

REV	DATE	BY	REASON
1	7-29-55		
2D	11-16-55		
3D	1-27-57		
4D	9-24-57		

342A PLUG
344 JACK
197FU SWITCH
197FF SWITCH
197FP SWITCH

CIRCUIT NOTES:

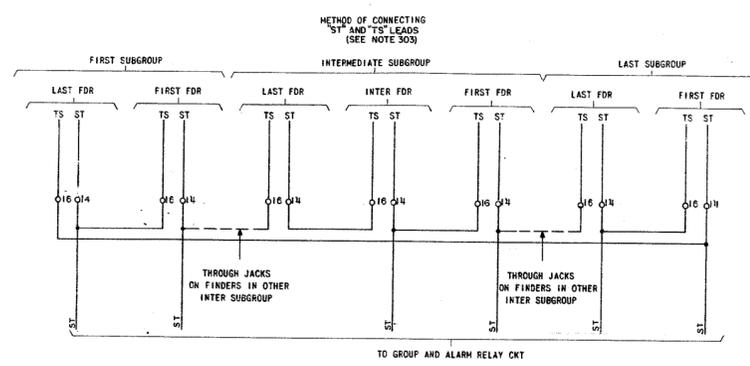
DESIG	AMP	POTENTIAL FUSED	NO. OF FINDERS IN GROUP	ONE PER
-3	48V SIG	20	2 FIGS. 2 OR 16 IN SAME SUB GROUP	
3	48V SIG	30	3 FIGS. 2 OR 16 IN SAME SUB GROUP	

109. RECORD OF FIGURES, WIRING, AND APPARATUS CHANGES

CHANGES REQUESTED ON ISS	IF JOB WAS NOT SPECIFIED	THIS WAS NOT FULFILL	SEE NOTE	USE IN CIRCUIT
NO.	FIG.	NO.	FIG.	NO.
4D	V OR N	104	K, M	
5D	K OR M	104	K, M	
7D	K OR M	104	K, M	
10D	G	106	G	

110. LEAD "ST" CONNECTS TO TERMINAL 14 SWITCH NO. 2.

FIG. 101



102. LEADS "C", "D", AND "E" ARE FOR ASM ONLY.

103. (A & M ONLY)

FEATURE OR OPTION	PROVIDE	ASSOC CAD NO.
WITH RESTRICTED SERVICE BY FINDER LEVELS	14 Y 1 PER FIG. 2	25
WITHOUT RESTRICTED SERVICE	Z 1 PER FIG. 2	24
FOR MIXED COIN AND NON-COIN GROUP WITH POSTPAY COIN TRUNK OPERATION BY FINDER LEVELS	Y 1 PER FIG. 2	25
FOR UNMIXED COIN GROUP	Z 1 PER FIG. 2	24
WITH MESSAGE RATE AUXILIARY LINE CKTS.	N 1 PER FIG. 2	24
WITH MESSAGE RATE TRUNK OPERATION OR WITH MESSAGE RATE AUXILIARY LINE CIRCUITS	Z 1 PER FIG. 2	24
WITH PREPAY COIN LINES AND LONG LINE EQUIPMENT	15 Y 1 PER FIG. 2	34

105. PROVIDE OPTIONAL APPARATUS, WIRING, AND NORMAL POST SPRING TERMINAL STRAPPING IN ACCORDANCE WITH THE FOLLOWING TABLE:

FIG.	APP & WIRING	NORMAL POST SPRINGS WHICH SHALL OPERATE	GROUND ON LEAD	RES	"RS" OR "EC"	SEE FOOT NOTE	TERMINAL STRAPPING AND LEAD DESIGNATIONS (SEE NOTE 107)
3	X	RIGHT LEFT RIGHT & LEFT	DIRECT RES DIRECT RES	NONE NONE	YES NONE	(A) RS-1340, L1 3000Ω	TO FIRST SEL OR SEL REP RS A O5 O3 O7
4	X	RIGHT LEFT RIGHT & LEFT	DIRECT RES DIRECT RES	NONE NONE	YES NONE	(A) RS-1340, L1 3000Ω	TO FIRST SEL OR SEL REP RS A O5 O3 O7
5	X	RIGHT LEFT RIGHT & LEFT	DIRECT RES DIRECT RES	NONE NONE	YES NONE	(A) RS-1340, L1 3000Ω	TO FIRST SEL OR SEL REP RS A O5 O3 O7
6	X	RIGHT LEFT RIGHT & LEFT	DIRECT RES DIRECT RES	NONE NONE	YES NONE	(A) RS-1340, L1 3000Ω	TO FIRST SEL OR SEL REP RS A O5 O3 O7
7	Y, Q	LEFT	DIRECT	NONE	YES (4)		"RS" LEAD TO POSTPAY COIN TRUNK OR TO SEL REP
8	X	RIGHT LEFT RIGHT & LEFT	DIRECT RES DIRECT RES	NONE NONE	YES (6) YES (6)	(A) RS-1340, L1 3000Ω	TO FIRST SEL OR SEL REP RS A O5 O3 O7
9	X	RIGHT LEFT RIGHT & LEFT	DIRECT RES DIRECT RES	NONE NONE	YES NONE	(A) RS-1340, L1 3000Ω	TO FIRST SEL OR SEL REP RS A O5 O3 O7
10	Z	NONE	RES	NONE	NONE		TO FIRST SEL OR SEL REP RS A O5 O3 O7
11	Z	NONE	DIRECT	NONE	NONE		TO FIRST SEL OR SEL REP RS A O5 O3 O7
12	X	RIGHT LEFT RIGHT & LEFT	RES DIRECT RES DIRECT	YES NONE	YES (7) YES (7)	(A) RS-1340, L1 3000Ω	TO FIRST SEL OR SEL REP RS A O5 O3 O7
13	Y, T	LEFT	DIRECT	NONE	YES		TO FIRST SEL OR SEL REP RS A O5 O3 O7
14 (A & M ONLY)	Y	LEFT	NONE	NONE	YES		TO SEL OR POSTPAY COIN TRUNK EC O5 O3 O7
15	Y	LEFT	NONE	NONE	NONE		TO PREPAY COIN TRUNK EC O5 O3 O7

106. CONTACT PROTECTION

NO.	NET CODE	RESISTANCE	CAPACITY	REMARKS
1	178A	150	1.0	(A)
2	*			(B)

* THE (A) NETWORK CONSISTS OF 2-5420 CAPACITORS 1.0UF EACH AND 1-KS13490, L2 RESISTOR 150 OHMS.
107. STRAPPING TO BE PROVIDED ON ORDER.

104.

FEATURE OR OPTION	PROVIDE	ASSOC CAD NO.
LINE OR TRUNK FINDER		
WITH POSTPAY COIN TRUNK OR WITH ONE CLASS OF SERVICE TONE BY FINDER LEVELS AND WITH OR WITHOUT AUXILIARY POSTPAY COIN LINES	X, FIG. 8	11
WITH RESTRICTED SERVICE BY FINDER LEVELS	Y, Q	12
WITHOUT RESTRICTED SERVICE	Z	10
WITH SINGLE PARTY MESSAGE RATE TRUNK OPERATION AND ONE CLASS OF SERVICE TONE BY FINDER LEVELS	Y, W	2
WITH RESTRICTED SERVICE BY FINDER LEVELS	Y, W	6
WITH RESTRICTED SERVICE BY FINDER LEVELS	X, FIG. 9	14
WITH RESTRICTED SERVICE BY FINDER LEVELS	X, FIG. 10	14
WITH RESTRICTED SERVICE BY FINDER LEVELS	X, FIG. 8	4
WITH RESTRICTED SERVICE BY FINDER LEVELS	X, FIG. 9	4
WITH RESTRICTED SERVICE BY FINDER LEVELS OR POSTPAY COIN TRUNK OPERATION	Y, W	3
WITHOUT RESTRICTED SERVICE	X, FIG. 5	13
WITH OR WITHOUT AUXILIARY POSTPAY COIN LINES	Y, R	8
WITH ONE CLASS OF SERVICE TONE BY FINDER LEVELS	Z, FIG. 10	9
WITH ONE CLASS OF SERVICE TONE ON ALL LEVELS	Z, FIG. 11	9
WITHOUT CLASS OF SERVICE TONE	Y, S	4
WITH RESTRICTED SERVICE BY FINDER LEVELS	Y, S	10
WITH POST PAY COIN TRUNK	Y, W	5
WITHOUT RESTRICTED SERVICE OR POSTPAY COIN TRUNK OPERATION	Z, Z	2
TRUNK FINDER	Y, W	29
FOR REGULAR AND TROUBLE INTERCEPTING SERVICE WHEN Y OPTION IS NOT REQUIRED	Z	29
LINE FINDER	M	2
WHEN MAXIMUM BUST LINE SLEEVE POTENTIAL DOES NOT EXCEED -2.4 VOLTS	M	
-4.3 VOLTS	K	
	Z, FIG. 2	

- TWO TYPES OF TONE TO OPERATOR ARE AVAILABLE. WHEN DIRECT GROUND ON THE "A" LEAD PROVIDES CONTINUOUS TONE, RESISTANCE GROUND PROVIDES INTERRUPTED TONE OR VICE VERSA DEPENDING UPON THE ARRANGEMENT OF THE OPERATOR OFFICE TRUNK. ABSENCE OF GROUND RESULTS IN NO TONE TO OPERATOR.
- WHEN COIN AND NON COIN LINES ARE SERVED BY THE SAME FINDER WITH A POSTPAY COIN TRUNK, GROUND ON THE "RS" OR "EC" LEAD ENABLES THE TRUNK FOR LEVELS ON WHICH THE COIN LINES APPEAR.
- GROUND ON THE "RS" OR "EC" LEAD TO THE SELECTOR SERIES ACCESS TO CERTAIN SELECTOR LEVELS FROM LINE FINDER LEVELS WHERE NORMAL POST SPRINGS ARE ADJUSTED TO PROVIDE GROUND.
- WHEN NORMAL POST SPRINGS DO NOT OPERATE, THERE WILL BE FULL ACCESS TO ALL SELECTOR LEVELS, NO TONE TO OPERATOR, AND NO ENGAGEMENT OF POST PAY COIN TRUNK.
- WHEN AUXILIARY POSTPAY COIN LINES ARE USED WITHOUT POSTPAY COIN TRUNKS.
- WHEN POSTPAY COIN TRUNKS ARE USED.
- AT LEAST ONE SET OF NORMAL POST SPRINGS SHALL OPERATE ON EACH LEVEL HAVING LINE CIRCUITS CONNECTED THERE TO.
- LEFT NORMAL POST SPRINGS ARE TO OPERATE ON THOSE LEVELS TO WHICH LONG LINE CIRCUITS ARE CONNECTED.

108. OPTIONS USED

FIGS.	APP OR WIRING
1	101
2	Y
3	X
4	N
5	V
6	U
7	S
8	S
9	R
10	Q
11	N
12	N
13	M
14	K
15	J
16	G

WORKING LIMITS (SEE NOTE 301):
FINDER BANK TERMINAL TO HOLDING GROUND
MAX BUST SLEEVE POTENTIAL
FIG. 2
-2.4V
-4.3V

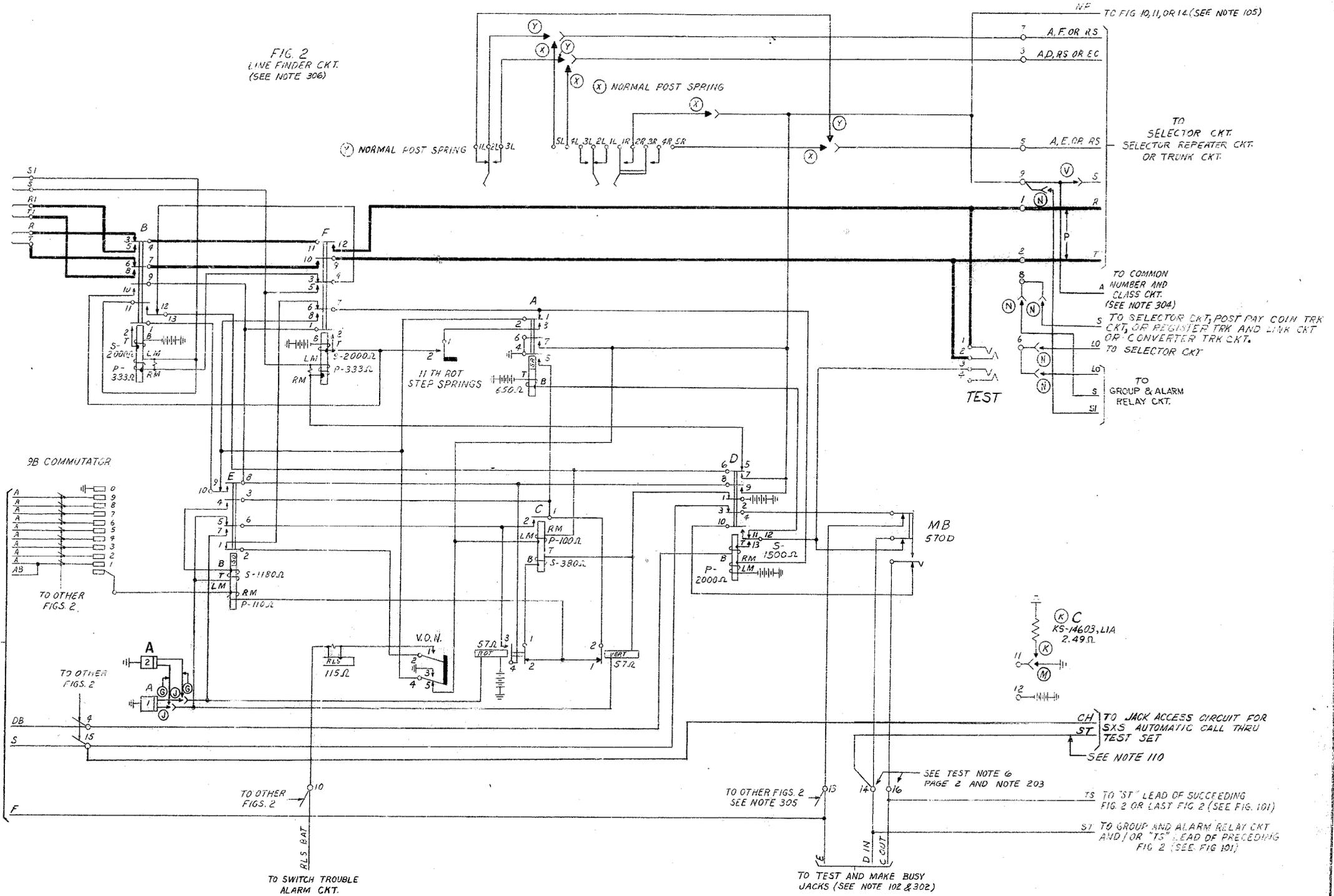
- INFORMATION NOTES:
- USE VOLTAGE LIMIT AS MEASURED ON BUSY FINDER SLEEVE LEAD WITH ANY STANDARD VOLTMETER OF AT LEAST 1000Ω PER VOLT.
 - WHEN THIS FINDER IS INSTALLED IN SHELF UNITS EQUIPPED WITH TEST AND MAKE BUSY JACKS, IT MAY BE MADE BUSY EITHER BY OPERATING THE (MB) KEY OR BY INSERTING A PLUG IN THE TEST AND MAKE BUSY JACKS. IF THE FINDER IS TESTED FROM THE TEST AND MAKE BUSY JACKS, THE MB KEY SHOULD BE UNOPERATED.
 - A SUBGROUP CONSISTS OF FINDERS HAVING THE FOLLOWING DESIGNATIONS:
IN A 20 FINDER GROUP THERE ARE TWO FINDERS PER SUBGROUP NUMBERED 1, 11, 2, 12, ETC., AND CONNECTED AS SHOWN IN FIG. 101 WITH POSITIONS WIRED AS SHOWN FOR FIRST AND LAST SUBGROUP.
IN A 30 FINDER GROUP THERE ARE THREE FINDERS PER SUBGROUP NUMBERED 1, 11, 21, 2, 12, 22, ETC AND CONNECTED AS SHOWN IN FIG. 101 WITH POSITIONS WIRED AS SHOWN FOR INTERMEDIATE SUBGROUP.
 - THE "A" LEAD IS FOR USE IN AUTOMATIC TICKETING OR AHA OFFICES WHEN CLASS INDICATION IS REQUIRED FROM LINE FINDER.
 - WHEN THIS FINDER IS INSTALLED IN SHELF UNITS EQUIPPED WITH TEST AND MAKE BUSY JACKS, THIS MULTIPLE STRAP IS NOT REQUIRED.
 - WITH "K" OPTION THE GROUND WITHIN THE SWITCH IN FIG. 2 IS SUPPLIED THROUGH THE (C) RESISTOR. WITH "M" OPTION ALL GROUNDS ARE DIRECT GROUNDS AS SHOWN.

200 POINT LINE OR TRUNK FINDER
SD-33013-01-1

BELL TELEPHONE LABORATORIES
INCORPORATED

ISSUE 10D

FIG. 2
LINE FINDER CKT.
(SEE NOTE 306)



WF TO FIG 10, 11, OR 14 (SEE NOTE 105)

TO SELECTOR CKT.
SELECTOR REPEATER CKT.
OR TRUNK CKT.

TO COMMON
NUMBER AND
CLASS CKT.
(SEE NOTE 304)
TO SELECTOR CKT, POST PAY COIN TRK
CKT, OR REGISTER TRK AND LINK CKT
OR 'C' CONVERTER TRK CKT.
TO SELECTOR CKT

TO GROUP & ALARM
RELAY CKT.

TEST

9B COMMUTATOR

TO OTHER
FIGS. 2

TO GROUP AND
ALARM RELAY CKT.

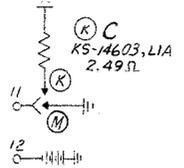
TO OTHER
FIGS. 2

TO OTHER
FIGS. 2

TO SWITCH TROUBLE
ALARM CKT.

TO OTHER FIGS 2
SEE NOTE 305

TO TEST AND MAKE BUSY
JACKS (SEE NOTE 102 & 302)



TO JACK ACCESS CIRCUIT FOR
SXS AUTOMATIC CALL THRU
TEST SET
SEE NOTE 110

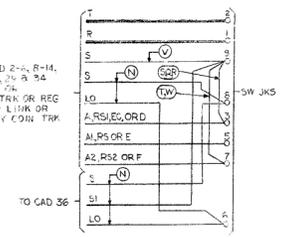
SEE TEST NOTE 6
PAGE 2 AND NOTE 203

TS TO 'ST' LEAD OF SUCCEEDING
FIG 2 OR LAST FIG 2 (SEE FIG. 101)

ST TO GROUP AND ALARM RELAY CKT
AND/OR 'TS' LEAD OF PRECEDING
FIG 2 (SEE FIG 101)

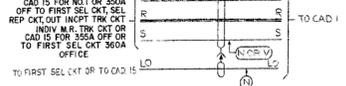
CAD 1

(FOR FIGS. 2-14)
LINE FINDERS OF TRUNK FINDERS
NO. 1, 350A, 355A, 360A OR 35-E-97
SEE NOTE 202 (MFR DISC)



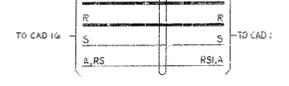
CAD 2

(FOR FIG. 2 WITH "Y" OPTION)
FOR TRUNK FINDERS OR LINE FINDERS IN NO. 1, 350A, 355A OR 360A OFFICE
SEE NOTE 204



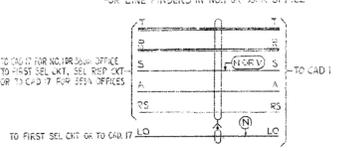
CAD 3

(FOR FIG. 2 WITH "Y" OPTION & FIG. 13 WITH "W" OPTION)
FOR LINE FINDERS IN NO. 1 OR 350A OFFICE



CAD 4

(FOR FIG. 2 WITH "Y" OPTION & FIG. 13) OR
(FOR FIG. 2 WITH "Y" OPTION & FIG. 13) OR
(FOR FIG. 2 WITH "Y" OPTION & FIG. 13) OR
FOR LINE FINDERS IN 355A OFFICES
(FOR FIG. 2 WITH "Y" OPTION & FIG. 13 WITH "T" OPTION)
FOR LINE FINDERS IN NO. 1 OR 350A OFFICE



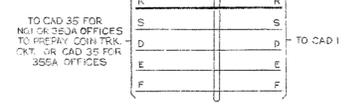
CAD 5

(FOR FIG. 2 WITH "Y" OPTION & FIG. 13 WITH "W" OPTION)
FOR LINE FINDERS IN 350A OFFICE



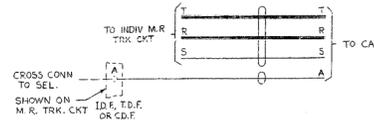
CAD 34 (A&M ONLY)

(FOR FIG. 2 WITH "Y" OPTION & FIG. 15)



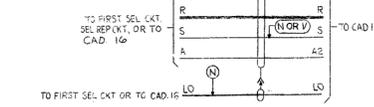
CAD 6

(FOR FIG. 2 WITH "Y" OPTION & FIG. 13 WITH "W" OPTION)
FOR LINE FINDERS IN NO. 1, 350A, OR 355A OFFICE
SEE NOTE 204



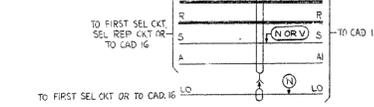
CAD 8

(FOR FIG. 2 WITH "Y" OPTION & FIG. 7 WITH "Q" OR "K" OPTION)
FOR LINE FINDERS IN 355A OFFICE



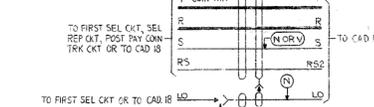
CAD 9

(FOR FIG. 2 WITH "Y" OPTION & FIG. 10 OR 11)
FOR LINE FINDERS IN 355A OFFICE



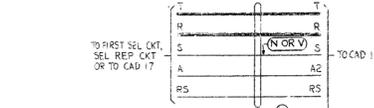
CAD 10

(FOR FIG. 2 WITH "Y" OPTION & FIG. 7 WITH "S" OR "T" OPTION)
FOR LINE FINDERS IN 355A OFFICE



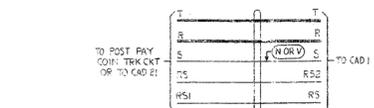
CAD 11

(FOR FIG. 2 WITH "Y" OPTION & FIG. 8)
FOR LINE FINDERS IN 355A OFFICE



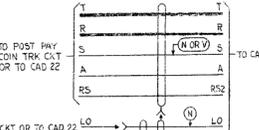
CAD 12

(FOR FIG. 2 WITH "Y" OPTION & FIG. 8)
FOR LINE FINDERS IN 355A OFFICE
SEE NOTE 201



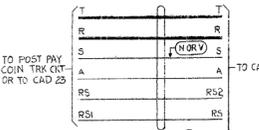
CAD 13

(FOR FIG. 2 WITH "Y" OPTION & FIG. 13 WITH "S" OR "T" OPTION) OR
FOR LINE FINDERS IN 355A OFFICES



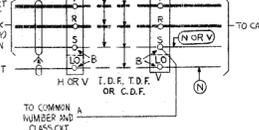
CAD 14

(FOR FIG. 2 WITH "Y" OPTION & FIG. 4) OR
(FOR FIG. 2 WITH "Y" OPTION & FIG. 12)
FOR LINE FINDERS IN 355A OFFICE
SEE NOTE 201



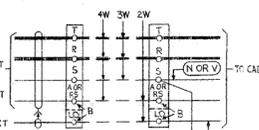
CAD 15

(FOR FIG. 2 WITH "Y" OR "Z" OPTION)



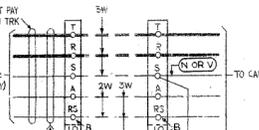
CAD 16

(FOR FIG. 2 WITH "Y" OPTION & FIG. 7 WITH "Q" OR "K" OPTION) OR
(FOR FIG. 2 WITH "Y" OPTION & FIG. 10 OR 11) OR
(FOR FIG. 2 WITH "Y" OPTION & FIG. 12 WITH "W" OPTION)



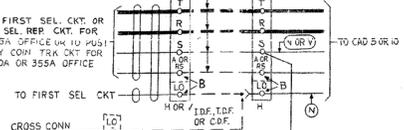
CAD 17

(FOR FIG. 2 WITH "Y" OPTION & FIG. 3) OR
(FOR FIG. 2 WITH "Y" OPTION & FIG. 6) OR
(FOR FIG. 2 WITH "Y" OPTION & FIG. 8) OR
(FOR FIG. 2 WITH "Y" OPTION & FIG. 13 WITH "T" OPTION)



CAD 18

(FOR FIG. 2 WITH "Y" OPTION & FIG. 7 WITH "S" OR "T" OPTION) OR
(FOR FIG. 2 WITH "Y" OPTION & FIG. 13 WITH "W" OPTION)



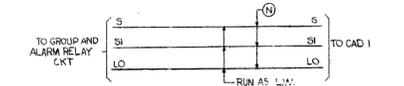
CAD 37

(FOR FIG. 2 OR 16)



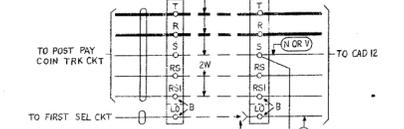
CAD 36

FOR LINE FINDERS IN 355A OFFICE
WHEN TIME RELEASE OF PERMANENT
SIGNAL IS REQUIRED



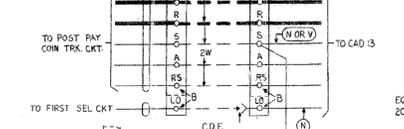
CAD 21

(FOR FIG. 2 WITH "Y" OPTION & FIG. 8)



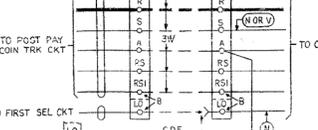
CAD 22

(FOR FIG. 2 WITH "Y" OPTION & FIG. 5)



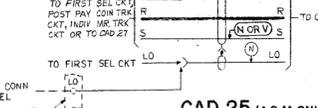
CAD 23

(FOR FIG. 2 WITH "Y" OPTION & FIG. 4) OR
(FOR FIG. 2 WITH "Y" OPTION & FIG. 12)



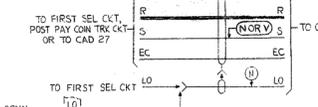
CAD 24 (A&M ONLY)

(FOR FIG. 2 WITH "Y" OPTION)
FOR LINE FINDERS IN 35-E-97 OFFICE



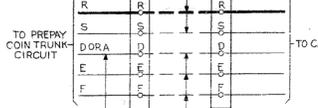
CAD 25 (A&M ONLY)

(FOR FIG. 2 WITH "Y" OPTION & FIG. 14)
FOR LINE FINDERS IN 35-E-97 OFFICE



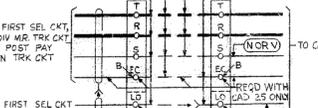
CAD 35 (A&M ONLY)

(FOR FIG. 2 WITH "Y" OPTION & FIG. 15)



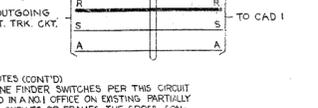
CAD 27 (A&M ONLY)

(FOR FIG. 2 WITH "Y" OPTION OR
FOR FIG. 2 WITH "Y" OPTION & FIG. 14)



CAD 29

(FOR FIG. 2 WITH "Y" OPTION & FIG. 13 WITH "W" OPTION)
FOR INTERCEPTING TRUNK FINDERS IN NO. 1, 350A, OR 355A OFFICE

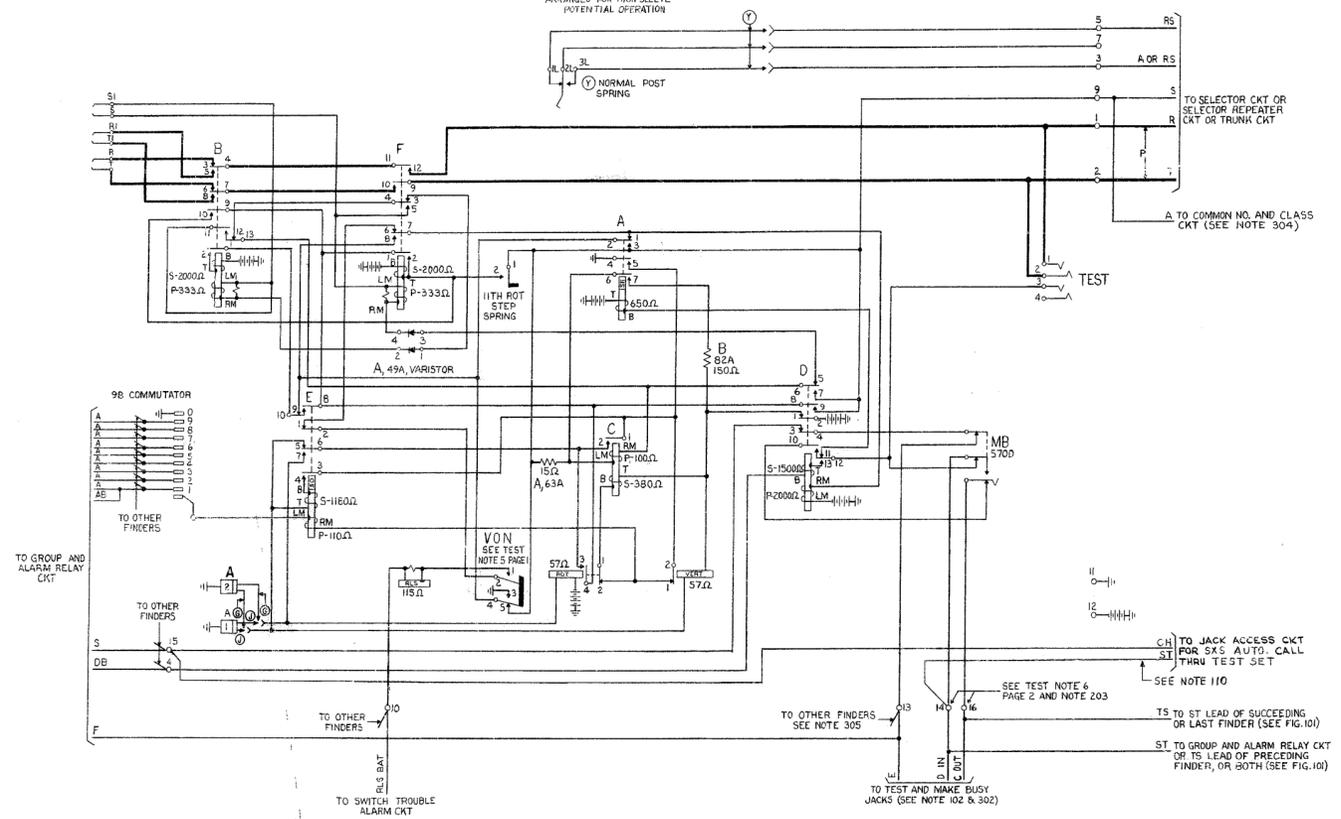


EQUIPMENT NOTES:
201. TO FACILITATE CABLING, THE "R" AND "RS" LEADS ARE DOUBLED UP AT THE COIN TRUNK UNIT BEFORE CONNECTIONS TO THE SELECTOR OR SELECTOR REPEATER CIRCUITS.
(MFR DISC)
202. WHEN LINE FINDER AND TRUNK FINDER SWITCHES PER THIS CIRCUIT ARE USED IN A 350A OR 355A OFFICE, THE CROSS-CONNECTIONS ON THE REPLACED CIRCUIT WHICH IS RATED "A&M ONLY" SHALL APPLY.
203. JACK SPRINGS 14 AND 16 SHALL BE STRIPPED 1/16" AT UNEQUIPPED FINDER POSITIONS.
204. THE OPTIONAL DISTRIBUTING FRAME CONNECTIONS BETWEEN THE LINE FINDER AND THE INDIVIDUAL MESSAGE RATE TRUNK ARE SHOWN ON THE TRUNK CIRCUIT. DISTRIBUTING FRAME JUMPERS BETWEEN LINE FINDERS AND INDIVIDUAL MESSAGE RATE TRUNKS SHALL BE FURNISHED ONLY WHEN SPECIFIED BY THE TELEPHONE CO.
205. CABLING DIAGRAM FIGURE NUMBERS, CAD 7, CAD 19, CAD 20, CAD 26, AND CAD 28 WERE NOT USED ON 15-11-1.
206. CADS 30 AND 31 MAY APPLY TO THE SAME TRUNK GROUP, HOWEVER, REGARDLESS OF THE TYPE OF INTERCEPT, THE TRUNK FINDER BANKS SHALL BE CABLED TO THE DISTRIBUTING FRAME AS A COMMON GROUP OF CIRCUITS.
207. THE 10 START CKT LEADS FOR EACH TRUNK FOR UNIT SHALL BE TERMINATED AT THE LINE OR CDF OR AN ADDITIONAL ROW OF TERMINALS ON THE TERMINAL STRIP SERVING THE FIRST TRUNK PER MULTIPLE CIRCUITS (OPPOSITE CIRCUITS 1-10).
208. LINE PINS CABLED PER CAD 15 MAY UTILIZE THE D OR A LEAD FOR CLASS OF SERVICE INDICATION IF LONG LINE CTS ARE NOT USED.
CAD 30
(FOR FIG. 1)
FOR INTERCEPTING TRUNK FINDERS IN NO. 1, 350A OR 355A OFFICE WITH INCPY TRK ON REL RACK
SEE NOTE 206
TO BANKS OF TRK FOR
LOOP AT POS OF (S7) & (C0) RELS
BANK 1 IS ON TRK FOR UNIT
CAD 31
(FOR FIG. 1)
FOR INTERCEPTING TRUNK FINDERS IN NO. 1, 350A OR 355A OFFICE WITH INCPY TRK ON TRK FOR UNIT
SEE NOTE 206
TO BANKS OF TRK FOR
BANK 1 IS ON TRK FOR UNIT
CAD 32
(FOR FIG. 1)
SEE NOTE 207
SHOWN ON GROUP & ALM. REL. CKT.
CROSS CONN TO INCPY TRK FROM LOC OR TOLL SEL BANKS OR FROM R.U. LINES.
V.I.D.F. OR V.C.D.F.
CAD 33
(FOR FIG. 1)
3W FOR 2 SETS AS RECD
CROSS CONN TO COIN MULT. AS SHOWN ON DRAWING OF CROSS-CONNS FOR LINE CTS AT DIST. FRAMES
V.I.D.F. OR V.C.D.F.

ISSUE

1	10/1/54
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49	10/1/54
50	10/1/54

FIG. 16
 (SPECIAL)
 LINE FINDER CKT
 ARRANGED FOR HIGH SLEEVE
 POTENTIAL OPERATION



3-10-51052-38

ISSUE
 10D