SHEET INDEX

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
SHEET INDEX SUPPORTING INFORMATION	A1	1	2	3	4	5	6	7	8	9	10	11	12	13	14											
FS1 - PICKUP KEY AND POLARITY GUARD CONNS FS2 - POLARITY GUARD CONNECTIONS FS3 - ROTARY DIAL & PANEL HEADSET JACK CONNECTIONS FS4 - TOUCH TONE DIAL & PANEL HEADSET JACK CONNECTIONS FS5 - RINGER CONNECTIONS	B1	1	2	3	4	5	5	5	5	5	5	5	5	5	5											
FS6 - REMOTE HEADSET JACK CONNECTIONS	B2	1	1	3	4	4	4	4	4	4	4	4	4	4	4											
FS7 - PICKUP KEY AND POLARITY GUARD CONNECTIONS	B3A*	-	-	-	4	5	5	7	8	8	8	8	8	13	14											
FS10 - ROTARY & TOUCH TONE DIAL CONNECTIONS FS12 - RINGER CIRCUIT	B3B	-	-	-	-	-	-	7	7	9	9	9	12	12	14											
FS8 - REMOTE HEADSET JACK CONNECTIONS FS9 - CMS ACCESS JACKS FS11 - CENTREX CONFERENCE KEY CIRCUIT FS13 - REMOTE JACKS FS14 - -48 TEST JACKS FS15 - CMS ACCESS JACKS OR NO. 4 ESS TTY JACKS FS16 - 2W ORDER WIRE INTERFACE CIRCUIT FS17 - 4W ORDER WIRE INTERFACE CIRCUIT FS18 - MAINTENANCE & COMMUNICATIONS HOLD KEY CIRCUIT	B4	-	-	-	4	5	6	7	7	7	10	10	10	10	10											
APP FIG. 1-12	C1	1	2	2	4	5	5	7	8	9	9	11	11	13	13											
APP FIG. 13-18	C2	-	-	-	4	5	6	6	8	8	8	8	8	8	8											
CIRCUIT NOTES	D1	1	2	3	4	5	6	7	8	9	10	10	12	13	13											
EQUIPMENT NOTES INFORMATION NOTES	D2	-	-	-	-	-	-	7	7	7	7	7	7	7	7											
SHEET NUMBER CANCELED ON DWG ISS 4B	F1																									
CAD 1 CAD 2	G1	1	2	3	4	5	6	6	6	6	6	6	6	6	6											
CAD 3-13	G2	-	-	3	4	5	5	5	5	5	5	5	5	5	5											
CAD 14-17	G3	-	-	-	4	5	6	7	7	7	10	10	10	13	13											
CAD 18,19	G4	-	-	-	4	5	6	7	7	7	10	10	10	13	13											
CAD 20,21,22,23,24,25	G5	-	-	-	-	5	6	7	7	7	10	10	10	10	10											

* SECTION B SHEETS WITH SUFFIX A WERE FORMERLY WITHOUT A SUFFIX LETTER.

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
BD 1 - 660 COMM PANEL KEY ACCESS DIAL LINES ONLY BD 2 - 660 COMM PANEL KEY ACCESS DIAL LINES & JACK SELECT WITH KEY ACCESS OF ORDER WIRES MULTI-KEY CONFERENCE BD 3 - 660 COMM PANEL KEY ACCESS DIAL LINES & RELAY SELECT WITH KEY ACCESS OF ORDER WIRES MULTI-KEY CONFERENCE DIAL LINES & ONE ORDER WIRE BD 4 - 660 COMM PANEL KEY ACCESS DIAL LINES & RELAY SELECT WITH BRIDGE CONFERENCE & KEY ACCESS OF ORDER WIRES	H1	-	-	-	-	-	6	6	6	6	6	6	6	6	6											

DWG ISSUE	CD ISSUE	DATE ISSUED	DRAWN	APPD
1	1	9-9-76	JLG DWR	RDT WGS RBH
2A	2A	9-12-77	C.R. JLG	RDT WGS WW
3B	2A APP 1B	9-12-77	C.R. JLG	RDT WGS WW
4B	3B	1-5-79	ADC WTB	FAS GJS JEB
5D	3B APP 1D	2-25-80	ZEN HWM	GJS FAS GB
6B	3B APP 2B	8-5-81	ADC HWM	GJS WJG GB
7D	4D	9-29-82	ADC HWM	GJS WJG CL
8D	4D APP 1D	3-1-83	SFL SFL	GJS WJG JDeC
9A	4D APP 2A	3-1-83	SFL SFL	GJS WJG JDeC
10B	4D APP 3B	9-23-83	ADC HWM	GJS WJG WD
11D	4D APP 4D	1-21-85	BAT	GJS WJG TMS
12B	4D APP 5B	12-85	BAT	GJS WJG TMS
13B	4D APP 6B	5-13-86		
14M	4D APP 7M	8-6-87		

SHEET INDEX NOTES

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.

SUPPORTING INFORMATION

CATEGORY	NO.
EQUIPMENT DRAWING	ED-3C660-30 ED-3C661-( ) ED-3C805-( ) ED-3C663-( ) ED-3C659-( )
DESCRIPTION INSTALLATION CONNECTIONS	028-349-101

ISSUE 14M

1N99

COMMON SYSTEMS

660
COMMUNICATION PANEL CIRCUIT

(2)

SD-3C292-01-A1
16 SHEETS

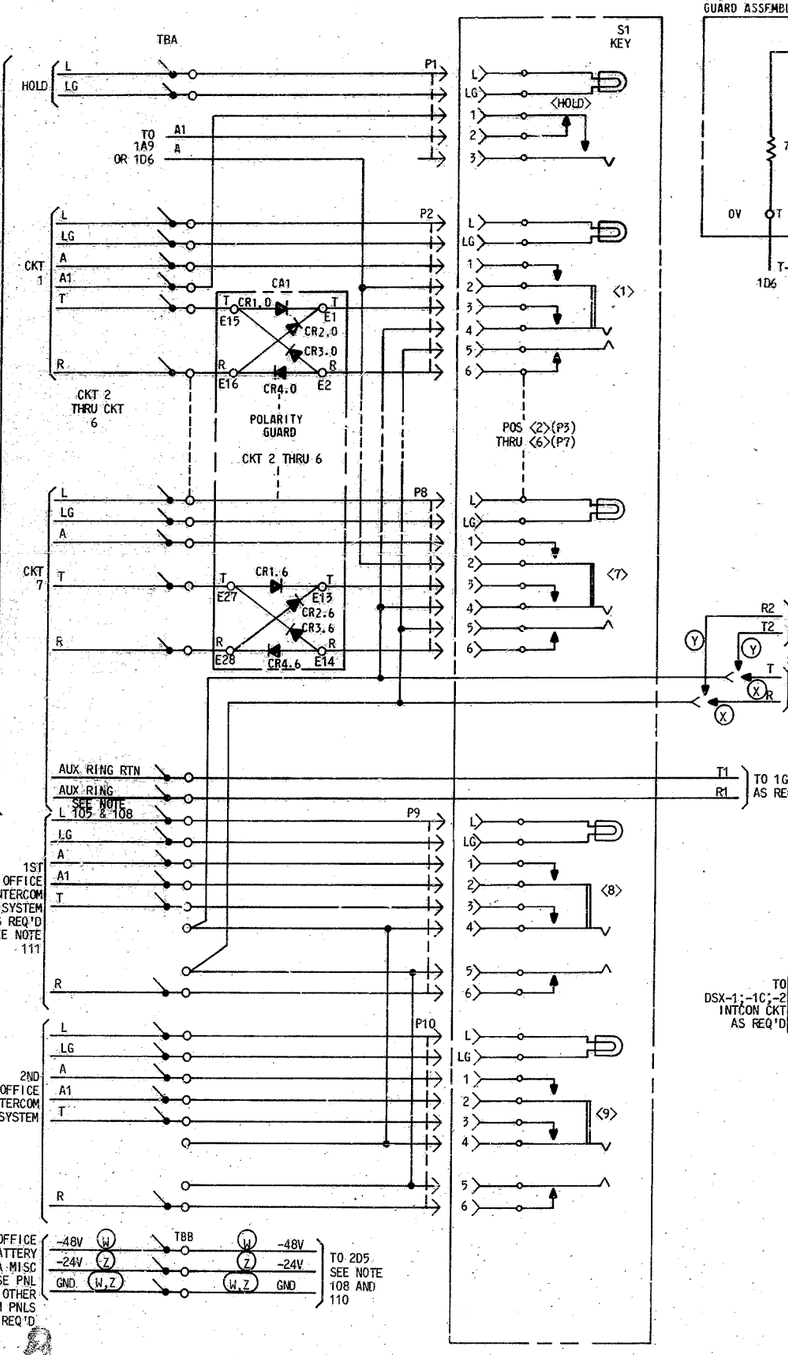
AT&T BELL LABORATORIES

SIZE 6S

PRINTED IN U.S.A.

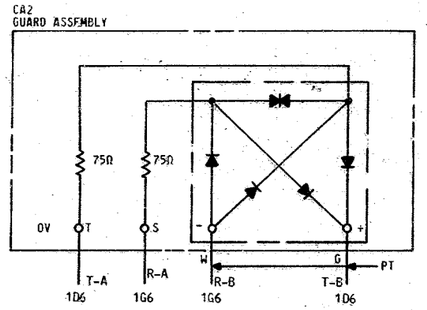
FS 1 ① ⑦ (MFR DISC)

PICKUP KEY AND POLARITY GUARD CONNECTIONS
(SEE NOTES 104 & 105)



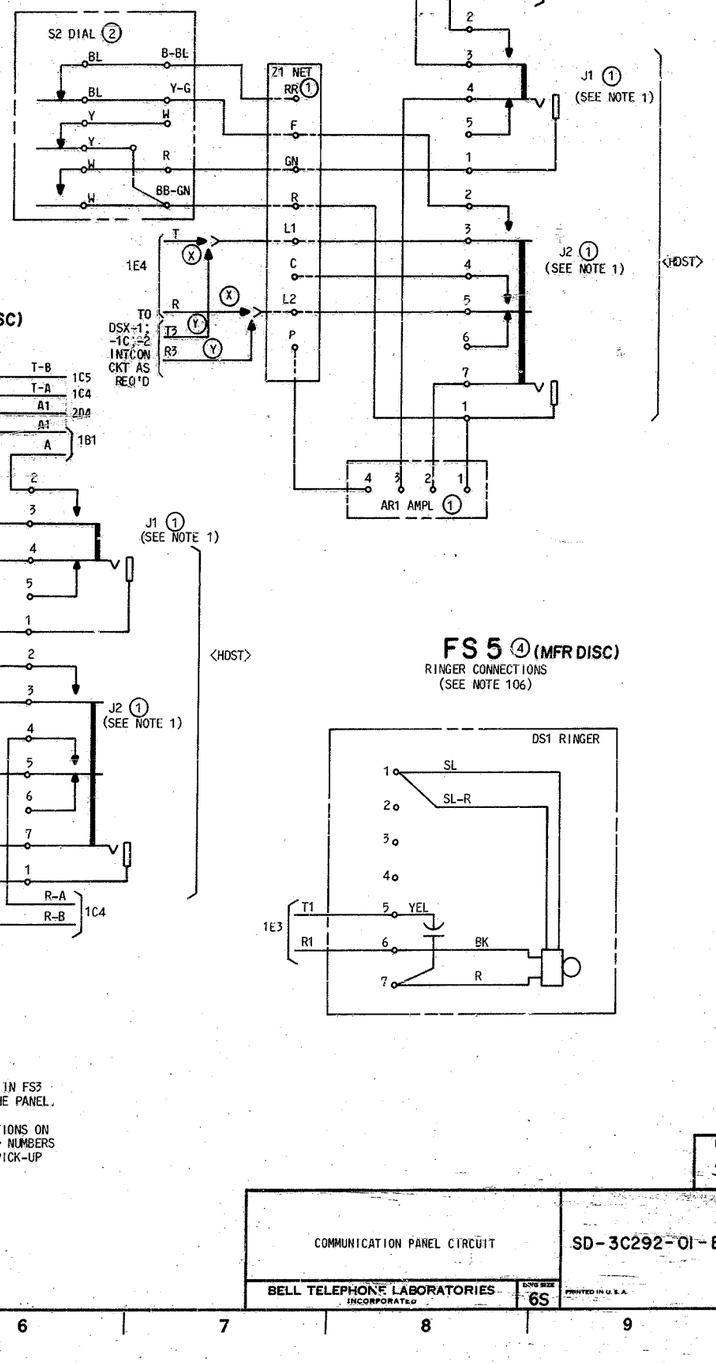
FS 2 ③ (MFR DISC)

POLARITY GUARD CONNECTIONS



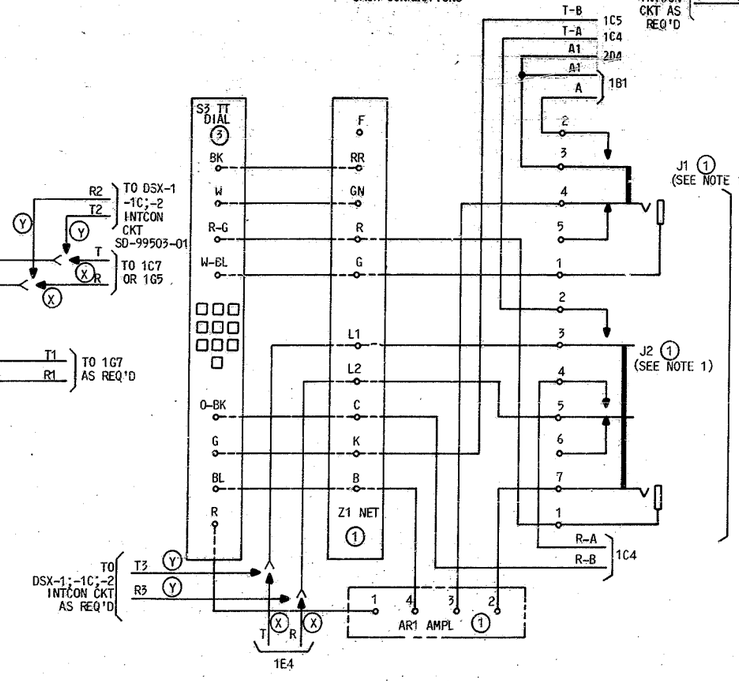
FS 3 ① ② (MFR DISC)

ROTARY DIAL & PANEL HEADSET JACK CONNECTIONS



FS 4 ① ③ (MFR DISC)

TOUCH TONE DIAL & PANEL HEADSET JACK CONNECTIONS



FS 5 ④ (MFR DISC)

RINGER CONNECTIONS
(SEE NOTE 106)

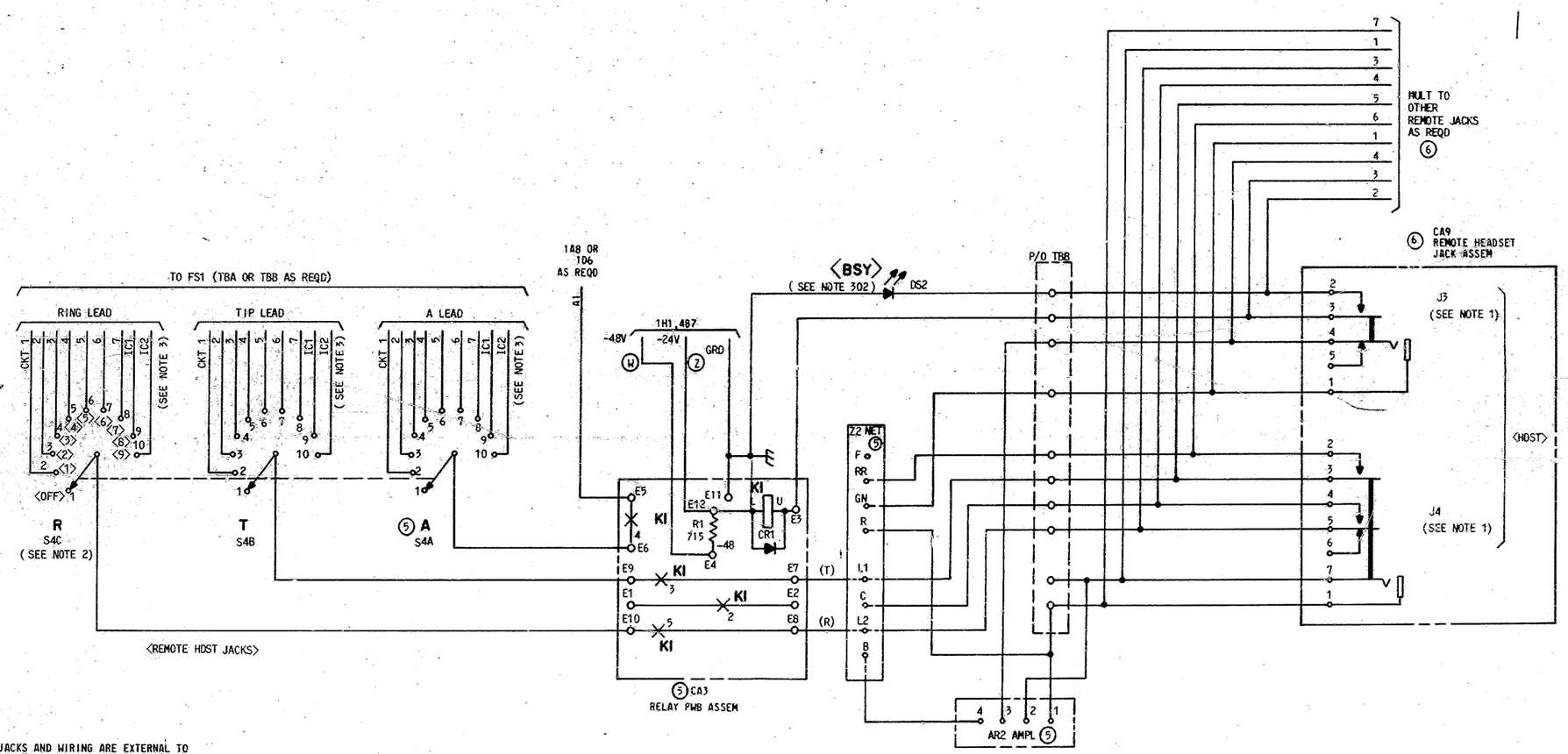
NOTES:

1. JACKS DESIGNATED J1 & J2 IN FS3 AND FS4 ARE MOUNTED ON THE PANEL.
2. THE ⟨ ⟩ INDICATE DESIGNATIONS ON THE FRONT PANEL. THE ⟨ ⟩ NUMBERS REFER TO THE RESPECTIVE PICK-UP KEY POSITION.

ISSUE 5D		
COMMUNICATION PANEL CIRCUIT		SD-3C292-01-BI
BELL TELEPHONE LABORATORIES INCORPORATED	SIZE 6S	PRINTED IN U.S.A.

FS 6 ⑤⑥ (MFR DISC)

REMOTE HEADSET JACK CONNECTIONS
(SEE NOTE 108)



NOTES:

1. J3 & J4 JACKS AND WIRING ARE EXTERNAL TO THE PANEL; THEY CAN BE REMOTELY MOUNTED ON AN EXISTING PANEL OR ARE PROVIDED MOUNTED ON COMPONENT ASSEMBLY CA 9.
2. THE < > INDICATE DESIGNATIONS ON THE FRONT PANEL. THE < > NUMBERS REFER TO THE RESPECTIVE PICK-UP KEY POSITION.
3. IC1 INDICATES INTERCOM CIRCUIT ONE.

ISSUE 4B

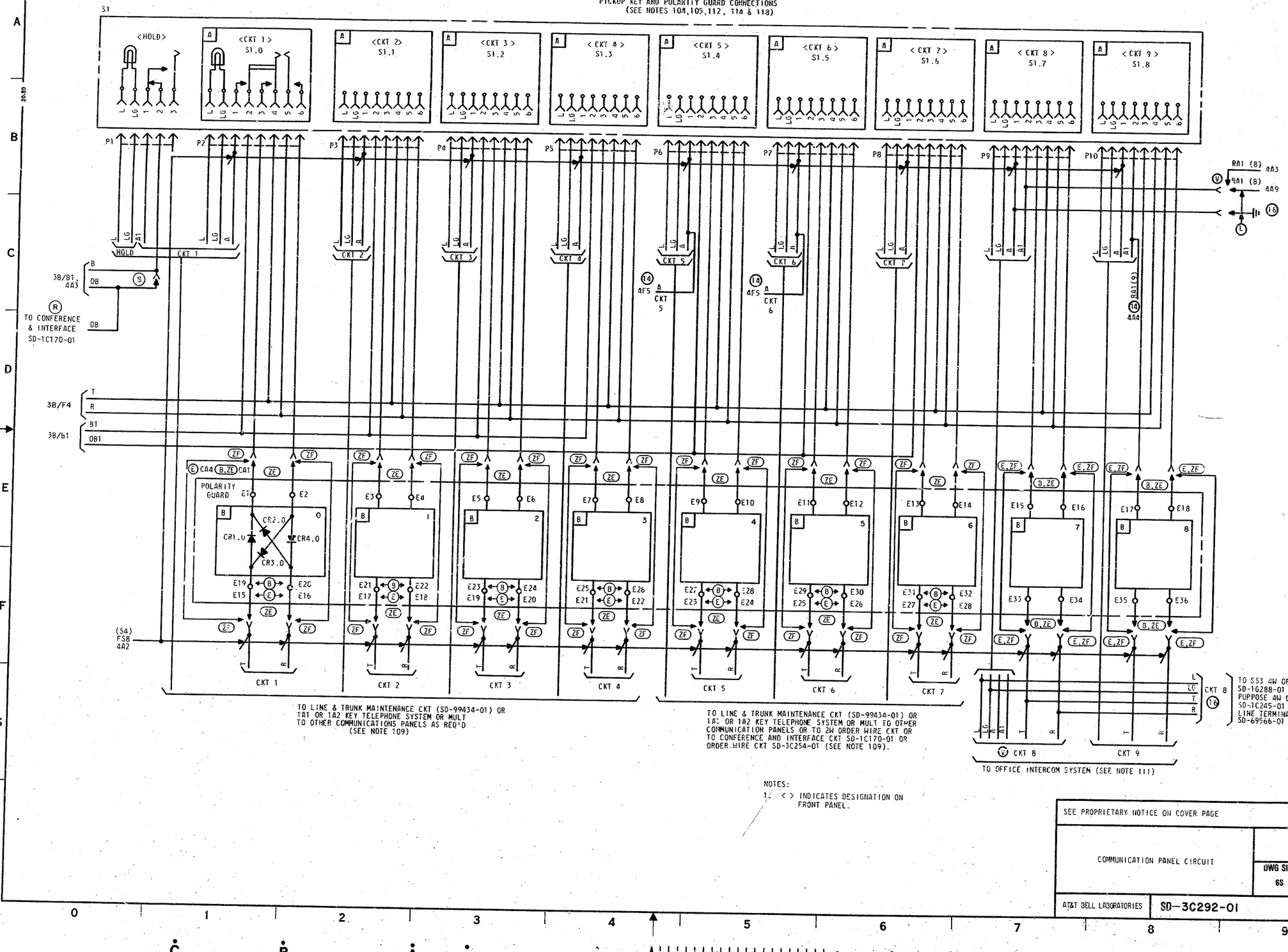
COMMUNICATION PANEL CIRCUIT	SD-3C292-01-B2
BELL TELEPHONE LABORATORIES INCORPORATED	DWG SIZE 6S

PRINTED IN U.S.A.

E-7481 (10-71)

P/O FS 7 (9)

PICKUP KEY AND POLARITY GUARD CONNECTIONS
(SEE NOTES 104,105,112, 114 & 118)



NOTES:

1. < > INDICATES DESIGNATION ON FRONT PANEL.

SEE PROPRIETARY NOTICE ON COVER PAGE

COMMUNICATION PANEL CIRCUIT	DWG SIZE 6S	ISSUE 14M
AT&T BELL LABORATORIES	SD-3C292-01	B3A

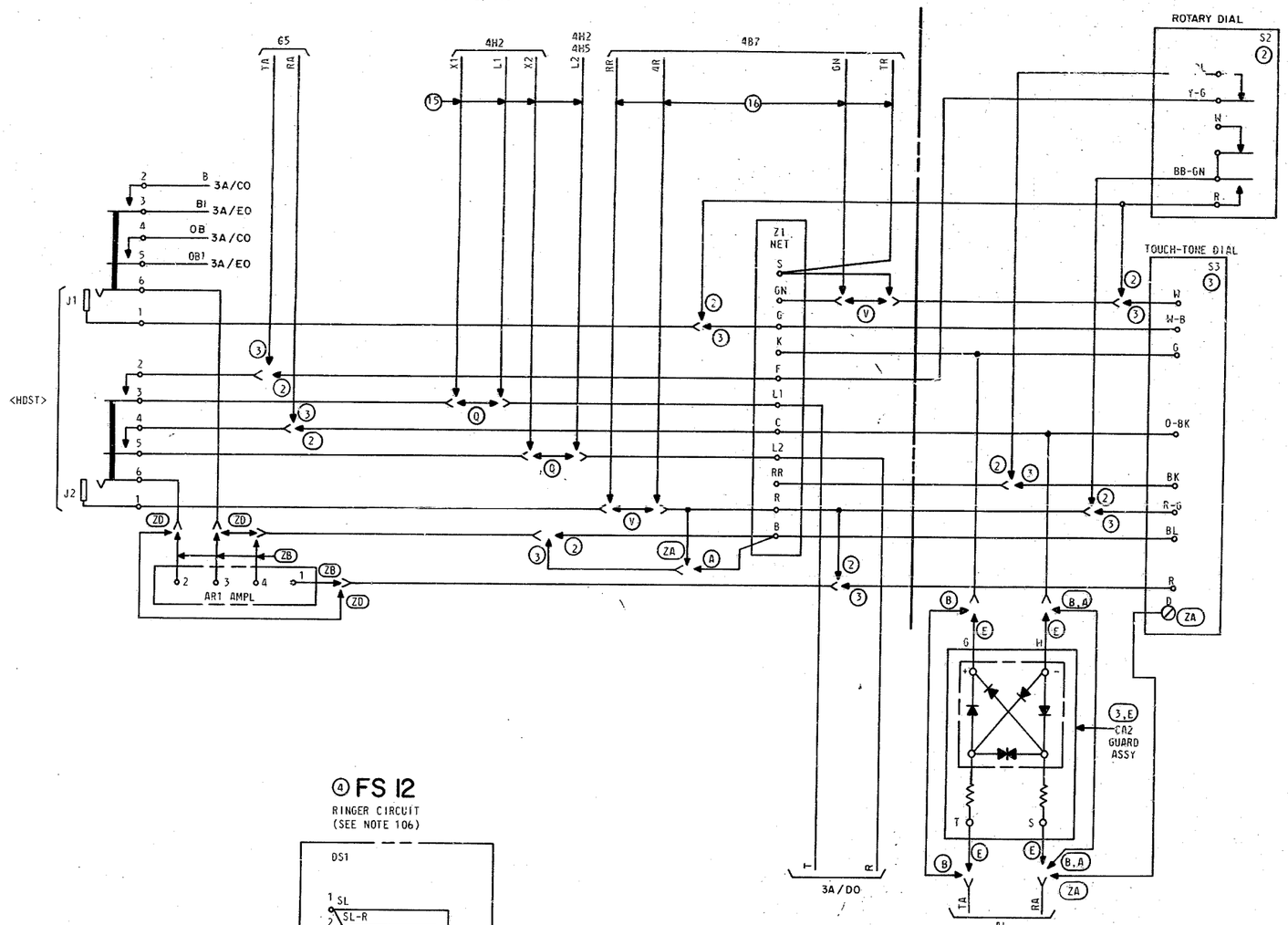
E-741 (3-81) PRINTED IN U.S.A.

P/O FS 7 (9)

PICKUP KEY AND POLARITY GUARD CONNECTIONS
(SEE NOTES 118, 119)

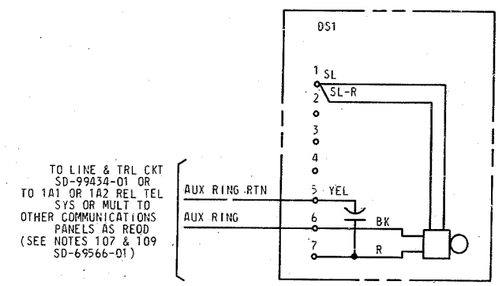
FS 10 (2,3)

DIAL



④ FS 12

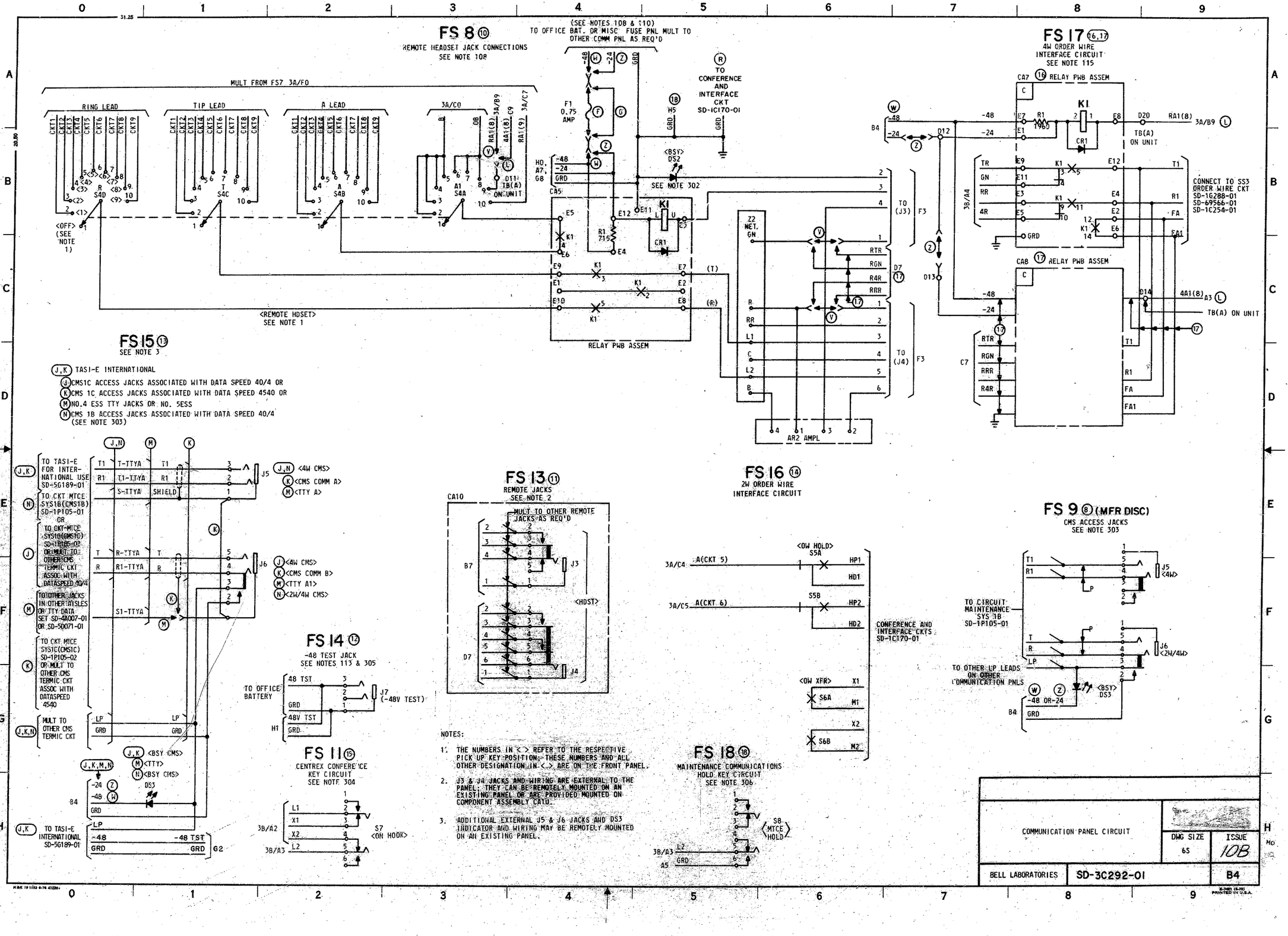
RINGER CIRCUIT
(SEE NOTE 106)



SEE PROPRIETARY NOTICE ON COVER PAGE

COMMUNICATION PANEL CIRCUIT	DWG SIZE	ISSUE
	6S	14M
AT&T BELL LABORATORIES	SD-3C292-01	B3B

E-7401 (7-83)
PRINTED IN U.S.A.



NOTES:

1. THE NUMBERS IN < > REFER TO THE RESPECTIVE PICK UP KEY POSITION. THESE NUMBERS AND ALL OTHER DESIGNATION IN < > ARE ON THE FRONT PANEL.
2. J3 & J4 JACKS AND WIRING ARE EXTERNAL TO THE PANEL. THEY CAN BE REMOTELY MOUNTED ON AN EXISTING PANEL OR ARE PROVIDED MOUNTED ON COMPONENT ASSEMBLY CA10.
3. ADDITIONAL EXTERNAL J5 & J6 JACKS AND DS3 INDICATOR AND WIRING MAY BE REMOTELY MOUNTED ON AN EXISTING PANEL.

COMMUNICATION PANEL CIRCUIT		DWG SIZE 6S	ISSUE 10B
BELL LABORATORIES	SD-3C292-01		B4

APP FIG. 1 ① (MFR DISC)

AMPLIFIER

DESIG	LOC	CODE
AR1	1D8,1G6	241B

CONNECTOR

DESIG	LOC	CODE
J1 (JACK)	1D6,1B8	234A
J2 (JACK)	1C9,1F6	411C
P1 (PLUG)	1A2	508G
P2 (PLUG)	1B2	508F
P3-P7(PLUG)	1C2	508F
P8 (PLUG)	1D2	508F
P9 (PLUG)	1F2	508H
P10(PLUG)	1G2	508H

KEY

DESIG	LOC	CODE
S1	1A2	647G5

NETWORK

DESIG	LOC	CODE
Z1	1B7,1F5	4228F

TERMINAL STRIP

DESIG	LOC	CODE
TBA	1A1	251B
TBB	1H1,2C7	298A

APP FIG. 2 ②

DIAL, ROTARY

DESIG	LOC	CODE
S2	1B6, 3B/A6	6EA-3

APP FIG. 3 ③

COMPONENT ASSEMBLY

DESIG	LOC	CODE
CA2	1A3,3B/E6	P-90D170

DIAL, TOUCH TONE

DESIG	LOC	CODE
S3	1D4,3B/C6	(A) ~~351JA~~, (ZA) 72H3A (SEE NOTE 120)

APP FIG. 4 ④

RINGER

DESIG	LOC	CODE
DS1	1F9, 3B/F2	E1C49

APP FIG. 5 ⑤ (MFR DISC)

COMPONENT ASSEMBLY

DESIG	LOC	CODE
CA3	2F5	ED-3C661-30, G1 OR G2

E/W

※ RELAY

DESIG	K1	
CODE	BF56	
OPTION		
	CONT ARR	LOC
6	-	-
5	EBM	2F4
4	EMB	2E4
3	EBM	2E4
2	EBM	2F5
1	-	-
COIL		2E5

※ RELAY NOT ADJUSTABLE. REPLACE WHEN THERE IS A MALFUNCTION.

DIODE

DESIG	LOC	CODE
CR1	2E5	533F

RESISTOR

DESIG	LOC	CODE
R1	2E5	KS-20289,L6C,715

AMPLIFIER

DESIG	LOC	CODE
AR2	2F6	241B

LIGHT EMITTING DIODE

DESIG	LOC	CODE
DS2(LED)	2D6	549E

NETWORK

DESIG	LOC	CODE
Z2	2E6	4228F

SWITCH, ROTARY

DESIG	LOC	CODE
S4A	2E3	KS-14464,L80
S4B	2E2	KS-14464,L80
S4C	2E1	KS-14464,L80

APP FIG. 6 ⑥ (MFR DISC)

COMPONENT ASSEMBLY

DESIG	LOC	CODE
CA9	2C9	ED-3C659-30, G1

E/W

CONNECTOR

DESIG	LOC	CODE
J3	2D9	234A
J4	2E9	411C

APP FIG. 7 ⑦ (MFR DISC)

COMPONENT ASSEMBLY

DESIG	LOC	CODE
CA1	1C1	ED-3C805-30, C1

E/W

DIODE

DESIG	LOC	CODE
(7) CR1.0-CR1.6 (7) CR2.0-CR2.6 (7) CR3.0-CR3.6 (7) CR4.0-CR4.6	1C1	KS-21765, L2

APP FIG. 8 ⑧ (MFR DISC)

CONNECTOR

DESIG	LOC	CODE
J5	4F9	241A
J6	4F9	241A

LIGHT EMITTING DIODE

DESIG	LOC	CODE
DS3	4G8	552B E/W 84120010B MTG ADAPTER & 47B LAMP SOCKET

APP FIG. 9 ⑨

AMPLIFIER

DESIG	LOC	CODE
AR1	3B/E1	241B

COMPONENT ASSEMBLY

DESIG	LOC	CODE
(E) CA4 (MFR DISC.)	3C1	~~ED-3C805-30,G1~~
(ZE) CA1	3A/E1	ED-2C638-( ),G1

E/W:

DIODE

DESIG	LOC	CODE
(9) CR1.0-CR1.8 (9) CR2.0-CR2.8 (9) CR3.0-CR3.8 (9) CR4.0-CR4.8	3A/E(1-8)	KS-21765, L2

CONNECTOR

DESIG	LOC	CODE
J1,J2	3B/C0,3B/D0	361C
P1	3A/B0	508G
(7) P2-P8	3A/B(1-6)	508F
(2) P9,P10	3A/B7	508H

KEY

DESIG	LOC	CODE
S1	3A/A0	647G5

NETWORK

DESIG	LOC	CODE
Z1	3B/B4	~~4228F~~ ~~4293F 0R~~ 4293N

APP FIG. 10

AMPLIFIER

DESIG	LOC	CODE
AR2	4D6	241B

COMPONENT ASSEMBLY

DESIG	LOC	CODE
CA5	4B4	ED-3C661-30, G2

E/W:

※ RELAY

DESIG	K1	
CODE	BF56	
OPTION		
	CONT ARR	LOC
6		
5	EBM	4C4
4	EMB	4C4
3	EBM	4C4
2	EBM	4C5
1		
COIL		4B5

※ RELAY NOT ADJUSTABLE. REPLACE WHEN THERE IS MALFUNCTION.

DIODE

DESIG	LOC	CODE
CR1	4C5	533F

RESISTOR

DESIG	LOC	CODE
R1	4C4	KS-20289,L6C, 715

FUSE

DESIG	LOC	CODE
(F) F1	4A4	70H

LIGHT EMITTING DIODE

DESIG	LOC	CODE
DS2	4B5	556E

NETWORK

DESIG	LOC	CODE
Z2	4B5	~~4228F~~ ~~4293F 0R~~ 4293N

SWITCH ROTARY

DESIG	LOC	CODE
S4	4B0-4B3	KS-14464,L98

APP FIG. 11

COMPONENT ASSEMBLY

DESIG	LOC	CODE
CA10	4E3	ED-3C659-30, G( )

E/W

CONNECTOR

DESIG	LOC	CODE
J3	4F4	234A
J4	4G4	361C

APP FIG. 12

CONNECTOR

DESIG	LOC	CODE
J7	4G3	238A

SEE PROPRIETARY NOTICE ON COVER PAGE

ISSUE 13B

COMMUNICATION PANEL CIRCUIT

SD-3C292-01-C1

AT&T BELL LABORATORIES

CAGE CODE 6S

PRINTED IN U.S.A.

E-7421 (10-71)

APP FIG. 13

CONNECTOR

DESIG	LOC	CODE
J5	4E1	238C
J6	4F1	241C

LIGHT EMITTING DIODE

DESIG	LOC	CODE
DS3	4F1	(H) 552B
		(Z) 552E

APP FIG. 14

SWITCH

DESIG	LOC	CODE
S5	4F6	KS-20869, L3
S6	4G6	KS-20869, L3

APP FIG. 15

SWITCH

DESIG	LOC	CODE
S7	4G2	547B E/W RED BUTTON

APP FIG.16 & 17

COMPONENT ASSEMBLY

DESIG	LOC	CODE
CA7,CA8	4A8,4C8	ED-2C565-( ), G1

E/W:

* RELAY

DESIG	CODE
K1	~~KS-21742, L3~~ LR13

3 o 4 / 5	4B8,4C8
6 o 7 / 8	
9 o 10 / 11	4B8,4C8
12 o 13 / 14	4B8,4C8
1 [ ] 2	4A8,4C8

* RELAY NOT ADJUSTABLE. REPLACE WHEN THERE IS A MALFUNCTION.

DIODE

DESIG	LOC	CODE
CR1	4B8,4C8	533F

RESISTOR

DESIG	LOC	CODE
R1	4A8,4C8	KS-20616,L1A, 1960

APP FIG. 18

SWITCH

DESIG	LOC	CODE
S8	4G1	547B E/W RED BUTTON

COMMUNICATION PANEL CIRCUIT		DWG SIZE 6S	ISSUE 80
BELL LABORATORIES	SD-3C292-01		C2

CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER
-48V	3/4A	-48V	SEE NOTE 108
-48V TST	1-1/3A	-48V	PANEL(SEE NOTE 113)
-24V	3/4A	-24V	SEE NOTE 108

102.

FEATURE OR OPTION				PROVIDE APP FIG	PROVIDE APP OR WRG	QUANTITY
COMMUNICATION PANEL				9	B	1 PER PNL
ROTARY DIAL				2		1 PER PNL AS REQ'D
TOUCH-TONE DIAL				3	ZA	
RINGER				4		AS REQ'D
2-WIRE ORDER WIRE	WITHOUT				S	AS REQ'D
	WITH			14	R	
4-WIRE ORDER WIRE	WITHOUT				V	AS REQ'D
	WITH	NO FUSE	-24V	16	Z,L	
			-48V		W,L	
		FUSE	-24V		Z,L,F	
			-48V		W,L,F	
CENTREX ON HOOK CONFERENCE KEY	WITHOUT				Q	AS REQ'D
	WITH			15		
MTCE COMM HOLD KEY				18	T	
-48V TEST JACK				12		AS REQ'D
CMS ACCESS JACKS		NO FUSE	-24V	13	Z	AS REQ'D
			-48V		W	
		FUSE	-24V		Z,F	
			-48V		W,F	
	DATA SPEED 4/40				J	
	DATA SPEED 4540				K	
TTY JACKS FOR 4ESS OR 5ESS					M	
REMOTE HEADSET JACK CONNECTION	WITHOUT 4-WIRE ORDER WIRE	NO FUSE	-24V	10	Z	AS REQ'D
			-48V		W	
		FUSE	-24V		Z,F	
			-48V		W,F	
	WITH 4-WIRE ORDER WIRE	NO FUSE	-24V	10, 17	Z,L	ONE PER APP FIG. 10 & 16
			-48V		W,L	
		FUSE	-24V		Z,F,L	
			-48V		W,F,L	
REMOTELY LOCATED HEADSET JACKS				11		AS REQ'D
TAS1-E REMOTE JACKS	DATA SPEED 4/40			11, 13	J	AS REQ'D
	DATA SPEED 4540				K	
WITH CONFERENCE POLARITY GUARD				9	ZE	AS REQ'D SEE NOTES 104 & 122
WITHOUT CONFERENCE POLARITY GUARD				9	ZF	

CIRCUIT NOTES:(CONT)

103.

RECORD OF APP FIGURES, WIRING & APPARATUS CHANGES							
CHANGED ON ISSUE	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT STD	A & M	MD	
3B	X,Y	X		X		Y	
	W,Z	W	110	W,Z			
4B	APP FIG. 1 & 7 OR 9	FIG.1 & 7		FIG.9		FIG.1 & 7	
	APP FIG. 5 OR 10	FIG.5		FIG.10		FIG.5	
	APP FIG. 6 OR 11	FIG.6		FIG.11		FIG.6	
	APP FIG. 12	NONE		FIG.12			
	APP FIG. 8 OR 13	FIG.8		FIG.13		FIG.8	
	APP FIG. 14	NONE		FIG.14			
	APP FIG. 15	NONE		FIG.15			
	APP FIG. 16	NONE		FIG.16			
	T,V	NONE		T,V			
	R,S	NONE		R,S			
	Q,N	NONE		Q,N			
	APP FIG. 17	NONE		FIG.17			
	APP FIG. 18	NONE		FIG.18			
5D	N,M	NONE		N,M			
	L	NONE	117	L			
6B	J,K,N	M		J,K		N	
7D	F,G	G		F		G	
	B,E	E		B		E	
9A	ZA	A	120	ZA		A	
12B	ZD	ZB	121	ZB,ZD			
13B	ZF	ZE	104 & 122	ZE,ZF			

CIRCUIT NOTES:(CONT)

104. THE PICKUP KEY COMES WIRED FOR A HOLD AND 7 POSITIONS THAT CAN BE CONFERENCED TOGETHER. IT IS RECOMMENDED THAT NO MORE THAN 3 LINES BE CONFERENCED TOGETHER AT ONE TIME.

105. POSITIONS 8 & 9 OF THE PICKUP KEY ARE FOR USE WITH THE OFFICE INTERCOM SYSTEMS AND THEY CANNOT BE CONFERENCED IN ANY WAY, WHEN ONE OF THESE KEYS IS OPERATED ALL OTHER KEYS ARE RELEASED.

106. THE RINGER(FS5 OR FS12) IS AVAILABLE ON AN OPTION BASIS. NORMALLY THE TEL SET ALARM WOULD BE CONNECTED TO THE OFFICE ALARM SYSTEM. INSURE THAT THE INTERNAL WIRING IS COMPLETED AS SHOWN.

107. WHEN FEATURES,SUCH AS LAMP INDICATION OF INCOMING CALL STATUS,AUDIBLE LINE SIGNALS OR ELECTRICAL HOLD ARE REQUIRED FOR ANY OF THE 7 LINES OF THE COMMUNICATIONS CIRCUIT,IT IS NECESSARY TO CONNECT THAT LINE TO A LINE CIRCUIT OF EITHER THE LINE AND TRUNK CIRCUIT FOR MAINTENANCE COMMUNICATIONS OR REPAIR SERVICE SD-99434-01 (FS17 OR FS40 OR EQUIVALENT) OR THE 1A1/1A2 KEY TELEPHONE SYSTEM.

WHEN ELECTRICAL HOLD IS USED FOR PBX OR CO LINES,KEY TELEPHONE SYSTEM CIRCUITS CANNOT BE MIXED WITH SD-99434-01 CIRCUITS ON THE SAME PICKUP KEY GROUP.

108. WHEN PANEL IS EQUIPPED WITH 4 WIRE INTERFACE AND REMOTE HEADSET CIRCUIT MULTIPLE UP TO 8 PANELS PER FUSE. WHEN PANEL IS EQUIPPED WITH 4 WIRE INTERFACE OR REMOTE HEADSET, BUT NOT BOTH, MULTIPLE UP TO 15 PANELS PER FUSE. REMOTE HEADSET CIRCUIT REQUIRES APPROXIMATELY 30 mA PER PANEL. 4 WIRE INTERFACE REQUIRES APPROXIMATELY 16 mA PER RELAY.

109. THE OPTIONAL RINGER AUX RING LEADS IN FS1 AND FS12 MAY BE CONNECTED AS SHOWN OR TO AN INDIVIDUAL INCOMING LINE BY STRAPPING TERMINALS A20 & B20 ON TBA CAD 1 OR TERMINALS C19 & C20 CAD 16 OR CAD 18 TO THE TIP AND RING TERMINALS RESPECTIVELY OF THE DESIRED LINE.

110. POWER MAY BE PROVIDED EITHER FROM -48V, USING OPTION (W) ,OR FROM -24V USING OPTION (Z).

111. WHEN CONNECTING AN INTERCOM LINE TO POSITIONS 8 OR 9, CARE MUST BE TAKEN TO INSURE THAT NEGATIVE BATTERY IS ON THE RING AND GROUND ON THE TIP.

112. POSITION 9 IS ONLY FOR USE WITH THE OFFICE INTERCOM SYSTEM. POSITION 8 MAY BE USED WITH EITHER THE OFFICE INTERCOM SYSTEM OR A 4 WIRE SERVICE.

113. FUSE -48V TEST JACK SEPARATE FROM COMMUNICATION CIRCUITS.

114. THE BATTERY SUPPLY ON THE TR LEADS SHALL BE -24 VOLTS.

115. DO NOT CONNECT OPTION (Z) LEADS TOGETHER WHEN OPERATING WITH OPTION (W) .

116. LAMP CONNECTIONS ARE FOR ILLUSTRATION ONLY WIRING MUST BE ARRANGED ON A LOCAL BASIS.

117. RELAY PWB ASSEMBLIES (16) & (17) PER FS17 REQUIRED FOR 4-WIRE ORDER WIRE MAY BE FURNISHED BUT NOT USED. WHEN 4-WIRE ORDER WIRE IS REQUIRED REPLACE WIRING OPTION (Y) WITH WIRING OPTION (L) .

118. POLARITY GUARD ASSEMBLY CA1 EQUIPPED WITH 7 SECTIONS, POLARITY GUARD ASSEMBLY CA2 AND ASSOCIATED WIRING ARE SHOWN AS OPTION (E). THIS IS REPLACED IN OPTION (B) BY WIRING AND A 9 SECTION CA1 GUARD ASSEMBLY.

119. TOUCH-TONE DIAL WIRING, OPTION (A) IS ASSOCIATED WITH DIAL 35Y3A AND OPTION (ZA) IS ASSOCIATED WITH DIAL 72H3A. ONLY OPTION (ZA) WIRING IS A CLASS A CHANGE.

120. APP FIG 5, OPTION (ZA) SUBSTITUTION OF 72H3A DIAL FOR OPTION (A) 35Y3A DIAL IS A CLASS D CHANGE NOT AN A CHANGE.

121. IF THERE IS CLIPPING OF THE TRANSMITTED SIGNAL WHEN INSTALLED WITH OPTION (ZB) , CHANGE TO OPTION (ZD) .

122. OPTION (ZE) PROVIDES A POLARITY GUARD WHICH MAKES ALL TR BIASES COMPATIBLE FOR NOTE 104 CONFERENCING. WITH OPTION (ZF) NO POLARITY GUARD IS PRESENT. WITH THIS OPTION CAREFUL INSTALLATION IS REQUIRED IF CONFERENCING AS IN NOTE 104 IS DESIRED.

COMMUNICATION PANEL CIRCUIT

DWG SIZE 6S | ISSUE 13B

AT&T BELL LABORATORIES | SD-3C292-01 | DI

EQUIPMENT NOTES:

INFORMATION NOTES:

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

302. THE LLJ DS2 INDICATES WHEN THE REMOTE JACKS ARE IN USE.

303. THE CMS ACCESS JACKS ARE MOUNTED IN THE UNUSED HOLES IN THE BLACK MOUNTING BLOCK. THE CMS BUSY LAMP IS ALSO MOUNTED IN THE MOUNTING BLOCK. WHENEVER THE CMS SYSTEM IS BEING USED, ON ANY PANEL WHERE IT APPEARS, THE BUSY LAMP WILL LIGHT.

304. THE CENTREX CONFERENCE KEY IS MOUNTED IN AN UNUSED HOLE IN THE BLACK MOUNTING BLOCK.

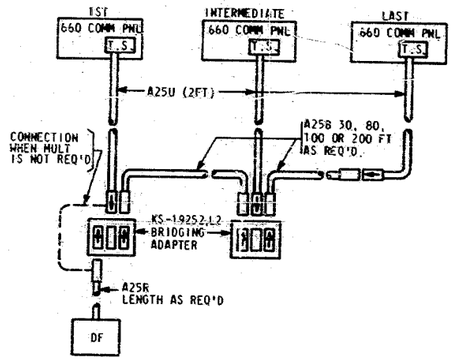
305. THE -48V TEST JACK IS MOUNTED IN AN UNUSED HOLE IN THE BLACK MOUNTING BLOCK.

306. THE MAINTENANCE COMMUNICATIONS HOLD KEY IS MOUNTED IN AN UNUSED HOLE IN THE BLACK MOUNTING BLOCK.

307. THE PICKUP KEYS ARE EQUIPPED WITH 51A LAMPS. THESE LAMPS ARE RATED TO PRODUCE AT LEAST 200 END-FOOT CANDLES AT 10 VOLTS WITH A 35 TO 45 MA LOAD.

308. IF A 10V LAMP SUPPLY IS NOT AVAILABLE USE A 278A PAGING ADAPTER TO CONVERT THE LAMP SOURCE. SUBSTITUTION OF 51B OR 52A LAMPS WILL RESULT IN OVERHEATING THE PICKUP KEY.

309. MULTIPLE CONNECTORIZED COMMUNICATION PANELS.



COMMUNICATION PANEL CIRCUIT		DWG SIZE 6S	ISSUE 7D
BELL LABORATORIES	SD-3C292-01		D2

CAD 1 (MFR DISC)

FOR APP FIG. 1,4,5 & 8

P/O TBA

CKT 1

A1 T R A L LG

B19 A1 A2 B1 B2 C1 C2 D1 D2

1 B-2 C-2 A-2 T R 1 2 A 2 L LG 4 5

TO P1 (FS1)

TO S4 (FS6)

TO GUARD ASSY 2 (CAD 3)

TO P2 (FS1)

TO J1 (FS3,4)

CKT 2

T R A L LG

A3 A4 B3 B4 C3 C4 D3 D4

B3 C3 A3 T R 1 2 L LG 4 5

TO S4 (FS6)

TO GUARD ASSY 2 (CAD 3)

TO P3 (FS1)

CKT 3 THRU CKT 6

A5,B5,C5,D5 THRU A12,B12,C12,D12

S4(FS6), P4-P7(FS1), AND GUARD ASSY 2 (CAD 3)

CKT 7

T R A L LG

A13 A14 B13 B14 C13 C14 D13 D14

B-8 C-8 A-8 T R 1 2 L LG 4 5

TO S4 (FS6)

TO GUARD ASSY 2 (CAD 3)

TO P8 (FS1)

R T

1AF

TO LINE & TRUNK MAINTENANCE CIRCUIT (SD-99434-01) OR 1A1 OR 1A2 KEY TELEPHONE SYSTEMS OR MULT TO OTHER COMMUNICATION PANELS AS REQUIRED

1H1

CKT 1

T R A A1 L LG

A15 A16 B15 B16 C15 C16 D15 D16

B-9 C-9 A-9 3 6 1 2 L LG 4 5

TO S4 (FS6)

TO P9 (FS1)

E5 TO K1 (FS6)

TO OFFICE INTERCOM SYSTEM AS REQD

CKT 2

T R A A1 L LG

A17 A18 B17 B18 C17 C18

B-10 C-10 A-10 3 6 1 2 L LG

TO S4 (FS6)

TO P10 (FS1)

T2 R2 T3 R3

D17 D18 D19 D20

4 5 T L1 R L2

TO Z1 (FS3 & 4)

A19 3 TO P1 (FS1)

TO MISC JK PANEL IN DSX BAY (WHEN REQD)

X Y

TO LINE & TRK CKT (SD-99434-01) OR 1A1 OR 1A2 KEY TEL SYS OR MULT TO OTHER COMMUNICATION PANELS AS REQD (SEE NOTE 109)

HOLD

L LG AUX RING RTN AUX RING

C19 C20 A20 B20

L LG TI RI 5 6

TO P1 (FS1)

TO DS1 (FS5)

P/O TBA

MULT ONLY TO OTHER REMOTE HEADSET JKS. ED-3C669-(),G1 OR CAD15 (DF) AS REQD, DO NOT MULT. TO ANOTHER 660 COMM. PANEL

CAD 2 (MFR DISC)

TO OFFICE BATTERY VIA MISC FUSE PANEL

GRD W,Z -48V W

A1 B1

W,Z GRD W -48V E11 E4

RELAY PWB ED-3C661-( )

TO J5 (FS6)

1 GN

2 BR

3 L1

4 C

5 L2

TO Z2 (FS6)

TO J4 (FS6)

TO REMOTE HEADSET JACKS ED-3C659-()G1 OR CAD 15 AS REQ'D

1 R

7 2

TO AR2 (FS6)

4 3

TO J5 (FS6)

2 TO DS2 (FS6)

3 E3

RELAY PWB ED-3C661-( )

MULT TO REMOTE HEADSET JKS ED-3C669-( ),G2, CAD 17 (DF), CAD 16 OR CAD 19 AS REQD. DO NOT MULT TO ANOTHER 66Q COMM PANEL

A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12

B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12

P

T1 R1 T R

A13 B13 A14 B14

5 4 5 4

TO (J5) FS9

TO (J6) FS9

TO CIRCUIT MAINTENANCE SYSTEM 1B SD-1P105-01

TO OFFICE BATT VIA MISC FUSE PNL SEE NOTE 110

-24V Z A15 Z -24V E12

RELAY PWB ED-3C661-( )

TO OTHER LP LEADS ON OTHER COMMUNICATION PANEL

LP B15 3 TO (J6) FS 9

TBB

ISSUE 6B

COMMUNICATION PANEL CIRCUIT

SD-3C292-01-G1

BELL TELEPHONE LABORATORIES INCORPORATED

DWG SIZE 6S

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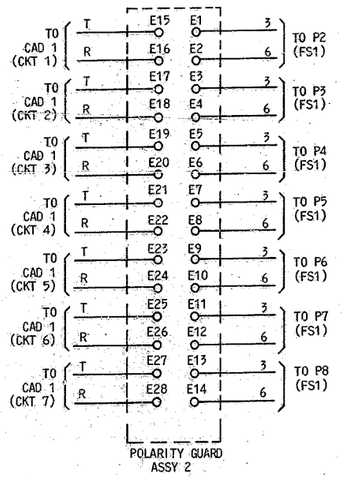
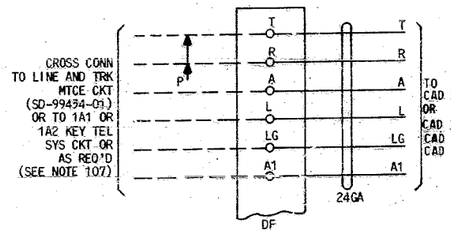
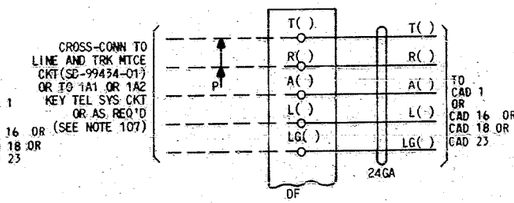
CAD 3 ⑦ (MFR DISC)
FOR APPARATUS FIGURES 1 & 7



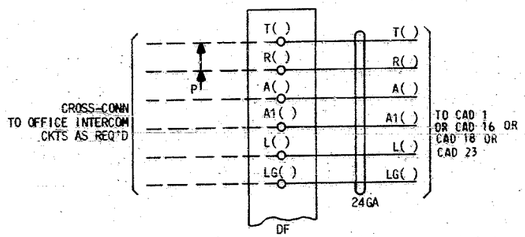
CAD 4
DISTRIBUTION FRAME CONNECTION FOR 1ST TELEPHONE LINE



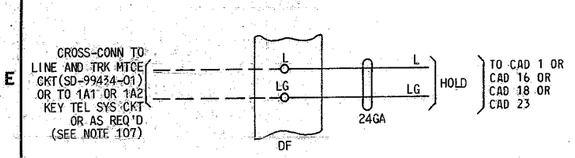
CAD 5
DISTRIBUTION FRAME CONNECTION FOR 2ND THRU 7TH TELEPHONE LINES



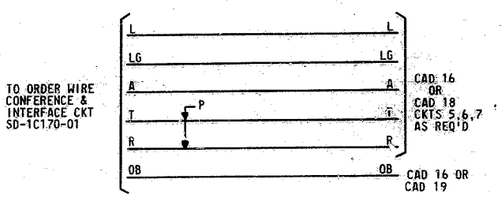
CAD 6
DISTRIBUTION FRAME CONNECTION FOR 1ST OR 2ND OFFICE INTERCOMMUNICATION LINE



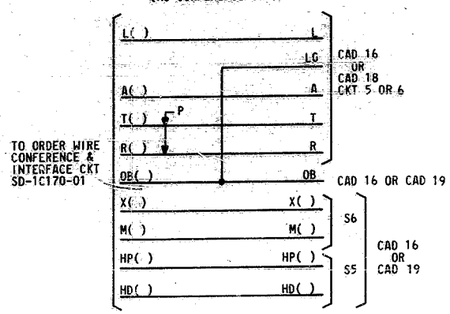
CAD 7
DISTRIBUTION FRAME CONNECTION FOR HOLD CIRCUIT



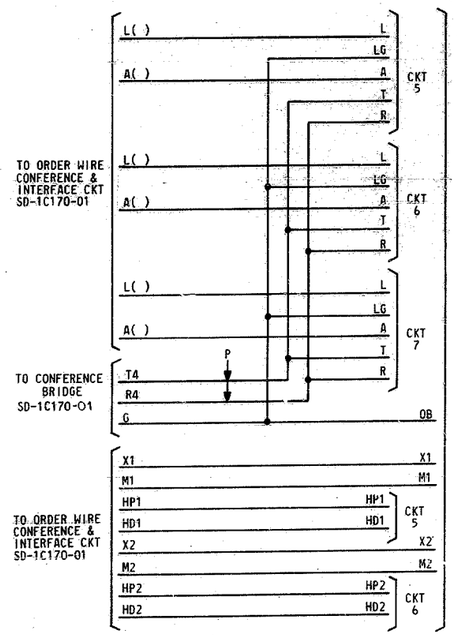
CAD 8
FOR SINGLE CONNECTION FOR T1/OS OR T1C ORDER WIRE



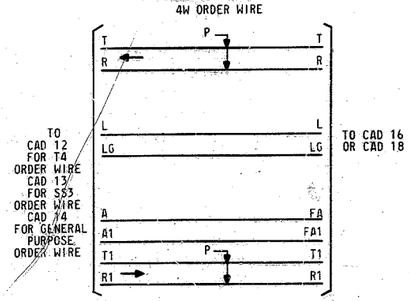
CAD 9
MULTI-ACCESS OW PICKUP (NO CONFERENCE CKT)



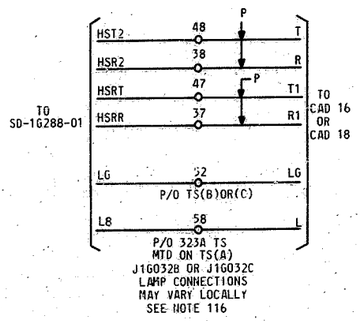
CAD 10
OW WITH CONFERENCE BRIDGE



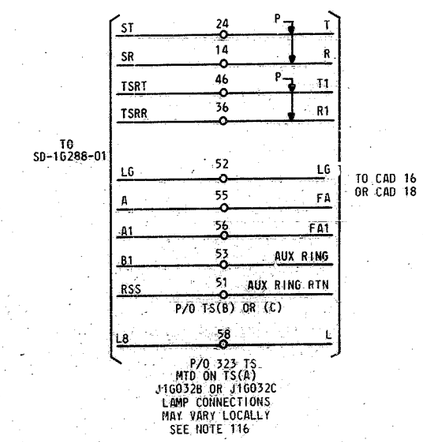
CAD 11 (MFR DISC)
4W ORDER WIRE



CAD 12
T4 ORDER WIRE



CAD 13
SS3 ORDER WIRE



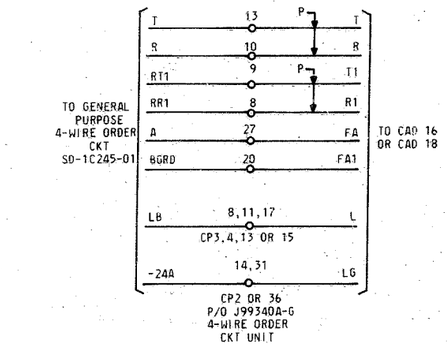
COMMUNICATION PANEL CIRCUIT

DWG SIZE	ISSUE
6S	5D

BELL LABORATORIES | SD-3C292-01 | G2

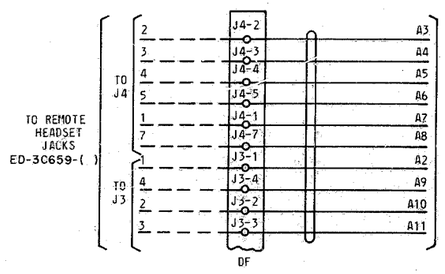
CAD 14

GENERAL PURPOSE
4-WIRE ORDER WIRE



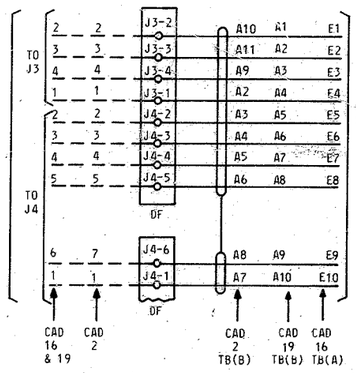
CAD 15 (MFR DISC.)

APP FIG. 6
DISTRIBUTION FRAME CONNECTION
FOR REMOTE HEADSET JACKS



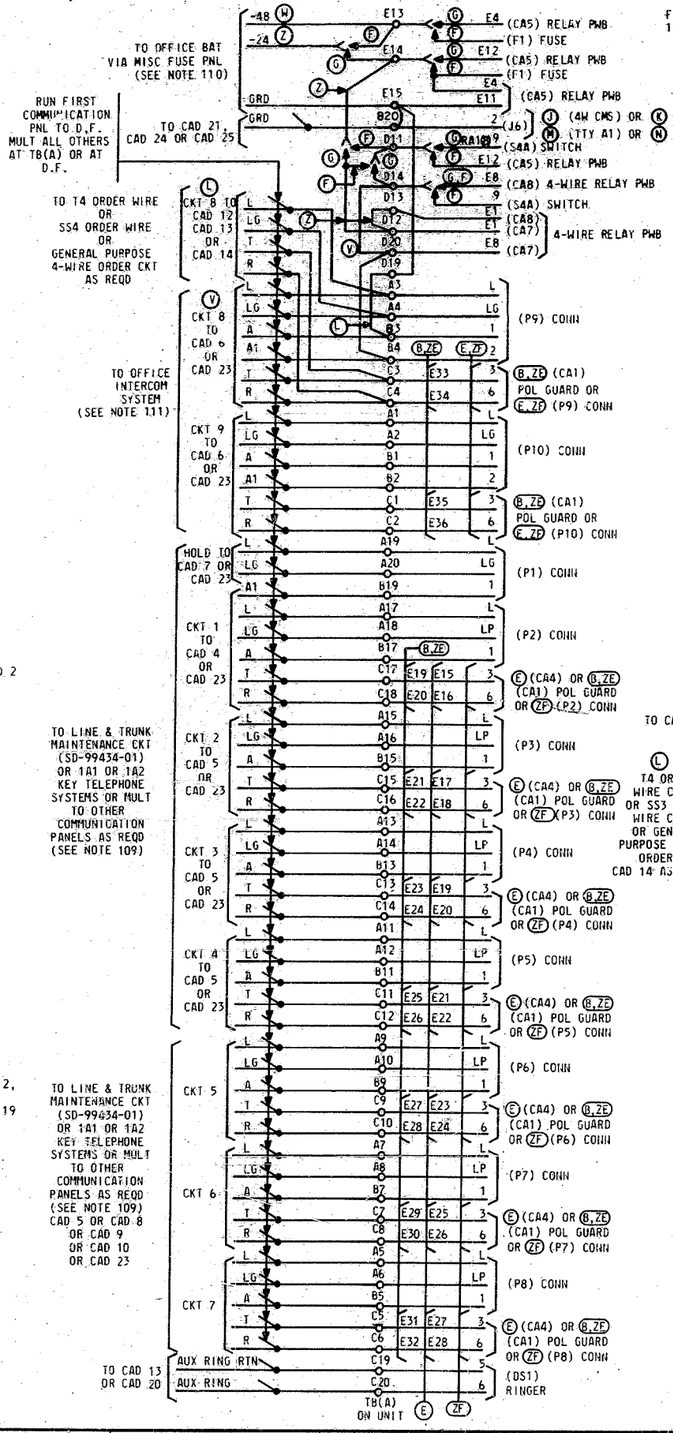
CAD 17

APP FIG. 11
DISTRIBUTION FRAME CONNECTION
FOR REMOTE HEADSET JACKS



CAD 16

FOR APP FIGS. 4,9,10,11,12, 13,14,15,16,17,18
SEE NOTE 307



SEE PROPRIETARY NOTICE ON COVER PAGE			
COMMUNICATION PANEL CIRCUIT		DWG SIZE 6S	ISSUE 13B
AT&T BELL LABORATORIES	SD-3C292-01		G3

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CAD 18

FOR APP FIGS. 4,9,10,15 TO 18
(SEE NOTE 307)

TO OFFICE BAT. VIA MISC FUSE PNL (SEE NOTE 110)

-48 (W) A13 (G) E4 (CA5)RELAY PWB
-24 (Z) (F) (F) (F1)FUSE
(G) A14 (G) E12 (CA5)RELAY PWB
(Z) (F) (F1)FUSE
E4
GRD A15 E11 (CA5)RELAY PWB

P/O TB(B)

TO CAD 21, CAD 24 OR CAD 25: GRD B20 2 (J)(4W CMS) OR (K) (CMS COMM B) OR (J6) (M)(TTY A1) OR (N) (2W/4W CMS)

(F) D11 (G) RA1(8) 9 (S4A)SWITCH
(G) (F) (F) E12 (CA5)RELAY PWB
(G) D14 (G,F) E8 (CA8)4-WIRE RELAY PWB
(F) 9 (S4A)SWITCH
D13 E1 (CA8)
D12 E1 (CA7) 4-WIRE RELAY PWB
D20 E8 (CA7)
D19

RUN FIRST COMMUNICATION PANEL TO D.F. MULT ALL OTHERS AT TB(A) OR AT D.F.

TO T4 ORDER WIRE OR SS4 ORDER WIRE OR GENERAL PURPOSE 4-WIRE ORDER CKT AS REQD

(L) CKT 8 TO CAD 12 CAD 13 OR CAD 14: L, LG, T, R
(V) CKT 8 TO CAD 6 OR CAD 23: L, LG, A, A1, T, R
CKT 9 TO CAD 6 OR CAD 23: L, LG, A, A1, T, R
HOLD TO CAD 7 OR CAD 23: L, LG, A1
CKT 1 TO CAD 4 OR CAD 23: L, LG, A, T, R
CKT 2 TO CAD 5 OR CAD 23: L, A, T, R
CKT 3 TO CAD 5 OR CAD 25: L, LG, A, T, R
CKT 4 TO CAD 5 OR CAD 23: L, LG, A, T, R

A3 L
A4 LG (P9) CONN
B3 1
B4 (B,ZE) (E,ZF) 2
C3 E33 3 (B,ZE) (CA1) POL GUARD OR (E,ZF) (P9) CONN
C4 E34 6
A1 L
A2 LG (P10) CONN
B1 1
B2 2
C1 E35 3 (B,ZE) (CA1) POL GUARD OR (E,ZF) (P10) CONN
C2 E36 6
A19 L
A20 LP (P1) CONN
B19 1
A17 L
A18 LG (P2) CONN
B17 (B,ZE) 1
C17 E19 E15 3 (E)(CA4) OR (B,ZE) (CA1) POL GUARD OR (ZF)(P2) CONN
C18 E20 E16 6
A15 L
A16 LP (P3) CONN
B15 1
C15 E21 E17 3 (E)(CA4) OR (B,ZE) (CA1) POL GUARD OR (ZF)(P3) CONN
C16 E22 E18 6
A13 L
A14 LG (P4) CONN
B13 1
C13 E23 E19 3 (E)(CA4) OR (B,ZE) (CA1) POL GUARD OR (ZF)(P4) CONN
C14 E24 E20 6
A11 L
A12 LG (P5) CONN
B11 1
C11 E25 E21 3 (E)(CA4) OR (B,ZE) (CA1) POL GUARD OR (ZF)(P5) CONN
C12 E26 E22 6

P/O TB(A) ON UNIT (E) (ZF)

TO LINE & TRUNK MAINTENANCE CKT (SD-99434-01) OR 1A1 OR 1A2 KEY TELEPHONE SYSTEM OR MULT TO OTHER COMMUNICATION PANELS AS REQD (SEE NOTE 109)

TO OFFICE INTERCOM SYSTEM (SEE NOTE 111)

RUN FIRST COMMUNICATION PANEL TO D.F. MULT ALL OTHERS TO TB(A) OR AT D.F.

TO LINE & TRUNK MAINTENANCE CKT (SD-99434-01) OR 1A1 OR 1A2 KEY TELEPHONE SYSTEM OR MULT TO OTHER COMMUNICATION PANELS AS REQD (SEE NOTE 109) OR CAD 9 OR CAD 10 OR CAD 23

CKT 5: L, LG, A, T, R
CKT 6: L, LG, A, T, R
CKT 7: L, LG, A, T, R

A9 L
A10 LG (P6) CONN
B9 1
C9 E27 E23 3 (E)(CA4) OR (B,ZE) (CA1) POL GUARD OR (ZF) (P6) CONN
C10 E28 E24 6
A7 L
A8 LG (P7) CONN
B7 1
C7 E29 E25 3 (E)(CA4) OR (B,ZE) (CA1) POL GUARD OR (ZF)(P7) CONN
C8 E30 E26 6
A5 L
A6 LG (P8) CONN
B5 1
C5 E31 E27 3 (E)(CA4) OR (B,ZE) (CA1) POL GUARD OR (ZF)(P8) CONN
C6 E32 E28 6
C19 5
AUX RING RTN
C20 6 (DS1) RINGER
AUX RING
(B,ZE) (E) (ZF)

TO CAD 13 OR CAD 20

B18 2 (P2)
B16 2 (P3)
B14 2 (P4)
B12 2 (P5)
B1 3 (J1)
B10 2 (P6)
B8 2 (P7)
B6 2 (P8)
OB1 5 (J1)
5 (P10)
D1 5 (P9)
5 (P8)
5 (P7)
D2 5 (P6)
5 (P5)
5 (P4)
D3 5 (P3)
5 (P2)
D4 R L2 (Z1)
4 (P2)
D8 4 (P3)
4 (P4)
4 (P5)
D7 4 (P6)
4 (P7)
4 (P8)
D6 4 (P9)
4 (P10)
D5 T L1 (Z1)
B 2-5 (S4A)
D9 B 2 (P1)
B 2 (J1)
(S) OB 6-8 (S4A)
D10 OB 4 (J1)

(R) TO CAD 8,9,10 OB

(L) TO T4 ORDER WIRE CAD 12 OR SS3 ORDER WIRE CAD 13 OR GENERAL PURPOSE 4-WIRE ORDER CKT CAD 14 AS REQD

T1 D15 E12
R1 D16 E4
FA D17 E2
FA1 D18 E6
(CA7) 4-WIRE RELAY PWB

P/O TB(A) ON UNIT

CAD 19

FOR APP FIGS 11,12,13 AND 14
MULT ONLY TO OTHER REMOTE HEADSET JACKS ED-3C659-( ),G2
CAD 2 OR CAD 17(DF) AS REQD.
DO NOT MULT TO ANOTHER 660 COMM PANEL

TO REMOTE HEADSET JACKS ED-3C659-() G2 OR ED-2C670-( ) OR TO CAD 17 AS REQD

(J3): 2, 3, 4, 1
(J4): 5, 6, 1

A1 1 (BSK) DS2
A2 E3 RELAY BD (CA5)
A3 3 (AR2) AMPL
A4 GN (Z2) NET OR E9 RELAY BOARD (CA 8)
A5 RR
A6 L1
A7 C (Z2) NET
A8 L2
A9 2
A10 R (AR2) AMPL
E3 (Z2) NET
RELAY BOARD (CA 8)

HP1 B1
HD1 B2
HP2 B3 (S5) OW HOLD
HD2 B4
X1 B5
M1 B6
X2 B7 (S6) OW XFR
M2 B8

TO OFFICE BAT VIA MISC FUSE PNL (SEE NOTE 113)
-48
GRD
-48 A12 3 J7 (-48V TEST)
TO CAD 25 GRD A11 1

T1 T-TTYA T1 (K) B9 3 (J,N) (CMS 4W)OR (K)(CMS COMM A)OR (M)(TTY A)
R1 R-TTYA R1 B10 2 (J5)
S-TTYA S1 B11 1
(J,N) TO CAD 21 OR (K) TO CAD 24 OR CAD 25 OR (M) OR CAD 22: R-TTYA T (K) B12 5
R R1-TTYA R (K) B13 4 (K)(CMS COMM B)OR (M)(TTY A1)OR (N) (CMS 2W/4W)
S1-TTYA B14 1 (J6)
LP LP B15 3
(J,N) (M) (K)

TB(B) ON UNIT

SEE PROPRIETARY NOTICE ON COVER PAGE

COMMUNICATION PANEL CIRCUIT

DWG SIZE	ISSUE
6S	13B

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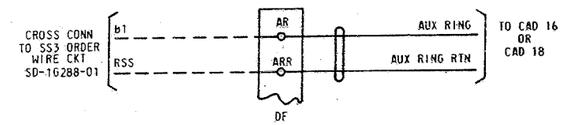
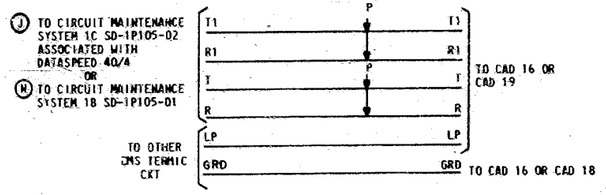
CAD 20

DISTRIBUTION FRAME CONNECTION FOR AUX RING TO SSS ORDER WIRE



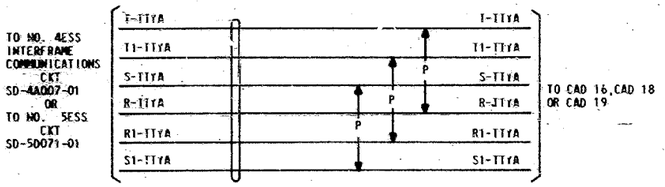
CAD 21

CIRCUIT MAINTENANCE SYSTEM 1B & 1C (CMS1B & 1C) ASSOCIATED WITH DATASPEED 40/4



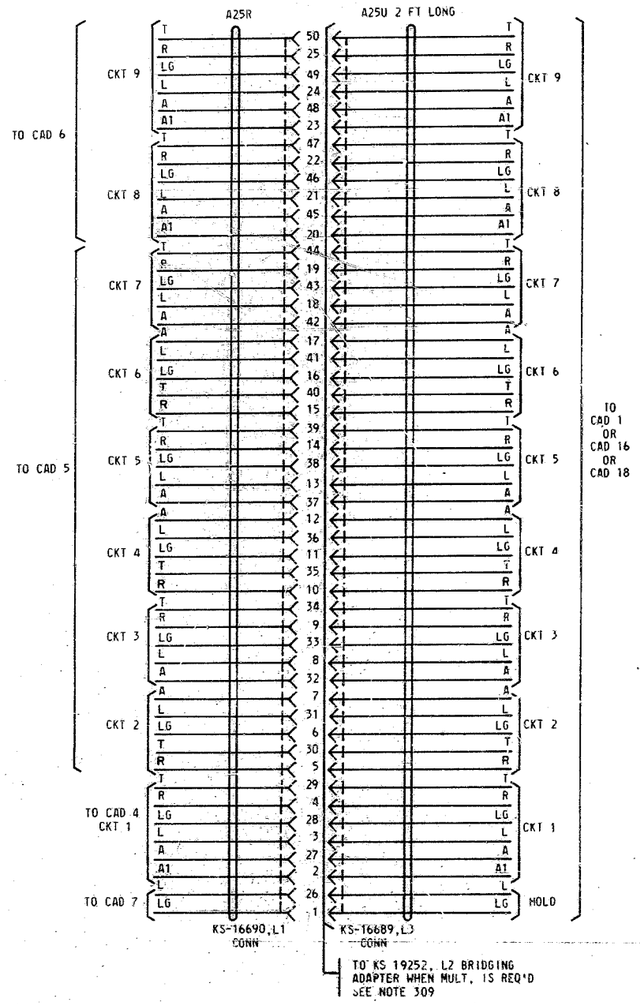
(M) CAD 22

NO. 4ESS OR NO. 5ESS TTY JACKS



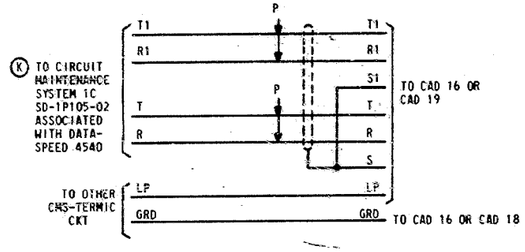
CAD 23

CONNECTORIZED CONNECTION



CAD 24

CIRCUIT MAINTENANCE SYSTEM (CMS 1C) ASSOCIATED WITH DATASPEED 4540

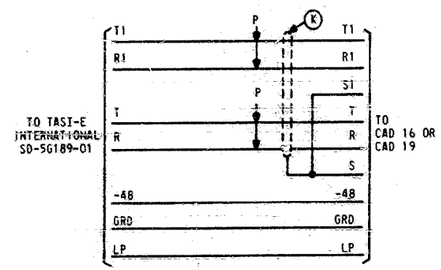


CAD 25

CIRCUIT MAINTENANCE SYSTEM TASI-E INTERNATIONAL

(J) ASSOCIATED WITH DATASPEED 40/4

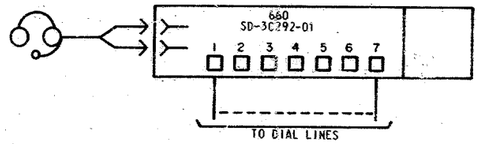
(K) ASSOCIATED WITH DATASPEED 4540



COMMUNICATION PANEL CIRCUIT			
		DWG SIZE: 6S	ISSUE: 10B
BELL LABORATORIES	SD-3C292-01		G5

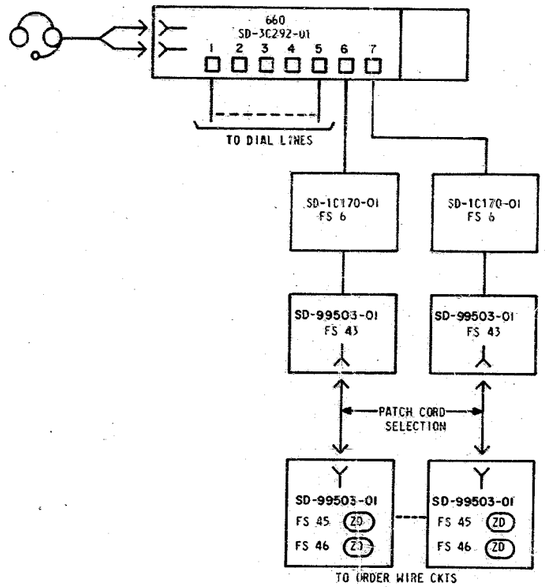
BD 1

660 COMM PANEL
KEY ACCESS DIAL LINES ONLY



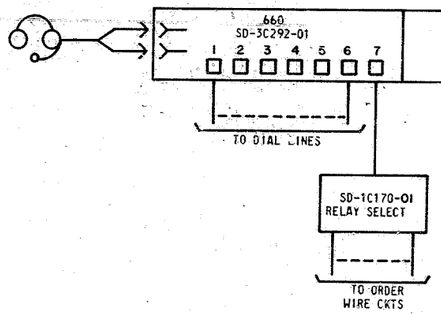
BD 2

660 COMM PANEL
KEY ACCESS DIAL LINES AND
JACK SELECT WITH KEY ACCESS OF
ORDER WIRES
MULTI-KEY CONFERENCE



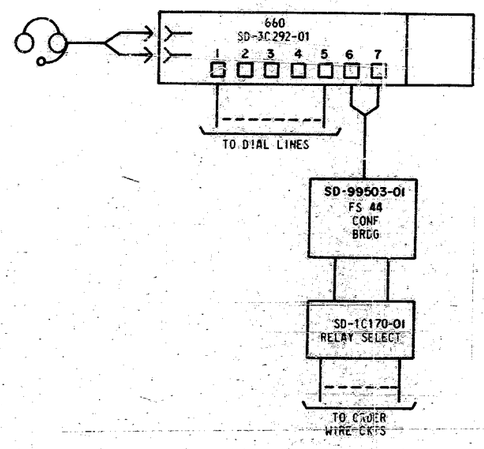
BD 3

660 COMM PANEL
KEY ACCESS DIAL LINES &
RELAY SELECT WITH KEY ACCESS
OF ORDER WIRES
MULTI-KEY CONFERENCE DIAL
LINES & ONE ORDER WIRE



BD 4

660 COMM PANEL
KEY ACCESS DIAL LINES &
RELAY SELECT WITH BRIDGE CONFERENCE
& KEY ACCESS OF ORDER WIRES



COMMUNICATION PANEL CIRCUIT		DWG SIZE 6S	ISSUE 6B
BELL LABORATORIES	SD-3C292-01		H1