

SHEET INDEX

DWG ISSUE	CD ISSUE	DATE ISSUED	DRWN	APPD
1	1	10-23-68	CDJ	JPK RTS
			FCR	LA

CONTENTS	SHEET NO.	ISSUE NO.																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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FS 4 AMPLIFIER INPUT CIRCUIT FS 6 AMPLIFIER OUTPUT CIRCUIT FS 7 MISCELLANEOUS CIRCUIT FS 8 POWER CIRCUIT	B2	1																								
FS 9 AMPLIFIER FS 10 CONNECTING CIRCUIT FS 11 AUXILIARY CIRCUIT	B3	1																								
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APP FIG. 2	C2	1																								
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CONTENTS	SHEET NO.	ISSUE NO.																												
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OPTION INDEX

APP OR WRG	LOCATION	APP OR WRG	LOCATION
Z	1G6	G	2G4
Y	1G6	F	1B4, 1D1, 2G1, 2G4
X	2A9		1A4, 1E0
W	2A9		
V	1B0, 1C0		
S	2G4	A	1F1
R	1D0		
P	2G4		
N	1A2		
Q	1B4, 1C4, 1D4, 1F4 2G4, 2H3, 2G1		
H	2G4, 2H6		

SUPPORTING INFORMATION

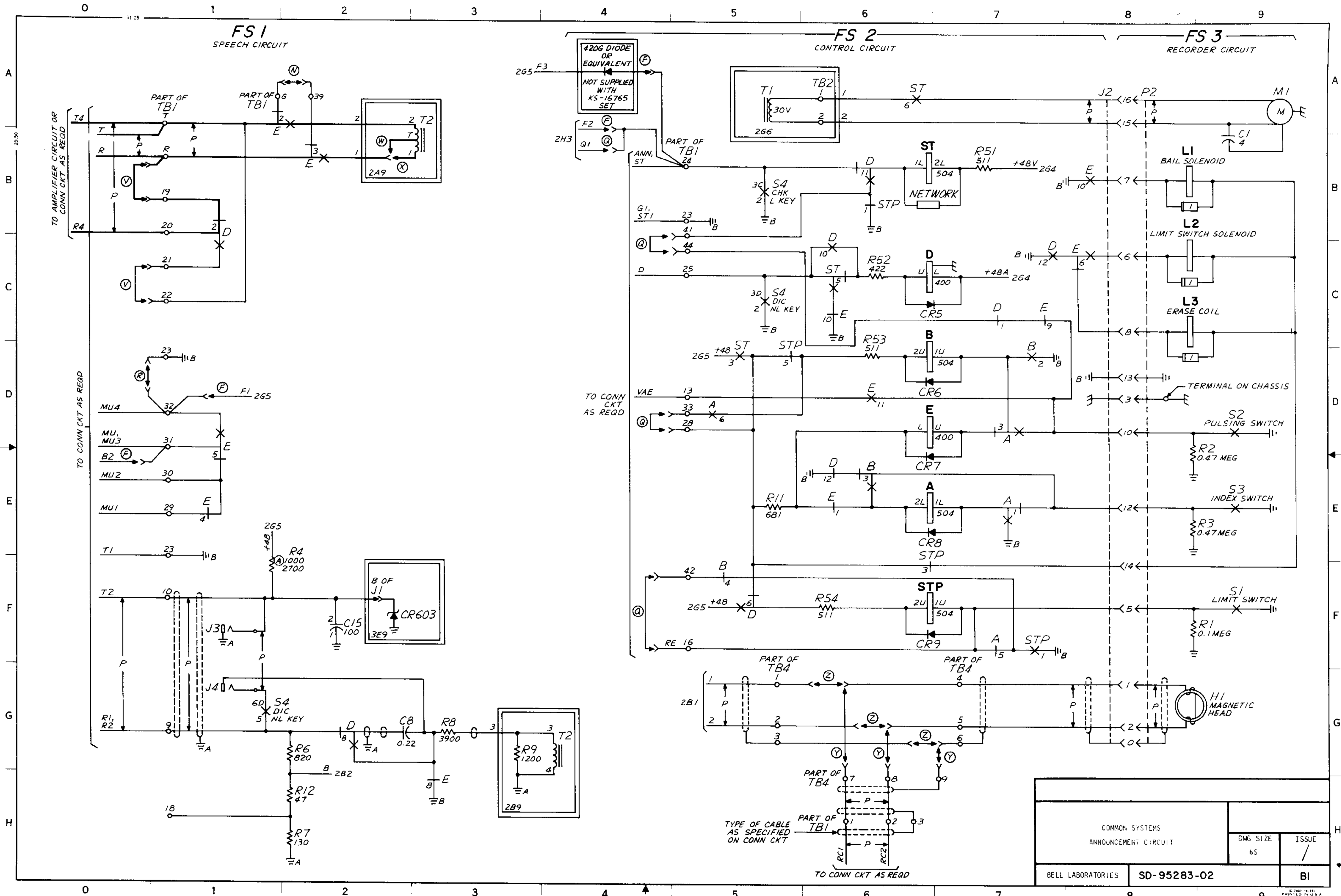
CATEGORY	NO.

SHEET INDEX NOTES

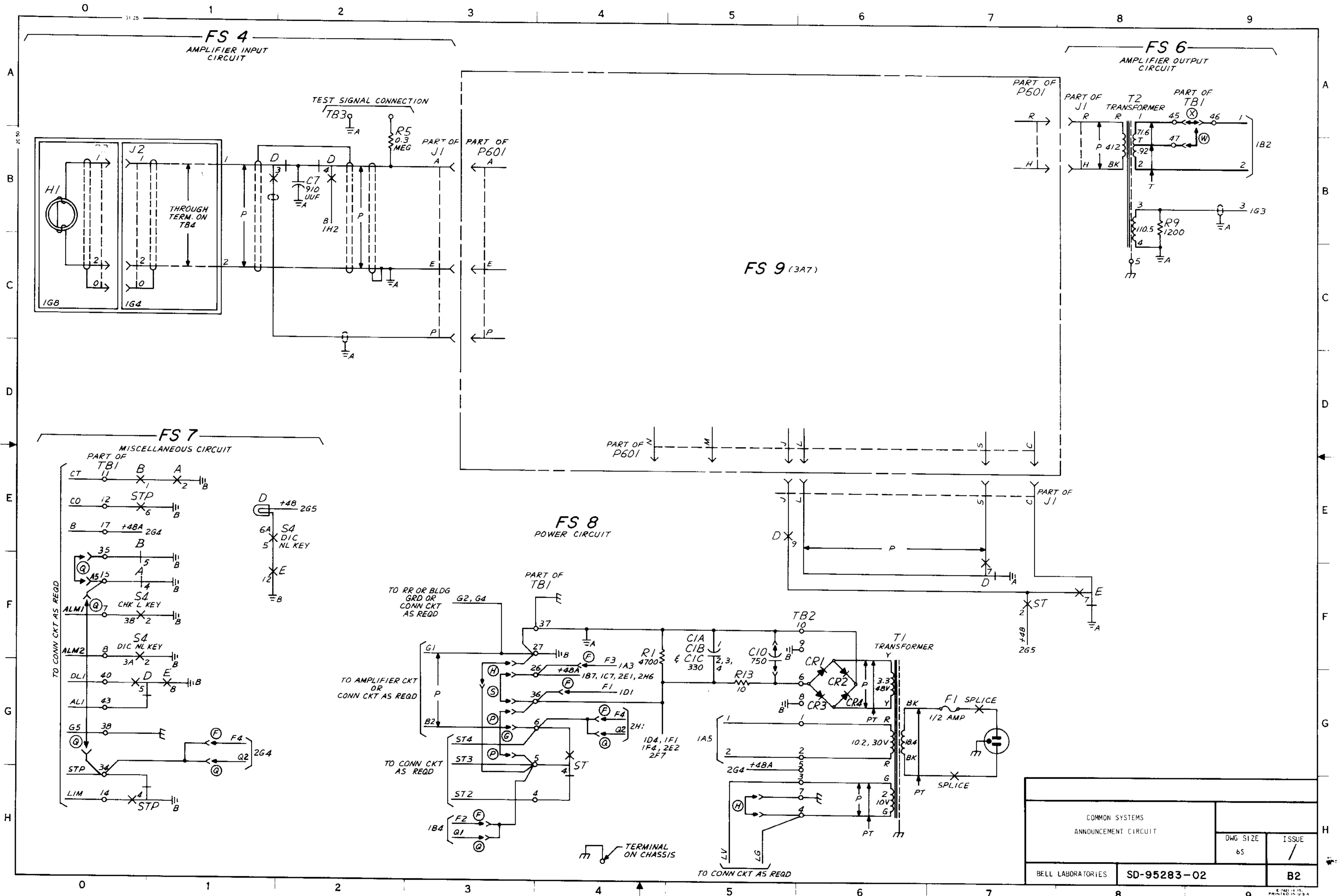
- WHEN CHANGES ARE MADE IN THIS DRAWING ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
- THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
- THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX.
- SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
- THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.

NOTICE - NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT.

IN01		AT&TCO STANDARD	
COMMON SYSTEMS ANNOUNCEMENT CIRCUIT EMPLOYING KS-16765 LIST 12 ANNOUNCEMENT SET		DWG SIZE 65	ISSUE /
BELL LABORATORIES		SD-95283-02	
		A1 12 SHEETS	

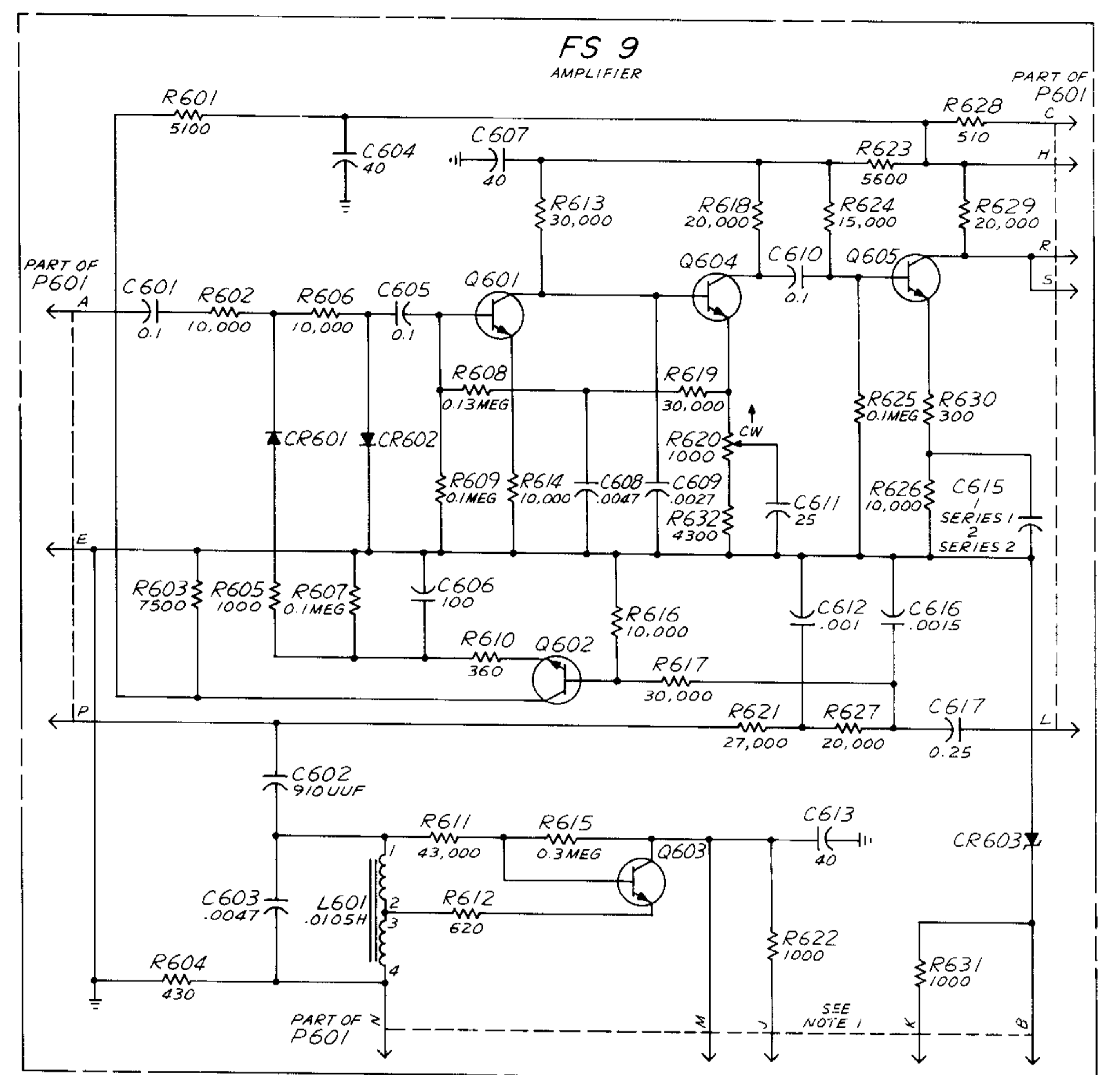
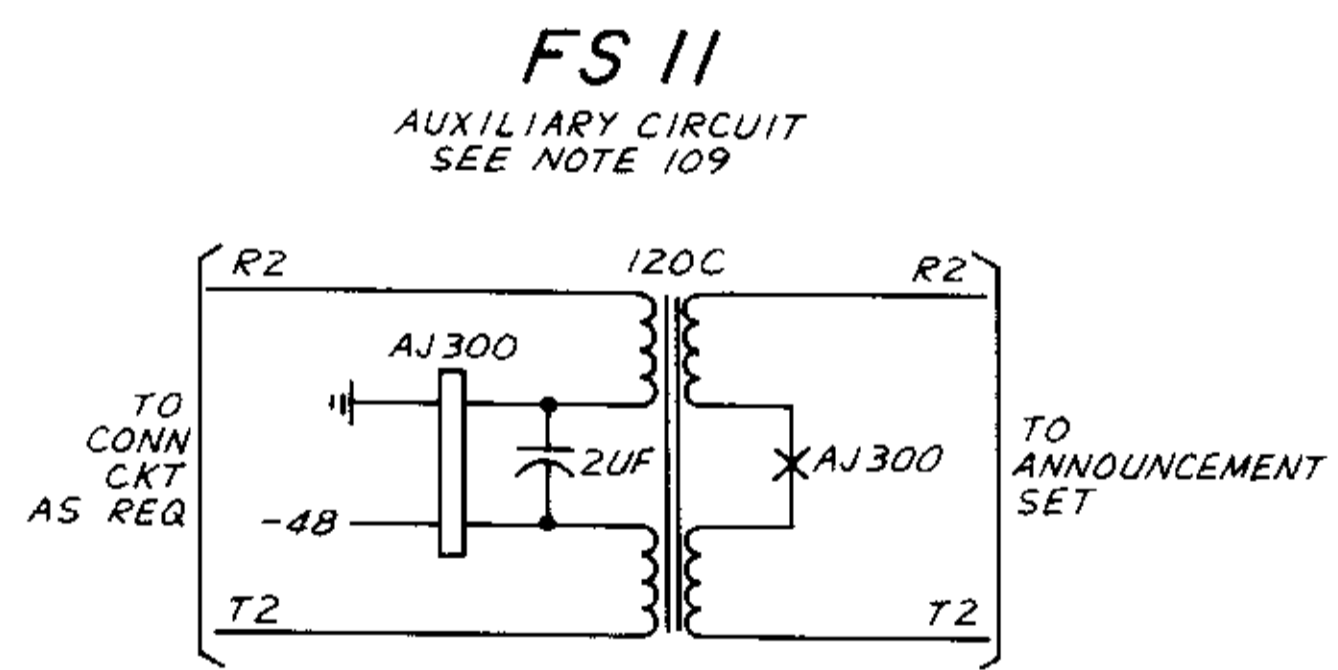
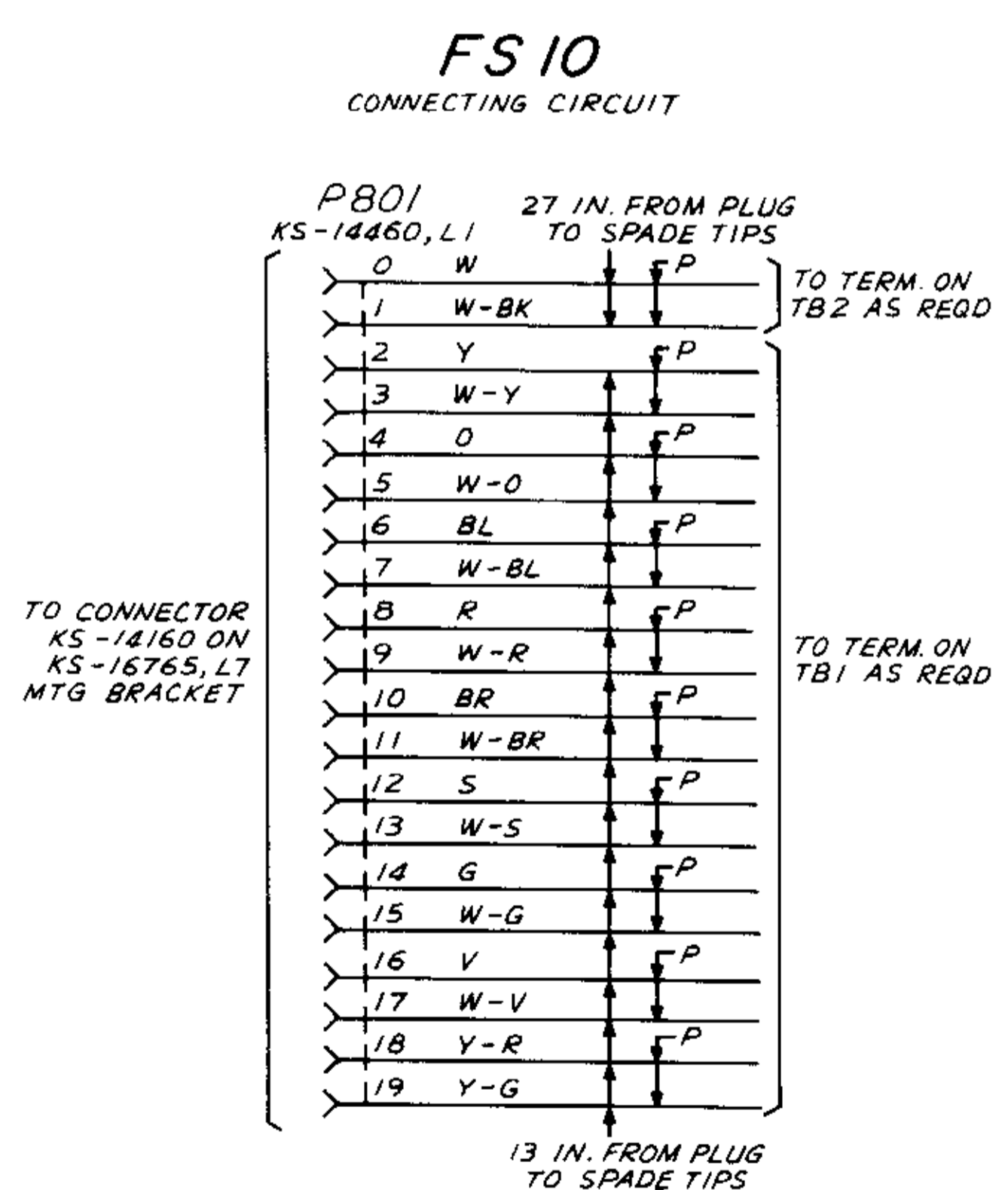


COMMON SYSTEMS ANNOUNCEMENT CIRCUIT		DWG SIZE 65	ISSUE /
BELL LABORATORIES		SD-95283-02	
		BI	



0 1 2 3 4 5 6 7 8 9

A
B
C
D
E
F
G
H



NOTES:
1. X TERMINAL NOT USED IN LIST 12 ANNOUNCEMENT SET;
USED IN LIST 11 ONLY. (SEE 3F9).

COMMON SYSTEMS ANNOUNCEMENT CIRCUIT		DWG SIZE 6S	ISSUE /
BELL LABORATORIES	SD-95283-02	B3	

APP FIG. 1

RELAY		A		B		D		E		ST		STP		DESIG		
CODE	BF 19	BF 19	BJ 24	BJ 24	BF 19	BF 19	LOC	LOC	LOC	LOC	LOC	LOC	LOC	LOC	LOC	
OPTION	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	
12			EBM	a	EBM	2F1										12
11			EBM	1B6	EBM	1D6										11
9			EBM	1B6	EBM	b										10
8			EBM	2E5	EBM	1D7										9
7			EBM	1G2	EBM	a										8
6	M	1E5	M	EBM	2F7	EBM	2F8									7
5	EBM	1F7	EBM	2G0	EBM	1D1		M	1A6	M	2E0					6
4	EMB	2F0	EMB	2B2	EBM	1E1		EBM	1C6	EBM	1D5					5
3	EBM	1D7	EBM	2B1	EBM	1B1		EBM	2G4	EMB	2H0					4
2	M	2E1	M	EBM	1D5	EBM	1F6		EBM	1D5	EBM	1F6				3
1	EMB	1E7	EMB	1C7	EBM	1E6		M	2F7	M						2
COIL	1E6	1C6		1C6	1D6			EMB	1B6	EMB	a					1

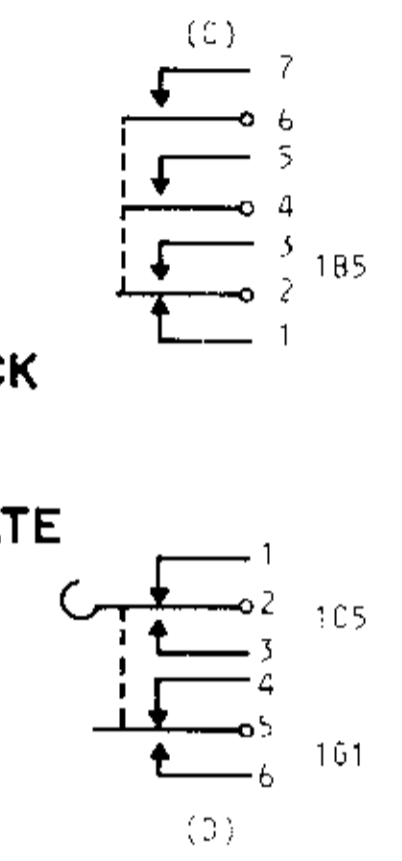
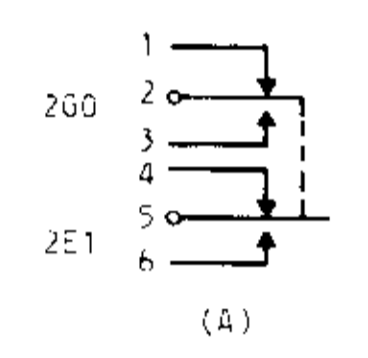
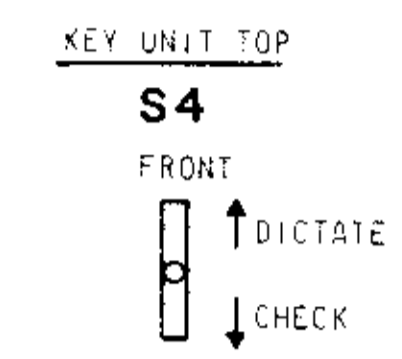
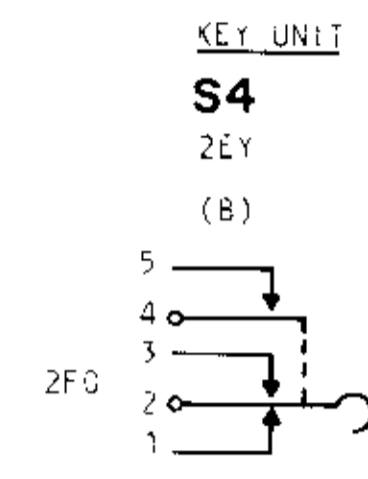
CAPACITOR

DESIG	LOC	CODE
C1A	2F	SPRAGUE, D-27842
C1B	2F	SANGAMO, CM200911J
C1C	2F	SPRAGUE, 96P22401S2
C7	2B2	SPRAGUE, 39D7570075JL0
C8	1G2	SPRAGUE, 40C1076012704
C10	2F6	
C15	1F2	

CONNECTOR
KS-16345 L2

DESIG	CONN	SOCKET
J1		
+		
O		
S		
O		
R		
O		
P		
O		
N		
O		
M		
O		
L		
O		
K		
O		
H		
O		
I		
O		
E		
O		
C		
O		
B		
O		
A		
+		

DESIG	NO.	LOC
J1	S	2E7
	R	2A8
	P	2C3
	N	
	M	
	L	2E6
	K	
	J	2E5
	H	2B8
	F	
	E	2C3
	D	
	C	2E7
	B	3F9
	A	2B3



CORD & PLUG

DESIG	LOC	CODE
PG1	2G8	B-650422-1 OR EQUIV

FUSE

DESIG	LOC	CODE
F1	2G7	BUSSMAN, AGC 1/2 AMP

JACK

DESIG	LOC	CODE
J3	1F1	223A
J4	1G1	223A

LAMP

DESIG	LOC	CODE
D	2E1	

NETWORK

DESIG	LOC	CODE
ST	2B6	185A

RECTIFIER

DESIG	LOC	CODE
CR1	2F6	1N4003
CR2	2F6	1N4003
CR3	2F6	1N4003
CR4	2F6	1N4003
CR5	1C6	458A
CR6	1D6	458A
CR7	1D6	458A
CR8	1E6	458A
CR9	1F6	458A

TRANSFORMER

DESIG	LOC	CODE
T1	2T7	L-517C91 (POWER)
T2	2A8	529B (OUTPUT)

RESISTOR

DESIG	LOC	CODE
R1	2F5	4700Ω ±10%, GB, ALLEN-BRADLEY
R4	1F1	1000Ω ±10%, GM
R5	2A2	2700Ω ±10%, HB
R6	1G1	0.3 MEG ±5%, EB
R7	1H1	820 ±5%, GB
R8	1G3	130Ω ±5%, EB
R9	2B9	3900Ω ±5%, EB
R11	1E5	1200Ω ±5%, EB
R12	1H1	681Ω, WARD LEONARD, AXI OHM-SX
R13	2F6	47Ω ±5%, EB, ALLEN-BRADLEY
R51	1B7	10Ω ±5%, KS-14603, L3A
R52	1C6	511Ω ±5%, KS-20289 L6C, 511
R53	1D6	422Ω ±5%, KS-20289 L6C, 422
R54	1F6	511Ω ±5%, KS-20289 L6C, 511

TERMINAL BOARD

DESIG	TB1				TB2				TB3				TB4							
CODE	840851786								840851786				THERMIONIC CORP. 160-2041-02-01-00				840851786			
	NO.	LOC	NO.	LOC	NO.	LOC	NO.	LOC	NO.	LOC	NO.	LOC	NO.	LOC	NO.	LOC	NO.	LOC		
	6	1A1	17	2E0	34	2H0	1	2G6	-	2A2	1	1G5								
	R	1B0	18	1H0	35	2F1	2	2G6	-	2A2	2	1G5								
	T	1A0	19	1B0	36	2G4	3	2H6			3	1G5								
	1	1H6	20	1B0	37	2F4	4	2H6			4	1G7								
	2	1H6	21	1C0	38	2G0	5	2H6			5	1G7								
	3	1H6	22	1C0	39	1A1	6	2G6			6	1G7								
	4	2H4		1B4/	40	2G0	7	2H6			7	1H6								
	5	2G4	23	1D0/	41	2C4	8	2G6			8	1H6								
	6	2G4		1F0	42	1F4	9	2F6			9	1H6								
	7	2F0	24	1B4	43	2G0	10	2F6												
	8	2G0	25	1C4	44	1C4														
	9	1G0	26	2G4	45	2A9														
	10	1F0	27	2F4	46	2A9														
	11	2E0	28	2D4	47	2A9														
	12	2E0	29	1E0																
	13	1D4	30	1E0																
	14	2H0	31	1D0																
	15	2E0	32	1D0																
	16	1F4	33	1D4																

SHEET NOTE:
1. UNLESS OTHERWISE SPECIFIED "B" OR "L" NUMBERS REFERRED TO ARE WECo. DRAWING NUMBERS; ORDER AS FOLLOWS: "B" OR "L" (NO.) (PART OF KS-16765, L12)

COMMON SYSTEMS		DWG SIZE		ISSUE	
ANNOUNCEMENT CIRCUIT		65		/	
BELL LABORATORIES		SD-95283-02		C1	

APP FIG. 2
(FS 3)

KS-16765, L3 RECORDER

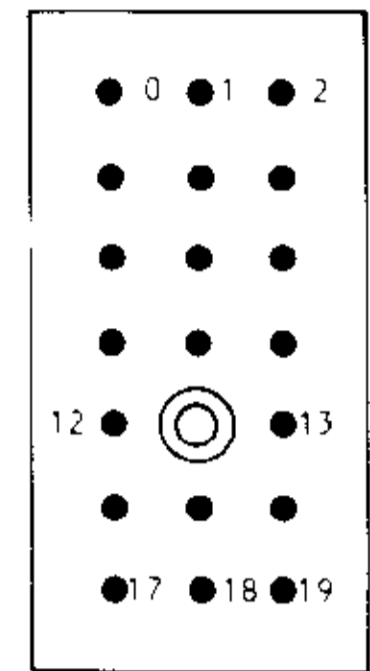
SOLENOID
B-190918

L 1 L 2
1B8 1C8

CAPACITOR
DESIG LOC
C1 1A9

CODE
F54Y605JT-10 GUDEMAN

CONNECTOR
CINCH, 14586



DESIG	P2
CONN	PLUG
OPTION	NO. LOC
	19
	18
	17
	16 1A8
	15 1A8
	14 1F8
	13 1D8
	12 1E8
	11
	10 1D8
	9
	8 1C8
	7 1B8
	6 1C8
	5 1F8
	4
	3 1D8
	2 1C8
	1 1G8
	0 1G8

ERASE COIL

L 3
B 190922

HEAD

DESIG LOC CODE
H1 1G8 B-191264

MOTOR
DESIG
M1

LOC CODE
1A9 L-517092
PART OF
B-650412
DRIVE ASSEMBLY

NETWORK

DESIG LOC CODE
L1 1B8
L2 1C8
L3 1D8 185A

RESISTOR

DESIG LOC
R1 1F8
R2 1D8
R3 1E8

CODE
0.1 MEG
0.47 MEG
0.47 MEG

SWITCH

B-191179 B 190969-1 B-19069-2
S1 S2 S3
1F9 1D9 1E9

NOTES:
1. UNLESS OTHERWISE SPECIFIED "B" & "L" NUMBERS REFERRED TO ARE WECO DRAWING NUMBERS. ORDER AS FOLLOWS: "B" (OR "L") (DWG NO.) PART OF KS-16765 L12.

COMMON SYSTEMS ANNOUNCEMENT CIRCUIT		DWG SIZE 65	ISSUE /
BELL LABORATORIES	SD-95283-02	C2	

APP FIG. 4
(FS 9)

KS-16765.L6 AMPLIFIER (PRINTED WIRING BOARD ASSEMBLY)

CAPACITOR

DESIG	LOC	CODE
C602	3B5	356C104K GUDEMAN
C603	3D6	CM20D911J } ELECTRO MOTIVE
C604	3E6	350B22J } OR EQUIV
	3A6	KS-16390.L8
C605	3B6	356C104K GUDEMAN } GUDEMAN
C606	3C6	40D107F003 SPRAGUE } OR EQUIV
C607	3A7	KS-16390.L8
C608	3C7	356C472J GUDEMAN OR EQUIV
C609	3C8	356C272J GUDEMAN OR
C610	3B8	356C104K EQUIV
C611	3C8	40D256F012 SPRAGUE OR EQUIV
C612	3C8	CM20D102J ELECTRO MOTIVE
C613	3E8	KS-16390.L8
C615	3C9	40D205F050 } SPRAGUE OR EQUIV
		SERIES 1
		SERIES 2
C616	3C9	356C152J GUDEMAN OR EQUIV
C617	3D9	542C

CONNECTOR

KS-16345 L1

- + S
- R
- P
- N
- M
- L
- K
- J
- H
- F
- E
- D
- C
- B
- A
- +

DESIG	P601
CONN	PLUG
OPTION	
	TERM. LOC
	S 3B9
	R 3B9
	P 3D5
	N 3F6
	M 3F8
	L 3D9
	K 3F9
	J 3F8
	H 3A9
	F
	E 3C5
	D
	C 3A9
	B 3F9
	A 3B5

DIODE

DESIG	LOC	CODE
CR601	3C6	IN1692 } GEN ELEC
CR602	3C6	OR EQUIV
CR603	3E9	446C

RESISTOR

DESIG	LOC	CODE
R601	3A5	51000
R602	3B6	10,0000
R603	3C5	75000
R604	3E5	4300
R605	3C6	10000
R606	3B6	10,0000
R607	3C6	0.1 MEG
R608	3B7	0.13 MEG
R609	3C7	0.1 MEG
R610	3D7	3600
R611	3E7	43,0000
R612	3E7	6200
R613	3A7	30,0000
R614	3C5	10000
R615	3E7	0.3 MEG
R616	3C7	10,0000

ALLEN
BRADLEY,
EB, +5%
OR EQUIV

INDUCTOR

DESIG	LOC	CODE
L601	3E6	15898

RESISTOR (CONT)

DESIG	LOC	CODE
R617	3D8	30,0000
R618	3A8	20,0000
R619	3B8	30,0000
R621	3D8	27,000
R622	3E8	10000
R623	3A8	56000
R624	3A8	15,0000
R625	3B8	0.1 MEG
R626	3C9	10,0000
R627	3D8	20,0000
R628	3A9	5100
R629	3A9	20,0000
R630	3B9	3000
R631	3E9	10000
R632	3C8	43000

ALLEN
BRADLEY,
EB, +5%
OR EQUIV

POTENTIOMETER

DESIG	LOC	CODE
R620	3C8	R74NAXSB'020, TYPE J } ALLEN BRADLEY OR EQUIV

TRANSISTORS

DESIG	LOC	CODE
Q601	3B7	2N3415 GEN ELEC
Q602	3D7	2N697 FAIRCHILD
Q603	3E7	2N699 GEN ELEC
Q604	3B8	2N3415 GEN ELEC
Q605	3B8	2N697 FAIRCHILD

APP FIG. 5
(FS 10)

CORD

DESIG	LOC	CODE
CC1	3E1	KS-16765.L8

COMMON SYSTEMS ANNOUNCEMENT CIRCUIT		DWG SIZE 65	ISSUE /
BELL LABORATORIES	SD-95283-02	C3	

CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER

BATTERY SYMBOL	VOLTAGE RANGE

102.

FEATURE OR OPTION	PROVIDE		
	APP FIG.	APP OR WRG	QUANTITY
KS-16765, ANNOUNCEMENT SET	1,2,4		1 PER SET
KS-16765.L3 RECORDER	2		AS REQD
KS-16765.L6 AMPLIFIER	4		AS REQD
KS-16765.L8 CORD	5		SEE NOTE 106
RECORD-REPRODUCE AMPLIFIER	INTERNAL	XZ	
	EXTERNAL	Y	REMOVE Z
NOMINAL OUTPUT	600Ω	XX	
	20Ω	W	REMOVE X
MUTING OF OUTPUT DURING RECORDING		V	
INTERNAL 48V DC SUPPLY		S	SEE NOTE 110
LEAD MU (MU3) GROUNDED		R	
LEADS T AND R MUTED		N	
USE WITH KS-16754 AMPLIFIER		N, V W, Z	
48V POWER SUPPLY TO CONNECTING CKT		P	
AUTOMATIC CALL DISTRIBUTING SYSTEM NO. 2A AND 2B		H, A	SEE NOTE 108
RECEIVER OFF HOOK TONE CONNECTING CIRCUIT FOR S X S		F	REMOVE R REMOVE P REMOVE G REMOVE Q SEE NOTE 107
STD WIRING WHEN OPTION F IS NOT USED		G	
MINIMUM DELAY "START TIME" FOR SINGLE CYCLE ANNOUNCEMENT		Q	REMOVE F

X SEE NOTE 105

CIRCUIT NOTES:(CONT)

103.

NETWORK VALUES		
NETWORK NO.	RESISTANCE IN OHMS	CAPACITANCE IN UF
1	470	0.11

104.

CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT		
				STD	A&M	MD

105. OPTIONS Z AND X ARE FURNISHED WITH SETS AS MANUFACTURED AND SHOULD BE LEFT IN PLACE UNLESS OTHERWISE SPECIFIED.
106. KS-16765.L8 CORD ORDERED AS REQUIRED.
107. OPTION F PROVIDES +48V DC POWER TO CONNECTING CIRCUIT ON LEAD B2 AT PUNCHING 31, TB1, WHEN THE BAIL SOLENOID OPERATES.
108. OPTION A PROVIDES SUFFICIENT CURRENT CAPABILITY ON T2 AND R2 LEADS FOR REMOTE RECORDING FROM SUPERVISORS CONSOLE IN 2A AND 2B ACD'S. OPTION H APPLICABLE TO ACD NO. 2B.
109. IN SOME LOCAL SITUATIONS WHERE THE ANNOUNCEMENT SET IS LOCATED SEVERAL HUNDRED FEET FROM THE RECORDING INSTRUMENT, IT MAY BE DESIRABLE TO INSTALL AN ISOLATION TRANSFORMER IN THE TIP AND RING LEADS TO REDUCE NOISE PICKUP DURING THE RECORDING PROCESS. THIS WILL REDUCE THE NOISE LEVEL IN THE REPRODUCED MESSAGE. SUCH ACTION SHOULD BE TAKEN ONLY IN THOSE CASES WHERE IT IS FOUND TO BE WARRANTED. A 120C REPEATING COIL OR EQUIVALENT TRANSFORMER IS RECOMMENDED FOR THIS PURPOSE. IT SHOULD BE LOCATED AS CLOSE TO THE ANNOUNCEMENT SET AS POSSIBLE. THE OUTPUT TERMINALS OF THE TRANSFORMER SHOULD BE CONNECTED TO TERMINALS 12 (10) AND R2 (9). PROVISION FOR DC TALK POWER TO THE TRANSMITTER IN THE RECORDING INSTRUMENT MUST BE MADE LOCALLY.
110. WHEN KS-16765.L12 IS USED WITH H400-197 EQUIPMENT ASSEMBLY, S OPTION MUST BE APPLIED.

INFORMATION NOTES:

301. UNLESS OTHERWISE SPECIFIED:
RESISTANCE VALUES ARE IN OHMS.
CAPACITANCE VALUES ARE IN MICROFARADS.
VALUES PRECEDED BY THE SYMBOL + (PLUS)
OR - (MINUS) ARE IN VOLTS.

COMMON SYSTEMS ANNOUNCEMENT CIRCUIT		DWG SIZE 6S	ISSUE /
BELL LABORATORIES	SD-95283-02	DI	

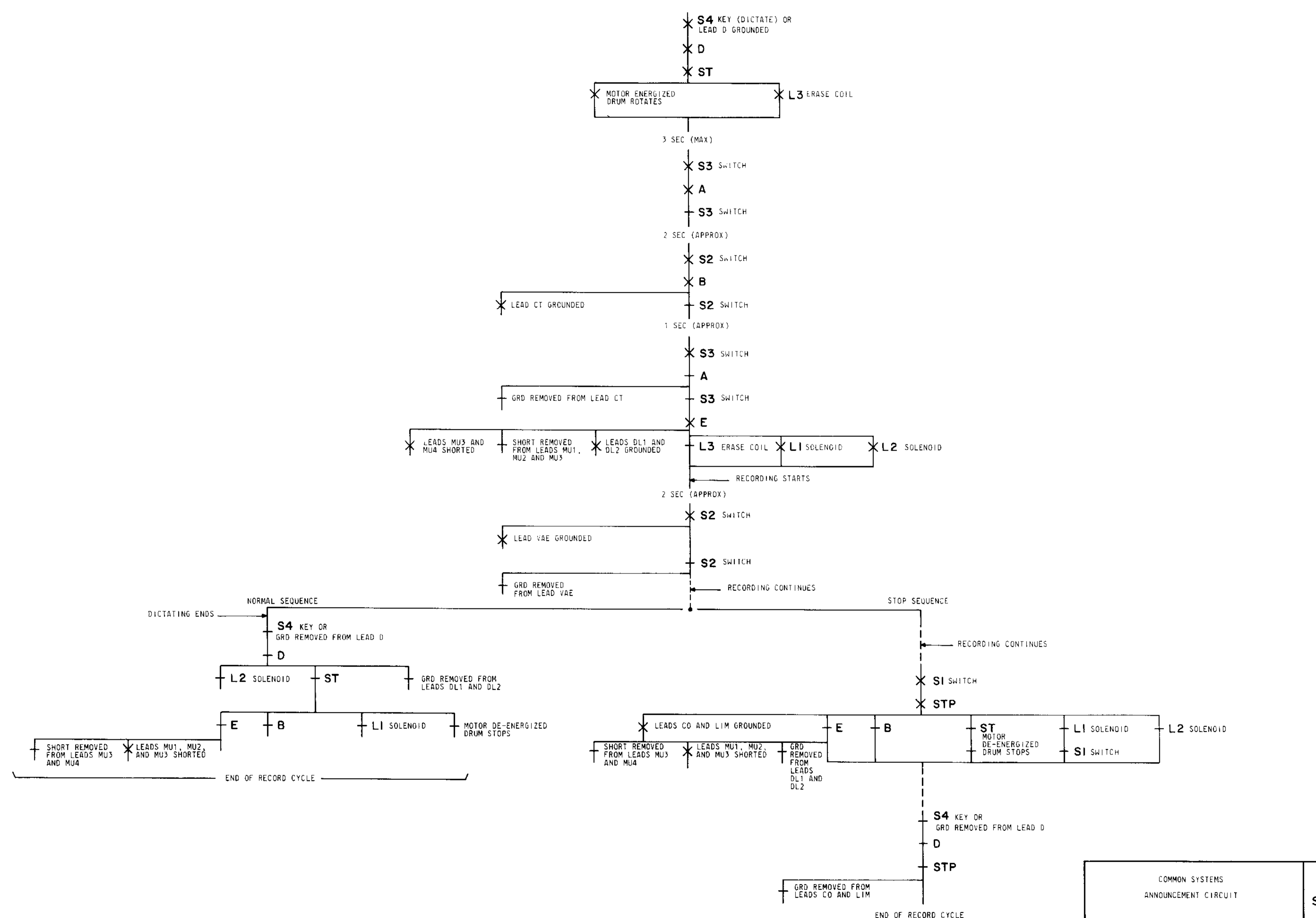
A B C D E F G H J K L M N P Q R S T U V W X Y Z AA AB AC AD AE

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DRAWING
ISSUE
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SC 1

ANNOUNCEMENT RECORD



COMMON SYSTEMS
ANNOUNCEMENT CIRCUIT

SD-95283-02-E1

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

PRINTED IN U.S.A.

A B C D E F G H J K L M N P Q R S T U V W X Y Z AA AB AC AD AE

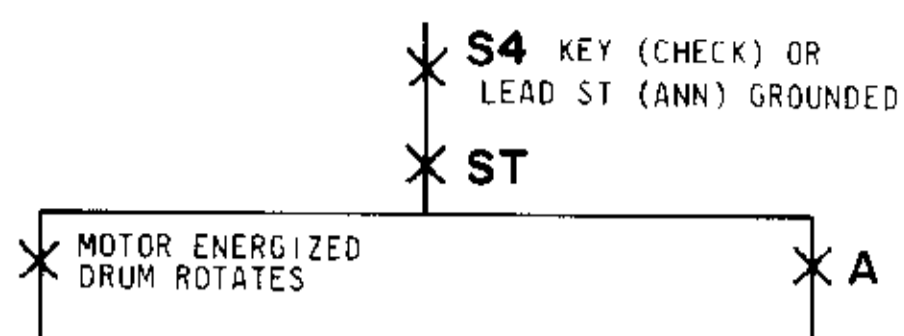
DRAWING ISSUE

SC 2

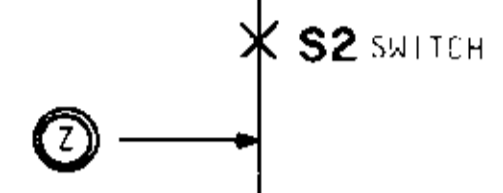
ANNOUNCEMENT REPRODUCE

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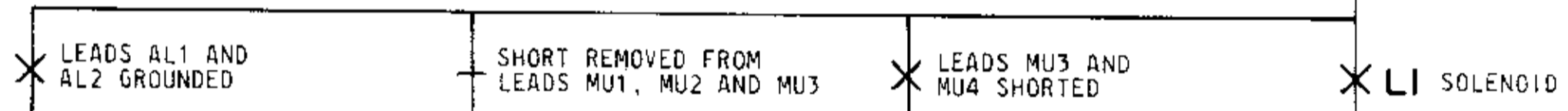
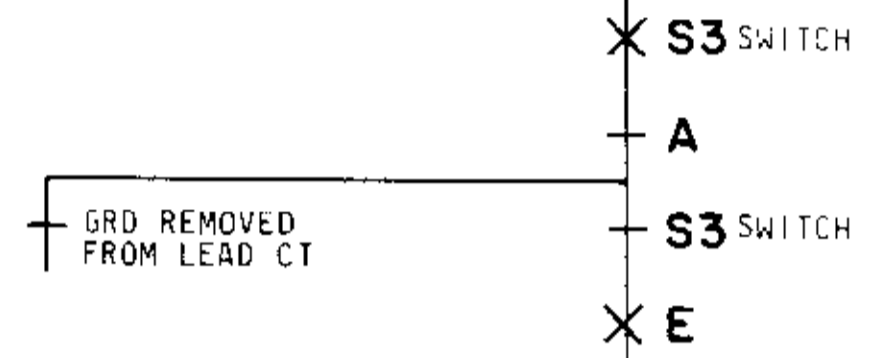
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3 SEC (MAX)

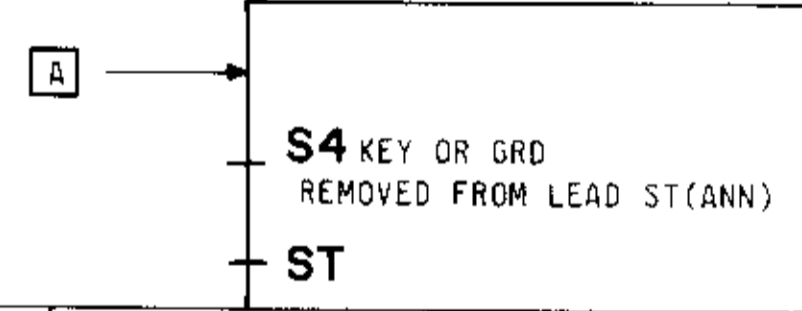
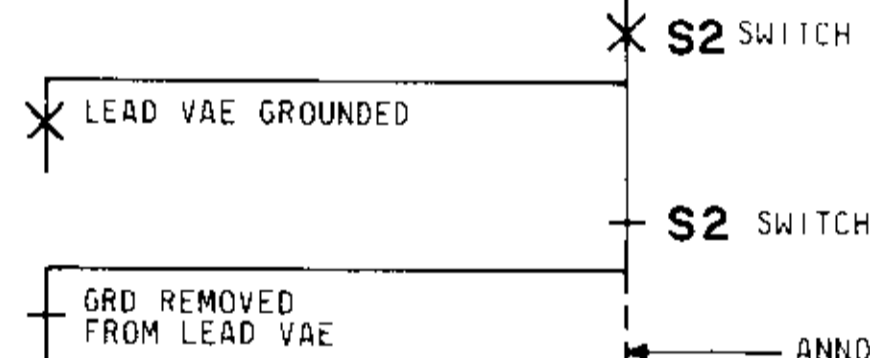


1 SEC (APPROX)

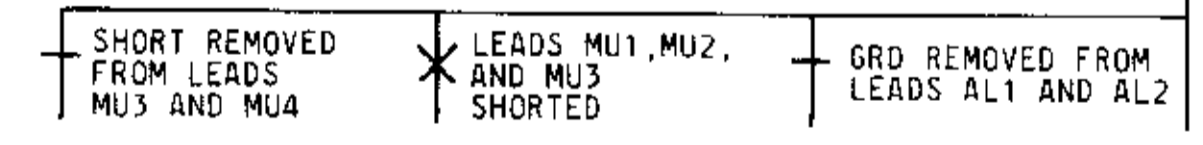
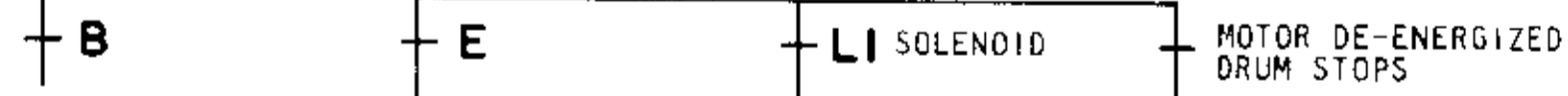


ANNOUNCEMENT STARTS

2 SEC (APPROX)

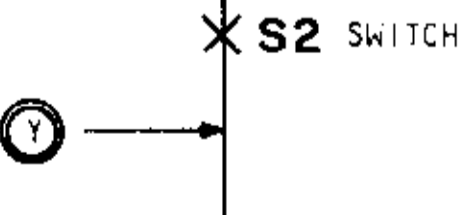


ANNOUNCEMENT ENDS



END OF ANNOUNCEMENT REPRODUCE CYCLE

3 SEC (MAX)



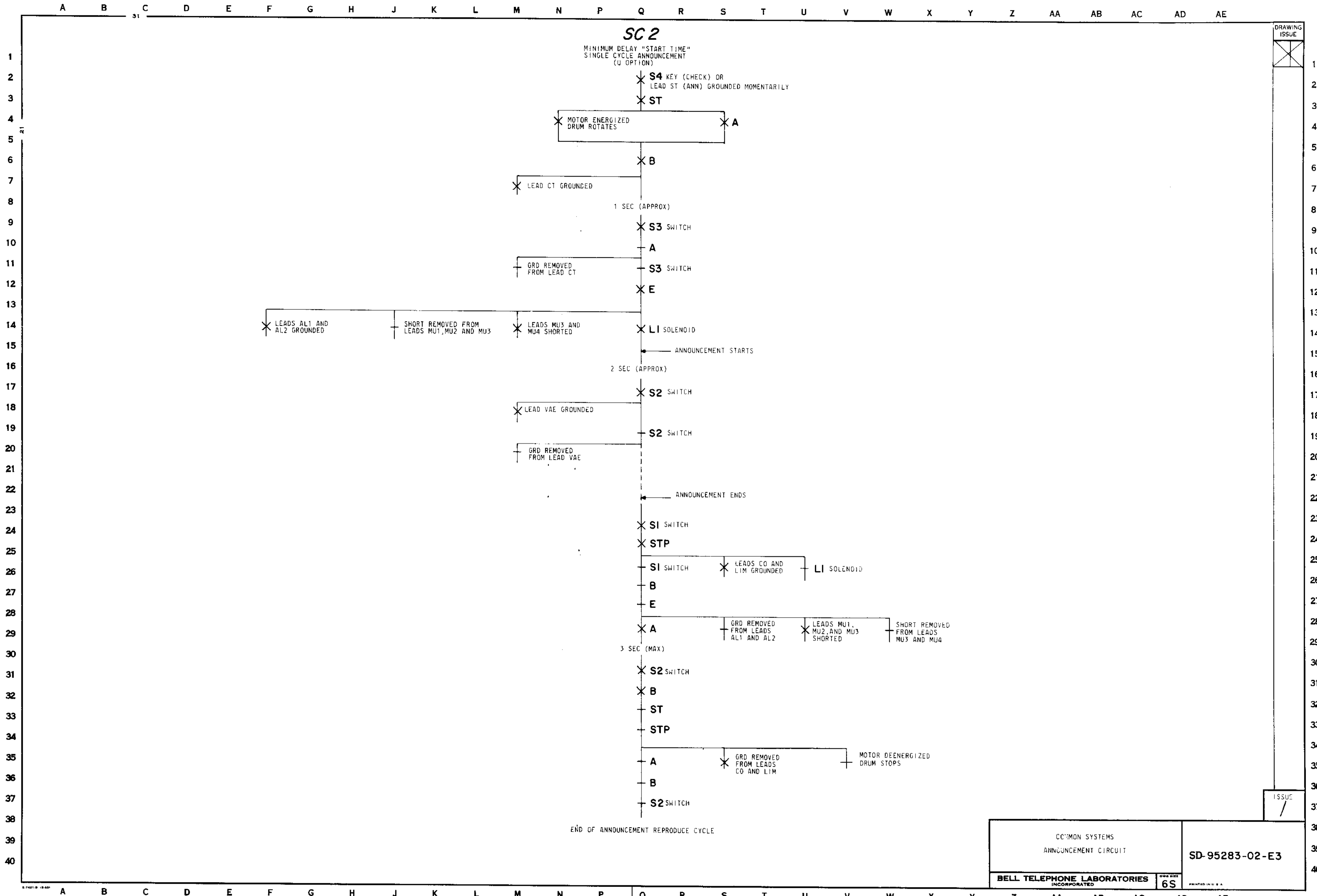
SEQUENCE IS REPEATED BETWEEN Z AND Y AS LONG AS S4 KEY IS IN CHECK POSITION OR GRD REMAINS ON LEAD ST (ANN)

TO A .2H25

COMMON SYSTEMS ANNOUNCEMENT CIRCUIT		SD-95283-02-E2
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ISSUE

A B C D E F G H J K L M N P Q R S T U V W X Y Z AA AB AC AD AE



DRAWING
ISSUE

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/

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K&E