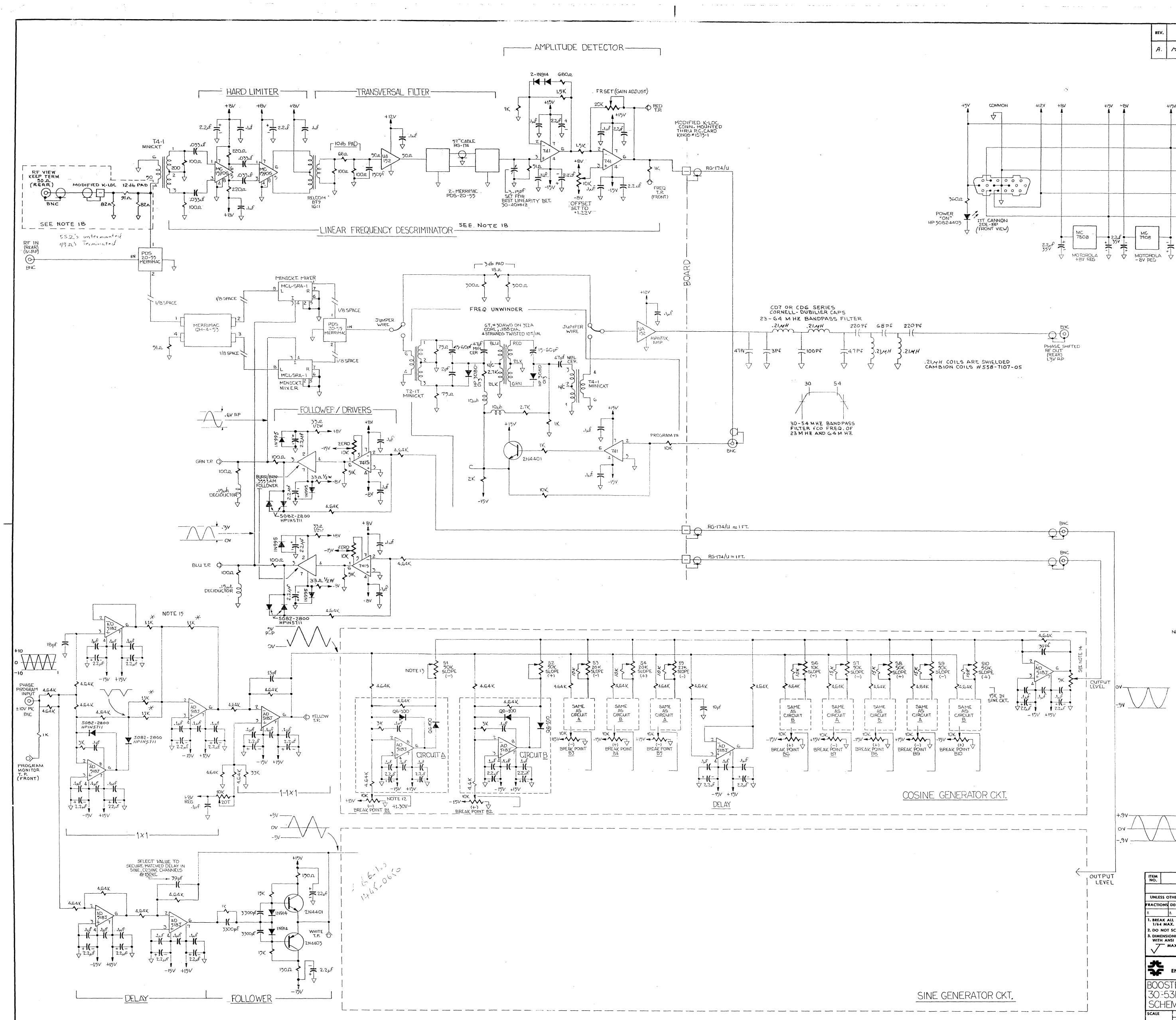

BREAK POINT VOLTAGES			
SINE		COSINE	
-B1	+1.28		
+B2	-1.42	B2	-1.64
-B3	+2.64		
+B4	-1.86	B4	-2.30
-B5	+3.49		
+B6	-3.02	B6	-2.97
-B7	+2.51		
+B8	-2.54	B8	-3.79
-B9	+4.10		
+B10	-3.97	B10	-4.52
SEE NOTES 11, 12 & 13			

NOTES:
1. INPUT Z = 50Ω
2. OUTPUT Z = 50Ω
3. INPUT RF LEVEL 0.8 TO 1.3V P-P
4. FREQ. RANGE 30-54 MHZ
5. Ø SHIFT RANGE ±90° @ ANY RF FREQ. IN RANGE.
6. Ø SHIFT PROGRAM 10V PK = 90° SHIFT ± (1 + ΔØ/2V PROG) DEG.
7. MAXIM AM DURING ±90° PROGRAM = ±.75db.
8. +PROGRAM VOLTAGE = LAGGING PHASE AT OUTPUT.
9. SPEED OF Ø PROGRAMMING dc TO 100KC FLAT, 300KC DOWN 3db.
10. ALL 4.64KΩ RESISTORS ARE 1% METEL FILM.
11. ONLY POSITIVE (+) BREAK POINT AND SLOPES ARE USED FOR COSINE(X)
12. TURNING BREAK POINT ADJ. POT. CCW INCREASES THE BREAK POINT LEVEL.
13. TURNING SLOPE ADJ. POT CCW DECREASES THE SLOPE.
14. TURNING OUTPUT LEVEL ADJ. POT CCW INCREASES OUTPUT LEVEL.
15. MATCHED 11KΩ 1% METAL FILM RESISTORS.
16. SET TO MATCH PHASE OF SIGNALS AT INPUT (WHT & YEL T.P.'s OF SINE(X) AND COSINE(X) GEN.
17. ALL AD 518J USE WAFEFIELD 204CB COOLERS.
18. ON SPARE UNIT, LINEAR FREQ. DISCRIMINATOR, FREQ. UNWINDER ARE OMITTED, RF VIEW ADDED.
19. DIODES ADDED TO FEEDBACK CIRCUIT ON SPARE UNIT OF FOLLOWER DRIVER CIRCUIT.
20. DIODES ADDED FOR REVERSE VOLTAGE CLAMPING ON BB3553AM PIN 2 & 7 FOLLOWER DRIVER CIRCUIT.

ITEM NO.	PART NO.	DESCRIPTION OR SIZE	QTY. REQ.

PARTS LIST

UNLESS OTHERWISE SPECIFIED		
ORIGINATOR	E.F. HIGGINS	1-26-76
DRAWN	Rick Divelbiss	3-3-76
CHECKED	[illegible]	5-4-76
APPROVED	E Higgins	5-4-76

FRACTIONS ± DECIMALS ± ANGLES ±

1. BREAK ALL SHARP EDGES 1/64 MAX.
2. DO NOT SCALE DWG.
3. DIMENSIONING IN ACCORD WITH ANSI Y14.5 STD's.
√ MAX. ALL MACHINED SURFACES

USED ON

MATERIAL-

FERMI NATIONAL ACCELERATOR LABORATORY
ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

BOOSTER LOW LEVEL RF
30-53MHZ PHASE SHIFTER
SCHEMATIC

SCALE | FILMED F 5/76 | DRAWING NUMBER 0331.00-EE-62812 | REV. A