

[illegible]

DWG 155	CD 155	DWG 155	CD 155	DWG 155	CD 155
1	1	2D	2D	3D	2D APPLIC
4D	2D APPLIC	5D	3D	6D	3D APPLIC
DWG ISSUE	CD ISSUE	DATE ISSUED		DRAWN	APP
7D	3D APPLIC 2D	2-14-75		CDI P10	CLD ORF 15 HIC

1. WHEN CHANGES ARE MADE IN THIS DRAWING, ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. 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.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
5. THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.
6. "OLD SHEET NO." REFERS TO SHEET NO. PRIOR TO ISSUE;

CATEGORY	NO.
EQUIPMENT DRAWINGS	ED-69401-30 ED-69428-30 J53009CV J53022EP J53022ER J53022ET J53033E J53032W J53033A

ISSUE
7D

SD-69395-01

1K04

STATION SYSTEMS
DARK ENVIRONMENT
LAMP CONTROL CIRCUIT
ARRANGED FOR KEY EQUIPMENT NO. 112A
AND
SWITCHING SYSTEMS NO. 301 AND 302

AT&TCO
STANDARD

SD-69395-01-A1
INDEX SHEET
15 SHEETS

BELL TELEPHONE LABORATORIES
INCORPORATED

35

POWER BY U. S. A.

CIRCUIT NOTES:

101.	DESIG.	AMP	POTENTIAL FUSED	ONE PER
	A	1-1/3	24V SIG	FIG. 1
		BAT SYMBOL		VOLTAGE RANGE
		-24		20-26V

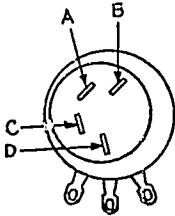
102.	FEATURE OR OPTION		FIG.	PROVIDE APP OR WIR	QUANTITY
	REGULATOR CIRCUIT	15 TO 36 LAMPS PER POS	1		1 PER POS
		LESS THAN 15 LAMPS PER POS		Z	
	BRIGHTNESS CONTROL WITH SEPARATE CUT-OFF KEY FOR 24 VOLT LAMP AT NIKE ZEUS		2		1 PER POS
	LINE LAMP DIODE CKT		3		1 PER LAMP PER POS
	HOLD OR SUPV LAMP DIODE CKT		4		1 PER LAMP PER POS
	BRIGHTNESS CONTROL WITH COMBINED CUT-OFF KEY		5		1 PER POS

103.	NETWORK VALUES		
NETWORK		RESISTANCE	CAPACITANCE
NO	CODE	IN OHMS	IN UF

104.	RECORD OF FIGURES, WIRING AND APPARATUS CHANGES						
CHANGED ON ISS.	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN.	SEE NOTE	USE IN CIRCUIT			
				STD	A&M	MD	
3D	X OR Y	Y	201	X,Y			
5D				FIG. 5			
6D	V OR W	W		V,W			

EQUIPMENT NOTES:

201. WHEN FIG. 2 IS ASSOCIATED ON EQUIPMENT UNITS WITH KS-J6672 LI CONNECTORS, X OPTION IS SPECIFIED. Y OPTION IS SPECIFIED FOR EQUIPMENT UNITS WITHOUT CONNECTORS.
202. FOR INTERCONNECTION OF THIS CIRCUIT FOR MOBILE RAPCON AND GROUND CONTROL APPROACH (GCA) INSTALLATIONS SEE INTERCONNECTING SCHEMATIC S0-69429-01.
203. BRIGHTNESS CONTROL OF FIG. 5 (BACK VIEW).



TERMINALS ARE LETTERED FOR REFERENCE ONLY

INFORMATION NOTES:

301. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS.

RECORD OF FIG. AND OPTIONS USED ON THIS DWG.			
FIG		OPTION	
1	37	Z	Q
2	38	Y	P
3		X	N
4		W	M
5		V	L
6		T	K
		S	YI

SD-69395-01-BI

STATION SYSTEMS

DARK ENVIRONMENT

LAMP CONTROL CIRCUIT

BELL TELEPHONE LABORATORIES

INCORPORATED

3 S

DWG SIZE

SD-69395-01-BI

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DRAWING	ISSUE
1	JWB
3D	DHC
4D	DHC
5D	DHC
6D	ARM

HO
KYV
H0

ISSUE
7D

INFORMATION NOTES: (CONT)

302. THIS NOTE CONTAINS INFORMATION FOR WIRING AND COMPONENTS TO LOCALLY PROVIDE REGULATION FOR 10 VOLT LAMPS, AND A LAMP OVER VOLTAGE CONDITION FOR HIGH LIGHT AMBIENT LOCATIONS. THE INFORMATION INDICATES STANDARD EQUIPMENT UNITS WHICH CAN BE USED. ITEMS A AND B SHOW NECESSARY OPTION AND APPARATUS IDENTIFICATION.

(A)

RECORD OF FIGURES, WIRING AND APPARATUS CHANGES							
CHANGED ON ISS.	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN.	SEE NOTE	USE IN CIRCUIT			
				STD	A&M	MD	
7B	L,S OR M	M	B,C	M,L		S	
	R,N, P,Q	NONE	B,C			R,N, P,Q	
	FIG. 6, 37,38, T,K,YI	NONE	C	FIG.6, 37,38, T,K, YI			

(B)

FEATURE OR OPTION			PROVIDE		
			FIG.	APP OR WIR.	QUANTITY
REGULATOR CIRCUIT	24 VOLT	15 TO 36 LAMPS PER POS	1	M	1 PER POS
		LESS THAN 15 LAMPS PER POS		Z,M	
	10 VOLT (HFR DISC)	8-18 LAMPS PER POS		S	
		LESS THAN 8 LAMPS PER POS		S,R	
		ASSOC., WITH FIG. 6		N	
LINE LAMP DIODE CKT		FOR 10 VOLT LAMPS	3	K	1 PER LAMP
		FOR 24 VOLT LAMPS		M	
BRIGHTNESS CONTROL WITH COMBINED CUT-OFF KEY		FOR 10 VOLT LAMPS (LESS THAN 18 LAMPS AT NON ARTS III POS)	5	L	1 PER POS
		FOR 24 VOLT LAMPS		M	
10 VOLT REGULATOR BRIGHTNESS CONTROL CKT WITH COMBINED CUTOFF KEY FOR USE WITH POS WITH GREATER THAN 18 LAMPS OR WITH ARTS III POS			6		1 PER POS
10 VOLT REGULATOR BACK LIGHTING CONTROL CKT		LESS THAN 8 LAMPS PER REGULATOR	37		1 PER POS
				T	
10 VOLT REGULATOR CKT			38		1 PER MAX 18 LAMPS PER POS

(C) OPTIONS S,R,Q,P, AND N WERE ADDED IN ISSUE 7 OF THIS DRAWING TO INDICATE MODIFICATIONS SHOWN IN P.E.M. 8066 FOR RECORDS AND MAINTENANCE ONLY. THIS EQUIPMENT ARRANGEMENT HAS NOT BEEN MADE STANDARD. THE OPTIONS, THEREFORE, HAVE BEEN ADDED AS "MFR DISC". OPTIONS 6, 37, 38, L AND K HAVE BEEN ADDED AS A STANDARD ARRANGEMENT TO PROVIDE 10 VOLT LAMP REGULATION.

DRAWING
ISSUE

ISSUE
7D

STATION SYSTEMS
DARK ENVIRONMENT
LAMP CONTROL CIRCUIT

1

SD-69395-01-B2

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG. SIZE
3S

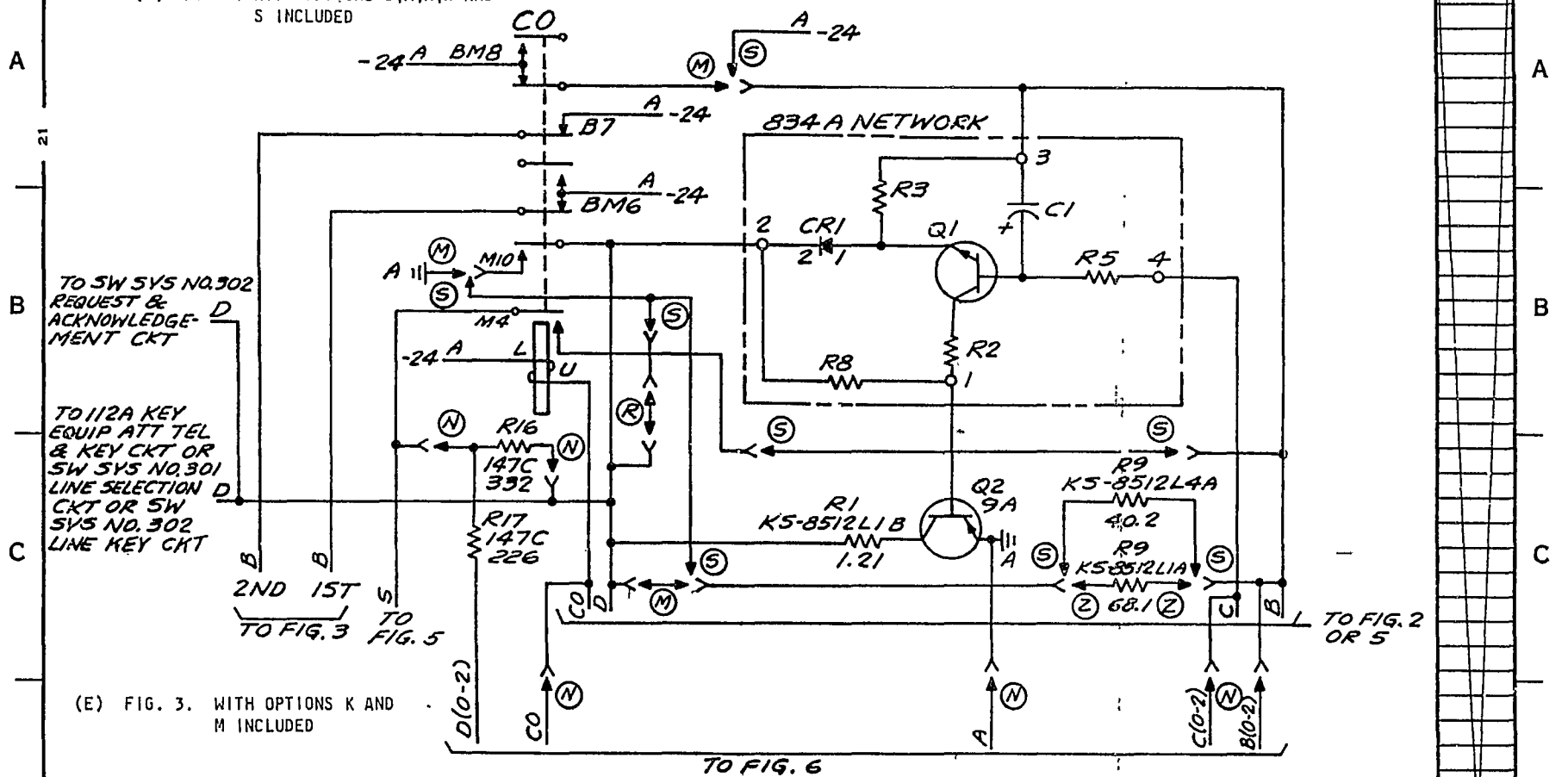
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SD-69395-01-B2

3-1

(D) FIG. 1 WITH OPTIONS S,M,N,R AND S INCLUDED

FIG. 1
REGULATOR CKT



(E) FIG. 3. WITH OPTIONS K AND M INCLUDED

(F) FIG. 5. WITH OPTIONS L,M AND S INCLUDED

FIG. 3
LINE LAMP DIODE CKT

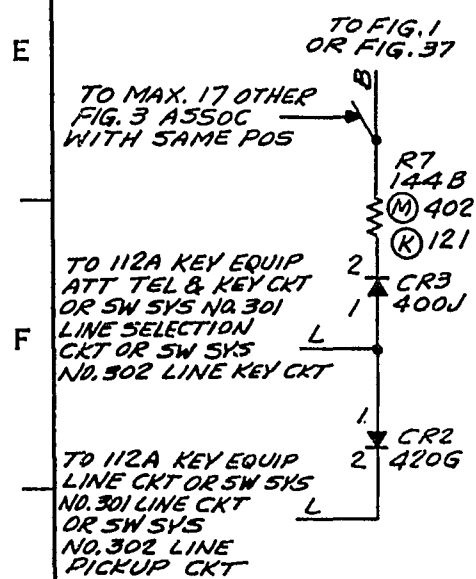
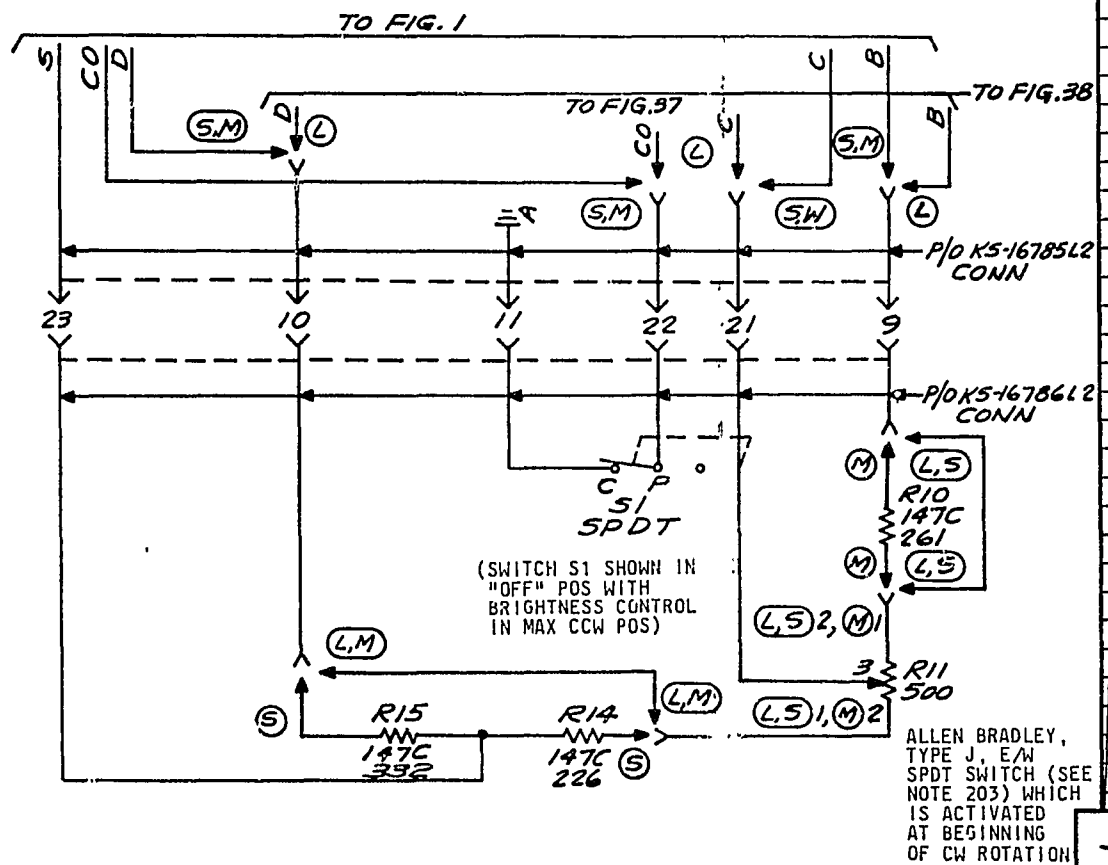


FIG.5
BRIGHTNESS CONTROL
WITH COMBINED CUTOFF KEY



ALLEN BRADLEY,
TYPE J, E/W
SPDT SWITCH (SEE
NOTE 203) WHICH
IS ACTIVATED
AT BEGINNING
OF CW ROTATION

ISSUE
7D

STATION SYSTEMS .
DARK ENVIRONMENT
LAMP CONTROL CIRCUIT

SD-69395-01-B3

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG 312
35

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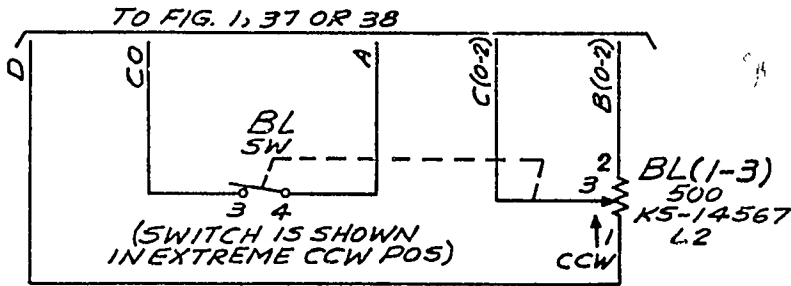
INFORMATION NOTE:
302. (CONT)
(G) FIG. 6

FIG. 6

10 VOLT REGULATOR BRIGHTNESS
CONTROL CIRCUIT

NOTES:

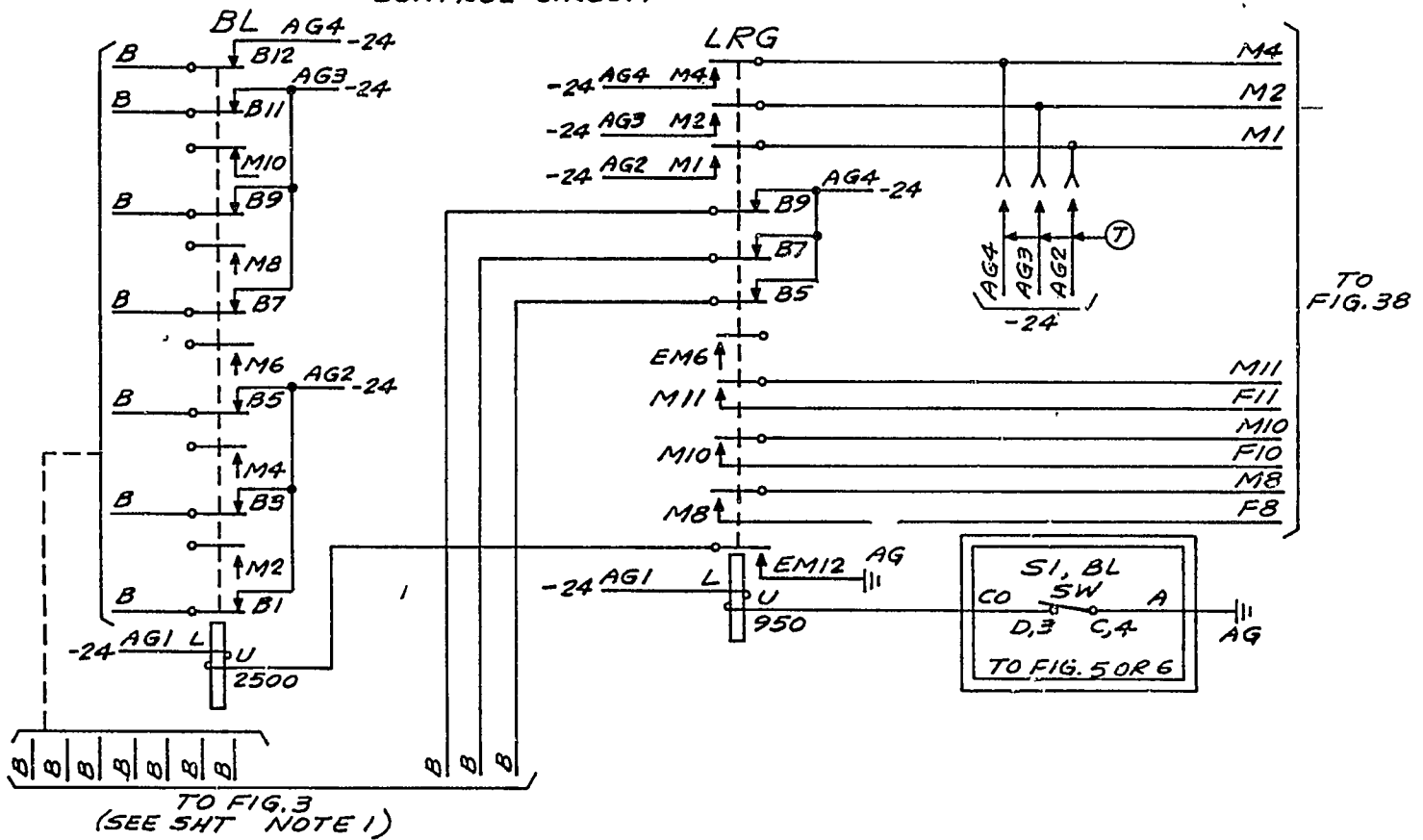
1. A MAXIMUM OF 12 LAMPS MAYBE
ASSOCIATED WITH EACH B LEAD



(H) FIG. 37 WITH T OPTION

(37) FIG. 37

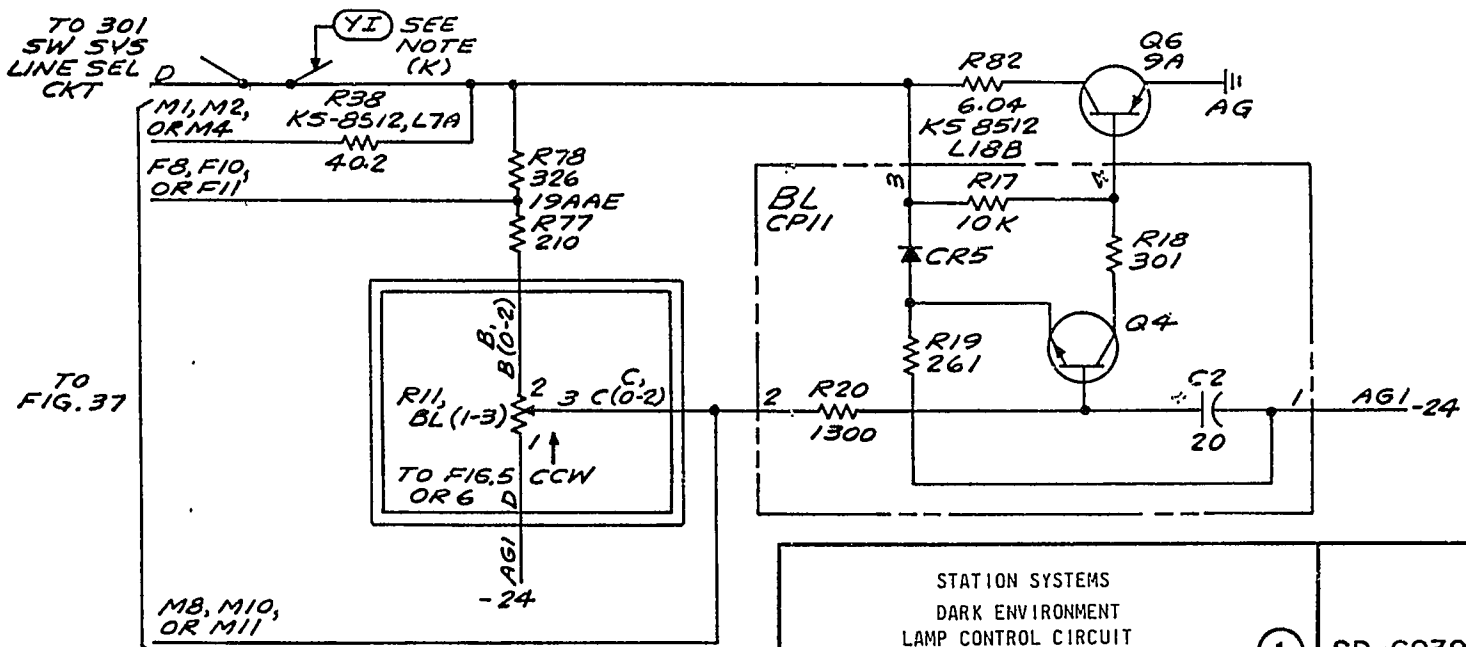
10 VOLT REGULATOR BACKLIGHTING
CONTROL CIRCUIT



(I) FIG. 38

(38) FIG. 38

10 VOLT REGULATOR CIRCUIT



STATION SYSTEMS
DARK ENVIRONMENT
LAMP CONTROL CIRCUIT

(1)

SD-69395-01-B4

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
3S

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ISSUE
7D

SD-69395-01-B4

INFORMATION NOTES:

302. (CONT)

(J) EQUIPMENT IN FIGURES 6, 38 AND 37 ARE USED AND SHOWN IN SD-69610-01 AS APP FIGURES 3, 38 AND 37 RESPECTIVELY. SD-69610-01 IS THE CONTROLLING DRAWING FOR THESE FIGURES.

(K) PROVIDE YI OPTION WHEN REGULATED VOLTAGES AT A POSITION WITH MORE THAN ONE REGULATOR CKT, DIFFER BY MORE THAN 0.7 VOLTS OR ARE OTHERWISE DEEMED TOO DIFFERENT SUCH THAT A NOTICABLE VARIATION OF ILLUMINATION OCCURS IN THE POSITION LAMP FIELD.

(L) IN CASES WHERE 301A SWITCHING SYSTEM KEY UNITS ARE TO BE USED, THE J53048AG DARK ENVIRONMENT LAMP REGULATOR AND CONTROL UNIT MUST BE USED TO PROVIDE A 10V SOURCE FOR THESE LAMPS. IT IS ORDERED AS FOLLOWS:

LIST 1 - ASSEMBLY, WIRING, AND EQUIPMENT FOR ONE DARK ENVIRONMENT LAMP CONTROL UNIT PER ATTENDANT POSITION IN ACCORDANCE WITH SD-69610-01 FIG. 37 (ONE CIRCUIT).

LIST 2 - ASSEMBLY, WIRING, AND EQUIPMENT REQUIRED IN ADDITION TO LIST 1 FOR ONE DARK ENVIRONMENT LAMP REGULATION CIRCUIT PER THREE ATTENDANT CONSOLE SIX BUTTON KEYS IN ACCORDANCE WITH SD-69610-01 FIG. 38 (ONE CIRCUIT, MAXIMUM 3)

301 A SWITCHING SYSTEM UNITS MAY BE USED AS REQUIRED AND ARE ORDERED AS FOLLOWS: SEE BELOW.

J53048CB: ATTENDANT TELEPHONE JACK AND KEYS AND DARK ENVIRONMENT LAMP CONTROL CIRCUIT

LIST 1 - ASSEMBLY, WIRING, AND EQUIPMENT FOR ONE ATTENDANT JACK AND KEY, AND DARK ENVIRONMENT LAMP CONTROL UNIT FOR USE IN THE ATTENDANT CONSOLE IN ACCORDANCE WITH SD-69610-01 FIG. 3 (ONE CIRCUIT) AND FIG. 4 (ONE CIRCUIT)

LIST 2 - GREY FACEPLATE IN ADDITION TO LIST 1

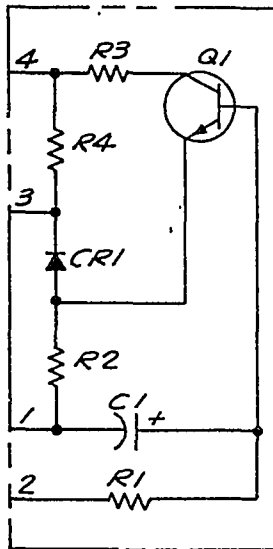
LIST 3 - TAN FACEPLATE IN ADDITION TO LIST 1

ADAPTER CABLE ED-69907-() GR1 IS PROVIDED FOR USE BETWEEN THE 301 SWITCHING SYSTEM CIRCUITRY AND 301A FUNCTION AND LINE SELECTION KEY UNITS J53048 CG,CH,CJ,CK. THE ADAPTER CABLE AND THE 301A SWITCHING SYSTEM KEY UNITS ARE FOR USE ONLY WHEN THE 301 SW. SYS HAS BEEN MODIFIED WITH 10V LAMP REGULATION UNIT J53048AG. THE J53048 CG,CH,CJ,CK FUNCTION AND LINE SELECTION KEY UNITS (12,18,24, & 36 BUTTON RESPECTIVELY) ARE AVAILABLE. SEE BSP 812-205-156 FOR DESCRIPTIVE INFORMATION. ONE ED-69907-() GR1 ADAPTER CABLE IS REQUIRED FOR EACH ROW OF 6 BUTTONS IN THE J53048 FUNCTION AND LINE SELECTION KEY UNITS; THE 12 HAS 2, THE 18 HAS 3, ETC.

(M)

DESIG.	AMP	POTENTIAL FUSED	ONE PER
A	1-1/3	24V SIG	FIG. 1
AG1	1-1/3	24V SIG	FIG. 7
AG2	1-1/3	24V SIG	FIG. 8
AG3	1-1/3	24V SIG	FIG. 8
AG4	1-1/3	24V SIG	FIG. 8
BAT. SYMBOL		VOLTAGE RANGE	
-24		20-26V	

(N) CP11



COMPONENT LIST

CAPACITOR

DESIG CODE
C1 602C, 20UF

DIODE

DESIG CODE
CR1 446B

RESISTOR

DESIG CODE
R1 221A, 1300Ω
R2 144B, 261Ω
R3 144B, 301Ω
R4 KS-19151, L1, 10KΩ

TRANSISTOR

DESIG CODE
Q1 16K

MANUFACTURING REFERENCES

CATEGORY	NO.
CP11	ED-1E179-() GROUP 3
CONNECTOR ON FRAME	KS-19437, L1

DRAWING
ISSUE

ISSUE
7D

STATION SYSTEMS
DARK ENVIRONMENT
LAMP CONTROL CIRCUIT

1

SD-69395-01-B5

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
3S

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SD-69395-01-B5

K&S MANUFACTURING CO. BOSTON, MASS.

14%

INFORMATION NOTE:

302. (CONT)

(0)

SD-69395-01

CIRCUIT REQUIREMENTS

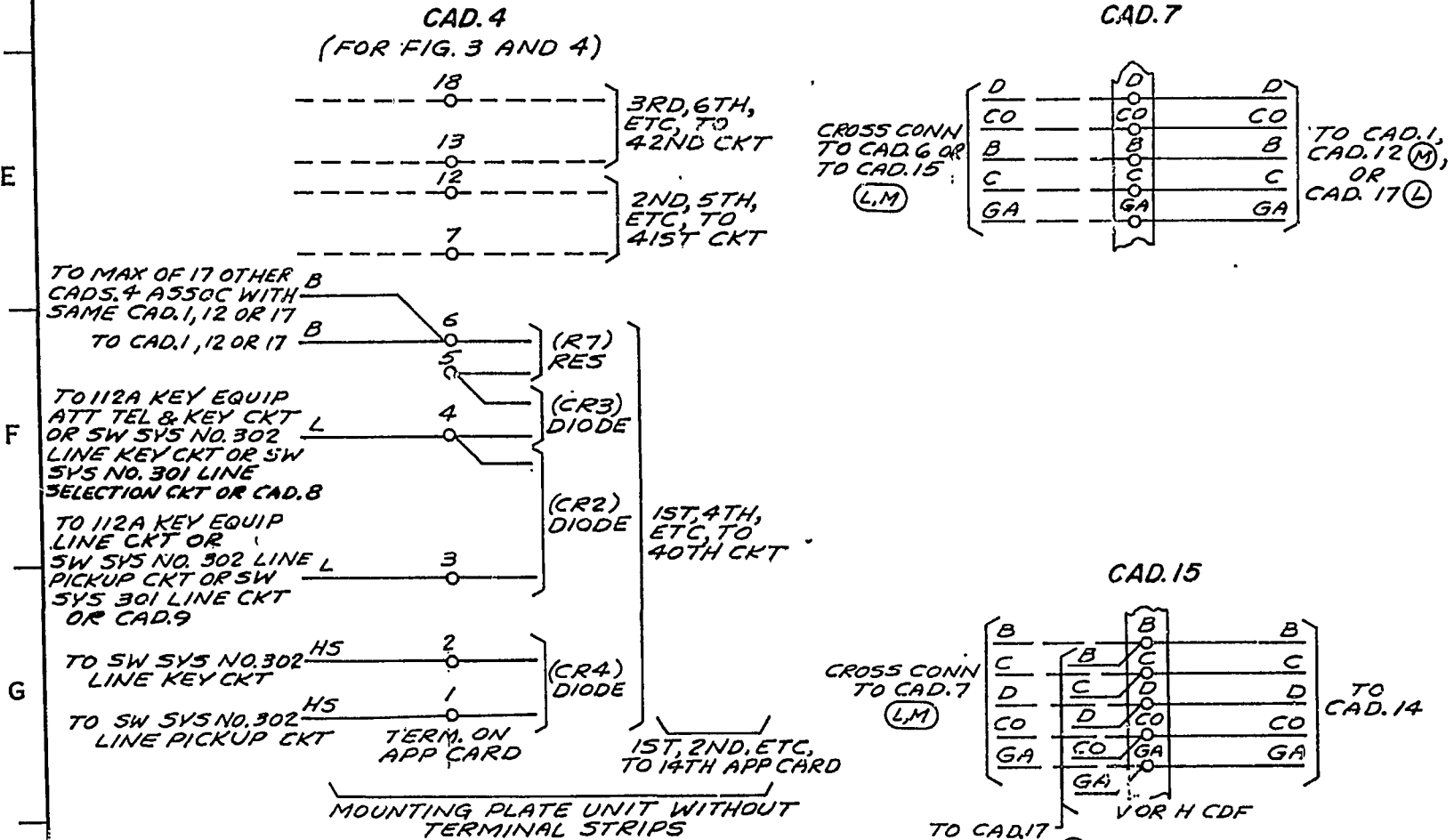
DARK ENVIRONMENT LAMP CONTROL CIRCUIT

APPARATUS				MECH REQ			CIRCUIT PREPARATION			TEST SET PREF	SEE TEST NOTE	DIRECT CURRENT FLOW REQ					REMARKS
DESIG	CODE	OPTION	FIG.	BSP FIG.	CONT PRESS	ARM. TRVL	BLOCK OR INSULATE	TEST CLIP DATA				TEST WDG	TEST FOR	AFTER SOAK MA.	TEST MA.	READJ MA.	
RELAYS																	
BL	AJ41		37	40					U(BL)	GRD		P	0		5.8	5.6	
CO	AF511		1	32					U(CO)	GRD			0		24.2	23.0	
LRG	AJ46		37	266					U(LRG)	GRD	1	P	0		12.3	11.7	
								</									

TEST NOTES:

- SET SWITCH S1, CUTOFF OR BL TO ANY POSITION BUT EXTREME COUNTER CLOCKWISE POSITION

(P) CAD FIGURES



ISSUE
7D

STATION SYSTEMS

DARK ENVIRONMENT

LAMP CONTROL CIRCUIT

1

SD-69395-01-B6

BELL TELEPHONE LABORATORIES

INCORPORATED

DWG SIZE

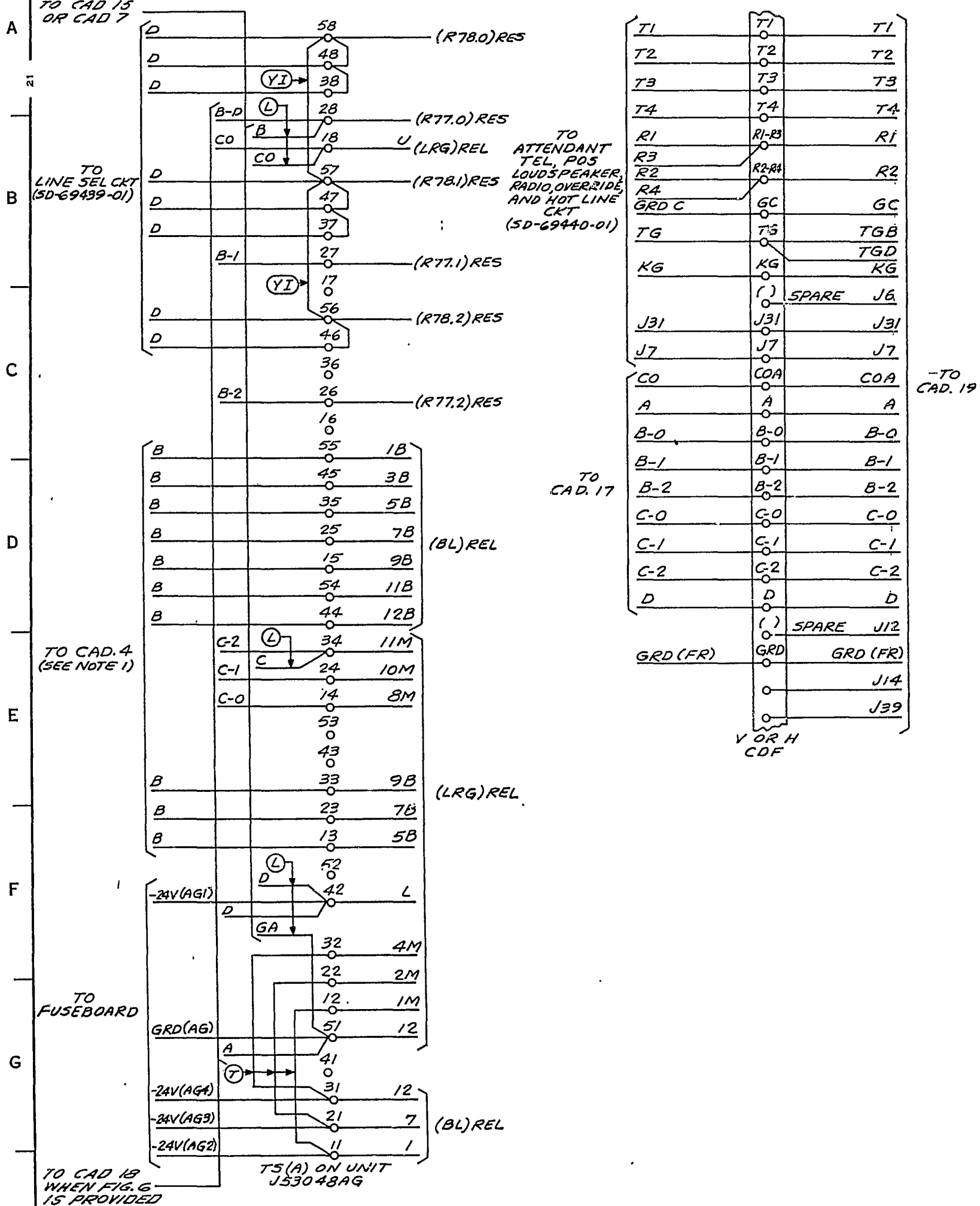
3S

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K&E MENCARELLI 2010 N.Y.

SD-69395-01-B6

CAD.18



NOTES:

1. A MAXIMUM OF 12 LAMPS MAY BE ASSOCIATED WITH EACH "B" LEAD.
2. SEE NOTE 302, SECTION (L).

STATION SYSTEMS
DARK ENVIRONMENT
AMP CONTROL CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

①

SD-69395-01-B7

DWL 81
39

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ISSUE
7D

0 1 2 3 4

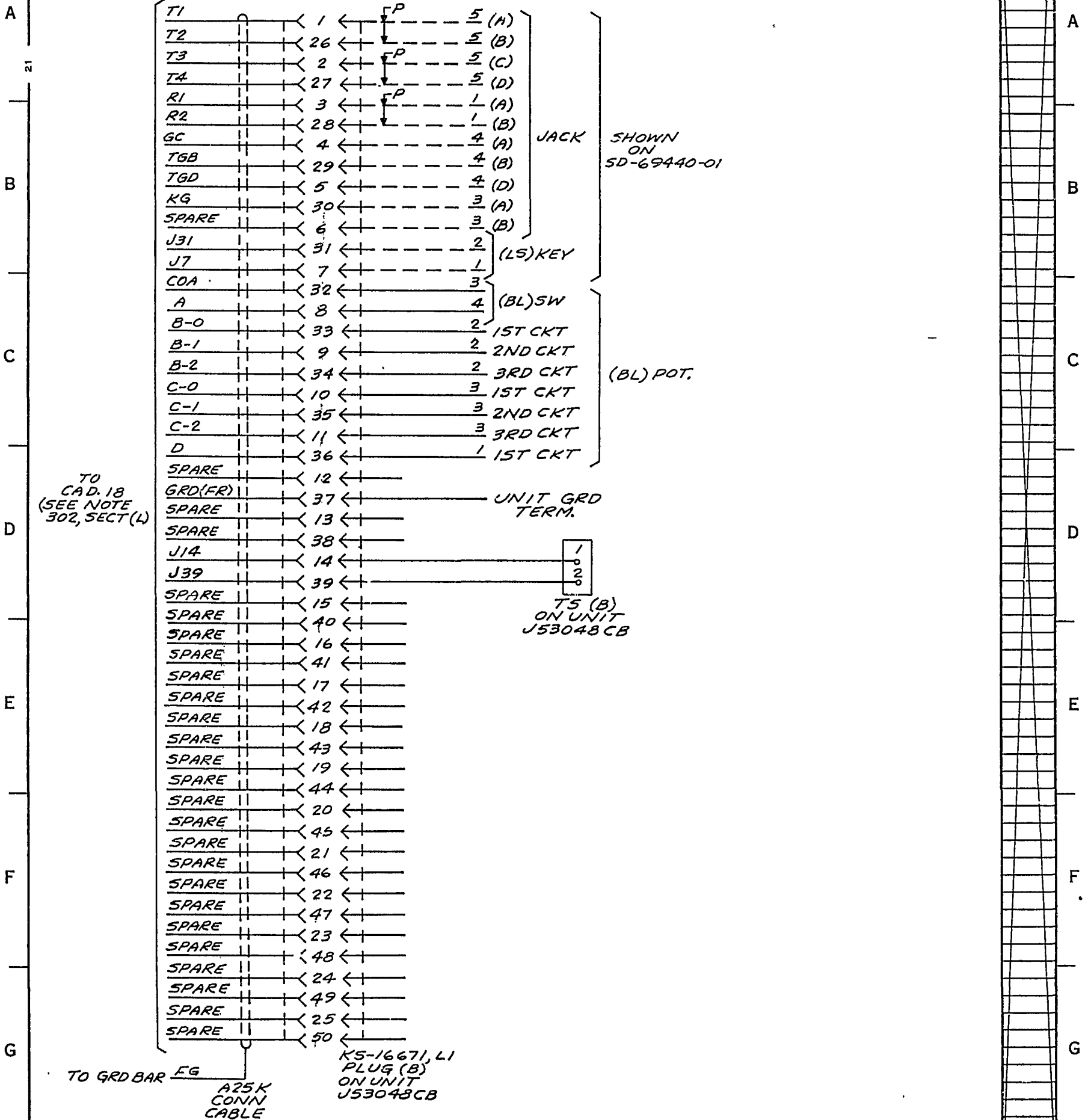
14 1/4

INFORMATION NOTE:

302. (CONT)

(P) CAD FIGURES (CONT)

CAD.19



DRAWING
ISSUE

ISSUE
7D

STATION SYSTEMS
DARK ENVIRONMENT
LAMP CONTROL CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

1

SD-69395-01-B8

DWG SIZE
3S

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SD-69395-01-B8

K&E
MARSHALL & COMPANY
NEW YORK, N.Y.

E-7424-B (7-64)

DRAWING ISSUE		
1	AMB	MH
2D	DMC	NW
3D	DMC	ARW
5D	DMC	DLV
6D	PG	ARM

FIG. 1
REGULATOR CKT

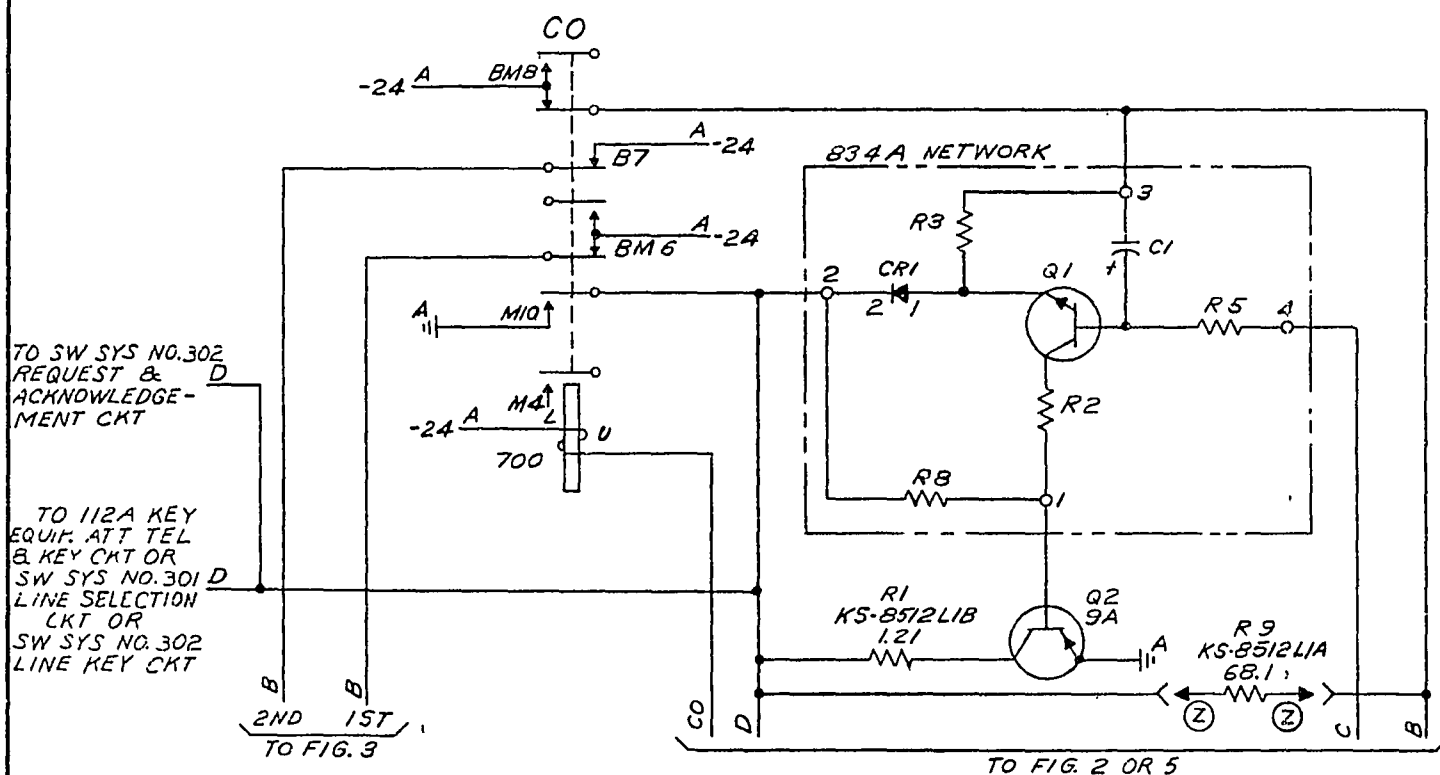


FIG. 2
BRIGHTNESS CONTROL
WITH SEPARATE CUTOFF KEY

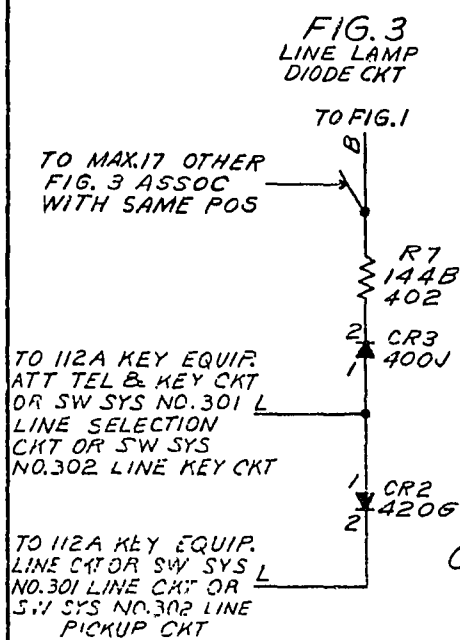


FIG. 4
HOLD OR SUPERVISOR LAMP
DIODE CKT

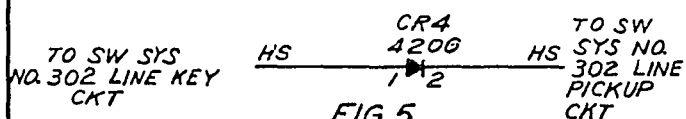
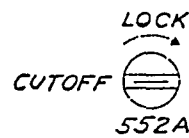
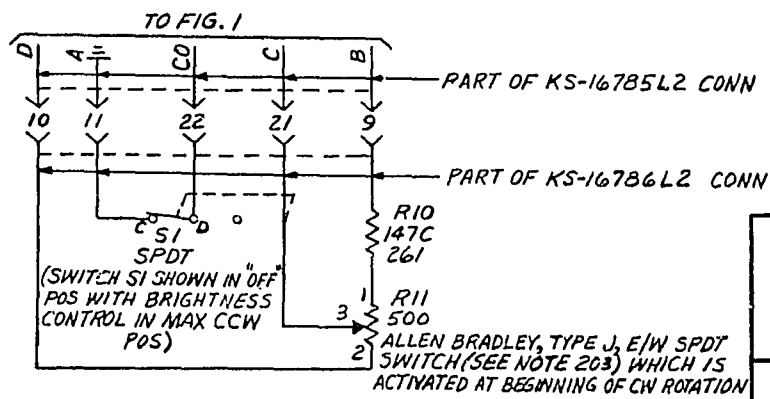


FIG. 5
BRIGHTNESS CONTROL
WITH COMBINED CUTOFF KEY



STATION SYSTEMS
DARK ENVIRONMENT
LAMP CONTROL CIRCUIT
BELL TELEPHONE LABORATORIES
INCORPORATED

SD-69395-01-CI

2

3S

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SD-69395-01-CI

6

15134

DARK ENVIRONMENT LAMP CONTROL CIRCUIT

ISSUE

1

MH
AW

[illegible]

SD-69395-01-DI

335

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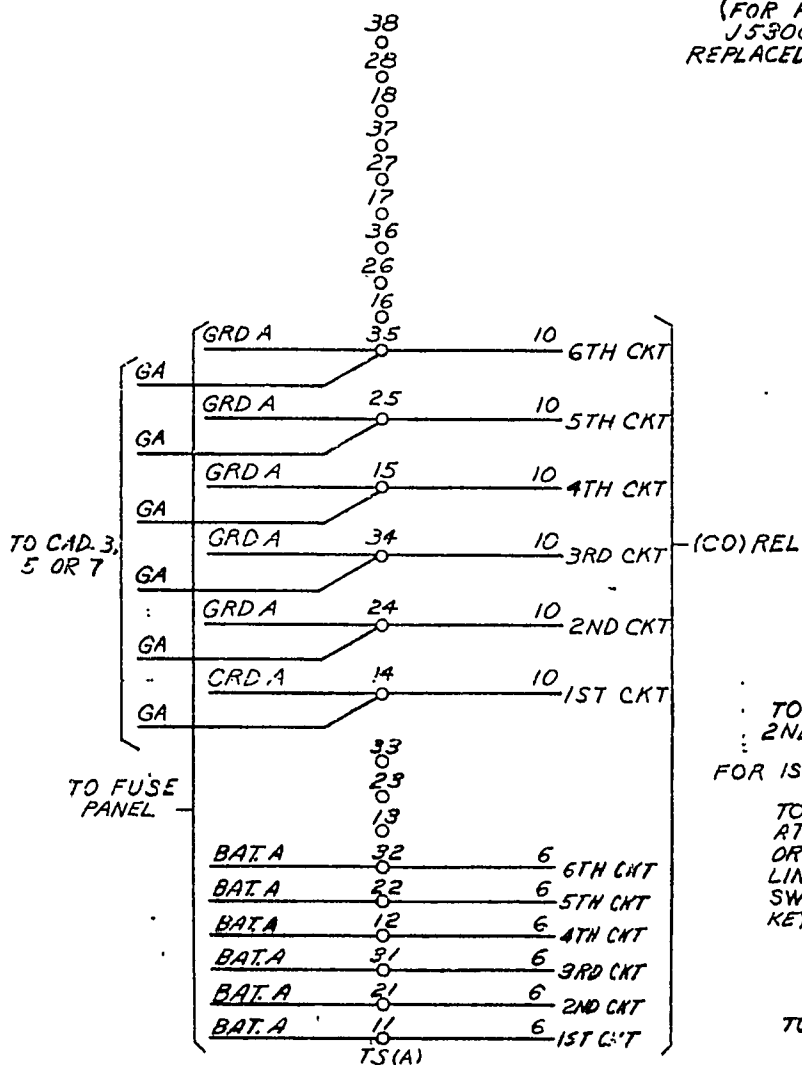
12

E.741A (8-44)

DRAWING
ISSUE

1	JWB	MH
2D	JWB	AN
3D	JWB	AN
4D	JWB	AN

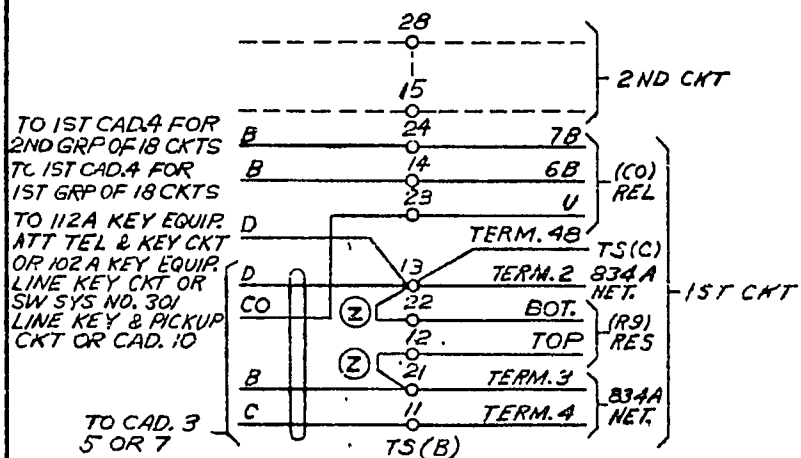
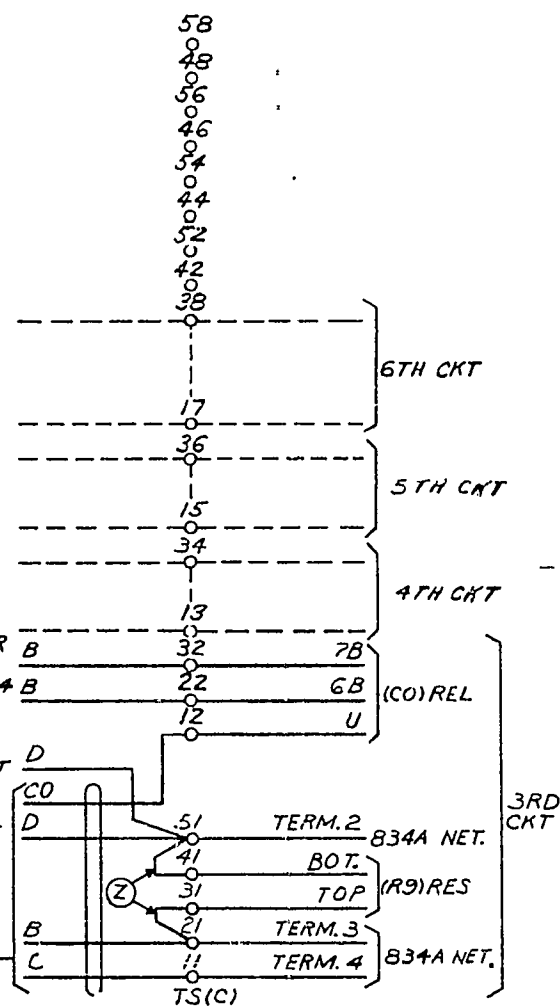
CAD. 1 (MFR DISC.)
(FOR FIG. 1)
153009C V
REPLACED BY CAD. 12



TO 1ST CAD. 4 FOR
2ND GRP OF 18 CKT
TO 1ST CAD. 4 B
FOR 1ST GRP OF 18 CKT

TO 112A KEY EQUIP.
ATT TEL & KEY CKT
OR 102A KEY EQUIP.
LINE KEY CKT OR
SW SYS NO. 301 LINE
KEY & PICKUP CKT
OR CAD. 10

TO CAD. 3, 5 OR 7



4

STATION SYSTEMS
DARK ENVIRONMENT
LAMP CONTROL CIRCUIT

SD-69395-01-EI

BELL TELEPHONE LABORATORIES
INCORPORATED

3S

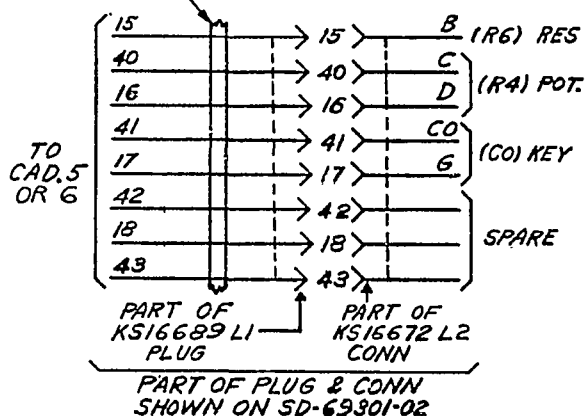
PRINTED IN U.S.A.

SD-69395-01-EI

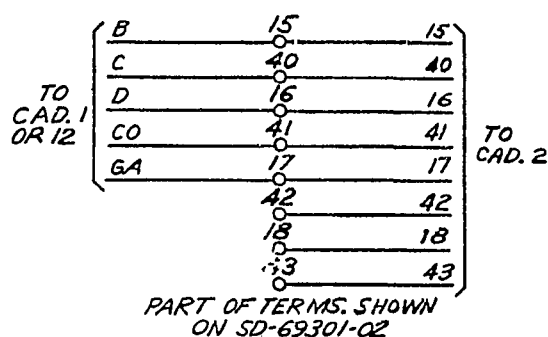
DRAWING	ISSUE
1	JWB LHM
2D	JWB ANH
3D	JWB ANH
4D	JWB ANH
5D	JWB ANH

CAD. 2
(FOR FIG. 2) 112A KEY EQUIPMENT
(AIR FORCE CONSOLES)

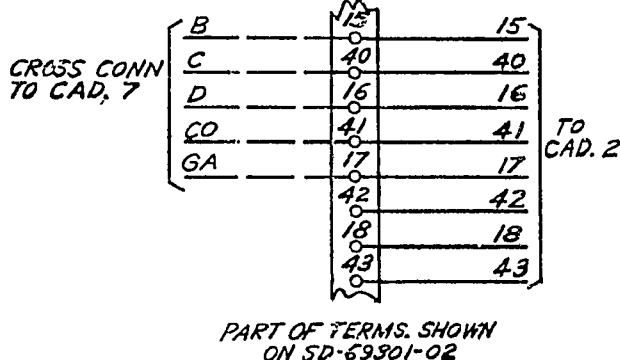
PART OF CABLE ASSEM
PER ED 69417-30 OR
ED-69420-30



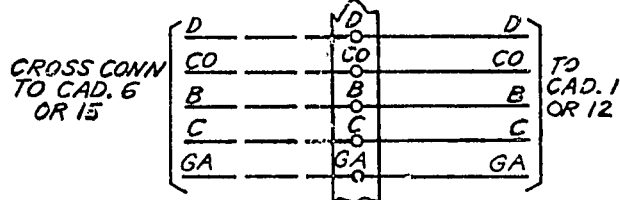
CAD. 5
(WHEN CDF IS NOT USED)



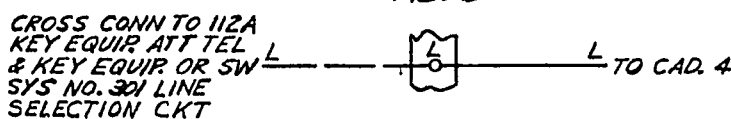
CAD. 6



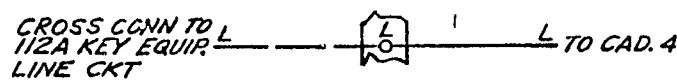
CAD. 7



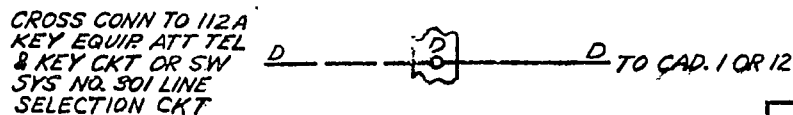
CAD. 8



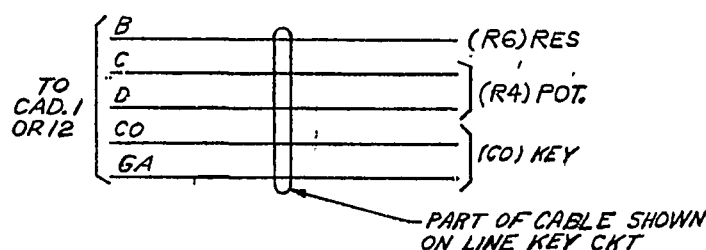
CAD. 9



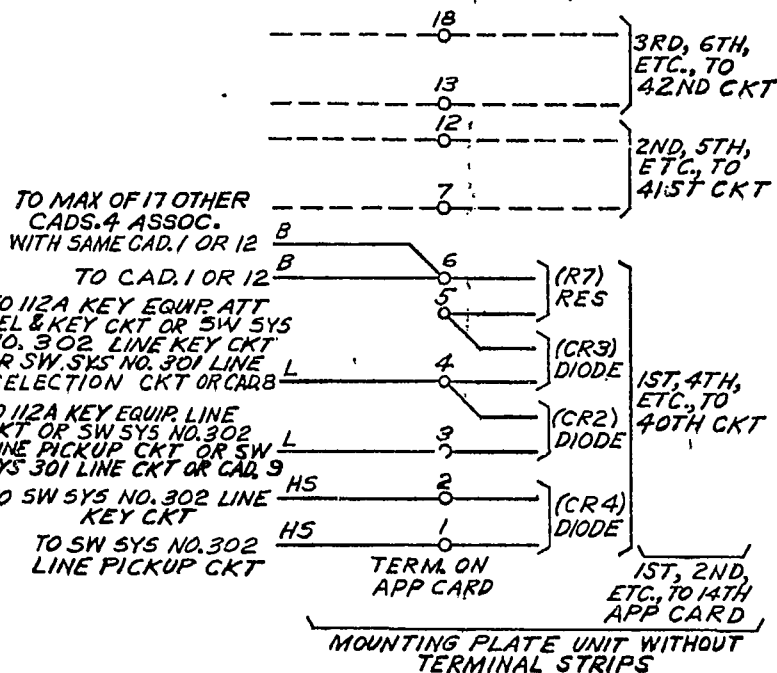
CAD. 10



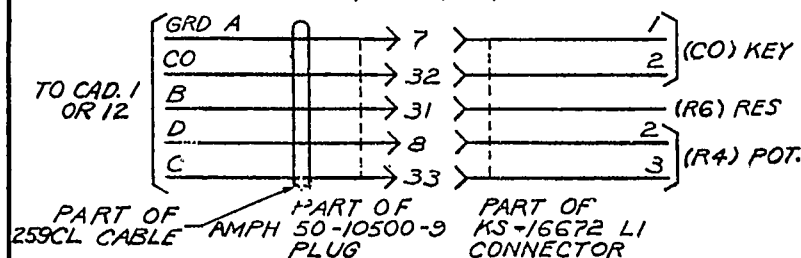
CAD. 3
(FOR FIG. 2) SW SYS NO. 302



CAD. 4
(FOR FIG. 3 AND 4)



CAD. 11
(FOR FIG. 2)



5

STATION SYSTEMS
DARK ENVIRONMENT
LAMP CONTROL CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

3S

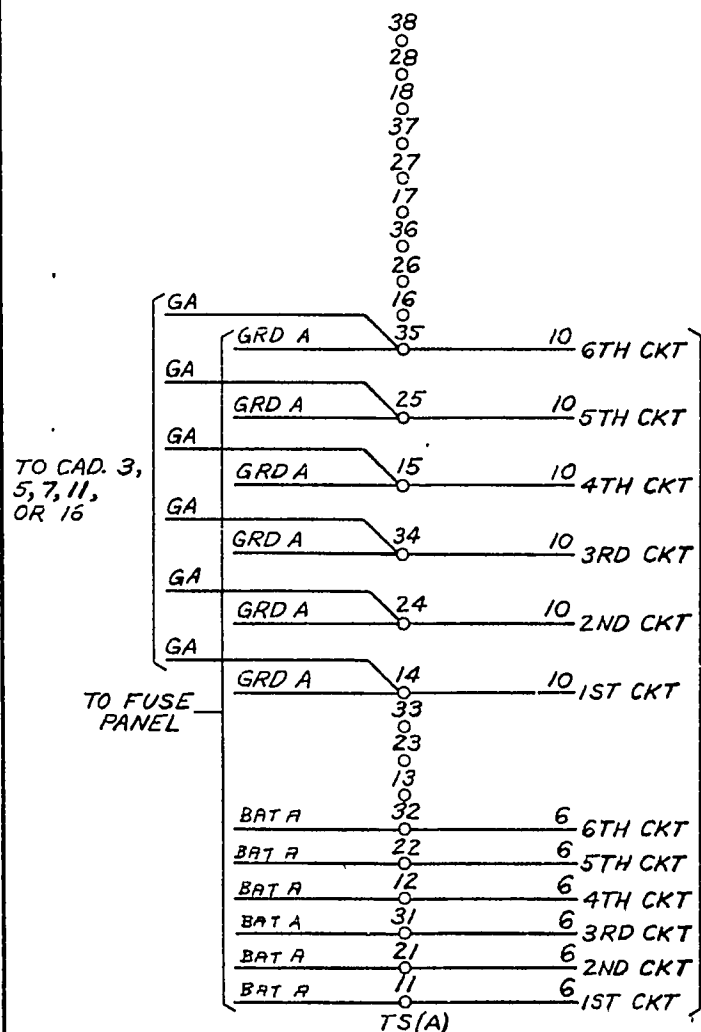
SD-69395-01-E2

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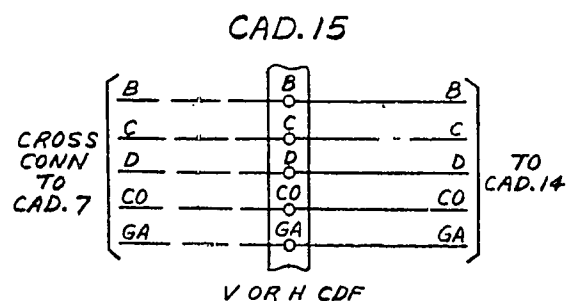
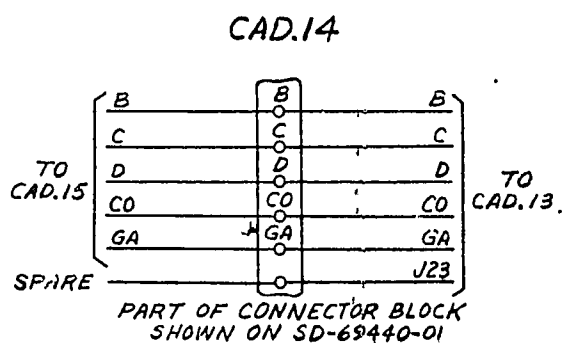
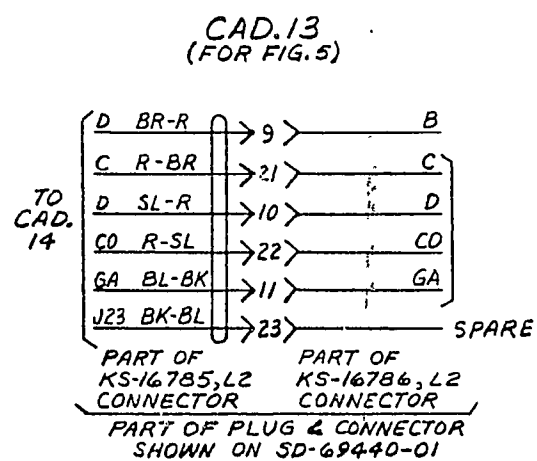
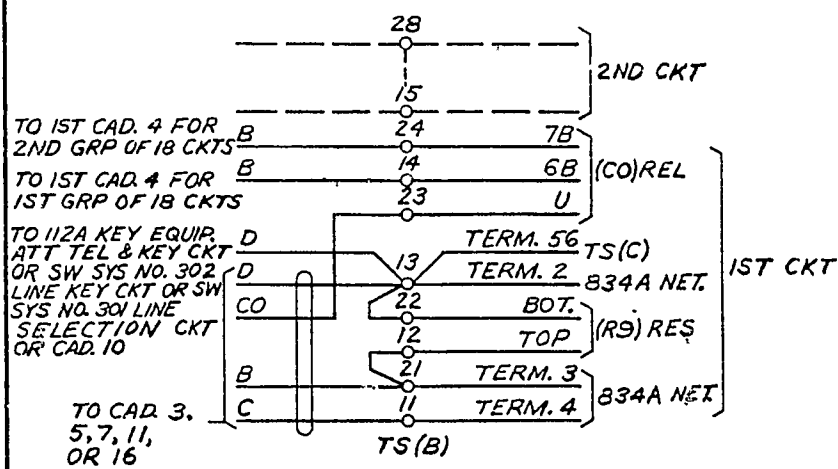
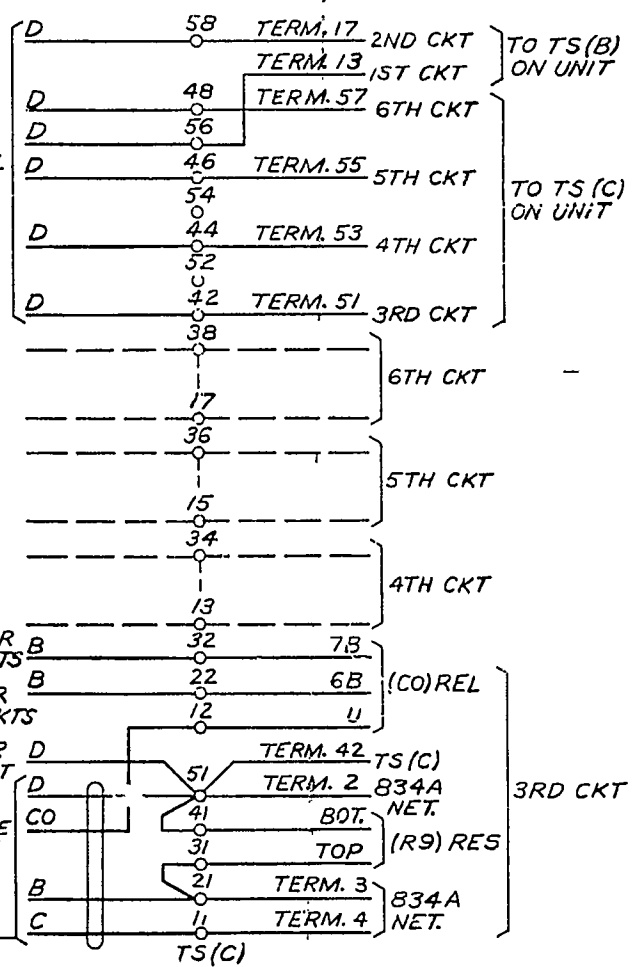
(6)

CAD. 12
-- (FOR FIG. 1) --
J530090 V
REPLACES CAD. 1

DRAWING ISSUE		
4D	MB DHC	MM MEJ
5D	ARM —	OLY <u>44</u>
6D	PG — ARM	NO



TO SW SYS
NO. 302 REQUEST &
ACKNOWLEDGEMENT
CKT



SD-69395-01-E3

6

STATION SYSTEMS
DARK ENVIRONMENT
LAMP CONTROL CIRCUIT

②

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DWG SIZE
35

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14 3/4

DRAWING
ISSUE

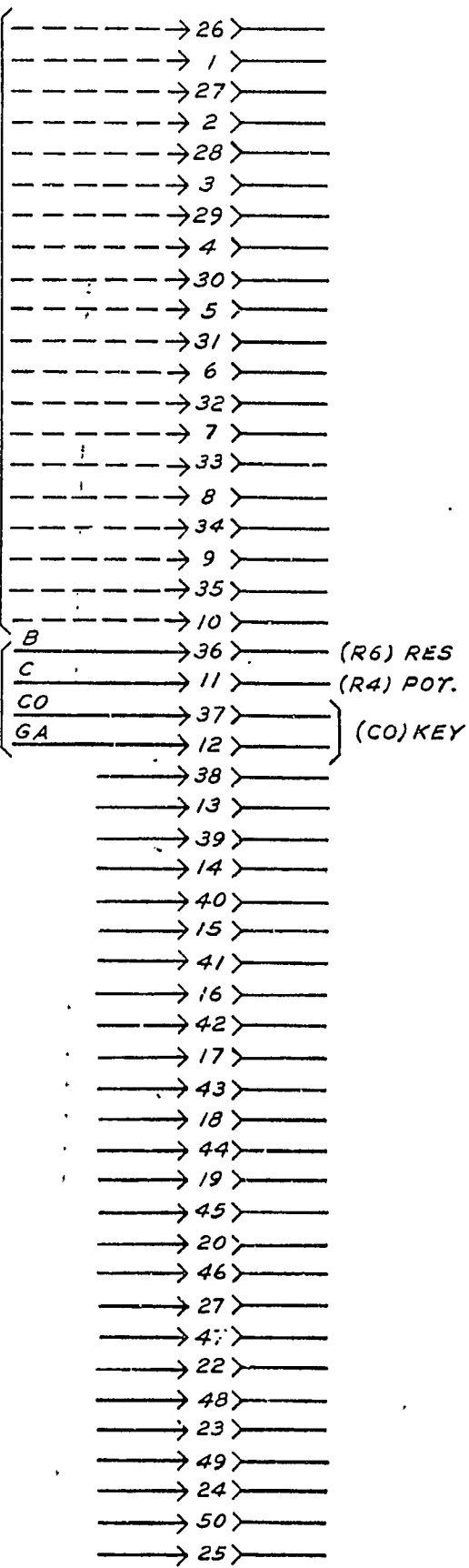
6D PG
ARM

19

CAD. 16

SHOWN ON
SD-69399-01

TO
CAD. 12



CONN ON
J53033A UNIT

6

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STATION SYSTEMS
DARK ENVIRONMENT
LAMP CONTROL CIRCUIT

2

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4