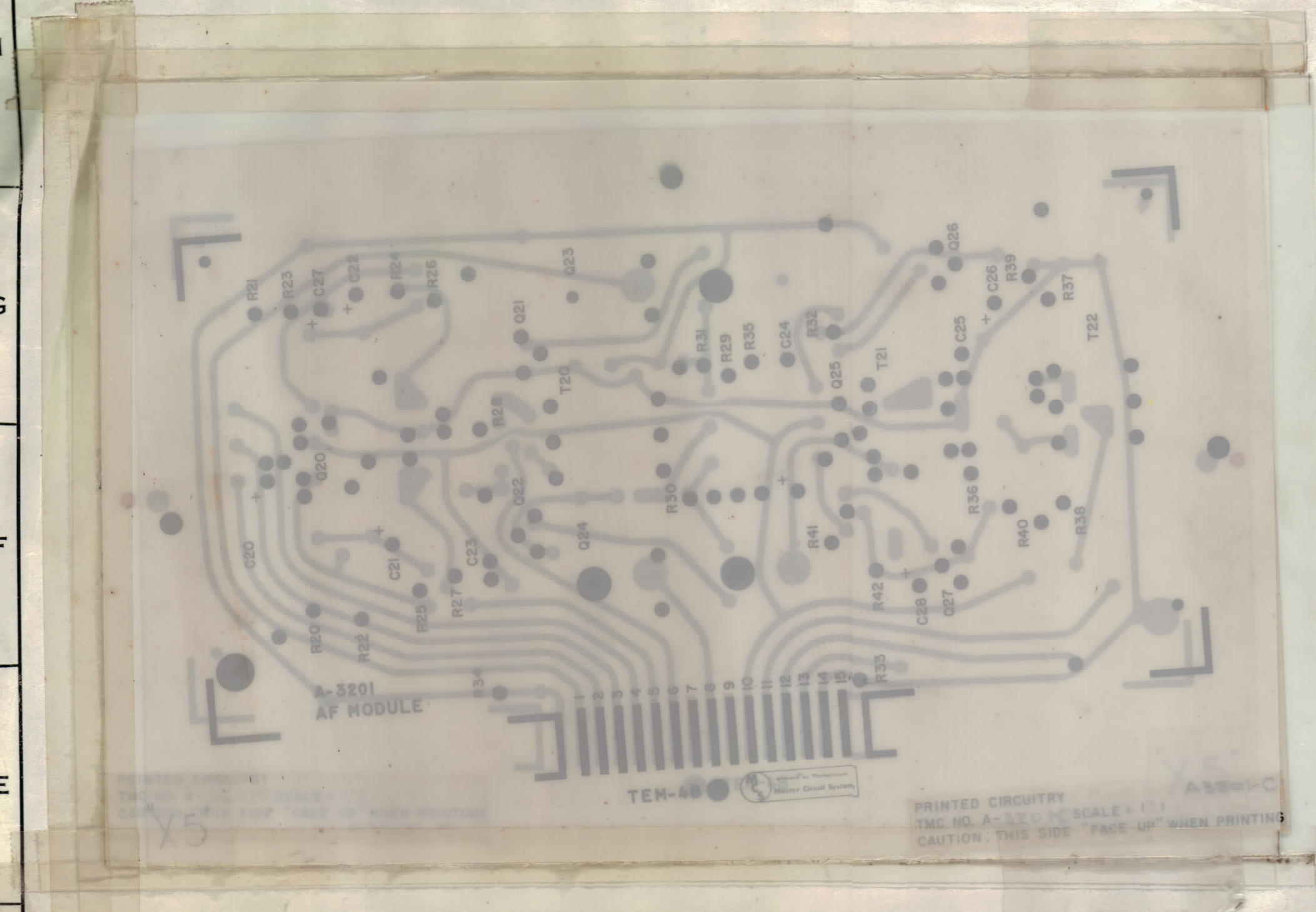


ETCHING, PRINTED CIRCUIT  
(A-3201-1)

REVISIONS						
ZONE	SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD
#	X2	SEE SHEET 2 OF 2, REVISION "X2"	12-2-63	2	SP	AK
F2	X3	HOLE # PAD SPECS UPDATED	2-5-64	3	SP	AK
#	X4	SEE SHEET 2 OF 2, REVISION "X4"	3/3/64	4	SP	AK
#	X5	SEE SHEET 2 OF 2, REVISION "X5"	3/4/64	5	SP	AK
#	X6	SEE NOTE 4 ADDED TO A3201-2	5/14/64	6	A.M.	@
O		ORIGINAL RELEASE FOR PRODUCTION	8/1/64	0	A.M.	@
-	A	SEE SHEET 2 OF 2 REV "A"	8-26-64	12096	AK	AK
-	B	SEE SHEET 2 OF 2 REV "B"	1-5-65	13108	AK	AK
-	C	SEE SHEET 2 OF 2 REV "C"	2-3-65	13302	NLA	AK

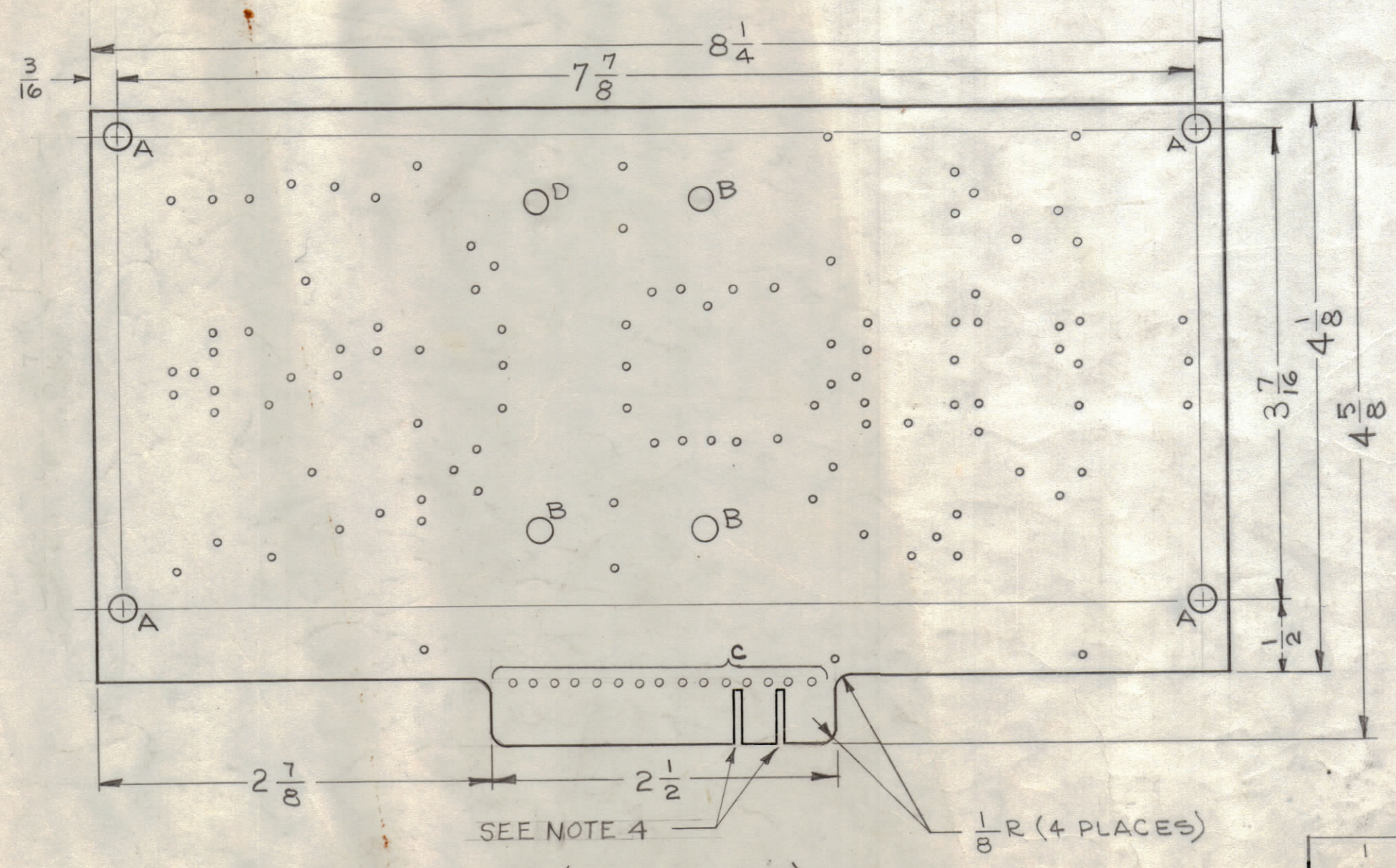


ORIGINAL ARTWORK TO BE REMOVED FROM PROTECTIVE POCKETS WHEN PHOTOGRAPHING.  
NOTE: DOUBLE POCKETS.

HOLE # PAD SPECIFICATIONS			
HOLE	DIA.	PAD DIA.	REQ
UNMARKED	.050	.130	104
A	.189	NONE	4
B	.156	.250	3
C	.040	CONTACT FINGERS	15
D	.156	NONE	1

- NOTES: TO BE MANUFACTURED IN ACCORDANCE WITH TMC SPEC. S-735, UNLESS OTHERWISE SPECIFIED.
- MATERIAL - G-10 EPOXY GLASS LAMINATE 3/32 THICK, 2 OUNCE COPPER CLAD BOTH SIDES.
  - ALL BOARDS WILL BE DOUBLE-SIDED. WHENEVER A PAD APPEARS ON THE PRINTED CIRCUIT SIDE, A SIMILAR SIZE AND SHAPE SHALL APPEAR ON THE COMPONENT SIDE IN EXACT REGISTER. (EXCEPT WHERE AN EXCEPTION IS NOTED.)
  - FINGER CONTACTS SHALL ALSO APPEAR ON THE COMPONENT SIDE OF BOARD AND SHALL BE CONNECTED WITH A .040 DIA. PLATED-THRU HOLE LOCATED IN THE CENTER OF EACH FINGER CONTACT .050" AWAY FROM THE MAIN BODY OF BOARD.
  - THE PRINTED CIRCUIT BOARDS SHALL BE KEYED WITH SLOTS .070" WIDE & .400" HIGH LOCATED BETWEEN FINGER CONTACTS 11 & 12, 13 & 14 AS VIEWED FROM COMPONENT SIDE OF BOARD.
  - (A) ALL HOLES EXCEPT "A" MTG. HOLES ARE TO BE PLATED-THRU WITH MINIMUM COPPER PLATING THICKNESS OF .001.  
(B) PLATE .0003 TO .0005 NICKEL & 25 MILLIONTHS MINIMUM OF GOLD ALL ETCHED SURFACES AND PLATED-THRU HOLES.
  - CONDUCTOR WIDTH: .046 MIN., .062 MAX.  
SPACE BETWEEN CONDUCTORS .031 MIN.

ETCHING, PRINTED CIRCUIT (A3201-1)



ORIGINAL ARTWORK TO BE SUPPLIED BY TMC FOR PHOTOGRAPHING (SCALE 1:1)

REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
M.GELLMAN LIST OF MATERIAL				
MATERIAL		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK		
FINISH		TITLE PRINTED CIRCUIT BOARD, ASS'Y. (AF MODULE)		
1		VLRA-1	AX-431	
QTY./UNIT		MODEL USED ON		
SCALE 1:1		ASSY. NO.		
CODE A		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		
TOLERANCES		DECIMALS: X ± .05, XX ± .01, XXX ± .005		
FRACTIONS: ± 1/64, ANGLES: ± 0° 30'		DRAWN: [Signature] DATE: 7-13-63		
ELECT. DES. [Signature]		CHECKED: [Signature] DATE: 5-7-64		
MECH. DES. [Signature]		DATE: 5-7-64		
SHEET 1 OF 2		REV. LTR. C		

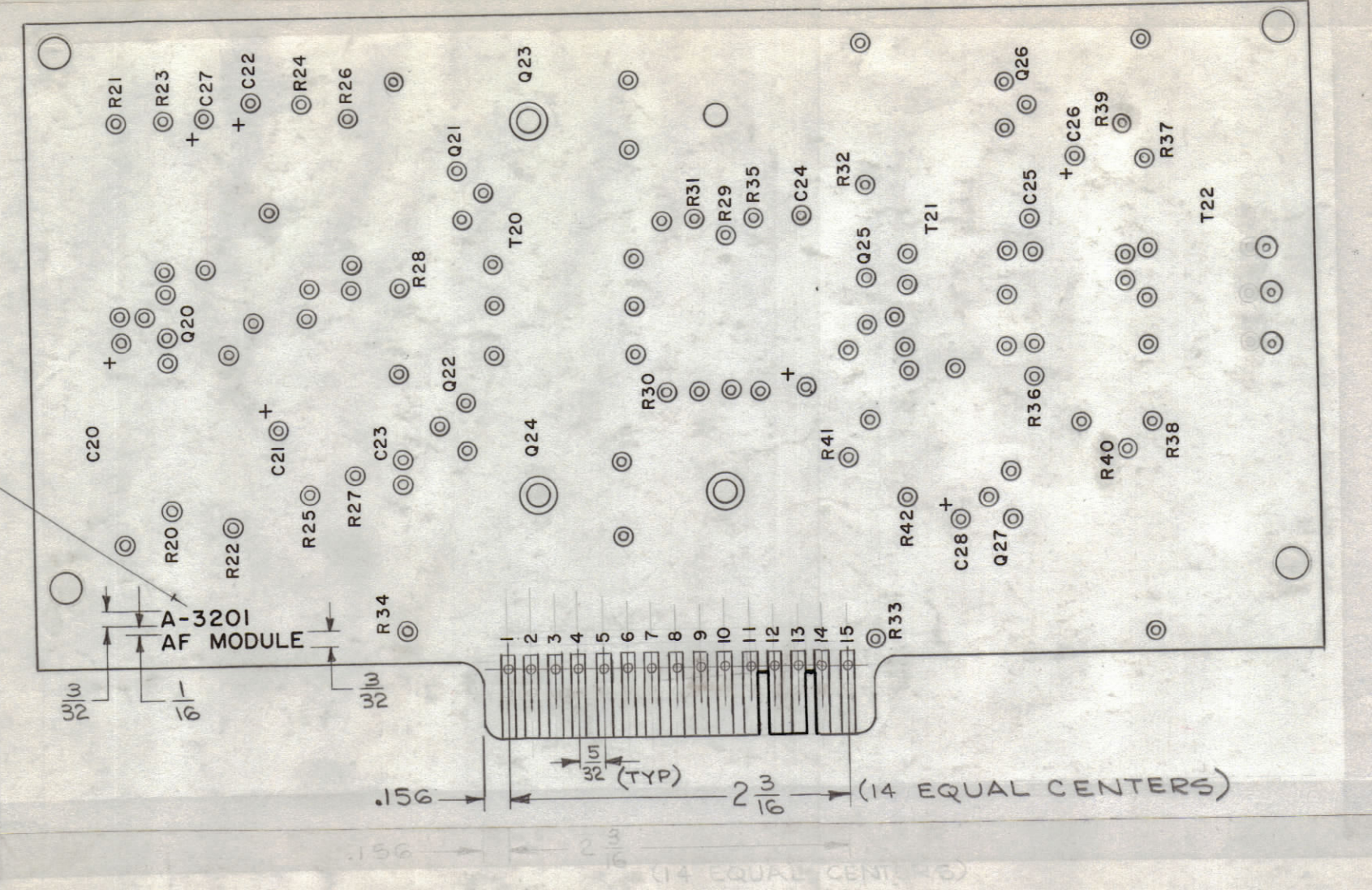
NOTES

A 3201 0



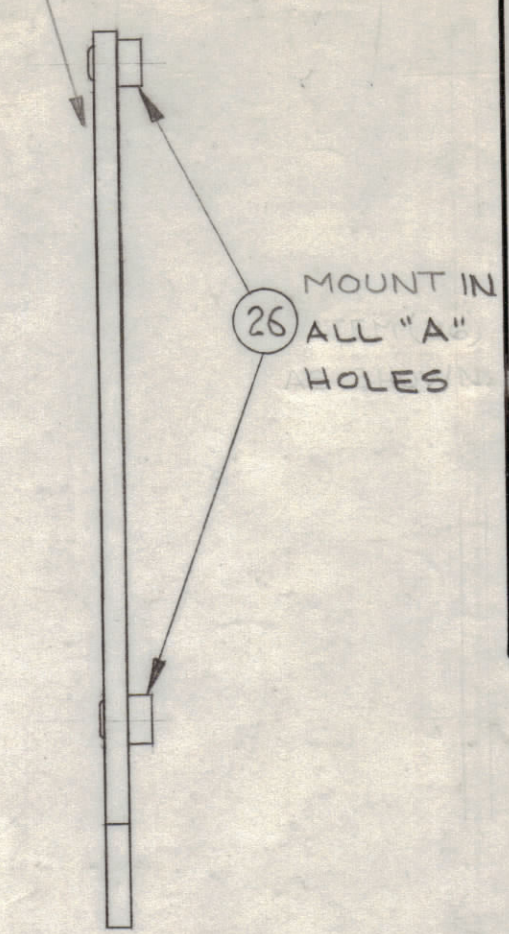
- UNLESS OTHERWISE SPECIFIED -

1. ALL LETTERING TO BE 5/64 HIGH BLACK GOTHIC, .010 STROKE. LOCATE APPROX. AS SHOWN ± 1/64.
2. MARKING PROCESS: AS PER TMC SPECIFICATION 5727



MARKING (A-3201-3)

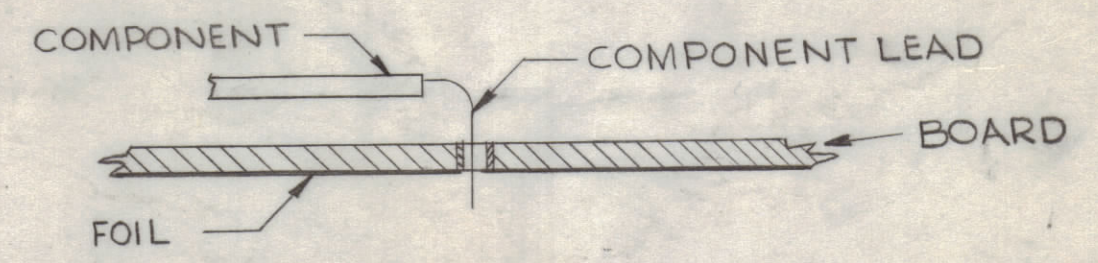
LETTERING ON THIS SIDE



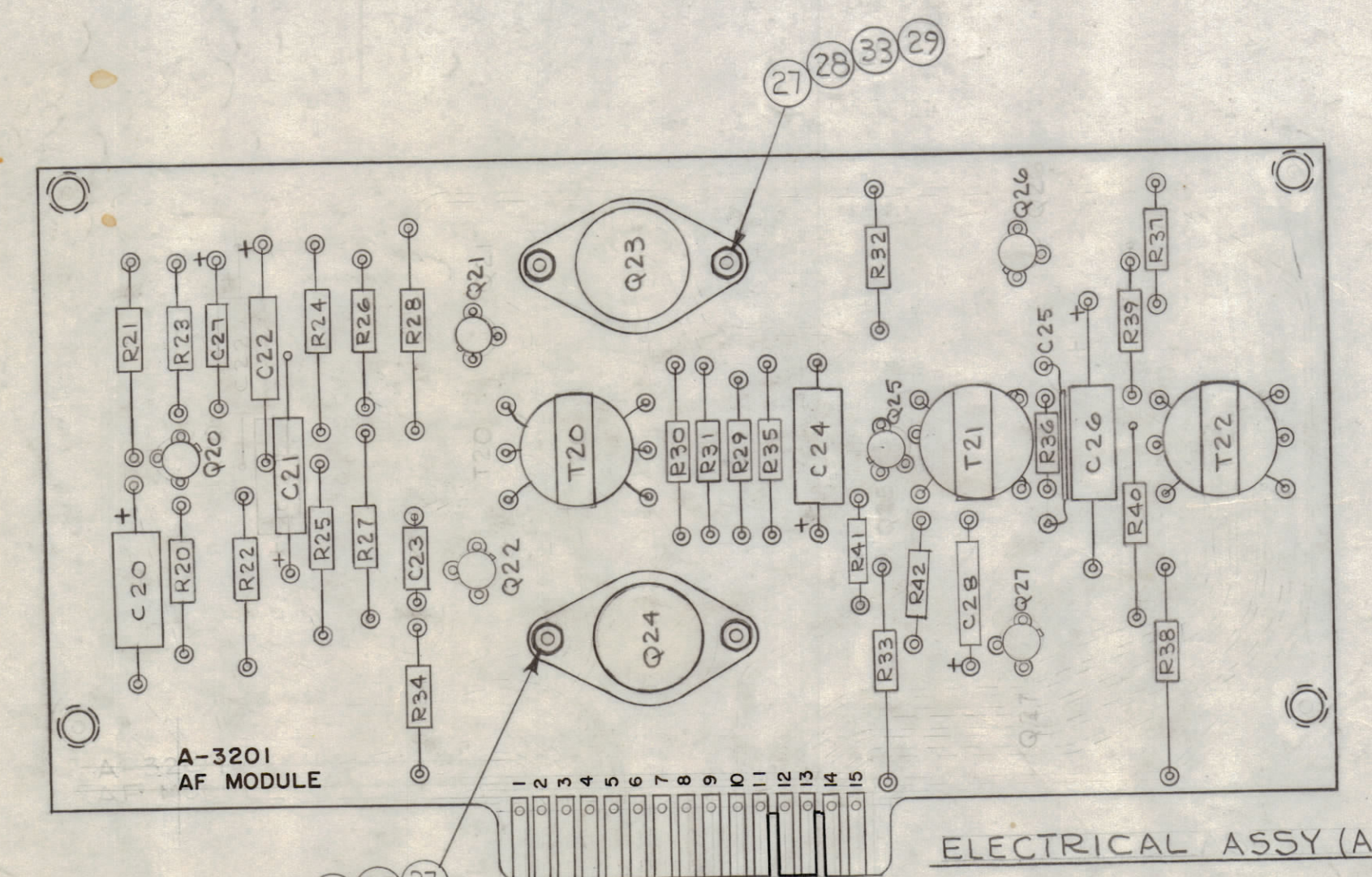
(A-3201-4) SUB-ASSY

~ ASSEMBLY NOTICE ~

1. TO MOUNT COMPONENTS INSERT LEAD THROUGH PLATED-THRU HOLES AND BEND ABOUT 1/16 OF LEAD OVER COPPER FOIL AS SHOWN
2. APPLY HEAT AND SOLDER TO LEAD AND FOIL ~ CAUTION ~ TOO MUCH HEAT WILL CAUSE THE FOIL TO SEPARATE FROM THE BOARD
3. CLEAN AND INSPECT AS PER 5676.
4. FUNGUS PROOFING PER TMC SPECIFICATION 5113.



REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
1	34	RC20GF122J	RESISTOR, FIXED, COMPOSITION	R29
4	33	LWS06MRN	LOCKWASHER, SPLIT	
1	32	RC20GF271J	RESISTOR, FIXED, COMPOSITION	R41
1	31	RC20GF102K	RESISTOR, FIXED, COMPOSITION	R42
2	30	CE-107-1	CAPACITOR, ELECTROLYTIC TANTALUM	C21, C28
4	29	NTH0632BN8	NUT, HEX.	
4	28	LWI06MRN	LOCKWASHER, INTERNAL	
4	27	SCBP0632BN8	SCREW, MACHINE	
4	26	TE-164-7	STANDOFF, RIVET TYPE	
X	25	BS-100	SOLDER, SOFT	
1	24	TX103	TRANSISTOR	Q23, 24
2	23	TX107	TRANSISTOR	Q21, 22
4	22	TX101-1	TRANSISTOR	
2	21	TF-270	TRANSFORMER, AUDIO INTERSTAGE	T20, 21
1	20	TF-271	TRANSFORMER, AUDIO OUTPUT	T22
3	19	CE-105-10-15	CAPACITOR, ELECTROLYTIC	C20, 21, 22
1	18	CE-105-100-15	CAPACITOR, ELECTROLYTIC	C24
1	17	CE-105-175-15	CAPACITOR, ELECTROLYTIC	C26
1	16	CC-112R474M	FIXED, CERAMIC, DIEL CAPACITOR	C23
1	15	CC-100-36	CAPACITOR DISC	C25
1	14	RC20GF223K	RESISTOR, FIXED, COMPOSITION	R34
1	13	RC20GF223K		R35
1	12	RC20GF272K		R36
5	11	RC20GF332K		
1	10	RC20GF4R7J		R31
2	9	RC20GF150J		R32, 33
2	8	RC20GF101J		R26, 27
1	7	RC20GF221K		R23
1	6	RC20GF821K		R30
1	5	RC20GF122K		R28
*	4	DELETED		
1	3	RC20GF392K		R20
2	2	RC20GF152J		R37, 38
1	1	RC20GF822K	RESISTOR, FIXED, COMPOSITION	R22



ELECTRICAL ASSY (A-3201-5)

NOTE:  
ITEM 24 MUST BE MATCHED PAIR.

R21, 24, 25, 39, 40

SYM	ZONE	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
C	#	ON B/M, CHGD. IT. 22, 23, 24 TO Tx Nos. ON V/O BLOCK VLRA-1 WAS VR-1	2-3-65	13302	WLA		
B	#	IT. (13) P/N WAS "RC20GF562K"	1-5-65	13108	RF		
A	-	IT. 22 WAS 2N396A, IT. 29 WAS NTH0632BN8	8-26-64	12096	WB		
O	#	ORIGINAL RELEASE FOR PRODUCTION	6-1-64	0	AM		
X6	#	SEE SHEET 1 OF 2	5/14/64	0	AM		
X5	#	ITEM 23 & 24, NOTE ADDED	5/4/64	0	AM		
X4	#	ITEM 34 ADDED; P/N RESISTORS CLARIFIED	3/3/64	4	AM		
X3	#	SEE SHEET 1 OF 2, REVISION "X3"	12-5-63	3	AM		
X2	#	ITEM (33) ADDED; BUILD-UP UPDATED	12-2-63	2	AM		
X1	#	LETTERING COMPLETELY REDRAWN	9-9-63	1	AM		

REF:CK-675

SYM	ZONE	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
UNLESS OTHERWISE SPECIFIED:							
DIMENSIONS ARE IN INCHES							
TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1/2°							
MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS & SHARP EDGES							

REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE
1	VLRA-1		AX-431	4-17-63
USED ON				

REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK				
PRINTED CIRCUIT BOARD, ASSEMBLY (AF MODULE)				
MATERIAL			DRAWN	CHECKED
TYPE & TEMPER			FINAL APPROVAL	
FINISH & SPEC. NO.			A-3201	
			ELEC. DES. APP.	MECH. DES. APP.
			SHEET 2 OF 2	