT1B2N)

An EVFU assembly for a 7 data bit I/O with ASCII control codes. The ROM's on the EVFU board are configured for a 8 channel VFU with a 6 bit line counter. Channel 8 is Top Of Form and Channel 2 is Bottom of Form. To obtain channel 8 as Top of Form the EVFU board incorporates the Top Of Form Option. See Table 3-9.

TABLE 3-9. EIGHT CHANNEL EVFU

LINE COUNTER

Bit 7	6	5	4	3	2	1	Command
0	0	0	0	0	0	0	Suppress Space
0	0	0	0	0	0	1	Single Space
			thru				thru
0	1	1	1	1	1	1	63 Spaces

EVFU 8 CHANNEL

Bit 7	6	5	4	3	2	1	Command
1	X	X	0	0	0	X	VFU Channel 1
1	X	X	0	0	1	0	VFU Channel 2 Bottom
1	X	X	0	0	1	1	VFU Channel 3
1	X	X	0	1	0	0	VFU Channel 4
1	X	X	0	1	0	1	VFU Channel 5
1	X	X	0	1	1	0	VFU Channel 6
1	X	X	0	1	1	1	VFU Channel 7
1	X	X	1	0	0	0	VFU Channel 8 Top
1	X	X	1	0	0	1	VFU Channel 9 *
1	X	X	1	0	1	0	VFU Channel 10 *
1	X	X	1	0	1	1	VFU Channel 11 *
1	X	X	1	1	0	0	VFU Channel 12 *

X - Indicates that the bit is ignored
* - Results in a single space

EVFU Assembly 44676456 PBS
(For CT1A1R, CT1H7D/E, CT1H6C)

The control codes for paper motion are sent at the end of the Data Transfer. The only paper motion codes responded to are Line Feed (LF, octal 12), Vertical Tab (VT, octal 13), Forms Feed (FF, octal 14), and Carriage Return (CR=LF, octal 15). This EVFU is used with a seven data bit interface which is converted to eight bits by the EVFU ROM's for internal use on the EVFU board. Only two EVFU channels are used along with a one bit line counter. See Table 3-10.

TABLE 3-10. TWO CHANNEL EVFU

LINE COUNTER

Data Bits 8	7	6	5	4	3	2	1	Lines Slewed
Data Code 0	0	0	1	0	1	0	(LF)	
EVFU Code 0	0	0	0	0	0	0	1	1
Data Code 0	0	0	1	1	0	1	(CR)	
EVFU Code 0	0	0	0	0	0	0	1	1

EVFU 2 CHANNEL

Data Bits 8	7	6	5	4	3	2	1	Channel Selected
Data Code 0	0	0	1	0	1	1	(VT)	
EVFU Code 1	0	0	0	0	0	1	0	3
Data Code 0	0	0	1	1	0	0	(FF)	
EVFU Code 1	0	0	0	0	0	0	0	1 (Top)

TABLE 3-11. BIT 5 DETECT EVFU WITH CR=PF CONTROL CODES

LINE COUNTER

VF	Data Bits 7	6	5	4	3	2	1	Lines Slewed
1	Ø	Ø	1	0	0	0	0	0
1	Ø	Ø	1	0	0	0	1	1
1	Ø	Ø	1	0	0	1	0	2
				Thru				
1	Ø	Ø	1	1	1	1	0	14
1	Ø	Ø	1	1	1	1	1	15

CONTROL CODES

VF	Data Bits 7	6	5	4	3	2	1		Lines Slewed	SW 10	SW 11
0	0	0	0	1	0	1	0	(PF)	1		
0	0	0	0	1	1	0	0	(FF)	CHAN 1 (TOP)		
0	0	0	0	1	1	0	1	(CR)	0	0	1
									1	1	0

EVFU 12 CHANNEL

VF	Data Bits 7	6	5	4	3	2	1	Channel Selected
1	Ø	Ø	0	0	0	0	0	(0) 1 (TOP)
1	Ø	Ø	0	0	0	0	1	(1) 2
				Thru				
1	Ø	Ø	0	1	0	1	0	(10) 11
1	Ø	Ø	0	1	0	1	1	(11) 12 (Bottom)
1	Ø	Ø	0	1	1	0	0	Illegal
1	Ø	Ø	0	1	1	0	1	Illegal
1	Ø	Ø	0	1	1	1	0	Illegal
1	Ø	Ø	0	1	1	1	1	Illegal

Notes:
Ø= Undefined State
Illegal-Forms Advance One line

EVFU Assembly 44680055 PBS, 44680056 PB (For CT1J1B, CT1J2B, CT1F4L)

A 12 channel EVFU with seven data bit interface and four bit line counter. An additional interface line, Vertical Format (VF) is used to detect the format EVFU code. The VF control code is sent at the end of the Data transfer in the same manner as the Form Feed (FF) Paper Feed (PF), and Carriage Return (CR) control codes which are without the Vertical Format (VF) signal. The control codes carriage Return (CR) and Paper Feed (PF) cause the forms to slew one line provided SW10 is open and SW11 is closed on the EVFU board (7PC6). See Table 3-11.

INSTALLATION

GENERAL

This section contains the necessary information for the installation of the optional Electronic Vertical Format Unit in a standard interface PBS printer. At present, a kit is available for this EVFU assembly (44673008) which is shown in the parts section. The 44673008 EVFU assembly is compatible only with a PBS printer without a special interface, like 2200, 7300, or 9322, etc. The PB printer has a similar EVFU assembly (44675593) which incorporates longer cables due to the location of the EVFU board (7PC6) at the lower back of the printer. A different board mounting plate is also required, refer to the PB parts manual. Printers with special system compatible interfaces are normally factory installed or installed as a kit, in which case a kit manual will cover installation. The Table 4-1 shows the EVFU assemblies compatible with the indicated interfaces. The primary differences between EVFU assemblies is cable length between PBS and PB assemblies, and component chips A4 and B4 between the different EVFU boards. Unique interfaces can also require special internal EVFU PROMs in locations G3 and J3. The standard EVFU board does not incorporate the connector P8. The following procedure is written to document those changes required to incorporate an EVFU assembly into a standard interface printer (PBS) released without an EVFU. Notes have been added to the procedure to provide the information necessary to add an EVFUto a standard PB printer. The changes made to the common controller boards in this following procedure does not reflect those changes that might be required on special interface controller boards.

TABLE 4-1. EVFU ASSEMBLIES

EVFU ASSEMBLIES PBS	PB	INTERFACE
44673008	44675593	STANDARD OEM
44673339	44675591	2200 Compatible
44673263	44675594	7300, 9322 (-2,-4)
44676556	44676555	NORSK Compatible
44676456		ITT (Centronics)
44678324	44677329	ITT/Centronics Compatible
44677330	44677332	Data Printer
44677331	44677333	General Automation
44680055	44680056	Secoinsa
44680636	44680637	Cummins Allison
44681211		I. C. L.

INSTALLATION PROCEDURE (44673008)

This procedure can be used for a PBS or PB printer with a standard interface. An EVFU kit is available for a PBS printer and a parts list is available in the parts section (44673008)

1. When performing this procedure it may be necessary to use the printer's Parts Manual as a reference guide for locating the printed circuit board components.

2. When disconnecting any cables do so by pulling on the connector body only. Do not pull on the wires since doing so may cause damage to the cables.

3. Turn off the power to the printer using the circuit breaker on the front of the pedestal and disconnect the power cord.

4. Remove the ground strap and lift off the bonnet.

5. Remove the paper bail which is positioned over the top of the printer and the boards. Also remove the back panel

6. Remove the cable connecting P5 of the oscillator horizontal and vertical motion board (7PC2) to P4 of the input print board (7PC1). This cable is not used with the EVFU. Retain the cable for possible fault isolation use when the EVFU may wish to be disconnected.

7. Perform the following operations on the oscillator horizontal and vertical motion board (7PC2):

   a. Unplug the cables and remove the board from the pivot bracket.
   b. Position and solder a 26 pin header on the board as shown in Figure 4-1.
   c. Remove jumpers J7 and J3B.
   d. Add jumper J3A.

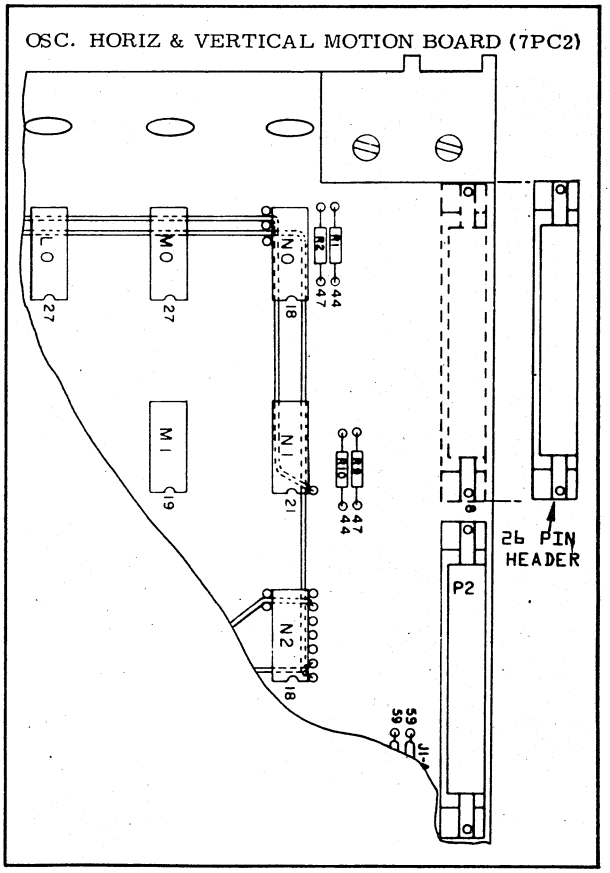


FIGURE 4-1 26 PIN HEADER INSTALLATION

8. Reidentify the oscillator horizontal and vertical motion board with the new part number as listed below:

PRESENT PART NO.	NEW PART NO.
44674844	44674845
44673057	44673058
44673052	44673053

9. Replace the oscillator horizontal and vertical motion board in the pivot bracket and plug in the cables.

10. Perform the following operations on the input print board (7PC1):

    a. Unplug the cables and remove the board from the pivot bracket.
    b. Remove jumper J8.
    c. Add jumper J9.

11. Re-identify the input print board (7PC1) with the new part number as listed below:

PRESENT PART NO.	NEW PART NO.
44674833	44674834
44673075	44673076
44673071	44673072

12. Replace the input print board (7PC1) in the pivot bracket and plug in the cables.

13. Install the interface mounting plate to the printed circuit board pivot bracket as shown in Figure 4-2.

14. Insert EROM's in the following positions on the E.V.F.U board (7PC6).

EROM NO.	7PC6 Position
95433220	G-3
95433221	J-3

The notch in the end of the EROM must be placed at the same end as the notch in the socket.

CAUTION

EROMs ARE SENSITIVE TO STATIC DISCHARGE. THE EROMs MUST BE CAREFULLY HANDLED DURING THE INSTALLATION PROCESS TO PREVENT DAMAGING THEM. PROPER HANDLING TECHNIQUES FOR FIELD EFFECT COMPONENTS ARE FOUND IN THE FRONT OF THE MAINTENANCE SECTION OF THE FIELD SERVICE MANUAL.

15. Install the E.V.F.U. board in location 7PC6 of the printed circuit board pivot bracket. Refer to the parts section under EVFU Assembly for the Printer Band 900 LPM models.

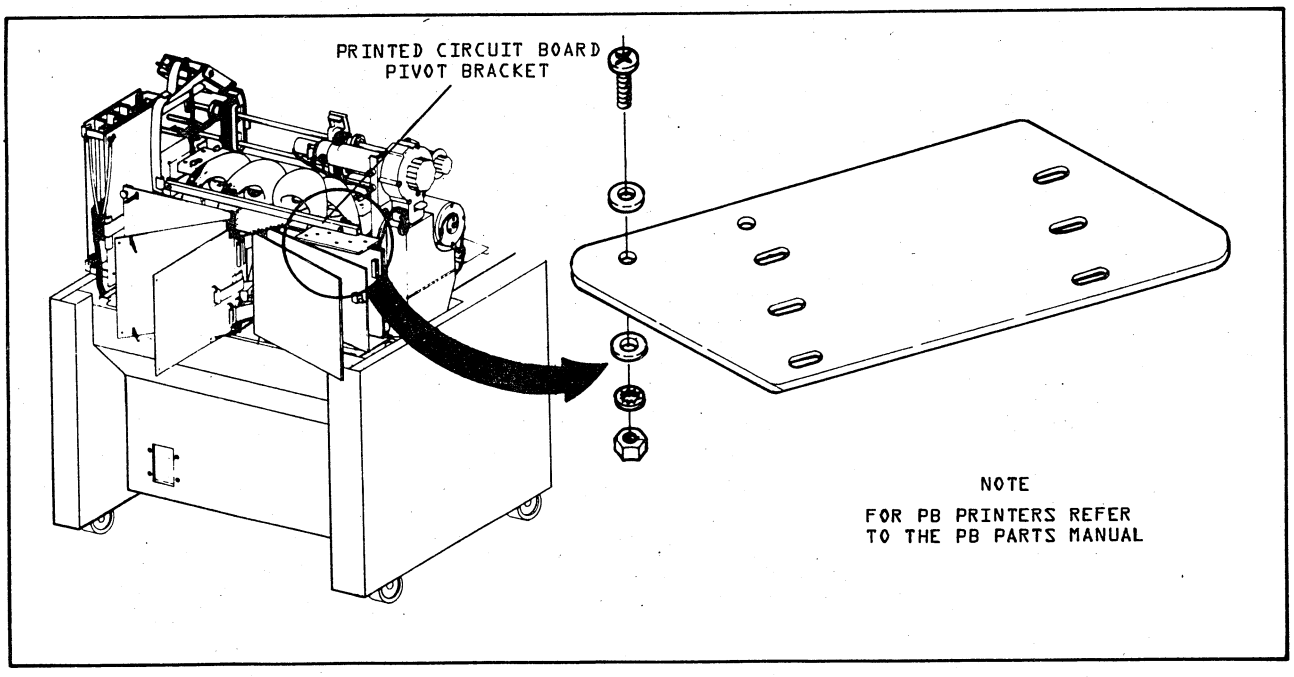


FIGURE 4-2. INTERFACE MOUNTING PLATE INSTALLATION

16. Install the E. V. F. U. reader assembly on the left side of the print head structure as shown in Figure 4-3.

17. Route the reader assembly cables as indicated below:

Cable Identification	Termination
44673011 (4 pin connector)	Blower motor wires (blue to blue & brown to brown) See note below.
44673012 (8 pin connector)	Plug P2-7PC6 (E. V. F. U.)
Paper Tape Reader (20 pin connector)	Plug P1-7PC6 (E. V. F. U.)

Note: The blue and brown reader motor wires are connected at the printers blower motor wires (blue and brown). On the standard 60Hz/120VAC printer without the voltage selection option (without 1TB3) the piggy back fastons must be cut off the blue and brown wires from the reader. Self tapping splices (44672469) are then used to splice the two blue wires together and then the two brown wires. Printers with the voltage selection option have terminal strip 1TB3 located to the left of the circuit breaker under a plastic cover. Note the Terminals of the blowers blue and brown wires. Remove the blowers wire fastons and connect the reader piggy back fastons to 1TB3, then connect the blowers wires to the piggy back faston. On printers with plug type voltage selection panels the kit manual will cover the a-c connection.

18. The four conductor adapter power cable is to be installed as follows: (On PB printer refer to the PB EVFU assembly).

a. Connect the plug on one end to P10 on the E. V. F. U. board (7PC6).

b. The fast-on connectors on the other end of the cable are installed on the power distribution board as follows:

Blue wire to 5TB2 (-12V)
Yellow wire to 5TB1 (+12V)
Red/White wire to 5TB5 (+5V)
Black wire to 5TB4 (GND)

19. Install the 26 pin connector cable on P7 of the EVFU board (7PC6) and on P1 of the Osc. Horizontal and Vert. Motion board (7PC2).

20. Install the 20 pin connector cable on P5 of the EVFU board (7PC6) and on P4 of the Input Print board (7PC1).

21. Install a board shield directly behind the EVFU board (44676066). This shield is not supplied as part of the EVFU kit.

22. Set up the dip switches SW1 throught SW8.
SW1- Off
SW2- On, Selects Auto Perf. Skip (Optional).
SW3- Off
SW4- Off
SW5- On
SW6- On, Chan 12 BOTTOM OF FORM (BOF)
7 and 8 switches Off.
SW7- On, Chan 8 BOF, 6 and 8 Off.
SW8- On, Chan 2 BOF, 6 and 7 Off.

23. Replace the front and rear pedestal covers.

24. Replace the paper bail, bonnet, and a-c power.

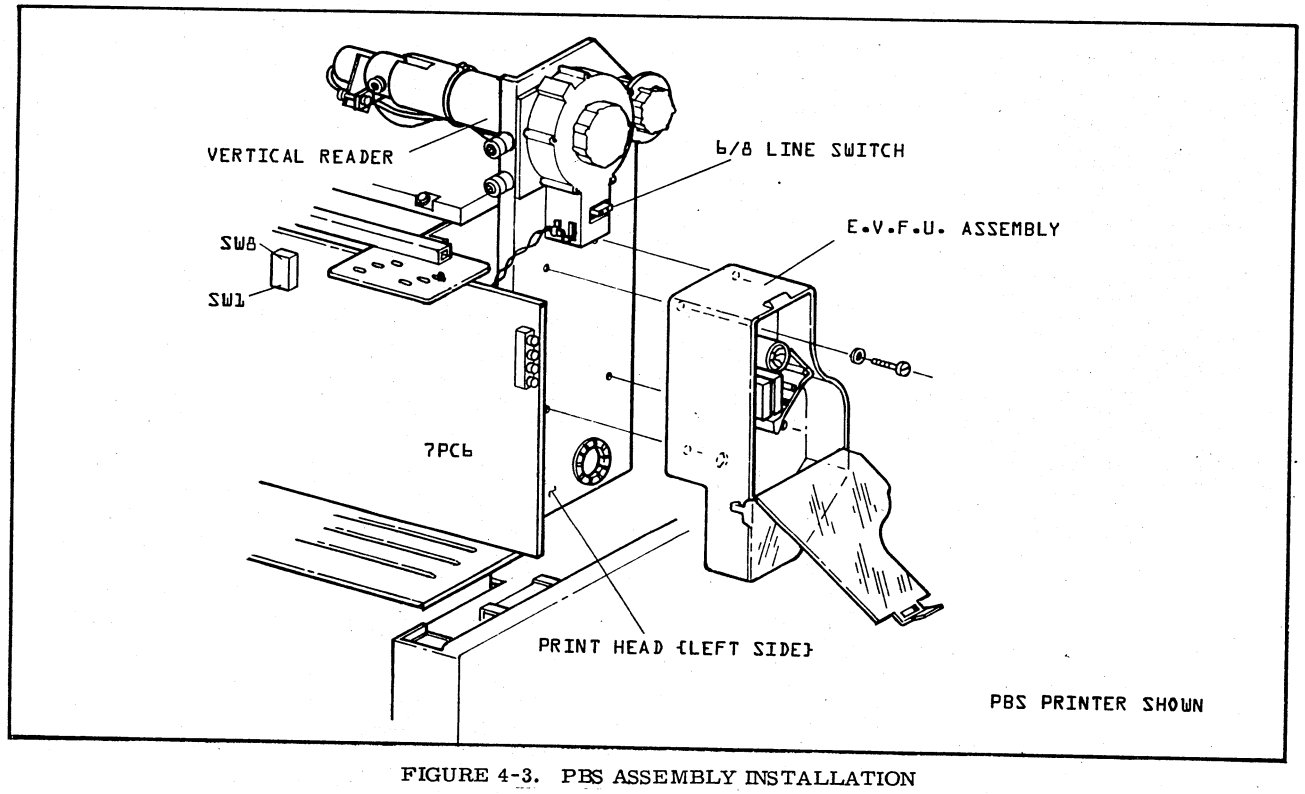


FIGURE 4-3. PBS ASSEMBLY INSTALLATION

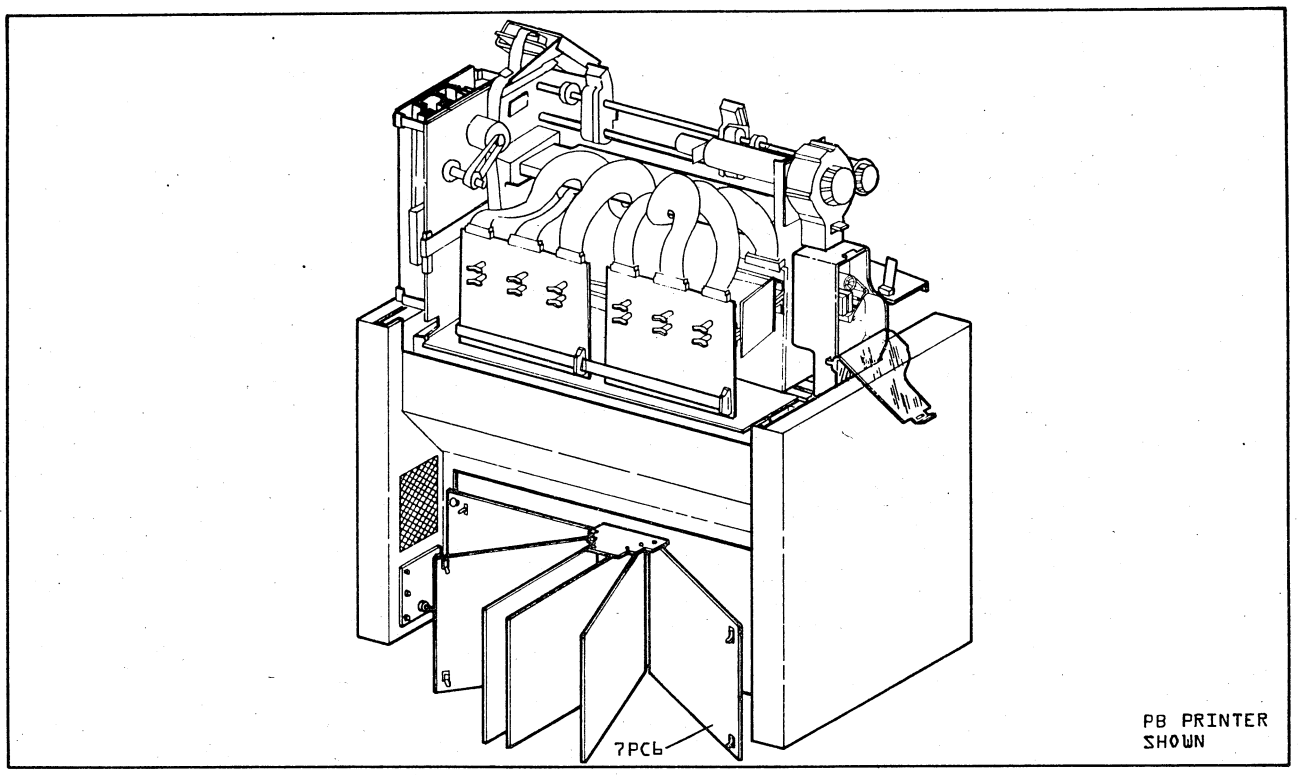


FIGURE 4-4. PB ASSEMBLY INSTALLATION

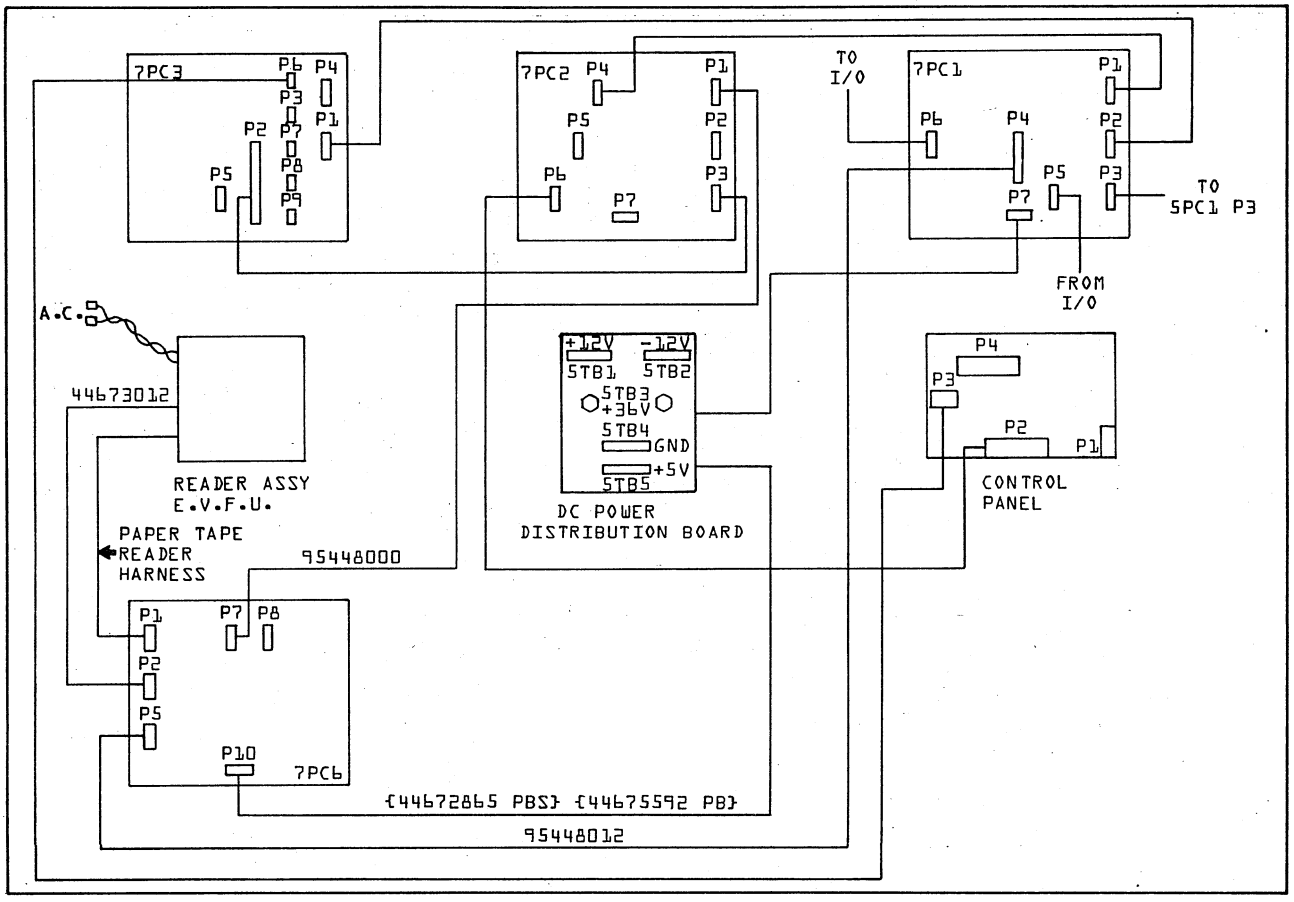


FIGURE 4-5. PRINTER WITH EVFU 44673008

MAINTENANCE

INTRODUCTION

The Maintenance section contains the information necessary for keeping the electronic vertical format unit in a good operating condition. The section is further divided into the sub-sections listed below:

1. Corrective Maintenance
2. Fault Recovery/ Isolation

CORRECTIVE MAINTENANCE

This sub-section is included in the manual as a service/ reference guide. Procedures for adjusting components of the E. V. F. U. have been outlined for reference and parts replacement.

READER ASSEMBLY REPLACEMENT

1. Turn off the power to the printer using the circuit breaker on the front of the pedestal and disconnect the power cord.

2. Remove the ground strap and lift off the bonnet.

3. Remove the paper bail which is positioned over the top of the printer and the boards.

4. Disconnect the reader cables from the 7PC6 board connectors P1 and P2.

5. Disconnect the a-c power leads (brown and blue) at the printer blower's ac power. Printers without the voltage selection option and early production units will have self tapping splices connecting the reader ac power leads to the blower power leads (blue to blue and brown to brown). Printers with self tapping splices (44672469) require the splice to be opened and the wire removed. Printers with the voltage selection option have a covered terminal strip to the left of the circuit breaker. Trace the reader ac wires to the terminal strip 1TB3 and note the terminal number and wire color of both leads. The ac leads to the printer blower connect by fastons to the EVFU reader leads which have piggy back fastons on the wire ends. Working with one lead at a time, disconnect the blower wire from the reader wire. Remove the reader lead from the terminal strip and connect the blower lead to the same terminal. Repeat for the outer ac lead.

6. Remove the reader cover. Remove the four corner mounting screws at the back inside surface of the reader.

7. Reverse the procedure for reader replacement.

EVFU READER MOTOR REPLACEMENT

Use the Reader Replacement procedure to remove the reader assembly from the printer.

1. Remove the reader cover if installed.

2. Open the format tape retainer by pressing down and turning counter clockwise on the knurled post next to the reader sprocket.

3. Rotate the sprocket until the set screw at the base of the sprocket is accessible and then use an allen wrench to loosen the sprocket from the motor shaft.

4. Remove the sprocket.

5. Turn the reader over and remove the two larger screws at the base of the motor.

6. Tag the motor wires per their location. Remember, if a new motor is being installed, its wires should be tagged per the old motors wires on 3TB1. Unsolder the motor wires.

7. Install a motor and connect its four wires as previously removed.

8. Install the sprocket with the allen screw towards the inside of the reader, and the motor shaft flat aligned with the allen screw.

9. Perform the Drive Sprocket Adjustment procedure and then install the reader on the printer using the Reader Replacement procedure in reverse order. Again, repeat the Drive Sprocket Adjustment procedure.

PAPER TAPE READER REPLACEMENT

1. Perform steps 1-6 of the Reader ASSEMBLY Replacement procedure.
2. Remove the two screws attaching the paper tape reader to the EVFU assembly housing. (See Figure 5-1).
3. Remove the paper tape reader.
4. Replace reader if necessary.
5. Replace the reader assembly by reversing the Reader Assembly Replacement procedure.
6. Perform the Drive Sprocket Adjustment procedure to check for proper loading of the format tape.

DRIVE SPROCKET ADJUSTMENT

The E. V. F. U. assembly uses a format tape to load its memory. This tape is driven by a sprocket and motor assembly. If the sprocket is not properly set, loading problems will occur.

NOTE

A DEFECTIVE FORMAT TAPE CAN CAUSE LOADING PROBLEMS. INSPECT THE TAPE FOR DEFECTS BEFORE ATTEMPTING THIS ADJUSTMENT.

Procedure

1. Turn the power off using the circuit breaker located on the printer's pedestal.
2. Open the bonnet.
3. Remove the E. V. F. U. cover from the side of the assembly.
4. Open the format tape spring guide by pushing down on the knurled shaft and turning it counterclockwise.
5. A properly adjusted drive sprocket will allow the format tape to just ride against the guide ramp during the entire load cycle. A sprocket positioned too far onto the motor shaft will cause the format tape to fold over and prevent the tape reader from reading the tape. A sprocket positioned too far out (toward the end of the motor shaft) will also prevent reading of the tape by the tape reader.
6. Loosen the screw holding the drive sprocket on the motor shaft.
7. Install a format tape.

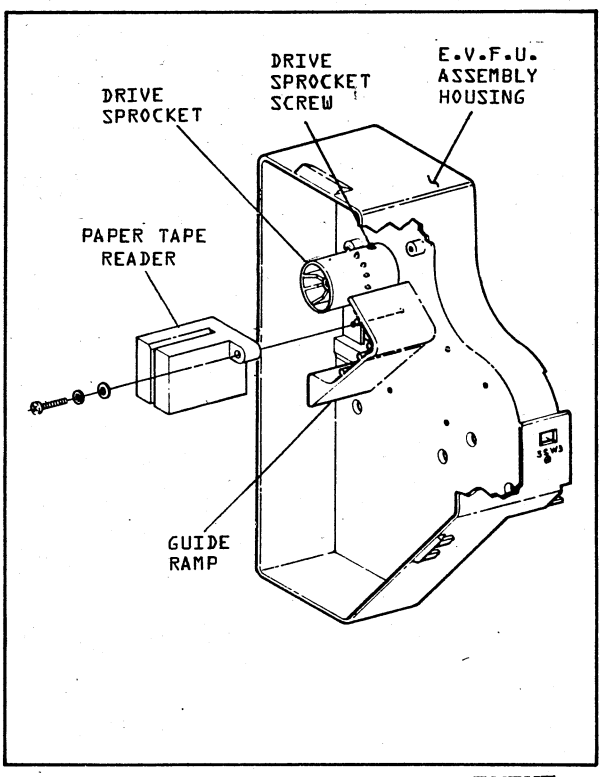


FIGURE 5-1 DRIVE SPROCKET ADJUSTMENT

8. Move the sprocket in or out as required so that the format tape will just ride against the guide ramp (located beneath the paper tape reader). Tighten the sprocket retaining screw. See Figure 5-1 .
9. Turn the knurled shaft clockwise to position the spring guide over the format tape.
10. Power the printer on and check for loading of the format tape.
11. Repeat steps 6 through 10 if necessary until the tape will load the E. V. F. U. assembly.

FAULT RECOVERY/ ISOLATION

This sub-section contains a chart which can be used for the diagnosis of problems that may cause the E. V. F. U. to become inoperable. The chart is sub-divided into four parts; Problem Indication, Possible Cause, Maintenance Action, and EVFU Bd. LED's Lit.

E. V. F. U. ASSEMBLY DISABLING ACTION

This action can only be performed on printers with Test Print/Test Mode capability or programming available with line space codes instead of EVFU channel codes.

This procedure should be followed if it becomes necessary to operate the printer without the electronic vertical format unit assembly. This action will be needed to disable the E. V. F. U. for the purpose of isolating a problem in the basic printer.

Disabling Procedure

This procedure is written for EVFU assemblies 44673008 (PBS) or 44675593 (PB). This procedure could also be used on EVFU assemblies 44673263, 44676556, 44676456, 44677330, 44677331 (PBS) or 44675594, 44676555 , 44677329, 44677332, 44677333 (PB) if programming is available. For EVFU assemblies 44673339 (PBS) or 44675591 (PB) jumper changes are not required, just cable connections refer to cable layout in printer parts manual.

NOTE
THIS PROCEDURE WILL REQUIRE THE USE OF A FLAT CABLE (PART NUMBER 44670362). THE CABLE MAY BE AVAILABLE WITH THE PRINTER IF THE E. V. F. U. ASSEMBLY WAS INSTALLED AS A KIT. THIS CABLE WOULD HAVE BEEN REMOVED.

1. Turn the power off using the circuit breaker located on the pedestal of the printer.
2. Remove the ground strap and lift off the bonnet.
3. Remove the front and rear pedestal covers.
4. Disconnect the P10 power cable from the E. V. F. U. board (7PC6).
5. Perform the following operations on the oscillator horizontal and vertical motion board (7PC2):
   a. Disconnect 26 pin connector at P1.
   b. Pivot the 7PC2 board on the pivot bracket.
   c. Remove jumper J3A.
   d. Add jumpers J7 and J3B.
6. Perform the following operations on the input print board (7PC1):
   a. Disconnect the 20 pin connector at P4.
   b. Pivot the 7PC1 board on the pivot bracket.
   c. Add jumper J8.
   d. Remove jumper J9.
7. Reinstall the printed circuit boards 7PC2 and 7PC1, if removal was required, in the appropriate positions of the pivot brackets.
8. Connect the ribbon cable (part number 44670362) running between P5 of the oscillator horizontal and vertical motion board (7PC2) and P4 on the input print board (7PC1).
9. If ac problems occur, it may be necessary to disconnect the power to the sprocket drive motor. Power is connected at the printer blower's ac source.
10. The printer can now be operated without an E. V. F. U. option. This action requires programming with a forms advance code with each data line instead of an EVFU channel code.
11. The option can be reactivated by performing the E. V. F. U. installation instructions found in the Installation Section.

TABLE 5-1. EVFU FAULT RECOVERY/ISOLATION CHART

PROBLEM INDICATION	POSSIBLE CAUSE	MAINTENANCE ACTION	EVFU BD. LED's LIT
Indicator lamp on Tape Reader remains lit after tape is loaded -and- Printer will not go START -and- Pressing Forms Feed switch results in one line space.	No Format Tape installed.	Load Tape in Reader and press switch on Reader.	RDR LOAD CYCLE 0011 / TOP LED
	Broken or damaged Format Tape. No holes punched in channel 1. Number of holes between channel 1 greater than 175.	Defective Format Tape.	
	Tape information read during verify cycle not same as load cycle. On multi-field tapes, fields are not identical.	Restart by pressing switch on Reader. Defective Format Tape.	
	Tape drive motor not turning.	Isolate Fault	
Indicator lamp on Tape Reader remains lit after Printer is turned on -and- Printer will not go START.	Incorrect Printer program ROM check sum detected during power-on sequence.	Restart by turning Printer power off on. Perform above 2nd time.	ROM CHECK 0001 / TOP LED
	Bad program ROM	Call C.E.	
	Incorrect RAM check status detected during power-on sequence.	Restart by turning Printer power off then on. Perform 2nd time if req'd	RAM CHECK 0010 / TOP LED
	Bad RAM	Isolate Fault	
Indicator lamp on Tape Reader remains lit after Forms Feed switch is depressed and Printer will not go START.	Format Tape Buffer (FTB) not loaded.	Install Format Tape and depress Tape Reader switch to load information then press START/STOP switch to place Printer in START.	
Printer goes into STOP mode and cannot be placed in START -and- indicator lamp on Reader is lit - and - depressing Forms Feed switch causes single line advance.	Format Tape Buffer (FTB) parity error detected.	Reload Format Tape as above. Repeat load 2nd time. Isolate Fault	FTB PARITY ERROR 0111 / TOP LED
Paper runaway condition occurred -and-Tape Reader lamp is lit -and- Printer will not go START and runaway did not exceed 195 lines.	Printer received a format control code that was illegal or is selecting a format channel that is not punched on the format tape previously loaded.	Check format tape against program listing. Check program for illegal Format Control Codes. Restart by reloading Format Tape then place Printer in START. If above steps fail, Isolate Fault	PAPER RUNAWAY 0100 / TOP LED
Printer goes STOP and does not move paper to next line, Tape Reader lamp is lit and Printer will not go START.	No paper motion occurred upon command from Data Source caused by Printer defect.	Turn printer power off then on. See if depressing Forms Feed/Page Eject switch causes forms to move. If not, Isolate Fault. If yes, place printer in START.	PRINTER BROKE 1000 / TOP LED

PARTS

GENERAL

This section contains the parts data for the electronic vertical format unit. Included for reference are the following:

a. Printed circuit board assemblies
b. E.V.F.U. convert kit assemblies.
c. E.V.F.U. assemblies
d. E.V.F.U. reader assembly

DEFINITION OF TERMS

REF NUM — (A) The reference number is the assembly part number. This number is shown at the top of each page to establish the numerical arrangement of assembly parts lists within the section.

REV — (B) The revision letter is an indication of the revision status of the source data of the assembly parts list.

TITLE — (C) The title description is the assembly nomenclature.

FIND NUM — (D) The find number column identifies the parts that make up the REF NUM assembly. These same numbers are used on the accompanying illustrations to help the reader determine where the part is used on the assembly.

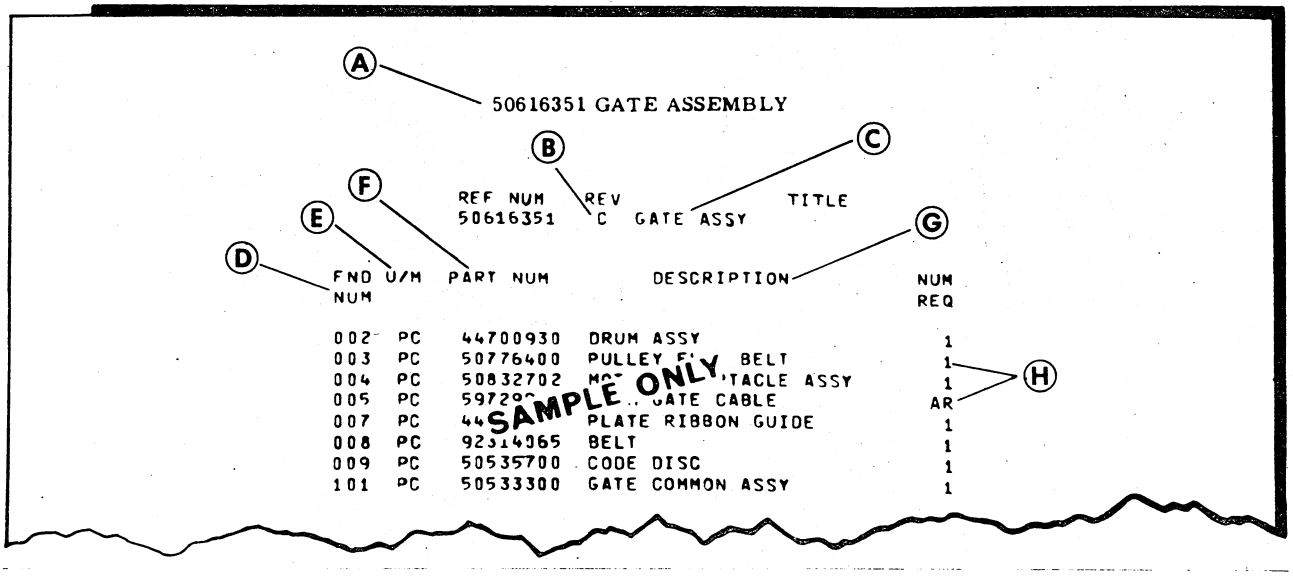
U/M — (E) The unit measure describes the form that the part can be ordered in, i.e., PC, OZ, LBS, IN, FT, etc.

PART NUM — (F) These 8-digit part numbers are used in reordering parts and are arranged in find number sequence to identify the parts that make up the REF NUM assembly.

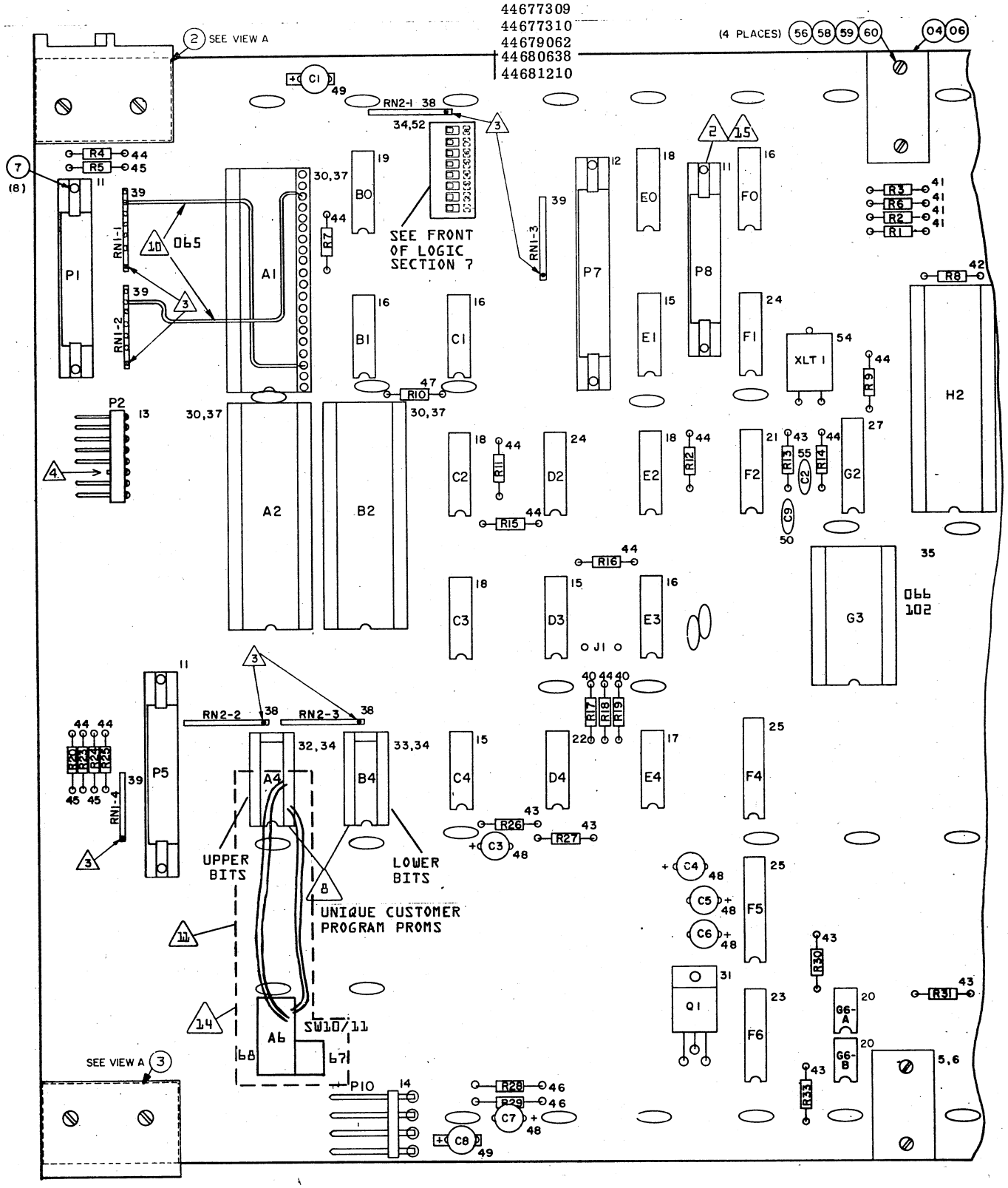
DESCRIPTION — (G) The part description is the part nomenclature.

AR — (H) This abbreviation is used to indicate an as-required quantity.

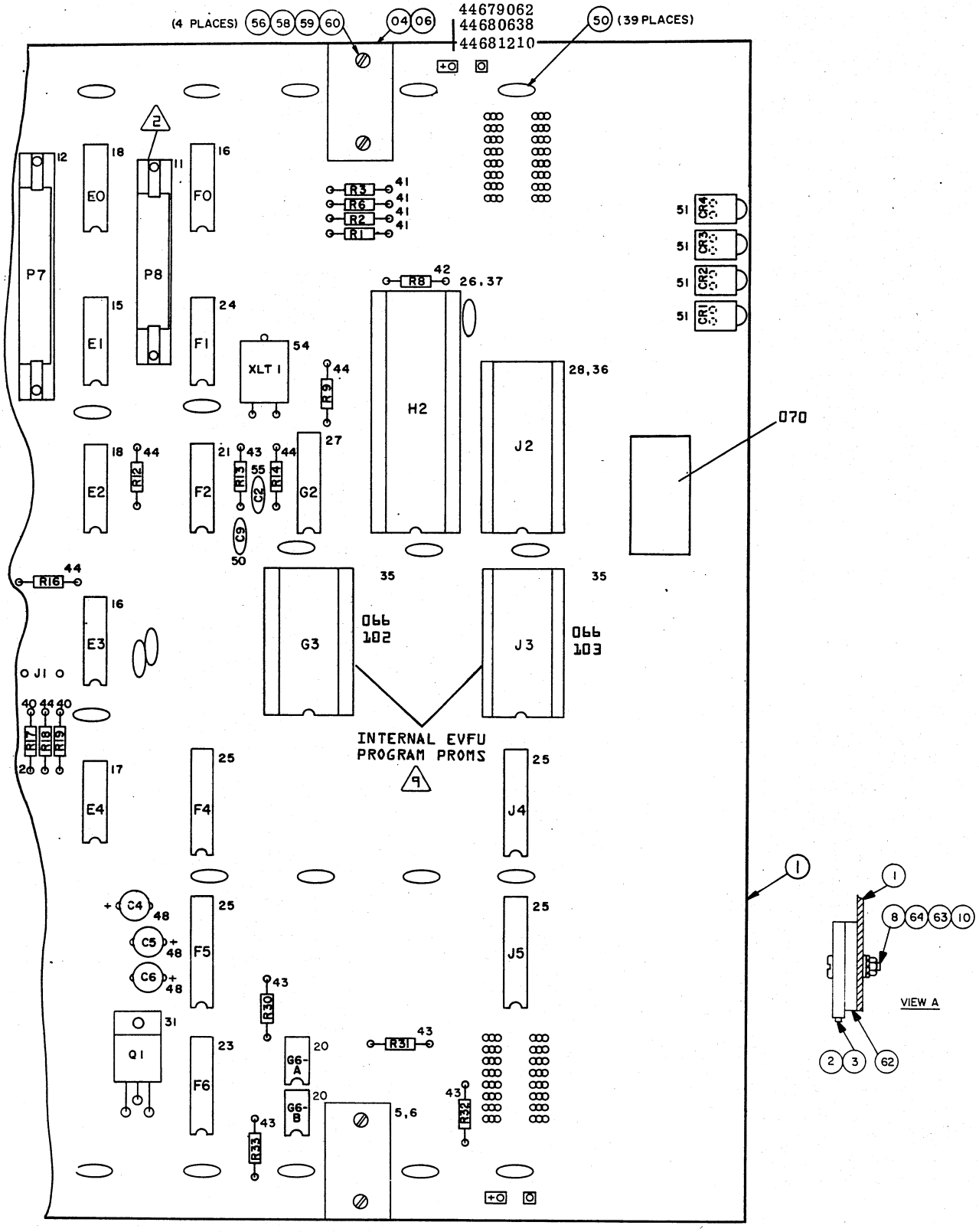
NR — This abbreviation is used to indicate none required for quantity.



E.V.F.U. PCB ASSY 44675725 (44673025) 6
44675726 (44673026)
44675727 (44673027)
44676661
44678292 (44676455)
44677309
44677310
44679062
44680638
44681210



E.V.F.U. PCB ASSY 44675725 (44673025) ⚠6
44675726 (44673026)
44675727 (44673027)
44676661
44678292 (44676455)
44677309
44677310
44679062
44680638
44681210



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E.V.F.U. PCB ASSY 44675725 (44673025)
44675726 (44673026) ⚠6
44675727 (44673027)
44676661
44678292 (44676455)
44677309
44677310
44679062
44681210
44680638

REF NUM	REV	TITLE
44675725	F	**ASSY EVFU PCB
44675726	E	
44675727	E	
44676661	E	
44678292	D	
44677309	F	
44677310	F	
44679062	A	
44681210	B	
44680638	B	

⚠8

FND NUM	U/M	PART NUM	DESCRIPTION	NUM REQ
001	PC	44680686	BD-DWG PBS EVFU	1
⚠14 001A	PC	44679061	BD-DWG PBS EVFU	1
002	PC	44670614	PIVOT P.C. CARD UPPER	1
003	PC	44670613	PIVOT P.C. CARD LOWER	1
004	PC	44671693	LATCH RIGHT HAND	1
005	PC	44671694	LATCH LEFT HAND	1
006	PC	44672257	INSULATOR PIVOT P.C. CARD	4
⚠5 007	PC	95302715	SCR SELF TAP 4-40 X 1/4	8
⚠5 008	PC	10127117	SCR PAN HD PHL 6-32X.875	8
010	PC	10125105	NUT HEX MACH 6-32	8
⚠7 011	PC	95433300	HEADER SOLDER TAIL	2
012	PC	95433301	HEADER 26 PINS	1
013	PC	44672525	PWR HEADER RIGHT ANGLE	1
014	PC	95443453	PRINTED CIRCUIT HEADER,KEYED	1
015	PC	36186800	IC 7400	3
016	PC	95350102	IC 7404	4
017	PC	50254200	IC 7406	1
018	PC	95338002	IC 7408	4
019	PC	15124800	IC 7414	1
020	PC	94791600	IC TTL2 DRYR POS	2
021	PC	15129700	IC TYPE 7411	1
022	PC	15107000	IC 7437	1
023	PC	95347802	IC 7442	1
024	PC	15104800	IC 7474	2
025	PC	15151600	IC 2111	4
026	PC	15138300	8080 MICRO PROCESSOR	1
027	PC	15153500	15153500	1
028	PC	15153400	8228 SYS CONTROLLER	1
030	PC	15164427	8255A I/O PORT	3
031	PC	76604702	REGULATOR 7905	1
⚠8 032	PC	TABLE 1 NEXT PAGE		
⚠8 033	PC	TABLE 1 NEXT PAGE		
⚠12 034	PC	51848401	SOCKET IC	3
035	PC	51848404	SOCKET 24 PIN	2
036	PC	51848405	DUAL IN LINE RECEPTACLE	1
037	PC	51848406	40 PIN SOCKET	4
038	PC	44678458	S.I.P. 3.3K 1/4 W	3
039	PC	44670460	RESISTOR NETWORK	4
040	PC	24500024	RESISTOR 24 OHMS 1/4W 5	2
041	PC	24500042	RESISTOR 130 OHMS 1/4W 5	4
042	PC	24500063	RESISTOR 1K 1/4W 5	1
043	PC	24500065	RESISTOR 1.2K 1/4W 5	7
044	PC	24500075	RESISTOR 3.3K OHMS /14W 5	11
045	PC	24500090	RESISTOR 13k OHMS /14W 5	3
046	PC	24500128	RES 36 OHMS /12W 5	2
047	PC	24500050	RES 300 25W 5	1
048	PC	94395505	CAP 6.8 MFD 10, 50V ELECT.	5
049	PC	94395511	CAP 33 MFD 10 35V	2
⚠13 050	PC	19115400	CAPACITOR FIXED CERAMIC 50 VDC	39
051	PC	44670961	DIODE LED INDICATOR	4
052	PC	83452205	SWITCH NET 8 POS	1
054	PC	95352001	CRYSTAL 18 MHZ	1
055	PC	94842103	CAP 6 PFD	1
056	PC	10127322	SCR PAN HD SLTD 4-40 x .375	4
057	PC	10125103	NUT HEX MACH 4-40	4
058	PC	10126101	WASHER INTL TOOTH LK 4	4
059	PC	10126103	WASHER INTL TOOTH LK 6	4
⚠6 060	PC	10125603	WASHER PLAIN 4	4
⚠6 062	PC	44676080	PIVOT SPACER .25	2
⚠6 063	PC	10126103	WASHER INTL TOOTH LK 6	4
⚠6 064	PC	10125605	WASHER PLAIN 6	4
065	FT	95393500	WIRE HI TEMP SOLID 30 WHT	.8
⚠9 066	PC	SEE TABLE 2 NEXT PAGE		
⚠14 067	PC	95398508	2 POS SWITCH	1
⚠14 068	PC	95459803	PROM 256X4	1
⚠15 069	PC	76648924	HEADER 6 POS.	1
070	PC	44677512	LABEL-MOS	1

NOTES:

⚠1 CAUTION- MOS DEVICES ON THIS BOARD ARE SENSITIVE TO STATIC DISCHARGES. USE PROPER HANDLING PROCEDURES.

⚠2 CONNECTOR NOT INSTALLED ON ASSY 44675727, 44673025, OR 44676661.

⚠3 PIN 1 DESIGNATION

⚠4 CUT OFF FOR KEYING

⚠5 QUANTITY OF 8 USED ON ASSY 44675726, 44675725, 44673026, 44677309, 44677310 AND 44673027. ALL CONNECTOR SCREWS BEING REMOVED ON FUTURE BOARDS.

⚠6 EARLY BOARDS 44673025/26/27 HAD A POTENTIAL SHORTING OF LOGIC AND POWER GROUNDS, FIXED BY FCO PH15198, ADDING 060-064 FND NUM'S.

⚠7 QUANTITY OF 8 USED ON ASSY 44675726, 44675727, 44673026, 44673027, 44677309 44677310 AND 44676455. QUANTITY OF 3 USED ON ASSY 44679062.

⚠8 BOARD ASSY FIND NUMBERS 032 AND 033 SHOWN IN TABLE 1 ON NEXT PAGE.

⚠9 FIND NUM 066 IS A PAIR OF PROMS, SEE TABLE 2 ON NEXT PAGE.

⚠10 ADDED TO SWAP FORMAT CHANNELS 1 AND 8 FROM THE TAPE READER ON BOARD 44677310.

⚠11 ADDED ON ASSY 44679062 ONLY.

⚠12 ASSY 44679062 NUM REQ IS 4.

⚠13 ASSY 44679062 NUM REQ IS 40.

⚠14 ASSY 44679062 ONLY

⚠15 FIND NUMBER 069 IS USED INSTEAD OF FIND NUMBER 011 WHEN INSTALLING HEADER IN LOCATION P8 ON ASSY 44681210.

E.V.F.U. PCB ASSY 44675725 (44673025)
44675726 (44673026)
44675727 (44673027)
44676661
44678202 (44676455)
44677309
44677310
44679062
44680638
44681210

(6)

TABLE 1 UNIQUE CUSTOMER INTERFACE PROGRAM PROMS

FND NUM BELOW CHANGE ON BOARD ASSY 44675725, 44673025, 44681210:

032	PC	44672055	DIL CONDUCTING NETWORK	1
033	PC	44672056	DIL CONDUCTING NETWORK	1

FND NUM BELOW CHANGE ON BOARD ASSY 44675726, 44673026:

032	PC	94781742	ROM 256x4	1
033	PC	94781741	ROM 256x4	1

FND NUM BELOW CHANGE ON BOARD ASSY 44675727, 44673027:

032	PC	94781747	ROM 256x4	1
033	PC	94781756	ROM 256x4	1

FND NUM BELOW CHANGE ON BOARD ASSY 44676661:

032	PC	94781764	ROM 256x4	1
033	PC	94781763	ROM 256x4	1

FND NUM BELOW CHANGE ON BOARD ASSY 44676455:

032	PC	94781761	ROM 256x4	1
033	PC	94781762	ROM 256x4	1

UNIQUE CUSTOMER PROGRAM PROMS
032 = A4
033 = B4
LOCATIONS

FND NUM BELOW CHANGE ON BOARD ASSY 44677309

032	PC	94781776	ROM 256 X 4	1
033	PC	94781775	ROM 256 X 4	1

FND NUM BELOW CHANGE ON BOARD ASSY 44677310

032	PC	94781778	ROM 256X 4	1
033	PC	94781777	ROM 256X 4	1

FND NUM BELOW CHANGE ON BOARD ASSY 44678292:

032	PC	94781761	ROM 256X4	1
033	PC	95459800	ROM 256 X 4	1

FND NUM BELOW CHANGE ON BOARD ASSY 44679062.

032	PC	93459801	PROM 256X4	
033	PC	95459802	PROM 256X4	

FND NUM BELOW CHANGE ON BOARD ASSY 44680638:

032	PC	94781776	ROM 256X 4	1
033	PC	94781775	ROM 256X 4	1

TABLE 2 INTERNAL EVFU OPERATING PROGRAM

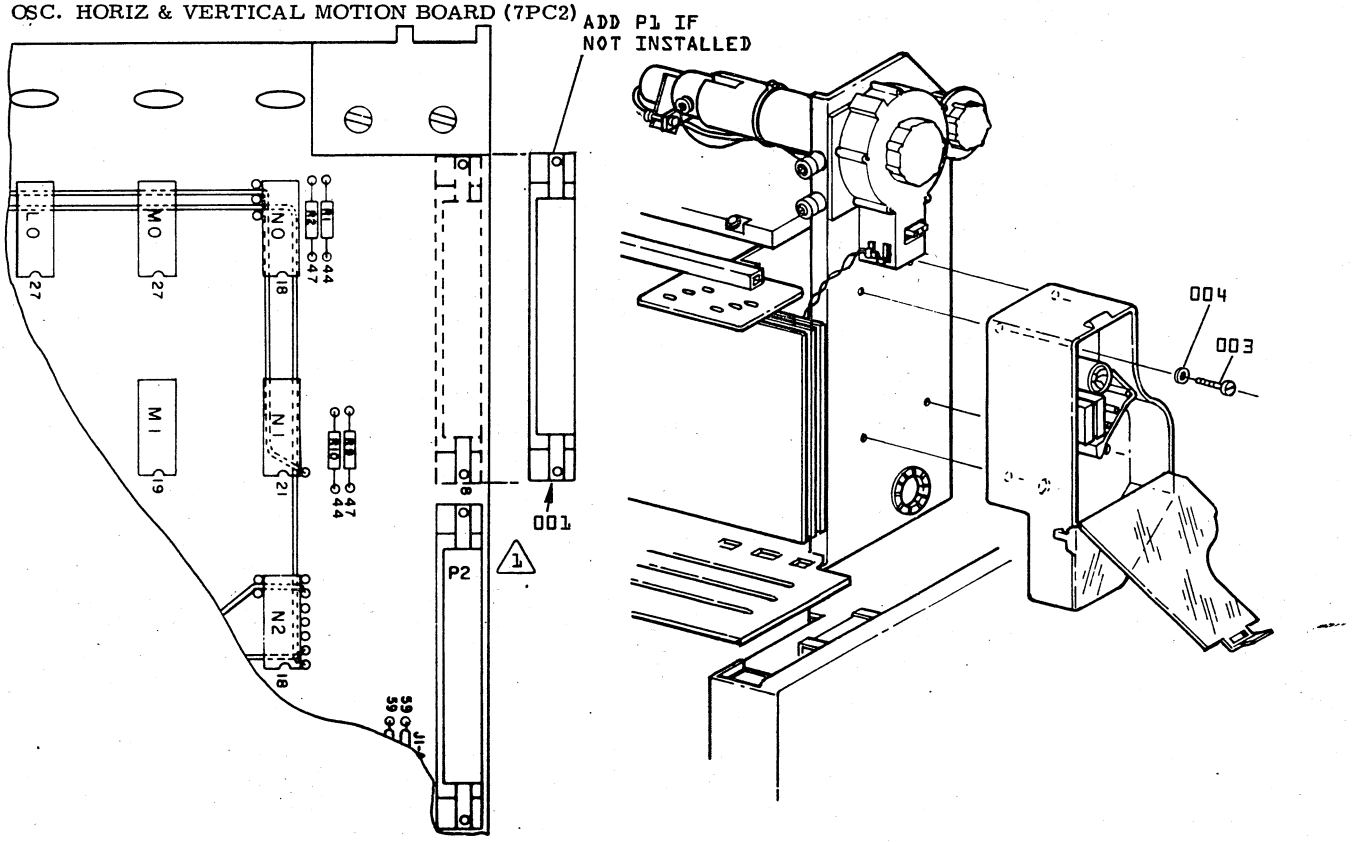
STANDARD OPERATING ROMS FOR ALL BOARDS (SEE EXCEPTIONS)

FND NUM				
066	PC	44673491	ASSY EROM 1024X8	1
101	PC	95433220	SPEC 1024X8 ROM NO. 1 (G3)	1
102	PC	95433221	SPEC 1024X8 ROM No. 2 (J3)	1

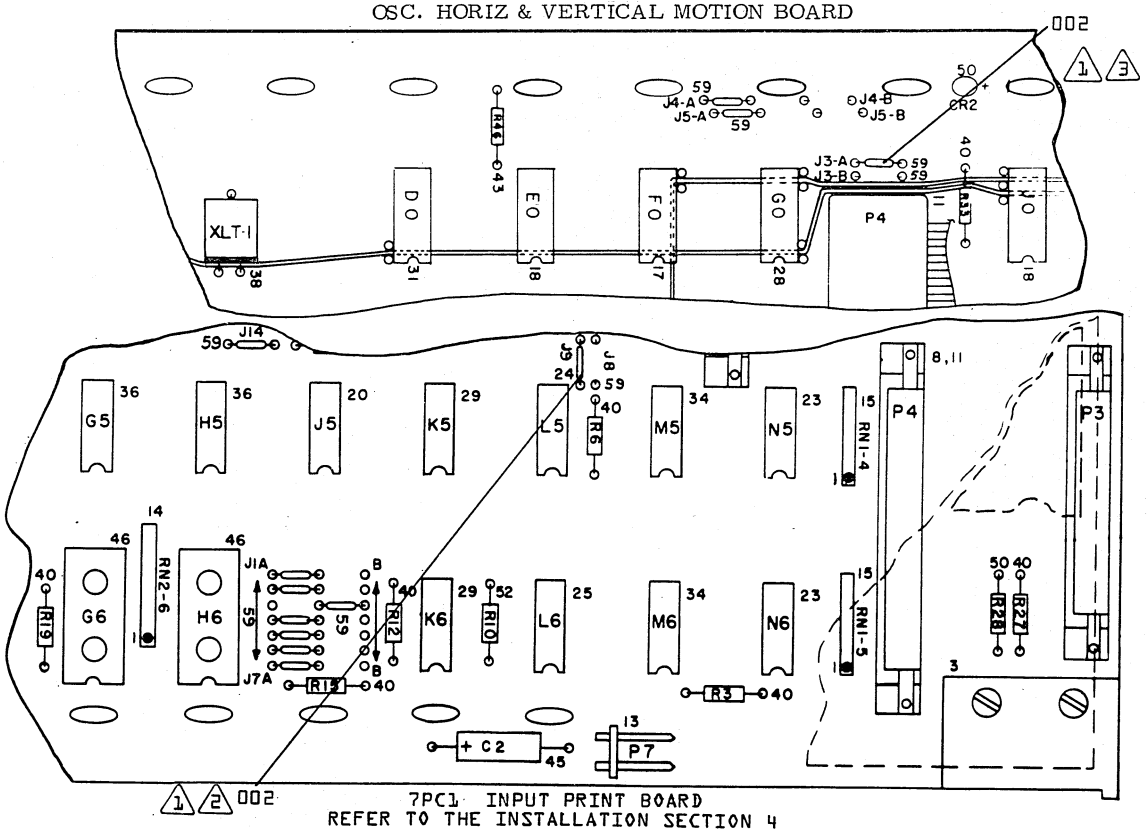
EXCEPTIONS:

FORMAT CHAN 2 AND 3 SWAP OPTION USED ON BOARD ASSY 44680638 ONLY.

FND NUM				
066	PC	44680639	PROG ROM SET	1
101	PC	95459161	ROM NO. 1 (G3)	1
102	PC	95459162	ROM NO. 2 (J3)	1


OSC. HORIZ & VERTICAL MOTION BOARD (7PC2)
ADD P1 IF
NOT INSTALLED
LO
MO
NO
M1
N1
N2
P2
J1
001
003
004

7PC2
OSC. HORIZ & VERTICAL MOTION BOARD



7PC1 INPUT PRINT BOARD
REFER TO THE INSTALLATION SECTION 4

REF NUM	REV	TITLE
44674662	B	CONVERT KIT EVFU ASSY (STANDARD INTERFACE ONLY) NOT FOR USE WITH 2200, 7300, or 9322 INTERFACES

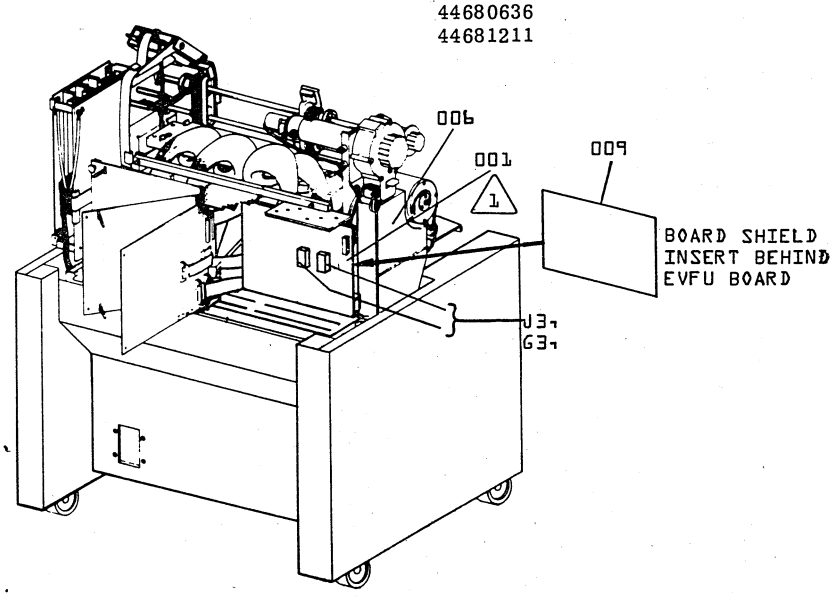
	FND NUM	U/M	PART NUM	DESCRIPTION	NUM REQ
	001	PC	95433301	HEADER 26 PINS	1
	002	PC	44670482	JUMPER P.C.B	2
	003	PC	10127356	SCR PAN HD SLTD 8-32X2.00	4
	004	PC	10126104	WASHER INTL TOOTH LK 8	4
	008	PC	44675243	INSTALL INST EVFU ASSY	REF
	009	PC	47868600	PLATE EQUIPMENT INDENT MED.	1
	010	PC	44672273	FORM FIELD CHANGE ORDER LOG	1
4	011	PC	44673008	EVFU ASSEMBLY	1

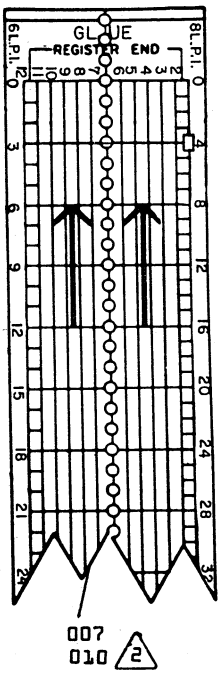
NOTES:

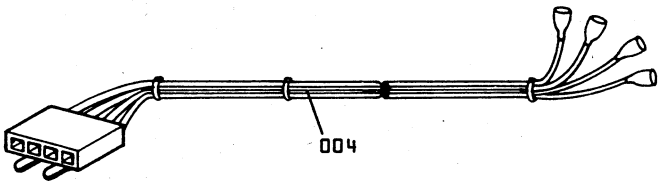
1. MODIFIED BOARDS MUST BE RE-IDENTIFIED BY A NEW PART NUMBER. REFER TO THE NOTES ON THE COMMON CONTROLLER BOARDS AT THE FRONT OF SECTION III IN THE PRINTER PARTS MANUAL. THE PRINTER PARTS MANUAL MUST BE A REVISION B OR 2, OR LATER.
2. ADD J9 AND REMOVE J8 IF INSTALLED.
3. ADD J3A AND REMOVE J3B IF INSTALLED.
4. THIS KIT SUPPLIES A 44673008 EVFU ASSEMBLY. FOR A PRINTER REQUIRING ANOTHER EVFU ASSY, ORDER PARTS SEPARATELY WITH CORRECT EVFU ASSY.

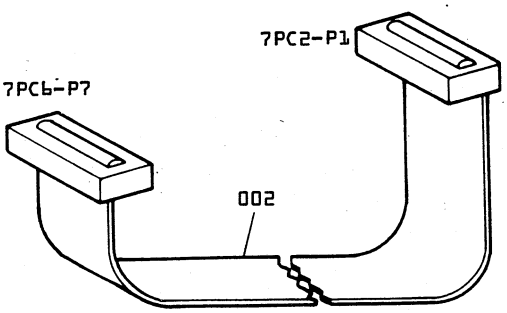
PRINTER BAND SHARING 360/720 LPM

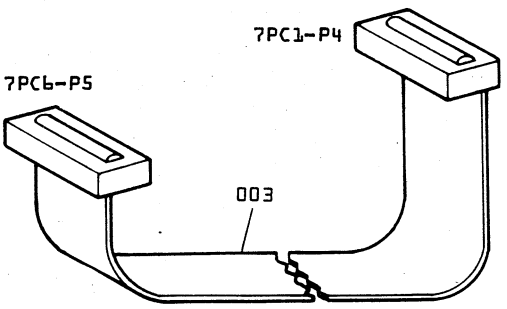
44673263 E.V.F.U. ASSEMBLY
44673008
44673339
44676556
44676456
44677330
44677331
44678324
44680055
44680636
44681211











PRINTER BAND SHARING 360/720 LPM

44673263 E.V.F.U. ASSEMBLY
44673008
44673339
44676556
44676456
44677330
44677331
44678234
44680055
44680636
44681211

REF NUM	REV	TITLE
44673263	B	E.V.F.U. ASSY
44673008	B	
44673339	B	
44676556	A	
44676456	B	
44677330	B	
44677331	B	
44678324	B	
44680055	A	
44670636	01	
44681211	B	

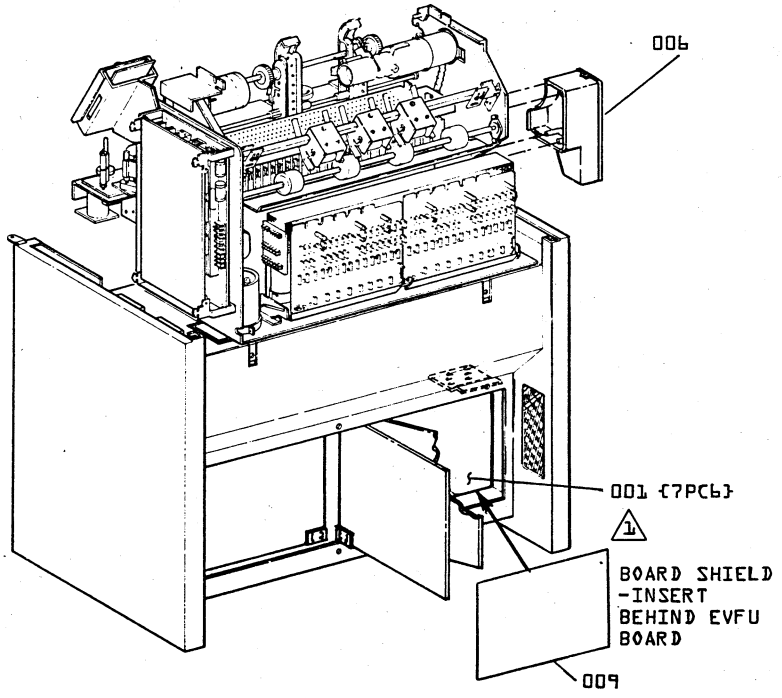
	FND NUM	U/M	PART NUM	DESCRIPTION	NUM REQ
(1)	001	PC	SEE BELOW	UNDER EVFU ASSEMBLY	1
	002	PC	95448000	CZ FLAT CABLE ASSY	1
	003	PC	95448012	CZ FLAT CABLE ASSY	1
	004	PC	44672865	CZ CABLE ADAPTOR PWR	1
	006	PC	44673023	READER ASSY E.V.F.U	1
	007	PC	44713800	FORMAT CONTROL TAPE	1
	009	PC	44676066	SHIELD PRINT HEAD BD	1
(2)	010	PC	44682680	FORMAT TAPE PUNCHED	1

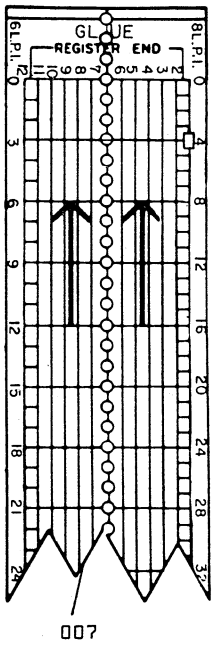
(1)
ASSY EVFU PCB 44675726 USED IN ASSEMBLY 44673263
ASSY EVFU PCB 44675725 USED IN ASSEMBLY 44673008
ASSY EVFU PCB 44675727 USED IN ASSEMBLY 44673339
ASSY EVFU PCB 44676661 USED IN ASSEMBLY 44676556
ASSY EVFU PCB 44676455 USED IN ASSEMBLY 44676456
ASSY EVFU PCB 44677309 USED IN ASSEMBLY 44677330
ASSY EVFU PCB 44677310 USED IN ASSEMBLY 44677331
ASSY EVFU PCB 44678292 USED IN ASSEMBLY 44678324
ASSY EVFU PCB 44679062 USED IN ASSEMBLY 44680055
ASSY EVFU PCB 44681210 USED IN ASSEMBLY 44681211
ASSY EVFU PCB 44680638 USED IN ASSEMBLY 44680636

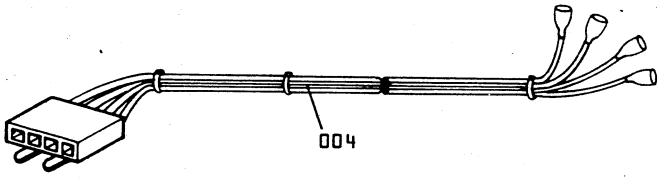
FOR EARLIER BOARD NUMBERS REFER TO THE BOARD ASSEMBLIES IN THIS SECTION.

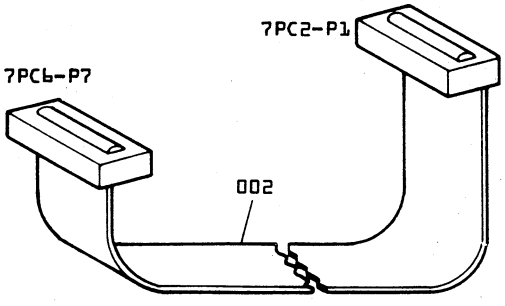
(2) USED IN EVFU ASSEMBLY 44681211 ONLY.

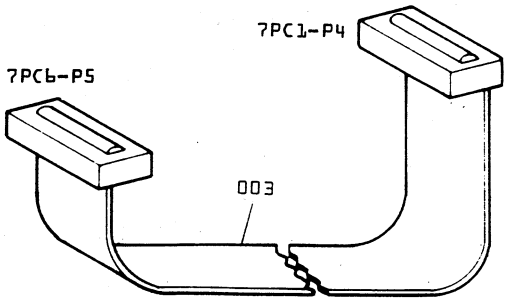
PRINTER BAND 1130 LPM
44675591 E.V.F.U. ASSEMBLY
44675593
44675594
44676555
44677329
44677332
44677333
44680056
44680637











PRINTER BAND 1130 LPM

44675591 E.V.F.U. ASSEMBLY
44675593
44675594
44676555
44677329
44677332
44677333
44680056
44680637

REF NUM	REV	TITLE
44675591	A	E.V.F.U. ASSY
44675593	A	
44675594	A	
44677329	B	
44677332	B	
44677333	B	
44680056	A	
44680637	01	

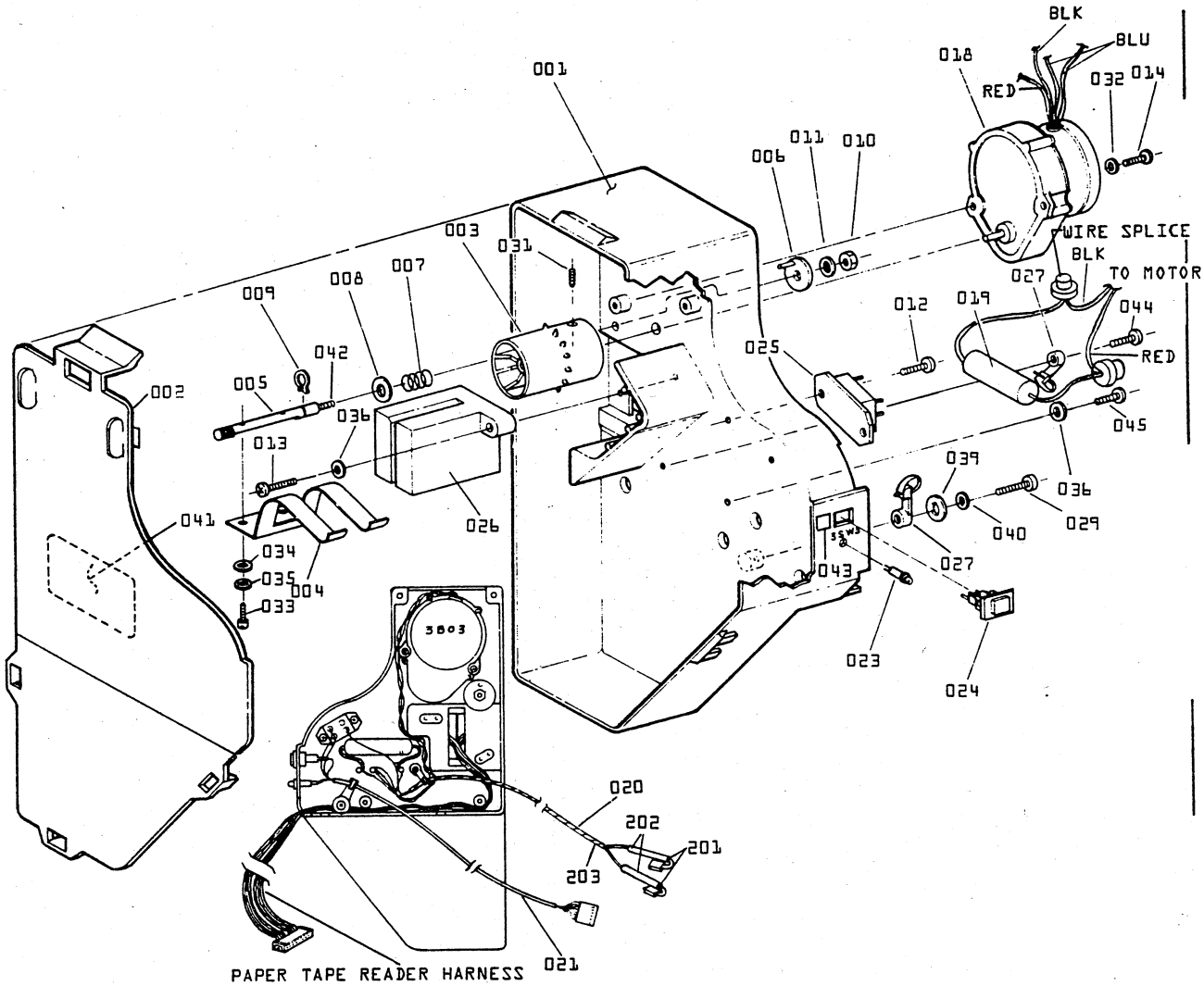
	FND NUM	U/M	PART NUM	DESCRIPTION	NUM REQ
1	001	PC	SEE BELOW	UNDER EVFU ASSEMBLY	
	002	PC	95448000	CZ FLAT CABLE ASSY	1
	003	PC	95448012	CZ FLAT CABLE ASSY	1
	004	PC	44675592	CZ CABLE ADAPTOR PWR	1
	006	PC	44673023	READER ASSY E.V.F.U	1
	007	PC	44713800	FORMAT CONTROL TAPE	1
	009	PC	44676066	SHIELD PRINT HEAD BD	1

1

ASSY EVFU PCB	44675727	USED IN ASSEMBLY	44675591
ASSY EVFU PCB	44675725	USED IN ASSEMBLY	44675593
ASSY EVFU PCB	44675726	USED IN ASSEMBLY	44675594
ASSY EVFU PCB	44676661	USED IN ASSEMBLY	44676555
ASSY EVFU PCB	44678292	USED IN ASSEMBLY	44677329
ASSY EVFU PCB	44677309	USED IN ASSEMBLY	44677332
ASSY EVFU PCB	44677310	USED IN ASSEMBLY	44677333
ASSY EVFU PCB	44679062	USED IN ASSEMBLY	44680056
ASSY EVFU PCB	44680638	USED IN ASSEMBLY	44680637

FOR EARLIER BOARD NUMBERS REFER TO THE BOARD ASSEMBLIES IN THIS SECTION

44673023 E.V.F.U. READER ASSEMBLY

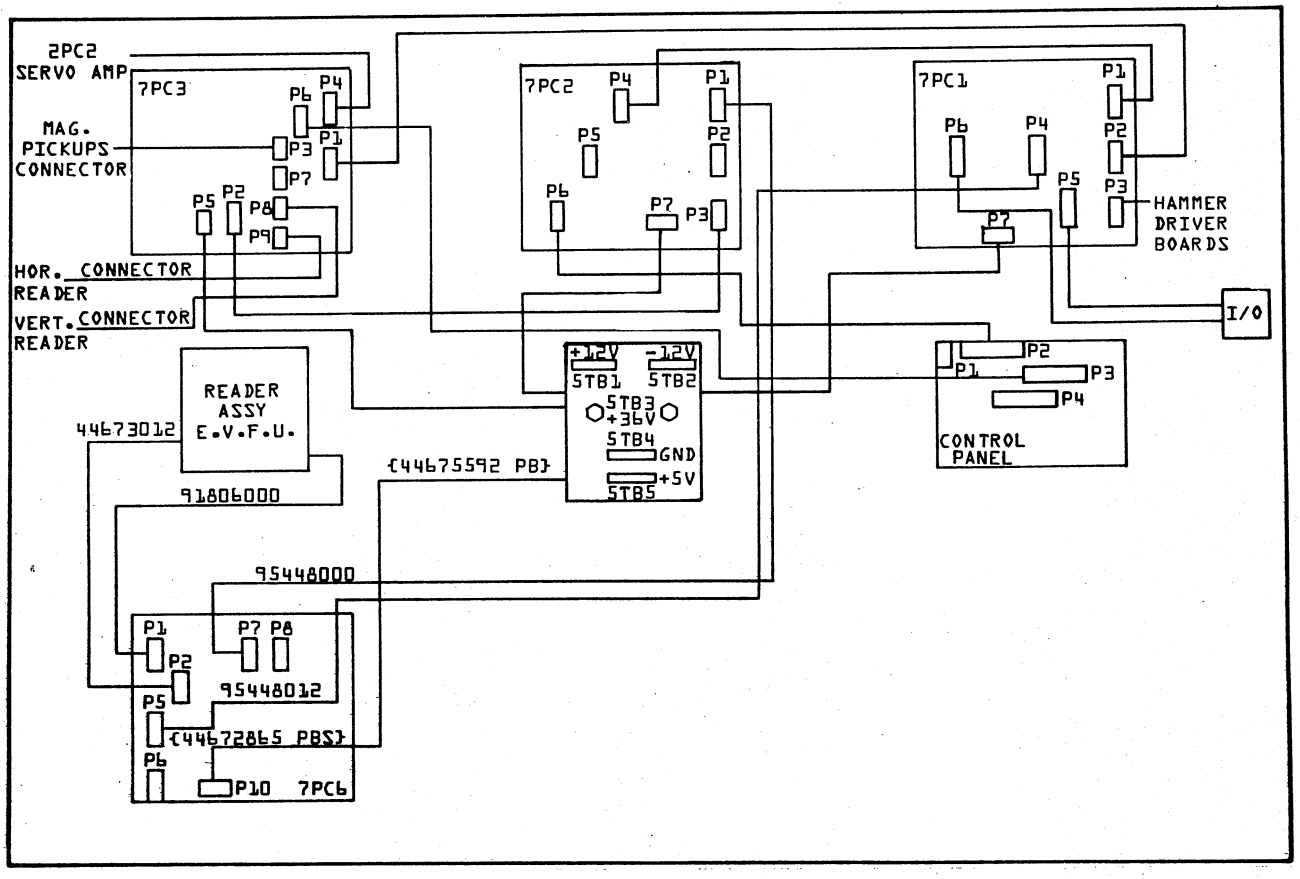


REF NUM 44673023 REV E

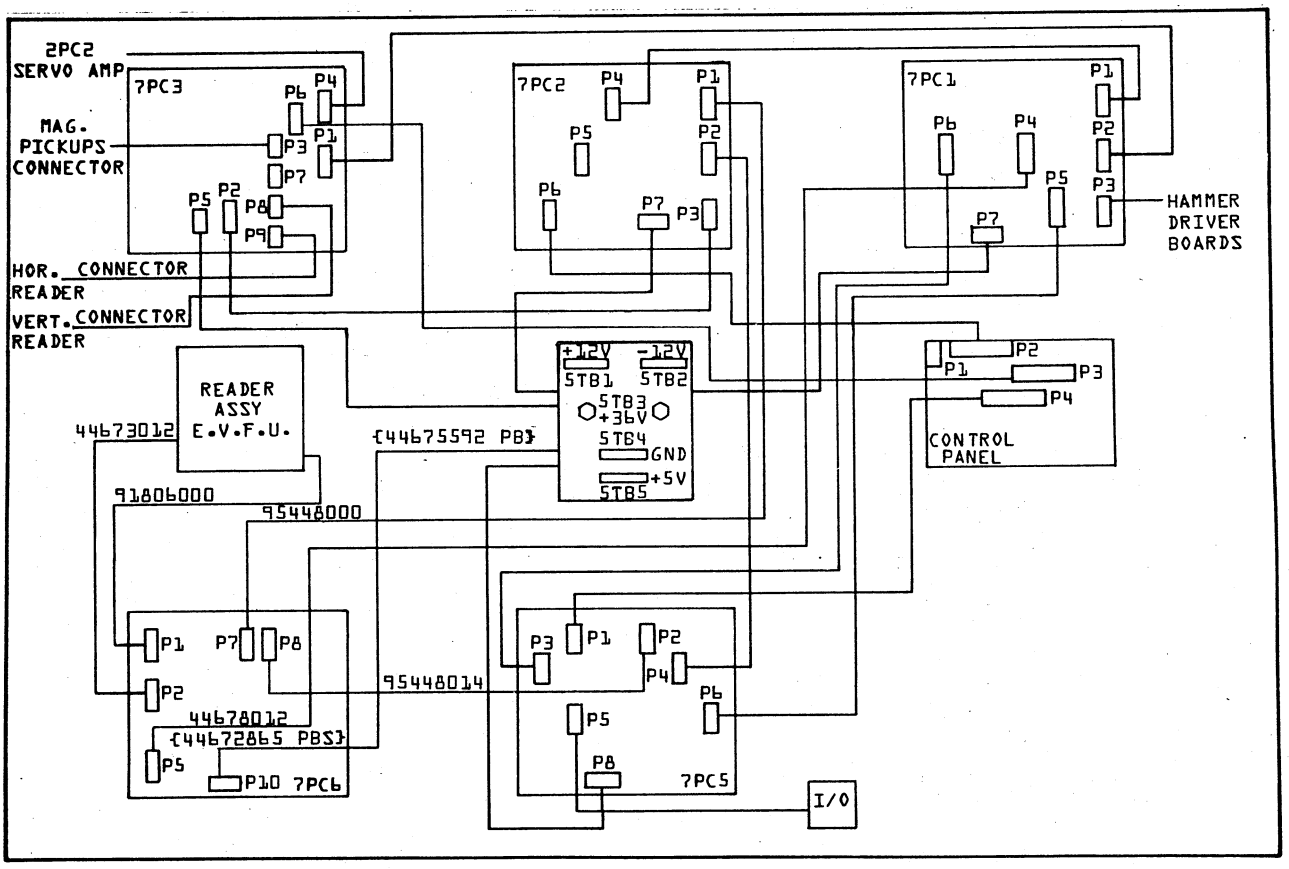
TITLE: READER ASSY E.V.F.U.

FND NUM	U/M	PART NUM	DESCRIPTION	NUM REQ
001	PC	44673180	HOUSING-VERTICAL-FORMAT	1
002	PC	44678997	COVER-VERTICAL-FORMAT	1
003	PC	44675606	SPROCKET-VERTICAL-FORMAT	1
004	PC	44673181	SPRING GUIDE	1
005	PC	44672880	SHAFT	1
006	PC	44672881	LOCATING WASHER E.V.F.U.	1
007	PC	44674075	SPRING COMPRESSION	1
008	PC	94047005	WASHER STL	1
009	PC	92033003	RETAINING RING	1
010	PC	10125106	NUT HEX MACH 8-32	1
011	PC	10126104	WASHER INTL TOOTH LK 8	1
012	PC	18064803	SCR SHT MTL 6X.375	2
013	PC	18064806	SCR SHT MTL 6X.562	2
014	PC	18064804	SCR SHT MTL 6X.437	2
015	PC	95302728	SCR SELF TAP 6-32 X 5/16	2
016	PC	10127355	SCR PAN HD SLTD 8-32X1.75	2
017	PC	10127356	SCR PAN HD SLTD 8-32X2.00	2
018	PC	44681240	MOTOR-SYNCHRONOUS	1
019	PC	95440234	CAP-MOLDED TUBULAR	1
020	PC	44673011	CZ A.C. E.V.F.U. HARNESS	1
201	PC	94130007	RECEPTACLE TERMINAL	2
202	PC	94801601	TUBING-HEAT SHRINKABLE	2
203	FT	93154107	TUBING-HEAT SHRINKABLE	8
021	PC	44673012	CZ D.C E.V.F.U. HARNESS	1
023	PC	44672557	L.E.D. INDICATOR	1
024	PC	44672621	P.B. SW WITH BEZEL (SPOT)	1
025	PC	44672926	RELAY SOLID STATE	1
026	PC	91806000	PAPER TAPE READER	1
027	PC	94277421	STRAP CABLE TIE	2
028	OZ	95024601	SOLDER	AR
029	PC	18064835	SCR SHT MTL 10X.625	1
030	PC	10125606	WASHER PLAIN 8	1
031	PC	93071165	SOC SET SCREW	1
032	PC	10126103	WSHR INTL LK	2
033	PC	10126209	SCR SOCKET HD CAP 2-56X250	2
034	PC	10125602	WASHER PLAIN 2	2
035	PC	10126100	WASHER INTL TOOTH LK 2	2
036	PC	10125605	WASHER PLAIN 6	2
037	PC	10125603	WASHER PLAIN 4	4
038	PC	10126101	WASHER INTL TOOTH LK 4	1
039	PC	10125607	WASHER PLAIN 10	1
040	PC	10126105	WASHER INTNL TOOTH LOCK	1
041	PC	44674593	DECAL EVFU LOAD	1
042	PC	95125308	LOCTITE GRADE CV	AR
043	PC	44680664	LABEL EVFU BUTTON	1
044	PC	18064808	SCR SHT MTL 6X.750	1
045	PC	18064805	SCR SHT MTL 6X.500	1

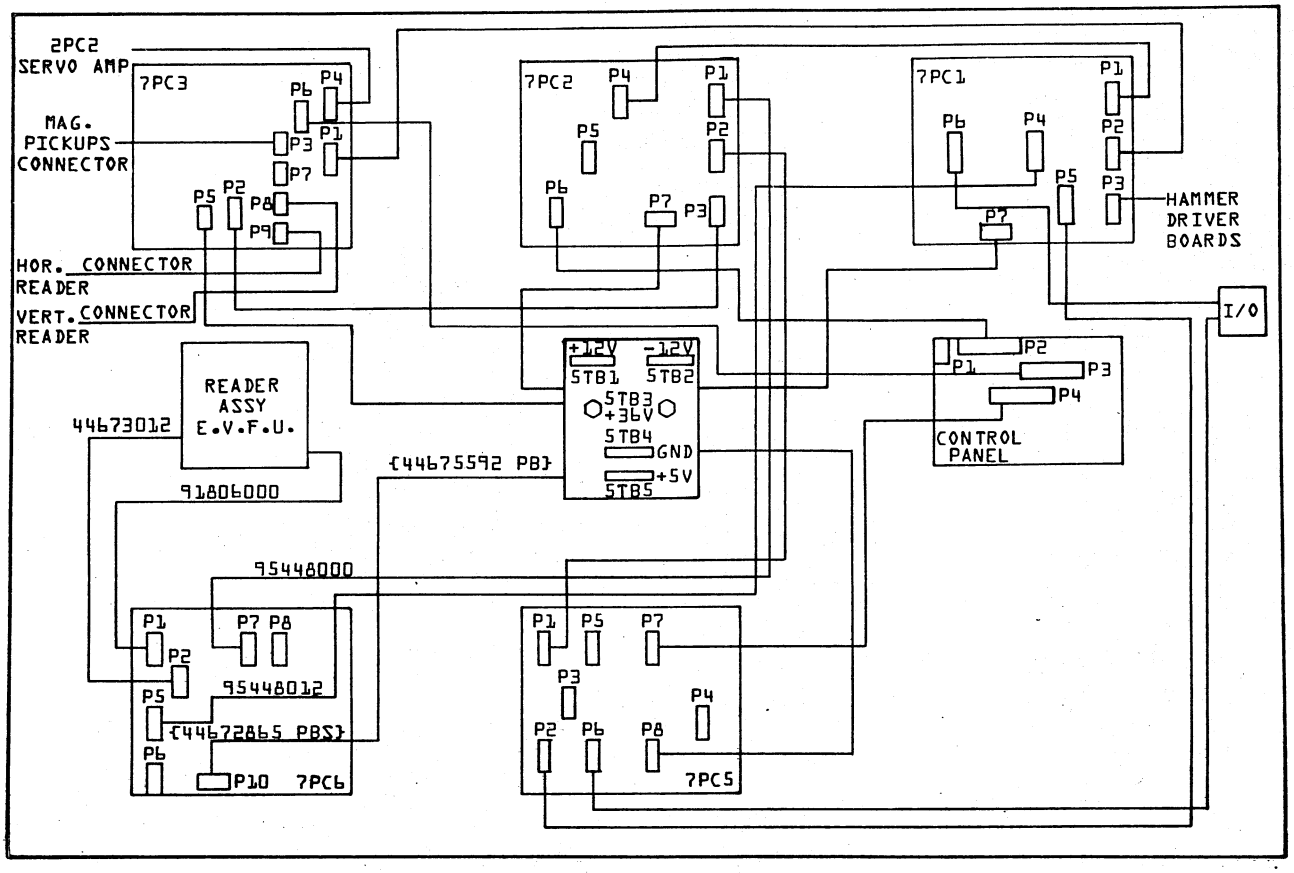
NOTE: WIRE SPLICE 44680667
IS PART OF 44681240
MOTOR ASSY

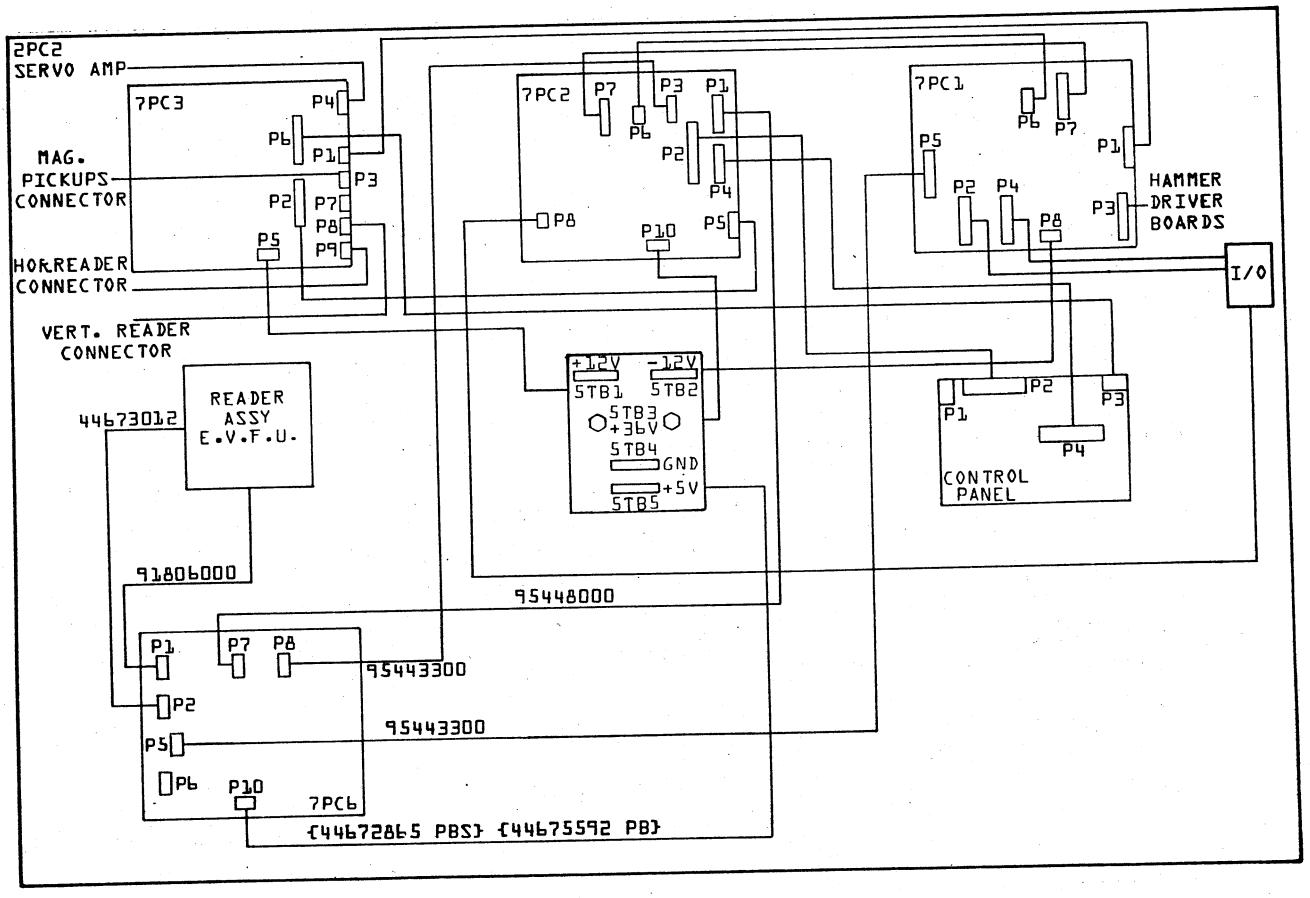

2PC2
SERVO AMP
7PC3
P6
P4
P1
P3
P7
P5
P2
P8
P9
MAG.
PICKUPS
CONNECTOR
HOR. CONNECTOR
READER
VERT. CONNECTOR
READER
7PC2
P4
P1
P5
P2
P6
P7
P3
7PC1
P1
P6
P4
P2
P5
P3
P7
HAMMER
DRIVER
BOARDS
I/O
READER
ASSY
E.V.F.U.
44673012
91806000
+12V
-12V
5TB1
5TB2
5TB3
+36V
5TB4
GND
+5V
5TB5
{44675592 PB}
P2
P1
P3
P4
CONTROL
PANEL
95448000
P1
P7
P8
P2
95448012
P5
{44672865 PB5}
P6
P10
7PC6

STANDARD PRINTER WITH 9322 INTERFACE AND 44673263
OR 44675594 E.V.F.U.

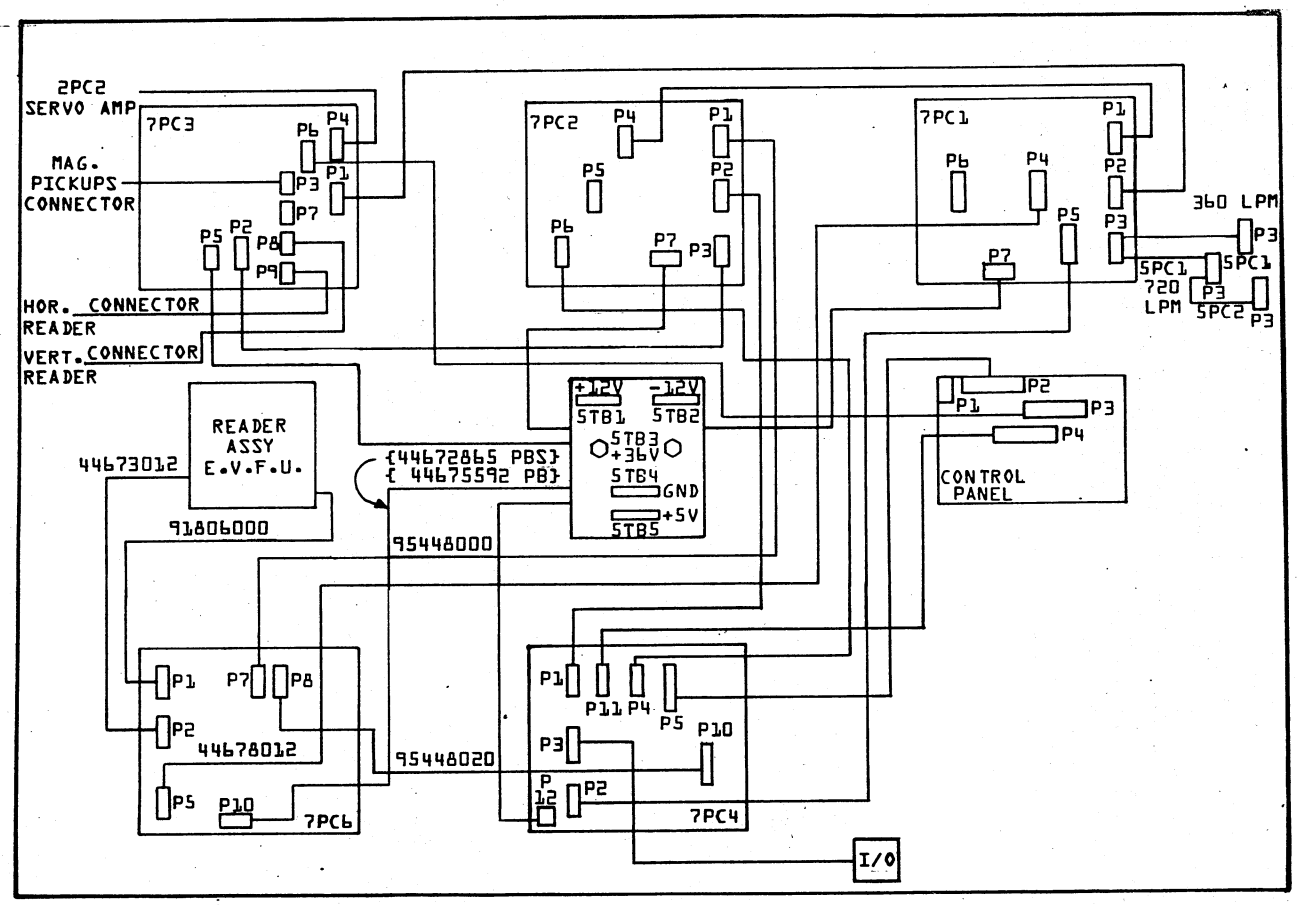


STANDARD PRINTER WITH SPECIAL FEATURE BOARD AND
44673008, 44675593, 44676555, or 44676556 E.V.F.U.

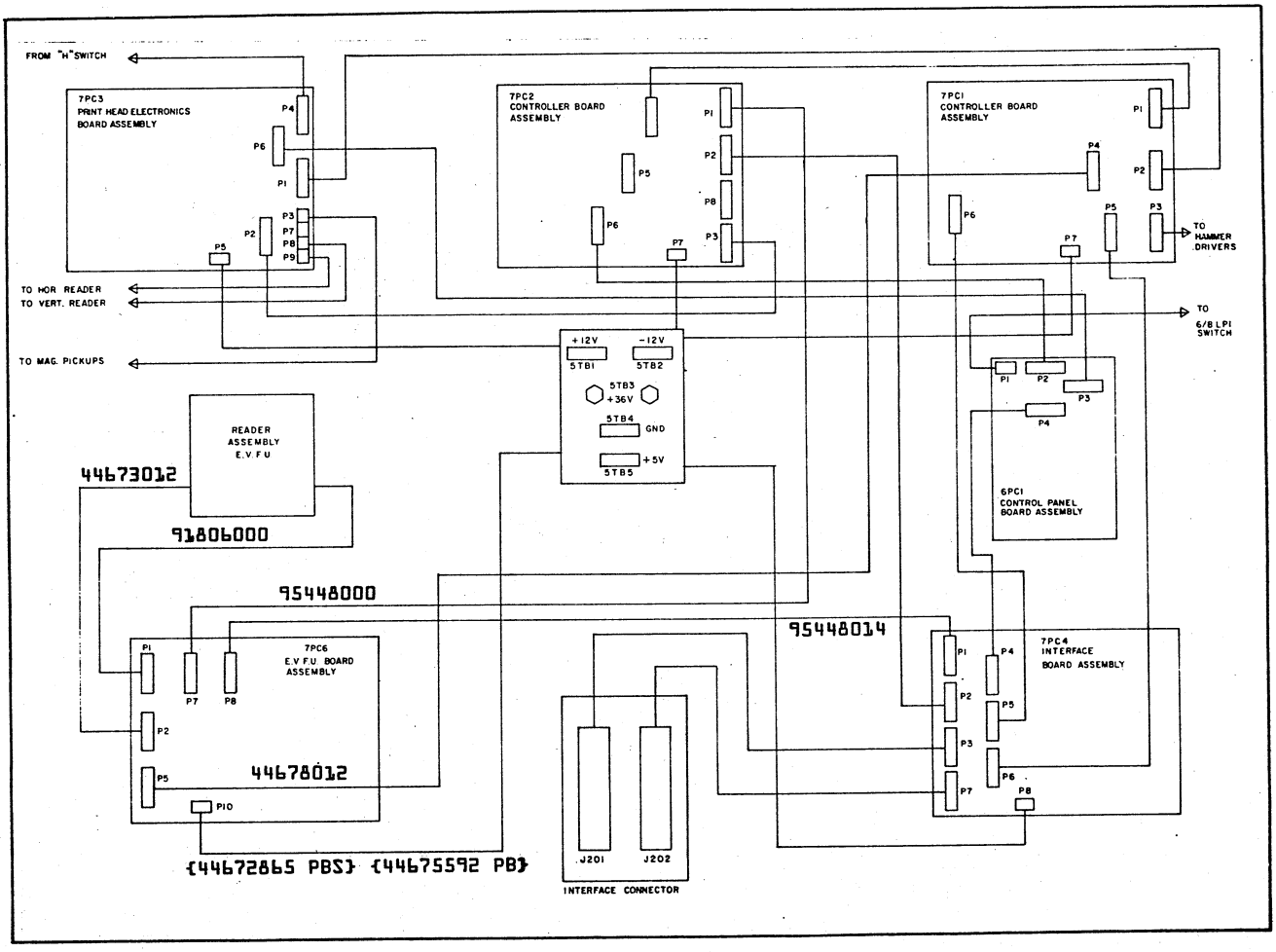


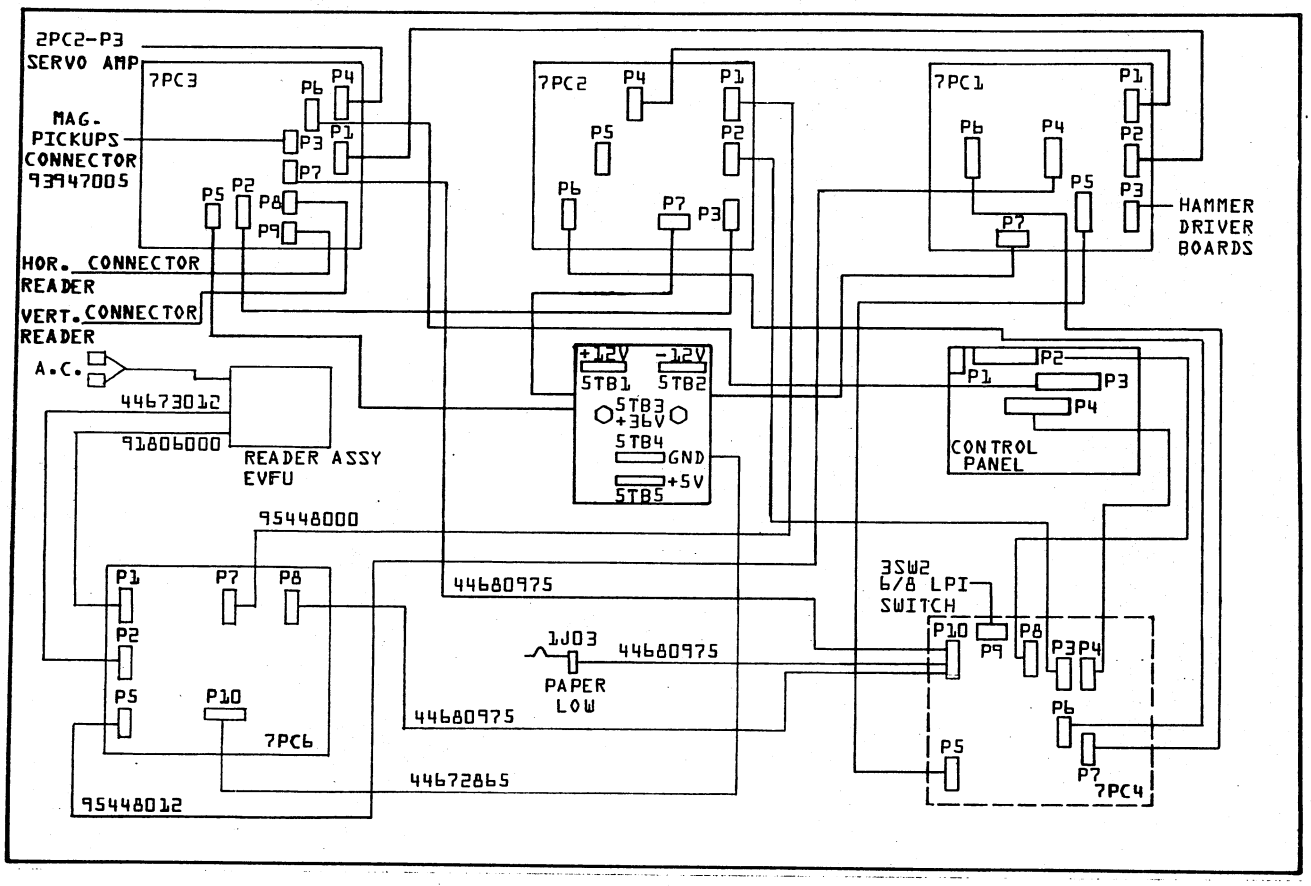

2PC2
SERVO AMP
7PC3
P4
P6
P1
MAG.
PICKUPS
CONNECTOR
P3
P2
P7
P8
P9
P5
HORREADER
CONNECTOR
VERT. READER
CONNECTOR
7PC2
P7
P3
P1
P6
P2
P4
P8
P10
P5
7PC1
P6
P7
P1
P5
P2
P4
HAMMER
DRIVER
BOARDS
P3
P8
I/O
+12V
-12V
5TB1
5TB2
5TB3
+36V
5TB4
GND
+5V
5TB5
P2
P3
P1
P4
CONTROL
PANEL
44673012
READER
ASSY
E.V.F.U.
91806000
95448000
P1
P7
P8
95443300
P2
95443300
P5
P6
P10
7PC6
{44672865 PB5} {44675592 PB}

STANDARD PRINTER BOARD CABLES WITH ITT/CENTRONICS INTERFACE AND E.V.F.U.
44676456, 44678324 OR 44677329

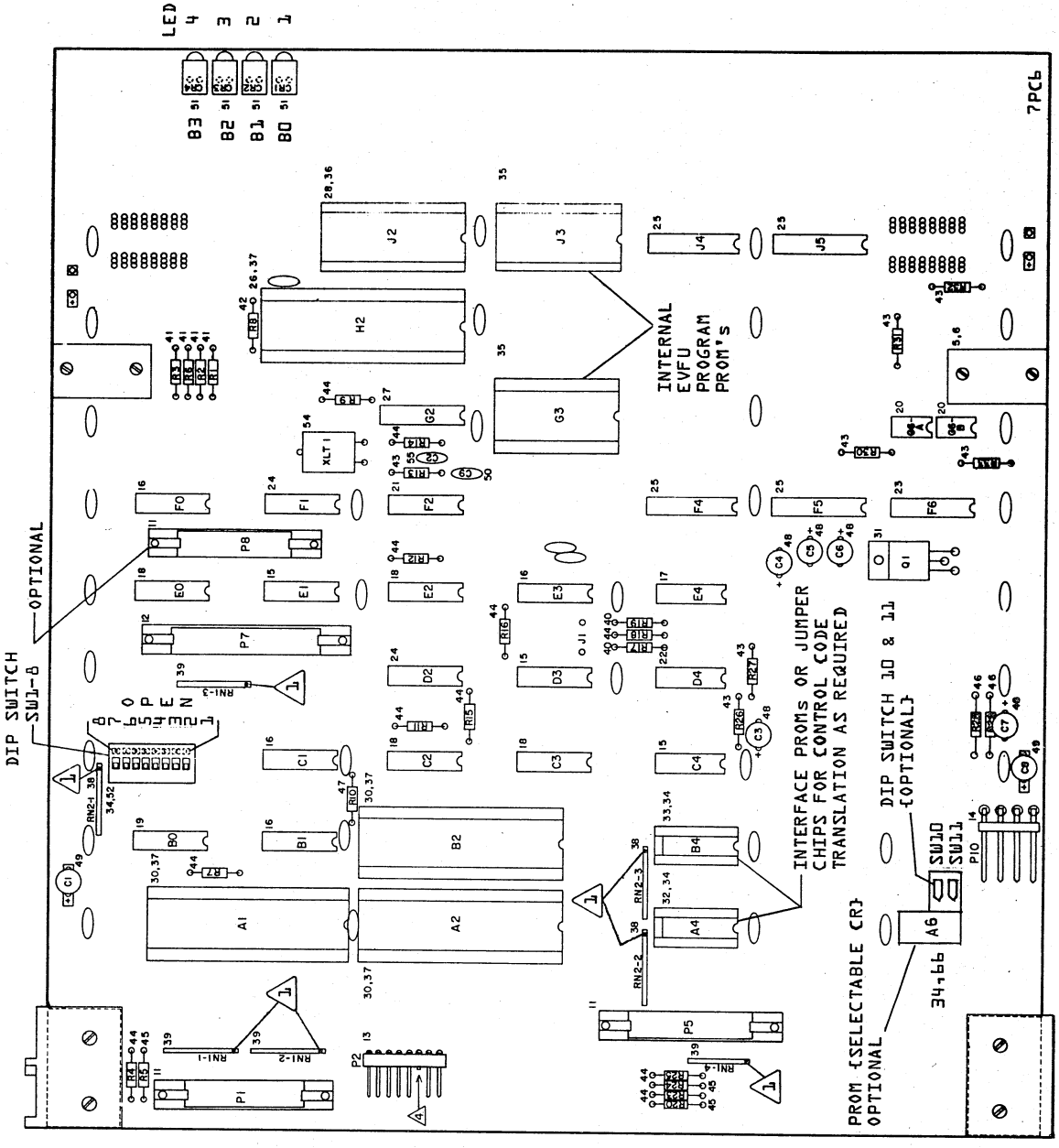


DATA PRINTER INTERFACE WITH EVFU 44677330/31/32/33




2PC2-P3
SERVO AMP
7PC3
P6
P4
P1
P3
P7
P5
P2
P8
P9
MAG.
PICKUPS
CONNECTOR
93947005
HOR. CONNECTOR
READER
VERT. CONNECTOR
READER
A.C.
44673012
91806000
READER ASSY
EVFU
7PC2
P4
P1
P5
P2
P6
P7
P3
7PC1
P1
P6
P4
P2
P5
P3
P7
HAMMER
DRIVER
BOARDS
+12V
-12V
5TB1
5TB2
5TB3
+36V
5TB4
GND
5TB5
+5V
P1
P2
P3
P4
CONTROL
PANEL
95448000
P1
P7
P8
P2
P5
P10
7PC6
44680975
1J03
PAPER
LOW
44680975
44680975
44672865
95448012
3SW2
6/8 LPI
SWITCH
P10
P9
P8
P3P4
P6
P5
P7
7PC4

EVFU
LOGIC DIAGRAM SET



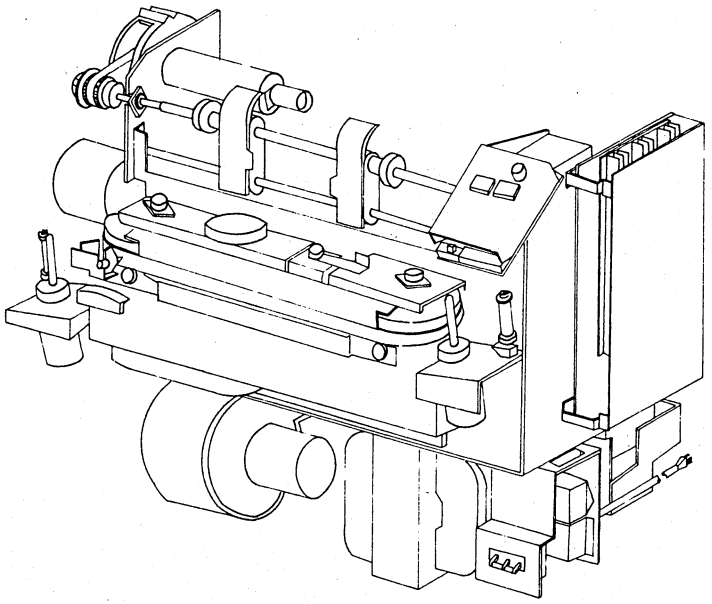
NOTE:
1 PIN 1 DESIGNATOR

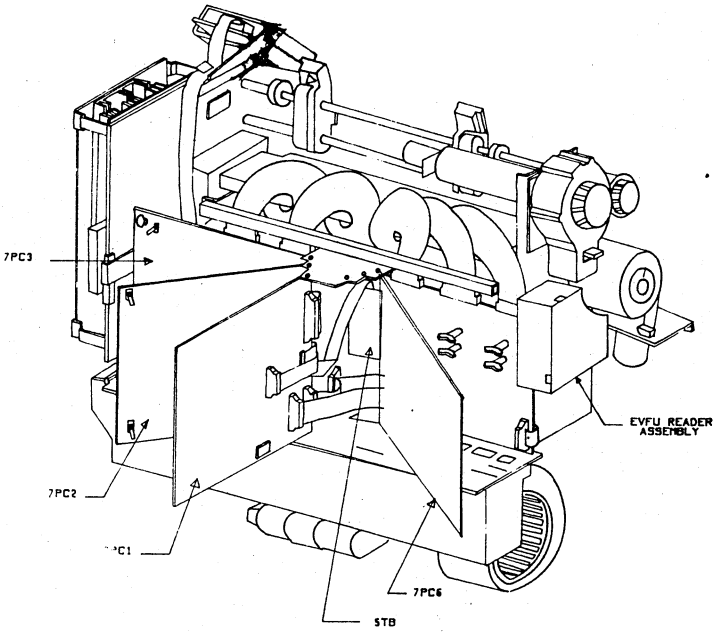
SHEET NO.	CROSS REF. NO.	MODULE LOCATION	REV	LOGIC DIAGRAM TITLE
1			A	LOGIC DIAGRAM SET CONTENTS SHEET
2			A	MACHINE AREA DESIGNATOR AND PARTS LOCATOR
3			A	CONNECTOR AND COMPONENT LOCATIONS
4			A	SPECIAL NOMENCLATURE
5			A	GENERAL NOTES & IDENTIFIER LIST
6	WD01		A	WIRING DIAGRAM EVFU
7	BD01		A	BLOCK DIAGRAM EVFU
8	RC01		A	RIBBON CABLE CONNECTIONS
9	TD02		A	TIMING DIAGRAM EVFU
10	10101		A	READER ASSEMBLY SCHEMATIC
11	10200	7PC6	A	DIP SWITCH AND LED FUNCTION EXPLINATION
12	10201	7PC6	A	EVFU LOGIC
13	10202	7PC6	A	EVFU LOGIC
14	10203	7PC6	A	EVFU LOGIC
15	10204	7PC6	A	EVFU LOGIC
16	10205	7PC6	A	EVFU LOGIC
17	10206	7PC6	A	EVFU LOGIC
18	10207	7PC6	A	EVFU LOGIC
19	10208	7PC6	C	EVFU LOGIC
20	10209	7PC6	C	EVFU LOGIC
21	10210	7PC6	A	EVFU LOGIC
22	10211	7PC6	A	EVFU LOGIC
23	10212	7PC6	A	EVFU LOGIC
24	10213	7PC6	A	EVFU LOGIC
25	10214	7PC6	A	EVFU LOGIC
26	10215	7PC6	A	EVFU LOGIC

CROSS REFERENCE NUMBER CODES		
CR--	=	RIBBON CABLE CONNECTIONS
WD--	=	WIRING DIAGRAM
BD--	=	BLOCK DIAGRAM
TD--	=	TIMING DIAGRAM
101--	=	READER ASSEMBLY SCHEMATIC
102--	=	EVFU LOGIC

LOGIC DIAGRAM SET CONTENTS SHEET
EVFU KIT

CODE IDENT: C
DWG NO:
REV: A
FSI/FSS
SHEET 1





AREA	MACHINE LOCATION
1	A.C. POWER
2	D.C. POWER
3	MOTION CONTROL
4	BAND GATE
5	HAMMER POWER
6	CONTROL PANEL
7	LOGIC BOARDS
8	INPUT/OUTPUT
9	FRAME

PARTS ABBREVIATION CODE
LO= COIL OR INDUCTOR
MO= MOTOR
SW= SWITCH
RO= RESISTOR
TB= TERMINAL BLOCK
XF= TRANSFORMER
CB= CIRCUIT BREAKER
LF= LINE FILTER
PC= PRINTED CIRCUIT BOARD
CO= CAPACITOR
BB= BUS BAR
JO= CONNECTOR

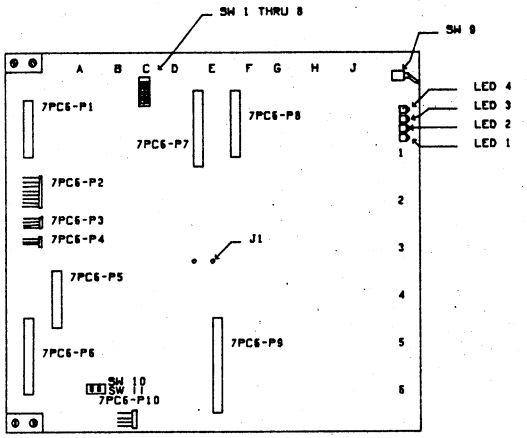
PARTS IDENTIFER CODE

PARTS ARE IDENTIFIED BY A FOUR DIGIT ALPHA-NUMERIC CODE AS FOLLOWS:

1 T B 1

- 1 — THIS DIGIT INDICATES THE NUMBER OF PARTS IN THE AREA
- TB — THESE TWO DIGITS ARE AN ABBREVIATION FOR THE PART (SEE ABBREVIATION CODE)
- 1 — THIS DIGIT REFERS TO THE AREA THE PART IS LOCATED IN (SEE CHART FOR AREA NUMBERS)

MACHINE AREA DESIGNATOR AND PARTS LOCATOR-EVFU KIT	CODE IDENT	C	DWG NO	REV A
	FB/PBS		SHEET 2	



THE DRAWING TO THE LEFT DEPICTS THE EVFU PCB CONNECTOR AND COMPONENT APPROXIMATE LOCATIONS.

POWER REQUIRMENT FOR THIS CARD ARE +5V, GND, +12V, AND -12V.

PCB CONNECTOR & COMPONENT LOCATIONS	CODE IDENT	C	DWG NO	REV A
			SHEET 3	

ABBREVIATION	DEFINITION	CROSS REF. NUMBERS
ACT RDR MOTOR	ACTIVATE READER MOTOR	10210
ADR0-13	ADDRESS LINES 0 TO 13	10201
ADV FF	ADVANCE FLIP FLOP	10207
APS ACTIVE	AUTOMATIC PERF SKIP	10211
BUSY MP	BUSY MICROPROCESSOR	10214
BOF	BOTTOM OF FORMS	10208
CC BIT 0-7	CONTROL CODE BIT 0-7	10207
CE LD FTB	CE LOAD FORMAT TAPE BUFFER	10211
CHNL 1	CHANNEL 1	10208
CHNL 3	CHANNEL 3	10208
CHNL 1-12	CHANNEL 1 TO 12	10210
CS-0 TO 8	CHIP SELECT ADDRESS LINES 10 TO 13	10203
DATA 0-7	DATA LINES 0 TO 7	10205
DATA 1-9	DATA BIT 1 TO 9	10213
DCE FF	DECELL FLIP FLOP	10207
ENAB ADV P	ENABLE ADVANCE PULSE	10214
EVFU LD'ED	ELECTRONIC VERTICAL FORMS UNIT LOADED	10208
EXT ADAPTOR PRESENT	EXTERNAL ADAPTOR PRESENT	10211
FF	FORMS FEED	10214
HOLD ACK	HOLD ACKNOWLEDGE	10201
INH DEL	INHIBIT DELAY	10214
INP DATA REQ	INPUT DATA REQUEST	10201
LF	LINE FEED	10209
LF O/S	LINE FEED ONE SHOT	10214
LF O/S FF	LINE FEED ONE SHOT FLIP FLOP	10214
LOAD PLB	LOAD PRINT LINE BUFFER	10213
MC	MASTER CLEAR	10213
MEM READ	MEMORY READ	10202
MEM WRITE	MEMORY WRITE	10202
MOTOR ON SW (COM)	MOTOR ON SWITCH COMMON	10210
MOTOR ON SW (NC)	MOTOR ON SWITCH NORMALLY CLOSED	10210
MOTOR ON SW (NO)	MOTOR ON SWITCH NORMALLY OPEN	10210
MP DATA 0-7	MICROPROCESSOR DAT LINES 0 TO 7	10201
OOP	OUT OF PAPER	10213
P ACK CLK	PORT ACKNOWLEDGE CLOCK	10208
P RST BUSY MP	PORT RESET BUSY MICROPROCESSOR	10208
P RST LF O/S	PORT RESET LINE FEED ONE SHOT	10208
RDR LD'ED	READER LOADED	10209
RDR MOTION ON	READER MOTION ON	10208
RDR STB	READER STROBE	10210
RDY	READY	10213
ROM 1 ENAB	ROM 1 ENABLE	10202
ROM 2 ENAB	ROM 2 ENABLE	10202
ROM 3 ENAB	ROM 3 ENABLE	10202
ROM 4 ENAB	ROM 4 ENABLE	10202
SET DCE	SET DECELL	10214
STB	STROBE	10213
VT	VERTICAL TAB	10209
*IDBI TO IDB8	INPUT DATA BIT LINES 1 TO 8	10213
8 BIT LC ONLY	8 BIT LINE COUNTER ONLY	10211
8 LPI	8 LINES PERINCH	10209

LOGIC LEVELS

HIGH OUTPUT VOLTAGE = 5.5V MAX / 2.4 MIN.
LOW OUTPUT VOLTAGE = 0.4V MAX / 0V MIN.

HIGH INPUT VOLTAGE = 5.5V MAX / 2.0V MIN.
LOW INPUT VOLTAGE = 0.8V MAX / 0V MIN.

POWER SUPPLY CONNECTIONS

ALL STANDARD I.C. PACKAGES HAVE THE FOLLOWING POWER SUPPLY CONNECTION WHICH ARE NOT SHOWN ON THE LOGIC ELEMENT SYMBOL.

14 PIN DEVICE =
GROUND ON PIN 7 AND +5V ON PIN 14
16 PIN DEVICE =
GROUND ON PIN 8 AND +5V ON PIN 16

ALL NON STANDARD I.C. PACKAGES WILL HAVE THEIR NON STANDARD GROUND AND SUPPLY CONNECTIONS SHOWN AS PART OF THE LOGIC ELEMENT SYMBOL.

REPETITIVE DETAILS

ALL LOGIC PRINTER CIRCUIT CARDS WILL HAVE FILLTER CAPACITORS GENERALLY LOCATED CLOSE TO THE INPUT POWER CONNECTOR. DECOUPLING CAPACITORS VALUES ARE 33 MFD.

HIGH FREQUENCY CAPACITORS (.01MFD) ARE LOCATED BETWEEN USED I.C. LOCATIONS.

THESE CAPACITORS ARE NOT SHOWN ON LOGIC DRAWINGS.

SPECIAL NOMENCLATURE

CODE IDENT C | DWG NO | REV A

SHEET 4

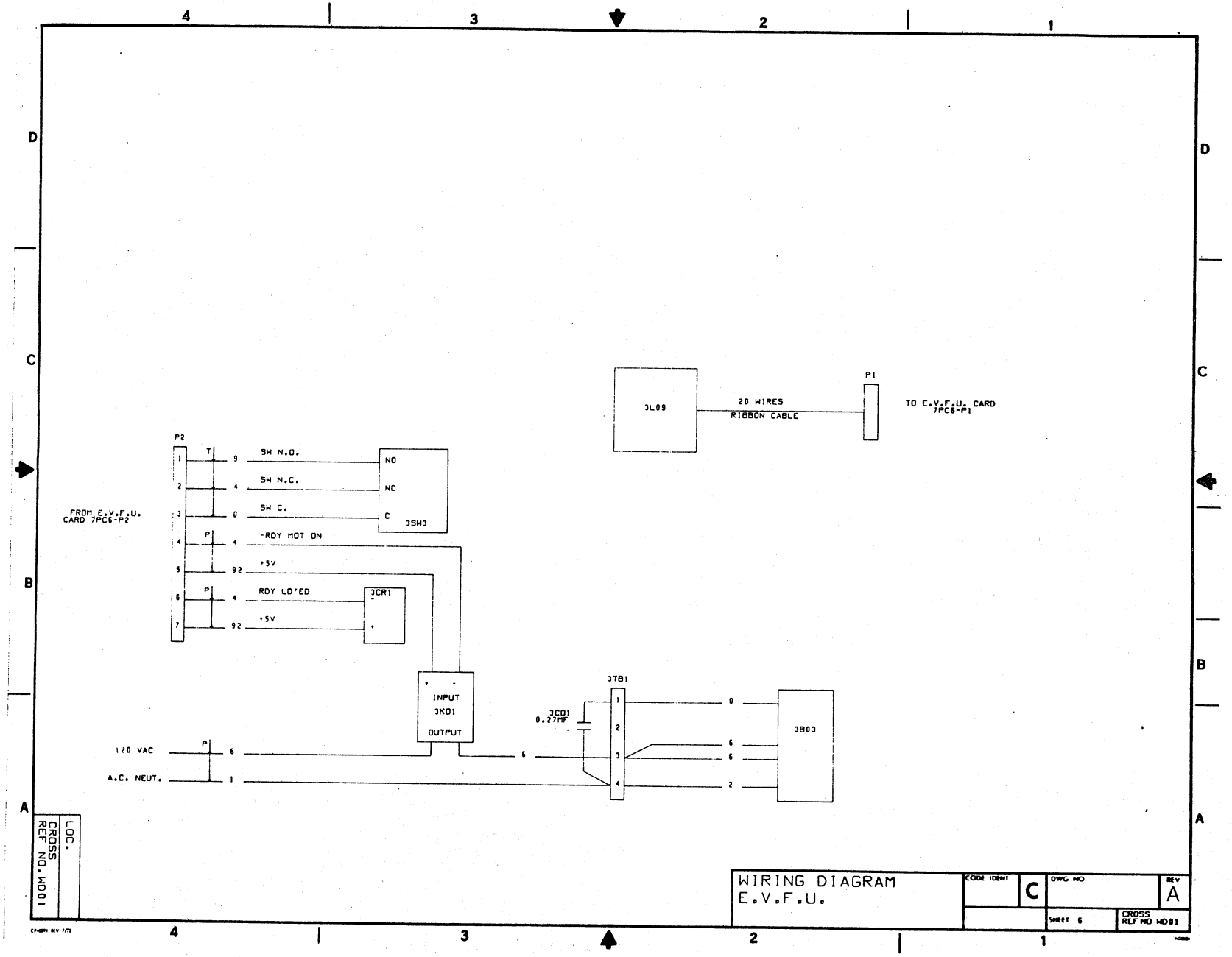
ELEMENT IDENTIFIER LIST

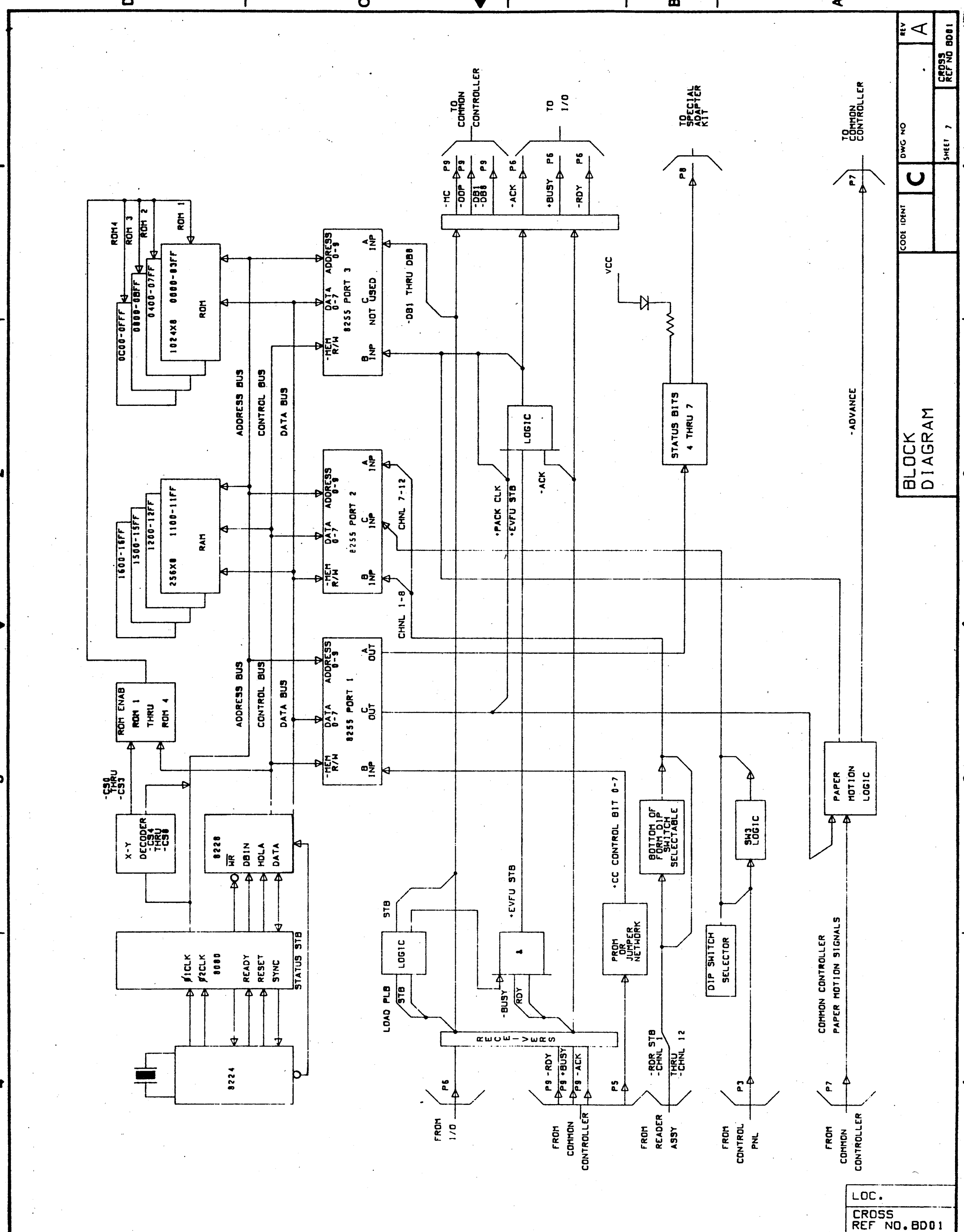
ELEMENT IDENTIFIER	GENERIC EQUIVALENT	DESCRIPTION
140	7400	QUAD 2 INPUT NAND
146	7404	HEX INVERTER
200	7406	DRIVER, HEX INVERTER-OPEN COLLECTOR
201	7408	QUAD 2 INPUT AND
943	7414	HEX SCHMITT TRIGER
218	7432	QUAD 2 INPUT OR
213	7411	TRIPLE 3 INPUT AND
210	7437	QUAD 2 INPUT NAND BUFFER
507	7442	SINGLE 4 LINE TO 10 LINE DECODER (1 OF 10)
175	7474	DUAL D-TYPE FF
780	8111	256 BY 4 STATIC RAM
558	8080	8 BIT MPU
8224	8224	CLOCK GENERATOR DRIVER
8228	8228	SYSTEM CONTROLLER AND DRIVER
8255	8255	PROGRAMMABLE I/O
2308	2308	1024 X 8 BIT ROM/PROM
7905	7905	POSITIVE VOLTAGE REGULATOR
5603	5306	PROGRAMMABLE 1024 BIT ROM

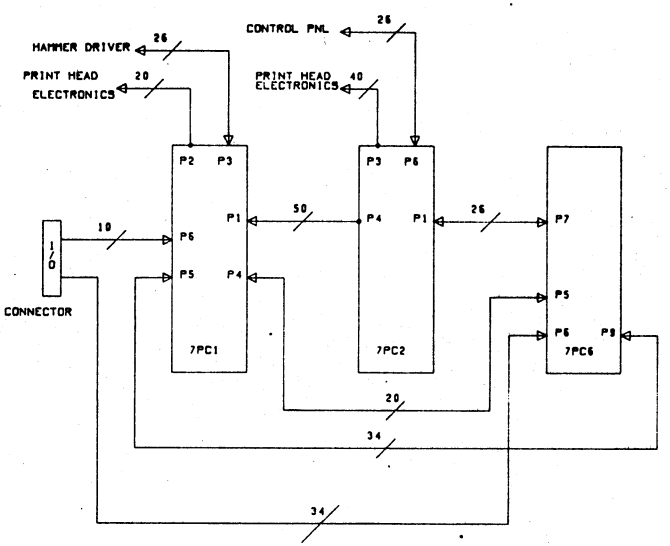
GENERAL NOTES

EACH SYMBOL IN THE DIAGRAMS REFLECTS THE LOGIC FUNCTION PERFORMED. COMPONENT TYPE OR ELEMENT IDENTIFIER AND LOCATION OF ALL OR PART OR AN I/C PACKAGE OR DISCREET COMPONENT(S). FOR DETAILED INFORMATION ON SYMBOLS AND PACKAGE TYPE REFER TO CIRCUIT DECRIPTIONS AT LEFT OF THIS SHEET. OR KEY TO SYMBOLS # 95387580.

GENERAL NOTES & IDENTIFIER LIST	CODE IDENT C	DWG NO	REV A
		SHEET 5	

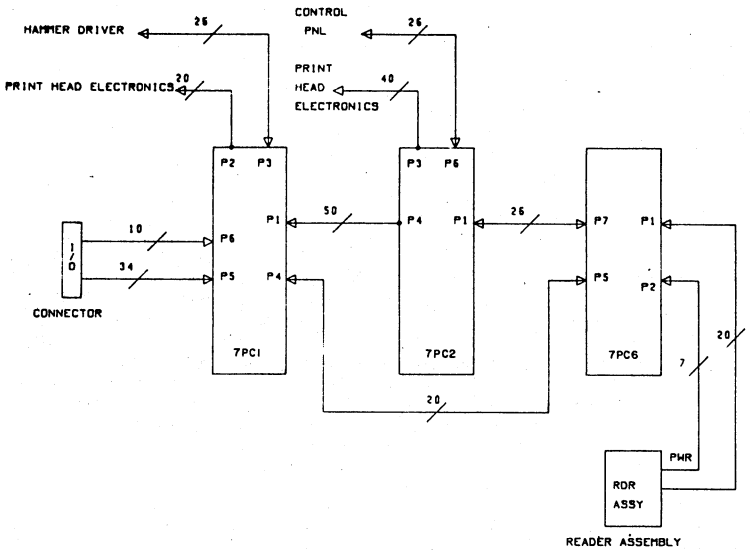

4
3
2
1
D
C
B
A
3L09
20 WIRES
RIBBON CABLE
P1
TO E.V.F.U. CARD
7PC6-P1
P2
FROM E.V.F.U.
CARD 7PC6-P2
SW N.O.
SW N.C.
SW C.
NO
NC
C
3SW3
-RDY MOT ON
+5V
RDY LO'ED
+5V
3CR1
INPUT
3K01
OUTPUT
3TB1
3C01
0.27MF
120 VAC
A.C. NEUT.
3B03
CROSS
REF NO. WD01
LOC.
WIRING DIAGRAM
E.V.F.U.
CODE IDENT
C
DWG NO
REV
A
SHEET 6
CROSS
REF NO WD81


BLOCK DIAGRAM
ROM 1
ROM 2
ROM 3
ROM4
1024X8
ROM
0000-03FF
0400-07FF
0800-0BFF
0C00-0FFF
256X8
RAM
1100-11FF
1200-12FF
1500-15FF
1600-16FF
ADDRESS BUS
CONTROL BUS
DATA BUS
8255 PORT 3
8255 PORT 2
8255 PORT 1
-MEM R/W
DATA 0-7
ADDRESS 0-9
B INP
C NOT USED
A INP
C INP
B INP
A OUT
C OUT
-DB1 THRU DB8
CHNL 7-12
CHNL 1-8
ROM ENAB ROM 1 THRU ROM 4
X-Y DECODER -CS4 THRU -CS8
-CS0 THRU -CS3
8228
WR
DBIN
HOLA
DATA
ϕ1CLK
ϕ2CLK
8080
READY
RESET
SYNC
STATUS STB
8224
LOGIC
+PACK CLK
+EVFU STB
-ACK
STATUS BITS 4 THRU 7
VCC
TO COMMON CONTROLLER
TO I/O
TO SPECIAL ADAPTER KIT
-MC
-DOP
-DB1 -DB8
-ACK
+BUSY
-RDY
P9
P6
P8
P7
-ADVANCE
PAPER MOTION LOGIC
SW3 LOGIC
DIP SWITCH SELECTOR
BOTTOM OF FORM DIP SWITCH SELECTABLE
+CC CONTROL BIT 0-7
PROM OR JUMPER NETWORK
+EVFU STB
STB
LOAD PLB
-BUSY
RDY
RECEIVERS
P6
P9 -RDY
P9 +BUSY
P9 -ACK
P5
-RDR STB
-CHNL 1 THRU -CHNL 12
P3
FROM I/O
FROM COMMON CONTROLLER
FROM READER ASSY
FROM CONTROL PNL
FROM COMMON CONTROLLER
COMMON CONTROLLER PAPER MOTION SIGNALS
CODE IDENT
C
DWG NO
SHEET 7
REV
A
CROSS REF NO BD01
LOC.
CROSS REF NO. BD01



I/O LOAD RIBBON CABLE INTERCONNECTION

NOT RELEASED



READER LOAD RIBBON CABLE INTERCONNECTION

STANDARD PRINTER WITHOUT INTERFACE
(REFER TO CABLE LAYOUT IN THE PARTS SECTION FOR OTHER INTERFACES)

CROSS REF	MODULE LOCATION	LOGIC DIAGRAM TITLE
001XX	7PC1	INPUT PRINT BD1
002XX	7PC2	OSC. HORZ AND VERT MOTION
102XX	7PC6	EVFU LOGIC

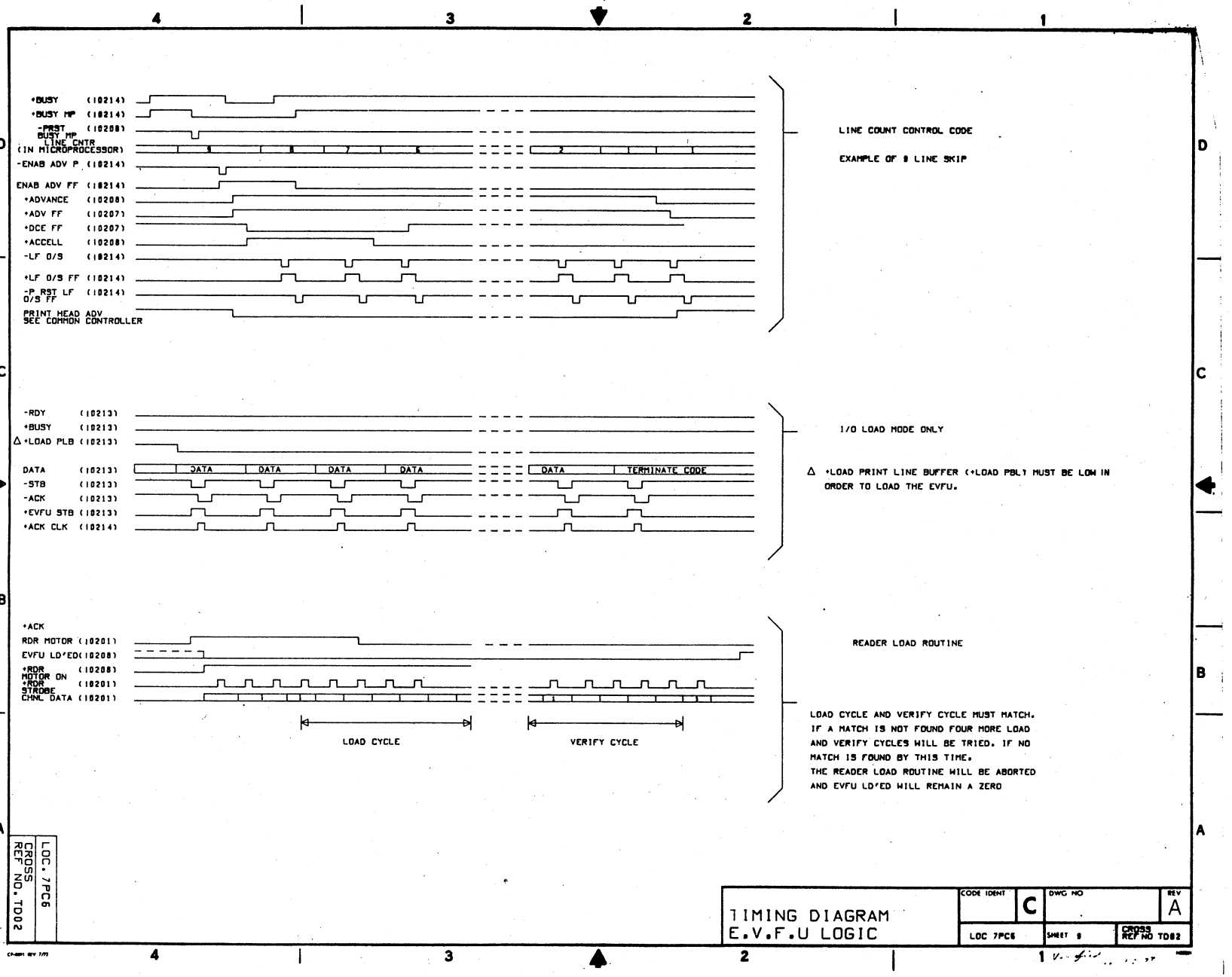
1. • NOTES A PCB RIBBON CABLE CONNECTOR.
2. ◁ NOTES A HEADER/SOCKET RIBBON CABLE CONNECTOR.
3. IN 8 BIT LINE COUNTER MODE, READER ASSEMBLY IS DELETED FOR THIS MODE OF OPERATION. CABLES P1 AND P2 HOULD NOT BE CONNECTED ON THE EVFU BOARD (7PC6).

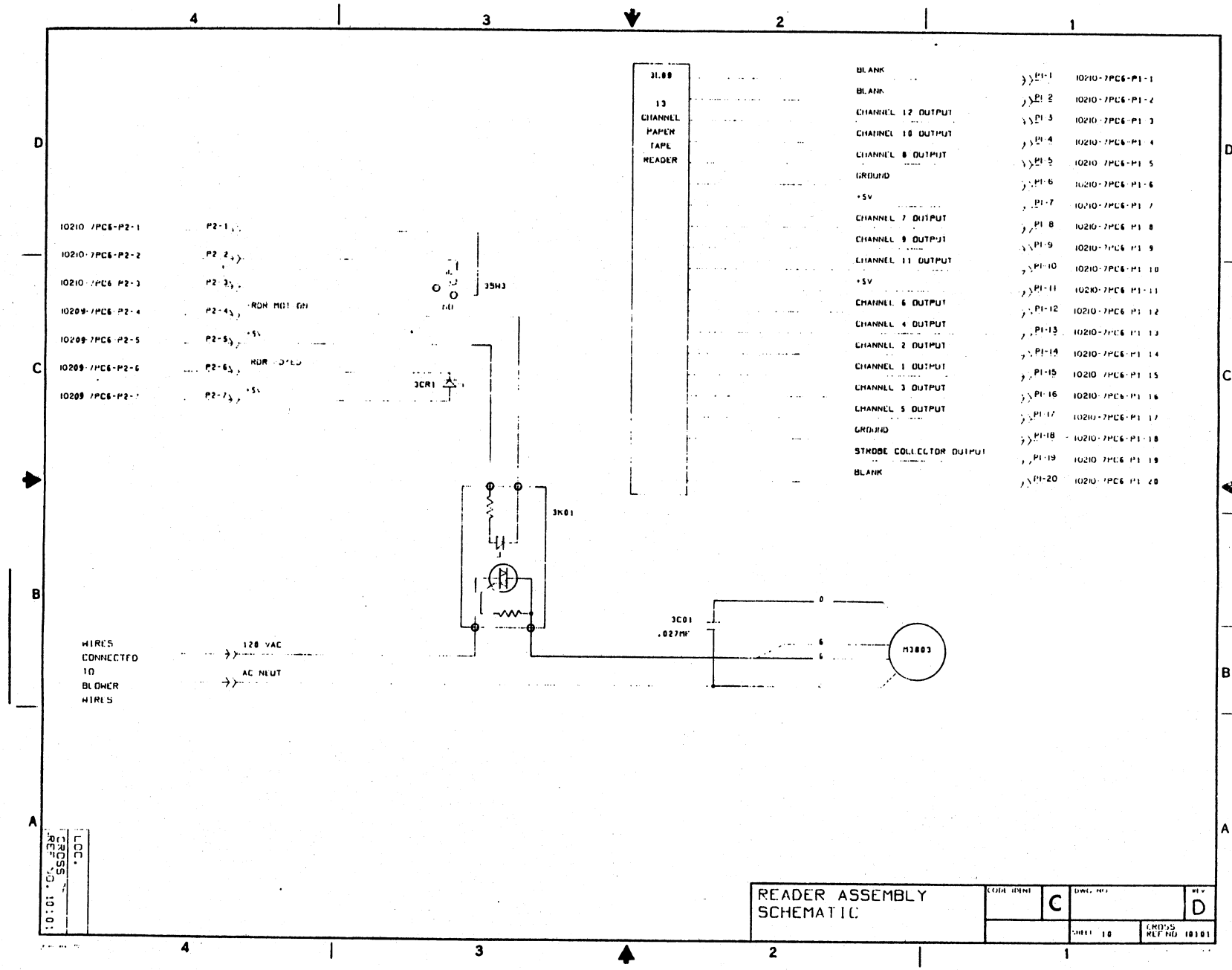
LOC. CROSS REF NO. RC01

RIBBON CABLE CONNECTIONS

CODE IDENT C | DWG NO | REV A

SHEET 8 | CROSS REF NO RC01


*BUSY (10214)
*BUSY MP (10214)
-PRST BUSY MP (10208)
LINE CNTR (IN MICROPROCESSOR)
-ENAB ADV P (10214)
ENAB ADV FF (10214)
*ADVANCE (10208)
*ADV FF (10207)
*DCE FF (10207)
*ACCELL (10208)
-LF 0/S (10214)
*LF 0/S FF (10214)
-P RST LF 0/S FF (10214)
PRINT HEAD ADV SEE COMMON CONTROLLER
LINE COUNT CONTROL CODE
EXAMPLE OF 8 LINE SKIP
-RDY (10213)
*BUSY (10213)
Δ *LOAD PLB (10213)
DATA (10213)
-STB (10213)
-ACK (10213)
*EVFU STB (10213)
*ACK CLK (10214)
DATA
TERMINATE CODE
I/O LOAD MODE ONLY
Δ *LOAD PRINT LINE BUFFER (*LOAD PBLT MUST BE LOW IN ORDER TO LOAD THE EVFU.
*ACK
RDR MOTOR (10201)
EVFU LD'ED (10208)
*RDR MOTOR ON (10208)
*RDR STROBE (10201)
CHNL DATA (10201)
LOAD CYCLE
VERIFY CYCLE
READER LOAD ROUTINE
LOAD CYCLE AND VERIFY CYCLE MUST MATCH. IF A MATCH IS NOT FOUND FOUR MORE LOAD AND VERIFY CYCLES WILL BE TRIED. IF NO MATCH IS FOUND BY THIS TIME, THE READER LOAD ROUTINE WILL BE ABORTED AND EVFU LD'ED WILL REMAIN A ZERO
CROSS REF NO. TD02
LOC. 7PC6
TIMING DIAGRAM
E.V.F.U LOGIC
CODE IDENT
C
DWG NO
REV
A
LOC 7PC6
SHEET 8
CROSS REF NO TD02


4
3
2
1
D
C
B
A
10210-7PC6-P2-1
10210-7PC6-P2-2
10210-7PC6-P2-3
10209-7PC6-P2-4
10209-7PC6-P2-5
10209-7PC6-P2-6
10209-7PC6-P2-7
P2-1
P2-2
P2-3
P2-4
P2-5
P2-6
P2-7
RDR MOT GN
+5V
RDR SPEED
+5V
3SH3
3CR1
3R01
3C01
.027MF
M3803
WIRES CONNECTED TO BLOWER WIRES
120 VAC
AC NEUT
31.09
13 CHANNEL PAPER TAPE READER
BLANK
BLANK
CHANNEL 12 OUTPUT
CHANNEL 10 OUTPUT
CHANNEL 8 OUTPUT
GROUND
+5V
CHANNEL 7 OUTPUT
CHANNEL 9 OUTPUT
CHANNEL 11 OUTPUT
+5V
CHANNEL 6 OUTPUT
CHANNEL 4 OUTPUT
CHANNEL 2 OUTPUT
CHANNEL 1 OUTPUT
CHANNEL 3 OUTPUT
CHANNEL 5 OUTPUT
GROUND
STROBE COLLECTOR OUTPUT
BLANK
P1-1 10210-7PC6-P1-1
P1-2 10210-7PC6-P1-2
P1-3 10210-7PC6-P1-3
P1-4 10210-7PC6-P1-4
P1-5 10210-7PC6-P1-5
P1-6 10210-7PC6-P1-6
P1-7 10210-7PC6-P1-7
P1-8 10210-7PC6-P1-8
P1-9 10210-7PC6-P1-9
P1-10 10210-7PC6-P1-10
P1-11 10210-7PC6-P1-11
P1-12 10210-7PC6-P1-12
P1-13 10210-7PC6-P1-13
P1-14 10210-7PC6-P1-14
P1-15 10210-7PC6-P1-15
P1-16 10210-7PC6-P1-16
P1-17 10210-7PC6-P1-17
P1-18 10210-7PC6-P1-18
P1-19 10210-7PC6-P1-19
P1-20 10210-7PC6-P1-20
CROSS REF NO. 10101
LOC.
READER ASSEMBLY SCHEMATIC
CODE IDENT
C
DWG. NO.
REV
D
SHEET 10
CROSS REF NO 10101

PBC DIP SWITCH EXPLANATION

1= OPEN OR OFF
0= CLOSED OR ON

MODE	DIP SWITCH			
	S1	S5	S2	
1	1	0	1	TAPE READER LOAD MODE WITH AUTOPERF SKIP FEATURE.
2	1	0	0	TAPE READER LOAD MODE WITHOUT AUTOPERF SKIP FEATURE.
3	0	0	1	I/O LOAD MODE WITH AUTO PERF SKIP FEATURE
4	0	0	0	I/O LOAD MODE WITHOUT AUTO PERF SKIP FEATURE.
5	1	1	0	8 BIT LINE COUNTER MODE-AUTO PERF SKIP NOT AVAILABLE WITH 8 BIT LINE COUNTER MODE.
	S6	S7	S8	
6	0	1	1	CHNL 12= BOTTOM OF FORMS-READER MODE ONLY
7	1	0	1	CHNL 8= BOTTOM OF FORM-READER MODE ONLY
8	1	1	0	CHNL 2= BOTTOM OF FORMS-READER MODE ONLY SW6,SW7,SW8, SETTINGS ARE IRRELAVENT WHEN IN THE 8 BIT LINE COUNTER OR I/O LOAD MODE.
	S4			
9	1			THIS SWITCH IS OPEN AT THE DISCRETION OF AN EXTERNAL ADAPTOR IF PRESENT. WHEN THE SWITCH IS OPEN, EVFU LOADED WILL NOT GO TO A ZERO WHEN: 1. PAPER MOTION IS EXECUTED FROM THE I/O, AND THE FORMAT TAPE BUFFER (FTB) IS NOT LOADED. THE DIP SWITCH IS ONLY ENABLED IN MODE 3 OR 4 (READER I/O LOAD MODE). 2. A PAPER RUNAWAY IS DETECTED AND THE DIP SWITCH IS PROGRAMED FOR MODES 1,2,3 OR 4 (THE TAPE OR I/O LOAD MODES)
10	0			
	S3			
11	1			WITH J1 ASSEMBLED AND P3 CONNECTOR CONNECTED TO READER ASSEMBLY, THIS SWITCH SHOULD BE OPEN, WHEN IN MODES 3 AND 4 (I/O LOAD MODE) AND J1 NOT ASSEMBLED, DEPRESSION OF PCB TOGGLE SWITCH WILL CAUSE THE FORMAT TAPE BUFFER TO BE LOADED WITH A PREDEFINED PROGRAM OF 88 LINES WHEN SWITCH 3 IS OPEN, AND 66 LINES WHEN SWITCH 3 IS CLOSED. THIS ALLOWS AN 11 INCH FORM IN EITHER 6 OR 8 LINES PER INCH. (LPI)
	S10	S11		
12	0	1		CR-0
	1	0		CR-1

LED INDICATOR FUNCTIONS

LED INDICATORS				NAME
B3	B2	B1	B0	
0	0	0	1	ROM CHECK
0	0	1	0	RAM CHECK
0	0	1	1	READER OR I/O LOAD TO THE FORMAT TAPE BUFFER
0	1	0	0	PAPER RUNAWAY
0	1	0	1	FORMAT TAPE BUFFER NOT LOADED
0	1	1	0	PAPER MOTION
0	1	1	1	FORMAT TAPE BUFFER PARITY ERROR
1	0	0	0	PRINTER BROKE

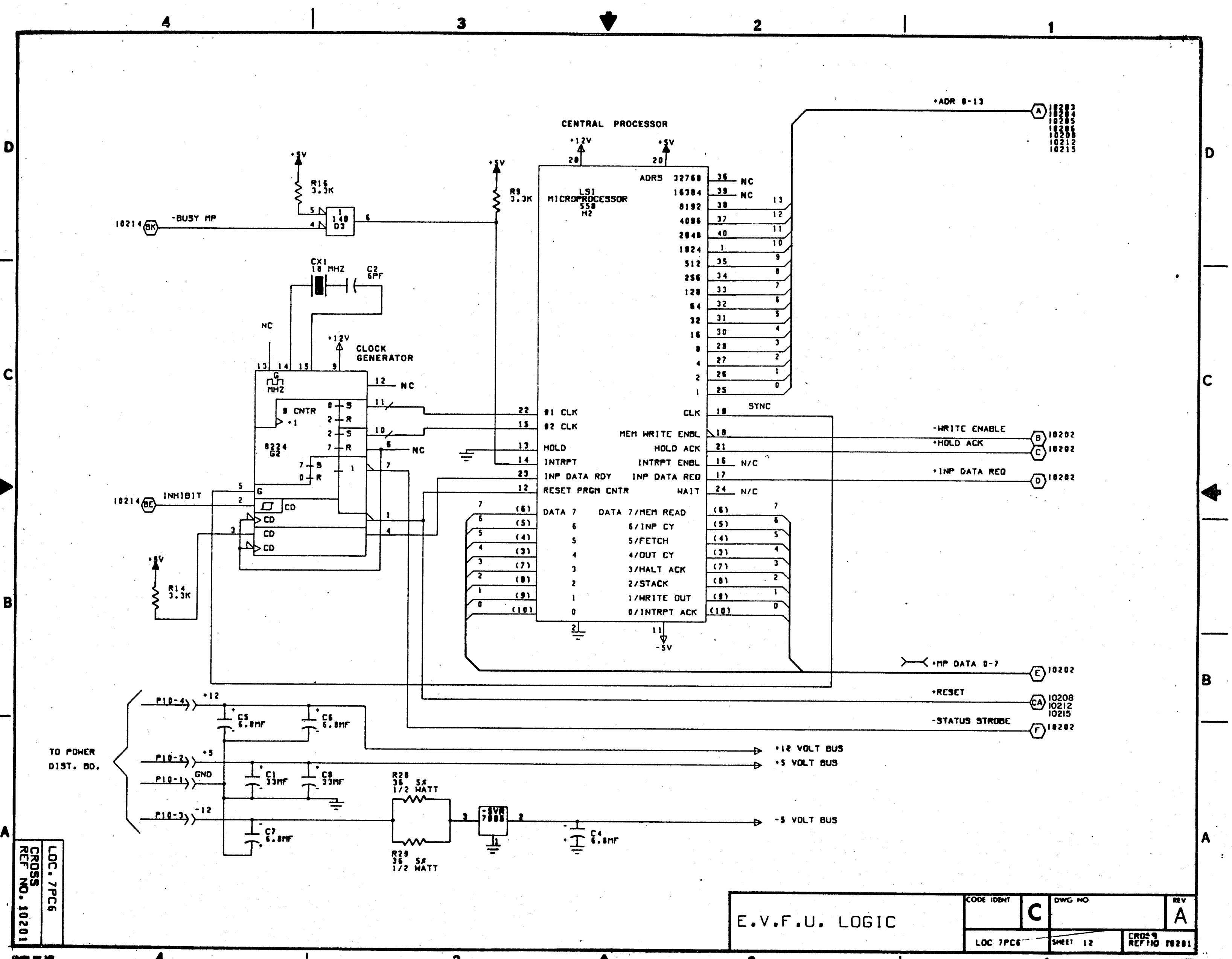
SEE APPROPRIATE SPECIFICATION FOR DISCRIPTION

CROSS REF NO. 10200 LOC. 7PC6

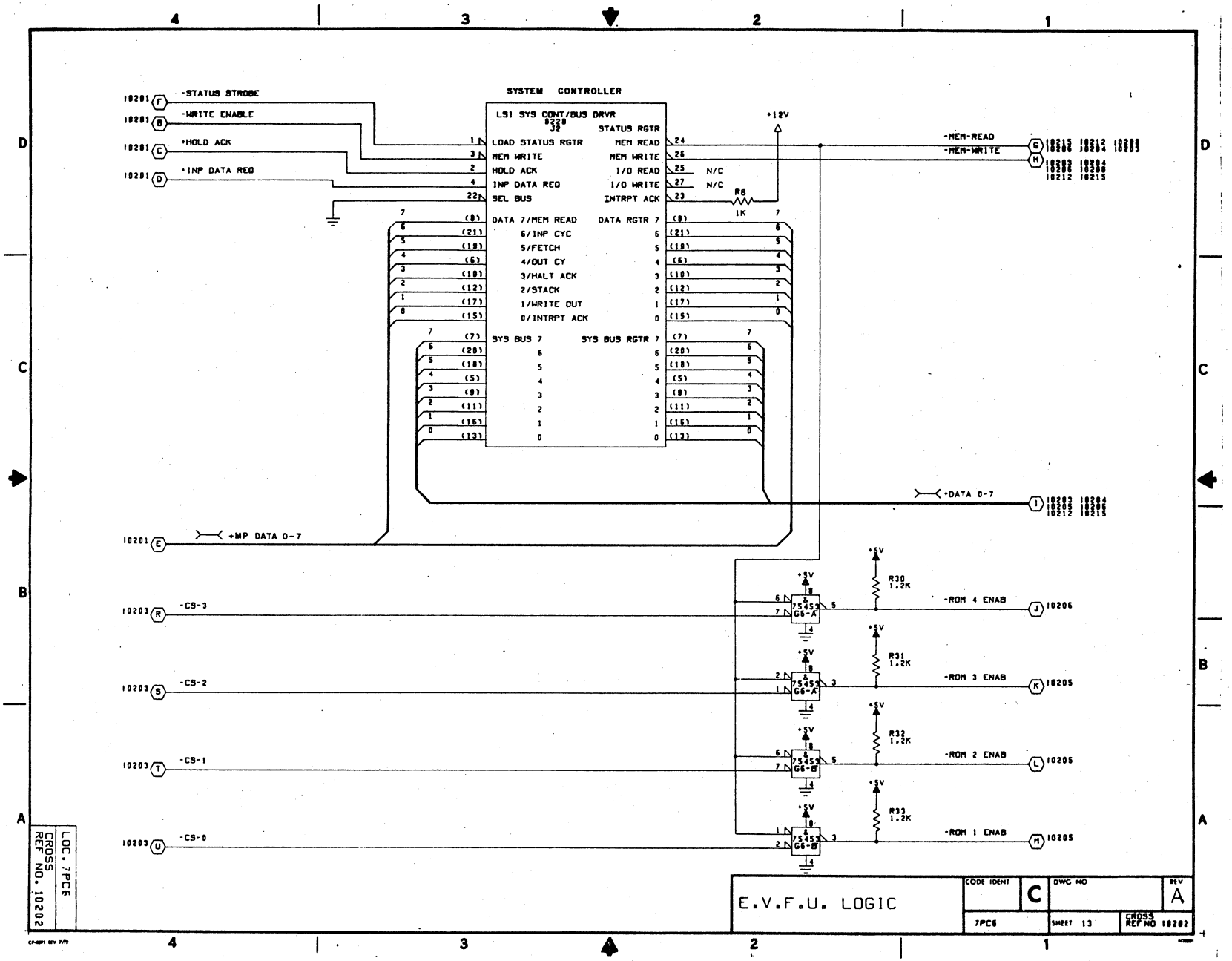
P.B.S.-E.V.F.U.
PCB DIP SW EXPL IN & LED INDIC FUNCTION

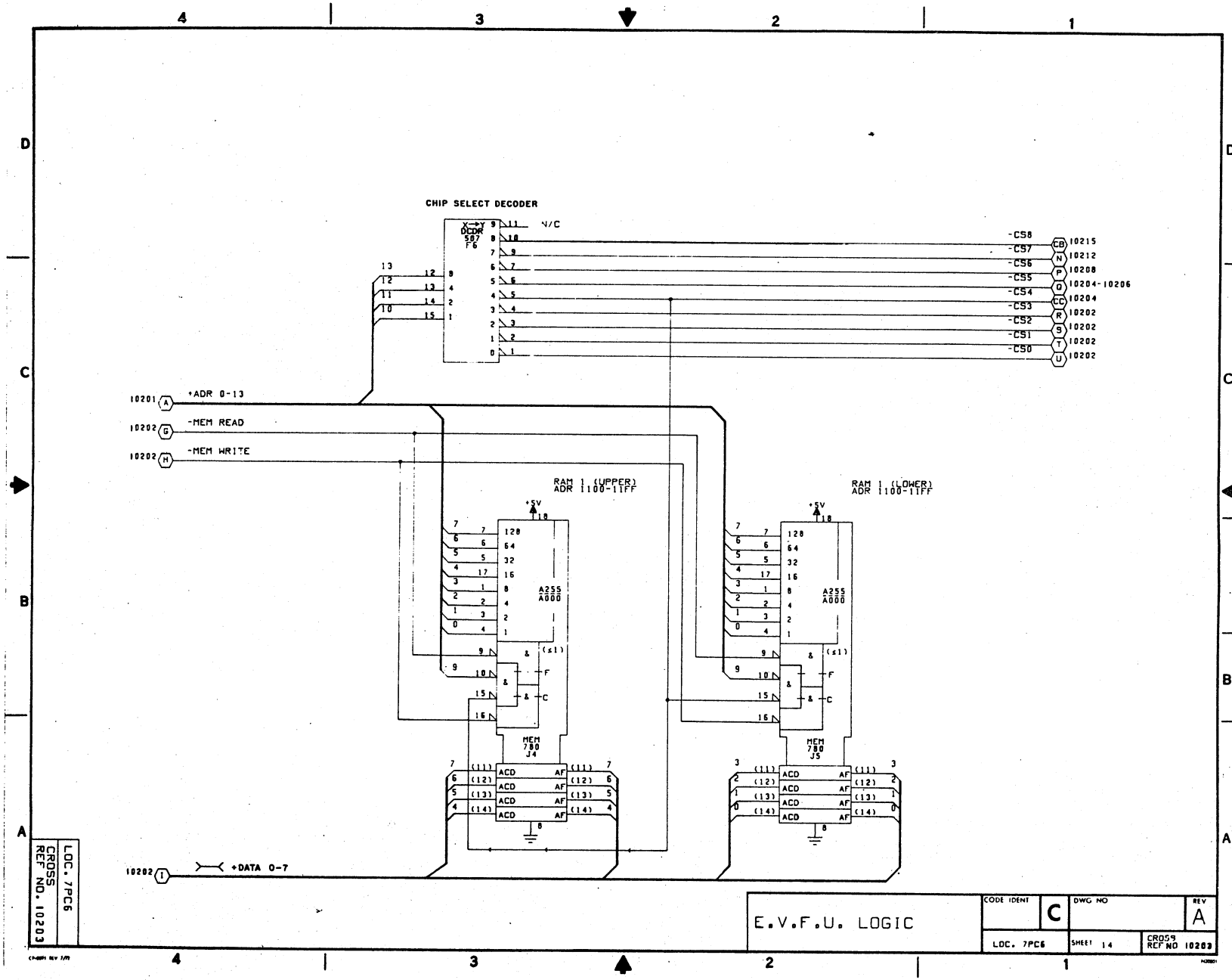
C

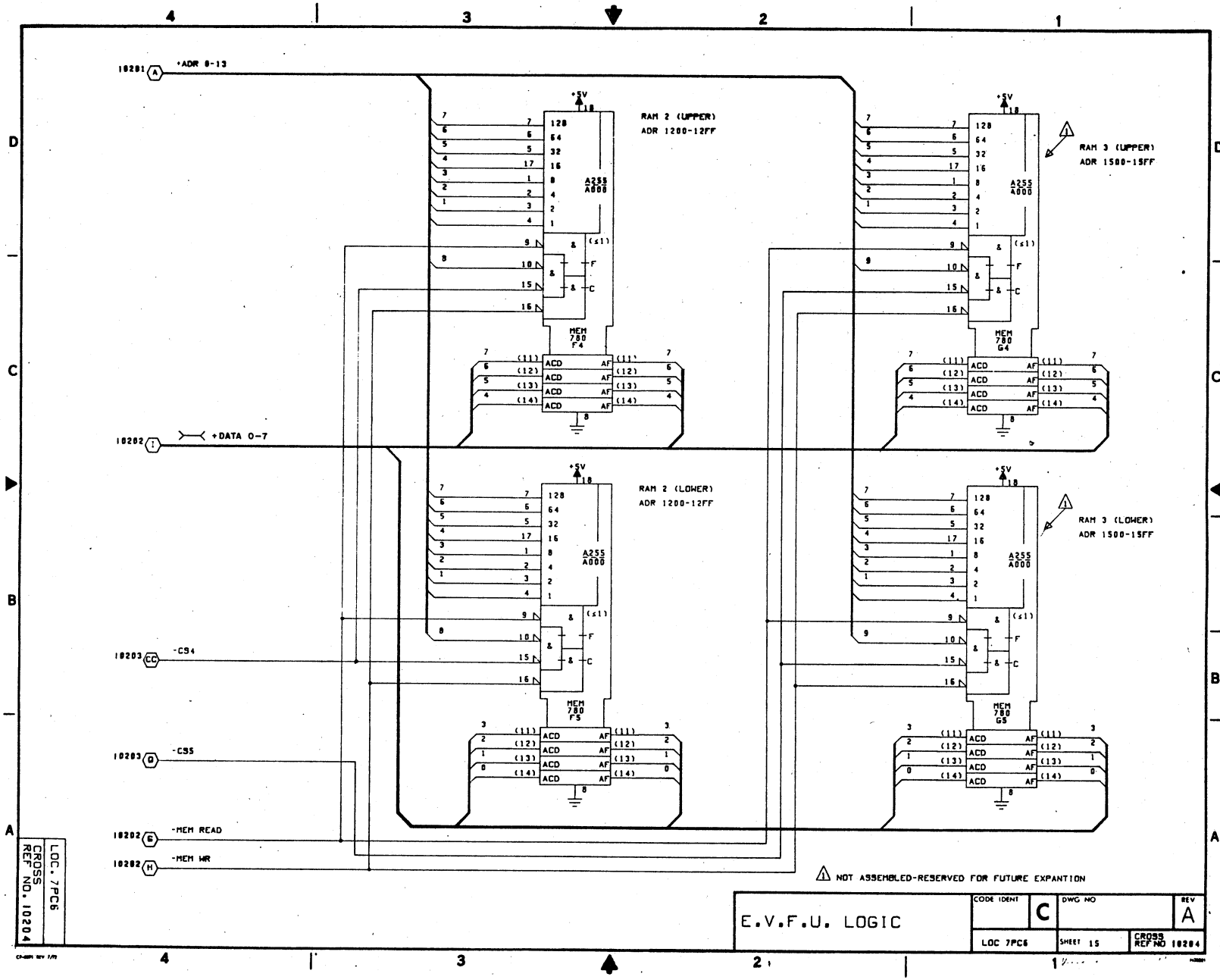
LOC. 7PC6 SHEET 11 CROSS REF NO. 10200

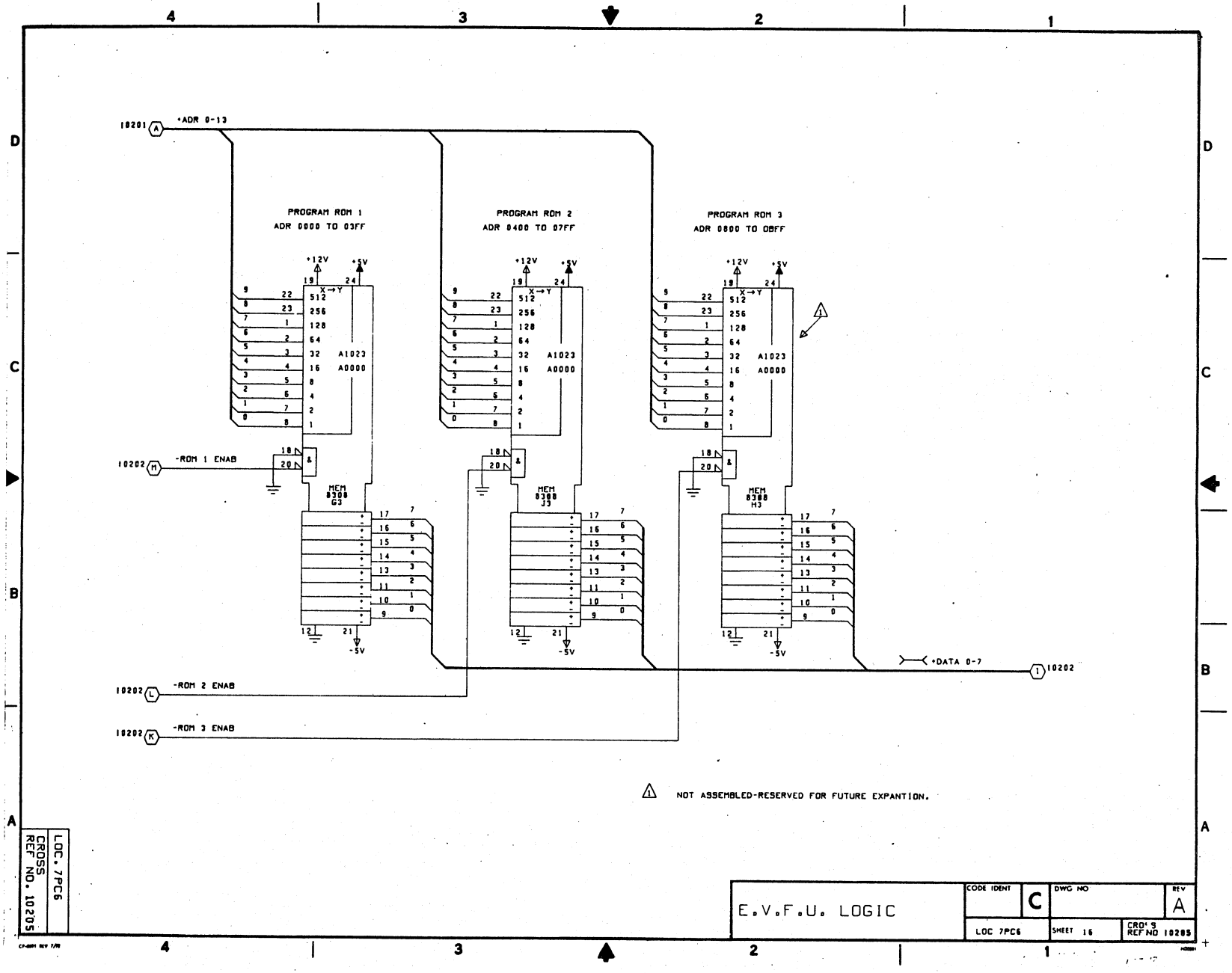

CENTRAL PROCESSOR
LSI MICROPROCESSOR 550 H2
CLOCK GENERATOR
8224 G2
CX1 18 MHZ
C2 6PF
R16 3.3K
R9 3.3K
R14 3.3K
-BUSY MP
INHIBIT
+ADR 0-13
-WRITE ENABLE
+HOLD ACK
+INP DATA REQ
+MP DATA 0-7
+RESET
-STATUS STROBE
+12 VOLT BUS
+5 VOLT BUS
-5 VOLT BUS
TO POWER DIST. BD.
E.V.F.U. LOGIC
LOC 7PC6
SHEET 12
CROSS REF NO 10201
LOC. 7PC6
CROSS REF NO. 10201

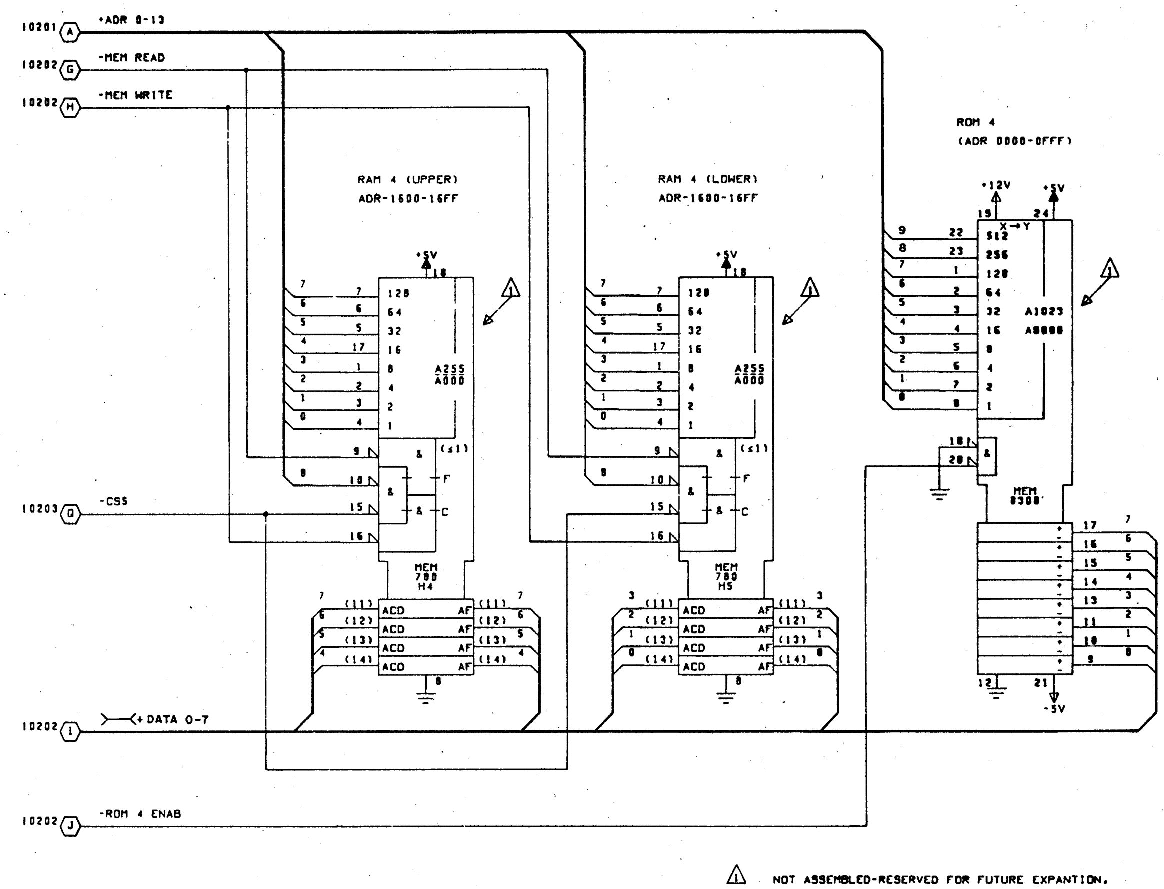
7-13


SYSTEM CONTROLLER
LSI SYS CONT/BUS DRVR
8228
J2
-STATUS STROBE
-WRITE ENABLE
+HOLD ACK
+INP DATA REQ
LOAD STATUS RGTR
MEM WRITE
HOLD ACK
INP DATA REQ
SEL BUS
DATA 7/MEM READ
6/INP CYC
5/FETCH
4/OUT CY
3/HALT ACK
2/STACK
1/WRITE OUT
0/INTRPT ACK
SYS BUS 7
STATUS RGTR
MEM READ
MEM WRITE
I/O READ
I/O WRITE
INTRPT ACK
DATA RGTR 7
SYS BUS RGTR 7
N/C
N/C
+12V
R8
1K
-MEM-READ
-MEM-WRITE
+DATA 0-7
+MP DATA 0-7
-CS-3
-CS-2
-CS-1
-CS-0
+5V
R30 1.2K
R31 1.2K
R32 1.2K
R33 1.2K
-ROM 4 ENAB
-ROM 3 ENAB
-ROM 2 ENAB
-ROM 1 ENAB
7545
G6-A
G6-B
LOC.: 7PC6
CROSS REF NO. 10202
E.V.F.U. LOGIC
CODE IDENT
C
DWG NO
REV
A
7PC6
SHEET 13
CROSS REF NO 10202


CHIP SELECT DECODER
N/C
-CS8
-CS7
-CS6
-CS5
-CS4
-CS3
-CS2
-CS1
-CS0
10215
10212
10208
10204-10206
10204
10202
10202
10202
10202
10201 +ADR 0-13
10202 -MEM READ
10202 -MEM WRITE
RAM 1 (UPPER) ADR 1100-11FF
RAM 1 (LOWER) ADR 1100-11FF
+5V
A255 A000
MEM 780 J4
MEM 780 J5
ACD
AF
10202 +DATA 0-7
E.V.F.U. LOGIC
CODE IDENT C
DWG NO
REV A
LOC. 7PC6
SHEET 14
CROSS REF NO 10203
CROSS REF NO. 10203
LOC. 7PC6


*ADR 8-13
+DATA 0-7
-CS4
-CS5
-MEM READ
-MEM WR
RAM 2 (UPPER)
ADR 1200-12FF
RAM 3 (UPPER)
ADR 1500-15FF
RAM 2 (LOWER)
ADR 1200-12FF
RAM 3 (LOWER)
ADR 1500-15FF
MEM 780 F4
MEM 780 G4
MEM 780 F5
MEM 780 G5
A255 A000
NOT ASSEMBLED-RESERVED FOR FUTURE EXPANTION
E.V.F.U. LOGIC
LOC 7PC6
CROSS REF NO. 10204
SHEET 15
DWG NO
CODE IDENT
REV

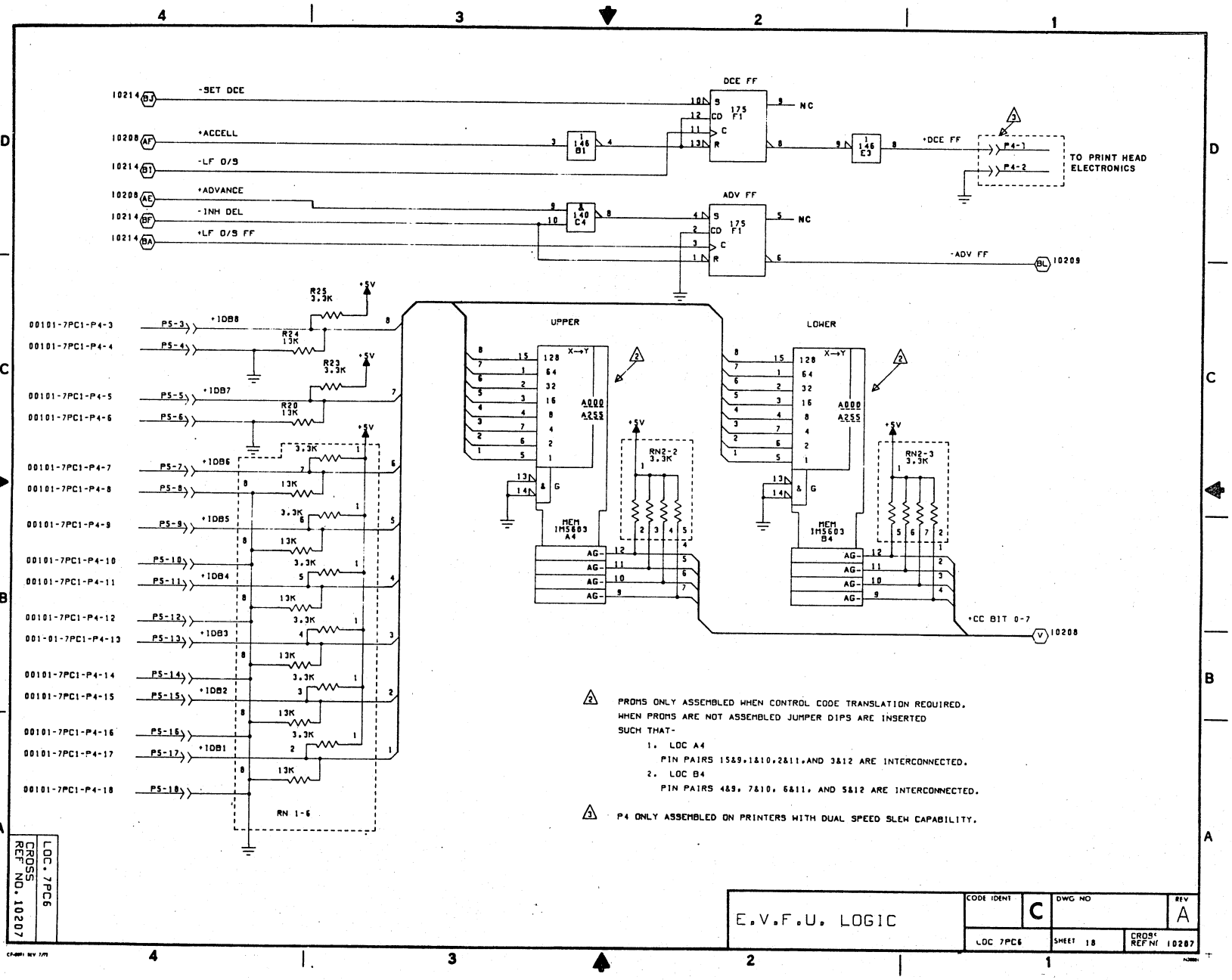

10201 A +ADR 0-13
PROGRAM ROM 1
ADR 0000 TO 03FF
PROGRAM ROM 2
ADR 0400 TO 07FF
PROGRAM ROM 3
ADR 0800 TO 0BFF
+12V
+5V
X→Y
512
256
128
64
32
16
8
4
2
1
A1023
A0000
10202 H -ROM 1 ENAB
10202 L -ROM 2 ENAB
10202 K -ROM 3 ENAB
MEM 8308 G3
MEM 8308 J3
MEM 8308 H3
-5V
+DATA 0-7
10202 I
⚠ NOT ASSEMBLED-RESERVED FOR FUTURE EXPANTION.
CROSS REF NO. 10205
LOC. 7PC6
E.V.F.U. LOGIC
CODE IDENT C
DWG NO
REV A
LOC 7PC6
SHEET 16
CRO'S REF NO 10205



LOC. 7PC6
CROSS REF NO. 10206

E.V.F.U. LOGIC

CODE IDENT	DWG NO	REV
C		A
LOC 7PC6	SHEET 17	CROSS REF NO 10206



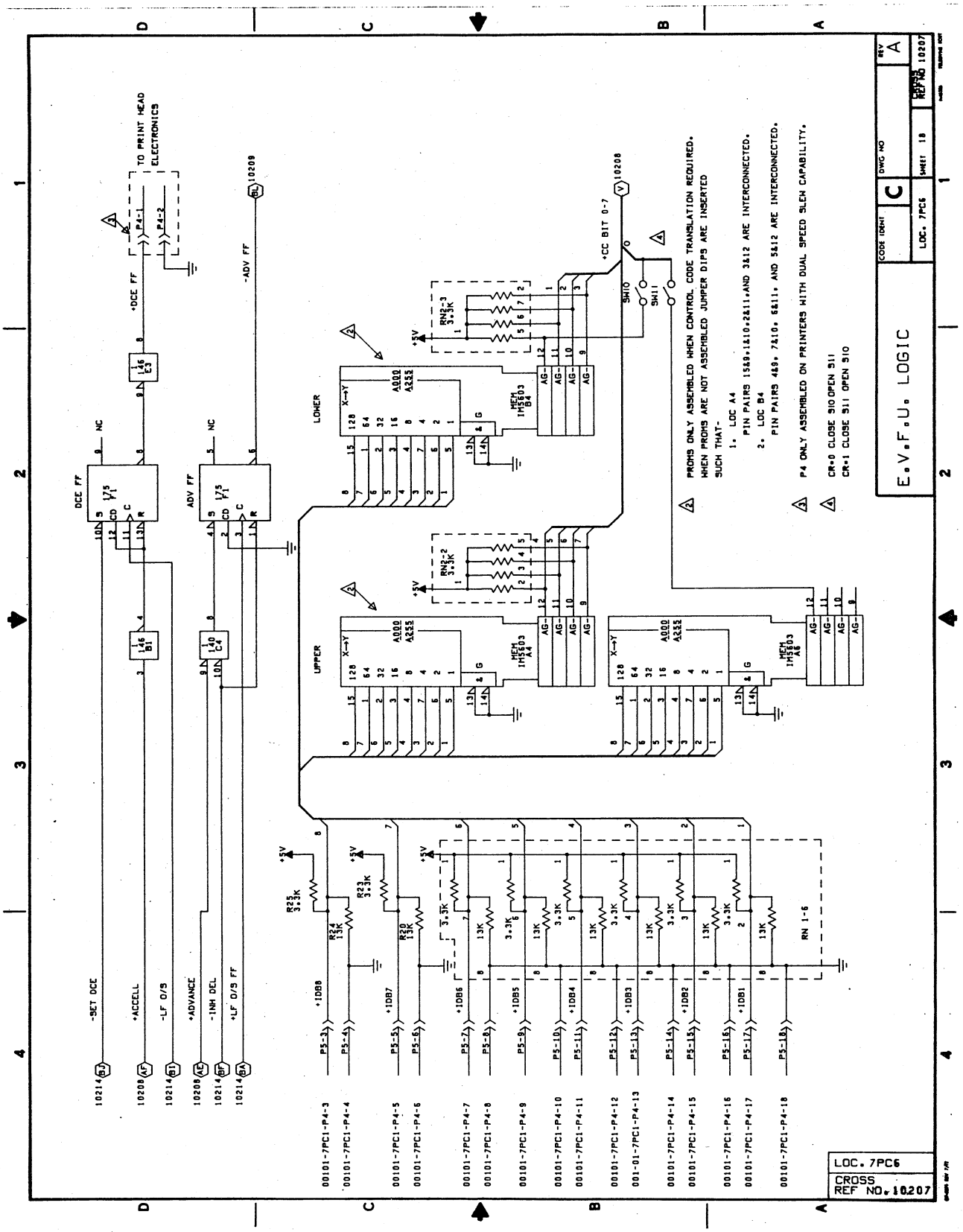
PROMS ONLY ASSEMBLED WHEN CONTROL CODE TRANSLATION REQUIRED.
WHEN PROMS ARE NOT ASSEMBLED JUMPER DIPS ARE INSERTED
SUCH THAT-

1. LOC A4
   PIN PAIRS 15&9, 1&10, 2&11, AND 3&12 ARE INTERCONNECTED.
2. LOC B4
   PIN PAIRS 4&9, 7&10, 6&11, AND 5&12 ARE INTERCONNECTED.

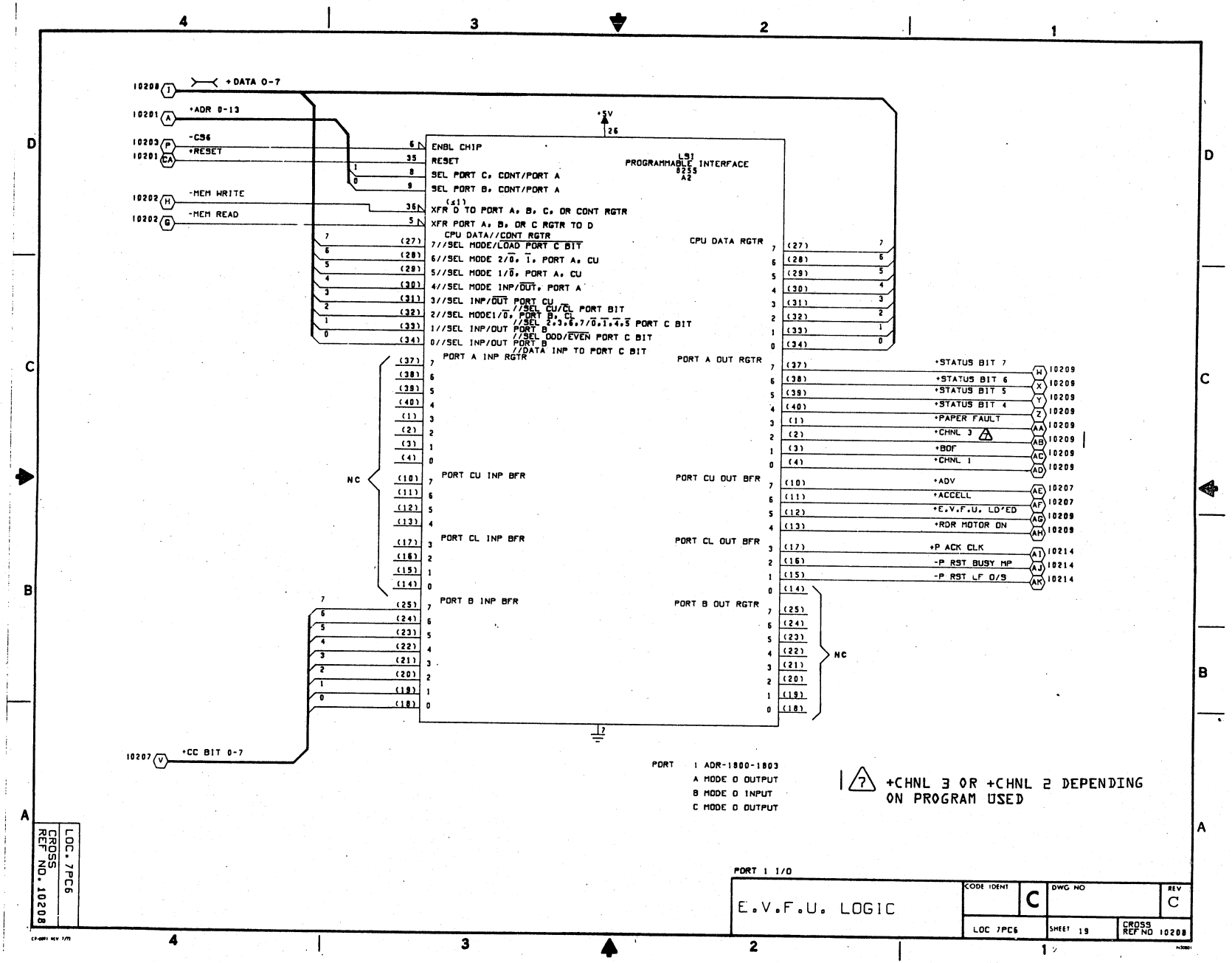
P4 ONLY ASSEMBLED ON PRINTERS WITH DUAL SPEED SLEW CAPABILITY.

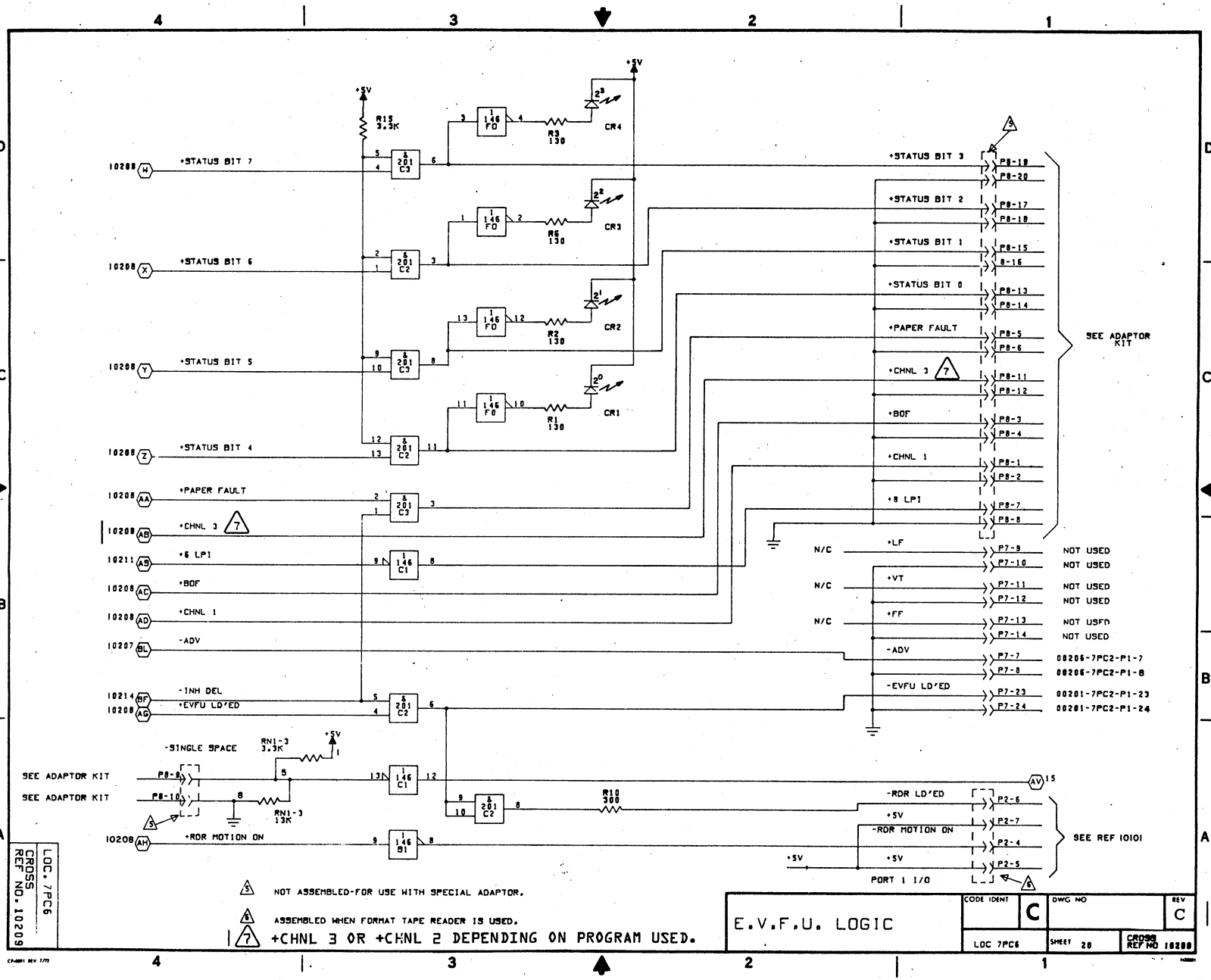
CROSS REF NO. 10207 | LOC. 7PC6

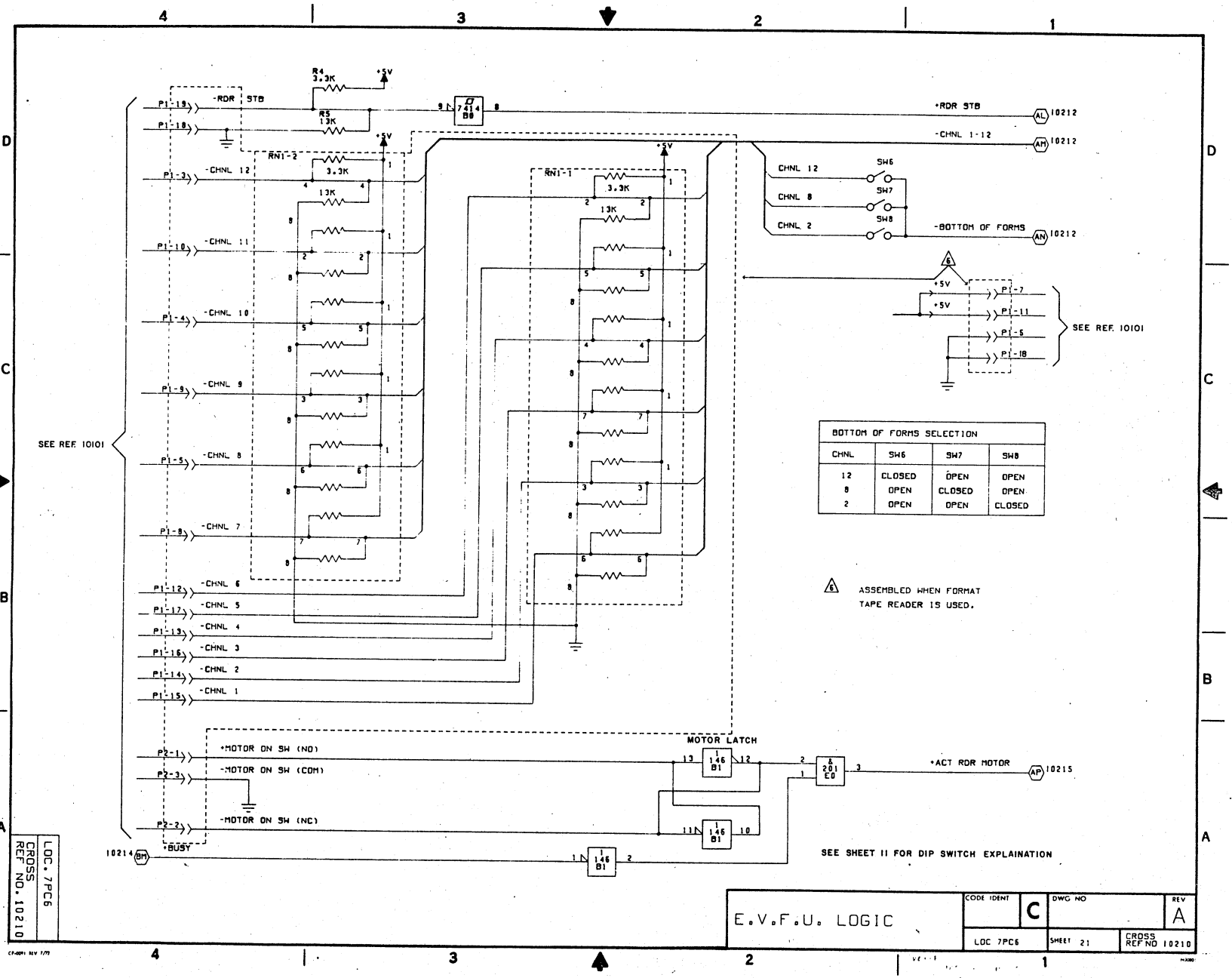
E.V.F.U. LOGIC	CODE IDENT C	DWG NO	REV A
	LOC 7PC6	SHEET 18	CROSS REF NO 10207

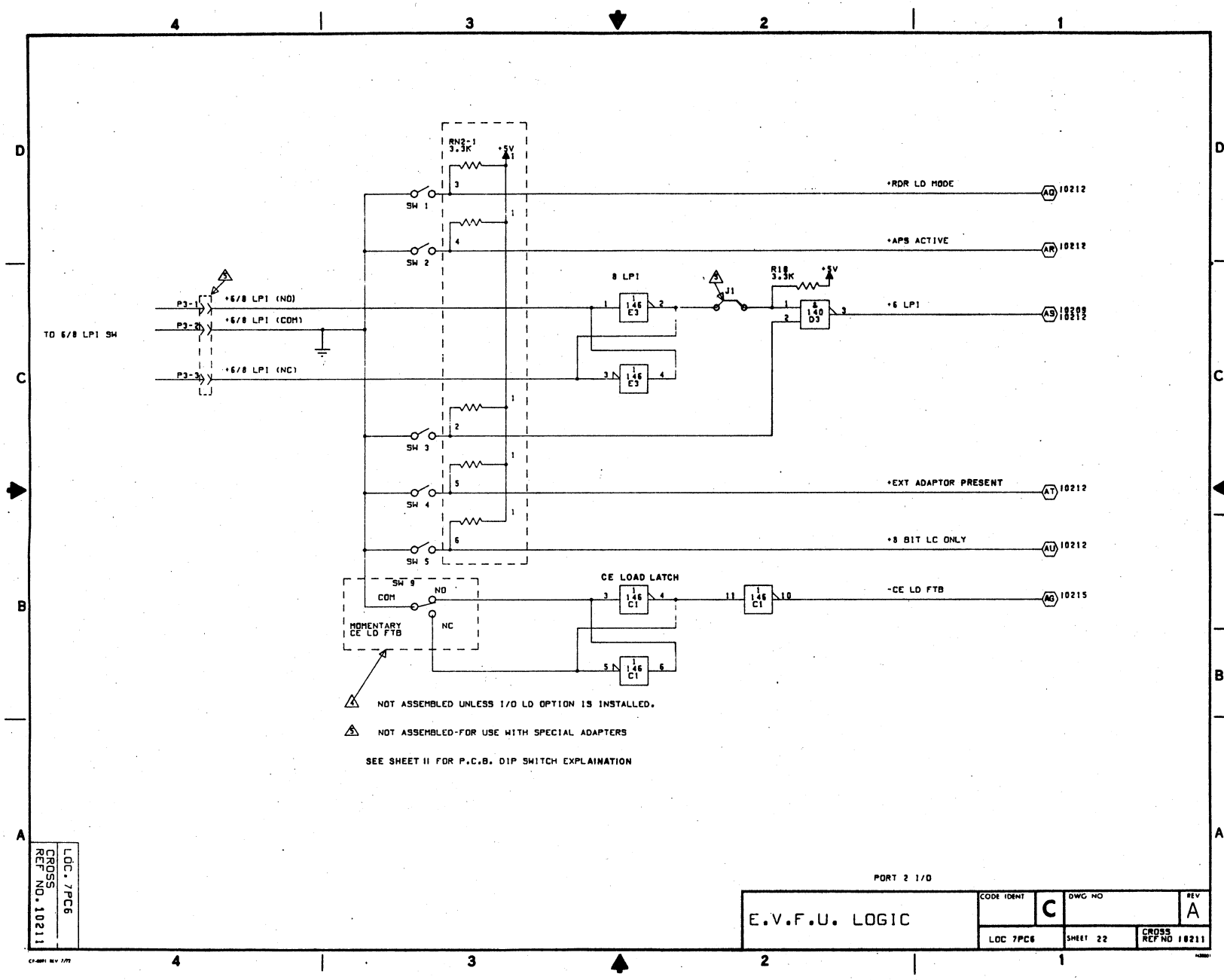


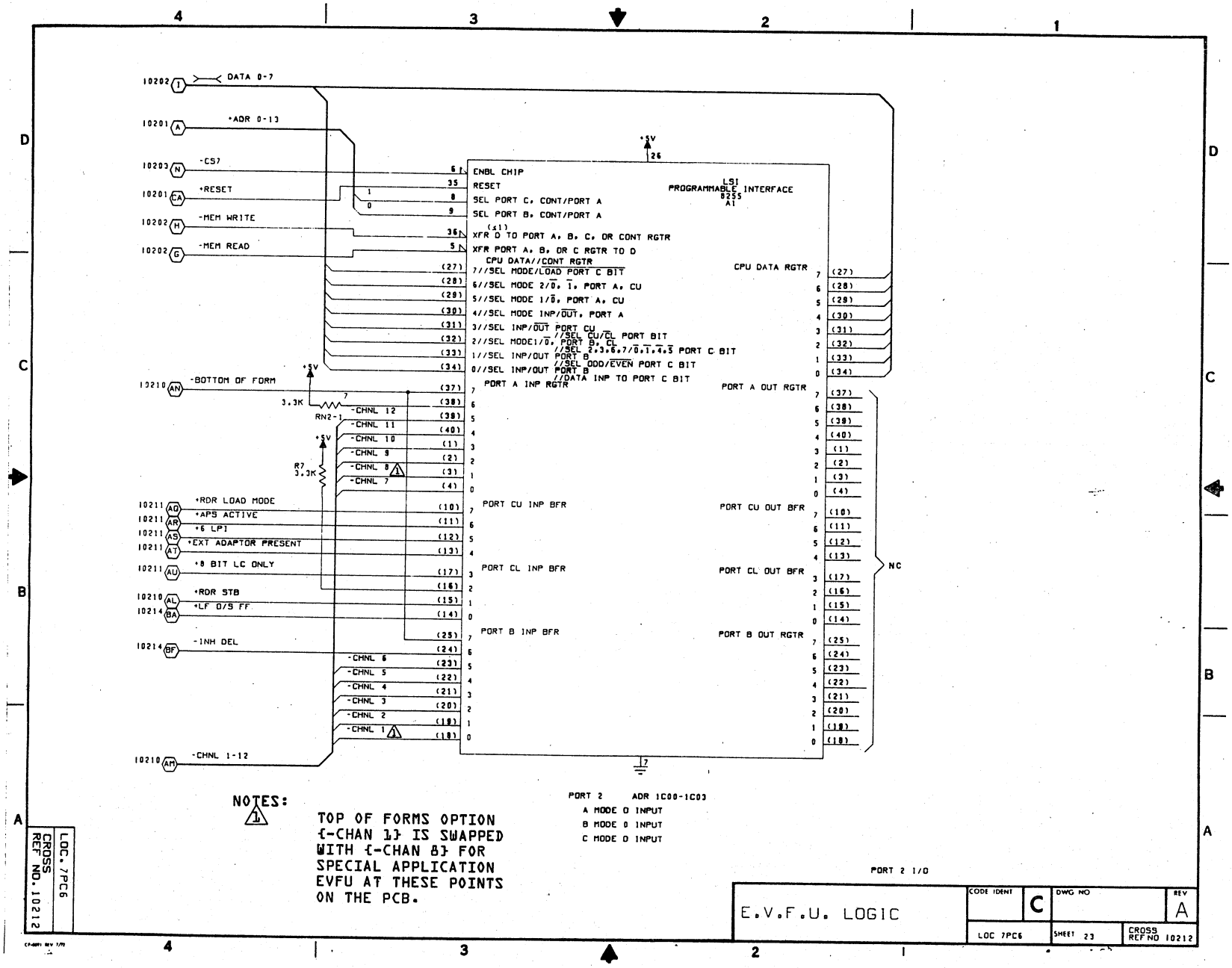
NOTES: THIS PAGE IS TO BE USED WITH EVFU ASSEMBLIES 44680055 AND 44680056 ONLY. THESE ASSEMBLIES USE PRINTED CIRCUIT BOARD 44679062.

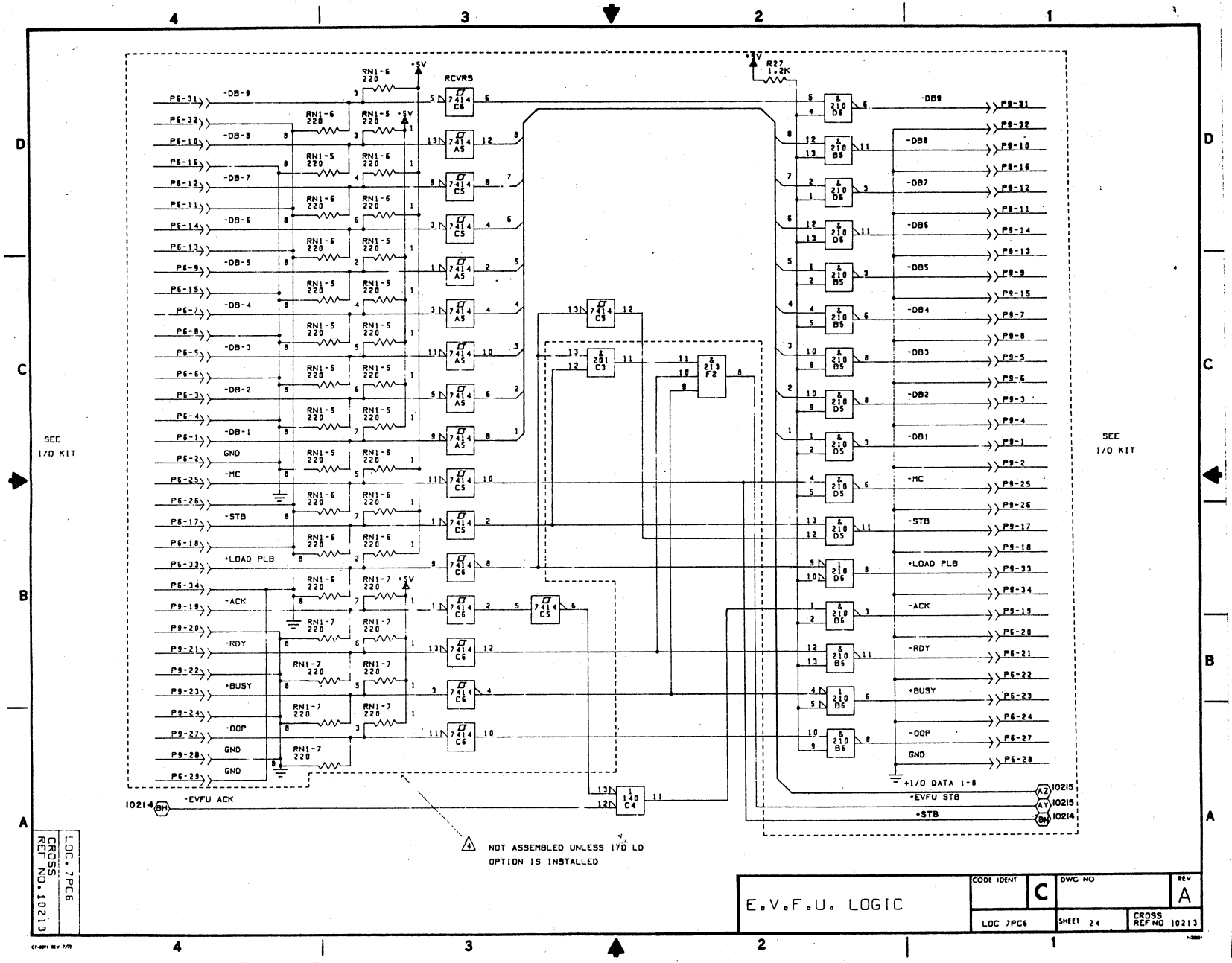

+DATA 0-7
*ADR 0-13
-CS6
*RESET
-MEM WRITE
-MEM READ
+5V
ENBL CHIP
RESET
LSI PROGRAMMABLE INTERFACE 8255 A2
SEL PORT C, CONT/PORT A
SEL PORT B, CONT/PORT A
XFR D TO PORT A, B, C, OR CONT RGTR
XFR PORT A, B, OR C RGTR TO D
CPU DATA//CONT RGTR
7//SEL MODE/LOAD PORT C BIT
6//SEL MODE 2/0, 1, PORT A, CU
5//SEL MODE 1/0, PORT A, CU
4//SEL MODE INP/OUT, PORT A
3//SEL INP/OUT PORT CU
2//SEL MODE1/0, PORT B, CL //SEL CU/CL PORT BIT
1//SEL INP/OUT PORT B //SEL 2,3,6,7/0,1,4,5 PORT C BIT
0//SEL INP/OUT PORT B //SEL ODD/EVEN PORT C BIT
PORT A INP RGTR //DATA INP TO PORT C BIT
CPU DATA RGTR
PORT A OUT RGTR
PORT CU INP BFR
PORT CU OUT BFR
PORT CL INP BFR
PORT CL OUT BFR
PORT B INP BFR
PORT B OUT RGTR
NC
*STATUS BIT 7
*STATUS BIT 6
*STATUS BIT 5
*STATUS BIT 4
*PAPER FAULT
*CHNL 3
*BOF
*CHNL 1
*ADV
*ACCELL
*E.V.F.U. LD'ED
*RDR MOTOR ON
+P ACK CLK
-P RST BUSY MP
-P RST LF 0/9
*CC BIT 0-7
PORT 1 ADR-1800-1803
A MODE 0 OUTPUT
B MODE 0 INPUT
C MODE 0 OUTPUT
+CHNL 3 OR +CHNL 2 DEPENDING ON PROGRAM USED
PORT 1 I/O
E.V.F.U. LOGIC
CODE IDENT C
DWG NO
REV C
LOC 7PC6
SHEET 19
CROSS REF NO 10208
CROSS REF NO. 10208
LOC. 7PC6

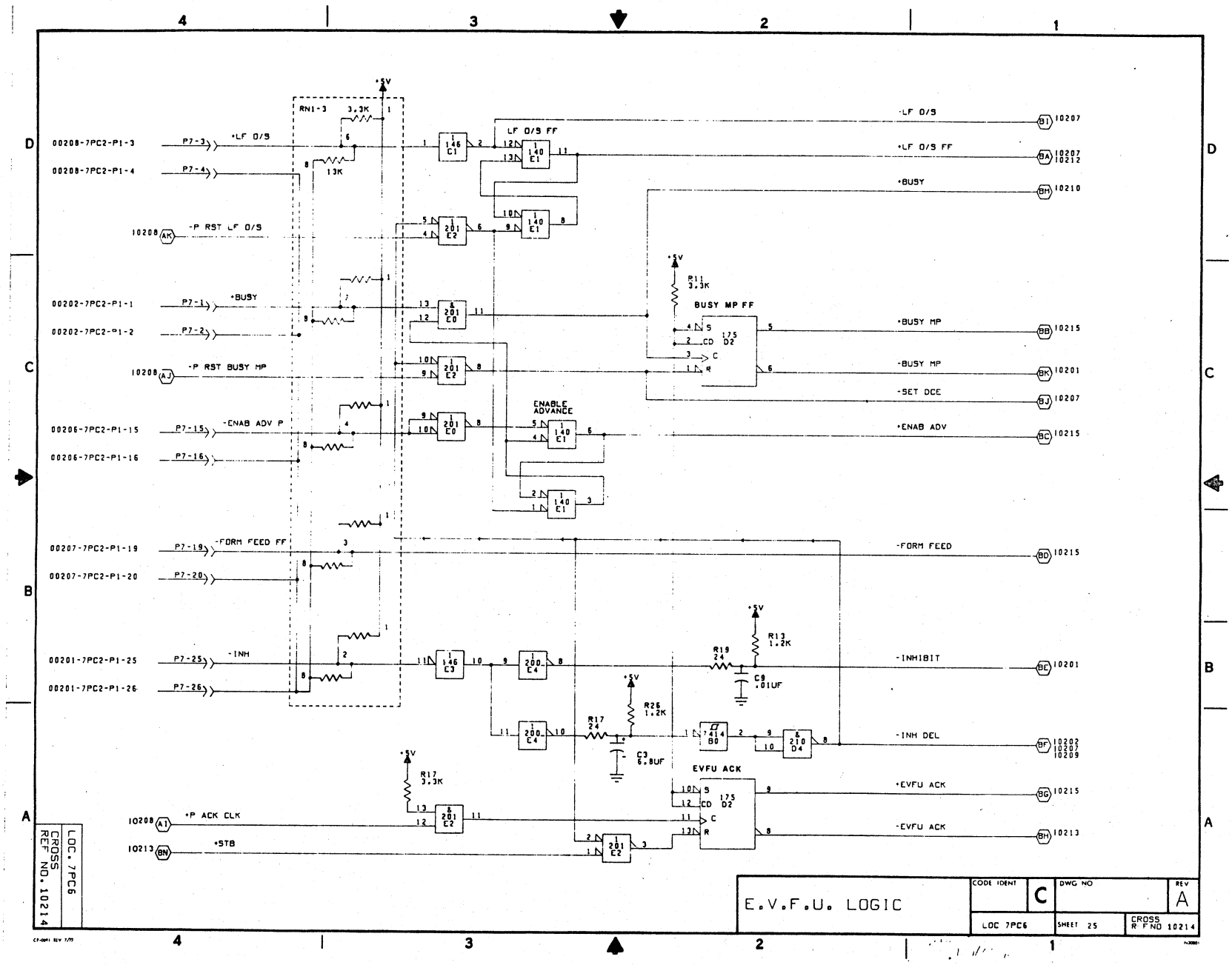

+5V
R15 3.3K
+STATUS BIT 7
+STATUS BIT 6
+STATUS BIT 5
+STATUS BIT 4
+PAPER FAULT
+CHNL 3
+6 LPI
+BOF
+CHNL 1
-ADV
-INH DEL
+EVFU LD'ED
-SINGLE SPACE
RN1-3 3.3K
RN1-3 13K
SEE ADAPTOR KIT
+RDR MOTION ON
R3 130
R6 130
R2 130
R1 130
R10 300
CR4
CR3
CR2
CR1
+STATUS BIT 3
+STATUS BIT 2
+STATUS BIT 1
+STATUS BIT 0
+PAPER FAULT
+CHNL 3
+BOF
+CHNL 1
+8 LPI
+LF
+VT
+FF
-ADV
-EVFU LD'ED
-RDR LD'ED
-RDR MOTION ON
N/C
NOT USED
00206-7PC2-P1-7
00206-7PC2-P1-8
00201-7PC2-P1-23
00201-7PC2-P1-24
SEE ADAPTOR KIT
SEE REF 10101
PORT 1 I/O
NOT ASSEMBLED-FOR USE WITH SPECIAL ADAPTOR.
ASSEMBLED WHEN FORMAT TAPE READER IS USED.
+CHNL 3 OR +CHNL 2 DEPENDING ON PROGRAM USED.
E.V.F.U. LOGIC
CODE IDENT
C
DWG NO
REV
C
LOC 7PC6
SHEET 28
CROSS REF NO 10209
LOC. 7PC6
CROSS REF NO. 10209

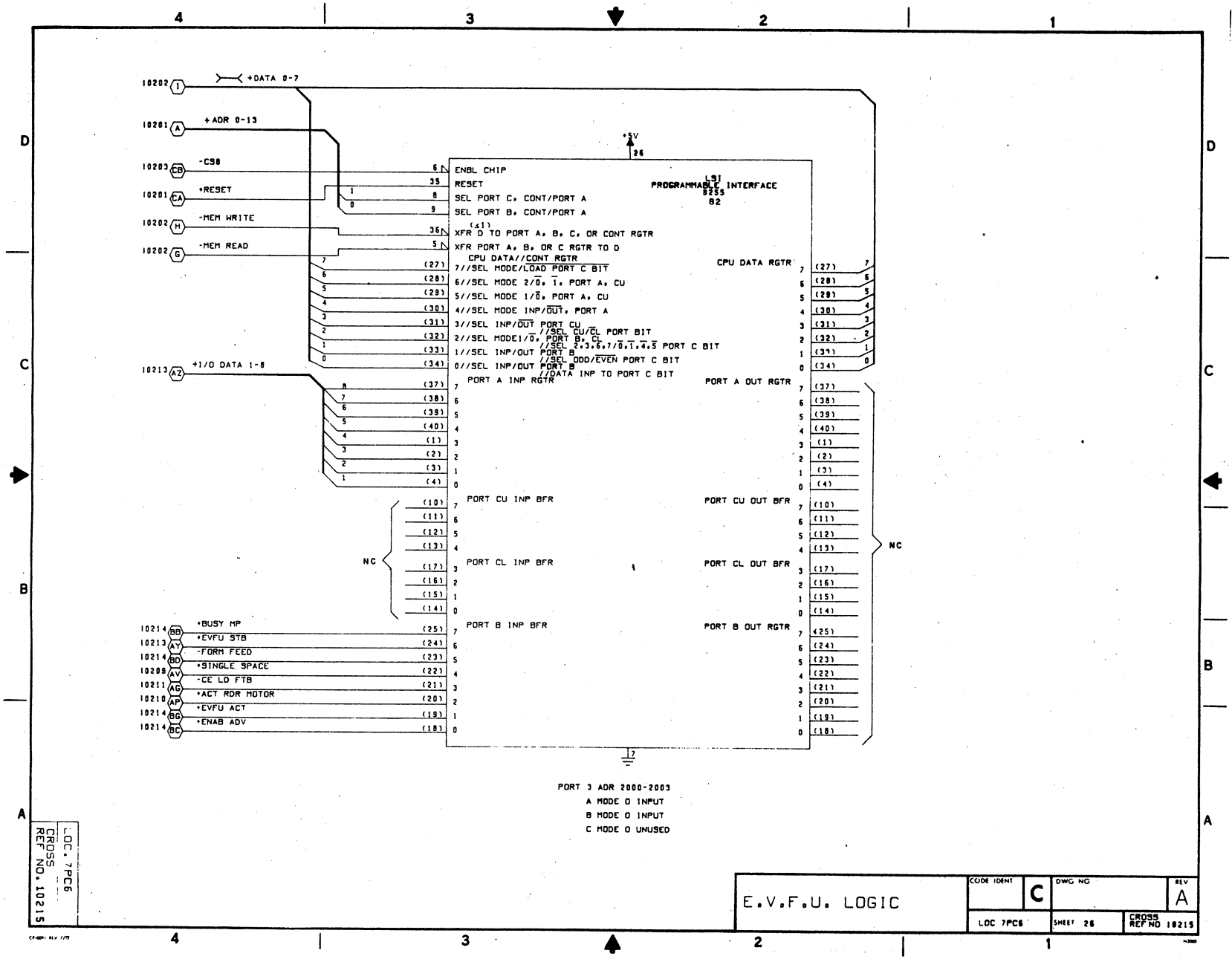

-RDR STB
P1-19
P1-18
R4 3.3K
R5 13K
+5V
*RDR STB
10212
-CHNL 1-12
RN1-2
RN1-1
3.3K
13K
P1-3
-CHNL 12
P1-10
-CHNL 11
P1-4
-CHNL 10
P1-9
-CHNL 9
P1-5
-CHNL 8
P1-8
-CHNL 7
P1-12
-CHNL 6
P1-17
-CHNL 5
P1-13
-CHNL 4
P1-16
-CHNL 3
P1-14
-CHNL 2
P1-15
-CHNL 1
SEE REF 10101
CHNL 12
CHNL 8
CHNL 2
SW6
SW7
SW8
-BOTTOM OF FORMS
P1-7
P1-11
P1-5
P1-18
BOTTOM OF FORMS SELECTION
CHNL | SW6 | SW7 | SW8
12 | CLOSED | OPEN | OPEN
8 | OPEN | CLOSED | OPEN
2 | OPEN | OPEN | CLOSED
ASSEMBLED WHEN FORMAT TAPE READER IS USED.
MOTOR LATCH
*MOTOR ON SW (NO)
-MOTOR ON SW (COM)
-MOTOR ON SW (NC)
P2-1
P2-3
P2-2
*ACT RDR MOTOR
10215
*BUSY
10214
SEE SHEET 11 FOR DIP SWITCH EXPLAINATION
CROSS REF NO. 10210
LOC. 7PC6
E.V.F.U. LOGIC
CODE IDENT
C
DWG NO
REV
A
LOC 7PC6
SHEET 21
CROSS REF NO 10210


RN2-1
3.3K
+5V
SW 1
SW 2
SW 3
SW 4
SW 5
+RDR LD MODE
+APS ACTIVE
+EXT ADAPTOR PRESENT
+8 BIT LC ONLY
TO 6/8 LPI SW
P3-1
P3-2
P3-3
+6/8 LPI (NO)
+6/8 LPI (COM)
+6/8 LPI (NC)
8 LPI
J1
R18
3.3K
+6 LPI
SW 9
COM
NO
NC
MOMENTARY
CE LD FTB
CE LOAD LATCH
-CE LD FTB
NOT ASSEMBLED UNLESS I/O LD OPTION IS INSTALLED.
NOT ASSEMBLED-FOR USE WITH SPECIAL ADAPTERS
SEE SHEET 11 FOR P.C.B. DIP SWITCH EXPLAINATION
PORT 2 I/O
E.V.F.U. LOGIC
CODE IDENT
C
DWG NO
REV
A
LOC 7PC6
SHEET 22
CROSS REF NO 10211
LOC. 7PC6
CROSS REF NO. 10211


10202 DATA 0-7
10201 *ADR 0-13
10203 -CS7
10201 *RESET
10202 -MEM WRITE
10202 -MEM READ
10210 -BOTTOM OF FORM
3.3K
RN2-1
-CHNL 12
-CHNL 11
-CHNL 10
-CHNL 9
-CHNL 8
-CHNL 7
R7
3.3K
10211 *RDR LOAD MODE
10211 *APS ACTIVE
10211 *6 LPI
10211 *EXT ADAPTOR PRESENT
10211 *8 BIT LC ONLY
10210 *RDR STB
10214 *LF 0/S FF
10214 -INH DEL
-CHNL 6
-CHNL 5
-CHNL 4
-CHNL 3
-CHNL 2
-CHNL 1
10210 -CHNL 1-12
+5V
26
ENBL CHIP
RESET
SEL PORT C, CONT/PORT A
SEL PORT B, CONT/PORT A
XFR D TO PORT A, B, C, OR CONT RGTR
XFR PORT A, B, OR C RGTR TO D
CPU DATA//CONT RGTR
7//SEL MODE/LOAD PORT C BIT
6//SEL MODE 2/0, 1, PORT A, CU
5//SEL MODE 1/0, PORT A, CU
4//SEL MODE INP/OUT, PORT A
3//SEL INP/OUT PORT CU
2//SEL MODE1/0, //SEL CU/CL PORT BIT PORT B, CL
1//SEL INP/OUT PORT B //SEL 2,3,6,7/0,1,4,5 PORT C BIT
0//SEL INP/OUT PORT B //SEL ODD/EVEN PORT C BIT
PORT A INP RGTR //DATA INP TO PORT C BIT
PORT CU INP BFR
PORT CL INP BFR
PORT B INP BFR
LSI PROGRAMMABLE INTERFACE 8255 A1
CPU DATA RGTR
PORT A OUT RGTR
PORT CU OUT BFR
PORT CL OUT BFR
PORT B OUT RGTR
NC
PORT 2 ADR 1C00-1C03
A MODE 0 INPUT
B MODE 0 INPUT
C MODE 0 INPUT
PORT 2 I/O
NOTES:
1 TOP OF FORMS OPTION (-CHAN 1) IS SWAPPED WITH (-CHAN 8) FOR SPECIAL APPLICATION EVFU AT THESE POINTS ON THE PCB.
CROSS REF NO. 10212
LOC. 7PC6
E.V.F.U. LOGIC
CODE IDENT C
DWG NO
REV A
LOC 7PC6
SHEET 23
CROSS REF NO 10212


SEE I/O KIT
SEE I/O KIT
RCVRS
R27 1.2K
+5V
-DB-8
-DB-7
-DB-6
-DB-5
-DB-4
-DB-3
-DB-2
-DB-1
GND
-MC
-STB
*LOAD PLB
-ACK
-RDY
*BUSY
-OOP
GND
GND
-EVFU ACK
10214
+I/O DATA 1-8
*EVFU STB
*STB
10215
10215
10214
NOT ASSEMBLED UNLESS I/O LD OPTION IS INSTALLED
E.V.F.U. LOGIC
CODE IDENT C
DWG NO
REV A
LOC 7PC6
SHEET 24
CROSS REF NO 10213
LOC. 7PC6
CROSS REF NO. 10213


4
3
2
1
D
C
B
A
+5V
RN1-3
3.3K
13K
00208-7PC2-P1-3
P7-3
+LF O/S
00208-7PC2-P1-4
P7-4
LF O/S FF
10208 AK
-P RST LF O/S
00202-7PC2-P1-1
P7-1
*BUSY
00202-7PC2-P1-2
P7-2
10208 AJ
-P RST BUSY MP
R11
3.3K
BUSY MP FF
00206-7PC2-P1-15
P7-15
-ENAB ADV P
00206-7PC2-P1-16
P7-16
ENABLE
ADVANCE
00207-7PC2-P1-19
P7-19
-FORM FEED FF
00207-7PC2-P1-20
P7-20
00201-7PC2-P1-25
P7-25
-INH
00201-7PC2-P1-26
P7-26
R13
1.2K
R19
24
C9
.01UF
R26
1.2K
R17
24
C3
6.8UF
R17
3.3K
EVFU ACK
10208 A1
*P ACK CLK
10213 BN
*STB
-LF O/S
10207 B1
*LF O/S FF
10207 10212 BA
*BUSY
10210 BH
*BUSY MP
10215 BB
-BUSY MP
10201 BK
-SET DCE
10207 BJ
*ENAB ADV
10215 BC
-FORM FEED
10215 BD
-INHIBIT
10201 BC
-INH DEL
10202 10207 10209 BF
*EVFU ACK
10215 BG
-EVFU ACK
10213 BH
CROSS REF NO. 10214
LOC. 7PC6
E.V.F.U. LOGIC
CODE IDENT
C
DWG NO
REV
A
LOC 7PC6
SHEET 25
CROSS R F NO 10214


+DATA 0-7
+ADR 0-13
-CS8
+RESET
-MEM WRITE
-MEM READ
+I/O DATA 1-8
+5V
ENBL CHIP
RESET
SEL PORT C, CONT/PORT A
SEL PORT B, CONT/PORT A
XFR D TO PORT A, B, C, OR CONT RGTR
XFR PORT A, B, OR C RGTR TO D
CPU DATA//CONT RGTR
7//SEL MODE/LOAD PORT C BIT
6//SEL MODE 2/0, 1, PORT A, CU
5//SEL MODE 1/0, PORT A, CU
4//SEL MODE INP/OUT, PORT A
3//SEL INP/OUT PORT CU
2//SEL MODE1/0, PORT B, CL
1//SEL INP/OUT PORT B
0//SEL INP/OUT PORT B
PORT A INP RGTR
PORT CU INP BFR
PORT CL INP BFR
PORT B INP BFR
PROGRAMMABLE INTERFACE
LSI
8255
82
CPU DATA RGTR
PORT A OUT RGTR
PORT CU OUT BFR
PORT CL OUT BFR
PORT B OUT RGTR
NC
+BUSY MP
+EVFU STB
-FORM FEED
+SINGLE SPACE
-CE LD FTB
+ACT RDR MOTOR
+EVFU ACT
+ENAB ADV
PORT 3 ADR 2000-2003
A MODE 0 INPUT
B MODE 0 INPUT
C MODE 0 UNUSED
LOC. 7PC6
CROSS REF NO. 10215
E.V.F.U. LOGIC
CODE IDENT
C
DWG NO
REV
A
LOC 7PC6
SHEET 28
CROSS REF NO 10215