

29 Series Schematic



10074 SW Arctic Drive Beaverton, OR 97005 503-641-7287

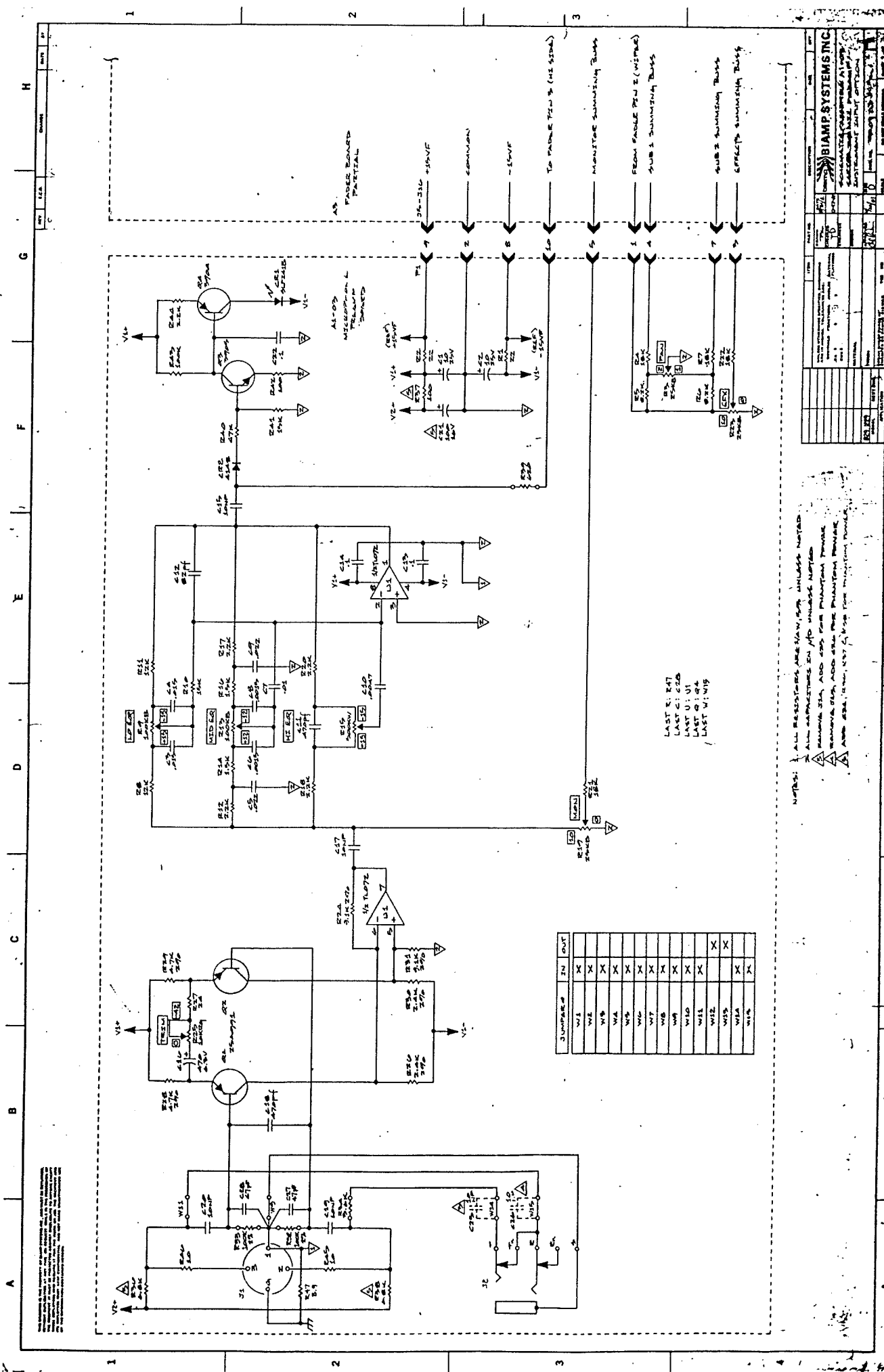
December 22, 1982

29 SERIES AMPLIFIER MODULE REPAIR

WHEN A POWER AMPLIFIER MODULE IN THE 29 SERIES POWERED MIXER SUFFERS AN OUTPUT TRANSISTOR FAILURE, THE REPAIR IS DIFFICULT BECAUSE OF A RIPPLE EFFECT THROUGHOUT THE CIRCUIT AND THE PHYSICAL LOCATION AND CONSTRUCTION OF THE MODULE ASSEMBLY. THE FOLLOWING PROCEDURE HAS PROVEN TO BE A SIMPLE AND EFFECTIVE REPAIR METHOD.

1. REMOVE THE MODULE ASSEMBLY FROM THE MIXER BOTTOM PANEL. THIS REQUIRES UNPLUGGING 3 HARNESS CABLES AND REMOVING 3 SCREWS THROUGH THE BOTTOM PANEL.
2. REMOVE THE DRIVER CIRCUIT BOARD FROM THE MODULE ASSEMBLY BY USING NEEDLE NOSE PLIERS TO SQUEEZE THE LOCK TAB ON THE 4 INSULATED STANDOFFS, LIFTING ONE CORNER AT A TIME.
3. WHEN AN OUTPUT TRANSISTOR BECOMES DEFECTIVE THE 4.7ohm RESISTOR IN SERIES WITH THE BASE LEAD WILL BURN UP. REPLACE ALL BURNED RESISTORS ON THE OUTPUT BOARD AND THE TRANSISTORS THEY ARE CONNECTED TO. THE DRIVER TRANSISTOR BASE RESISTORS R25 AND R26 (22ohms) ARE USUALLY BURNED VERY BADLY. REPLACE THESE AND THE 2SA1006 (Q5) AND 2SC2336 (Q1) DRIVER TRANSISTORS.
4. TEST THE MJE 180 (Q9) BIAS TRANSISTOR.
5. INSPECT THE DRIVER BOARD FOR ANY BURNED RESISTORS AND REPLACE THEM IF FOUND.
6. REPLACE THE 2N3904 (Q9) AND 2N3906 (Q10) PROTECTION TRANSISTORS ON THE DRIVER BOARD.

7. USING A DVM SET FOR THE 2000ohm RANGE TEST EACH DIODE ON THE DRIVER BOARD FOR FORWARD CONDUCTION AND CHANGE ANY SHORTED OR OPEN DIODES. CAUTION THERE ARE 3 DIFFERENT TYPES OF DIODES ON THIS BOARD.
8. TEST THE 2 L.E.D.'s FOR DAMAGE BY TESTING THEM FOR FORWARD CONDUCTION. THEY MAY LIGHT AND THEIR RESISTANCE SHOULD BE 15-1800 ohms. IF THEY ARE OVER 2000ohms OR SHORTED REPLACE THEM WITH THE SAME TYPE DIODE. THESE ARE USED AS A VOLTAGE REFERENCE SOURCE. TEST ANY NEW L.E.D.'s IN CIRCUIT AS A PRECAUTION.
9. U1 AND U2 ARE OPTO-COUPPLERS. THEY CLOSELY SPACED LEADS ARE L.E.D.'s AND SHOULD BE CHECKED AS IN STEP #8.
10. ALL REMAINING TRANSISTORS EXCEPT THE 2N5638 FET CAN BE TESTED IN CIRCUIT. THEY HAVE NOT SHOWN A TENDANCY TO FAIL. [REDACTED]
11. MEASURE THE 2.2ohm RESISTORS ON EACH CIRCUIT BOARD.
12. REMOUNT THE DRIVER BOARD TO THE MODULE ASSEMBLY AND REINSTALL THE MODULE ASSEMBLY TO THE BOTTOM PANEL AND WIRING HARNESSSES.
13. TEST ALL POWER SUPPLY FUSES.
14. IF POSSIBLE USE A VARIAC TO TURN THE MIXER ON. MONITOR THE OUTPUT OFFSET VOLTAGE BETWEEN PIN NUMBER 1 OF THE TEST POINT STRIP AND GROUND. MAXIMUM VOLTAGE SHOULD BE LESS THAN 50 MV.
15. MEASURE BETWEEN PINS #1,2 OF THE TEST POINT STRIP AND ADJUST THE BIAS CONTROL FOR A READING OF 8 MV (HEAT SINK COLD). THE BIAS READING BETWEEN PINS 1 AND 3 SHOULD BE ABOUT THE SAME AND OPPOSITE IN POLARITY.
16. TEST THE AMPLIFIER FOR SIGNAL AND POWER. IT SHOULD FUNCTION NORMALLY.



NUMBER	IN	OUT
W1	X	X
W2	X	X
W3	X	X
W4	X	X
W5	X	X
W6	X	X
W7	X	X
W8	X	X
W9	X	X
W10	X	X
W11	X	X
W12	X	X
W13	X	X
W14	X	X
W15	X	X
W16	X	X

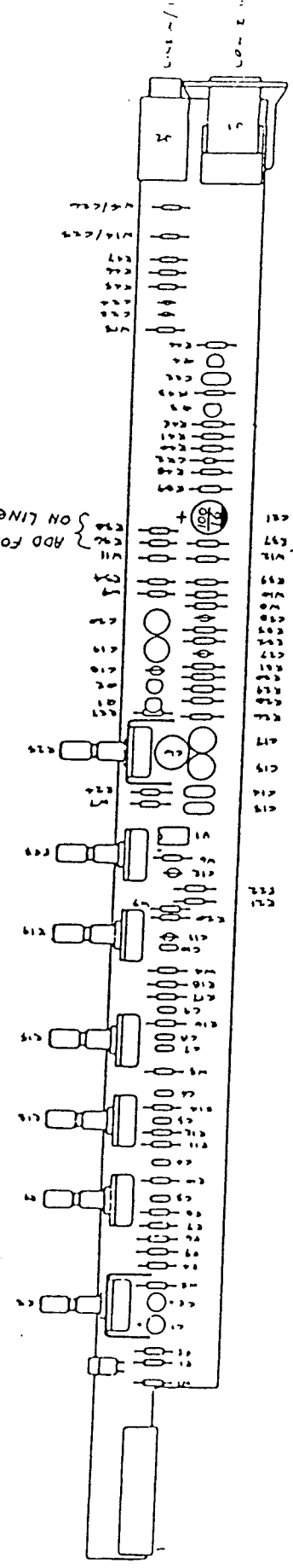
LAST R: R47
 LAST C: C26
 LAST U: U1
 LAST Q: Q4
 LAST V: V19

NOTES: ALL RESISTORS ARE 1/4W UNLESS NOTED
 ALL CAPACITORS IN µFD UNLESS NOTED
 MINIMUM 5% TOL. FOR ALL RESISTORS
 MINIMUM 5% TOL. FOR ALL CAPACITORS
 ADD 5% TOL. FOR ALL CAPACITORS
 ADD 5% TOL. FOR ALL CAPACITORS

BIAMP SYSTEMS, INC.	
DATE: 10/1/74	REV: 1
DESIGNED BY: [Signature]	CHECKED BY: [Signature]
DRAWN BY: [Signature]	TESTED BY: [Signature]
PROJECT: [Blank]	QUANTITY: [Blank]
DATE: 10/1/74	REV: 1

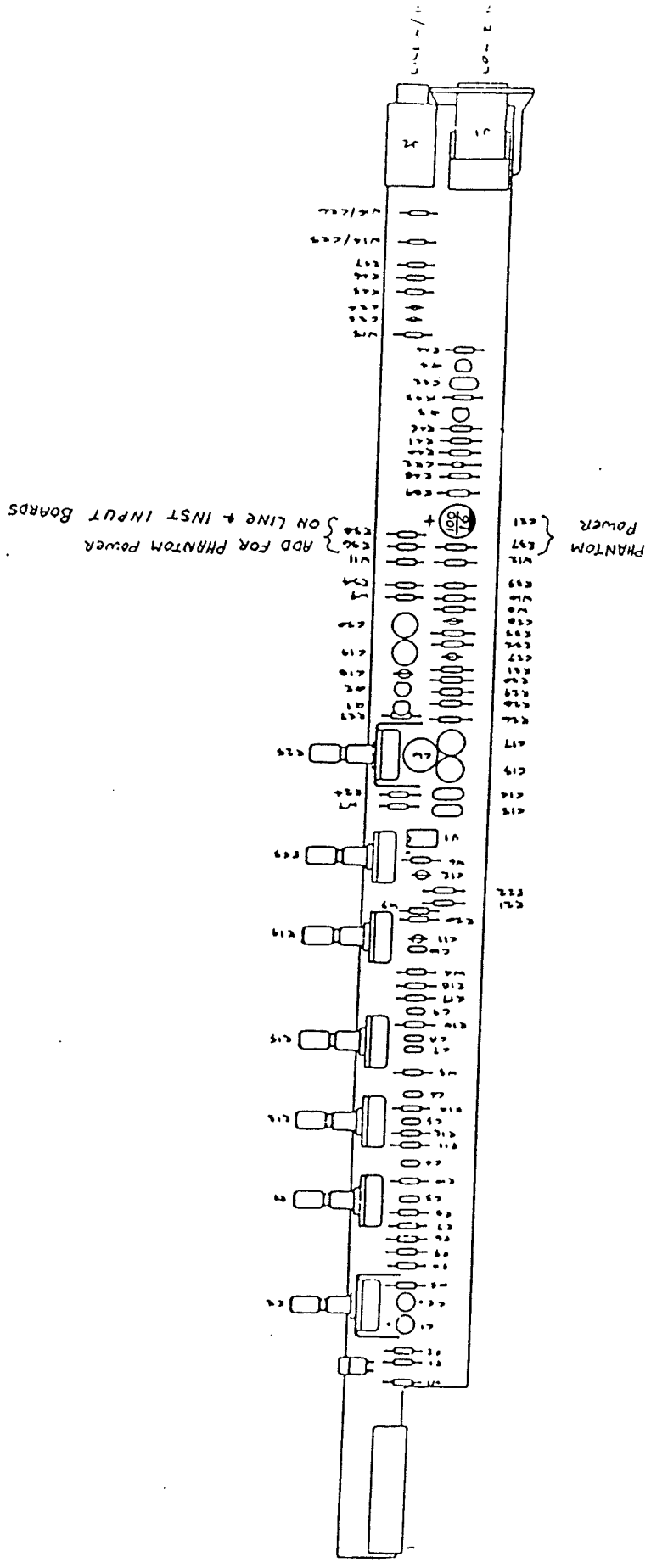
A B C D E F G H
 1 2 3 4

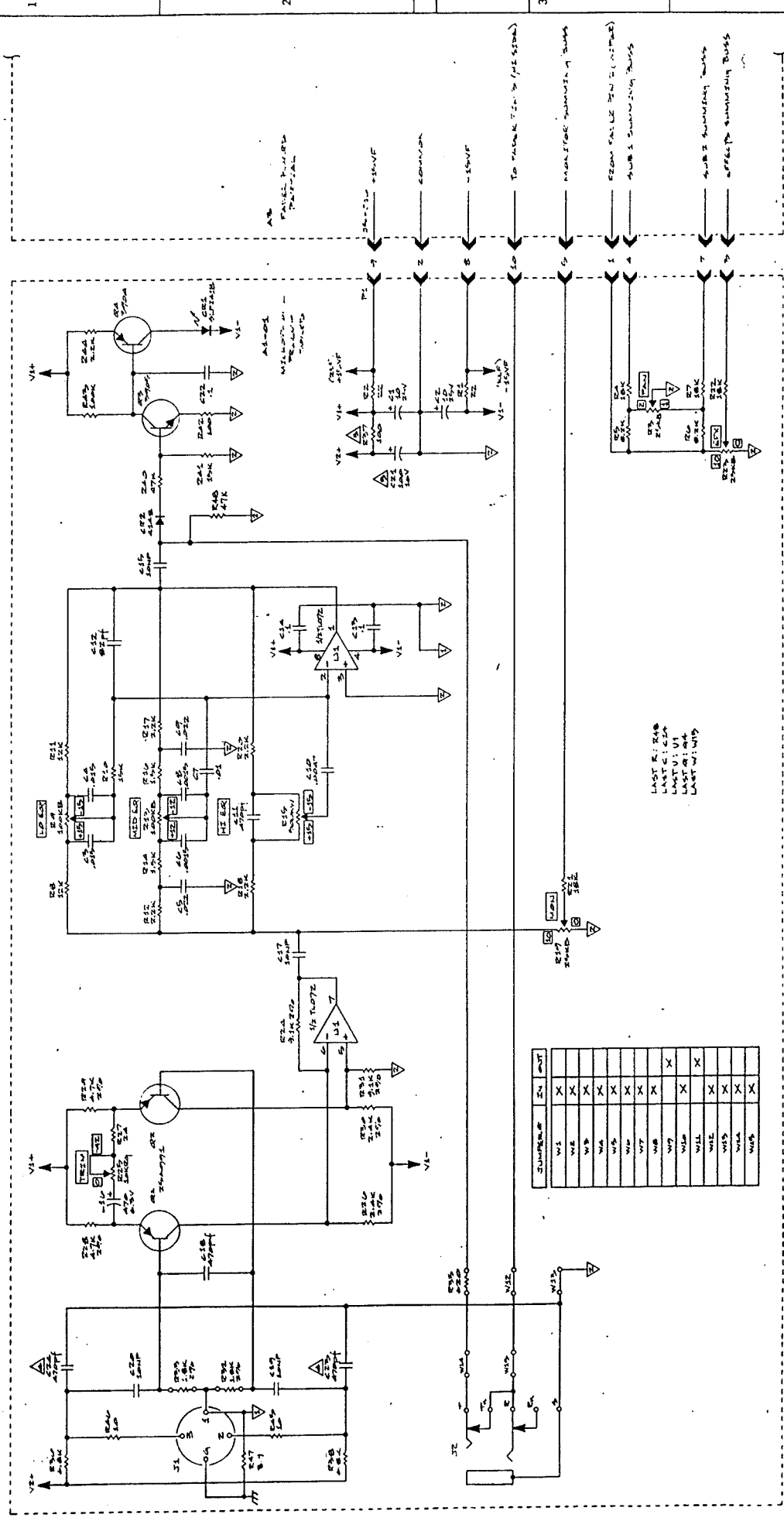
PHANTOM Power
 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000



29 INPUT BOARD
 COMPONENT LAYOUT

29 INPUT BOARD
COMPONENT LAYOUT



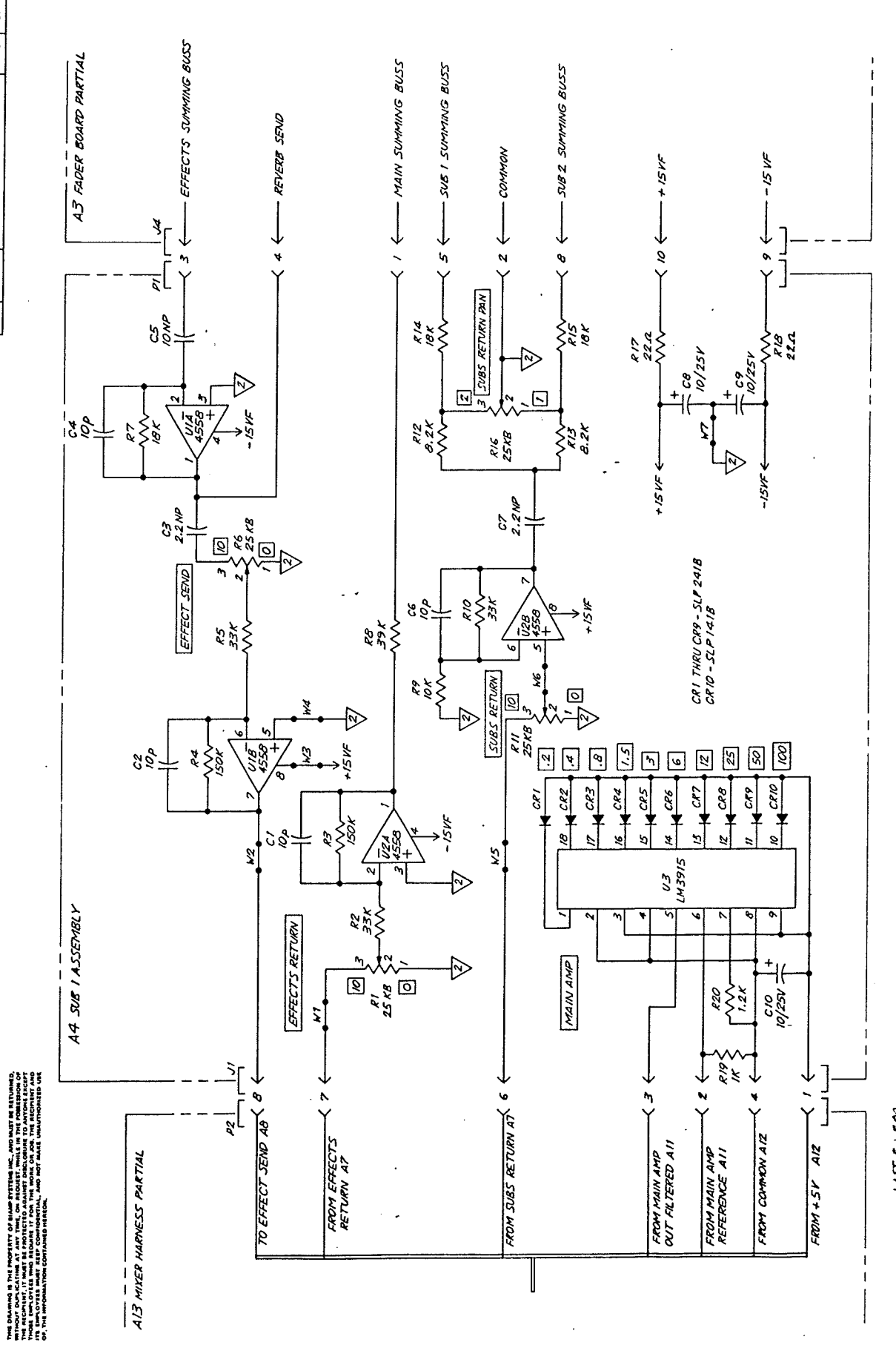


REV	DATE	DESCRIPTION
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2	11/78	REVISED FOR MANUFACTURE
3	12/78	REVISED FOR MANUFACTURE
4	01/79	REVISED FOR MANUFACTURE
5	02/79	REVISED FOR MANUFACTURE
6	03/79	REVISED FOR MANUFACTURE
7	04/79	REVISED FOR MANUFACTURE
8	05/79	REVISED FOR MANUFACTURE
9	06/79	REVISED FOR MANUFACTURE
10	07/79	REVISED FOR MANUFACTURE
11	08/79	REVISED FOR MANUFACTURE
12	09/79	REVISED FOR MANUFACTURE
13	10/79	REVISED FOR MANUFACTURE
14	11/79	REVISED FOR MANUFACTURE
15	12/79	REVISED FOR MANUFACTURE
16	01/80	REVISED FOR MANUFACTURE
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18	03/80	REVISED FOR MANUFACTURE
19	04/80	REVISED FOR MANUFACTURE
20	05/80	REVISED FOR MANUFACTURE
21	06/80	REVISED FOR MANUFACTURE
22	07/80	REVISED FOR MANUFACTURE
23	08/80	REVISED FOR MANUFACTURE
24	09/80	REVISED FOR MANUFACTURE
25	10/80	REVISED FOR MANUFACTURE
26	11/80	REVISED FOR MANUFACTURE
27	12/80	REVISED FOR MANUFACTURE
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98	11/86	REVISED FOR MANUFACTURE
99	12/86	REVISED FOR MANUFACTURE
100	01/87	REVISED FOR MANUFACTURE

Notes: 1. ALL RESISTORS ARE 1/4W, 5% UNLESS NOTED
 2. ALL CAPACITORS IN P/P UNLESS NOTED
 3. ALL CAPACITORS IN P/P UNLESS NOTED
 4. ADD 0.01% CSA FOR MANUFACTURE
 5. ADD 0.01% CSA FOR MANUFACTURE

LAST R: 208
 LAST C: 208
 LAST U: U1
 LAST W: W19

COMPONENT	IN	OUT
W1	X	X
W2	X	X
W3	X	X
W4	X	X
W5	X	X
W6	X	X
W7	X	X
W8	X	X
W9	X	X
W10	X	X
W11	X	X
W12	X	X
W13	X	X
W14	X	X
W15	X	X
W16	X	X
W17	X	X
W18	X	X
W19	X	X



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ITEM	PART NO.	DESCRIPTION	SIZE	QTY.
U1A	4558	OP AMP		1
U1B	4558	OP AMP		1
U2A	4558	OP AMP		1
U3	LM3915	REGULATOR		1
R1	25K	RES		1
R2	33K	RES		1
R3	150K	RES		1
R4	150K	RES		1
R5	33K	RES		1
R6	25K	RES		1
R7	18K	RES		1
R8	39K	RES		1
R9	10K	RES		1
R10	33K	RES		1
R11	25K	RES		1
R12	8.2K	RES		1
R13	8.2K	RES		1
R14	18K	RES		1
R15	18K	RES		1
R16	25K	RES		1
R17	22.2	RES		1
R19	1K	RES		1
R20	1.2K	RES		1
C1	10P	CAP		1
C2	10P	CAP		1
C3	2.2NP	CAP		1
C4	10P	CAP		1
C6	10P	CAP		1
C7	2.2NP	CAP		1
C8	10/25V	CAP		1
C9	10/25V	CAP		1
C10	10/25V	CAP		1
CR1	SLP 241B	DIODE		1
CR2	SLP 241B	DIODE		1
CR3	SLP 241B	DIODE		1
CR4	SLP 241B	DIODE		1
CR5	SLP 241B	DIODE		1
CR6	SLP 241B	DIODE		1
CR7	SLP 241B	DIODE		1
CR8	SLP 241B	DIODE		1
CR9	SLP 241B	DIODE		1
CR10	SLP 141B	DIODE		1

DATE	BY	DESCRIPTION	SIZE	QTY.
11/10/71	UL	BIAMP SYSTEMS, INC.		
10/27/71	UL	SCHEMATIC - ASSEMBLY A4		
10/27/71	UL	29 SERIES SUB 1 BOARD		

LAST R: R20
 C: C10
 CR: CR10
 W: W7
 U: U3
 J: J1
 P: P1

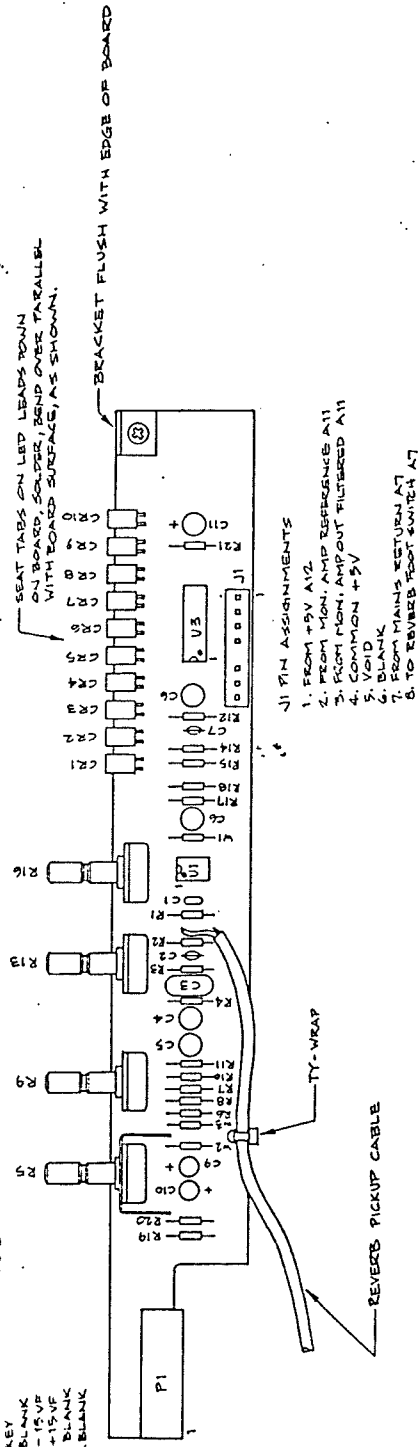
3. SEE SHEET 2 FOR PCB ASSEMBLY.
 2. ALL RESISTORS ARE 1/4 W, 5% UNLESS NOTED.
 1. ALL CAPACITORS IN μ F UNLESS NOTED.

NOTES:

REV. C	E.Z.D.	CHANGE	DATE	BY
		ADDED WIZ & W/D.	11/81	JL

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- P1 PIN ASSIGNMENTS**
1. MAIN SUMMING BUSS
 2. COMMON
 3. BLANK
 4. MONITOR SUMMING BUSS
 5. KEY
 6. BLANK
 7. -15V
 8. BLANK
 9. BLANK
 10. BLANK

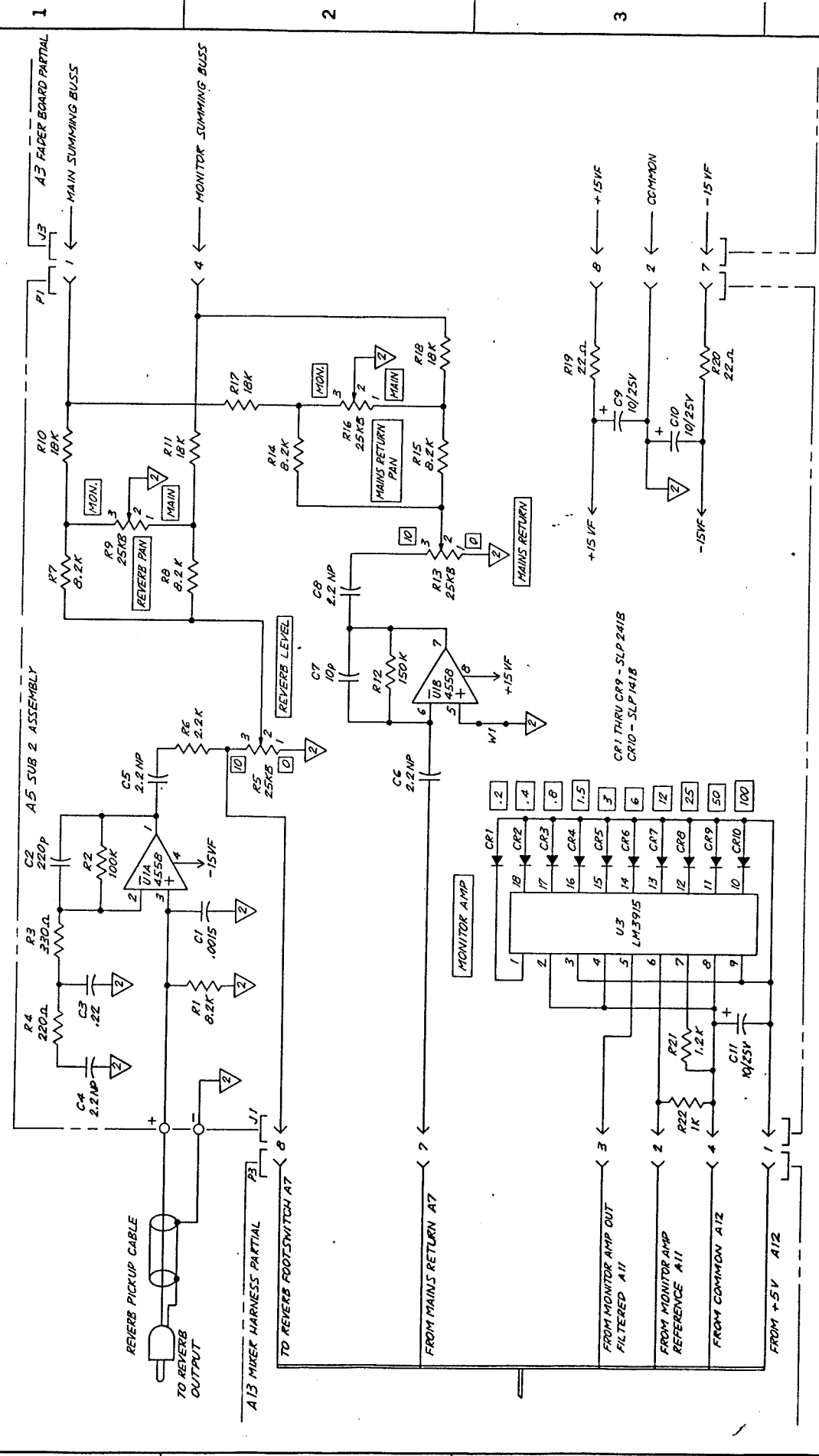


- J1 PIN ASSIGNMENTS**
1. FROM +5V A12
 2. FROM MON. AMP REFERENCE A11
 3. FROM MON. AMP OUT FILTERED A11
 4. COMMON +5V
 5. VOID
 6. BLANK
 7. FROM MAINS RETURN A7
 8. TO REVERSE FOOT SWITCH A7

UNCLASSIFIED	DATE	DESCRIPTION	SYMBOL	QTY
BIAMP SYSTEMS INC.	11-13-81	ASSEMBLY AS		
ASSEMBLY AS		29 SERIES SUB 2 BOARD		
APPROVED	DATE	BY	QTY	
JL	11/81	JL		
FINISH				
REMARKS				

2. ALL COMPONENTS TO BE FULLY SEATED DOWN ON BOARD.
1. SEE SHEET 1 FOR SCHEMATIC.

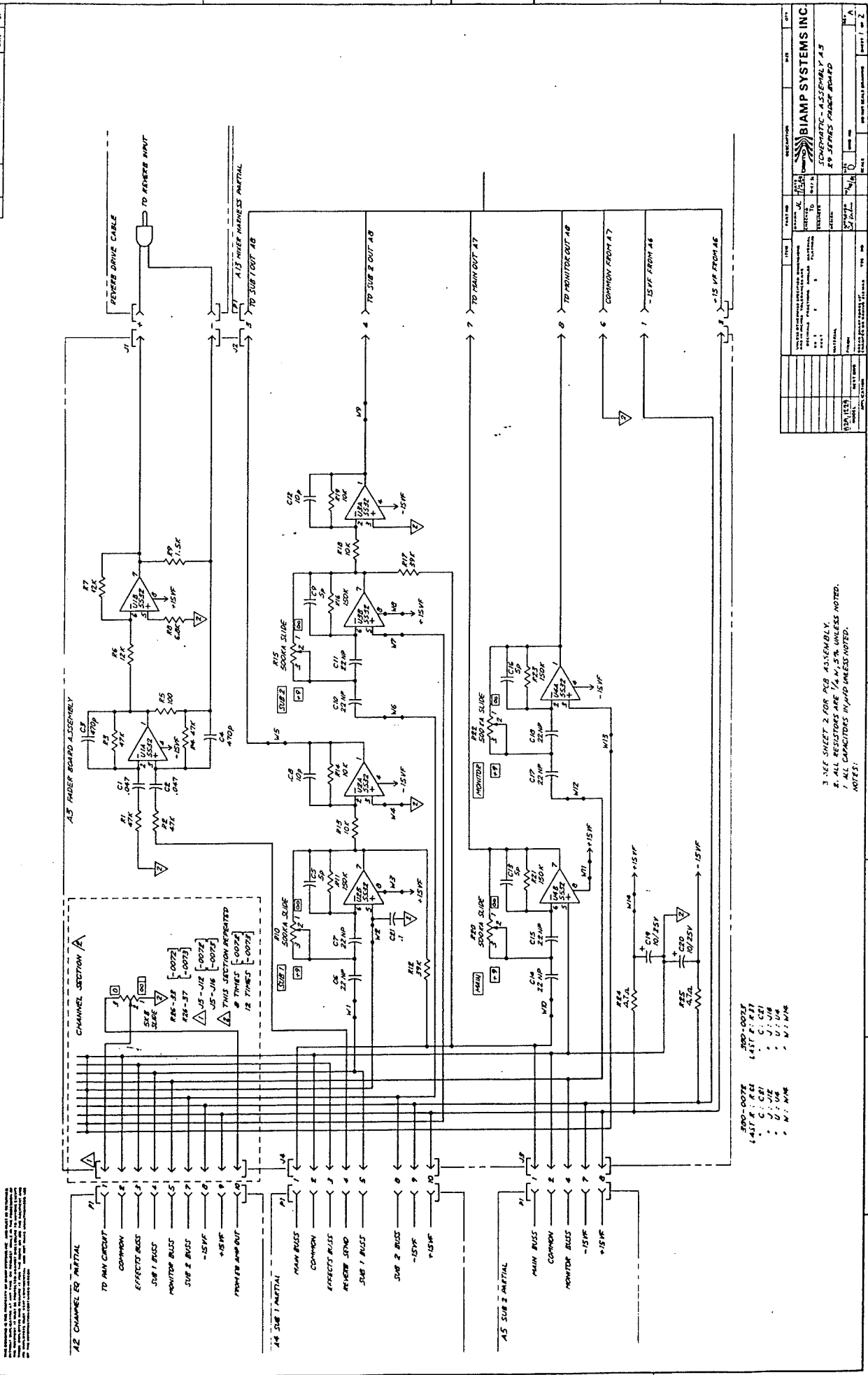
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- LAST R: R22
 C: C11
 CR: CR10
 W: W1
 U: U3
 J: J1
 P: P1

3. SEE SHEET 2 FOR PCB ASSEMBLY.
 2. ALL RESISTORS ARE 1/4 W, 5% UNLESS NOTED.
 1. ALL CAPACITORS IN JUFD UNLESS NOTED.

ITEM	PART NO.	DESCRIPTION	SIZE	QTY.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: .XX ± .005 .XXX ± .002 .XXXX ± .001				
MATERIALS: CR10 - SLP 1418				
MATERIAL: CR1 - THRU CR9 - SLP 2418				
MATERIAL: CR10 - SLP 1418				
FINISH: 6024, 10249				
APPLICATION: REVERB LEVEL CONTROL				
NEXT DWG. NO.:				
MODEL: 17-7-81 C				
DESIGN: W. J. B...				
APPROVED: W. J. B...				
DATE: 10-22-71				
DRAWN: J. L. B...				
CHECKED: D. D...				
BIAMP SYSTEMS INC.				
SCHEMATIC - ASSEMBLY A5				
29 SERIES SUB 2 BOARD				
Dwg. No.:				
SCALE:				
DO NOT SCALE DRAWING				
SHEET 1 OF 2				



REV	DATE	BY	CHKD	DESCRIPTION
1	10/10/70	J. J. W.	M. J. W.	INITIAL DESIGN
2	11/10/70	J. J. W.	M. J. W.	REVISED FOR MANUFACTURE
3	12/10/70	J. J. W.	M. J. W.	REVISED FOR MANUFACTURE
4	01/10/71	J. J. W.	M. J. W.	REVISED FOR MANUFACTURE

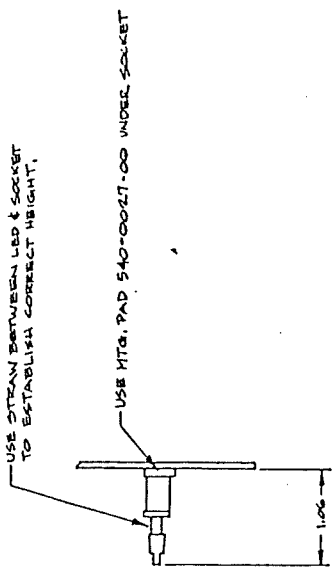
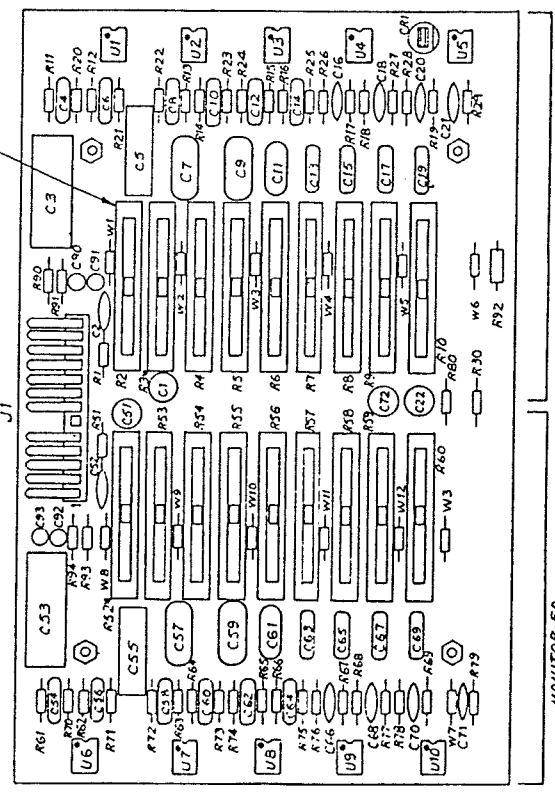
DESIGNED BY	J. J. W.
CHECKED BY	M. J. W.
DATE	10/10/70
PROJECT	BIAMP SYSTEMS INC.
DESCRIPTION	BIAMP SYSTEMS INC. CHANNEL SECTION A ASSEMBLY A5
REVISED FOR	REVISED FOR MANUFACTURE
BY	J. J. W.
DATE	11/10/70
DESCRIPTION	REVISED FOR MANUFACTURE
BY	J. J. W.
DATE	12/10/70
DESCRIPTION	REVISED FOR MANUFACTURE
BY	J. J. W.
DATE	01/10/71
DESCRIPTION	REVISED FOR MANUFACTURE
BY	J. J. W.
DATE	01/10/71
DESCRIPTION	REVISED FOR MANUFACTURE

3 SEE SHEET 2 FOR PCB ASSEMBLY.
 4 ALL RESISTORS ARE 1/4 W, 5% UNLESS NOTED.
 5 ALL CAPACITORS IN μD UNLESS NOTED.

1. ALL COMPONENTS TO BE FULLY SEATED DOWN ON BOARD.
2. SEE SHEET 1 FOR SCHEMATIC.

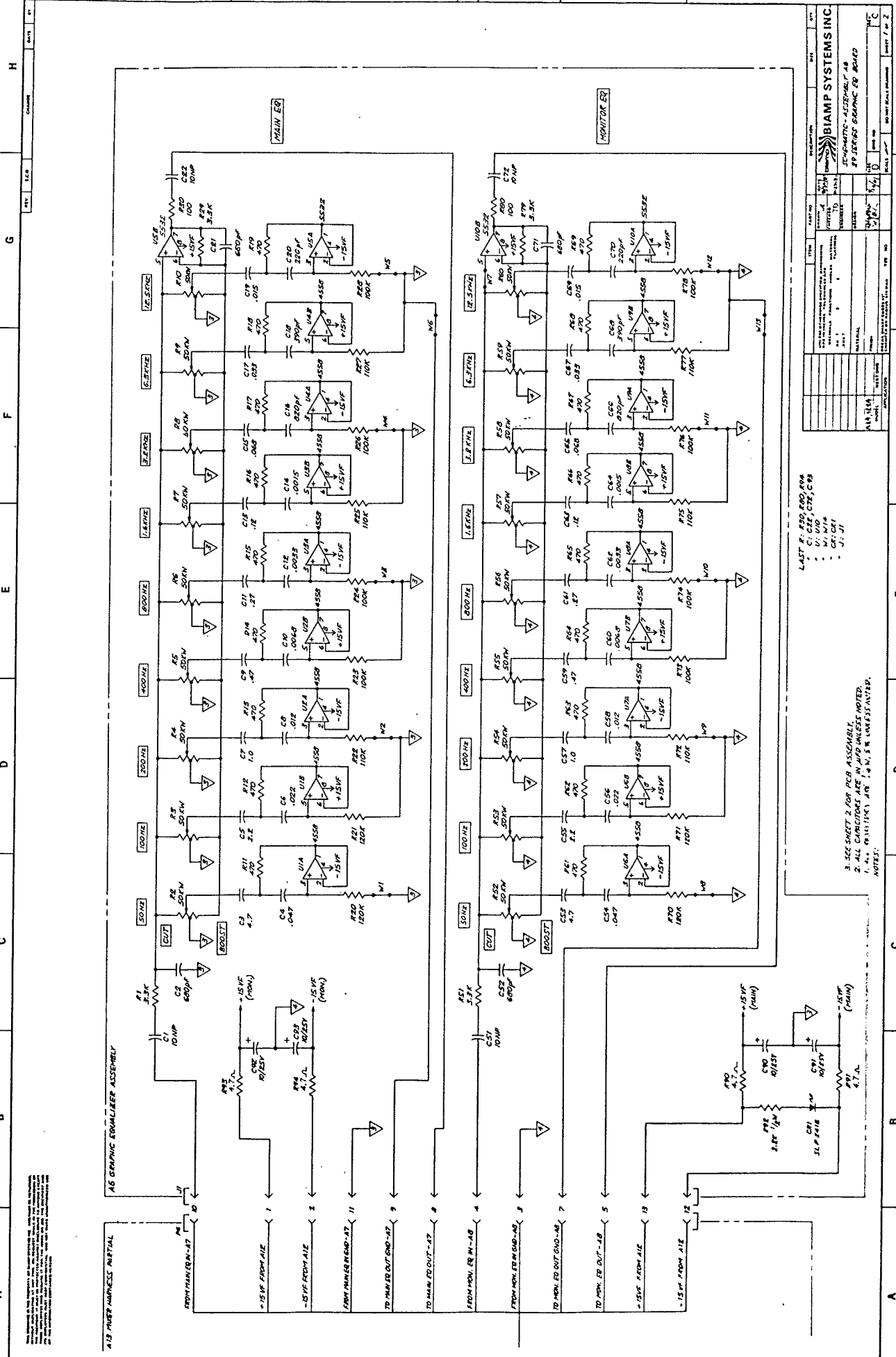
- J1 PIN ASSIGNMENTS**
1. +15V FROM A12
 2. -15V FROM A12
 3. FROM MON. EQ IN AND A8
 4. FROM MON. EQ IN A8
 5. TO MON. EQ OUT A8
 6. VOID
 7. TO MON. EQ OUT AND A8
 8. TO MAIN EQ OUT A7
 9. TO MAIN EQ OUT AND A7
 10. FROM MAIN EQ IN A7
 11. FROM MAIN EQ IN A7
 12. -15V FROM A12
 13. +15V FROM A12

SEAT POTS DOWN ON BOARD; MAINTAIN .40" CENTER-TO-CENTER.



ITEM	DESCRIPTION	SIZE	QTY
1	BIAMP SYSTEMS INC.		
2	ASSEMBLY 46		
3	29 SERIES GRAPHIC EQ BOARD		
4			
5			
6			
7			
8			
9			
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NOTE:
1. SEE SHEET 1 FOR SCHEMATIC.
2. ALL COMPONENTS TO BE FULLY SEATED DOWN ON BOARD.



1
2
3
4

A6 GRAPHIC EQUALIZER ASSEMBLY

MAIN EQ

MONITOR EQ

LAST R: R30, R30, R36
 C: C22, C23, C28
 W: W1, W2
 CR: CR1
 J: J1, J2

3-SEE SHEET 2 FOR PCB ASSEMBLY
 2-ALL CAPACITORS ARE IN μ D UNLESS NOTED.
 1-ALL RESISTORS ARE 1/4 W, 5% UNLESS NOTED.

NOTES:

REV	DATE	BY	CHKD	DESCRIPTION
1	10/1/74	J. J. JI	J. J. JI	REVISED FOR PCB ASSEMBLY
2	10/1/74	J. J. JI	J. J. JI	REVISED FOR PCB ASSEMBLY
3	10/1/74	J. J. JI	J. J. JI	REVISED FOR PCB ASSEMBLY
4	10/1/74	J. J. JI	J. J. JI	REVISED FOR PCB ASSEMBLY

REV	DATE	BY	CHKD	DESCRIPTION
1	10/1/74	J. J. JI	J. J. JI	REVISED FOR PCB ASSEMBLY
2	10/1/74	J. J. JI	J. J. JI	REVISED FOR PCB ASSEMBLY
3	10/1/74	J. J. JI	J. J. JI	REVISED FOR PCB ASSEMBLY
4	10/1/74	J. J. JI	J. J. JI	REVISED FOR PCB ASSEMBLY

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A B C D

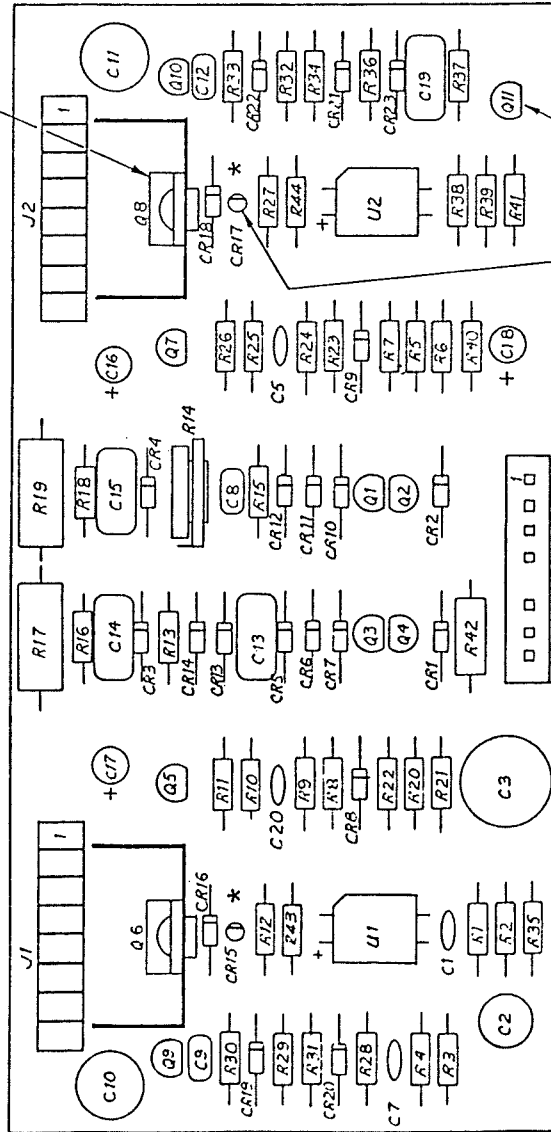
REV.	ECO.	CHANGE	DATE	BY
C	118-5115-01	ADDED R45 & R44	11/7/81	JL

J1 PIN ASSIGNMENTS

1. OUTPUT
2. THERMAL RESISTOR - T5
3. THERMAL RESISTOR - T1
4. VISENSE
5. + DRIVE/BIAS
6. + Vcc 2
7. + Vcc 1
8. + Vcc 1

J2 PIN ASSIGNMENTS

1. GROUND
2. -Vcc 1
3. -Vcc 2
4. -Vcc 2
5. -Vcc 2
6. -Vcc 2
7. - DRIVE/BIAS
8. BIAS



- J3 PIN ASSIGNMENTS**
1. FILTERED LED CONTROL VOLTAGE
 2. LED REFERENCE GROUND
 3. FAST OFF CONTROL
 4. +Vcc 1 LED REFERENCE VOLTAGE
 5. V01D (-DC INPUT)
 6. +DC INPUT
 7. INPUT GROUND
 8. SIGNAL INPUT

HEIGHT (FROM BOARD TO TOP OF CASE) TO BE 3/8". (FOR Q1-Q5, Q7, Q9-Q11)

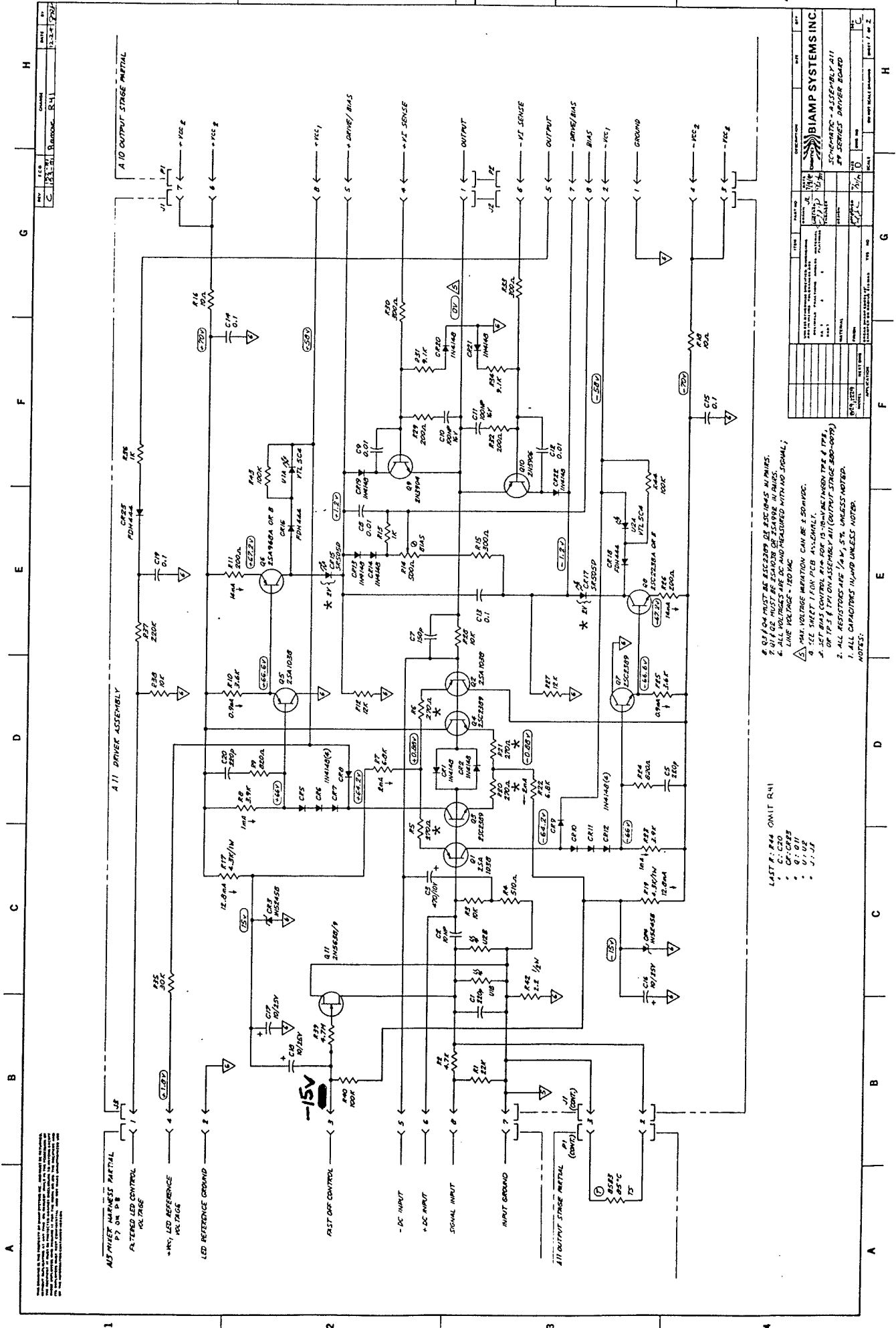
HEIGHT (FROM BOARD TO TOP OF LED) TO BE 5/8". (FOR CR19 & CR17)

* CR15 & CR17 replaced with 1N5226B (3.3v Zener) with reversed polarity.

REV.	ECO.	CHANGE	DATE	BY
C	118-5115-01	ADDED R45 & R44	11/7/81	JL

ITEM	PART NO.	DESCRIPTION	QTY
1	BIAMP SYSTEMS INC.	BIAMP SYSTEMS INC.	
2	ASSEMBLY KIT	ASSEMBLY KIT	
3	29 SERIES DRIVER BOARD	29 SERIES DRIVER BOARD	

2. ALL COMPONENTS TO BE FULLY SEATED



* CR15 & CR17 changed to 1N5226B 3.3v Zener (reversed polarity).
 * R5, R6, R20, R21 changed to 30 ohm (reduced THD).

1 2 3 4

C

B

A

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P1 PIN ASSIGNMENTS

1. OUTPUT
2. THERMAL RESISTOR - TS
3. THERMAL RESISTOR - T
4. +VI SENSE
5. +DRIVE/BIAS
6. +VCC 2
7. +VCC 1
8. -VCC 1

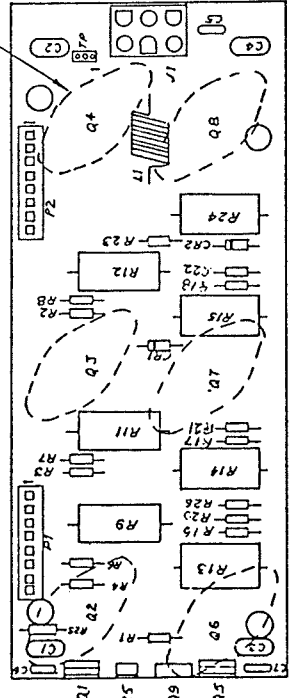
P2 PIN ASSIGNMENTS

1. GROUND
2. -VCC 1
3. -VCC 2
4. -VCC 2
5. OUTPUT
6. -VI SENSE
7. -DRIVE/BIAS
8. BIAS

J1 PIN ASSIGNMENTS

1. -VCC 2
2. AMP GROUND
3. +VCC 2
4. -VCC 1
5. AMP OUT
6. +VCC 1

HAND ADD SOCKETS ON BACK OF BOARD AT TIME OF AMP MODULE ASSEMBLY.

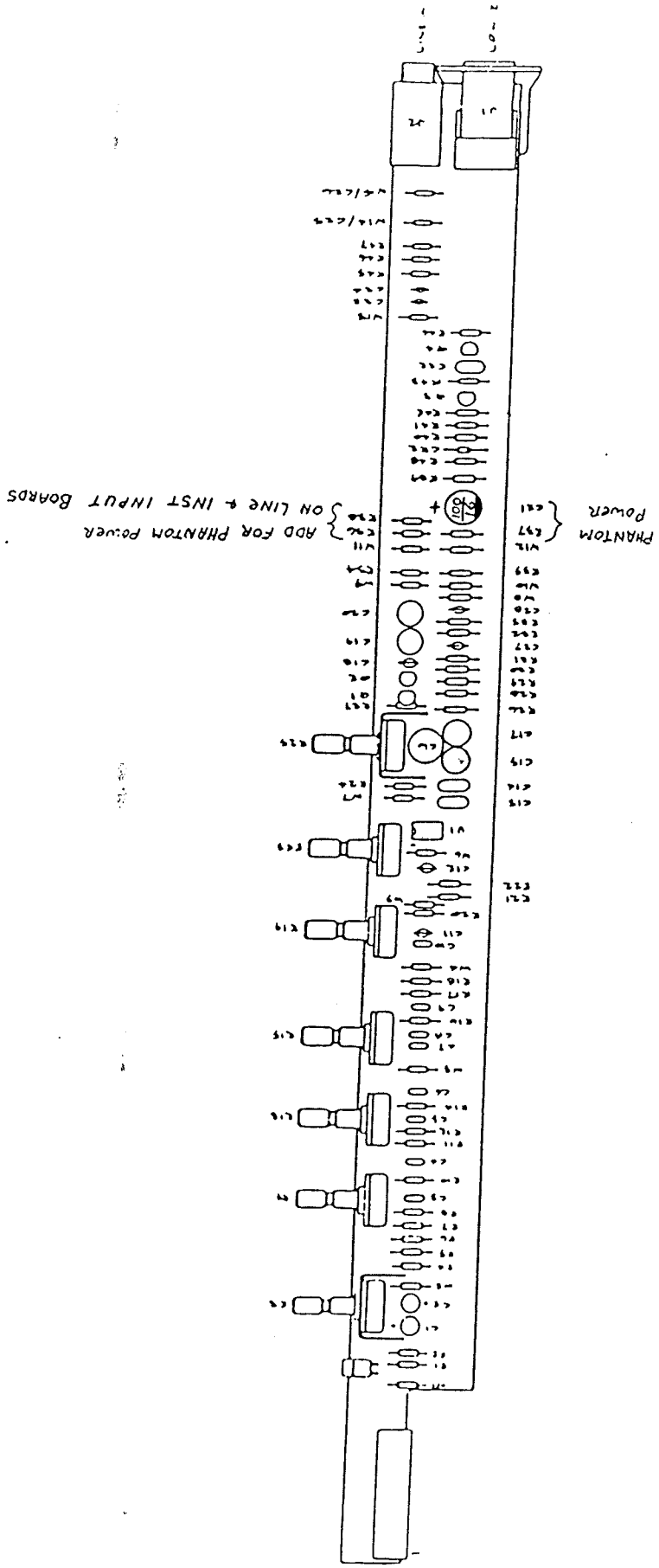


2. ALL COMPONENTS TO BE FULLY SEATED DOWN ON BOARD.
1. SEE SHEET 1 FOR SCHEMATIC.

NOTE :

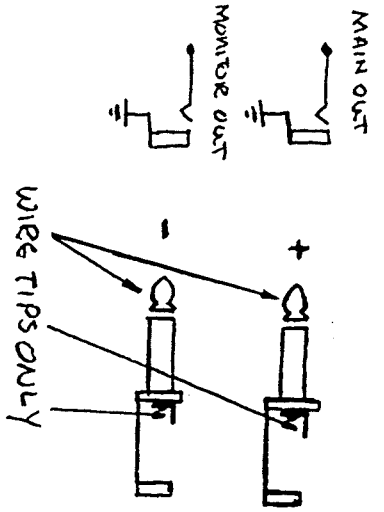
ITEM	PART NO.	DESCRIPTION	DATE	BY
1	BIAMP SYSTEMS INC.	BIAMP SYSTEMS INC.		
2	ASSEMBLY A 10	ASSEMBLY A 10		
3	19 SERIES OUTPUT STAGE BOARD	19 SERIES OUTPUT STAGE BOARD		
4	SCALE	SCALE		
5	DO NOT SCALE DRAWING	DO NOT SCALE DRAWING		
6	DRWG. NO.	DRWG. NO.		
7	REV. NO.	REV. NO.		
8	SCALE	SCALE		
9	DO NOT SCALE DRAWING	DO NOT SCALE DRAWING		
10	DRWG. NO.	DRWG. NO.		
11	REV. NO.	REV. NO.		
12	SCALE	SCALE		
13	DO NOT SCALE DRAWING	DO NOT SCALE DRAWING		
14	DRWG. NO.	DRWG. NO.		
15	REV. NO.	REV. NO.		
16	SCALE	SCALE		
17	DO NOT SCALE DRAWING	DO NOT SCALE DRAWING		
18	DRWG. NO.	DRWG. NO.		
19	REV. NO.	REV. NO.		
20	SCALE	SCALE		
21	DO NOT SCALE DRAWING	DO NOT SCALE DRAWING		
22	DRWG. NO.	DRWG. NO.		
23	REV. NO.	REV. NO.		
24	SCALE	SCALE		
25	DO NOT SCALE DRAWING	DO NOT SCALE DRAWING		
26	DRWG. NO.	DRWG. NO.		
27	REV. NO.	REV. NO.		
28	SCALE	SCALE		
29	DO NOT SCALE DRAWING	DO NOT SCALE DRAWING		
30	DRWG. NO.	DRWG. NO.		
31	REV. NO.	REV. NO.		
32	SCALE	SCALE		
33	DO NOT SCALE DRAWING	DO NOT SCALE DRAWING		
34	DRWG. NO.	DRWG. NO.		
35	REV. NO.	REV. NO.		
36	SCALE	SCALE		
37	DO NOT SCALE DRAWING	DO NOT SCALE DRAWING		
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44	SCALE	SCALE		
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53	DO NOT SCALE DRAWING	DO NOT SCALE DRAWING		
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74	DRWG. NO.	DRWG. NO.		
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76	SCALE	SCALE		
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81	DO NOT SCALE DRAWING	DO NOT SCALE DRAWING		
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92	SCALE	SCALE		
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94	DRWG. NO.	DRWG. NO.		
95	REV. NO.	REV. NO.		
96	SCALE	SCALE		
97	DO NOT SCALE DRAWING	DO NOT SCALE DRAWING		
98	DRWG. NO.	DRWG. NO.		
99	REV. NO.	REV. NO.		
100	SCALE	SCALE		

29. INPUT BOARD COMPONENT LAYOUT

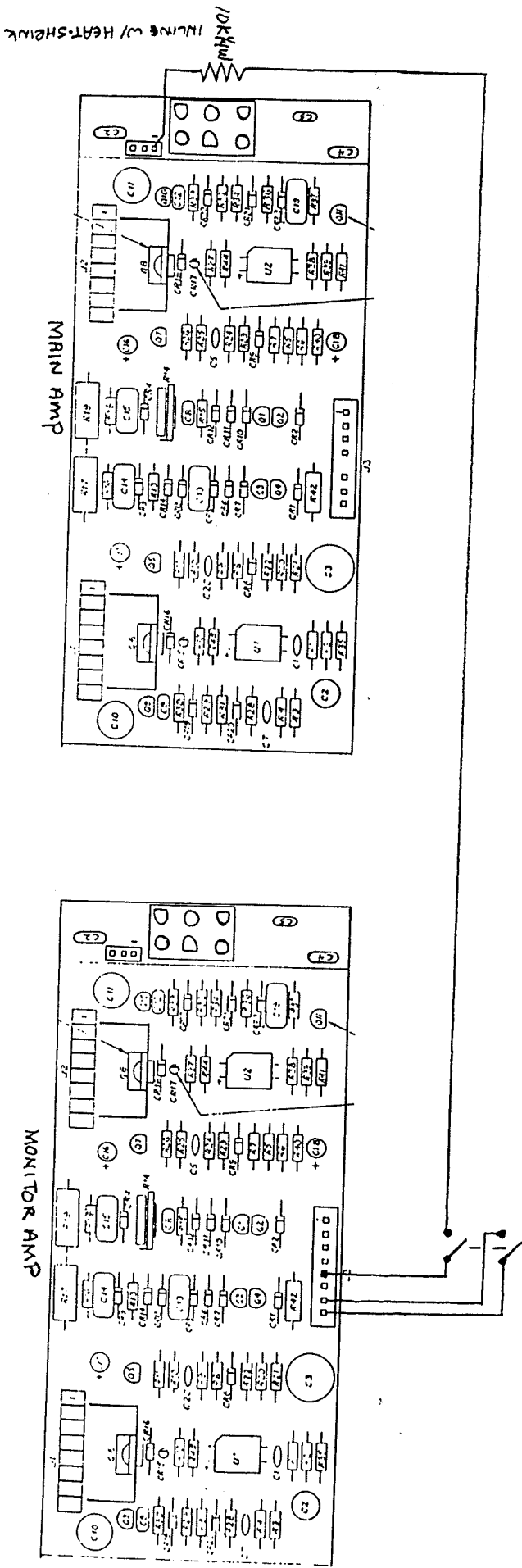


29 SERIES MONO-BRIDGE WIRING DIAGRAM (REVISED)

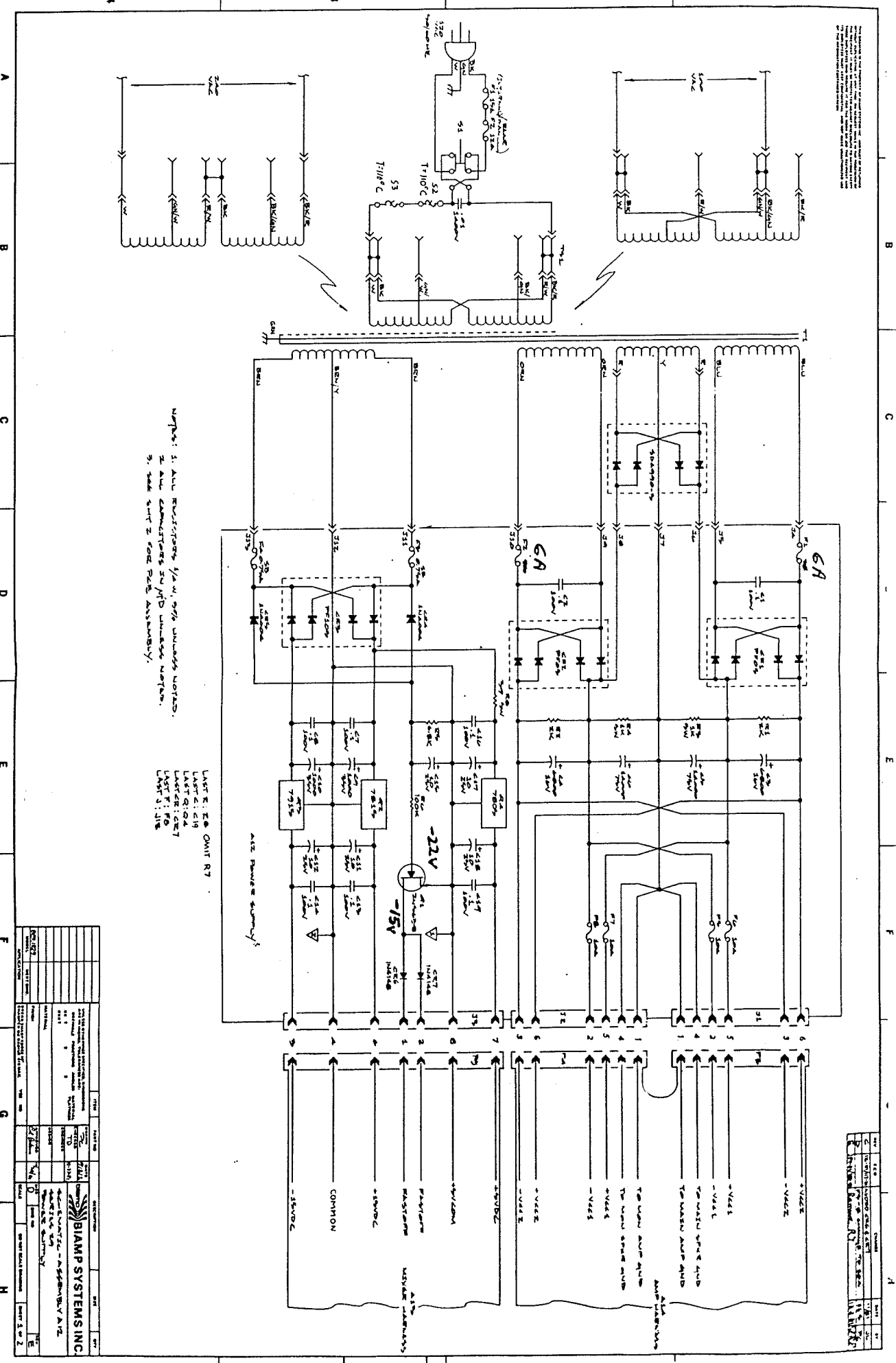
6/24/84
W.L.R.



OPEN: STEREO
CLOSED: MONO-BRIDGED



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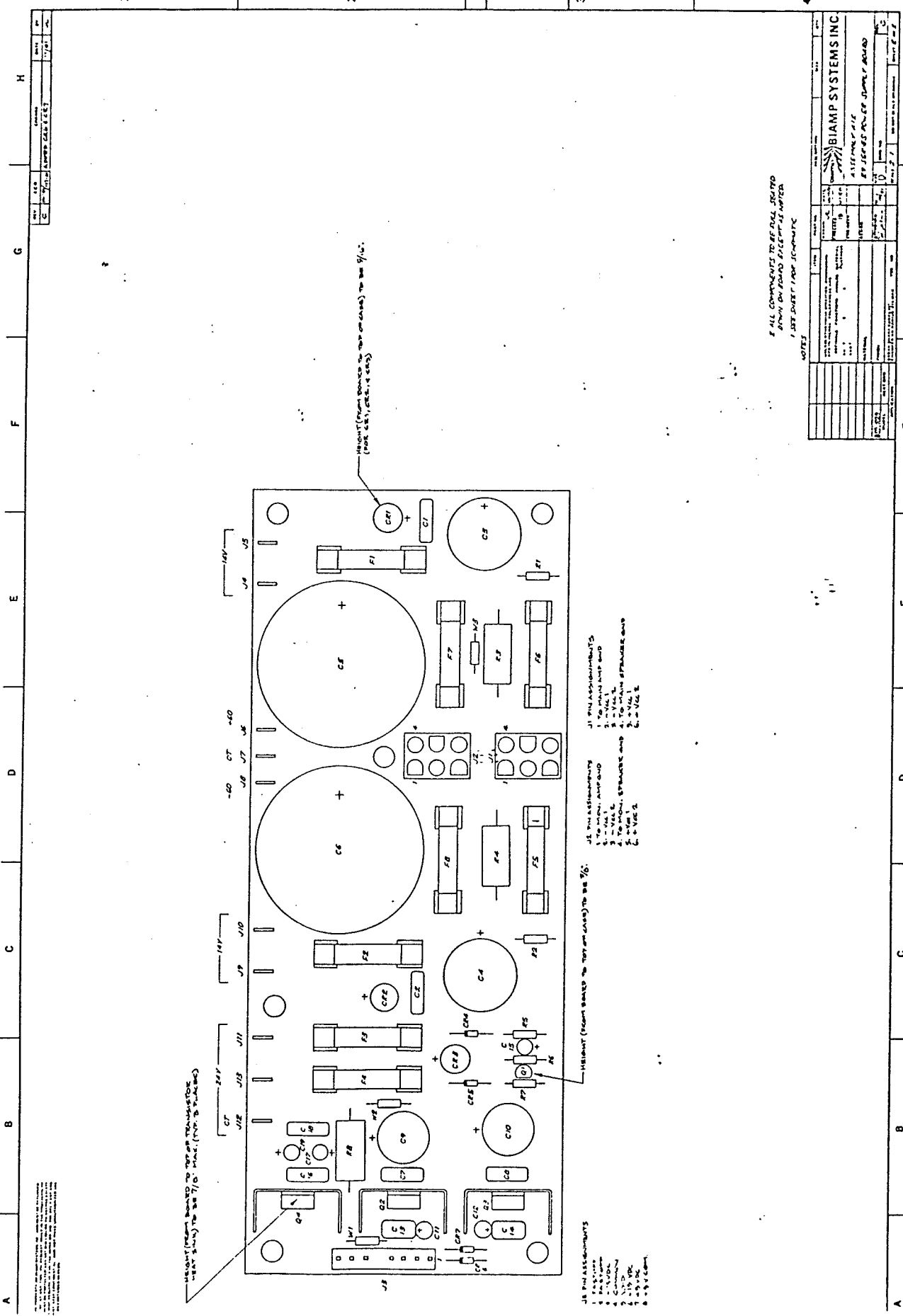
NOTES: 1. ALL RESISTORS 1/4 W. 5% UNLESS NOTED.
 2. ALL CAPACITORS SU JFD UNLESS NOTED.
 3. SEE SET 2 FOR PCB ASSEMBLY.

LAST E: EA OMIT R7
 LAST G: C18
 LAST G: C18
 LAST G: C18
 LAST G: C18
 LAST G: C18

REV	DATE	DESCRIPTION
1		INITIAL DESIGN
2		REVISED FOR MANUFACTURING
3		REVISED FOR MANUFACTURING
4		REVISED FOR MANUFACTURING
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8		REVISED FOR MANUFACTURING
9		REVISED FOR MANUFACTURING
10		REVISED FOR MANUFACTURING

BIAMP SYSTEMS, INC.
 2000 W. 15TH AVENUE, SUITE 100
 DENVER, CO 80202
 (303) 751-1000
 FAX (303) 751-1001

REV	DATE	DESCRIPTION
1		INITIAL DESIGN
2		REVISED FOR MANUFACTURING
3		REVISED FOR MANUFACTURING
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9		REVISED FOR MANUFACTURING
10		REVISED FOR MANUFACTURING



REV.	DATE	BY	CHKD.
1			
2			
3			
4			

DESCRIPTION	DATE	BY
BIAMP SYSTEMS INC. (SEE KEY)		

DATE	BY	CHKD.

DATE	BY	CHKD.

DATE	BY	CHKD.

DATE	BY	CHKD.

DATE	BY	CHKD.

IF ALL COMPONENTS TO BE PLACED SHOWN ON BOARD PLEASE REFER TO SEE SHEET FOR IDENTIFICATION

BIAMP SYSTEMS INC.	
ASSEMBLY FILE	
BIAMP SYSTEMS INC. (SEE KEY)	
DATE	BY
DATE	BY

HEIGHT FROM BOARD TO TOP OF TRANSDUCER (SEE 3/10) TO SEE 7/0. HANG (TOP OF BOARD)

HEIGHT FROM BOARD TO TOP OF BOARD TO SEE 9/10. HANG (TOP OF BOARD)

- J1 PIN ASSIGNMENTS
- 1. 100K
 - 2. 100K
 - 3. 100K
 - 4. 100K
 - 5. 100K
 - 6. 100K
 - 7. 100K
 - 8. 100K

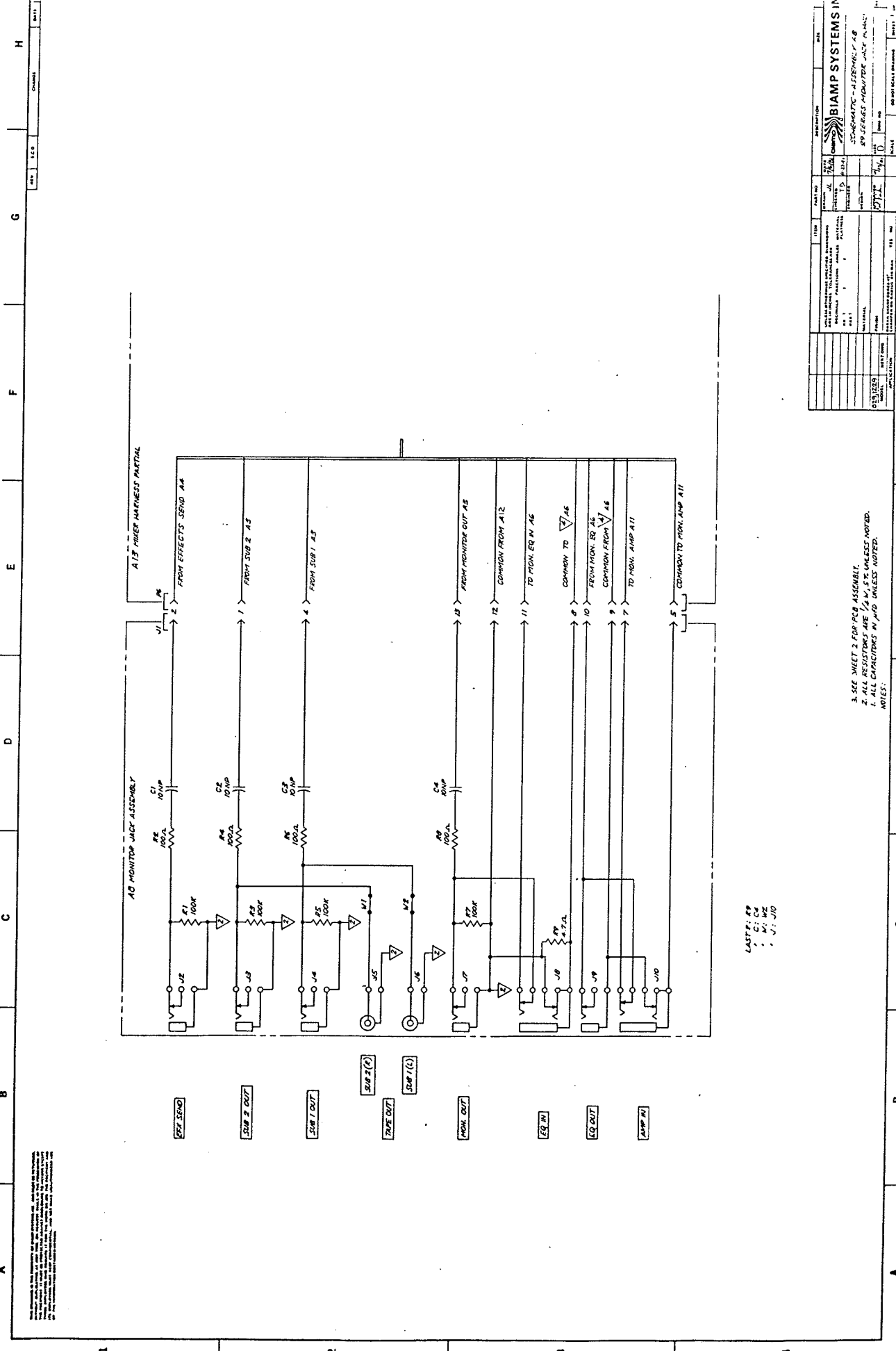
- J2 PIN ASSIGNMENTS
- 1. 100K
 - 2. 100K
 - 3. 100K
 - 4. 100K
 - 5. 100K
 - 6. 100K
 - 7. 100K
 - 8. 100K

- J3 PIN ASSIGNMENTS
- 1. 100K
 - 2. 100K
 - 3. 100K
 - 4. 100K
 - 5. 100K
 - 6. 100K
 - 7. 100K
 - 8. 100K

- J4 PIN ASSIGNMENTS
- 1. 100K
 - 2. 100K
 - 3. 100K
 - 4. 100K
 - 5. 100K
 - 6. 100K
 - 7. 100K
 - 8. 100K

- J5 PIN ASSIGNMENTS
- 1. 100K
 - 2. 100K
 - 3. 100K
 - 4. 100K
 - 5. 100K
 - 6. 100K
 - 7. 100K
 - 8. 100K

- J6 PIN ASSIGNMENTS
- 1. 100K
 - 2. 100K
 - 3. 100K
 - 4. 100K
 - 5. 100K
 - 6. 100K
 - 7. 100K
 - 8. 100K



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LAST P: 49
 : C: C4
 : J: J10

3- SEE SHEET 2 FOR PCB ASSEMBLY.
 4- ALL CAPACITORS ARE 1/4 W. 5% TOLERANCE UNLESS NOTED.
 5- ALL CAPACITORS ARE 50V UNLESS NOTED.

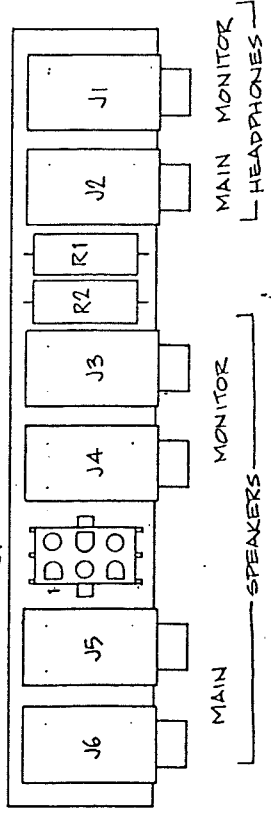
ITEM		DESCRIPTION		DATE	
1	AD MONITOR JACK ASSEMBLY	REVISED	BY	DATE	BY
2		REVISED	BY	DATE	BY
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99		REVISED	BY	DATE	BY
100		REVISED	BY	DATE	BY

REV.	E.C.O.	CHANGE	DATE	BY
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- JT PIN ASSIGNMENTS**
1. FROM MAIN AMP OUT A10
 2. BLANK
 3. MAIN AMP GND A12
 4. FROM MON. AMP OUT A10
 5. BLANK
 6. MON. AMP GND A12

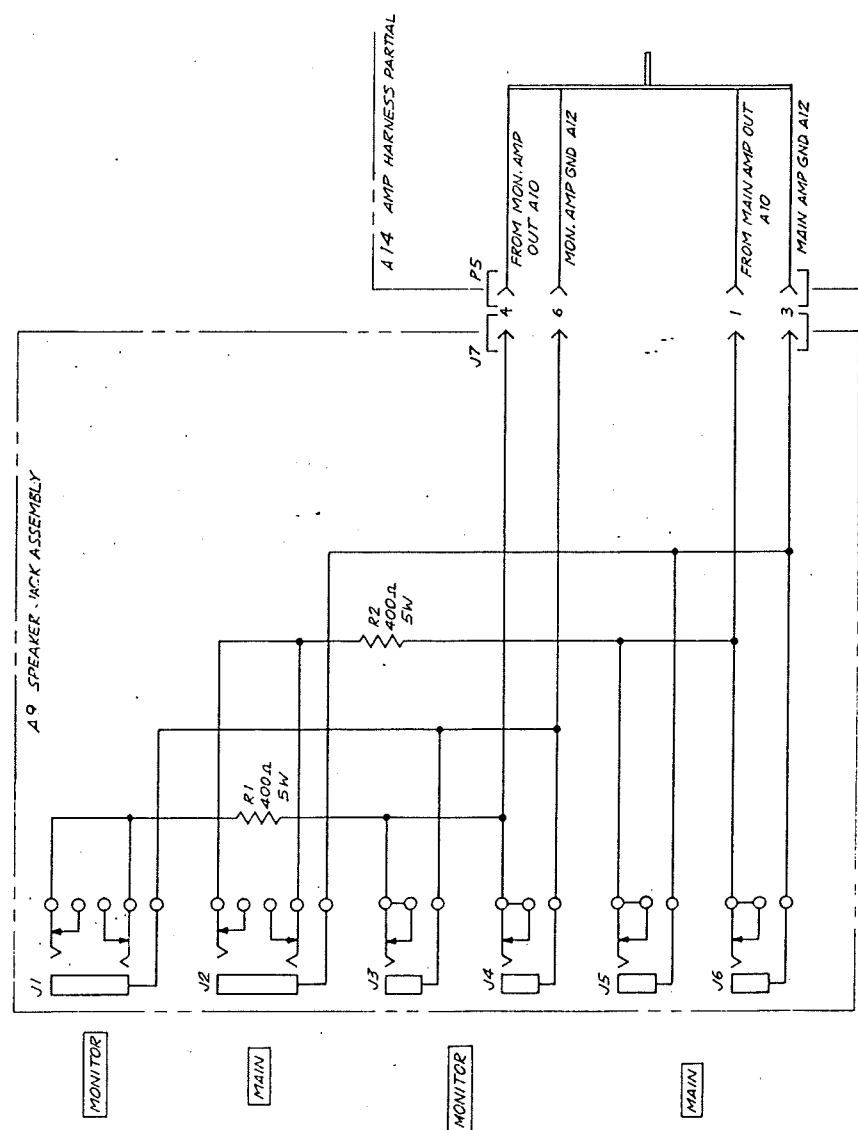
MATES WITH PS OF A14 AMP HARNESS
JT



- NOTES:**
1. ALL COMPONENTS TO BE FULLY SEATED DOWN ON BOARD.
 2. REFER TO SHEET 1 FOR SCHEMATIC DIAGRAM.

ITEM	PART NO.	DESCRIPTION	SIZE	QTY
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE: DECIMALS FRACTIONS ANGLES MATERIAL .XX ± .XXX ±				
DRAWN: AL 9/2/81 DATE: 9/2/81				
CHECKED: TD 10/15/81				
ENGINEER:				
DESIGN:				
APPROVED: [Signature] 10/15/81				
BIAMP SYSTEMS INC.				
ASSEMBLY A9				
29 SPEAKER JACK PC BRD				
SCALE: 1:1				
DWG. NO. [Blank]				
REV. A				
DO NOT SCALE DRAWING SHEET 2 OF 2				

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LAST P: R2
LAST J: J7

ITEM	PART NO.	DESCRIPTION	SIZE	QTY.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: DECIMALS FRACTIONS ANGLES MATERIAL				
APPROVED	DATE	BY	DATE	BY
DESIGN	10/16/81	J.P.	10/16/81	J.P.
ENGINEER	CHECKED	D	10/16/81	D
FINISH	DRAWN	J.P.	10/16/81	J.P.
APPLICATION	SCALE	1/8" = 1"		
MODEL	SCALE			
APPLICATION	SCALE			
MODEL	SCALE			
APPLICATION	SCALE			

BIAMP SYSTEMS INC.
SCHEMATIC - ASSEMBLY A9
29 SERIES SPEAKER JACK BOARD

NOTE: 1- SEE SHEET 2 FOR PCB ASSEMBLY.