

395-0060032

REQD	SIZE	NEXT ASSEMBLY
1		

ITEM	DWG. NO.	DWG NAME	REVISION LEVEL		
			CURRENT DESIGN	ASSOC & CHG NO	THIS MACHINE
1	095-0300752	SCHEMATIC-SCR.MOT. DRIVER	C		
2	095-0300987	SCHEMATIC-SCR.MOT. LOGIC	C		
3	095-0300776	SCHEMATIC-BALL MOT. DRIVER	C		
4	095-0300788	SCHEMATIC-BALL MOT. LOGIC	D		
5	095-0300806	SCHEMATIC - CONN. PANEL	C		
6	095-0300818	SCHEMATIC - SOL. DRIVER	B		
7	095-0300825	SCHEMATIC - AMPLIFIER	C		
8	395-0063700	SCHEMATIC - PRINTER	E		
9	095-0010969	SCHEMATIC-BALL INTERFACE	A		
10	095-0300972	SCHEMATIC-CARR. INTERFACE	A		
11	095-0300869	SCHEMATIC-AC MOT. CONTROL	B		
12	095-0011034	SCHEMATIC-LOG(BALL INTERFACE	A		
		ARABIC)			

MODULE CHG. NO	UNIT CLASS	REV.	RELEASE NO	DFTS	DATE
	399	E	46ER00360 JS	5-11	

NOTES
SIMILAR PARTS
CHANGES (E) ADDED ITEM 12

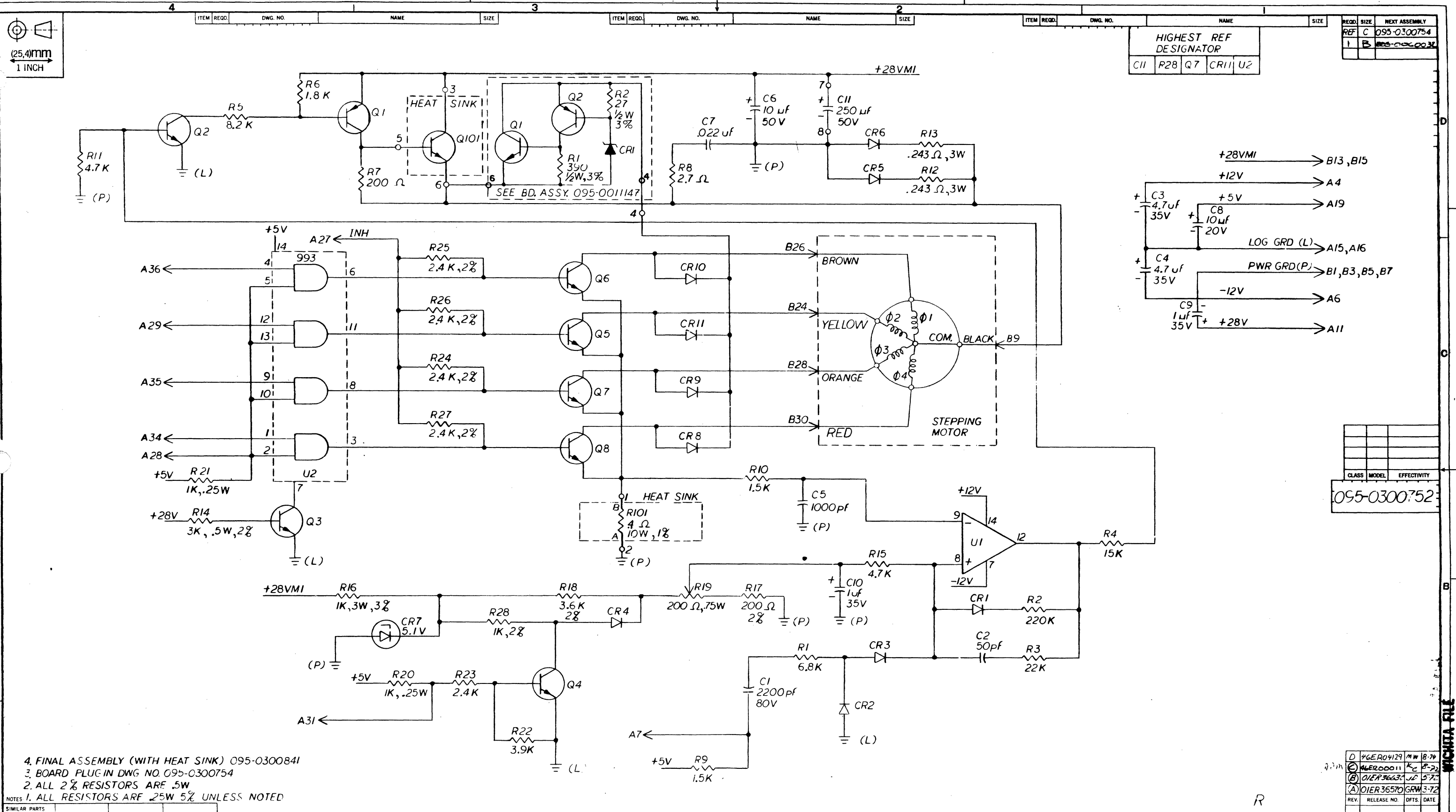
REPLACES DWG SAME NO DATED 10-27-72

MATERIAL:	
COATING:	
BRAZE:	
HEAT TREAT:	
HARDNESS:	

UNLESS OTHERWISE SPECIFIED, DIMENSIONAL LIMITS ARE:
INCH NOMINAL
XX ± .02
XXX ± .005

STD. QUALITY SEE SP4004.15	THE NATIONAL CASH REGISTER CO. DAYTON OHIO	
CLASS: M41-X-399-00	UNIT: SYSTEM 399 COMPUTER	
START:	FINISH: 10-27-72	NAME: INDEX-FIELD PRINT PACKAGE (BALL PRINTER)
DFTS: GH	CHKR:	
DESIGNER: R.C. EIFORT		
APPD:	APPD:	SHEET OF
SUPSD. BY:		SCALE: —
SUPERSEDES:		CODE: 2-9507

395-0060032
FIELD PRINT



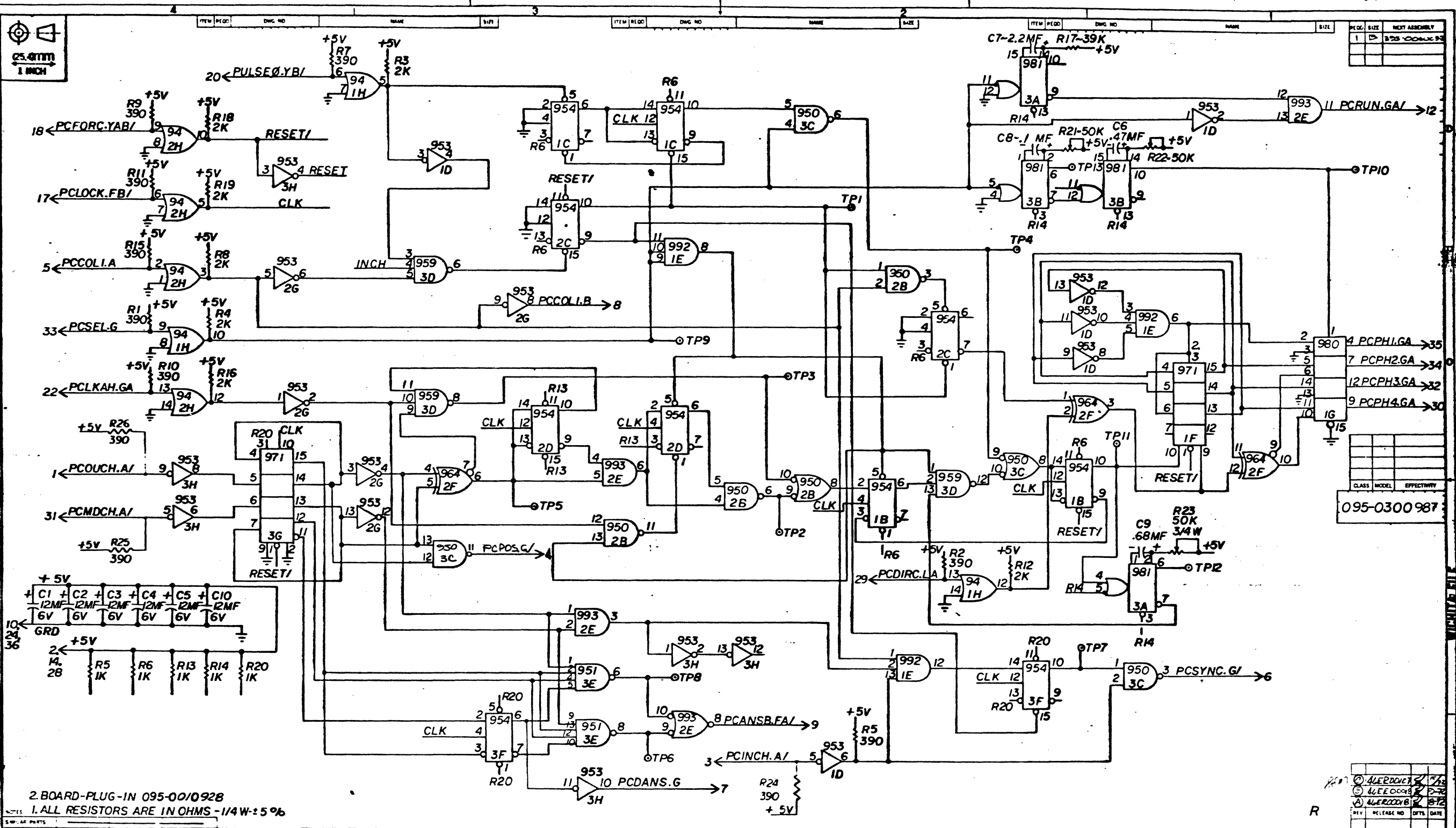
ITEM	REQD.	DWG. NO.	NAME	SIZE
REF	C	095-0300754	HIGHEST REF DESIGNATOR	
1	B	095-001147	C11 R28 Q7 CR11 U2	

CLASS	MODEL	EFFECTIVITY
095-0300752		

4. FINAL ASSEMBLY (WITH HEAT SINK) 095-0300841
 3. BOARD PLUG IN DWG NO. 095-0300754
 2. ALL 2% RESISTORS ARE .5W
 1. ALL RESISTORS ARE .25W 5% UNLESS NOTED

CHANGES: (A) NEW (B) R9 WAS 6202 (C) ADDED "FIELD PRINT" MARKING 395-0060032 TO NEXT ASSY AREA (D) ADDED BOARD ASSEMBLY 095-001147

STD. QUALITY SEE SP4004.15	CLASS: M 41-4-399	UNIT: BALL PRINTER MECHANISM
START: 3-72 FINISH: 3-27-72	DFTS: GRW	NAME: SCHEMATIC
DESIGNER: S NASEEM	APPD: [Signature]	SHEET 1 of 1
SUPD. BY:	SCALE:	095-0300752
SUPERSEDES:	CODE: 25560	



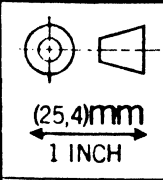
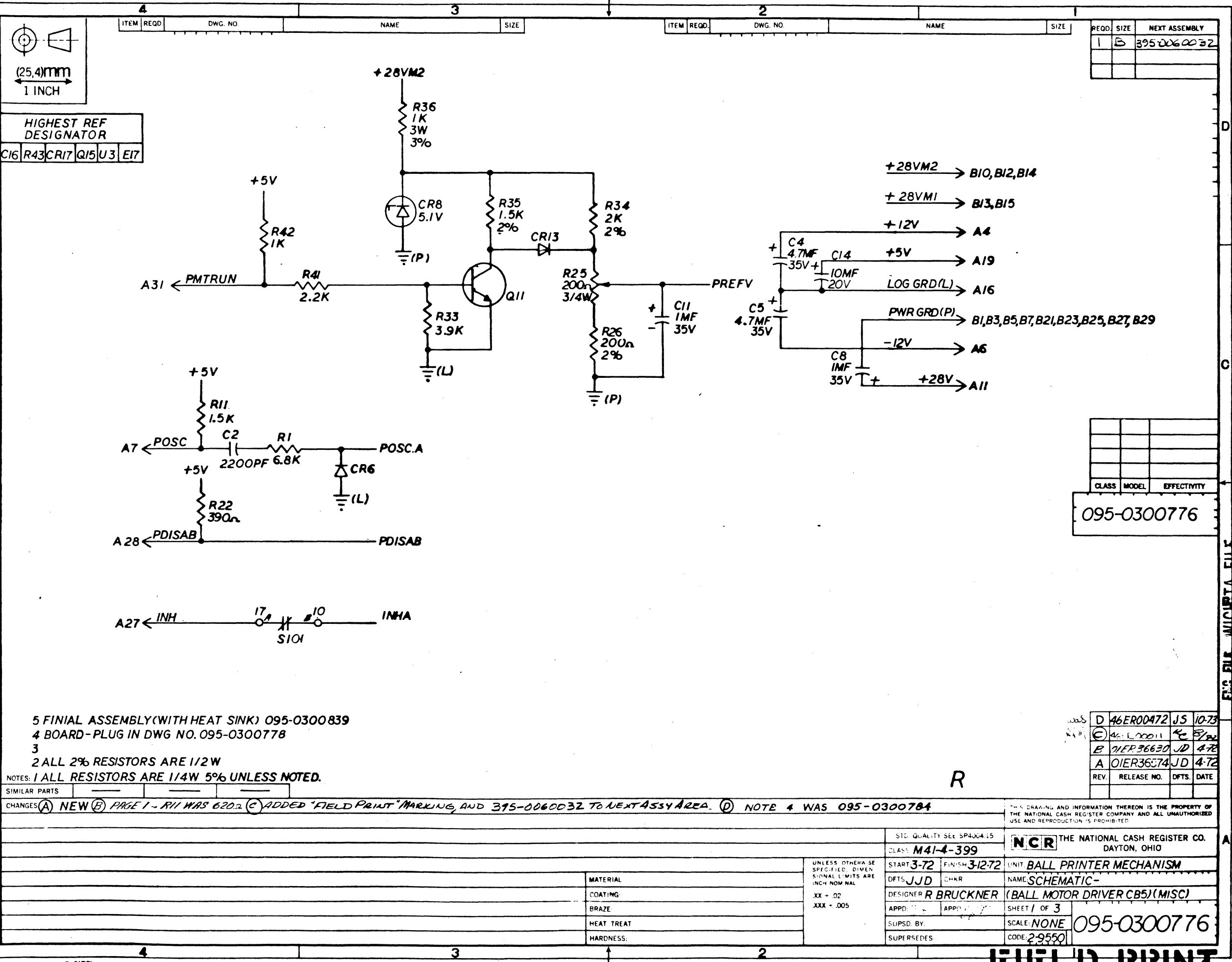
2. BOARD-PLUG-IN 095-00/0928
1. ALL RESISTORS ARE IN OHMS - 1/4W ± 5%
REVISIONS: (A) NEW (B) ZONE B2 - REMOVED OUTPUT PIN 4, ZONE B3 - ADDED GATE 3C 11, 12, 13 TO OUTPUT PIN 4 AS SHOWN (C) CB WAS .47MF, NOTE 2 WAS 095-0300988

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

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES AND DECIMALS THEREOF. MATERIAL: COPPER CLAD BOARD. COATING: HASLETT. BRAZE: 60/40. HEAT TREAT: NONE. HARDNESS: NONE. CLASS: M-414-399. DATE: 8-25-72. BY: L. DITMER. CHECKED: [Signature].

095-0300987

FIELD PRINT



HIGHEST REF DESIGNATOR

C16	R43	CR17	Q15	U3	E17
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REQD.	SIZE	NEXT ASSEMBLY
1	B	395-0060032

CLASS	MODEL	EFFECTIVITY
095-0300776		

5 FINAL ASSEMBLY (WITH HEAT SINK) 095-0300839
 4 BOARD-PLUG IN DWG NO. 095-0300778
 3
 2 ALL 2% RESISTORS ARE 1/2W
 NOTES: 1 ALL RESISTORS ARE 1/4W 5% UNLESS NOTED.

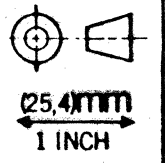
SIMILAR PARTS: _____
 CHANGES: (A) NEW (B) PAGE 1 - R11 WAS 6202 (C) ADDED "FIELD PRINT" MARKING, AND 395-0060032 TO NEXT ASSY AREA. (D) NOTE 4 WAS 095-0300784

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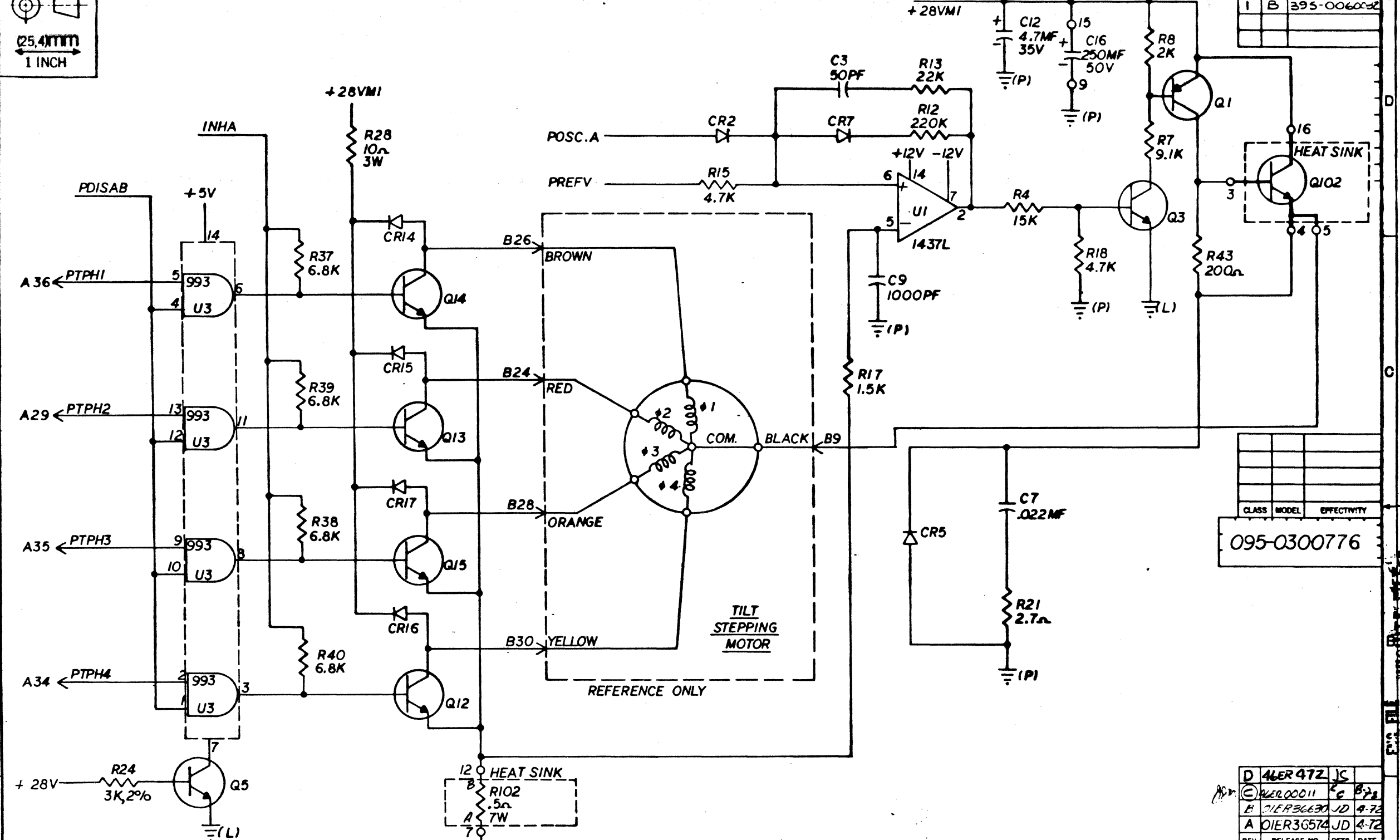
STD. QUALITY SEE SP4064.15		CLASS M41-4-399		UNIT BALL PRINTER MECHANISM	
START 3-72 FINISH 3-12-72		DFTS JJD CHR		NAME SCHEMATIC-	
DESIGNER R BRUCKNER		APPD: _____		SHEET 1 OF 3	
SUPSD. BY: _____		SCALE: NONE		CODE: 2-9550	
SUPERSEDES: _____		095-0300776			

FIELD PRINT

ENC. FILE WICHTIA FILE



ITEM	REQD.	DWG. NO.	NAME	SIZE	ITEM	REQD.	DWG. NO.	NAME	SIZE	REQD.	SIZE	NEXT ASSEMBLY
										1	B	395-0060032



CLASS MODEL EFFECTIVITY
095-0300776

D	46R472	JC
E	46R00011	JD 4-72
F	01ER36630	JD 4-72
A	01ER36574	JD 4-72
REV.	RELEASE NO.	DFTS. DATE

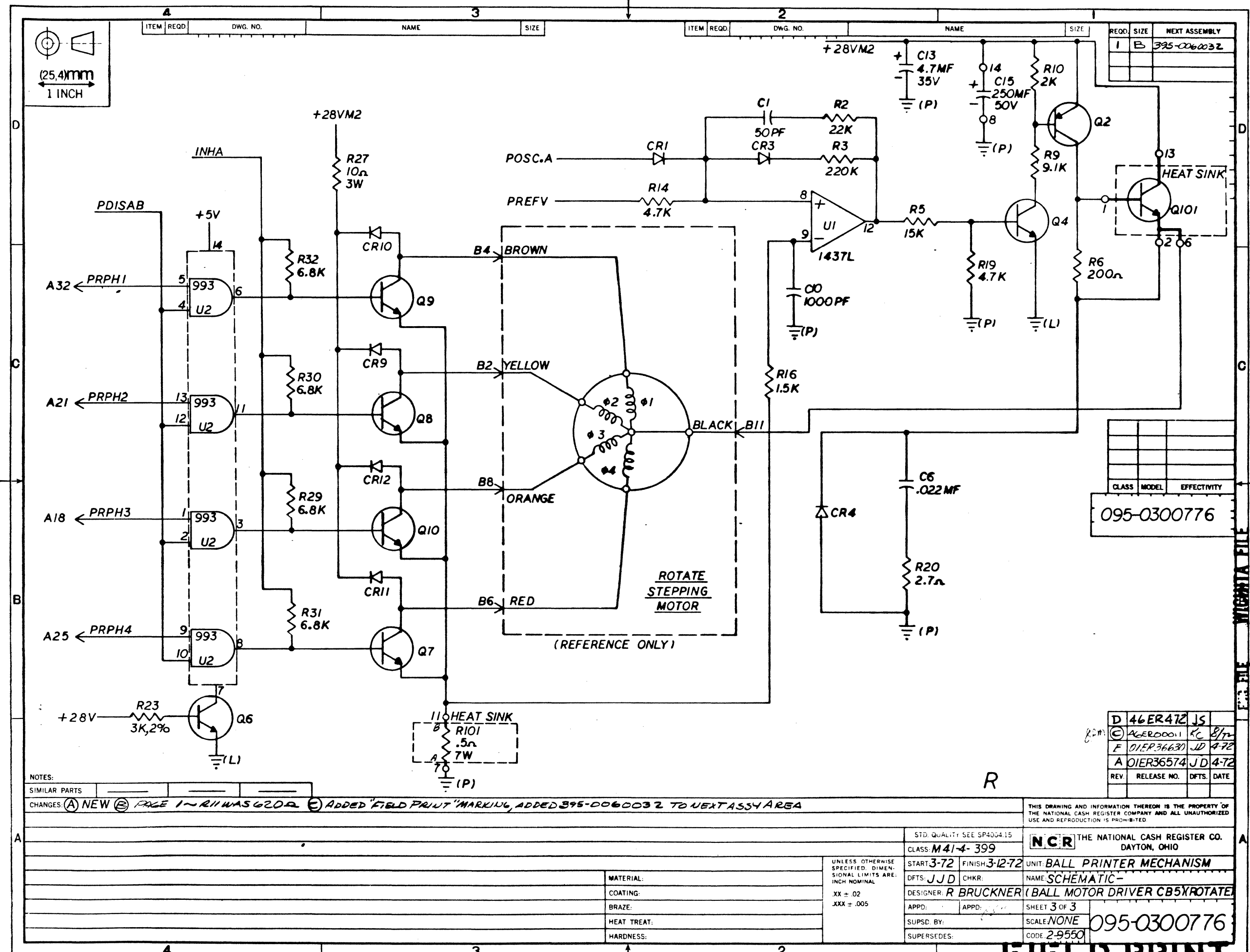
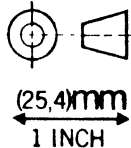
NOTES:

SIMILAR PARTS: _____
 CHANGES (A) NEW (B) PAGE IN R11 WAS 620 (C) ADDED 'FIELD PRINT' MARKING, ADDED 395-0060032 TO NEXT ASSY. AREA

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STD. QUALITY SEE SP4004.15		CLASS: M41-4-399		UNIT: BALL PRINTER MECHANISM	
START: 3-72 FINISH: 3-12-72		DFTS: JJD		NAME: SCHEMATIC	
DESIGNER: R BRUCKNER		APPD: [Signature]		SHEET 2 OF 3	
SHEET 2 OF 3		SCALE: NONE		095-0300776	
SHEET 2 OF 3		CODE: 2-9550			

FIELD PRINT



NOTES:

SIMILAR PARTS: _____
 CHANGES: (A) NEW (B) PAGE 1 ~ R11 WAS 620R (C) ADDED "FIELD PRINT" MARKING, ADDED 395-0060032 TO NEXT ASSY AREA

REQD.	SIZE	NEXT ASSEMBLY
1	B	395-0060032

CLASS	MODEL	EFFECTIVITY

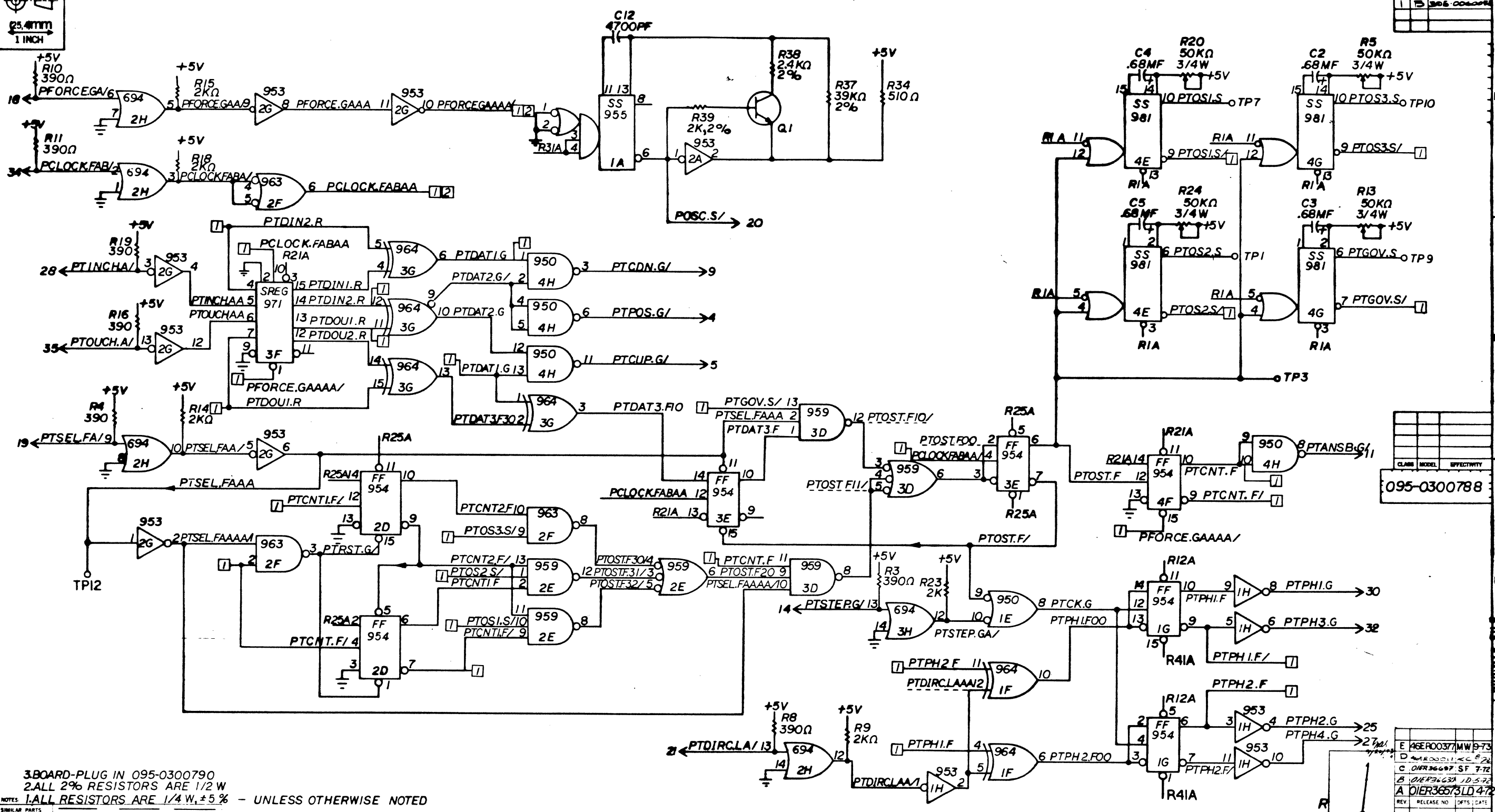
095-0300776

D	46ER472	JS
E	AGER0001	KC 8/m
F	OIER36630	JD 4-72
A	OIER36574	JD 4-72
REV.	RELEASE NO.	DFTS. DATE

STD. QUALITY SEE SP4004.15		THE NATIONAL CASH REGISTER CO. DAYTON, OHIO	
CLASS: M41-4-399	UNIT: BALL PRINTER MECHANISM	NAME: SCHEMATIC-	
START: 3-72	FINISH: 3-12-72	DESIGNER: R BRUCKNER	(BALL MOTOR DRIVER CB5XROTATE)
DFTS: JJD	CHKR:	APPD:	APPD:
SHEET 3 OF 3		SCALE: NONE	
SUPSD. BY:		CODE: 2-9550	
SUPERSEDES:		095-0300776	

FIELD PRINT

ITEM	REQD.	DWG. NO.	NAME	SIZE	ITEM	REQD.	DWG. NO.	NAME	SIZE	ITEM	REQD.	DWG. NO.	NAME	SIZE	REQD.	SIZE	NEXT ASSEMBLY



3. BOARD-PLUG IN 095-0300790
 2. ALL 2% RESISTORS ARE 1/2 W
 1. ALL RESISTORS ARE 1/4 W, ±5% - UNLESS OTHERWISE NOTED

CHANGES: (A) NEW (B) PAGE 1, REMOVE R35 (C) ADDED MNEMONIC NAMES & REFERENCE DESIGNATORS (D) ADDED "FIELD PRINT" MARKING TO NEXT ASSEMBLY (E) ADDED TP12 AT 1-B4

CLASS	MODEL	EFFECTIVITY
095-0300788		

REV	RELEASE NO	DATE
E	000037	MW 9-73
D	000011	CC 6-72
C	000007	SF 7-72
B	000003	JD 5-72
A	000001	LD 4-72

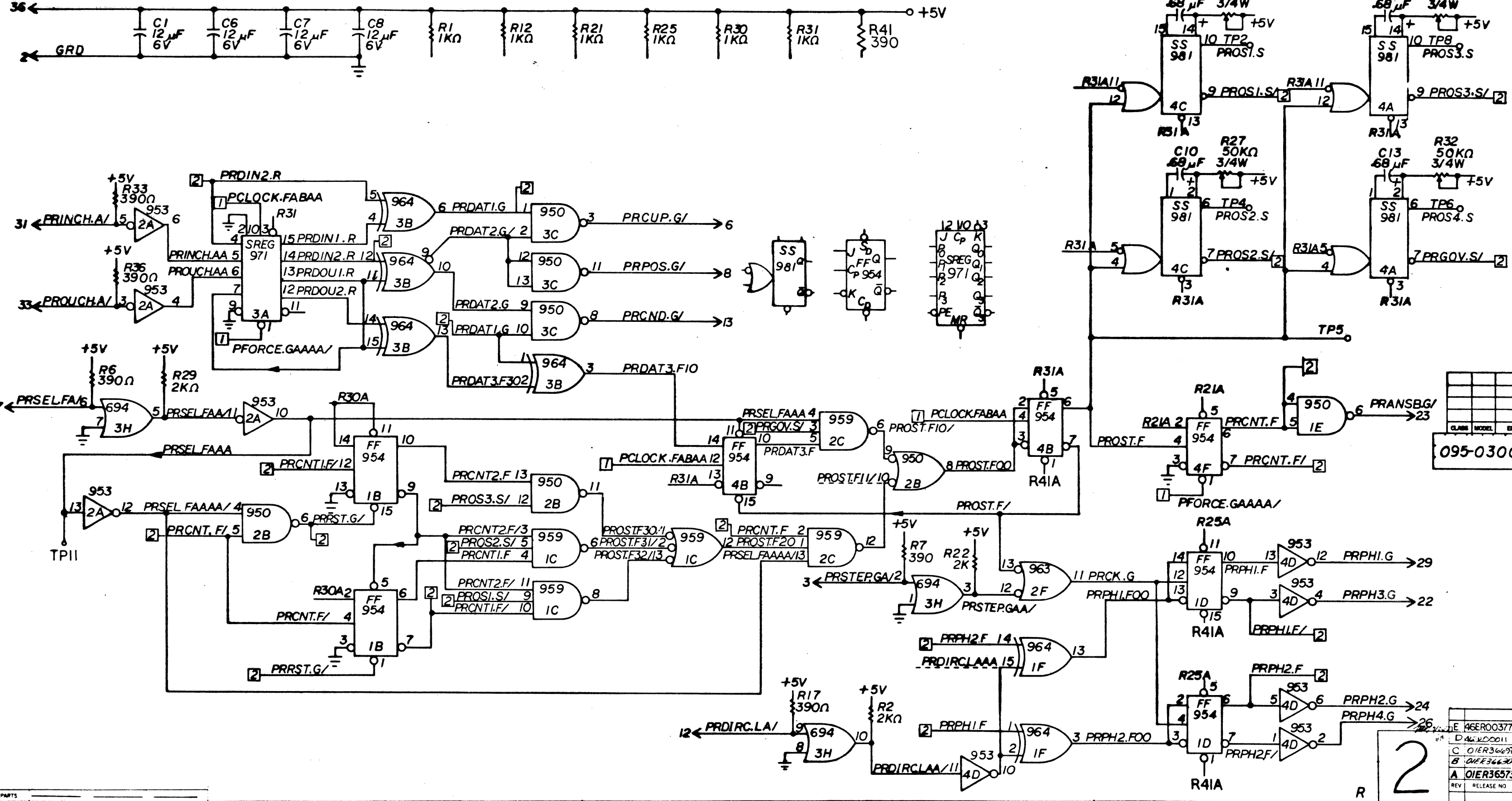
STD. QUALITY SEE SP4004-15		NCR THE NATIONAL CASH REGISTER CO. DAYTON, OHIO	
CLASS	M 41-4-399	START	4-1
FINISH	4-1-72	DESIGNER	J. HELMBOLD (CB&A MOTOR LOGIC)
DFTS	JPD	APPD.	
XX - 02		SHEET	OF 2
XXX - 005		REV.	2-9550

095 0300 788

FIELD PRINT

ITEM RECD.	QTY	NAME	SIZE	ITEM RECD.	QTY	NAME	SIZE	ITEM RECD.	QTY	NAME	SIZE	ITEM RECD.	QTY	NAME	SIZE	ITEM RECD.	QTY	NAME	SIZE	ITEM RECD.	QTY	NAME	SIZE	ITEM RECD.	QTY	NAME	SIZE
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25.41111
1 INCH



CLASS	MODEL	EFFECTIVITY
095-0300788		

NOTES:

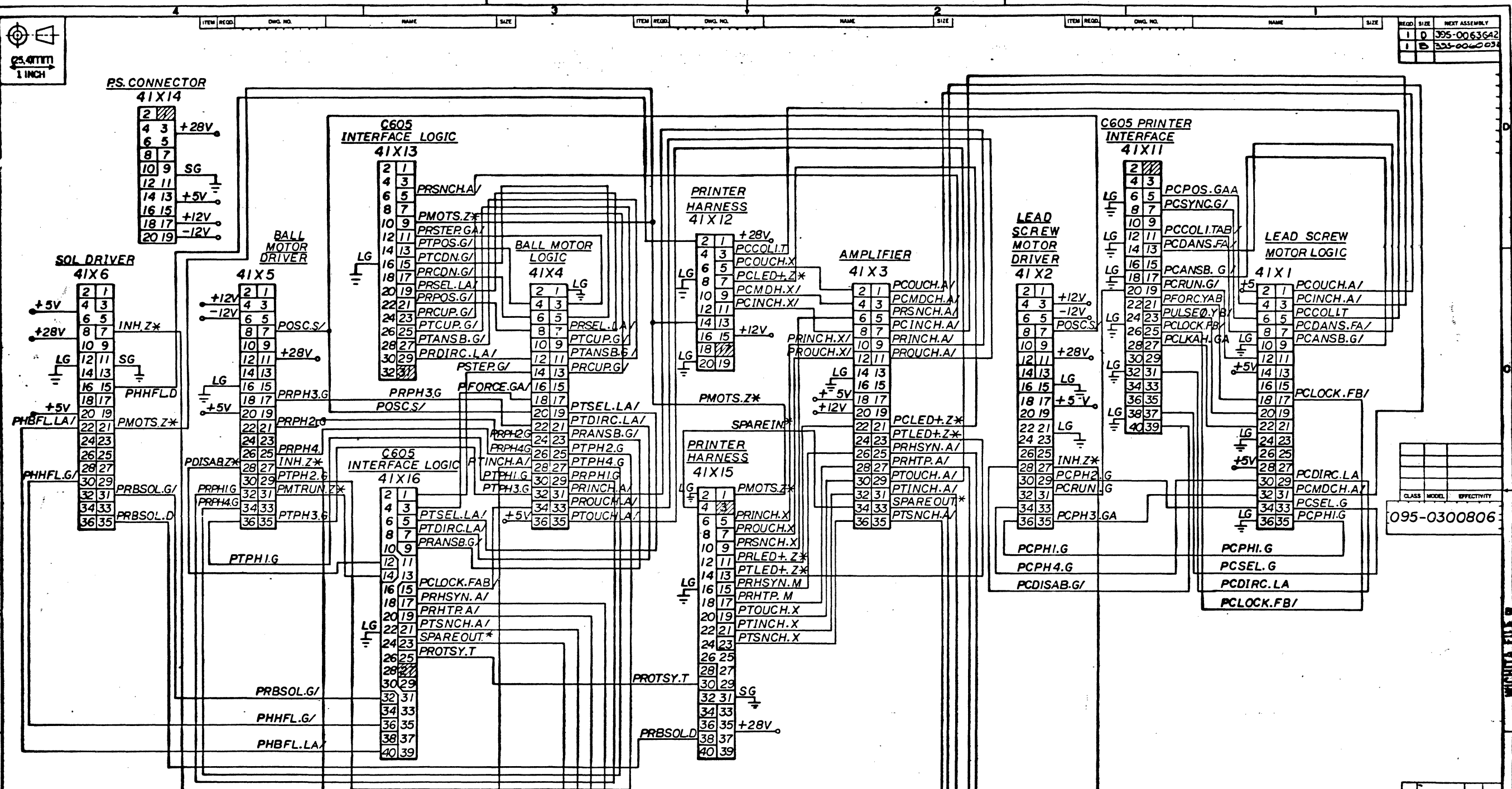
CHANGES: (A) NEW (C) ADDED MNEMONIC NAMES & REFERENCE DESIGNATORS (D) ADDED "FIELD PRINT" MARKING # 395-0060032 TO PAGE AREA (E) ADDED R41 & TP11 AT 2-02 & 2-84

REV	DATE	BY	CHKD
A	01ER36573 LD 4-72		
B	01ER36630 U 5-72		
C	01ER36631 SF 7-72		
D	01ER36632 U 8-72		
E	01ER36633 M 9-72		

CLASS M 41-4-399		NCR	THE NATIONAL CASH REGISTER CO.
START 4-1	FINISH 4-1-72	BALL PRINTER MECHANISM	
DESIGNED BY J. HELMBOLD		SCHEMATIC-LOGIC	
APP'D BY J. HELMBOLD		SCALE 2 OF 2	
SHEET 2 OF 2		095-0300788	

FIELD PRINT

RECD	SIZE	NEXT ASSEMBLY
1	D	395-00636A2
1	D	395-0060032



CLASS MODEL EFFECTIVITY
095-0300806

3 ■ INDICATES KEYING PIN
2 BOARD-ASSY 095-0300808 5 SPARE-IN&OUT, NOT LOGIC NAMES
1. VIEW FROM CIRCUIT SIDE 4 *NOT LOGIC LEVEL SIGNAL

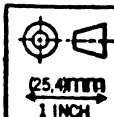
CHANGES (A) NEW (B) ADDED MNEMONIC NAMES (C) ADDED "FIELD PRINT" MARKING & 395-0060032 TO USAGE AREA

R-(399)

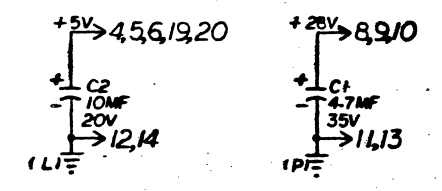
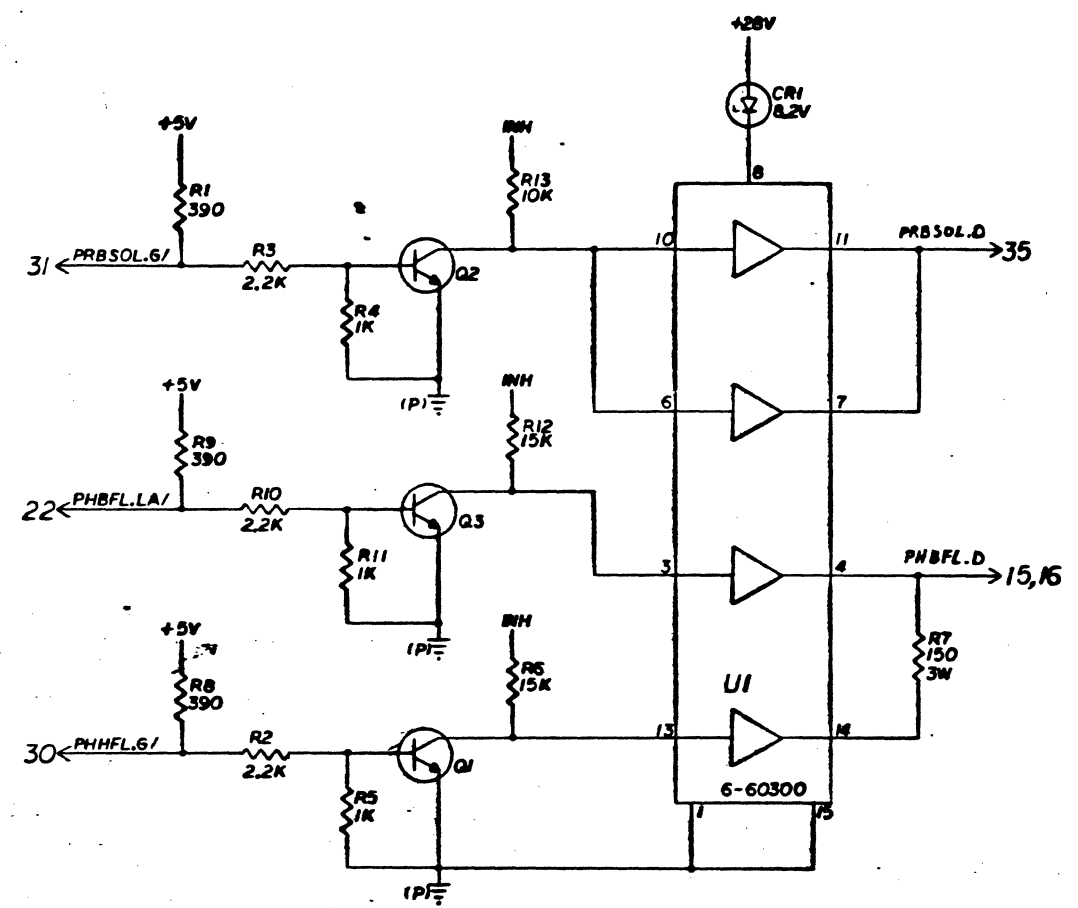
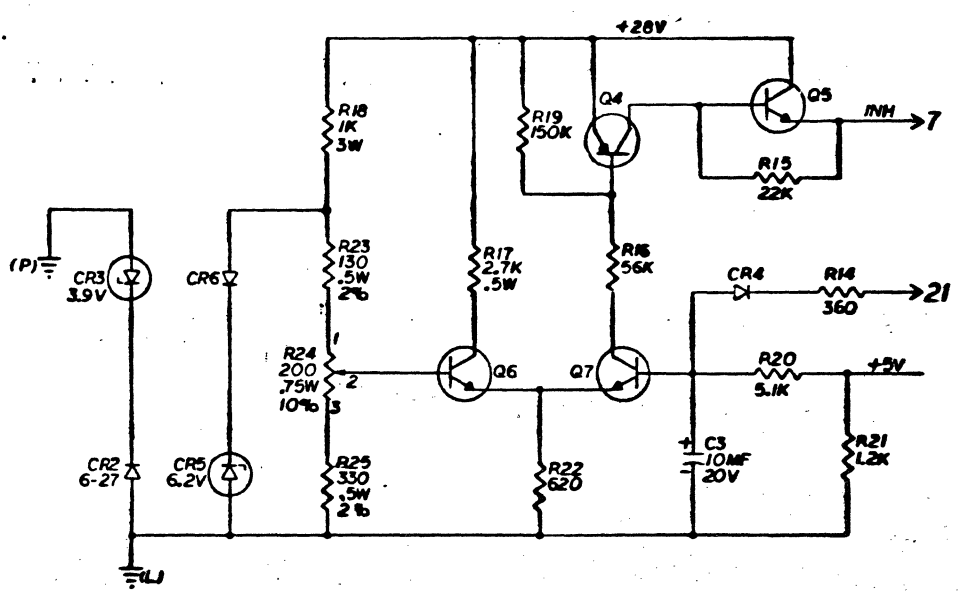
REV	DESCRIPTION	DATE
1	01ER3657LD	3-72
2	01ER36697SF	7-72
3	01ER36697LD	7-72

STANDARD QUALITY SEE SP004-15	CLASS M-414-399	NCR THE NATIONAL CASH REGISTER CO. DAYTON, OHIO
START 2-23 FINISH 2-24-72	PROJECT BALL PRINTER MECHANISM	NAME SCHEMATIC-LOGIC
DFTS JPD	DESIGNER J.J. MULLINS	CBIO CONNECTOR PANEL
APPROVED	SCALE 1 OF 1	SHEET
SUPD. BY	SCALE	095 0300806
SUPERSEDES	CODE 29550	

FIELD PRINT



 HIGHEST REFERENCE DESIGNATOR
 R25 C3 CR6 Q7 U1



3 ALL RESISTORS ARE IN OHMS UNLESS NOTED
 2 ALL RESISTORS ARE .25W 5% UNLESS NOTED
 NOTES / BOARD - PLUG IN 095-0300820

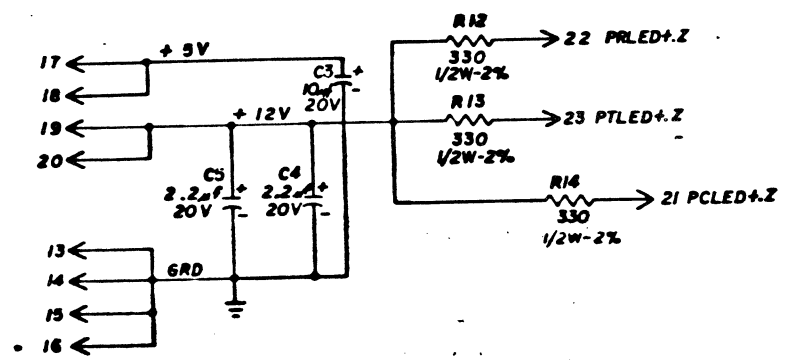
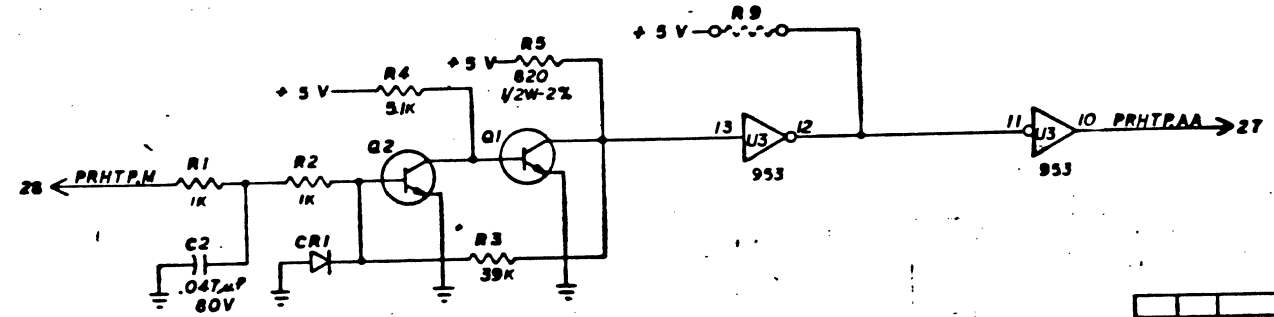
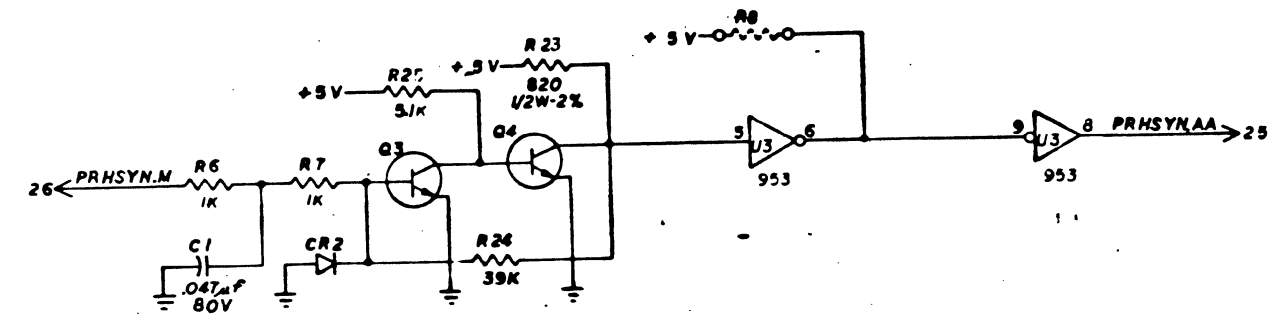
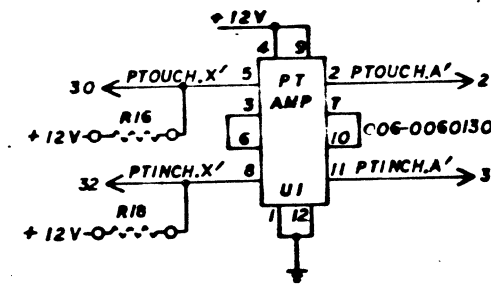
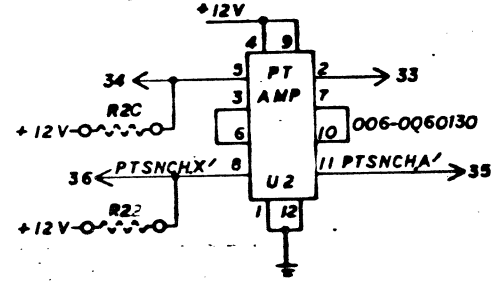
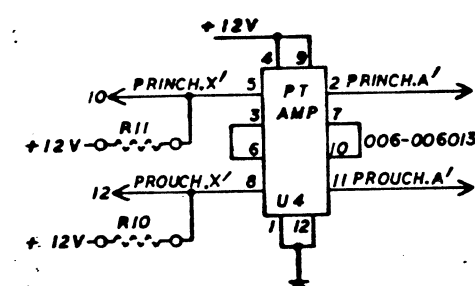
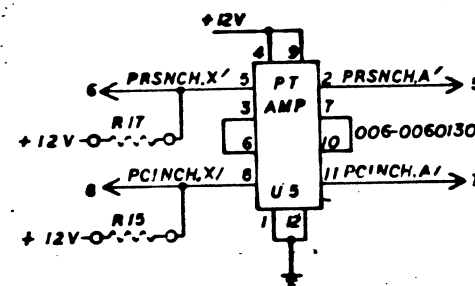
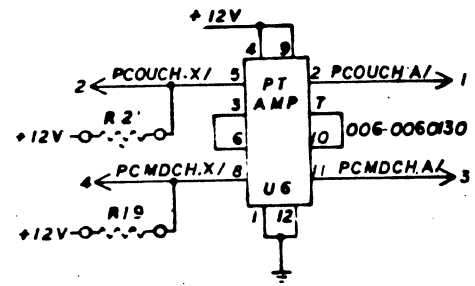
SIMILAR PARTS
 CHANGES (A) NEW (B) ADDED "FIELD PRINT" MARKINGS, § 395-0060032 TO USAGE AREA

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STD. QUALITY SEE SP204 15 CLASS 1444-399-99	N.C.R. THE NATIONAL CASH REGISTER CO. DAYTON, OHIO
START 2-72 FINISH 2-17-72 DTG JJD CHR WES DESIGNER W. SMITH APPD W.S. APPD W.S. SUPD BY SUPERSEDES	PRINTER MOTOR CONTROL (SOLENOID DRIVER) SHEET 1 OF 1 SCALE NONE 095-0300818 CODE 2-0550
MATERIAL COATING BRAZE HEAT TREAT HARDNESS	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES XX - DEC XXX - 008



HIGHEST REF DESIGNATOR
 C5 CR 2 Q4 R26
 REF DESIGNATOR NOT USED

RB-R10
 RS-R23



- 3. ALL RESISTOR VALUES ARE IN OHMS
- 2. ALL RESISTORS ARE 1/4W & 5% UNLESS OTHERWISE SPECIFIED
- 1. BOARD-PLUG IN DWG. NO. 095-0300827

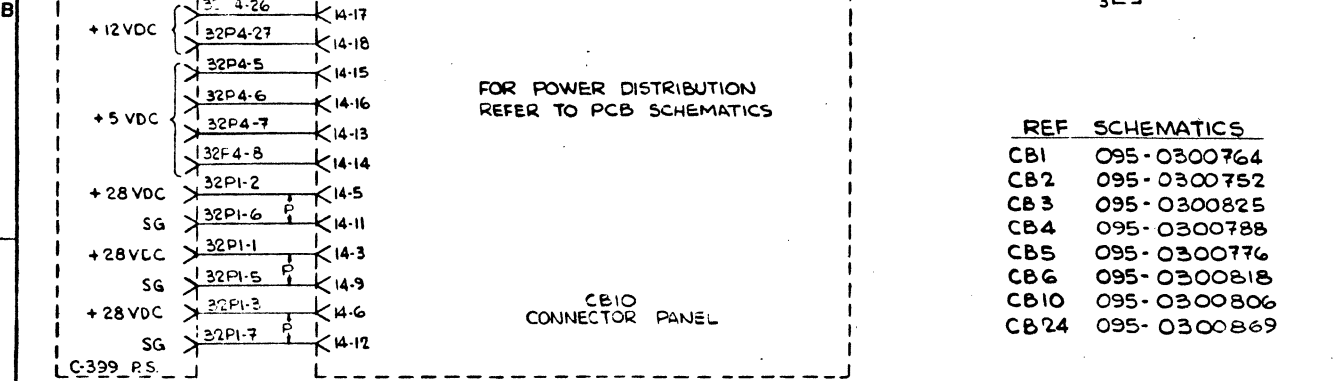
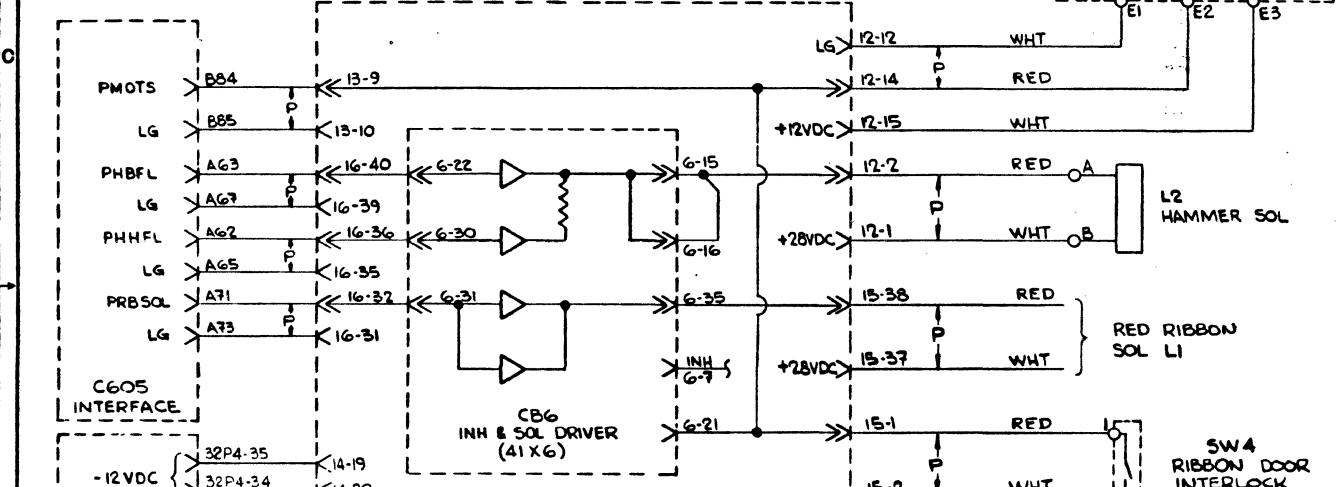
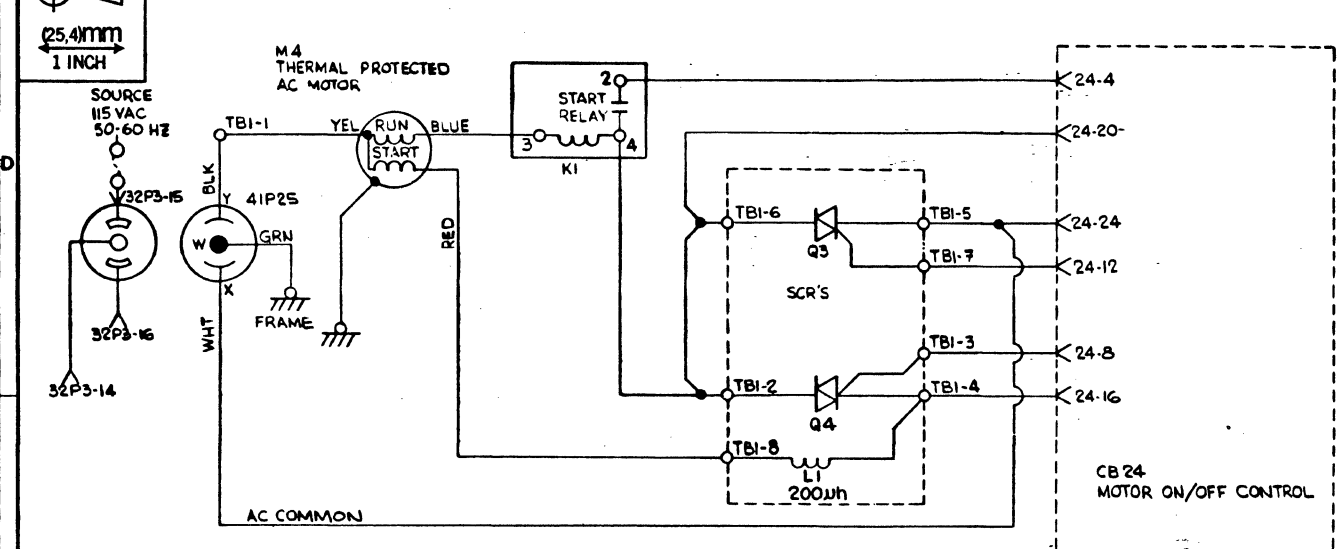
NOTES
 CHANGES: (A) NEW (B) ADDED FIELD PRINT MARKING 395-0060032 TO USAGE AREA (C) REMOVED POLARITY FROM C1 & C2

CLASS: M41-1-399-00	DATE: 3-1-72	DESIGNER: W. SMITH	APP: WBS
START: 3-1-72	END: 3-1-72	NAME: SCHEMATIC	SCALE: NONE
DR: DBJ	CHK: WBS	PROJECT: 095-0300825	DATE: 2-9-55

095-0300825

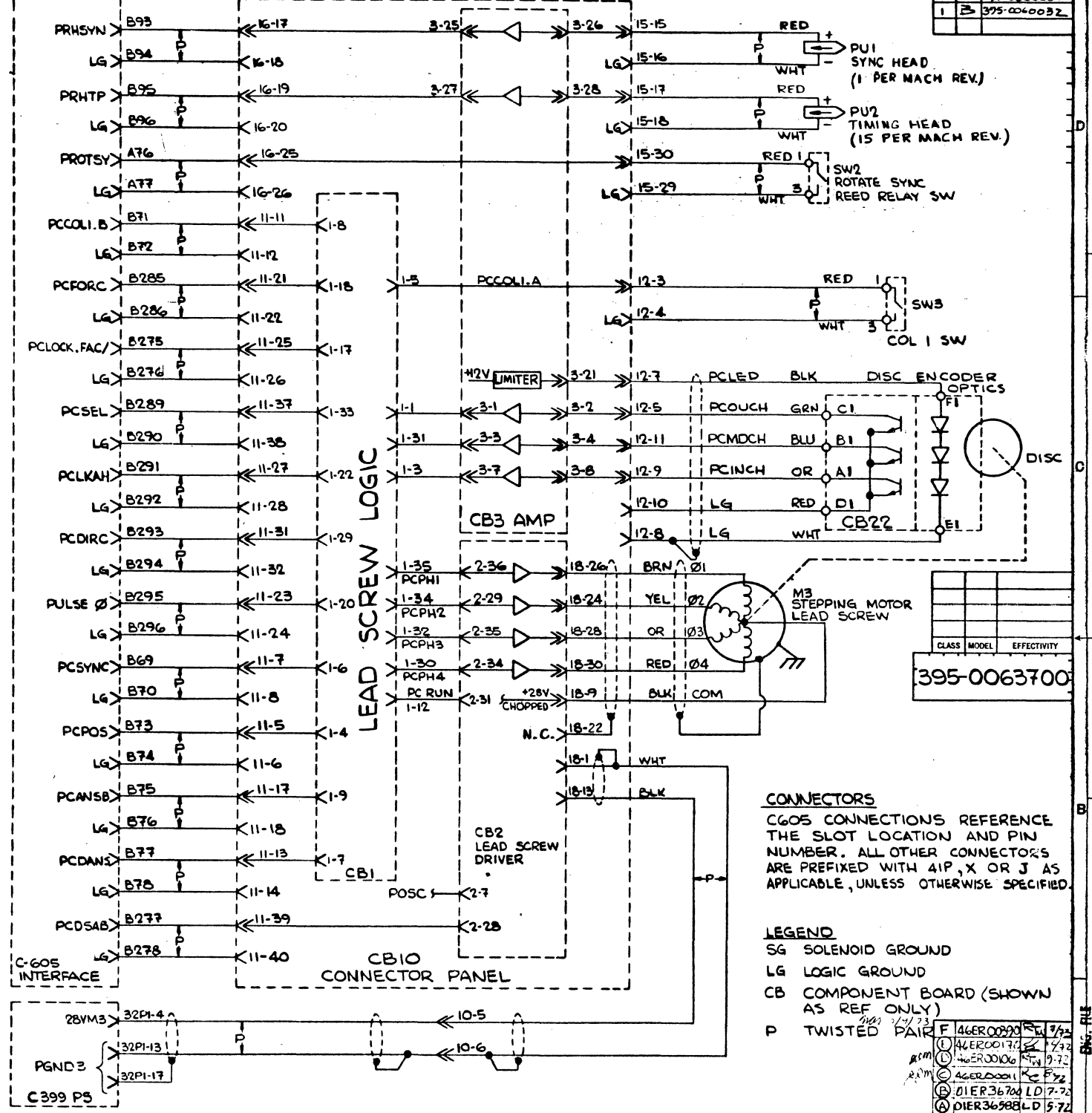
FIELD PRINT

ITEM	REQD.	DWG. NO.	NAME	SIZE	ITEM	REQD.	DWG. NO.	NAME	SIZE	ITEM	REQD.	DWG. NO.	NAME	SIZE
REF	D	395-006322												
1		395-006032												



REF SCHEMATICS

CB1	095-0300764
CB2	095-0300752
CB3	095-0300825
CB4	095-0300788
CB5	095-0300776
CB6	095-0300818
CB10	095-0300806
CB24	095-0300869



CONNECTORS
 C605 CONNECTIONS REFERENCE THE SLOT LOCATION AND PIN NUMBER. ALL OTHER CONNECTORS ARE PREFIXED WITH 41P, X OR J AS APPLICABLE, UNLESS OTHERWISE SPECIFIED.

LEGEND
 SG SOLENOID GROUND
 LG LOGIC GROUND
 CB COMPONENT BOARD (SHOWN AS REF ONLY)
 P TWISTED PAIR

REV	RELEASE NO	DATE
1		

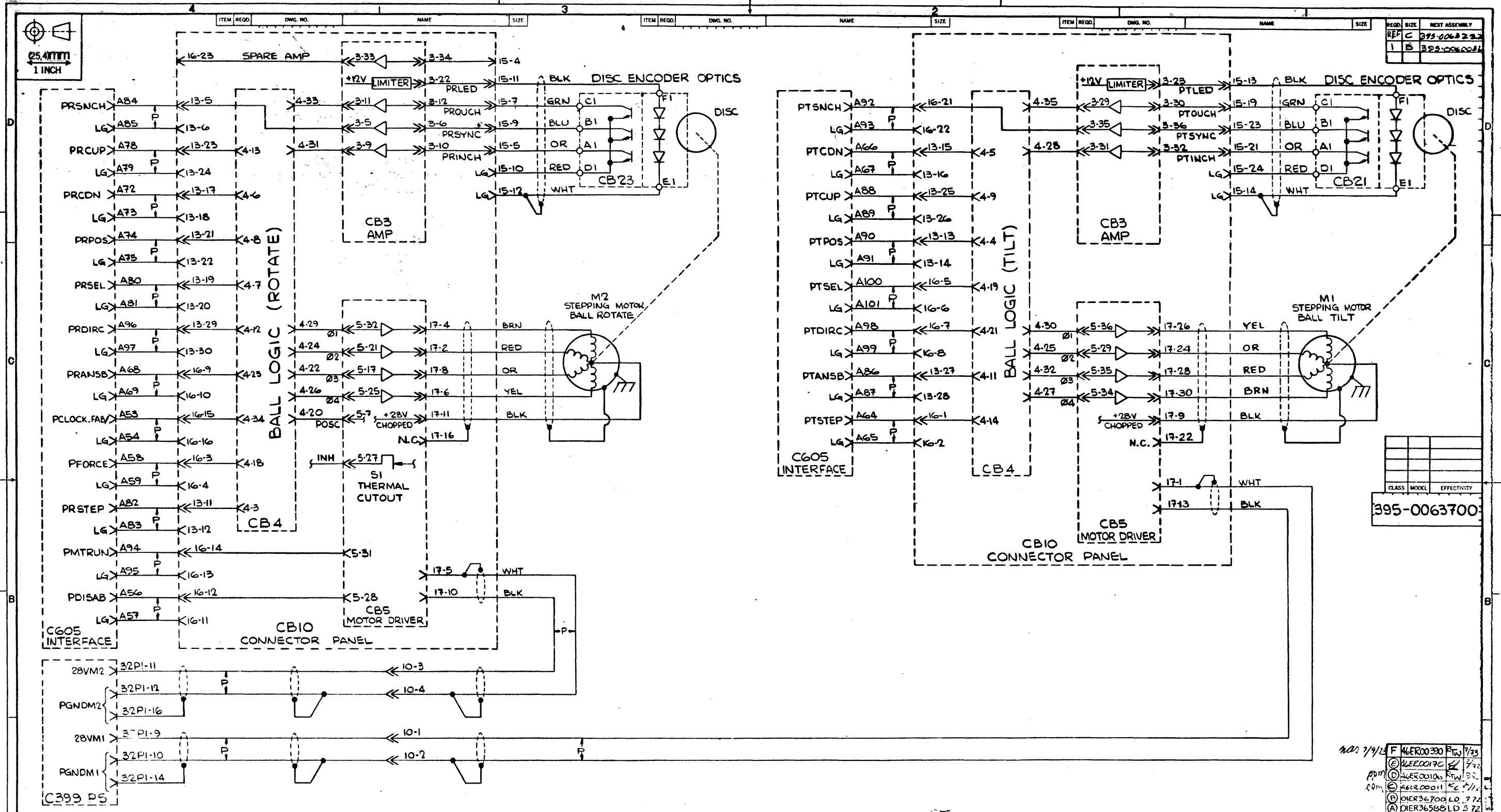
NOTES: SIMILAR PARTS: CHANGES: (A) NEW (B) NAME WAS MILLMATE SYSTEM; CORRECTED COLOR DESIGNATION OF WIRE. (C) ADDED "FIELD PRINT" MARKING TO NEXT ASSY. AREA (D) CB22-A1, B1, C1, D1, E1 & F1 WAS CB22-A2, B2, C2, D2, E2 & F2 (ZONE 10) (E) REDREW VIEW OF SW4 (F) CB23-A1 THRU F1 WAS CB21-A2 THRU F2 (ZONE D-5, INT 2)

CLASS	MODEL	EFFECTIVITY
395-0063700		

REV	RELEASE NO	DATE
1		

THIS DRAWING AND INFORMATION THEREON IS THE PROPERTY OF THE BALL BEARING COMPANY AND ALL UNAUTHORIZED REPRODUCTION IS PROHIBITED.

FIELD PRINT



REQD.	SIZE	NEXT ASSEMBLY
REF C	395-0063700	
1	B	395-0063700

CLASS	MODEL	EFFECTIVITY

395-0063700

NOV 21 1973

① 46ER00390	REV 1/73
② 46E00170	REV 7/72
③ 46ER00100	REV 3/72
④ 46ER00011	REV 4/71
⑤ 46ER36700	LD 7/72
⑥ 46ER36588	LD 5/72

NOTES: SIMILAR PARTS: CHANGE (NEW) QUANTITY SYSTEMS SWITCHING SYSTEMS COMPLETED COLOR DESIGNATION OF WIRE ADDED "FIELD PRINT" MARKING 395-0060032 TO NEXT ASSEMBLY SEE SHT #1 SEE SHT #2 SEE SHT #3

MATERIAL		M 41		NCR	
COATING		4-572		DAYTON 4110	
BRAZE		LDR		BALL PRINTER	
HEAT TREAT		LDR		SCHEMATIC - BALL PRINTER	
PART NO.		2 of 2		NONC 395-0063700	

FIELD PRINT