

E.W. GRUSSING - OAK PARK

TRAINING TEXT
OPERATIONAL SKETCH
&
SEQUENCE CHART
755-A
DIAL P.B.X.



JUNE 1956

P.T.S. 508.3

Developed by
The Plant Training Schools
For Training Purposes Only

PREFACE

This outline has been prepared as a guide for the instructor to enable him to make full use of the apparatus and materials provided for use in this class. The teaching sequence as outlined is largely the result of experience and should be closely followed in order to obtain uniform results.

Reference to Bell System Practices are to latest issues at the time this outline is published. It will be necessary for the instructor, therefore, to check subsequent issues of practices, making corrections as necessary in this outline. When such corrections are necessary, they should be made in all existing copies of the outline.

If after considerable experience in teaching the class from this outline the instructor feels that changes should be made or if he wishes to introduce new ideas and materials, such changes should be discussed with Plant School Supervision. Should the discussion result in a decision to make such changes, appropriate steps will be taken to have this outline republished.

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LEGEND



RELAY WINDING



CIRCUIT THROUGH NORMAL RELAY, CONTACTS 1 TO 2 TOP



CIRCUIT THROUGH OPERATED RELAY, CONTACTS 1 TO 2 BOTTOM

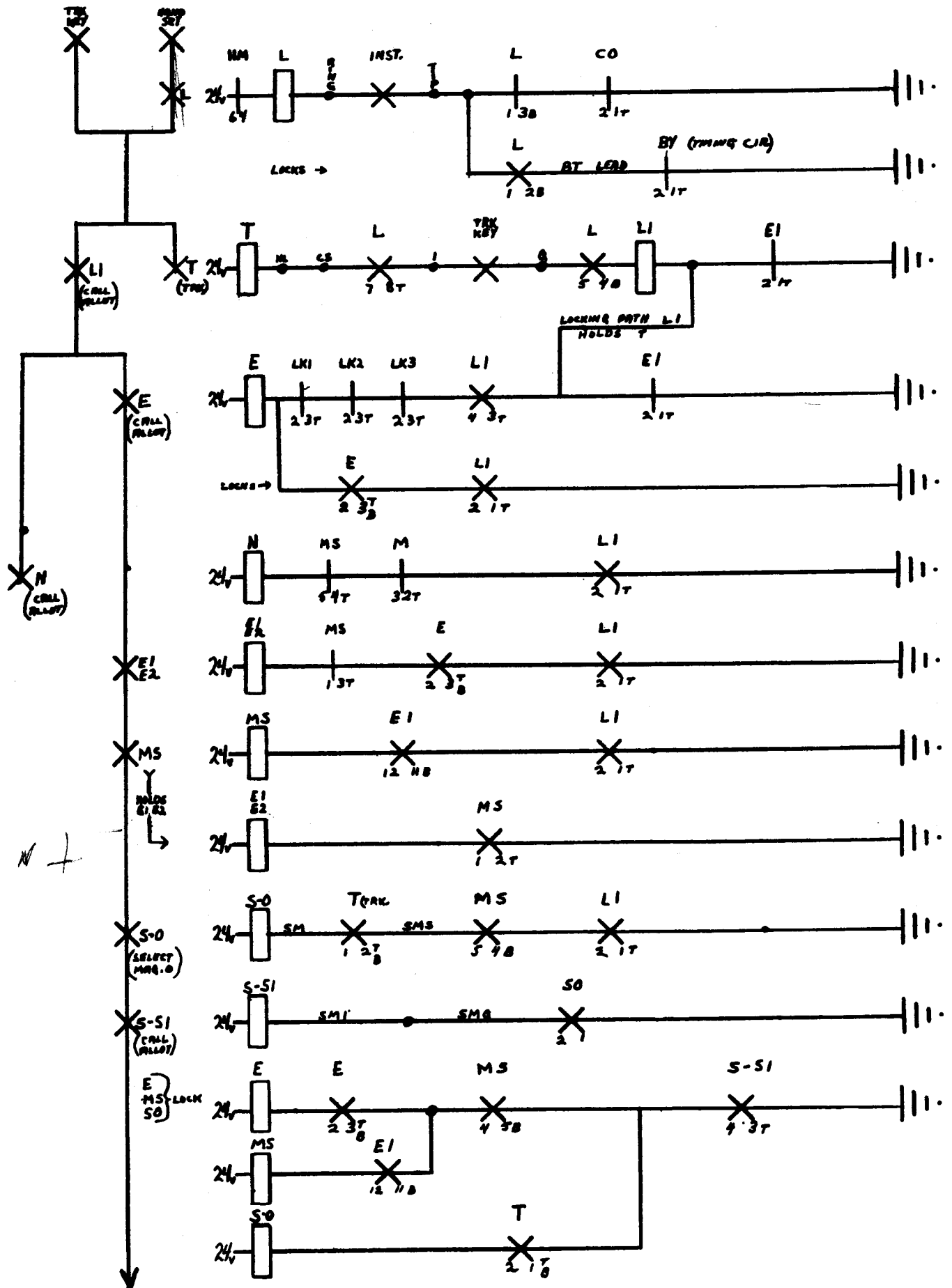
The 755-A P.B.X. is a small dial telephone system employing crossbar switches and Jand Y type relays. It provides dial intercommunicating service and outside trunk service without an attendant. It is designed to serve small business houses and large residences, and replaces the 750-A P.B.X. The capacity of the 755-A P.B.X. is 20 station lines, 4 trunks, and 3 intercommunicating links.

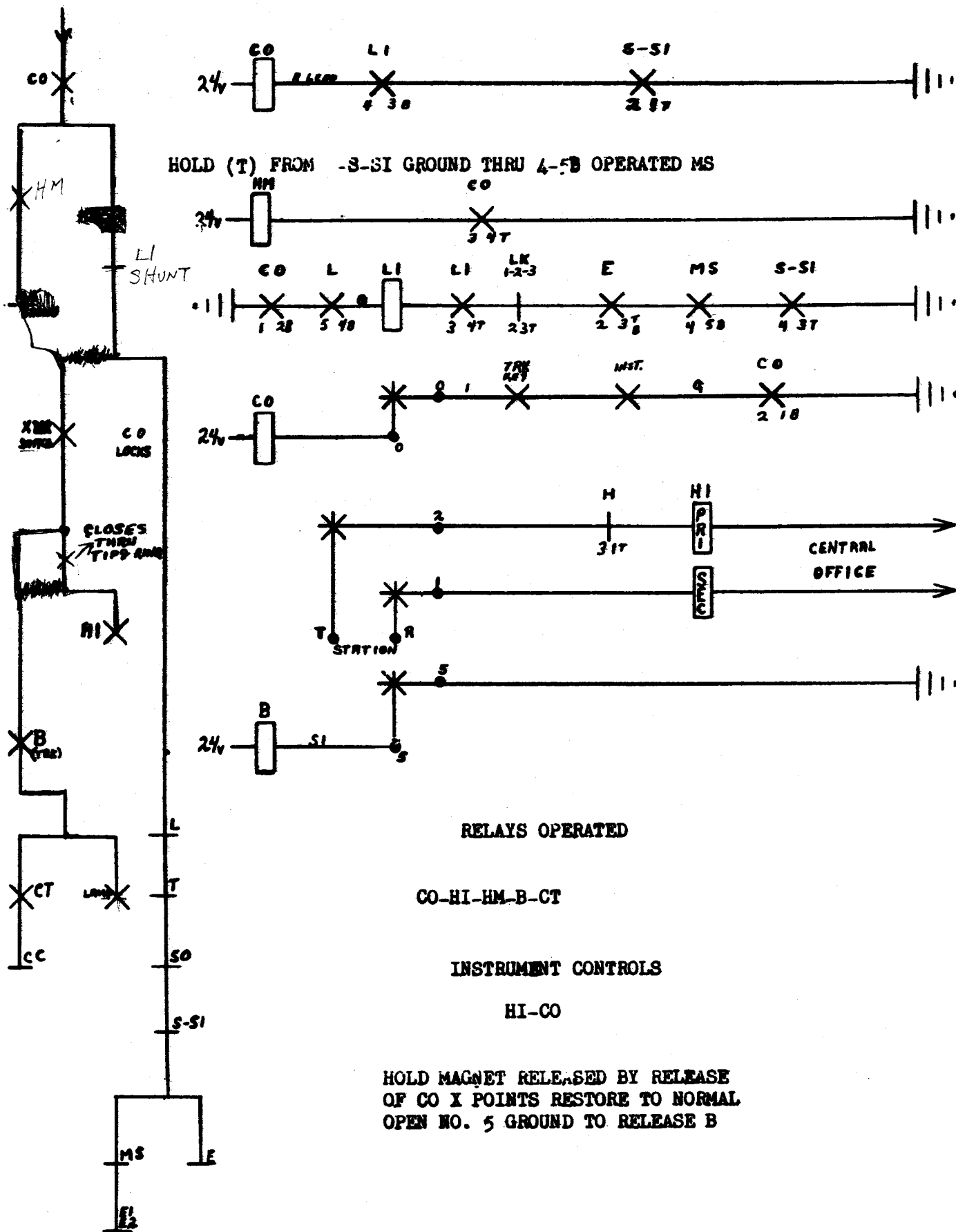
The principal features of the equipment are summarized as follows:

- (a) Dial intercommunicating service.
- (b) A crossbar switch is used as a switching device, which eliminates all moving parts.
- (c) All incoming central office calls can be answered and transferred at any key station.
- (d) Key stations may or may not, as desired, be arranged for outgoing central office calls.
- (e) Provision of a combined dial hand telephone set with the necessary key buttons mounted in the base for establishing local and trunk service.
- (f) A control key arrangement is available for use at key stations to provide means for connecting keyless type stations to central office trunks without limiting the use of the key station.
- (g) One or more key stations may be connected as extensions of a main key station.
- (h) Arrangements are provided to permit line hunting on certain lines when required.
- (i) Local conference connections may be established by dialing.
- (j) Trunk lamps may be provided at the stations and are arranged to flash to indicate unanswered calls and to light steadily when their associated trunks are busy.
- (k) Lamp signals similar to those used for trunks may be provided for local lines.
- (l) Tie trunk service to other P.B.X.'s.
- (m) One station may pick up calls directed to another station by means of a special key.
- (n) Outgoing service on wiring plan trunks.
- (o) Trunk service to a disassociated telephone.

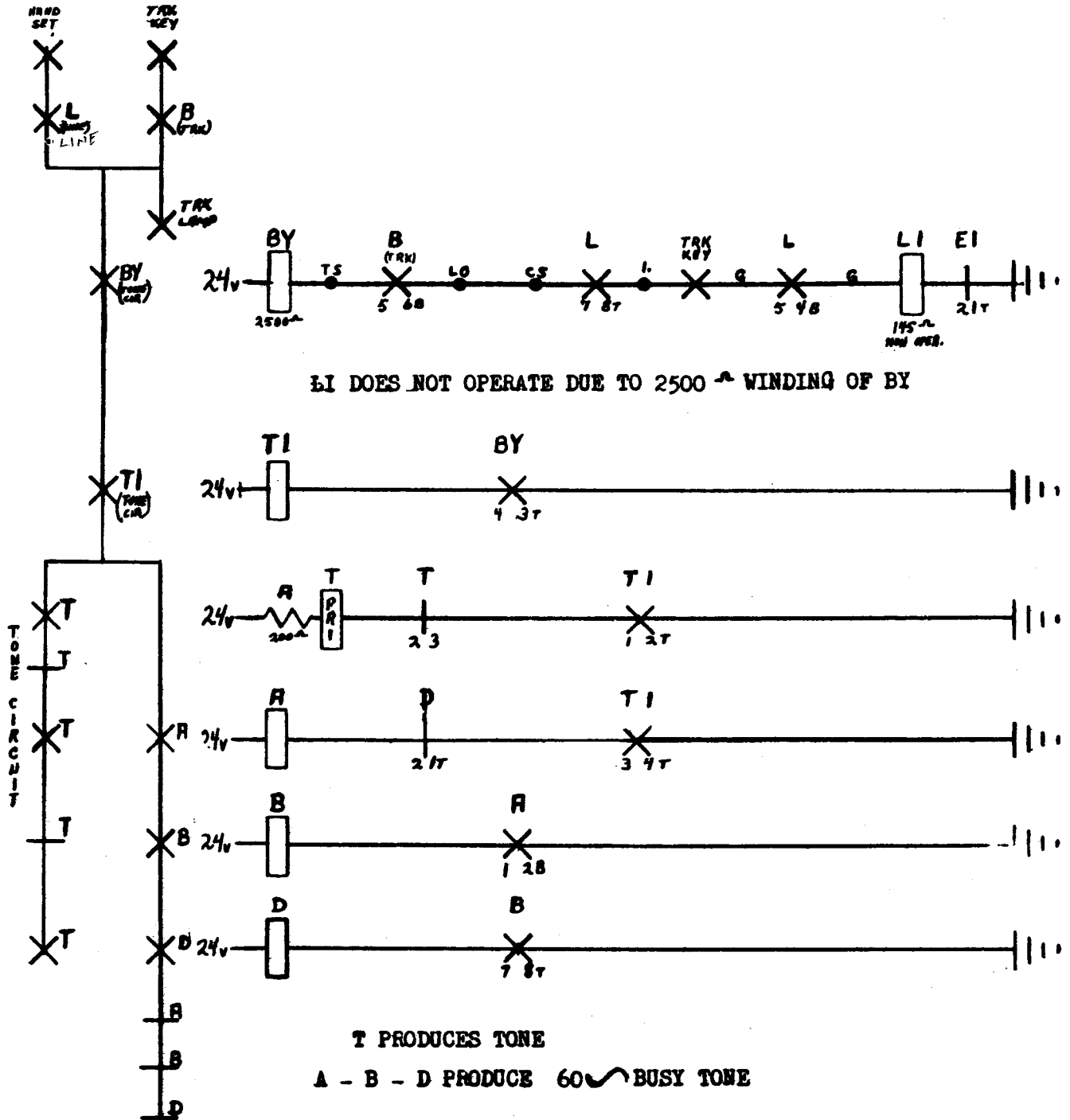
The following circuit code covers the main functions of the 755-A P.B.X. and does not take into consideration all the special features which may be used. Information on any item which is not covered in this book should be obtained from S.D. and C.D. sheets.

TRUNK CALL TO CENTRAL OFFICE

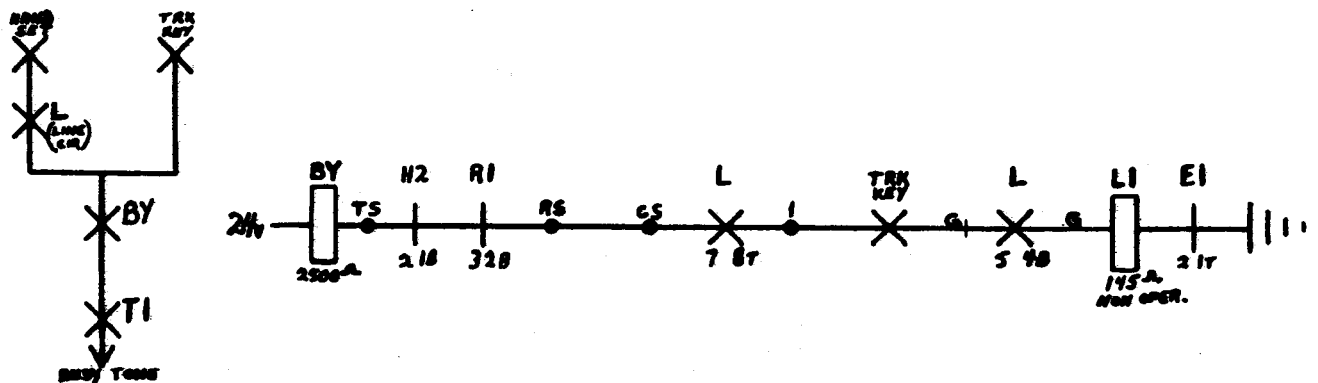




LOCK OUT STATION CLOSES ON BUSY TRUNK

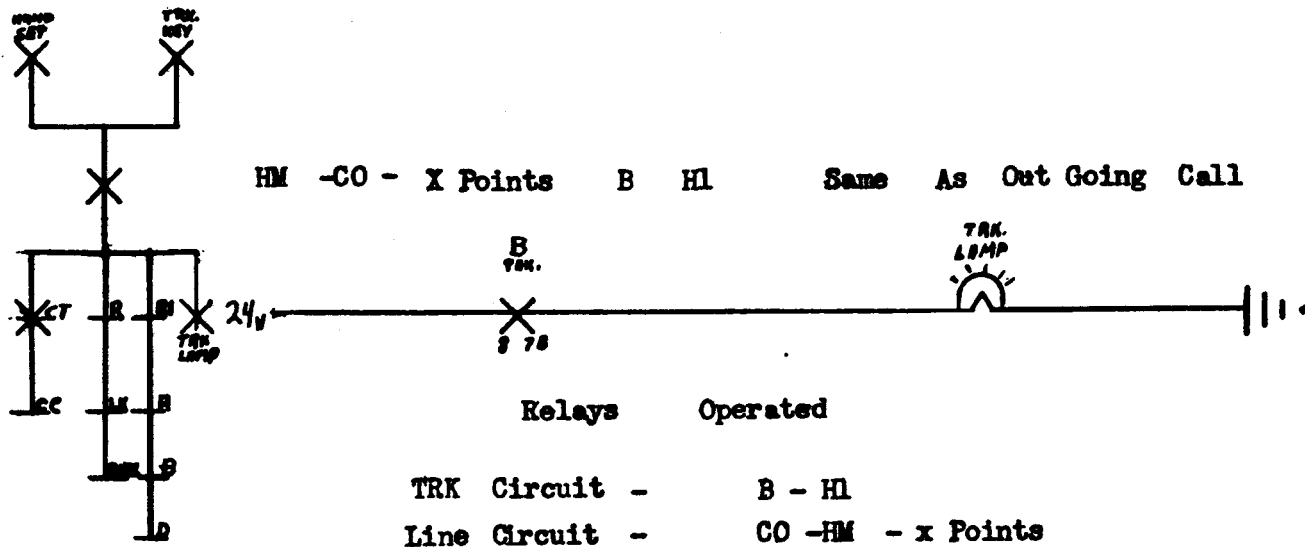


RESTRICTED STATION ATTEMPTS C.O. CALL

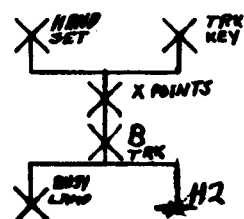
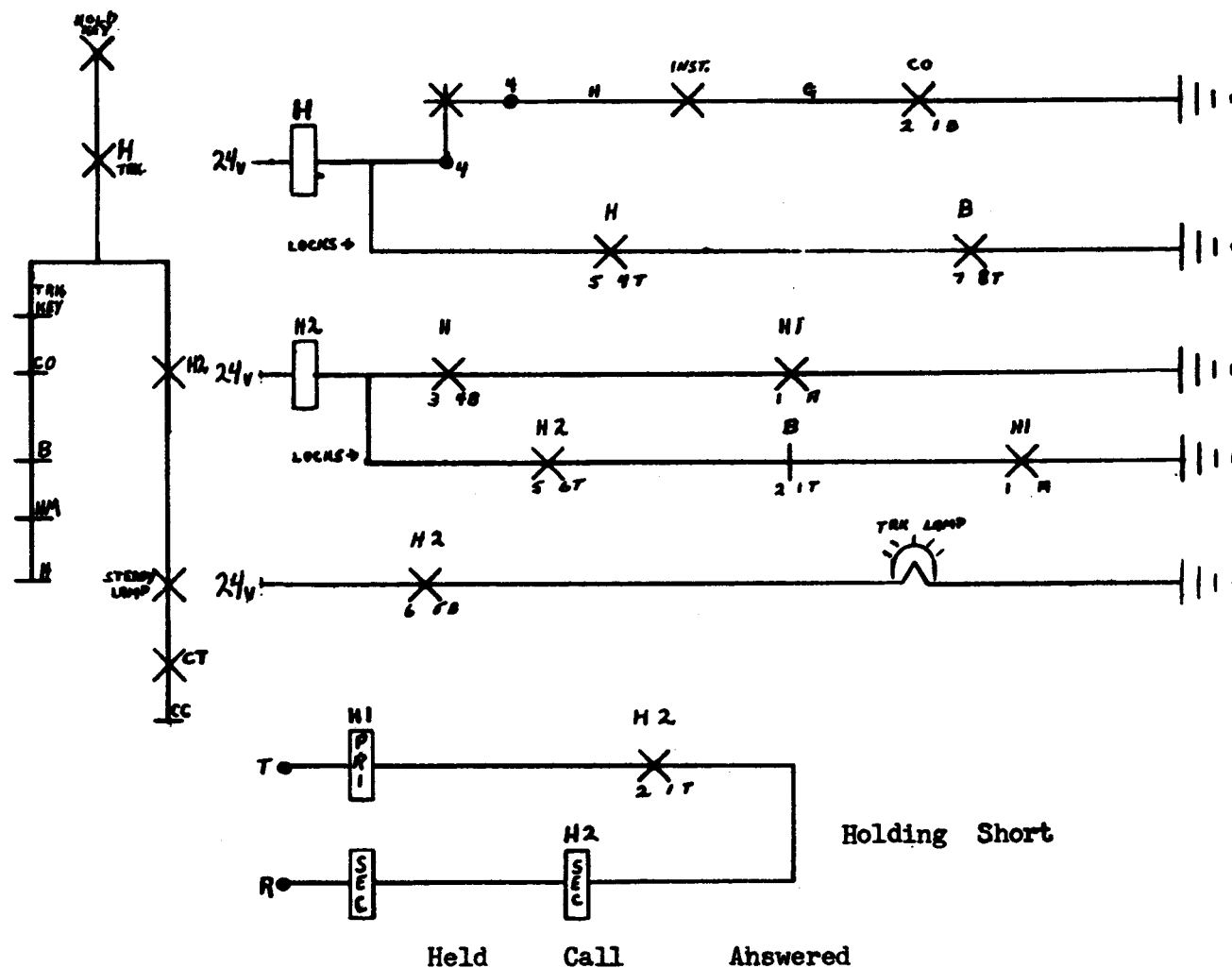


[illegible]

Answer	Incoming	Call
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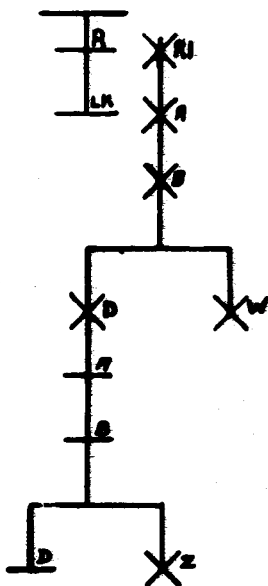


Trunk	Call	Held
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
17	17	17
18	18	18
19	19	19
20	20	20
21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29
30	30	30
31	31	31
32	32	32
33	33	33
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39	39	39
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43	43	43
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64	64	64
65	65	65
66	66	66
67	67	67
68	68	68
69	69	69
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85	85	85
86	86	86
87	87	87
88	88	88
89	89	89
90	90	90
91	91	91
92	92	92
93	93	93
94	94	94
95	95	95
96	96	96
97	97	97
98	98	98
99	99	99
100	100	100



INCOMING TRK. CALL ABANDONED

C.O. RINGING
STOPPED

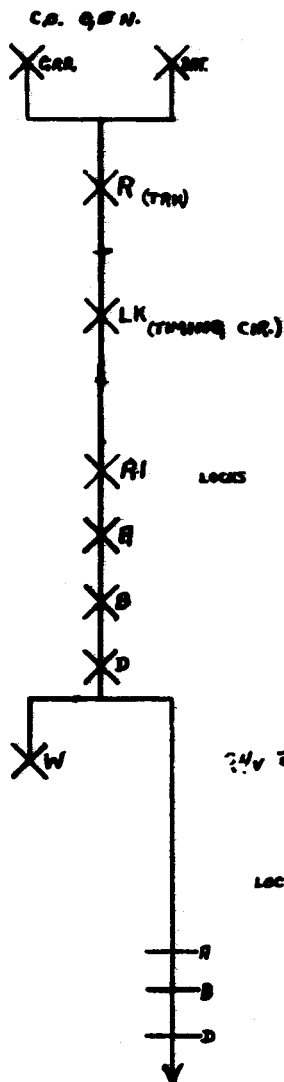


R1 RELAY REMAINS LOCKED TO GROUND AT THE Z3 RELAY

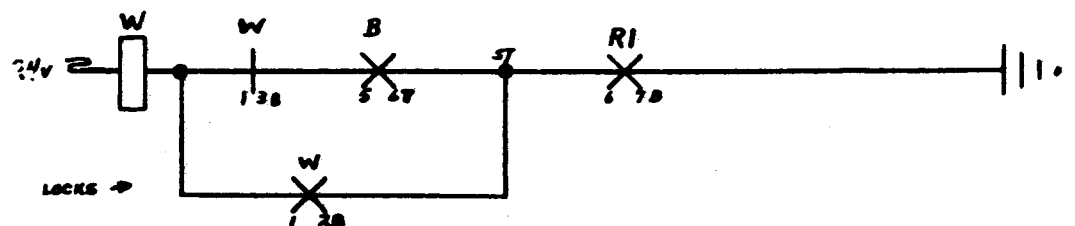
THE A,B,D, RELAY ACTION WILL CONTINUE UNTIL THE R1
RELAY RELEASE - TRUNK LAMP CONTINUES TO FLASH

THE B RELAY CONTROLS THE OPERATION OF TIMING CIRCUIT

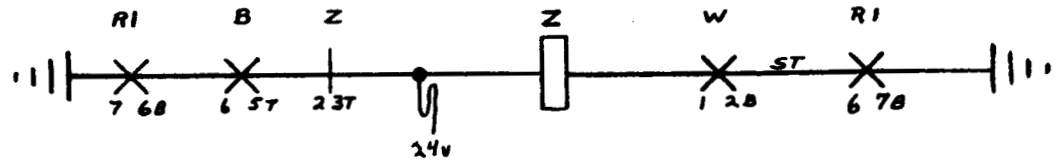
ABANDONED TRUNK CALL



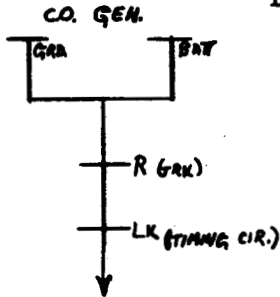
LOCKS (TO OPERATED W3 OR RELEASED Z3 AND B)



SHUNT Z



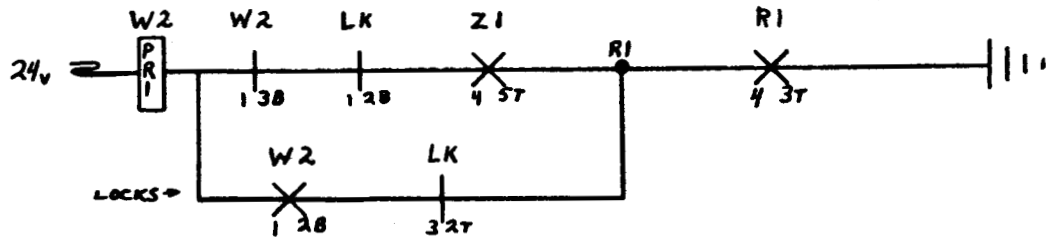
W, Z, W1, Z1, SAME AS SHOWN ON LOCAL CALL EXCEPT THAT GROUND IS NOW SUPPLIED FROM R1 IN TRK, INSTEAD OF SP IN LINK



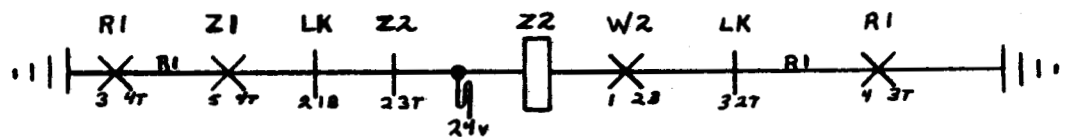
STEP #1



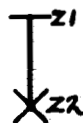
SAME AS STEP 4 (LOCAL CALL)



SHUNT Z2



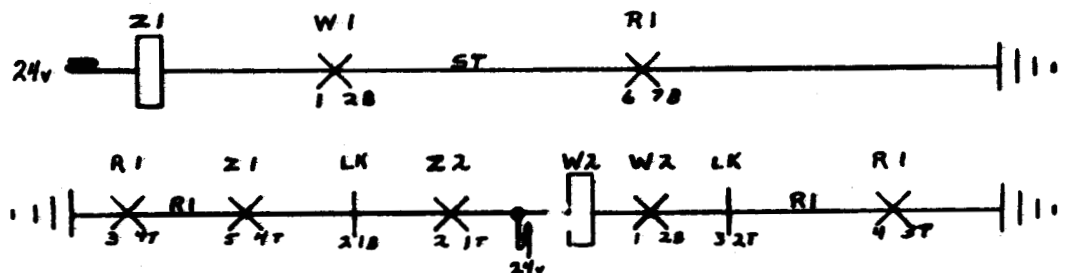
STEP #2

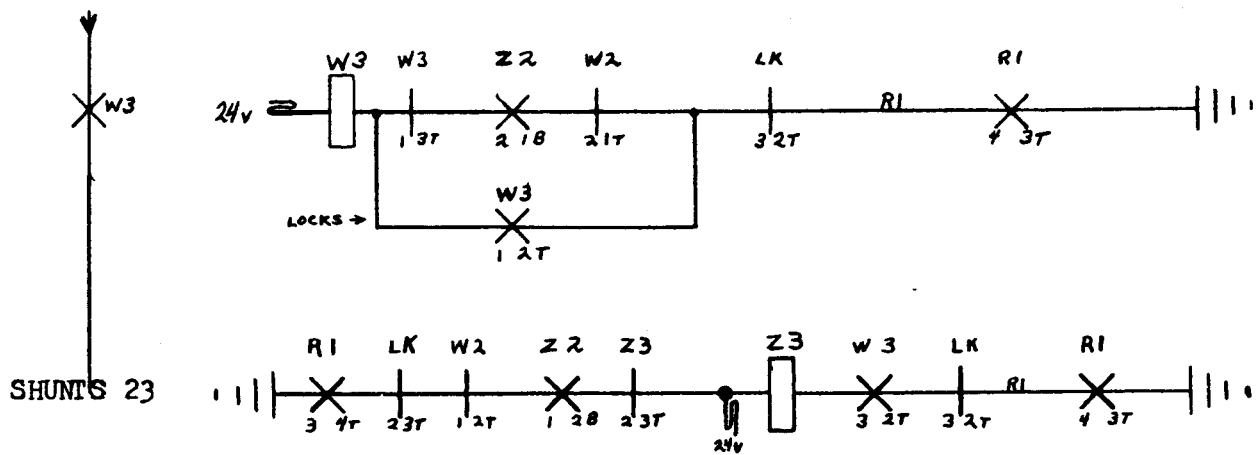


SAME AS STEP 8 (LOCAL CALL)

RELEASE OF Z1 REMOVES SHUNT

STEP #3





SHUNTS 23

STEP #4



(SHUNT REMOVED)

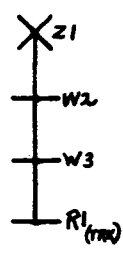
STEP #5



STEP #6



STEP #7



(BY SHUNT) HOLDS Z2

(BY SHUNT) HOLDS Z3

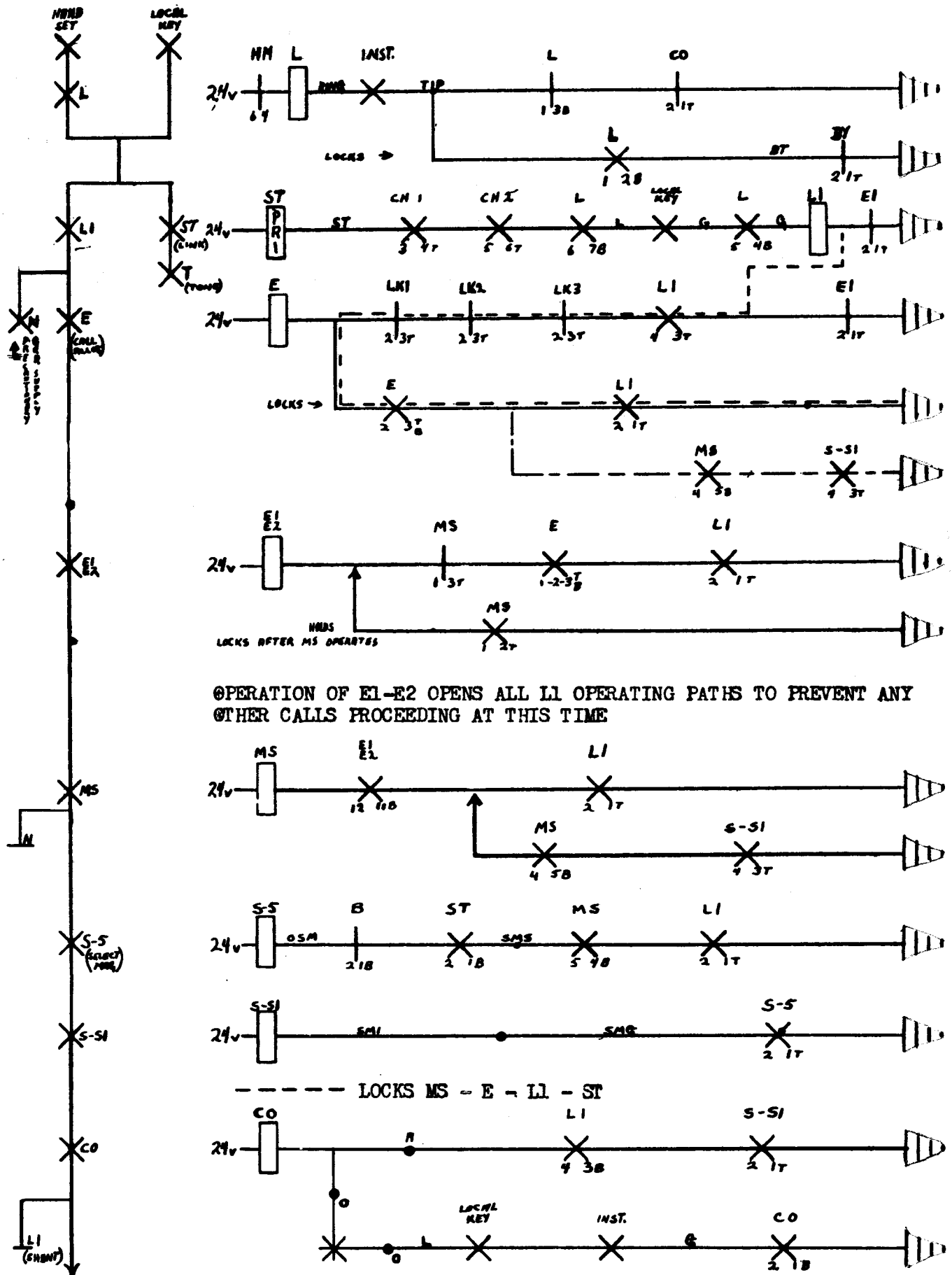
THE RELEASE OF THE R1 (TRK) REMOVES GROUND FROM THE ST AND R1 LEADS ALLOWING THE ENTIRE TIMING CIRCUIT TO RESTORE TO NORMAL AND EXTINGUISHES THE TRK LAMP

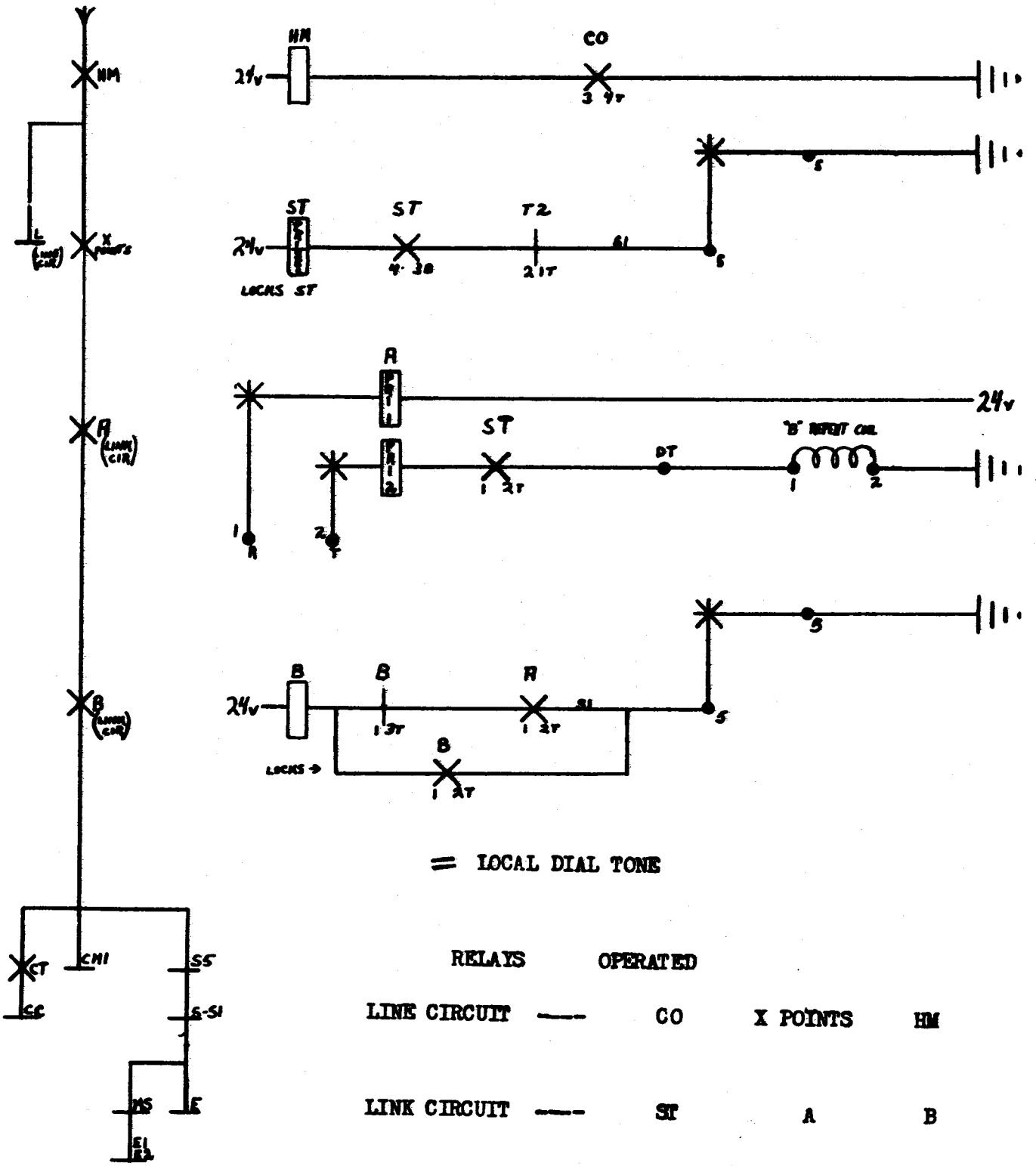
LOCAL CALL

STA 20

CALLS

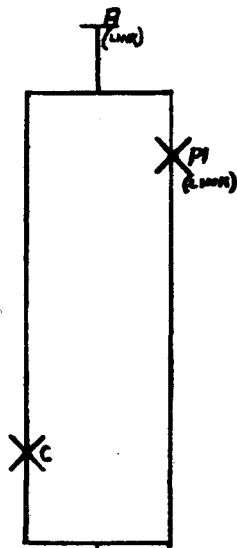
STA 37





STATION DIALS TENS DIGIT (#3)

1st Pulse

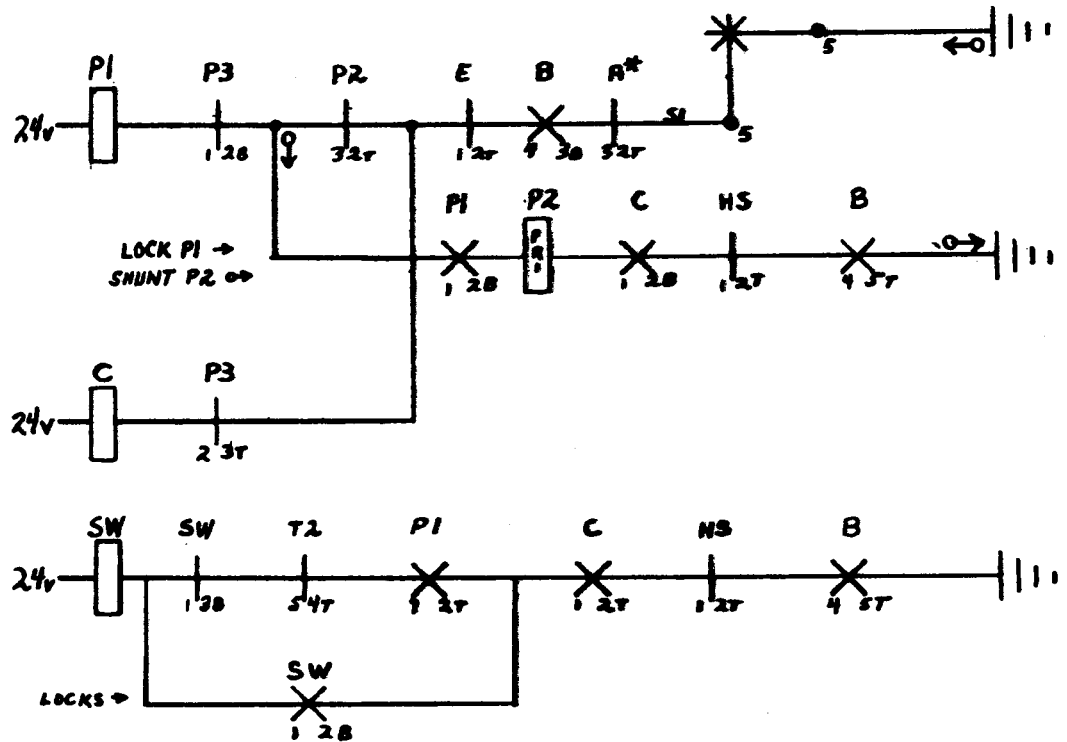
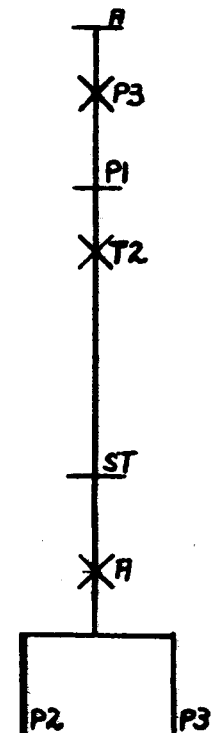


X SW

X R*

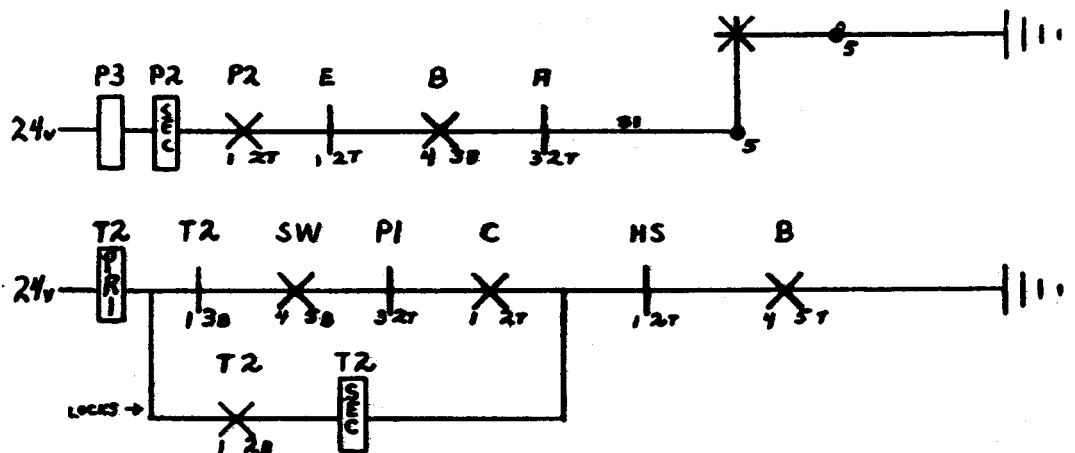
X P2

2nd Pulse



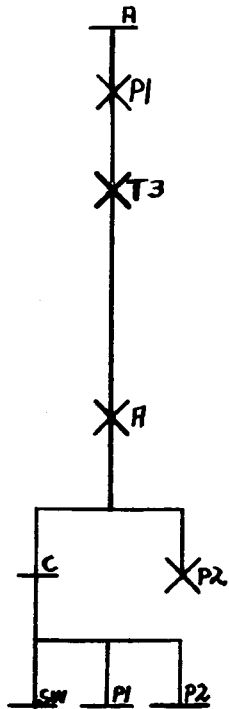
OPENS P2 SHUNT PATH

SHUNT PATH REMOVED



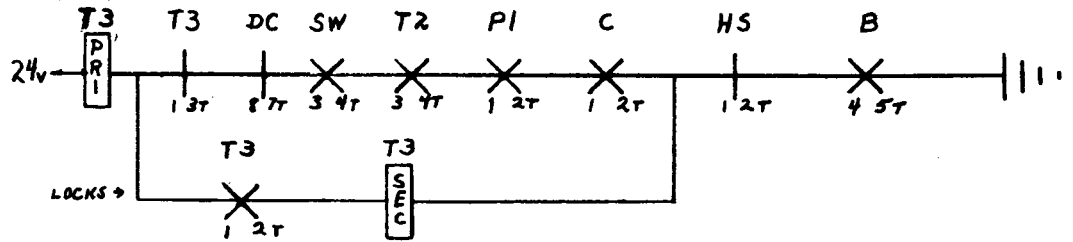
(REMOVES DIAL TONE)
CONNECT GRD TO A RELAY

3rd PULSE



Lock P1
Shunt P2
Hold C

Same as 1st Pulse



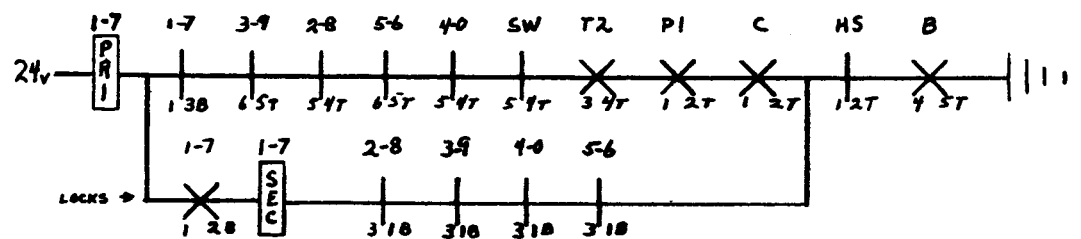
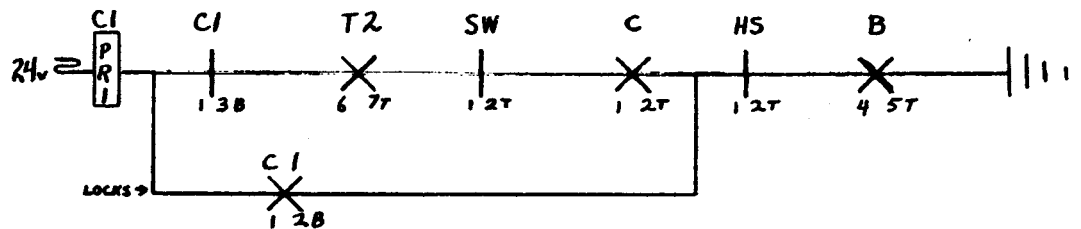
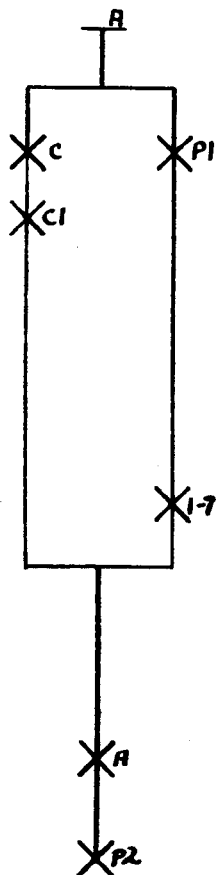
Removes P2 Shunt

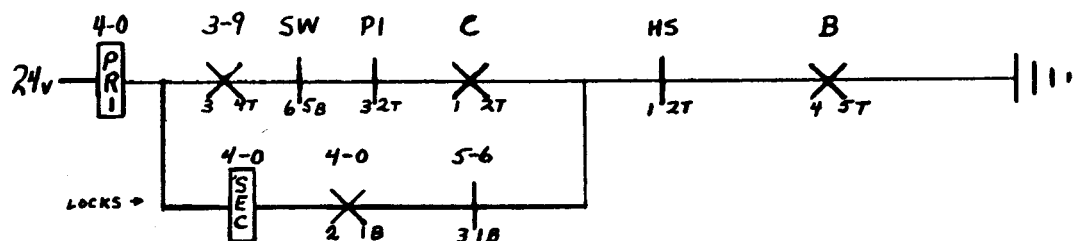
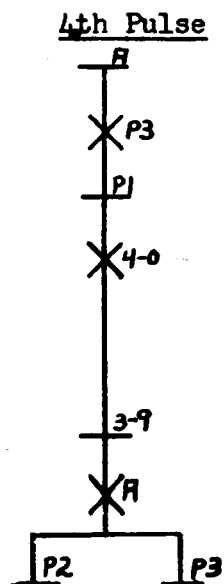
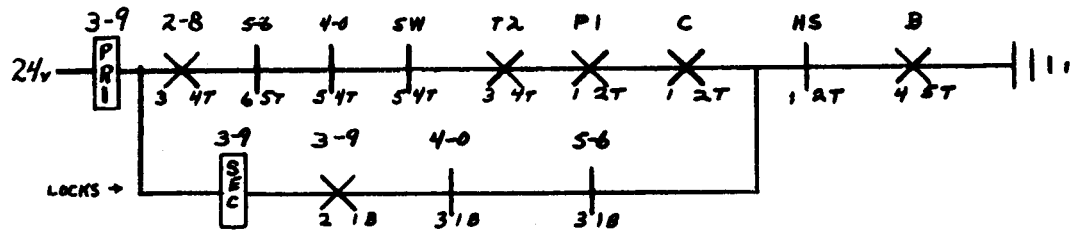
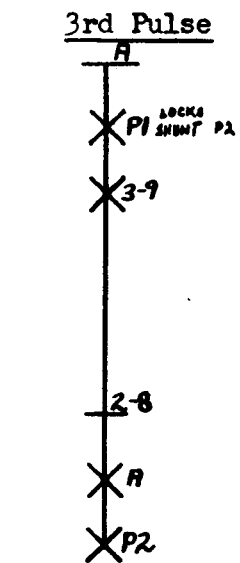
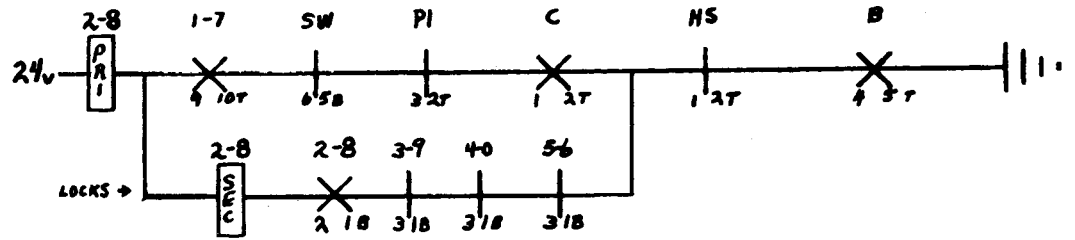
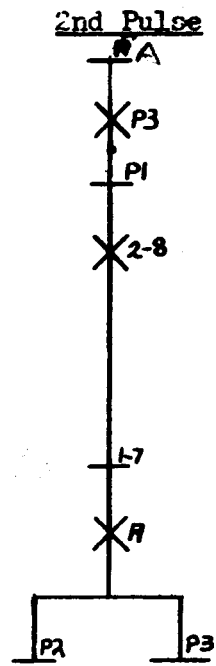
RELAYS REMAINING OPERATED

A B T2 T3

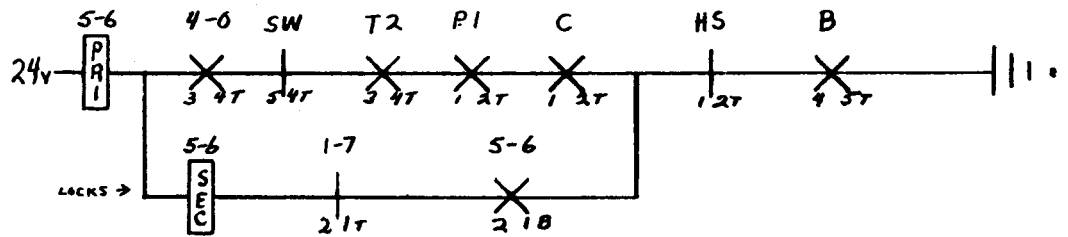
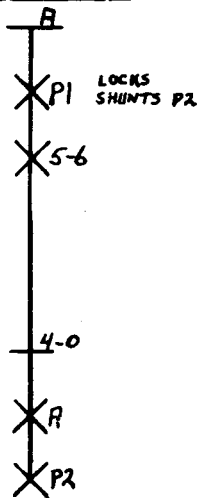
C Relay, Slow release, remains operated during Pulses Holding Sw.

DIALING UNITS (#7)

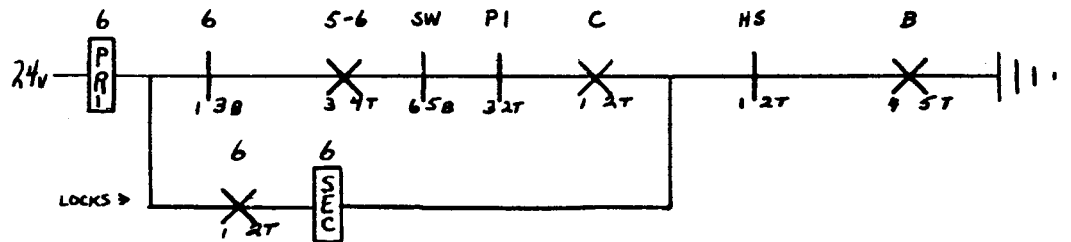
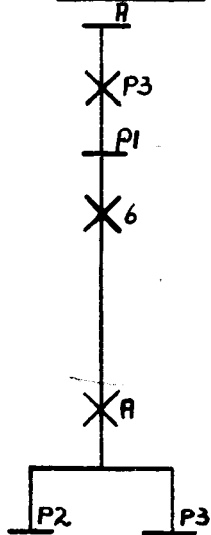




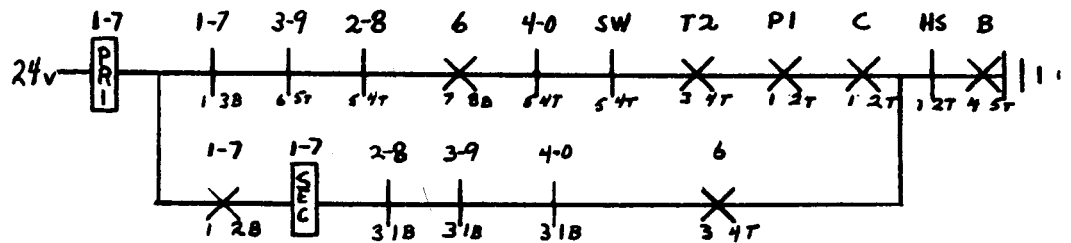
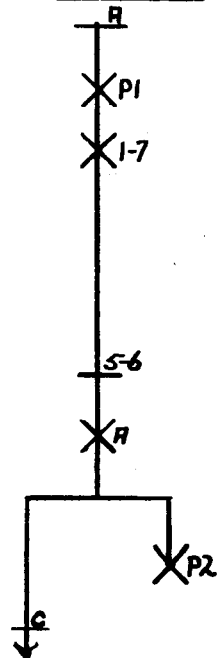
5th Pulse

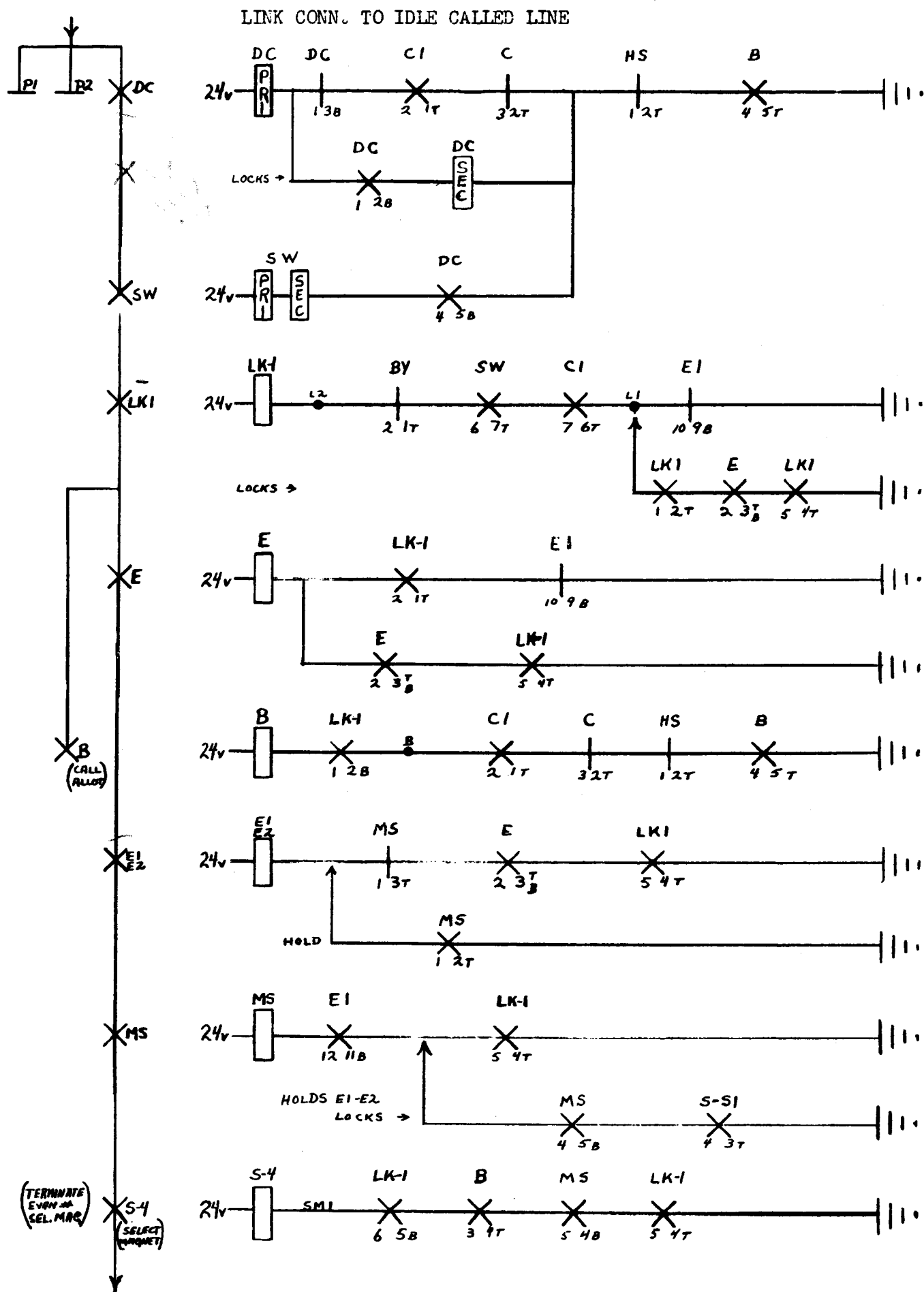


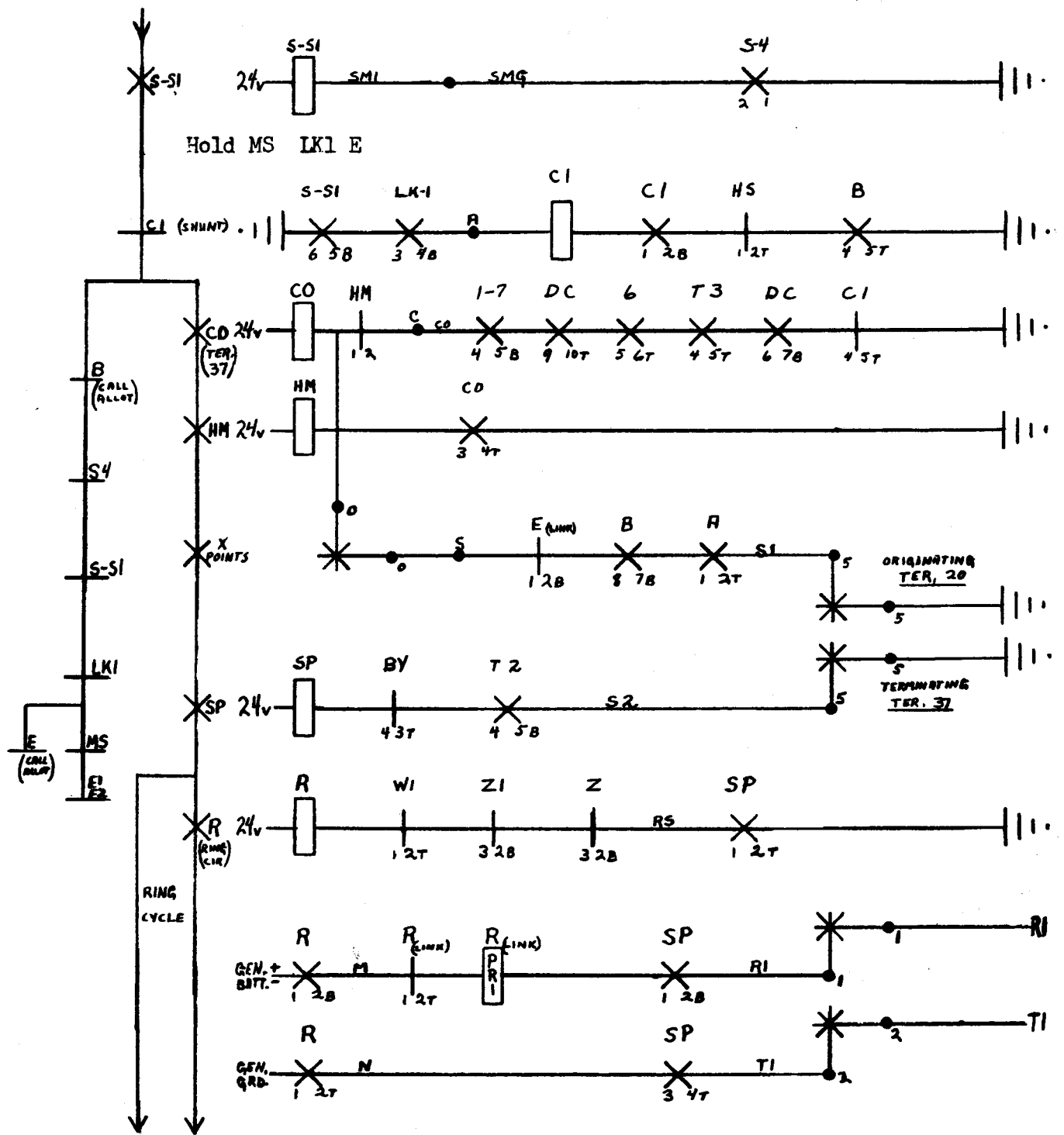
6th Pulse



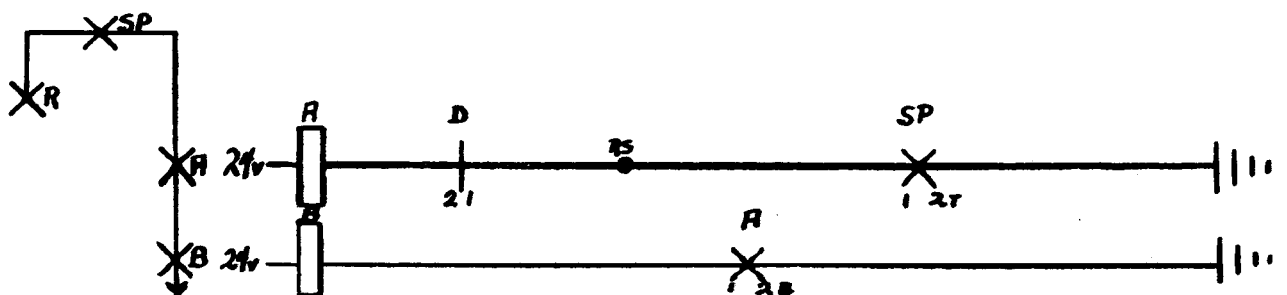
7th Pulse

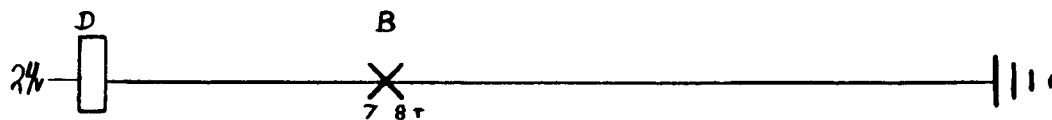
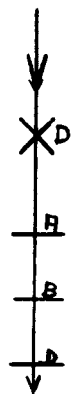






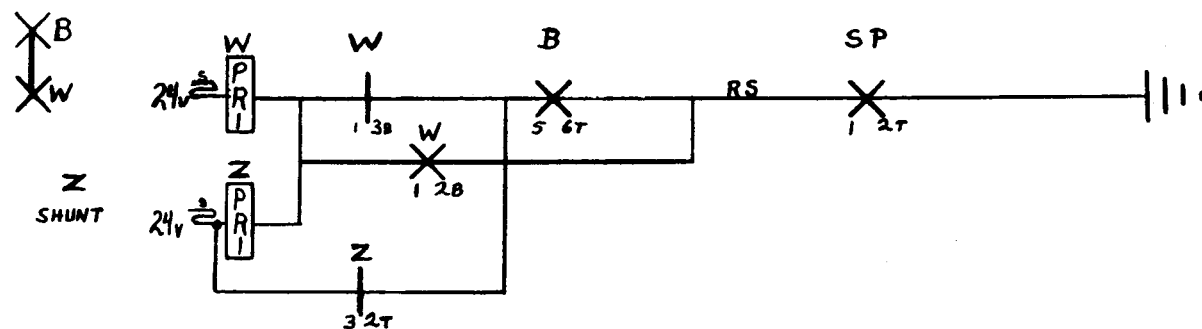
TIMING CIRCUIT AUTOMATIC RINGING



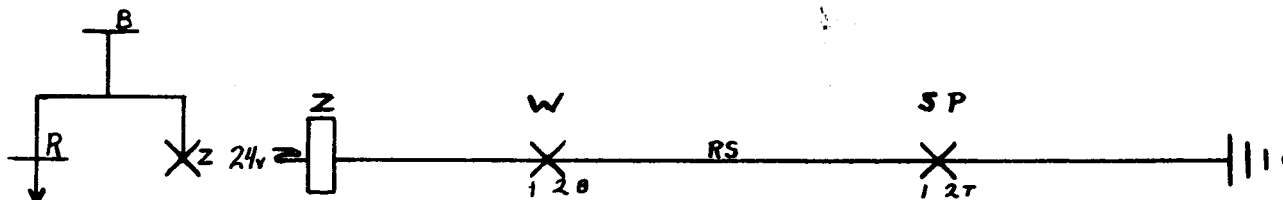


B Relay provides one second Pulses with one second interval for operation of timing circuit.

STEP #1

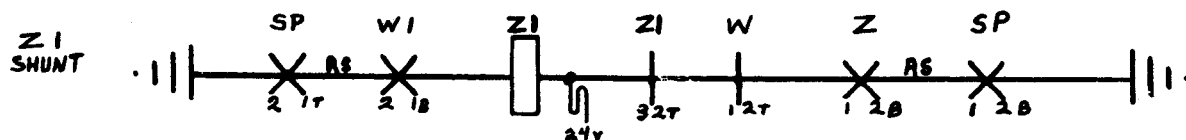
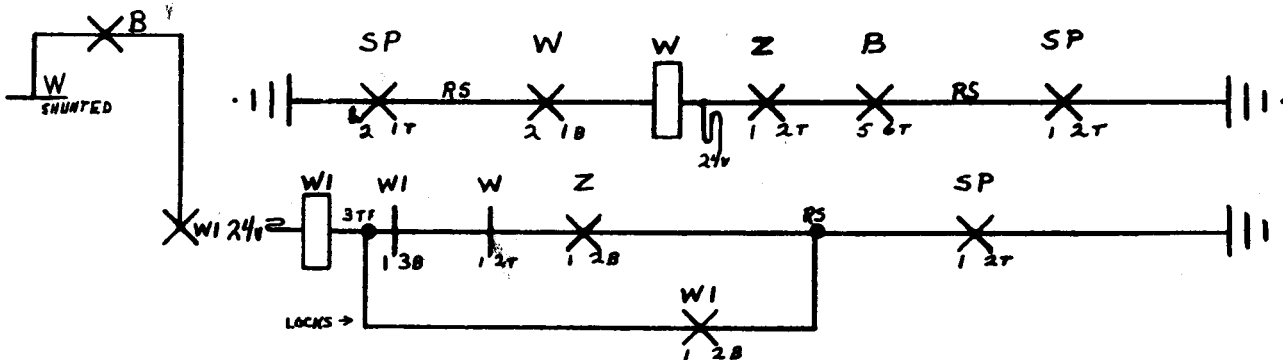


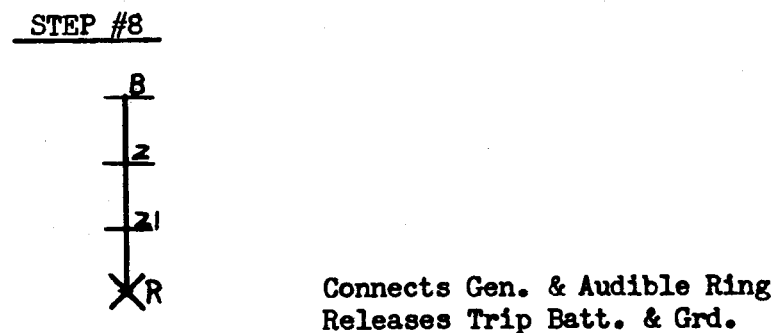
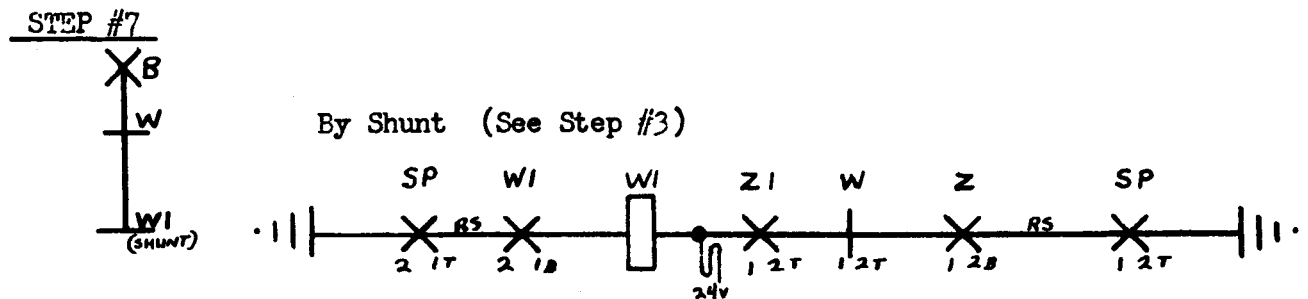
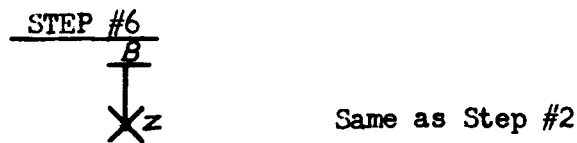
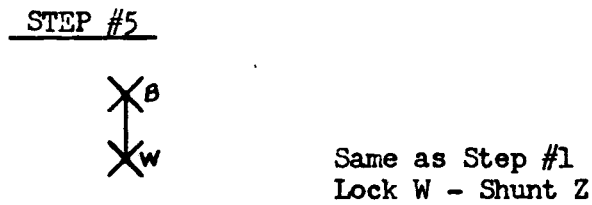
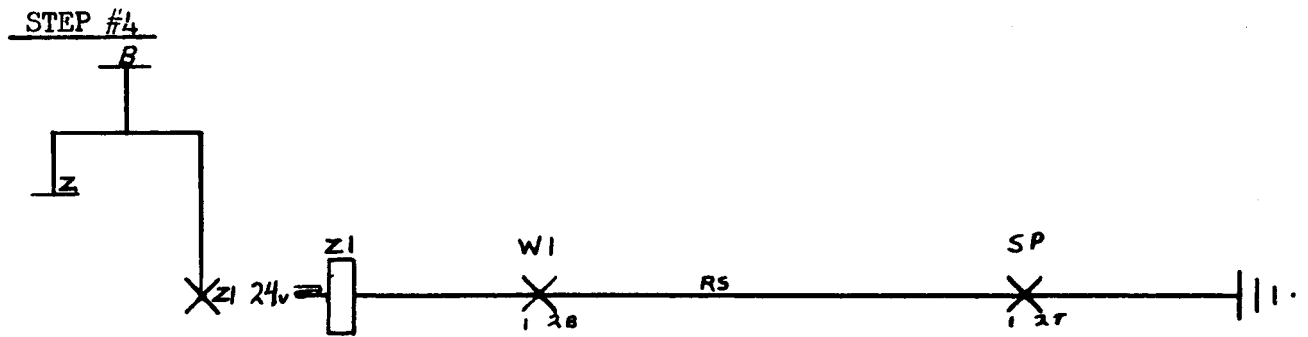
STEP #2



Release Gen.
connect trip Batt. & Grd.
Release Audible Ring.

STEP #2





The above circuit provides one cycle of
Generator and three cycles of silent period.

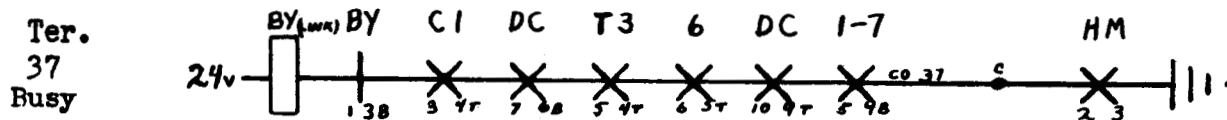
Each cycle approximately one second duration.

The diagram illustrates a complex telegraph circuit. At the top left, there are two keys labeled "LOCAL KEY" and "HAND SET". These connect to a central vertical line. On this line, from top to bottom, are a relay labeled "R (LINK)" with a note "(OPENS RING CIR)", another relay labeled "HS", and a switch labeled "SP". Below the switch, there is a horizontal busbar with five terminals labeled "SW", "T2", "T3", "DS", "6", and "1-7". The "SP" switch connects to a terminal labeled "R (LINK)".

To the right of the main vertical line, there are four parallel horizontal circuits:

- Circuit 1:** Starts at point "2", goes through a key, then a magnet labeled "TI", followed by a relay labeled "SP" with contacts "4 3T", then a long wire segment labeled "N", and ends at a relay labeled "R (RING)" with contact "2 3T".
- Circuit 2:** Starts at point "1", goes through a key, then a magnet labeled "RI", followed by a relay labeled "SP" with contacts "2 1B" and a box labeled "P R I", then a wire segment labeled "M", and ends at a relay labeled "R (RING)" with contact "2 3B".
- Circuit 3:** Starts at point "3", goes through a key, then a magnet labeled "L", followed by a key labeled "LOCAL KEY", then a magnet labeled "INST.", then a magnet labeled "G", and ends at a relay labeled "CO" with contact "2 1B".
- Circuit 4:** Starts at point "0", goes through a key, then a wire segment labeled "S", then a relay labeled "HS" with contact "5 4B", and ends at a battery symbol.

Additional components include two 24V solenoids labeled "HS" and "CO" connected to points "2" and "0" respectively. A label "HOLDS CO" is near the "CO" solenoid. Various other labels like "T1", "R", "M", "N", "L", "G", "S", "E (LINK)", and "DS" are present throughout the diagram.



P.B.X. SYSTEMS DIAGRAM OF CONNECTIONS TO CROSSBAR SWITCHES IN 755A P.B.X.

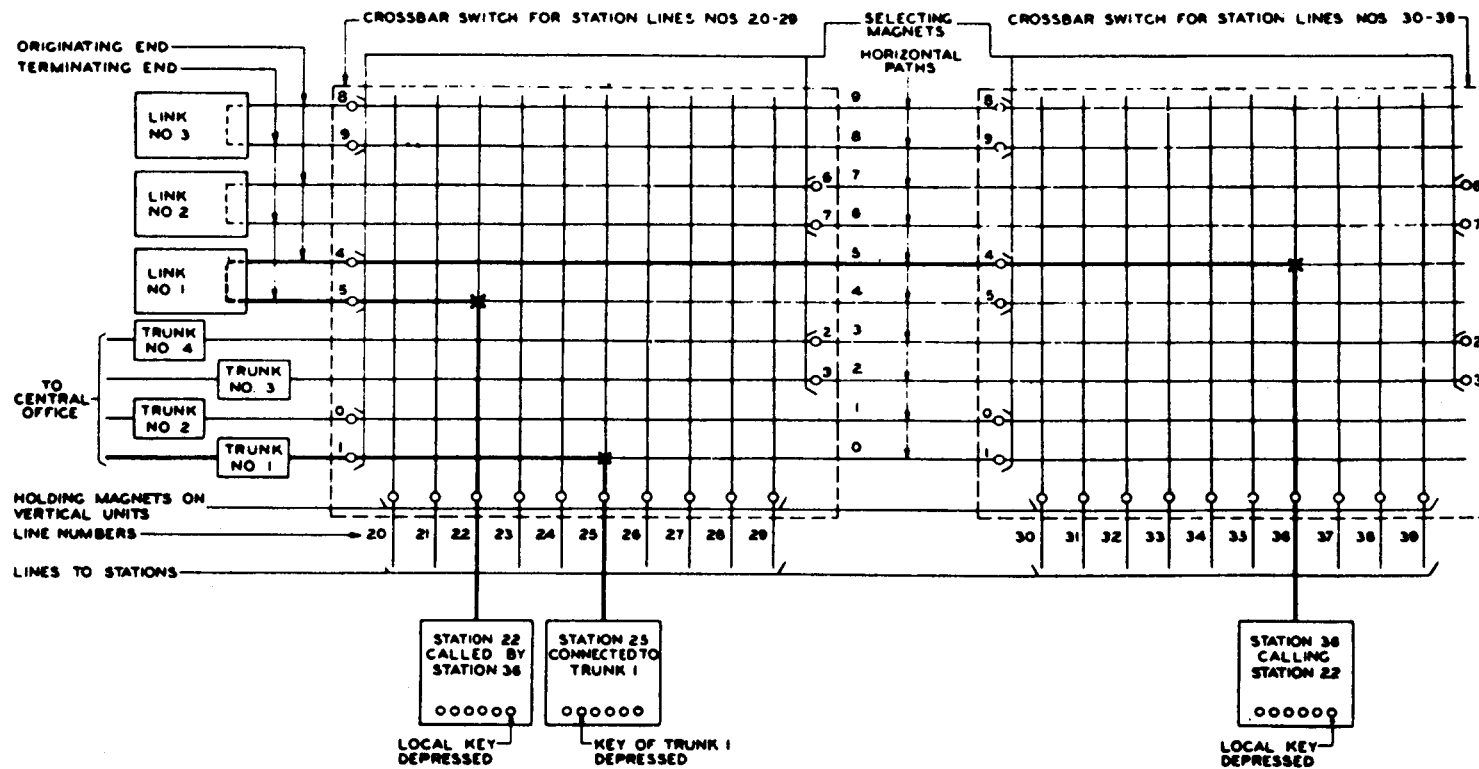


FIG 520
 10-51

MEMORANDUMILLUMINATED KEY BUTTON TELEPHONE SETS
FOR USE WITH 755-A P.B.X. SWITCHBOARDS

Illuminated key button telephone sets have recently been introduced as standard alternate equipment for stations connected to 755-A P.B.X. switchboards. The sets are equipped with #51-A lamps for visual signals on trunk calls and local calls. Power to operate the lamps, which are rated at 10 volts, is supplied from the local battery (18-25 volts) or centralized battery through a resistance element wired in the lamp circuit to provide the specified voltage.

Illuminated key sets impose a heavier drain on the local batteries than lamp indicators due to the additional appearances of trunk lamps. It would be necessary in most cases, dependent on traffic and number of key sets, to replace or supplement the local batteries with a higher capacity power plant and provide additional charging facilities. Inasmuch as there is no suitable power plant available, an economical and satisfactory method of supplying power to operate the system can be effected by using local 110 volt, 50-60 cycle power with a 393-A transformer to furnish 10 volts for the lamps in the key sets, and continue using the local battery for all other features of the P.B.X.

The following paragraphs give wiring changes and associated information pertaining to modification of the 755-A P.B.X. trunk circuit to operate the trunk lamp from 50-60 cycle power. Modification of the line circuit is also included for cases where a visual signal is to be provided for local calls. These changes of wiring will be in effect until the standard drawings which are in the process of development are available. The "SD" and "T" drawings involved are to be marked to show the necessary changes and left at the P.B.X. for maintenance forces.

Connecting Block Wiring

The pairs indicated below are to be strapped common for required number of stations at the cross-connecting terminal per B.S.P. B556.015, Table I, and a #20AM lead run to Terminal Strip "A" as follows:

Pairs 152-161,	inclusive,	to misc. term. #1
" 162-171,	" " "	" #2
" 172-181,	" " "	" #3
" 182-191,	" " "	" #4
" 192-201,	each pair strapped individually when required	
	for station line lamps and a lead run to misc.	
	term. #17, 23, 35, 41 or 47, 29.	

Wiring Changes

1. 755-A Trunk Circuit - T-66503-11

- (a) Remove (Battery) red lead from 2B of the (B) relay and 3B of the (H2) relay. (See note 1)
- (b) Remove the "LB" lead from 1B of the (T) relay. (See note 1)

- (c) Strap 2B of the (B) relay, 3B of the (H2) relay, and the "LB" lead together and extend the lead to the "A" terminal of the 393-A transformer. Tape splice of "LB" lead.

2. Station Line Lamp Circuit - T-66506-11

- (a) If station line lamp is required, a flashing call lamp can be provided, using A.C. power, but a steady busy lamp will not be available due to circuit conditions.
- (b) Remove and tape battery lead from 2B of the (B) relay.
(See note 2)
- (c) Remove fuse (C) at fuse panel (Signal).
- (d) Run a lead from 2B of the (B) relay to "A" terminal of the 393-A transformer.

Note 1 - Corresponding terminals per SD-66503-11 are 8B of the (B) relay, 6B of the (H2) relay, and 3B of the (T) relay.

Note 2 - Corresponding terminal per SD-66506-11 is 8B of the (B) relay.

393A Transformer

1. Wire 393-A transformer per SD-69091-0120, Fig. 31, and install per B.S.P. C53.511.
2. 36 Lamps may be connected to one transformer.
3. Use one transformer for each trunk when the 755-A P.B.X. is fully equipped with 20 stations.
4. One transformer may be used for more than one trunk in so far as the capacity of the transformer is not exceeded.
5. All lamps for an individual trunk are to be connected to the same transformer.

325 LAMPS RT2 TRANSFORMER

C-755A

COURSE 451

PLANT TRAINING COURSE

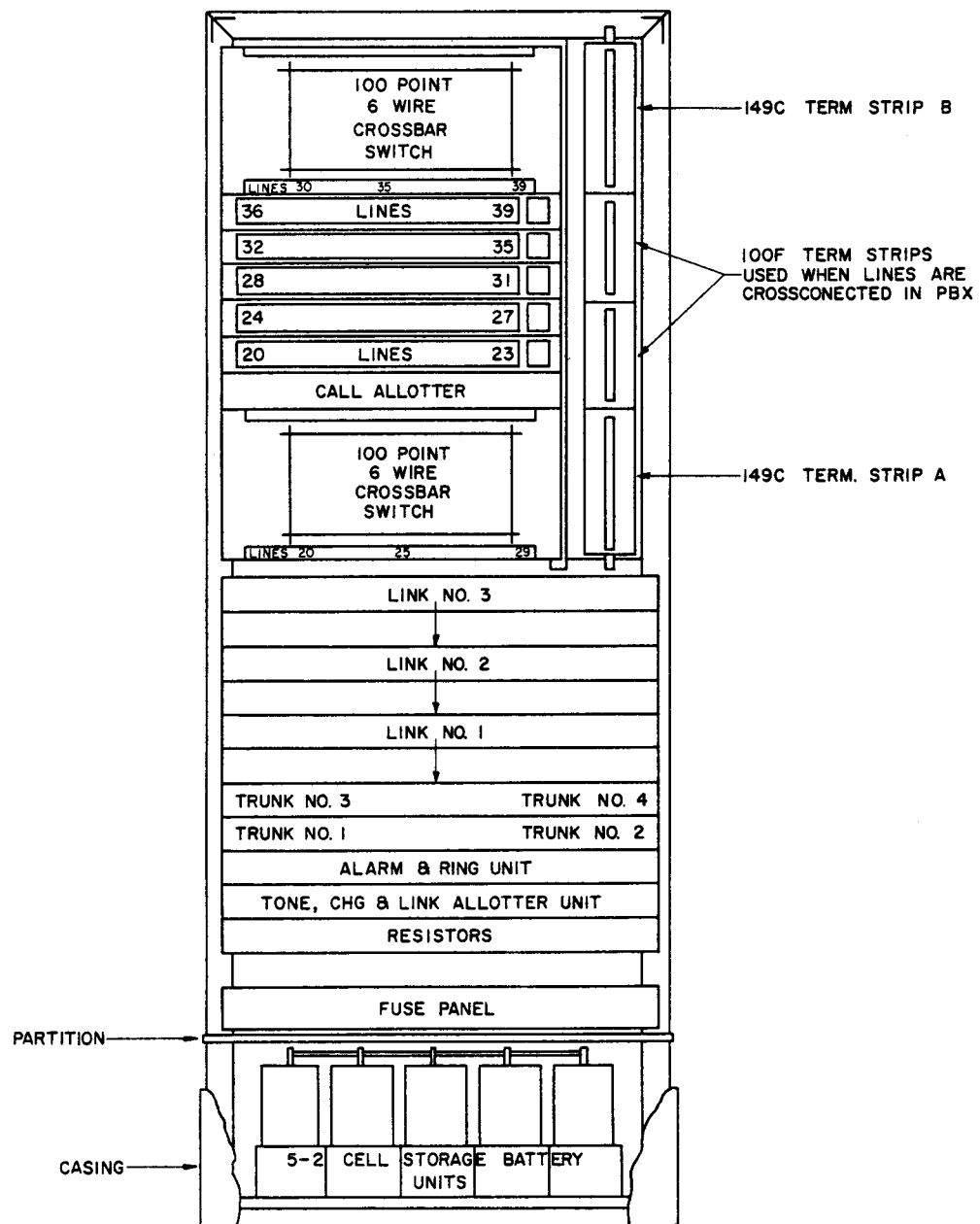
STUDENT MATERIAL FOR 755A P.B.X.

OPERATIONAL SKETCHES AND SEQUENCE CHARTS

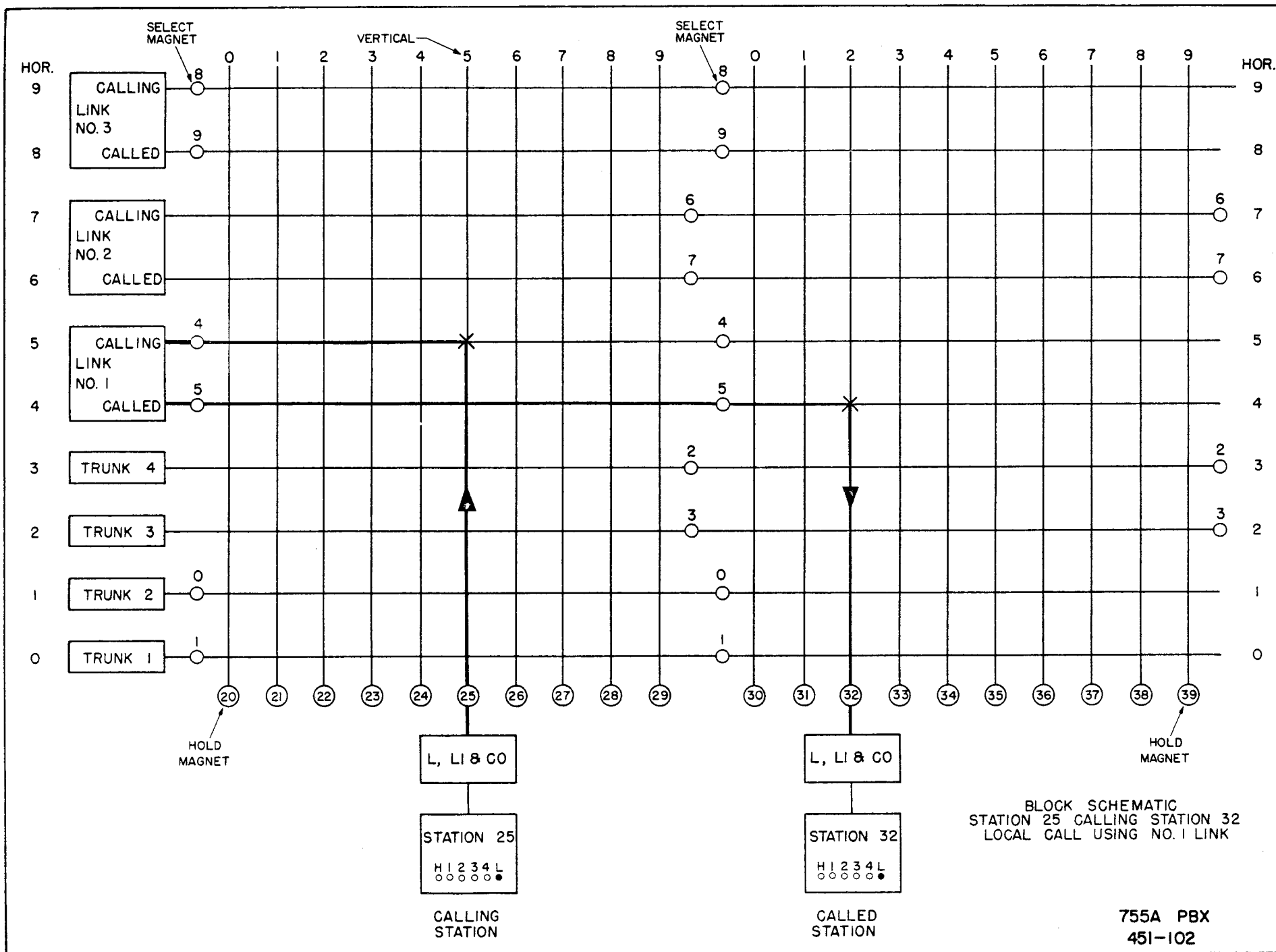
Michigan Bell Telephone Co.
General Plant Personnel
March, 1959

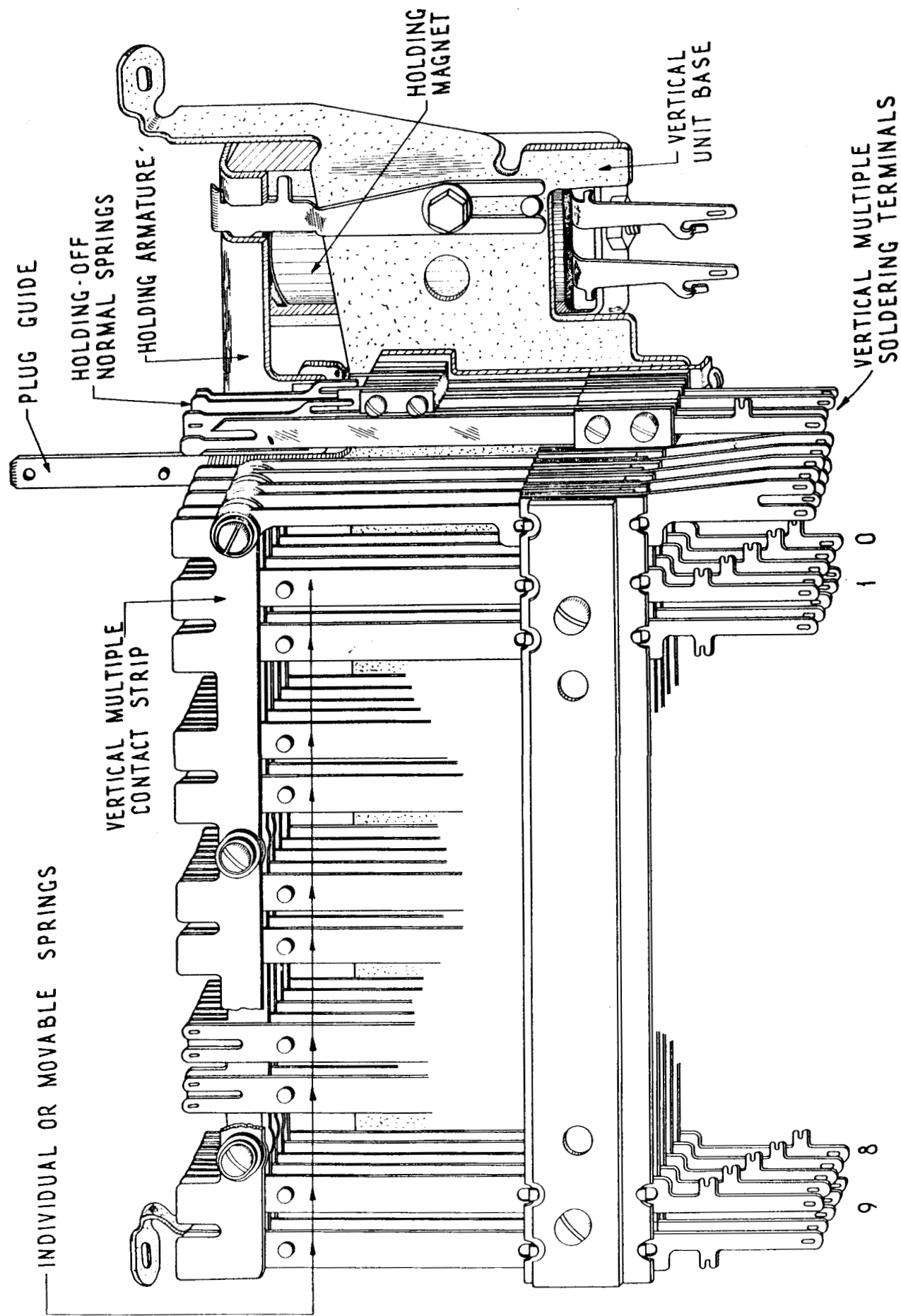
NUMBER

101	755A PBX EQUIPMENT
102	BLOCK SCHEMATIC, STATION 25 CALLING STATION 32
103	CROSSBAR SWITCH - VERTICAL UNIT
104	PICTURES 100 AND 200 POINT CROSSBAR SWITCHES
105	CROSSBAR SWITCH SELECTING MECHANISM
106	CARD OPERATED MECHANISM
107	FIG. A GENERAL VIEW-NOMENCLATURE
108	PARTIAL PERSPECTIVE VIEW 20 VERTICAL UNIT SWITCH
109	FIG. B METHOD OF COUNTING CONTACTS
110	149C TERMINAL STRIPS A AND B
111	LIST OF RELAYS AND LOCATIONS ON OS DRAWINGS
112	SEQUENCE CHART NO. 1 LOCAL CALL TO STATION 32
113	SEQUENCE CHART NO. 1 CONTINUED
114	SEQUENCE CHART NO. 1 CONTINUED AND NO. 2 TRUNK CALL
115	OS-1 OPERATION OF LINE L-RELAY
116	OS-2 SELECT LINK
117	OS-3 CLOSING CROSSPOINT AT ORIGINATING END OF LINK
118	OS-4 PULSE COUNTING
119	OS-5 REGISTER TENS DIGIT DIALED
120	OS-6 REGISTERING UNITS DIGIT
121	OS-7 TESTING LINE FOR BUSY AND LINE HUNTING 26 & 36
122	OS-8 RECEIVING BUSY SIGNAL
123	OS-9 OPERATION OF SELECT MAGNET CALLED END OF LINK
124	OS-10 RINGING CALLED STATION
125	OS-11 INDICATION OF IDLE LINKS
126	OS-12 SLEEVE & HOLDING PATHS, TRUNK CLASS FOR STATION
127	OS-13 TIP AND RING ON TRUNK CALL
128	OS-14 FLASHING TRUNK LAMP ON INCOMING CALL



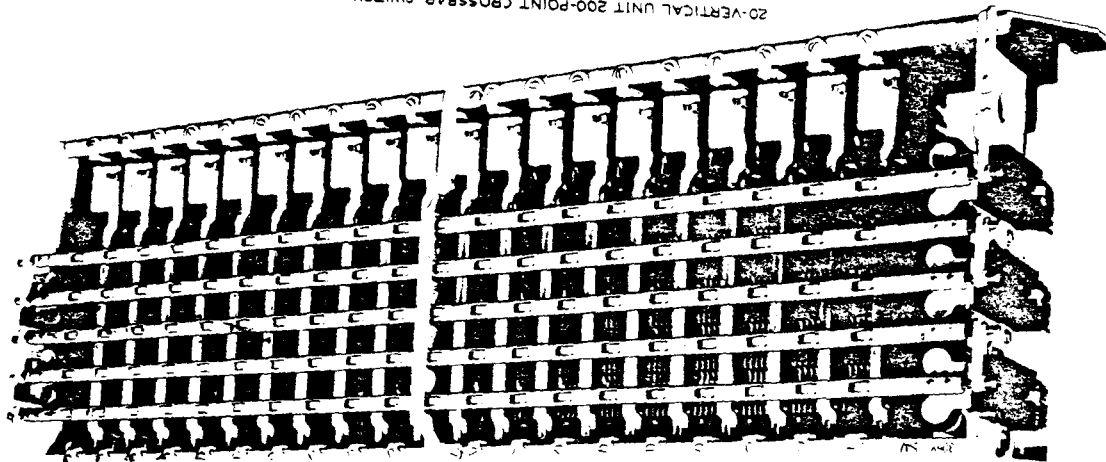
755A PBX
EQUIPMENT



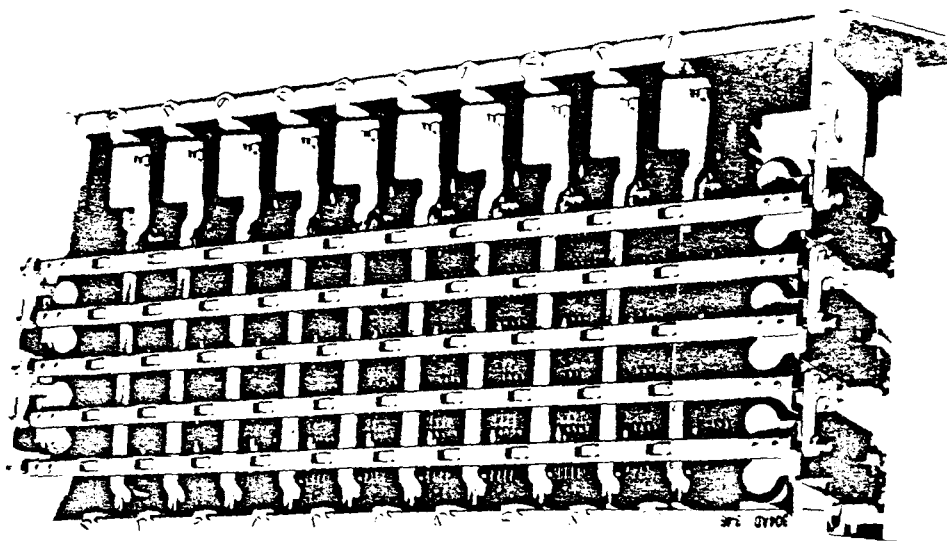


CROSSBAR SWITCHES

20-VERTICAL UNIT 200-POINT CROSSBAR SWITCH



10-VERTICAL UNIT 100-POINT CROSSBAR SWITCH



451-104

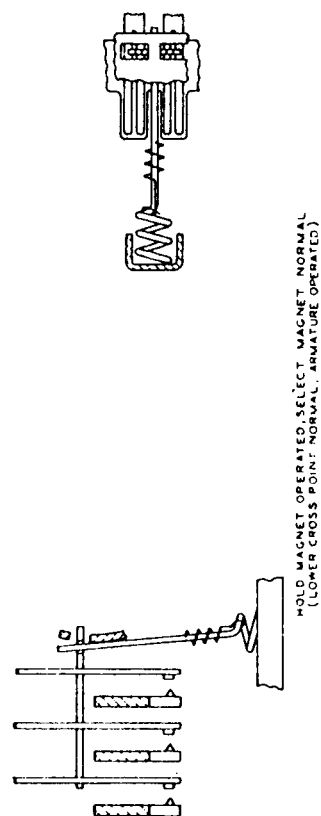
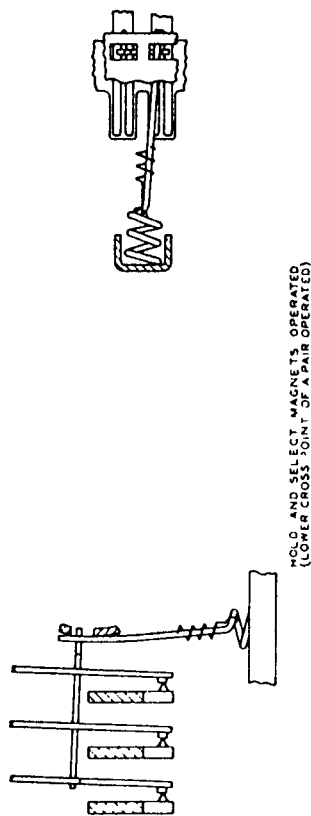
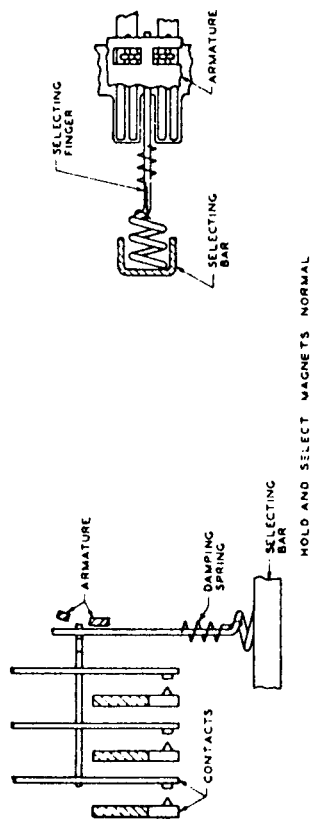
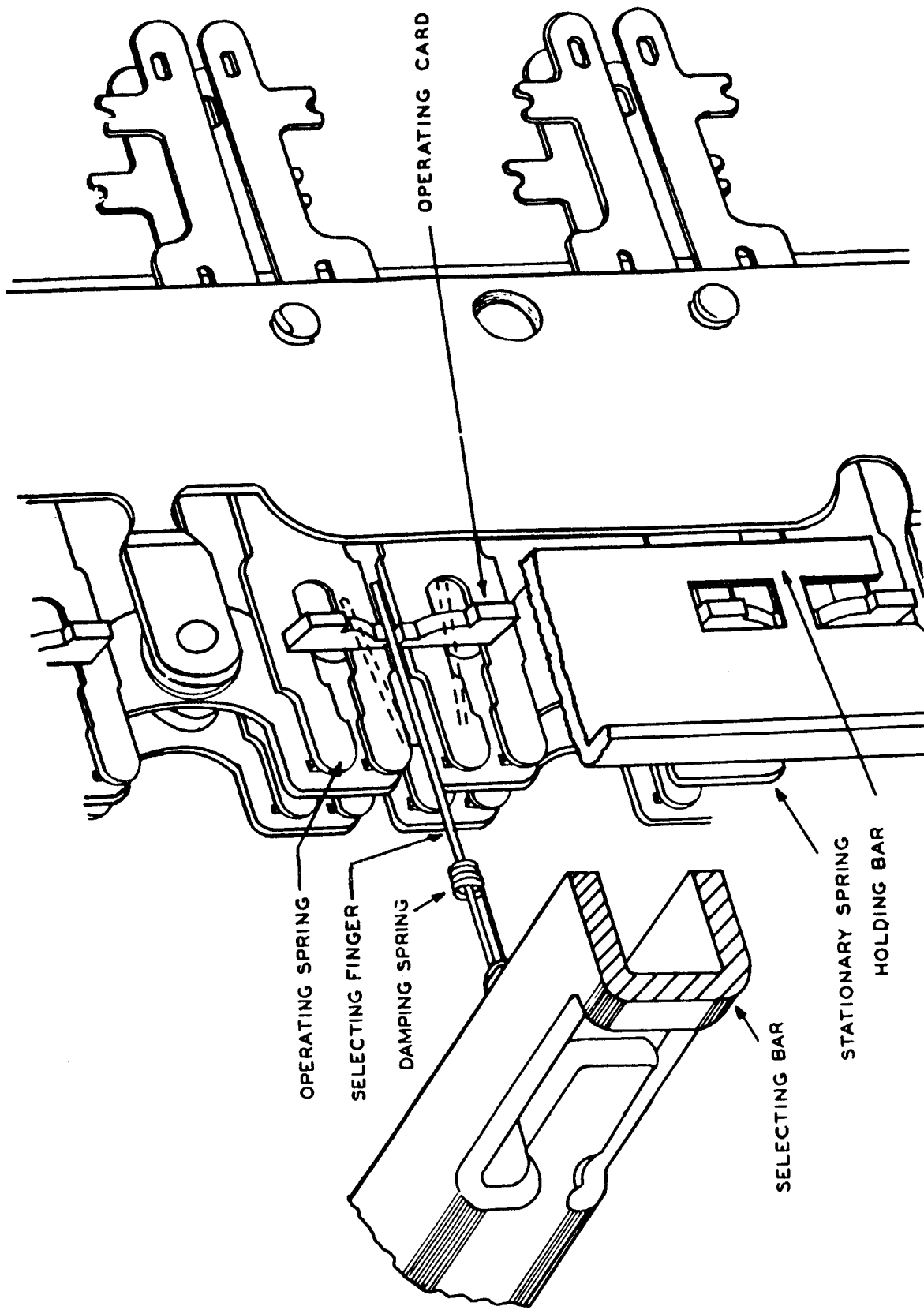


FIG 2
CROSSBAR SWITCH
SELECTING MECHANISM



CARD OPERATED MECHANISM

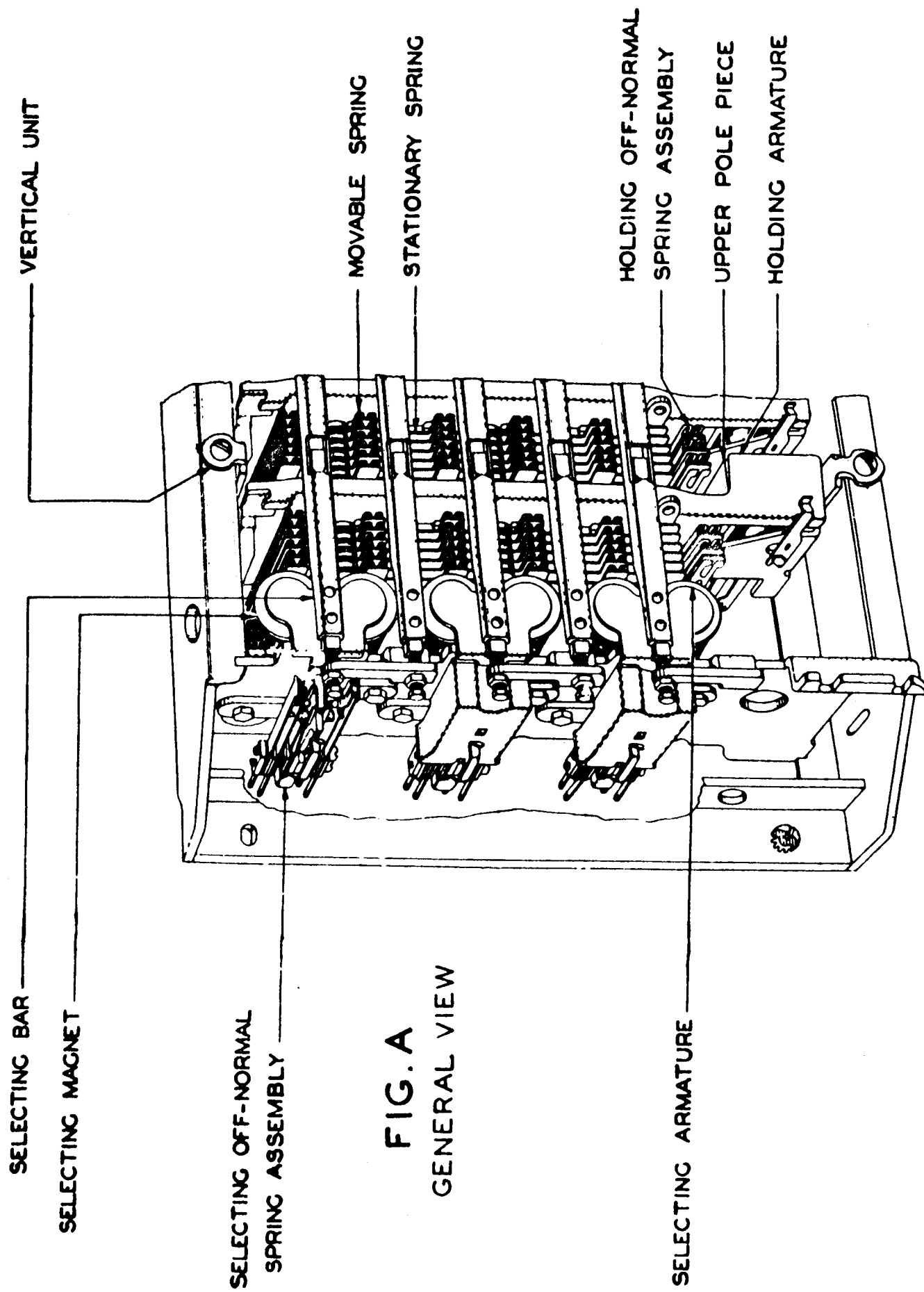
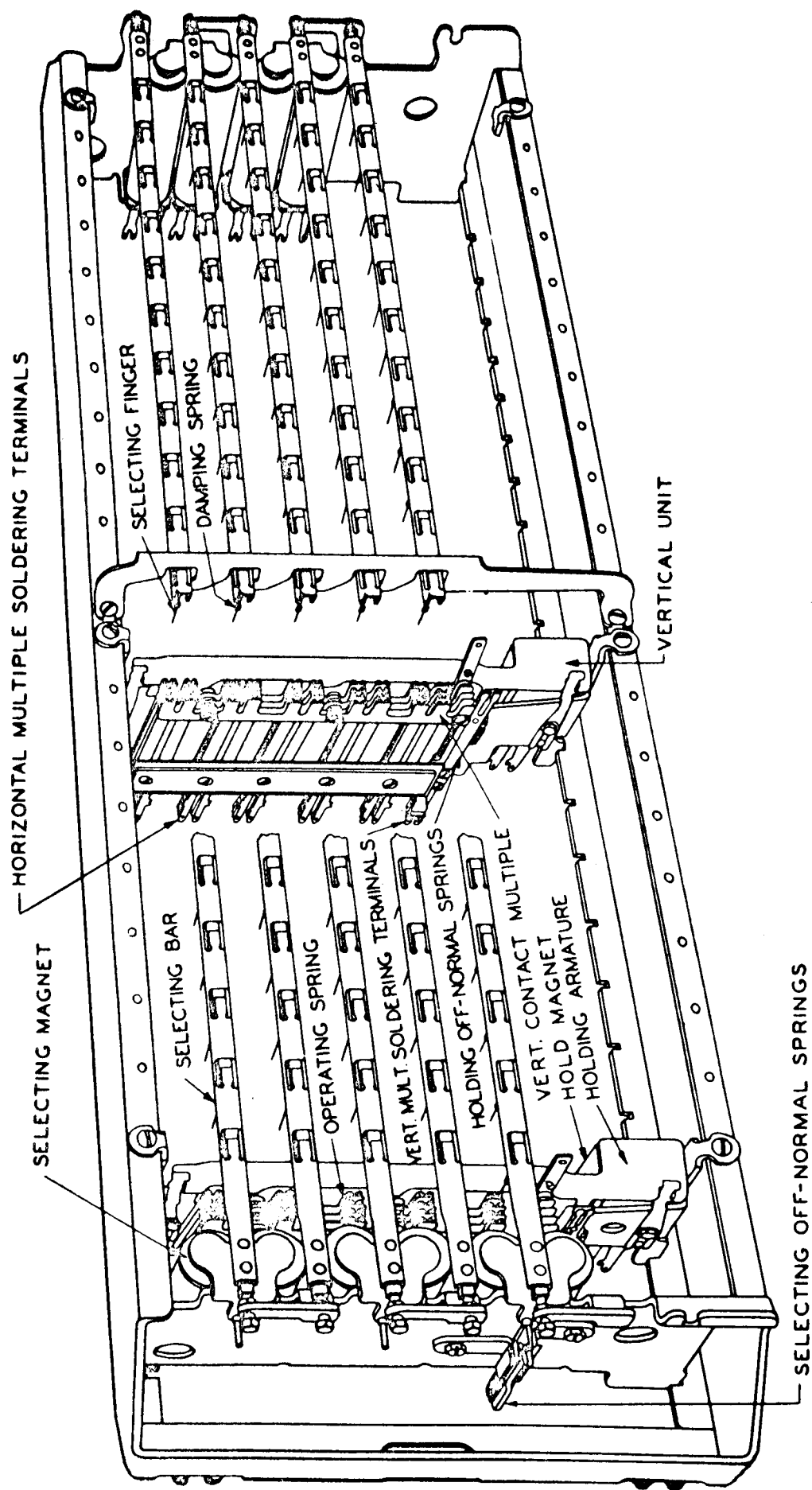
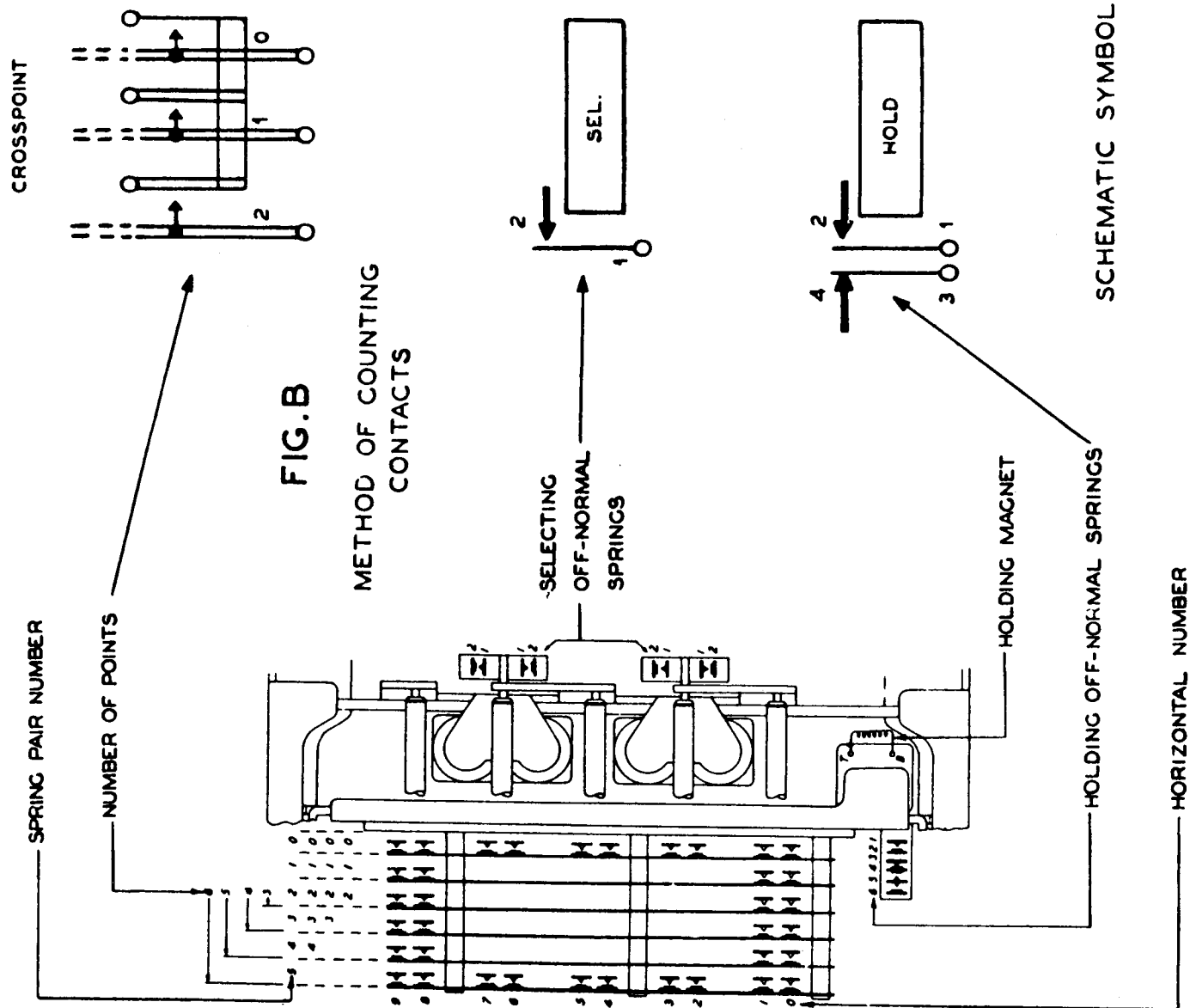


FIG. A
GENERAL VIEW



PARTIAL PERSPECTIVE VIEW OF 20-VERTICAL UNIT CROSSBAR SWITCH (200 POINT)



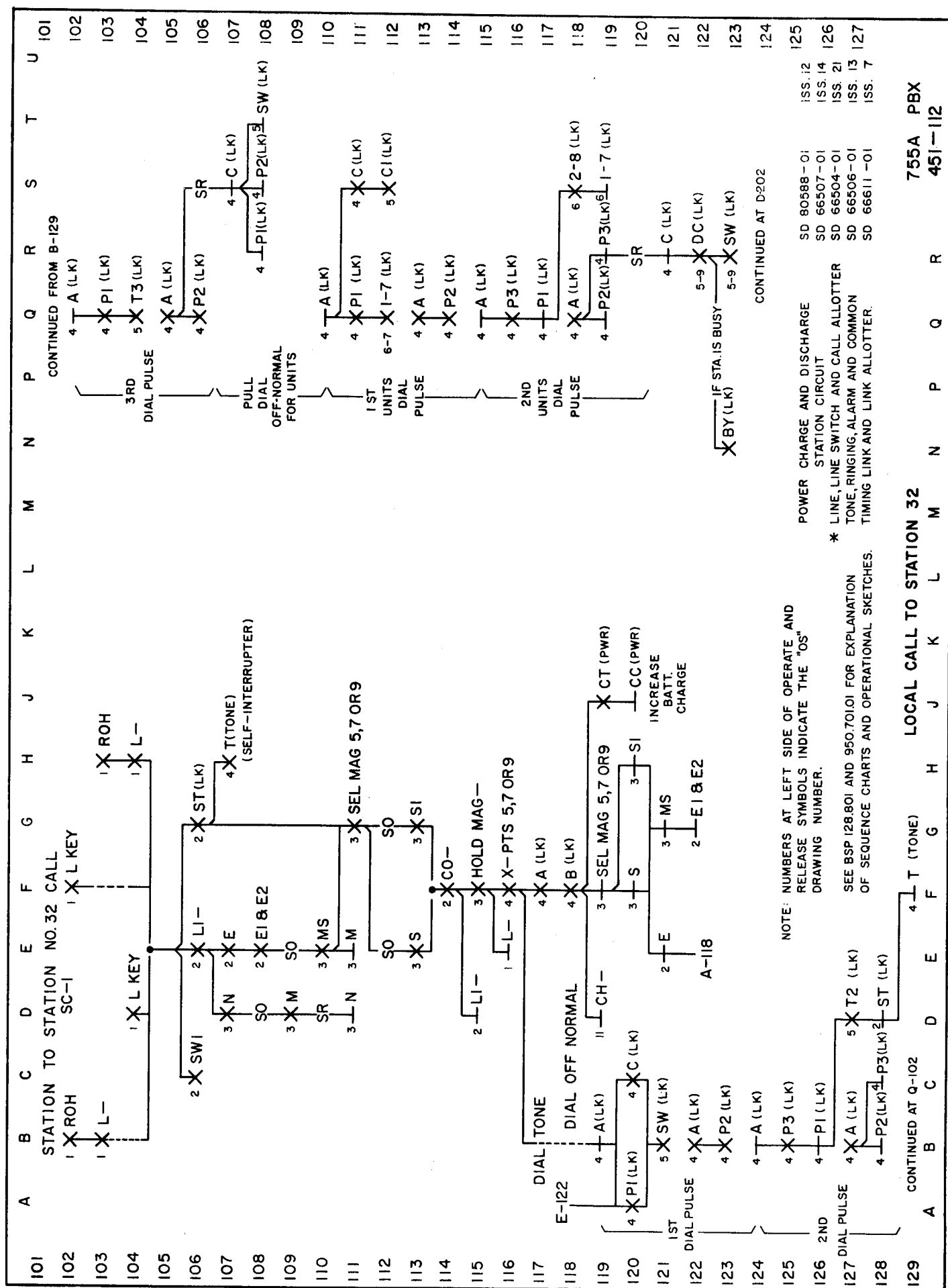
[illegible][illegible]

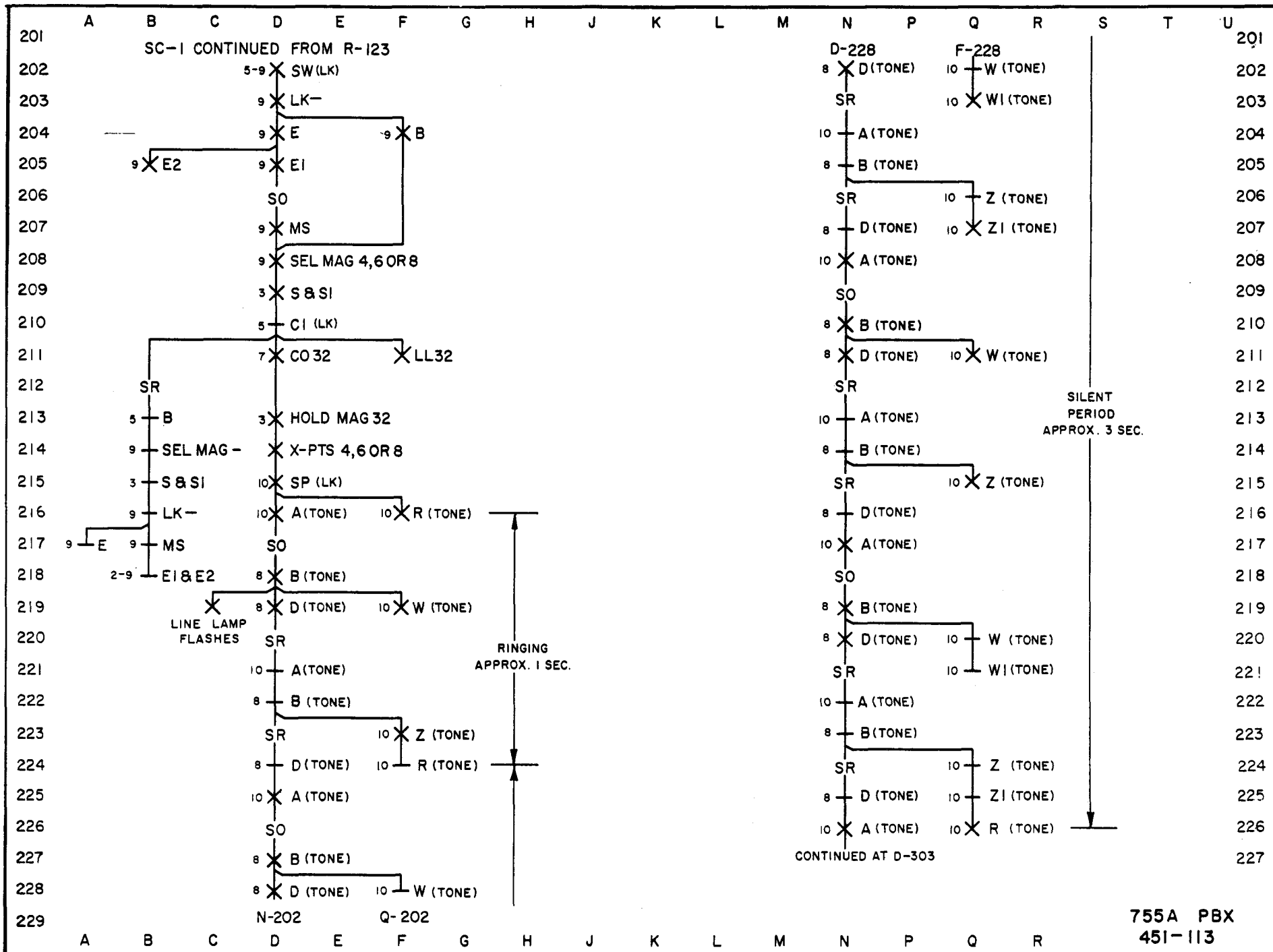
SD-66504-01		
RELAY	LINE, LINE SWITCH AND CALL ALLOTTER	OS
B	BREAK SEL. MAG. OPERATING GROUND	9
CO-	CUT-OFF LINE GROUND AND OPERATE LINE HOLD MAG.	2, 7, 12
E	END OF CHAIN CIRCUIT	2, 9
E1	END AUXILIARY NO. 1	2, 9
E2	END AUXILIARY NO. 2	2, 9
HOLD MAG.	LINE HOLD MAGNET	3
L-	LINE RELAY 20 to 29 AND 30 TO 39	1, 4, 8, 13
L1-	LINE AUXILIARY NO. 1	2
LL	LINE LAMP	-
LK	LINK 1, 2 or 3	9
M	TIMING FOR EMERGENCY OPERATION OF SEL. MAG.	3, 9
MS	START THE OPERATION OF SEL. MAG.	3, 9
N	TIMING FOR EMERGENCY OPERATION OF SEL. MAG.	3, 9
S	START CLOSING CROSSPOINT	3
S1	START CLOSING CROSSPOINT AUX. NO. 1	3
SEL MAG.	SELECT MAGNET	3, 9
SW	SWITCH TIP AND RING FROM OTHER STATION	-
TK	TAKE-UP OTHER STATION	-
SD-66611-01		
	LINK AND LINK ALLOTTER	
1-7	UNITS DIGIT DIALED 1 OR 7	6, 7
2-8	UNITS DIGIT DIALED 2 OR 8	6
3-9	UNITS DIGIT DIALED 3 OR 9	6
4-0	UNITS DIGIT DIALED 4 OR 0	6
5-6	UNITS DIGIT DIALED 5	6
6	UNITS DIGIT DIALED 6 OR MORE	6
A	SUPERVISORY RELAY CALLING STATION	4, 8
B	BUSY LINK	4
BY	BUSY CALLED STATION	7
C	COMPLETION OF DIALING A DIGIT (SLOW RELEASE)	4
C1	C RELAY AUXILIARY NO. 1	5
CH-	CHANNEL OR LINK NO. 1, 2, OR 3	11
DC	DIALING COMPLETED	5
E	SUPERVISORY RELAY CALLED END	8, 10
HS	HOLD SLEEVE	12
P1	PULSE COUNTING RELAY NO. 1	4
P2	PULSE COUNTING RELAY NO. 2	4
P3	PULSE COUNTING RELAY NO. 3	4
R	RING THE CALLED STATION	10
SP	SPLIT THE TALKING PATH FOR RINGING	10
ST	START THE LINK	2
SW	SWITCH PULSING FROM TENS TO UNITS	5
T2	TENS TWO	5
T3	TENS THREE	5
TL	TIE LINE	-

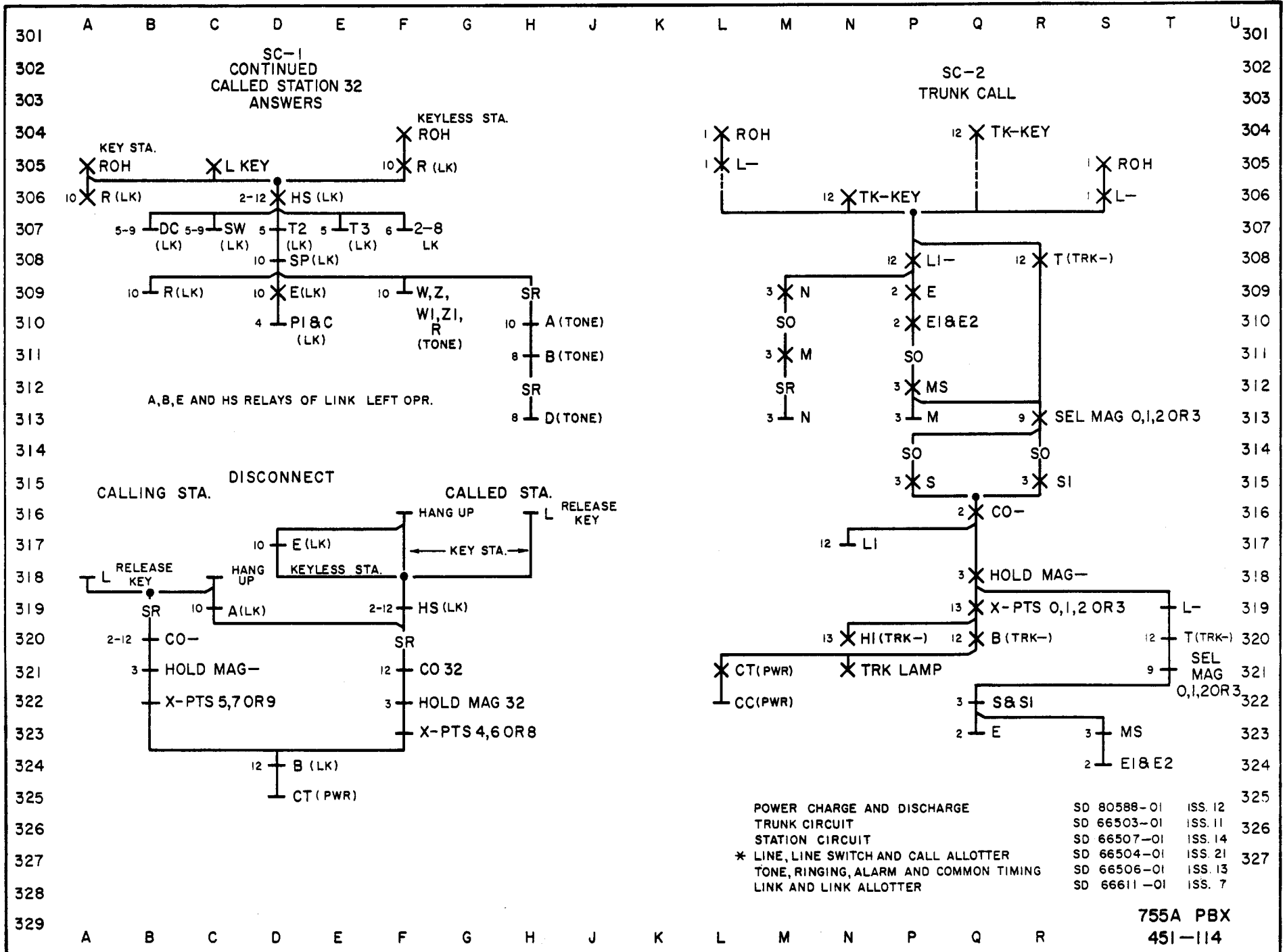
SD-66503-01		
RELAY	TRUNK	OS
B	BUSY TRUNK	12
H	HOLD TRUNK	12
H1	HOLD TRUNK AUX. NO. 1	13
H2	HOLD TRUNK AUX. NO. 2	13
L	LINE RELAY FOR PERMANENTLY CONNECTED STATION	-
R	RING-UP RELAY	13
R1	RING-UP AUXILIARY NO. 1	14
T	TRUNK SELECT MAGNET RELAY	12
SD-66506-01		
	TONE, RINGING, ALARM AND COMMON TIMING	
A	FIRST RELAY OPERATED	10, 14
B	SECOND RELAY OPERATED	8, 14
BY	BUSY TONE FOR LINES	2
CO	CUT-OFF ALARM	-
D	DROP THE FIRST AND SECOND RELAYS	8, 14
F	FUSE ALARM	-
LK	LOCK-UP RELAY	14
R	RING STATION	10, 14
T	TONE GENERATOR	4, 8
T1	TONE AUXILIARY NO. 1	8
W	TIMING RELAY	10, 14
W-	TIMING AUXILIARY NO. 1, 2, & 3	10, 14
Z	TIMING RELAY	10, 14
Z-	TIMING AUXILIARY NO. 1, 2, & 3	10, 14
SD-80588-01		
	POWER CHARGE AND DISCHARGE	
CC	CHARGE CONTROL	-
CT	CHARGE CONTROL TRIP	-

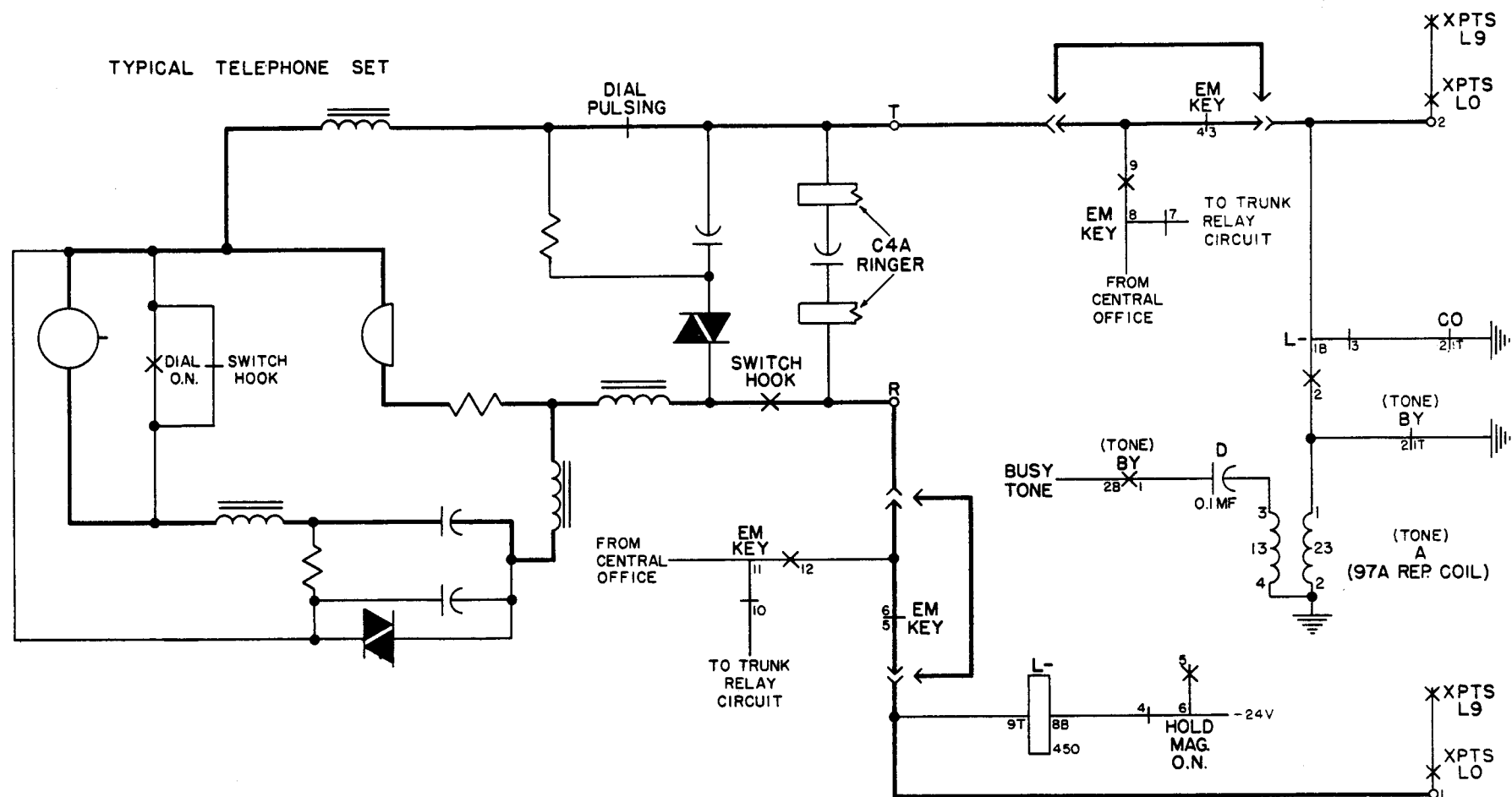
LIST OF RELAYS AND LOCATIONS
ON OS DRAWINGS

755A P.B.X.
451-111









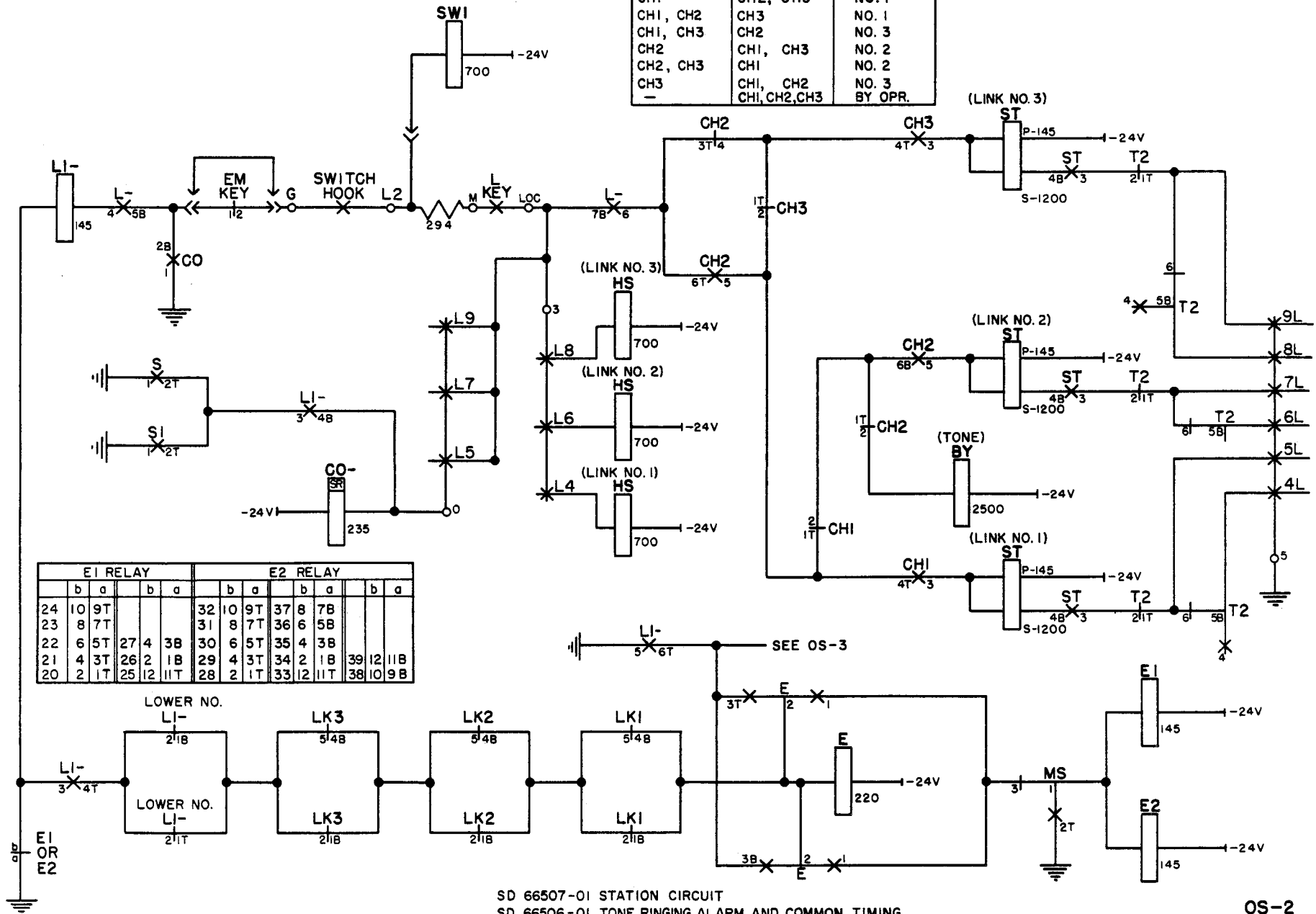
NOTE: SEE B.S.P 128.801 AND 950.701.01 FOR EXPLANATION OF SEQUENCE CHARTS AND DETACHED-CONTACT-SCHEMATIC DRAWINGS AND OPERATIONAL SKETCHES.

SD 66506-01 TONE, RINGING, ALARM AND COMMON TIMING
 SD 66507-01 STATION CIRCUIT
 * SD 66504-01 LINE, LINE SWITCH AND CALL ALLOTTER

OPERATION OF LINE L-RELAY

OS-1
 755A PBX
 451-115

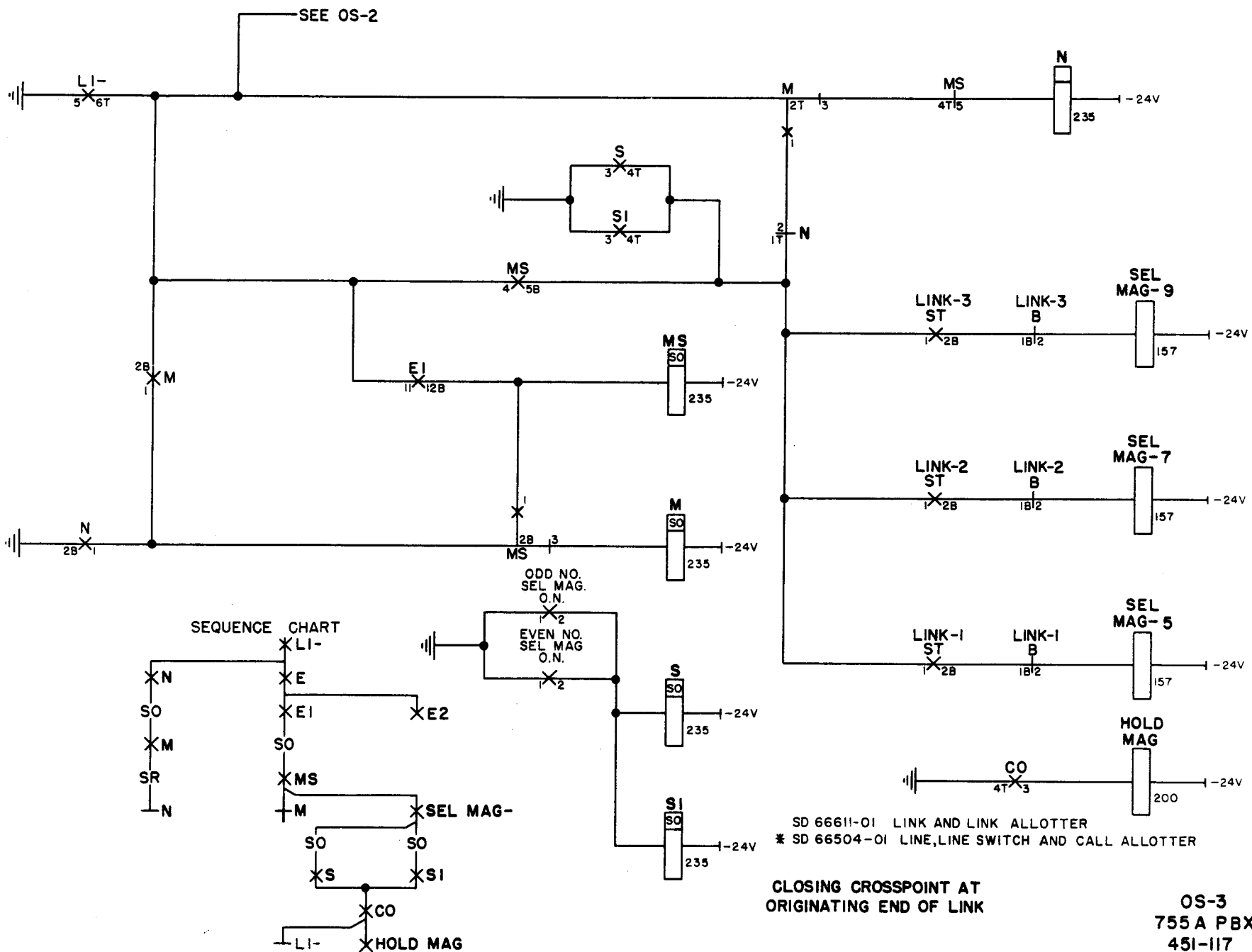
RELAYS OPR.	RELAYS REL	LINK SEL.
CH1	CH2, CH3	NO. 1
CH1, CH2	CH3	NO. 1
CH1, CH3	CH2	NO. 3
CH2	CH1, CH3	NO. 2
CH2, CH3	CH1	NO. 2
CH3	CH1, CH2	NO. 3
-	CH1, CH2, CH3	BY OPR.

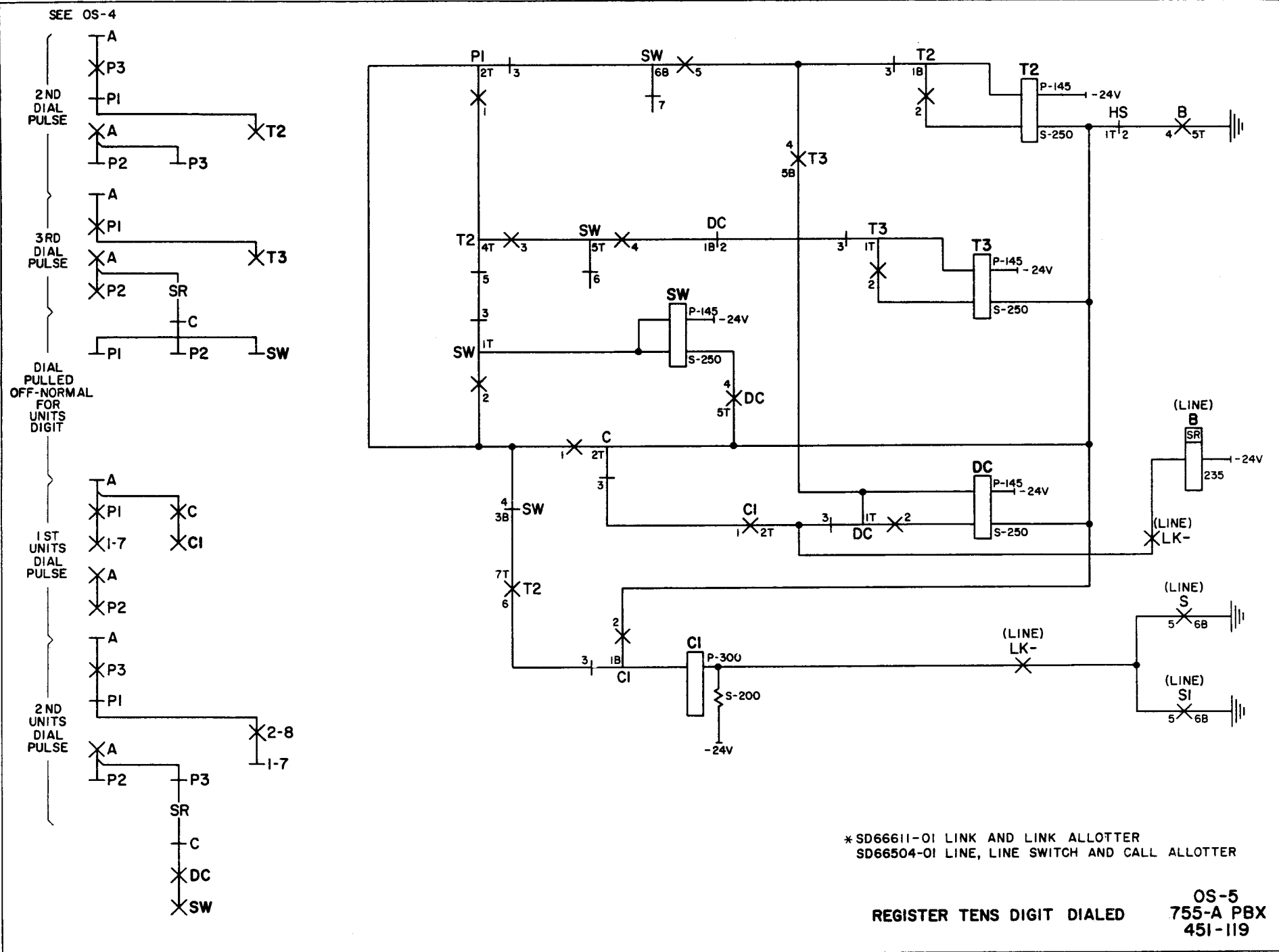


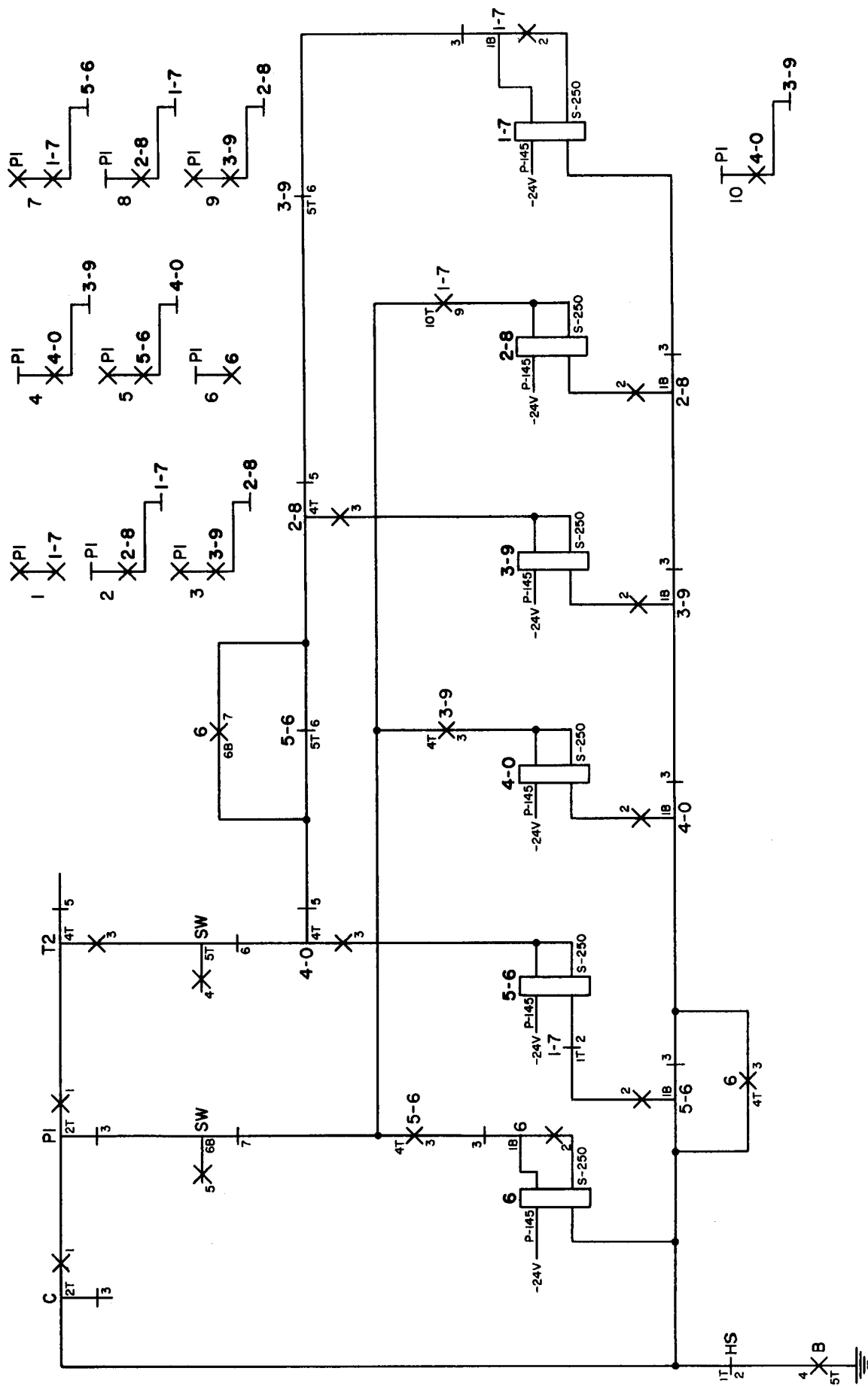
SD 66507-01 STATION CIRCUIT
SD 66506-01 TONE, RINGING, ALARM AND COMMON TIMING
SD 66611-01 LINK AND LINK ALLOTTER
* SD 66504-01 LINE, LINE SWITCH AND CALL ALLOTTER

SELECT LINK

OS-2
755A PBX
451-116



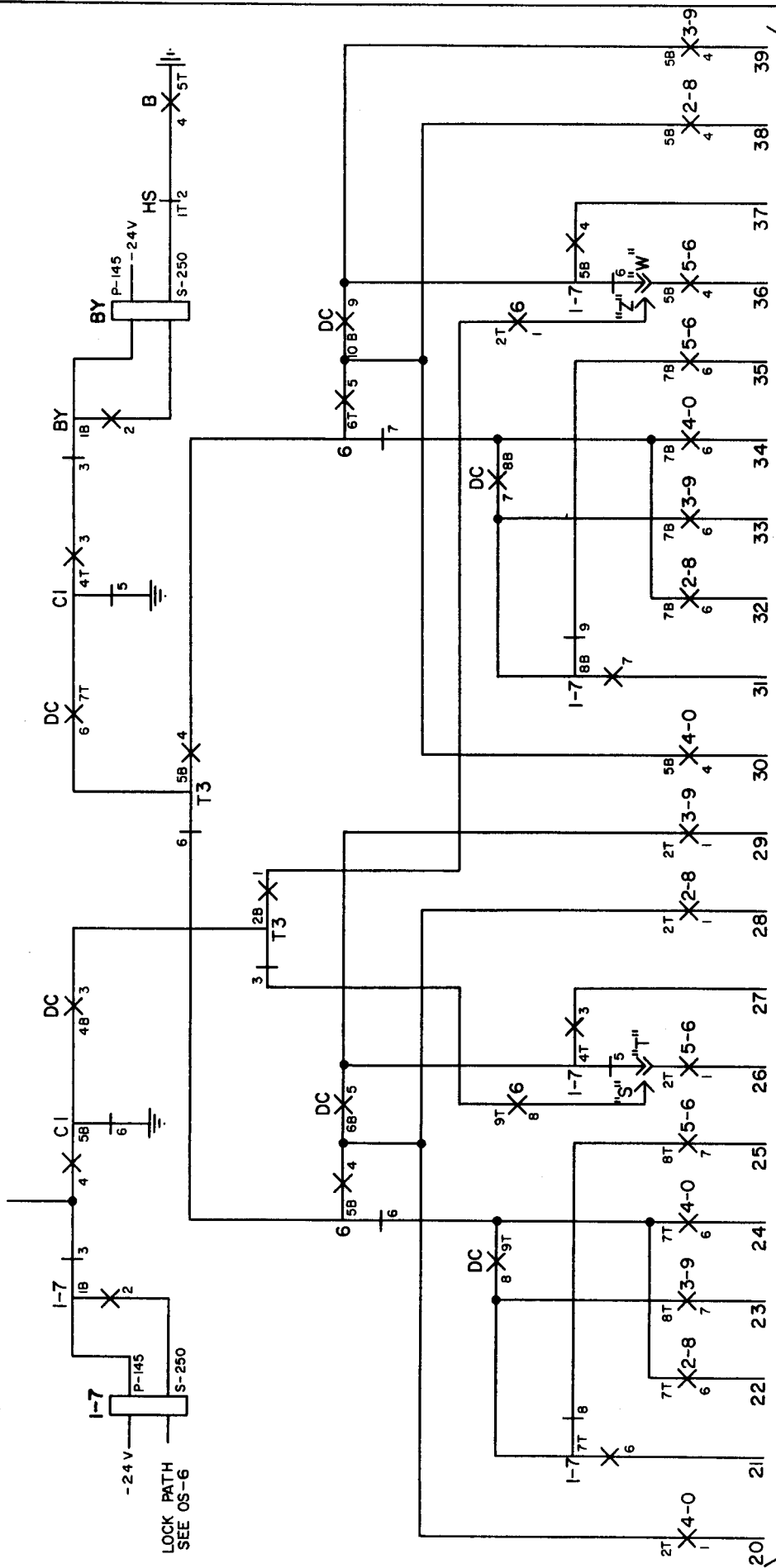




*SD66611-01 LINK AND LINK ALLOTTER

REGISTERING UNITS DIGIT
OS-6
755-A PBX
451-120

REGULAR OPERATING PATH OF 1-7



(LINE)

CO-

SR

235

-24 V

HOLD

MAGNET

ON. CONTACTS

(LINE)

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3

4

5

6

7

8

9

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11

12

13

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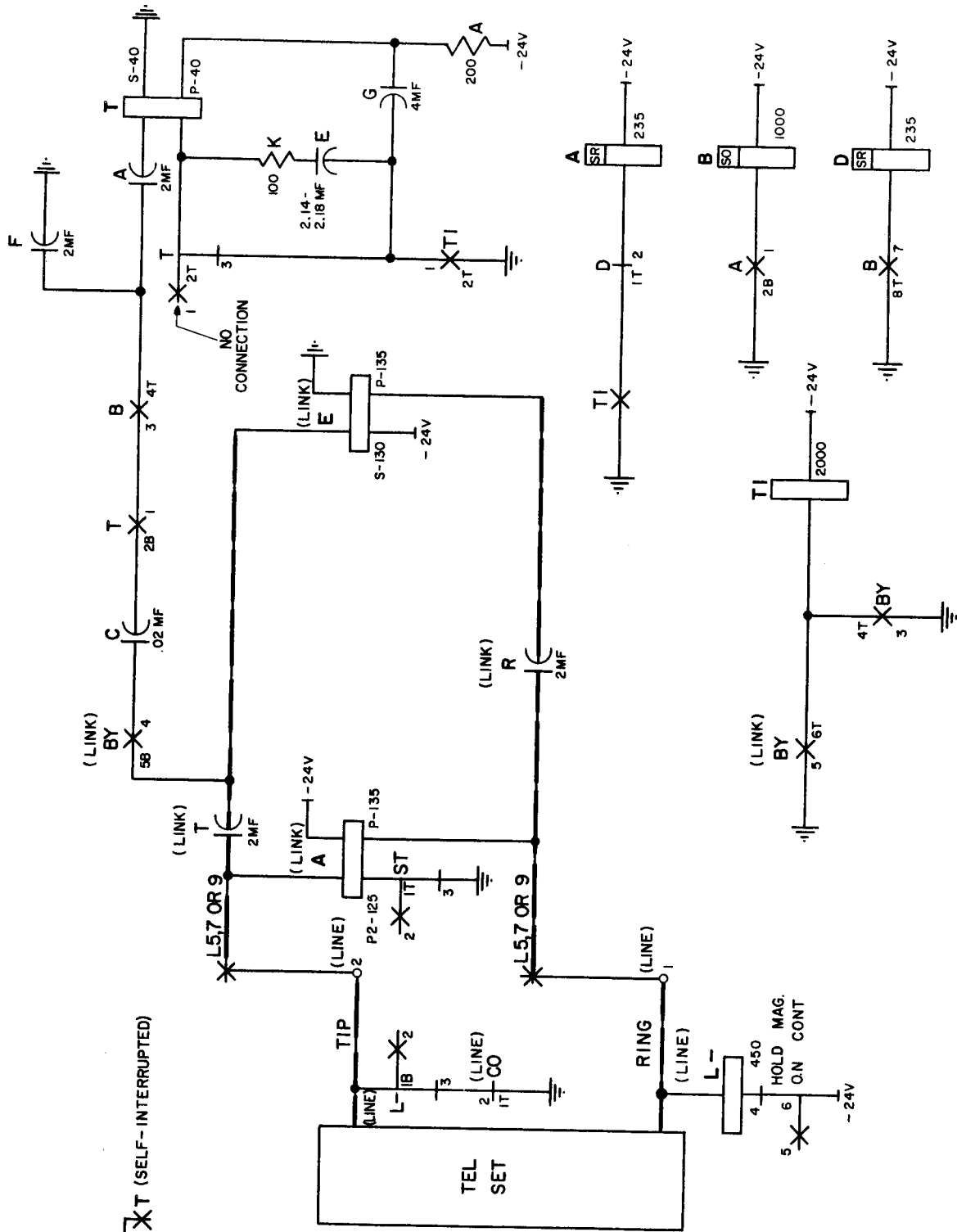
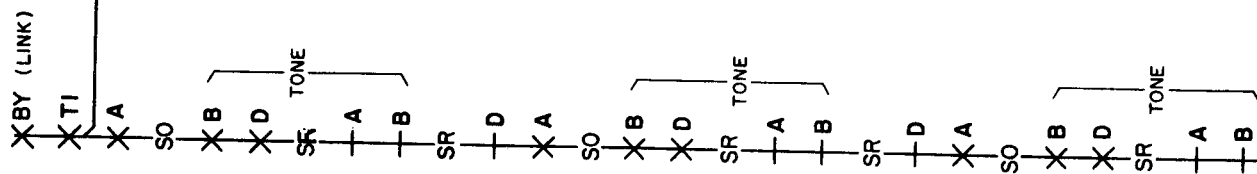
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298

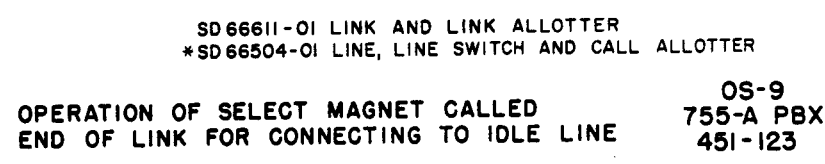
SEQUENCE CHART

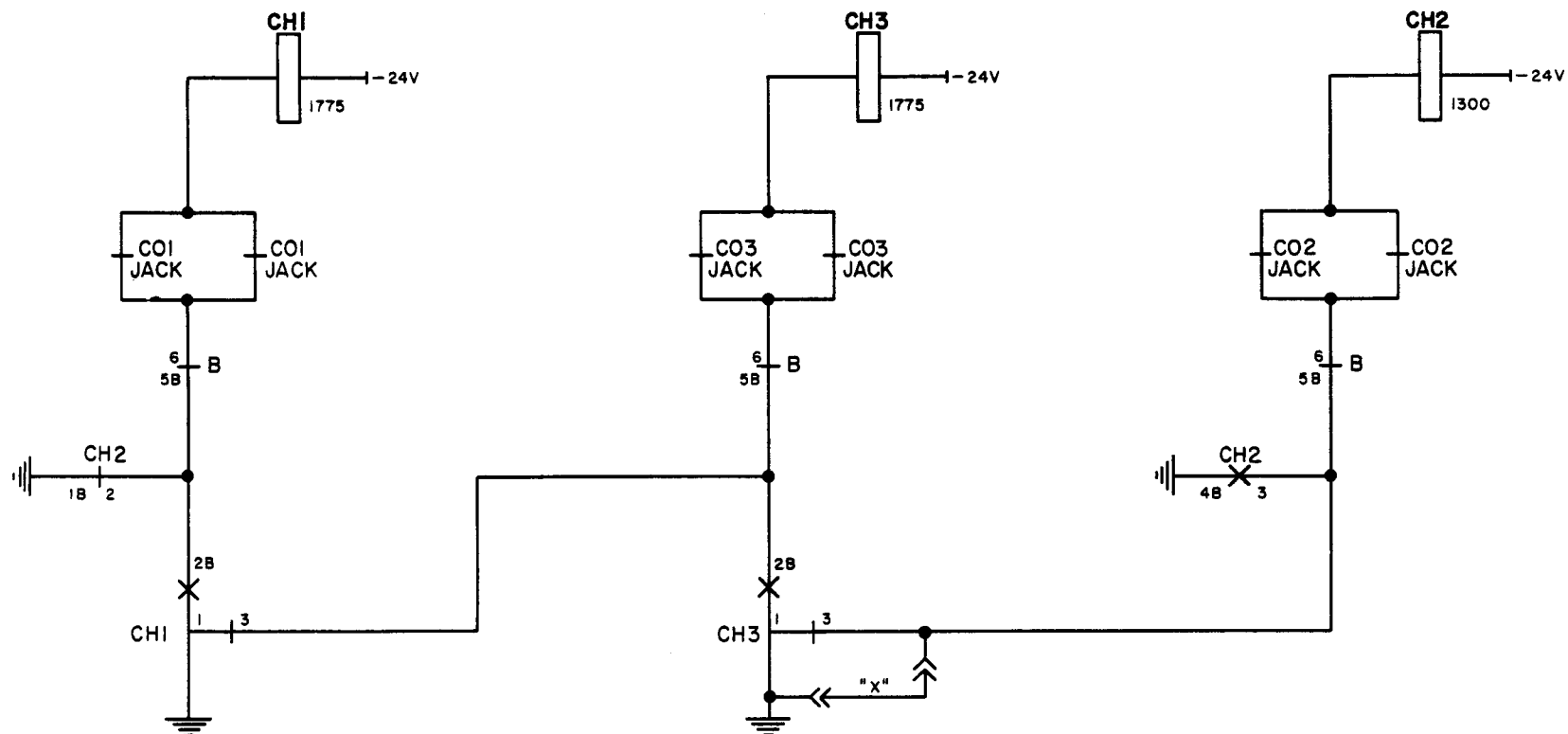


SD 66504-01 LINE, LINE SWITCH AND CALL ALLOTTER
SD 66611-01 LINK AND LINK ALLOTTER
* SD 66506-01 TONE, RINGING, ALARM AND COMMON TIMING

RECEIVING BUSY SIGNAL

OS-8
755 A PBX
451-122





SEE OS-2 FOR CONTACTS OF CH- RELAYS

RELAYS OPERATED	RELAYS NORMAL	LINK SELECTED
CH1	CH2 AND CH3	LINK NO.1
CH1 AND CH2	CH3	LINK NO.1
CH1 AND CH3	CH2	LINK NO.3
CH2	CH1 AND CH3	LINK NO.2
CH2 AND CH3	CH1	LINK NO.2
CH3	CH1 AND CH2	LINK NO.3
NONE	CH1, CH2 AND CH3	NONE

USE "X" WIRING WHEN ONLY 2 LINKS ARE USED

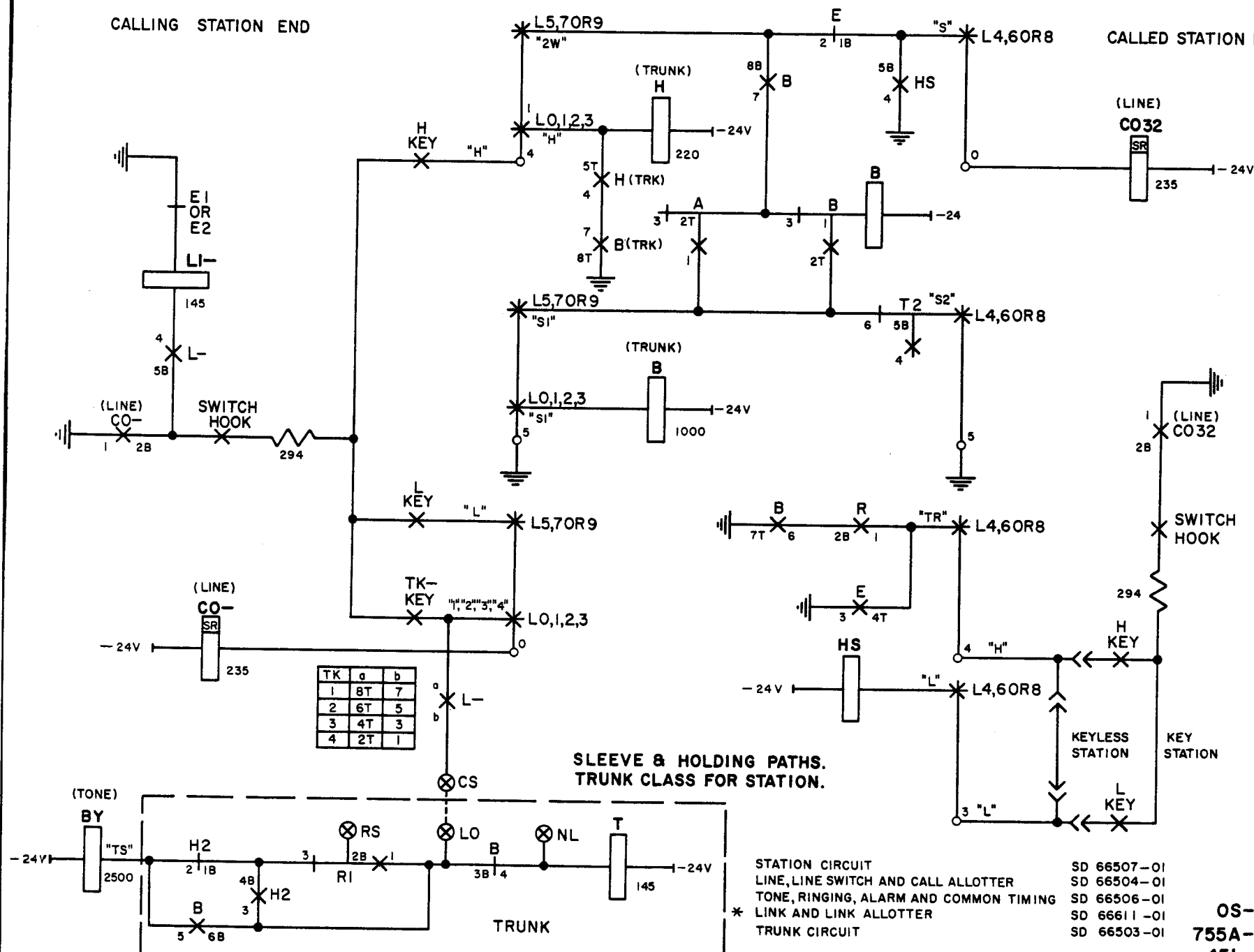
INDICATION OF IDLE LINKS

SD 66611-01 LINK AND LINK ALLOTTER

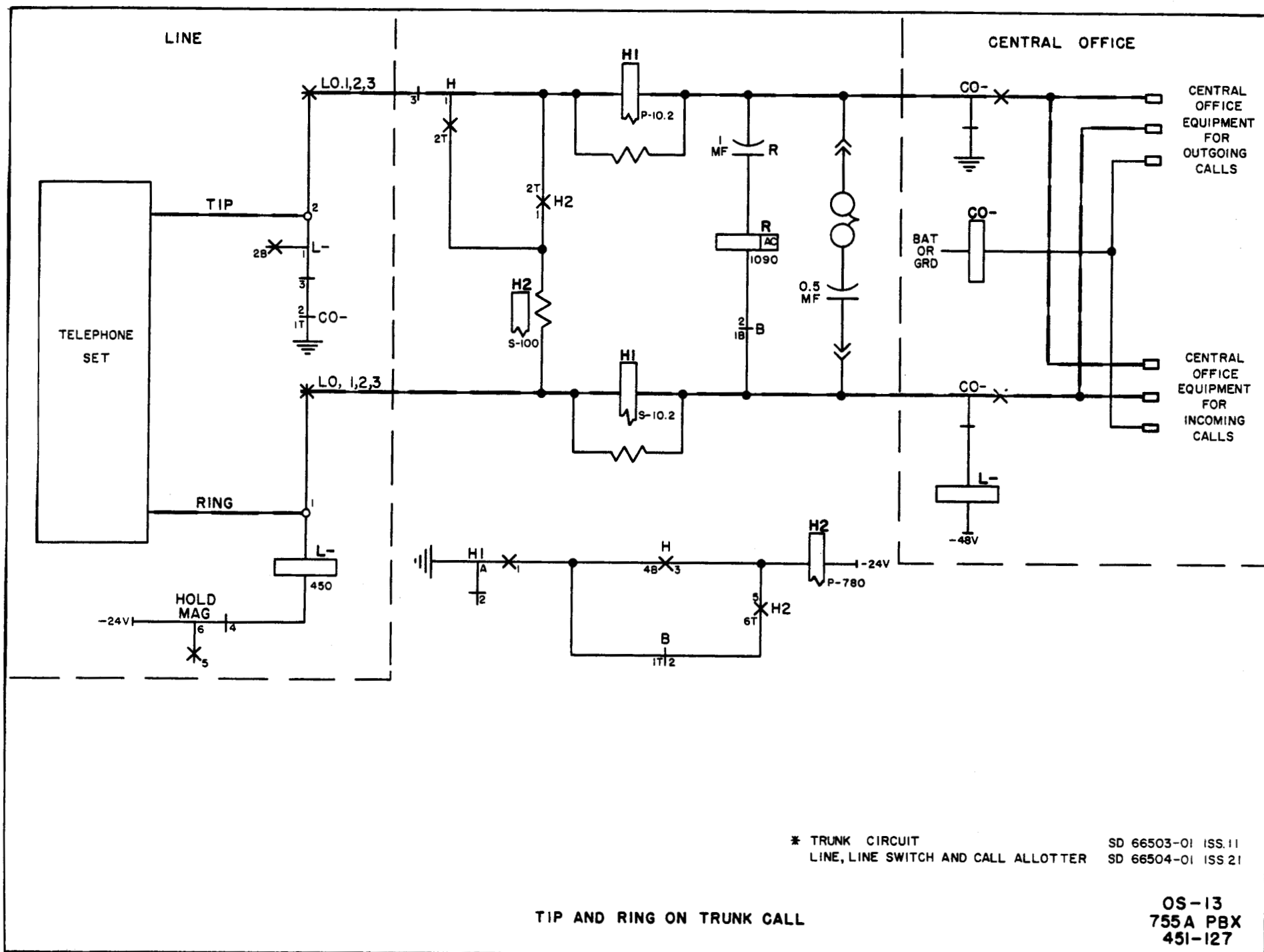
OS-11
755A PBX
451-125

CALLING STATION END

CALLED STATION END



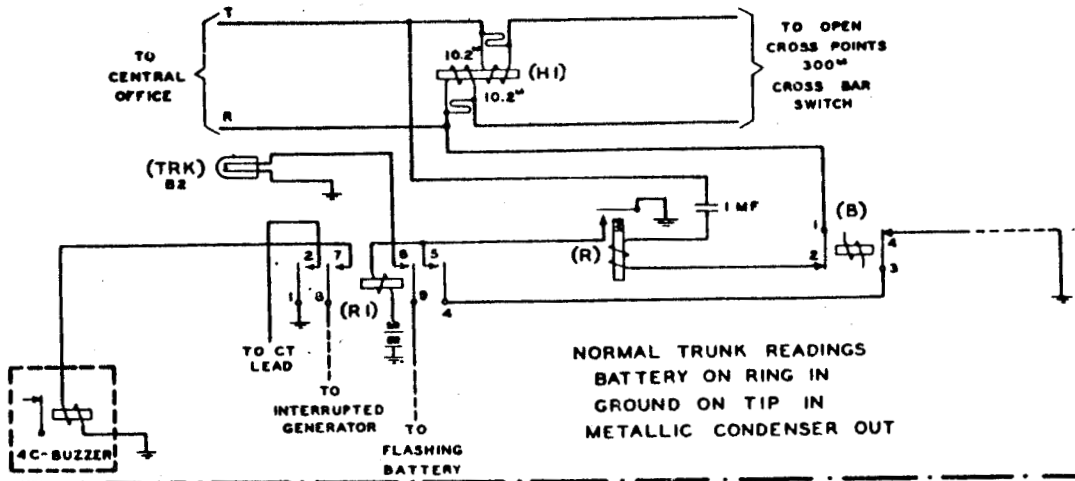
OS-12
755A-PBX
451-126



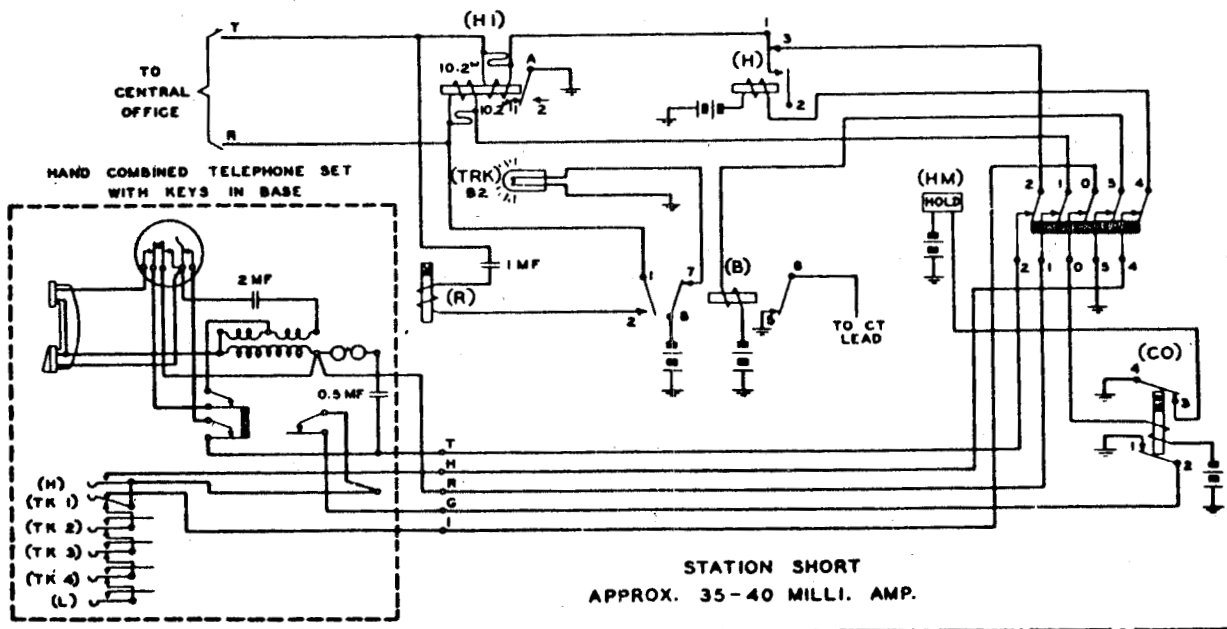
TIP AND RING ON TRUNK CALL

755-A P. B. X.

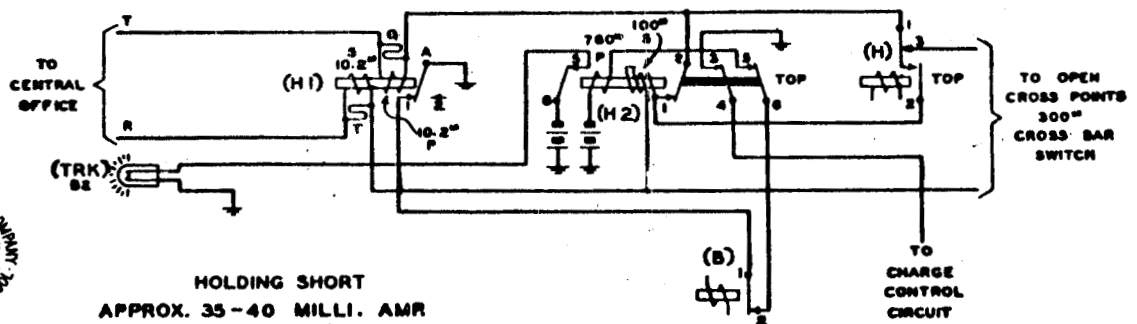
NORMAL TRUNK CIRCUIT

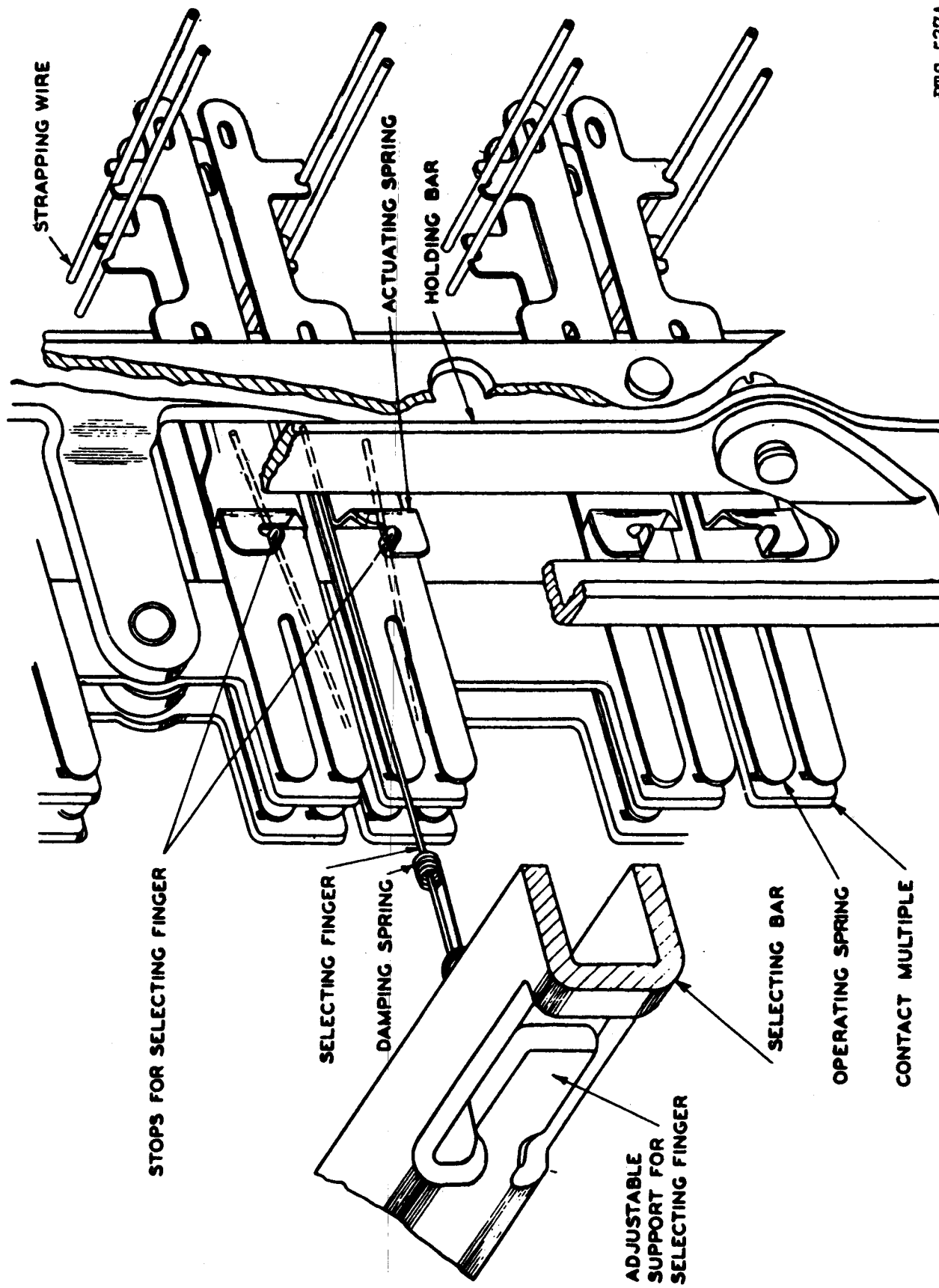


TRUNK CONNECTED TO KEY STATION



TRUNK IN A HOLD POSITION

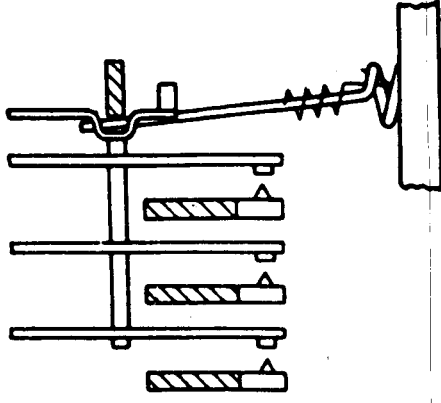




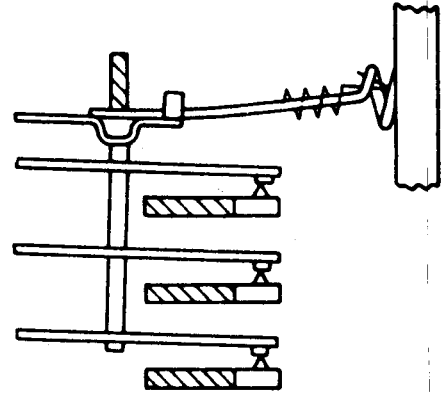
PERSPECTIVE DRAWING OF CROSSBAR MECHANISM

~~FIG 537A~~
10-51

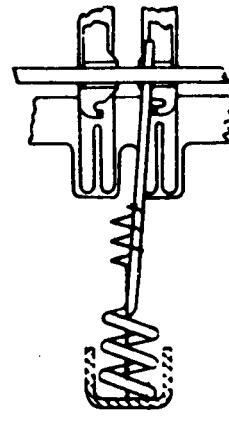
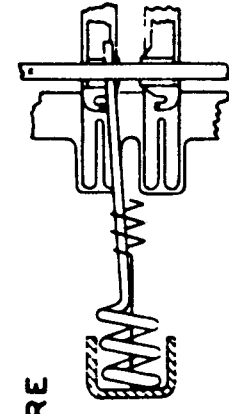
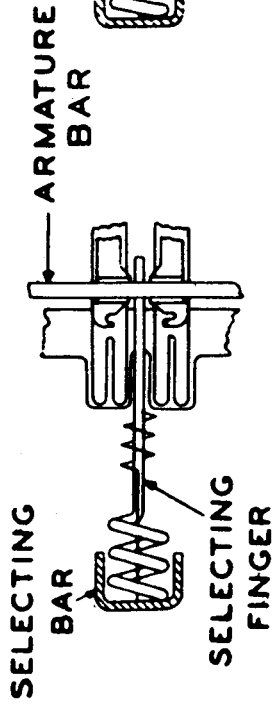
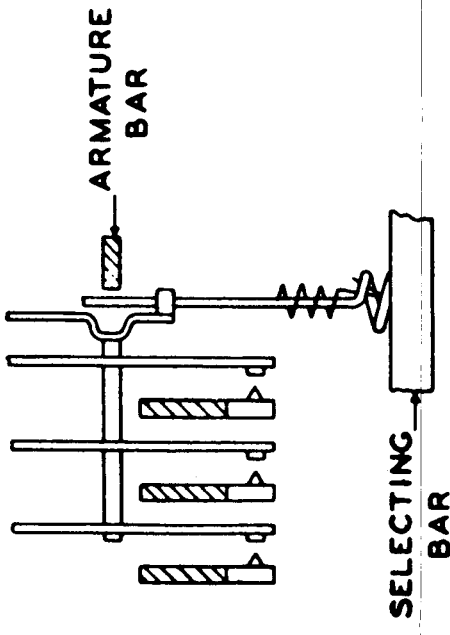
UPPER CROSS POINT NORMAL,
ARMATURE OPERATED



UPPER CROSS POINT
OF A PAIR OPERATED



VERTICAL UNIT
NORMAL

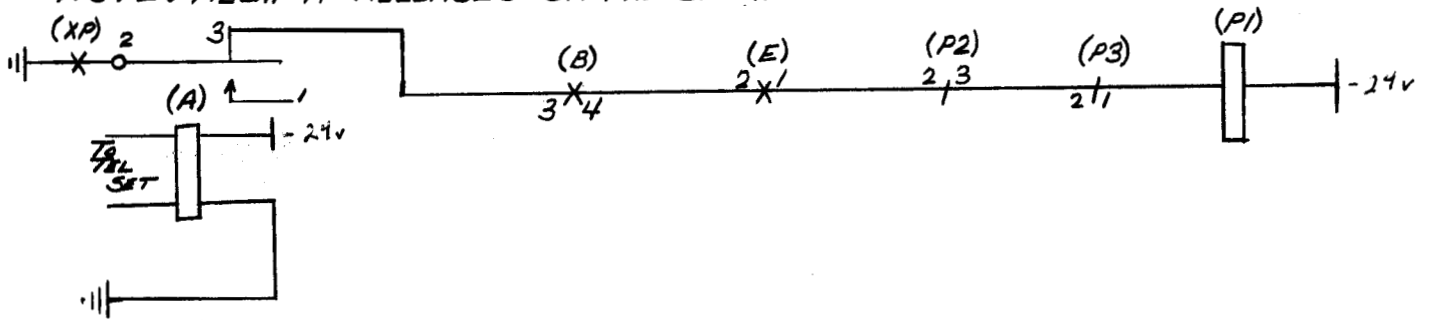


CROSSBAR SWITCH SELECTING MECHANISM

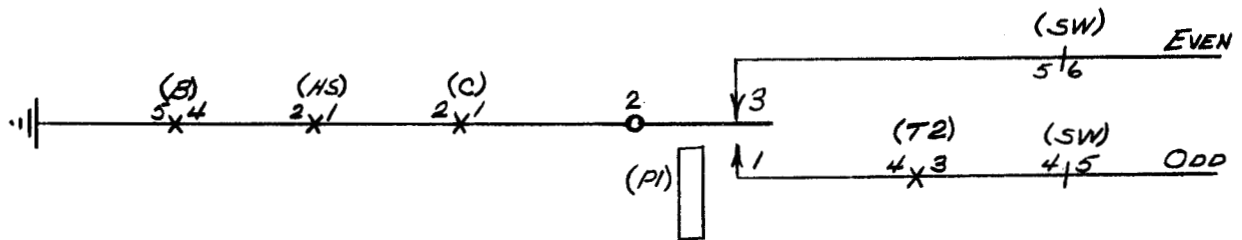
10-51

DIALING UNITS DIGITS

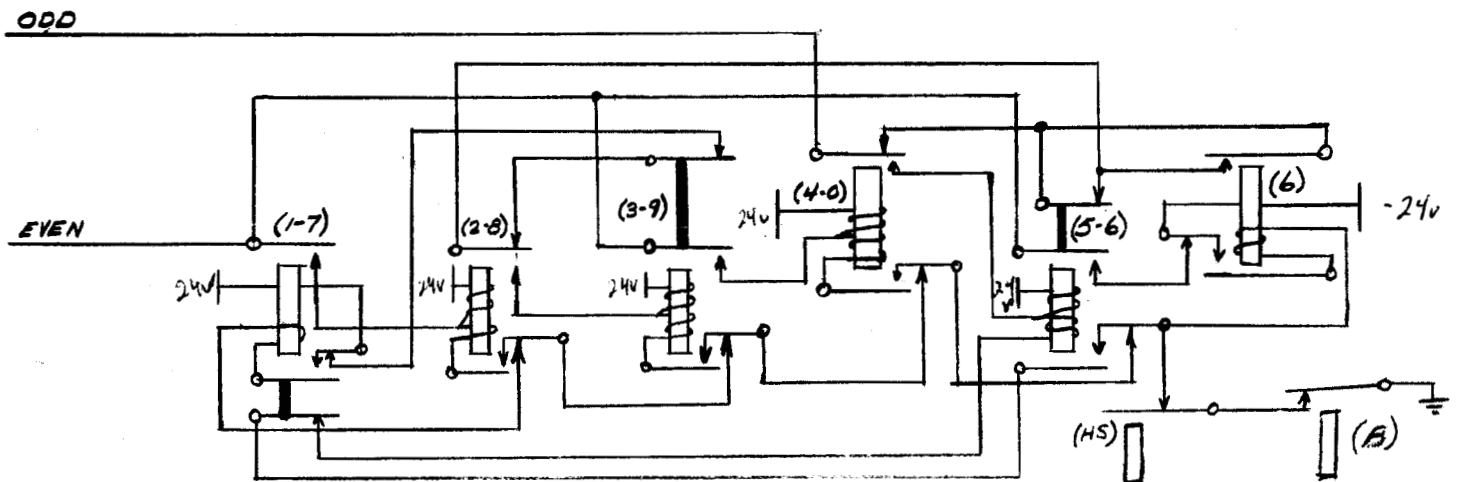
NOTE: RELAY A RELEASES ON THE BREAK OF DIAL CONTACTS.



RELAY P1 WILL OPERATE IN SAME SEQUENCE as/ SEQUENCE B



The first pulse will be ODD. Pulses will alternate thereafter as/ number dialed.

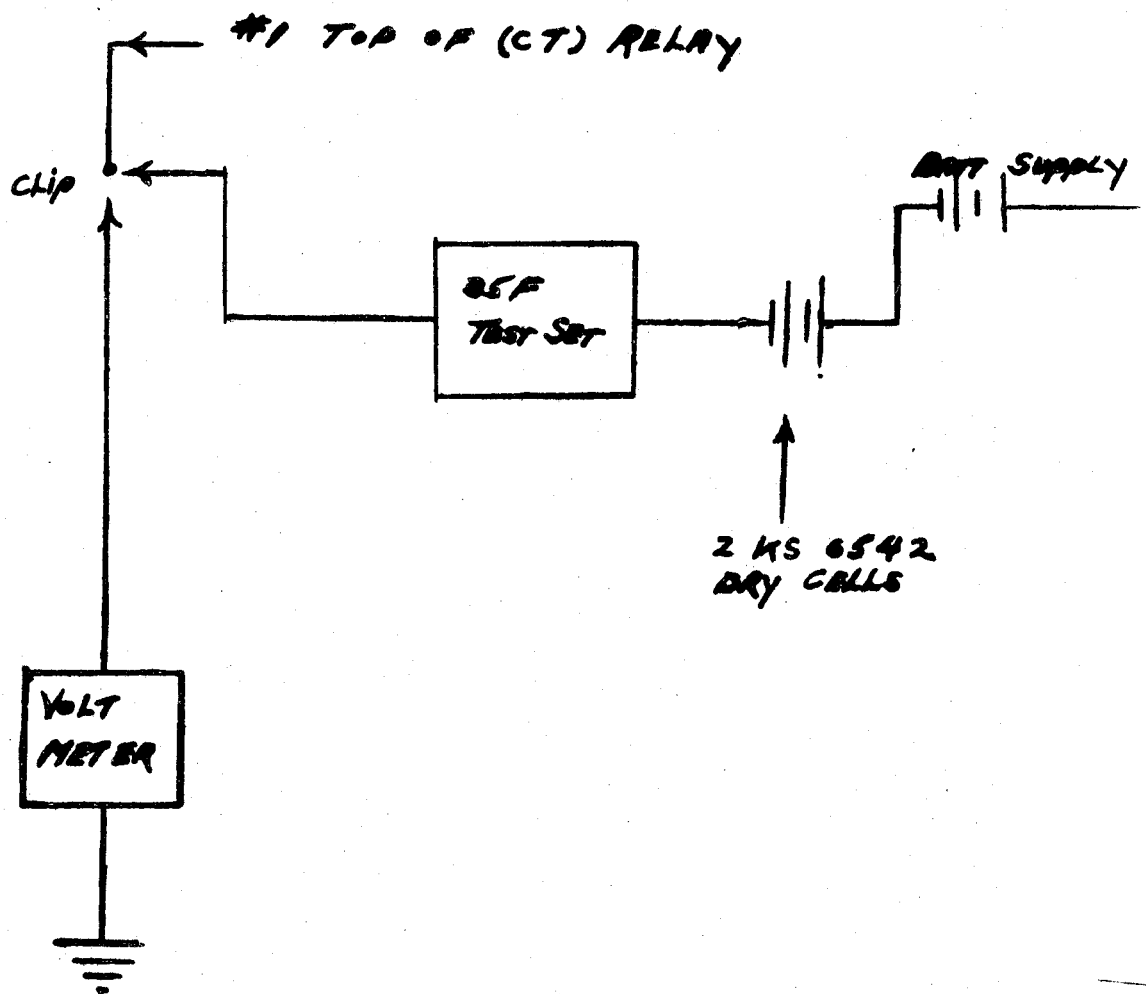


Digits Dialed	Relays Remainder Operated	640 Pulses	Even Pulses
1	1-7	1-7	1-7
2	2-8	2-8	2-8
3	3-9	3-9	3-9
4	4-0	4-0	4-0
5	5-6	5-6	5-6
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
0	0	0	0

SET UP OF CHARGE RATE & CC RELAY

1. See Section B556.015 - 3.37 to 3.44 for setting charge rate.
2. CC Relay
 1. Block 1 top of (CT) relay open.
 2. Operate battery & ground key of 35F test set.
 3. Use Jack on 35F test set

○	○	○	○	○
○	○	○	○	↑
 4. Non operate 21.5 volts.
 5. Operate 23. volts.

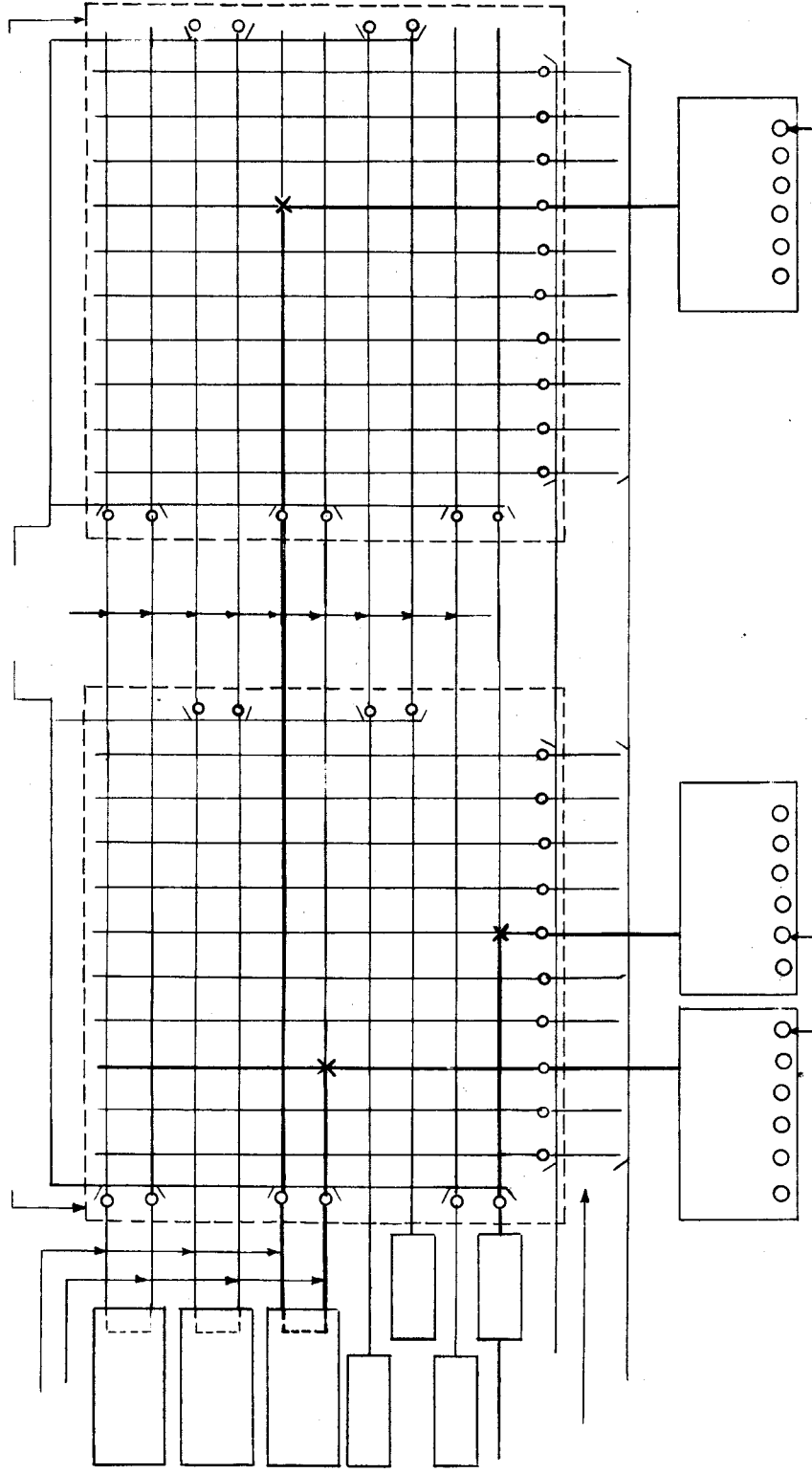


OPTIONAL TRUNK SERVICE WIRING - 755A P.B.X.

<u>T4</u> 	<u>T3</u> 	<u>T2</u> 	<u>T1</u> 	
<u>T4</u> 	<u>T3</u> 	<u>T2</u> 	<u>T1</u> 	
<u>T4</u> 	<u>T3</u> 	<u>T2</u> 	<u>T1</u> 	20
<u>T4</u> 	<u>T3</u> 	<u>T2</u> 	<u>T1</u> 	NL RS LO N

ASSIGNMENT _____

CROSS BAR SWITCH CONNECTION 755-A P.B.X.



M.B.T. CO. 50. DIV. PLANT
INSTRUCTION DEPT.

FOR TRAINING PURPOSES ONLY

MICHIGAN BELL TELEPHONE COMPANY

SOUTHERN DIVISION PLANT INSTRUCTION DEPARTMENT

755-A P.B.X. Cable Termination-stations 20-29 & 30-39

PAIR NO.	CA. PAIR TIP	COLOR RING	CONN. BLK. PAIR NO.	T.S.A. PCHG. NO.	STA. NO.
1	White	Blue	1	1-2	20
2	White	Orange	2	3-4	
3	White	Green	3	5-6	
4	White	Brown	4	7-8	
5	White	slate	5	9-12	
6	White	Bl-Wh	6	1-2	21
7	White	Bl-Or	7	3-4	
8	White	Bl-Gn	8	5-6	
9	White	Bl-Br	9	7-8	
10	White	Bl-sl	10	9-12	
11	White	Or-Wh	11	1-2	22
12	White	Or-Gn	12	3-4	
13	White	Or-Br	13	5-6	
14	White	Or-sl	14	7-8	
15	White	Gn-Wh	15	9-12	
16	White	Gn-Br	16	1-2	23
17	White	Gn-sl	17	3-4	
18	White	Br-Wh	18	5-6	
19	White	Br-sl	19	7-8	
20	White	sl-Wh	20	9-12	
21	Red	Blue	21	1-2	24
22	Red	Orange	22	3-4	
23	Red	Green	23	5-6	
24	Red	Brown	24	7-8	
25	Red	slate	25	9-12	

MICHIGAN BELL TELEPHONE COMPANY

SOUTHERN DIVISION PLANT INSTRUCTION DEPARTMENT

755-A P.B.X. Cable Termination-stations 20-29 & 30-39

PAIR NO.	CA. PAIR TIP	COLOR RING	CONN BLK PAIR NO.	T.S.A. PCHG. NO.	STA. NO.
26	Red	Bl-Wh	1	1-2	25
27	Red	Bl-Or	2	3-4	
28	Red	Bl-Gn	3	5-6	
29	Red	Bl-Br	4	7-8	
30	Red	Bl-Sl	5	9-12	
31	Red	Or-Wh	6	1-2	26
32	Red	Or-Gn	7	3-4	
33	Red	Or-Br	8	5-6	
34	Red	Or-Sl	9	7-8	
35	Red	Gn-Wh	10	9-12	
36	Red	Gn-Br	11	1-2	27
37	Red	Gn-Sl	12	3-4	
38	Red	Br-Wh	13	5-6	
39	Red	Br-Sl	14	7-8	
40	Red	Sl-Wh	15	9-12	
41	Black	Blue	16	1-2	28
42	Black	Orange	17	3-4	
43	Black	Green	18	5-6	
44	Black	Brown	19	7-8	
45	Black	slate	20	9-12	
46	Black	Bl-Wh	21	1-2	29
47	Black	Bl-Or	22	3-4	
48	Black	Bl-Gn	23	5-6	
49	Black	Bl-Br	24	7-8	
50	Black	Bl-Sl	25	9-12	
			26		

MICHIGAN BELL TELEPHONE COMPANY

SOUTHERN DIVISION PLANT INSTRUCTION DEPARTMENT

755-A P.B.X. Cable Termination-Stations 20-29 & 30-39

PAIR NO.	CA. PAIR TIP	COLOR RING	CONN. BLK. PAIR NO.	T.S.A. PCHG. NO.	T.S.B. PCHG. NO.	TRK. NO.
51	Black	Or-Wh	1	Tk. } T 1 #1 } R 1		1
52	Black	Or-Gn	2	Mis T 1 R 7		
53	Black	Or-Br	3	Mis T 12 R 6		
54	Black	Or-Sl	4	Trk } T 1 #2 } R 2		2
55	Black	Gn-Wh	5	Mis T 2 R 8		
56	Black	Gn-Br	6	Mis T 24 R 18		
57	Black	Gn-Sl	7	Trk } T 1 #3 } R 2		3
58	Black	Br-Wh	8	Mis T 3 R 9		
59	Black	Br-Sl	9	Mis T 36 R 30		
60	Black	Sl-Wh	10	Trk } T 1 #4 } R 2		4
61	Red-Wh	Blue	11	Mis T 4 R 10		
62	Red-Wh	Orange	12	Mis T 48 R 42		
63	Red-Wh	Green	13		Mis T 1 R 50	GRD. BATT.
64	Red-Wh	Brown	14		Mis T 2 R 51	GRD. BATT.
65	Red-Wh	Slate	15		Mis T 3 R 52	GRD. BATT.
66	Red-Wh	Bl-Wh	16		Mis T 4 R 53	GRD. BATT.
67	Red-Wh	Bl-Or	17		Mis T 5 R 54	GRD. BATT.
68	Red-Wh	Bl-Gr	18		Mis T 24 R 27	ALM. BELL.
69	Red-Wh	Bl-Br	19		Mis T 6 R 30	ALM. KEY
70	Red-Wh	Bl-Sl	20		Mis T 35 R 36	C.O. ALM.
71	Red-Wh	Or-Wh	21		Mis T 6 R 60	L.RG. MCH.

4

MICHIGAN BELL TELEPHONE COMPANY
SOUTHERN DIVISION PLANT INSTRUCTION DEPARTMENT

755-A P.B.X. Cable Termination Stations 20-29 & 30-39

PAIR NO.	CA. PAIR TIP	COLOR RING	CONN. BLK. PAIR	T.S.A. PCHG. NO.	T.S.B. PCHG. NO.	TRK. NO.
77	Red-Wh	Gn-Sl	1	Mis R 25	Mis T 15	Com
78	Red-Wh	Br-Wh	2	Mis R 26	Mis T 15	Rng
79	Red-Wh	Br-Sl	3	Mis R 27	Mis T 16	GRP
80	Red-Wh	Sl-Wh	4	Mis R 28	Mis T 16	CB2
81	Blk-Wh	Blue	5	Mis R 37	Mis T 17	Com
82	Blk-Wh	Orange	6	Mis R 38	Mis T 17	Rng
83	Blk-Wh	Green	7	Mis R 39	Mis T 18	GRP
84	Blk-Wh	Brown	8	Mis R 40	Mis T 18	CB3
85	Blk-Wh	Slate	9	Mis T 17 R 23		Sta
86	Blk-Wh	Bl-Wh	10	Mis T 29 R 35		Line
87	Blk-Wh	Bl-Or	11	Mis T 41 R 47		Lamps
88	Blk-Wh	Bl-Gn	12		Mis T 43 R 44	L 5-6 Con
89	Blk-Wh	Bl-Br	13		Mis T 45 R 46	L 7&8 Key
90	Blk-Wh	Bl-Sl	14		Mis T 37 R 38	#1 Con
91	Blk-Wh	Or-Wh	15		Mis T 39 R 40	#2 Sta
92	Blk-Wh	Or-Gn	16		Mis T 9 R 10	T-LP GRP
93	Blk-Wh	Or-Br	17		Mis T 12 R 12	Con Key
94	Blk-Wh	Or-Sl	18		Mis T 7 R 7	P.L. Key
95	Blk-Wh	Gn-Wh	19		Mis T 19 R 20	L-GD 20-23
96	Blk-Wh	Gn-Br	20		Mis T 21 R 22	L-GD 24-27
97	Blk-Wh	Gn-Sl	21		Mis T 23 R 28	L-GD 28-31
98	Blk-Wh	Br-Wh	22		Mis T 29 R 33	L-GD 32-35
99	Blk-Wh	Br-Sl	23		Mis T 34 R 41	L-GD 36-39
100	Blk-Wh	Sl-Wh	24		Mis T 11 R 49	RTX
101	White	Red	25			Spare Pr

MICHIGAN BELL TELEPHONE COMPANY

SOUTHERN DIVISION PLANT INSTRUCTION DEPARTMENT

755-A P.B.X. Cable Termination-Stations 20-29 & 30-39

PAIR NO.	CA. PAIR		CONN. BLK PAIR NO.	T.S.B. PCHG. NO.	STA. NO.
	TIP	COLOR RING			
102	Red-Black	Blue	1	1-2	30
103	Red-Black	Orange	2	3-4	
104	Red-Black	Green	3	5-6	
105	Red-Black	Brown	4	7-8	
106	Red-Black	Slate	5	9-12	
107	Red-Black	White	6	1-2	31
108	Red-Black	Orange	7	3-4	
109	Red-Black	Green	8	5-6	
110	Red-Black	Brown	9	7-8	
111	Red-Black	Bl-Sl	10	9-12	
112	Red-Black	White	11	1-2	32
113	Red-Black	Green	12	3-4	
114	Red-Black	Brown	13	5-6	
115	Red-Black	Or-Sl	14	7-8	
116	Red-Black	White	15	9-12	
117	Red-Black	Brown	16	1-2	33
118	Red-Black	Gn-Sl	17	3-4	
119	Red-Black	White	18	5-6	
120	Red-Black	Br-Sl	19	7-8	
121	Black-Or.	Sl-Wh	20	9-12	
122	Black-Or.	Blue	21	1-2	34
123	Black-Or.	Orange	22	3-4	
124	Black-Or.	Green	23	5-6	
125	Black-Or.	Brown	24	7-8	
126	Black-Or.	Slate	25	9-12	
			26		

MICHIGAN BELL TELEPHONE COMPANY

SOUTHERN DIVISION PLANT INSTRUCTION DEPARTMENT

755-A P.B.X. Cable Termination- Stations 20-29 & 30-39

PAIR NO.	CA. PAIR		CONN. BLK. PAIR NO.	T.S.B. PCKG. NO.	STA. NO.
	TIP	COLOR RING			
127	Black-Or.	Bl-Wh	1	1-2	35
128	Black-Or.	Bl-Or	2	3-4	
129	Black-Or.	Bl-Gn	3	5-6	
130	Black-Or.	Bl-Br	4	7-8	
131	Black-Or.	Bl-Sl	5	9-12	
132	Black-Or.	Or-Wh	6	1-2	36
133	Black-Or.	Or-Gn	7	3-4	
134	Black-Or.	Or-Br	8	5-6	
135	Black-Or.	Or-Sl	9	7-8	
136	Black-Or.	Gn-Wh	10	9-12	
137	Black-Or.	Gn-Br	11	1-2	37
138	Black-Or.	Gn-Sl	12	3-4	
139	Black-Or.	Br-Wh	13	5-6	
140	Black-Or.	Br-Sl	14	7-8	
141	Black-Gn.	Sl-Wh	15	9-12	
142	Black-Gn.	Blue	16	1-2	38
143	Black-Gn.	Orange	17	3-4	
144	Black-Gn.	Green	18	5-6	
145	Black-Gn.	Brown	19	7-8	
146	Black-Gn.	Slate	20	9-12	
147	Black-Gn.	Bl-Wh.	21	1-2	39
148	Black-Gn.	Bl-Or.	22	3-4	
149	Black-Gn.	Bl-Gn	23	5-6	
150	Black-Gn.	Bl-Br	24	7-8	
151	Black-Gn.	Bl-Sl	25	9-12	
152	White	Black	26		

*152 Pair to be spare pair if 152 Pair is used only:

MICHIGAN BELL TELEPHONE COMPANY

SOUTHERN DIVISION PLANT INSTRUCTION DEPARTMENT

755-A P.B.X. Cable Terminal Stations 20-29 & 30-39

AIR NO.	CA. PAIR	COLOR	CONN. BLK. PAIR NO.	L1 LEADS FOR STA. #	T. or B of RES. UNIT		TRK. NO.
	TIP	RING					
152	Blk-Gr	Or-Wh	1	20-21	T 1T	R 1B	1
153	Blk-Gr	Or-Gr	2	22-23	T 2T	R 2B	1
154	Blk-Gr	Or-Br	3	24-25	T 3T	R 3B	1
155	Blk-Gr	Or-Sl	4	26-27	T 4T	R 4B	1
156	Blk-Gr	Gr-W	5	28-29	T 5T	R 5B	1
157	Blk-Gr	Gr-Br	6	30-31	T 6T	R 6B	1
158	Blk-Gr	Gr-Sl	7	32-33	T 7T	R 7B	1
159	Blk-Gr	Br-Wh	8	34-35	T 8T	R 8B	1
160	Blk-Gr	Br-Sl	9	36-37	T 9T	R 9B	1
161	Blk-Br	Sl-Wh	10	38-39	T 10T	R 10B	1
162	Blk-Br	Blue	11	20-21	T 11T	R 11B	2
163	Blk-Br	Orange	12	22-23-	T 12T	R 12B	2
164	Blk-Br	Green	13	24-25	T 13T	R 13B	2
165	Blk-Br	Brown	14	26-27	T 14T	R 14B	2
166	Blk-Br	Slate	15	28-29	T 15T	R 15B	2
167	Blk-Br	Bl-Wh	16	30-31	T 16T	R 16B	2
168	Blk-Br	Bl-Or	17	32-33	T 17T	R 17B	2
169	Blk-Br	Bl-Gr	18	34-35	T 18T	R 18B	2
170	Blk-Br	Bl-Br	19	36-37-	T 19T	R 19B	2
171	Blk-Br	Bl-Sl	20	38-39	T 20T	R 20B	2
172	Blk-Br	Or-Wh	21	20-21	T 21T	R 21B	3
173	Blk-Br	Or-Gr	22	22-23	T 22T	R 22B	3
174	Blk-Br	Or-Br	23	24-25	T 23T	R 23B	3
175	Blk-Br	Or-Sl	24	26-27	T 24T	R 24B	3
176	Blk-Br	Gr-Wh	25	28-29	T 25T	R 25B	3

MICHIGAN BELL TELEPHONE COMPANY

SOUTHERN DIVISION PLANT INSTRUCTION DEPARTMENT

755-A P.B.X. Cable Terminals Stations 20-29 & 30-39

NO.	CA. PAIR	COLOR	CONN. BLK. PAIR NO.	L1 LEADS FOR STA. #	T OR B OF		TRK. NO.
	TIP	RING			RES.	UNIT	
177	Blk-Br	Gr-Br	1	30-31	T	26 T	3
178	Blk-Br	Gr-Sl	2	32-33	R	26 B	
179	Blk-Br	Br-Wh	3	34-35	T	27 T	3
180	Blk-Br	Br-Sl	4	36-37	R	27 B	
181	Blk-Br	Sl-W	5	38-39	T	28 T	3
182	Blk-Sl	Blue	6	20-21	R	28 B	
183	Blk-Sl	Orange	7	22-23	T	29 T	4
184	Blk-Sl	Green	8	24-25	R	29 B	
185	Blk-Sl	Brown	9	26-27	T	30 T	4
186	Blk-Sl	Slate	10	28-29	R	30 B	
187	Blk-Sl	Bl-Wh	11	30-31	T	31 T	4
188	Blk-Sl	Bl-Or	12	32-33	R	31 B	
189	Blk-Sl	Bl-Gr	13	34-35	T	32 T	4
190	Blk-Sl	Bl-Br	14	36-37	R	32 B	
191	Blk-Sl	Bl-Sl	15	38-39	T	33 T	4
192	Blk-Sl	Or-Wh	16	L1 Leads	R	33 B	
193	Blk-Sl	Or-Gr	17	FOR	T	34 T	4
194	Blk-Sl	Or-Br	18	Stations	R	34 B	
195	Blk-Sl	Or-Sl	19	Provided	T	35 T	4
196	Blk-Sl	Gr-Wh	20	With	R	35 B	
197	Blk-Sl	Gr-Br	21	Local	T	36 T	4
198	Blk-Sl	Gr-Sl	22	Line	R	36 B	
199	Blk-Sl	Br-Wh	23	Lamps	T	37 T	4
200	Blk-Sl	Br-Sl	24		R	37 B	
201	Blk-Sl	Sl-Wh	25		T	38 T	4
202	White	Black	26		R	38 B	
					SPARE		

Prepared By:
J. C. Roodvoets
Plant School
Grand Rapids

Form 755-7

WIRE AND EQUIPMENT REQUIRED FOR
EACH OPTIONAL FEATURE - 755 - PBX

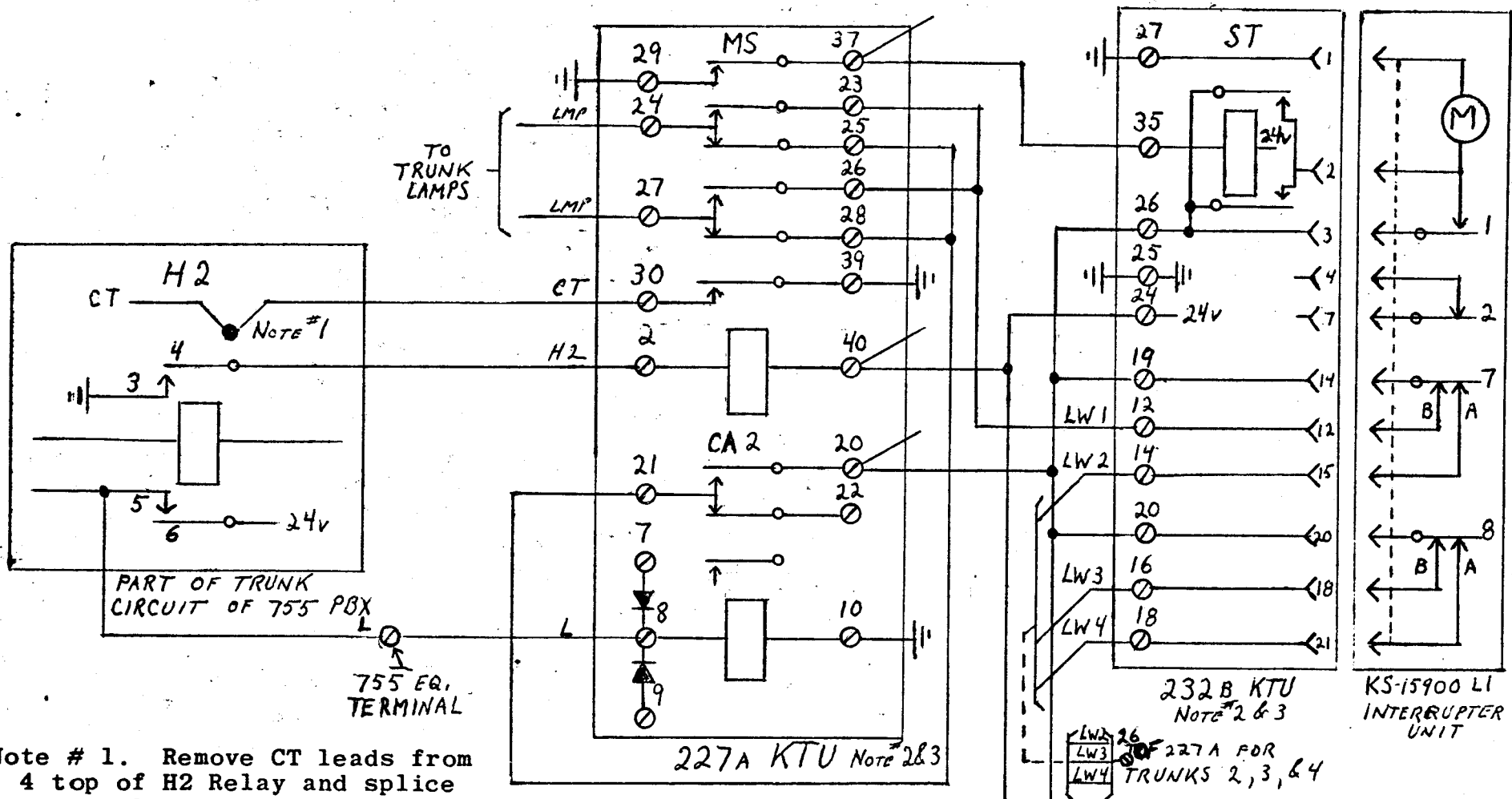
Optional Feature Extra Line Pick-Up Using Seperate Key

Drawing Nos. SD 66504-012 8 - 9 - 12
T 66504 - 14 Fig. Nos. 1, 3 & 4

DWG. 755-2 EQUIPMENT REQUIRED

Quan.	Item	Code No.	Quan.	Item	Code No.	Quan.	Item	Code No.
1	Relay	U-612						
1	Key	60176 551 P.B.						

Part No.	Ga.	Cond.	Type	Part No.	Ga.	Cond.	Type	Color	
P-467477	22	Single	SCB	P-324442	22	Single	DCL	Red	
P-324382	22	Single	DCL	R-Or.	P-324444	22	Single	DCL	R-Wh
P-324422	22	Single	DCL	R-Bk-Or					
P-324383	22	Single	DCL	R-Gr.					
P-324443	22	Single	DCL	Black					
P-324445	22	Single	DCL	Bk-Wh.					
P-324395	22	Single	DCL	R-Gr-Wh.					
P-324385	22	Single	DCL	R-Sl.					
P-324398	22	Single	DCL	R-Br-Wh					
P-324425	22	Single	DCL	R-Bk-Sl					
P-364404	22	2-Cond	DCL	(Gr-Wh					
P-364401	22	2-Cond	DCL	(Bl-Wh					
P-364403	22	2-Cond	DCL	(Sl-Wh					



Note # 1. Remove CT leads from 4 top of H2 Relay and splice to new lead on Trunk # 1 only.

Remove lead and insulate on all other trunks. (CT Lead not needed when PBX is fed by Power Plant.)

Note # 2. One 227AKTU per Trunk
One 232BKTU per System

Note # 3. For clarity, only that part of the KTU being used is shown.

LAMP AND WINK HOLD CIRCUIT FOR 755 PBX

EXTRA LINE PICKUP FEATURE USING SEPARATE KEY ON KEY STATION (WITHOUT LAMPS ON LOCAL)

22 GA SWBD WIRE	LEAD DESIGN.	SW 4612 RELAY	TS "A" OR "B"	L 4322 RELAY	HOLD MAG	CO 474 RELAY
Bc	T	5T	T			
Bc-W	C	LT	R			
R-G	J	ET	G			
R-Bc	L	2B	L			
Bc-O	K	1B-10T	K			
G-	T2	6T	1B			
G-W	R2	3T	9T			
S	T1	4T	1B *			
S-W	R1	1T	9T *			
R-W	G2	9T	5B			
Bc-G	Co1	5B				
Bc-S	Co2	6B				
R-Bc	L2	3B	7B			
Bc-W	SB	9B				
Bc-S	SC	4B	7T			
O-G	G1	7B				
O	L1	8B				
G	T					
G-W	A					
R	L					
R-G	C					

T --- WIRING TO BE
 R --- CUT DEAD & S. CURED
 L --- FOR STA ARRANGED TO PICKUP LINE OF
 G --- 5B ANOTHER STA.

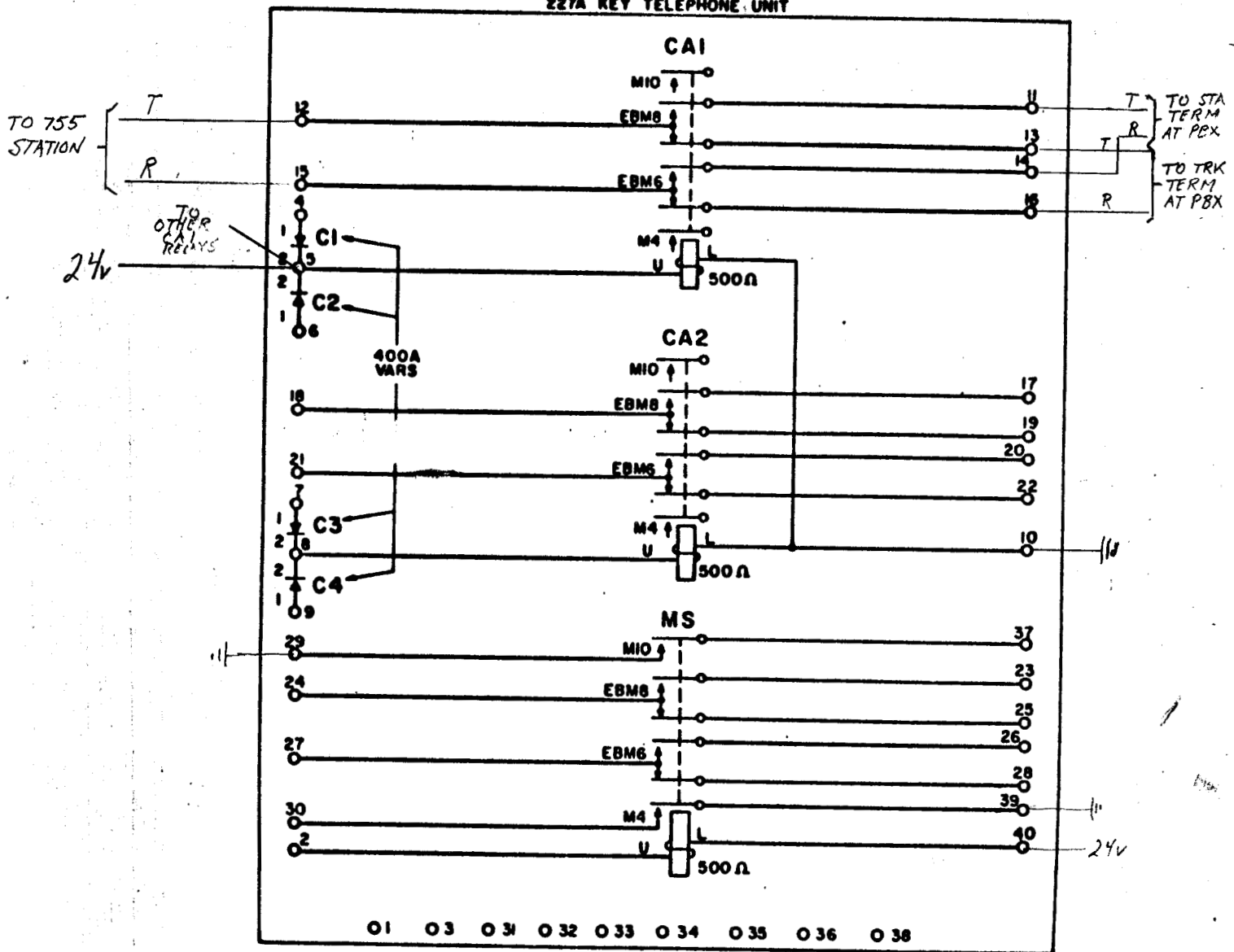
C-2 "Y" WIRING TO BE REMOVED

* - RELAY OF STA TO BE PICKED UP OR CO LINE
 † TRAP TO OTHER SW RELAYS

T 66004-33 DNE 4
 T " -34 " 2
 SD " -012 " 21
 Will

POWER FAILURE OPTION FOR 755 PBX

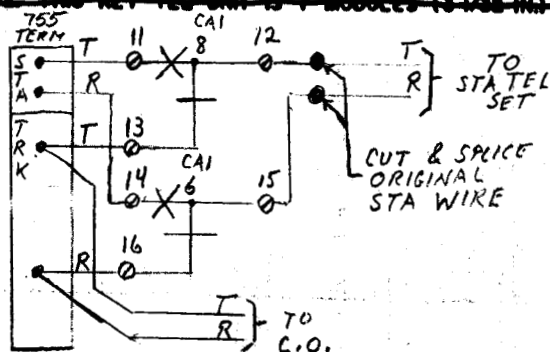
227A KEY TELEPHONE UNIT



THIS OPTION TRANSFERS TRUNKS TO PREDETERMINED STATIONS IN A POWER FAILURE CONDITION

EQUIPMENT NOTES:

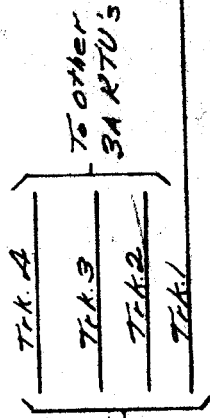
- 201 THIS KEY TEL UNIT IS DESIGNED FOR USE PRIMARILY IN KEY TEL SYSTEM NO. 6A, 80-60286-01, J00020
- 202 THIS KEY TEL UNIT IS 7 MODULES (13 INCH) WIDE.



3 PAIR PER TRUNK.
STRAP 24V FROM
PHG 40, LOWER WINDING
STRAPPED INTERNALLY
WITH PHG 10

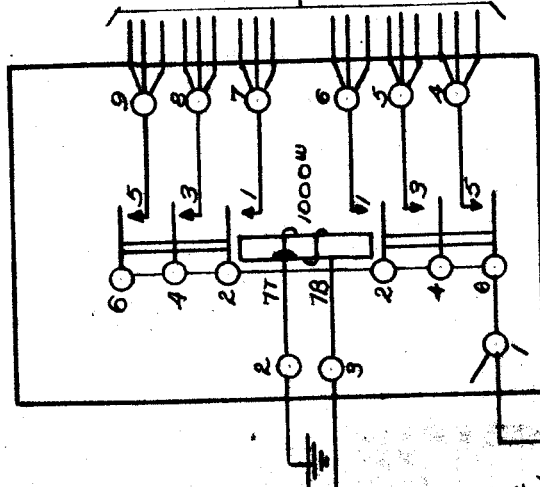
W. J. 9-7-66

Note: 1. 3A-KTU shall be mounted in a 05A app. The app box and 3A-KTU is former to be mounted as closely as possible to the P.B.X.



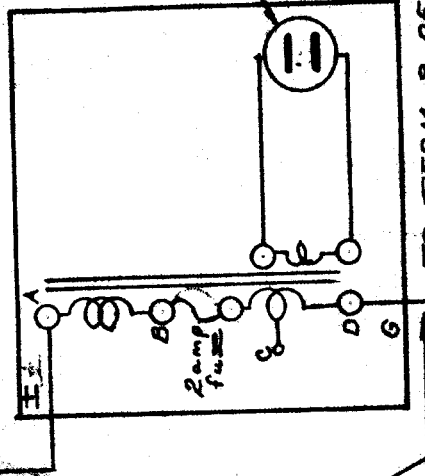
To 05A app.
SD-05503-012
Fig. 4K.

3A-KTU (LAMP RELAY)



To trunk lamps No. 1 on sta. tel. sets.

These leads to be 20 ga. A.M. wire and to be kept as short as possible.



393-A Transformer for connection see SD-09196-0103 NOTE III.

Connect to 110-125 v. 50-60 cycle supply.

TO TERM. 9 OF T.S. 'B' SD-05503-012 FIG. 2L, 3L, & 4L.

Note 2.
(A) Installations with up to 24 trunks do not require an auxiliary power supply.
(B) Installations with from 24-30 trunk lamps require 1 lamp relay per trunk and one transformer per installation.
(C) Installations with from 31-80 trunk lamps require one lamp relay per trunk, one transformer for trunks 1 and 2, and 1 transformer for trunks 3 and 4.

Note: Connect the leads to terminals in the system as follows -

Line Voltage	Connect to Lead	Connect to Line
110	A	D
115	A	C
180	B	D
185	B	C

Auxiliary 10 Volt A.C. Power supply

755 PBX using illuminated sets. Copy of SE66 128482 J.H. Keert

WIRE - GAUGE, TYPE AND COLOR	SEE NOTE ③	(LL) RELAY CONTACTS	(LI) RELAY CONTACTS	(HM) RELAY CONTACTS	(CO) RELAY CONTACTS	CROSS POINT SW CTS	(A) T. S. LUG NO.	(D) T. S. LUG NO.	P. B. X. TERM. DESIG.	LAMP INDIC DESIG.	REMARKS
22 GA. SCB - (GREEN)		17									
22 GA. DCL - (R-DK-GR)		5B		1							
22 GA. DCL - (RED) NOTE ⑤		21									
SEE NOTE ① & ⑤											
SEE NOTE ① & ⑤											
20 GA. ESCB - (BLUE)		3T									
20 GA. ESCB - (BL-R)		9T									
22 GA. DCL - (BK-O)		4T									
22 GA. DCL - (R-OL-W)		5T									
22 GA. SCB - (GREEN)		6T									
22 GA. DCL - (BLACK)		2B									
22 GA. DCL - (R-BK-OR)		7T		5 - (R)							
22 GA. DCL - (R-SL)		8T									
22 GA. BARE STRAP											
SEE NOTE ②											
P. B. X. CABLE CONDUCTORS											
INSIDE WIRE OR IW CABLE											
22 GA. DCL - (R-DK-Q)		3B									
22 GA. DCL - (R-GR-W)		4B									
P. B. X. CABLE CONDUCTOR											
INSIDE WIRE OR IW CABLE											
22 GA. DCL - (BK-W)		1B									
22 GA. DCL - (BK-W)		1B									
DISCONNECT (X) AND LEADS LISTED BELOW:											
(X) - RED-WHITE WIRE											
(X) - BARE STRAP WIRE											
(F) - BARE STRAP WIRE											

① WIRING USED WHEN LAMP IS USED AS A BUSY SIG.

1ST AND 2ND APPEARANCE

3RD AND 4TH APPEARANCE

LEADS DISCONNECTED TO BE SLEEVED WITH COTTON SLEEVING

- ① - Red wire to be connected to lug 13 for rgr. group - 1, to lug 25 for group 2 & to lug 31 for group 3.
- ② - Red slate wire to be connected to lug 17 strapped to 23 for first (LL) relay installed. To lug 29 strapped to 35 for second (LL) relay installed and to lug 41 strapped to 47 for third (LL) relay installed.
- ③ - Wiring changes shown for (LL) - (CO) - (K.M) relays and cross points to be made on eqpt. associated with station requiring line lamp.

- W. Burdick
SOUTHERN DIVISION PLANT
FOR TRAINING PURPOSES ONLY
J.C. Roodvoets 10-28-49

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755 P.B.X. OPTIONAL EQUIPMENT

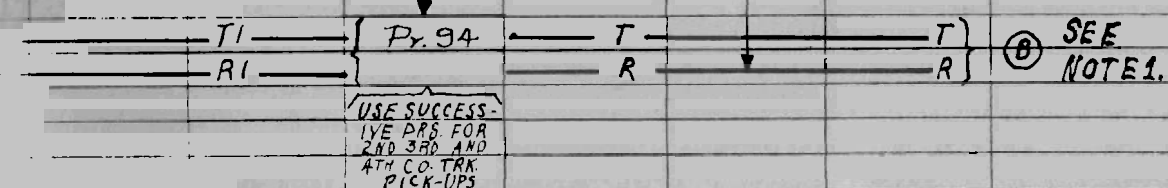
SURFACE WIRING DRAWING - KEY STATION - EXTRACTIVE PICK-UP - USING SPARE TRUNK KEY.

 REFERENCE
 T-66504 - 14
 FIGS 1, 3 & 4

WIRE GAUGE TYPE AND COLOR	(SW) RELAY CONTACTS	(TK) RELAY CONTACTS	(L) RELAY CONTACTS	(LI) RELAY CONTACTS	(CO) RELAY CONTACTS	(HM) RELAY CONTACTS	(A) RELAY CONTACTS	(B) RELAY CONTACTS	(C) RELAY CONTACTS	LOCAL P.B.X. CABLE	P.B.X. TER N. DESIG.	INSIDE WIRE OR I.W. CABLE	INC. C.O. TRK. CKTS.	REMARKS
22 GA. SCB. (GREEN)	1T													
22 GA. DCL. (RED-OR)	9B	4T												
22 GA. DCL. (R. BK. OR)	2T		4B											
22 GA. DCL. (RED-GR.)	3T	3T												
	4T													
22 GA. SCB. (GREEN)														
22 GA. DCL. (BLACK)	6B	2T		5T										
22 GA. DCL. (GR) PRD. WITH GW	5T		8B											
22 GA. DCL. (BL) PRD. WITH BL-W	6T													
22 GA. DCL. (GW) PRD. WITH GR	8T		1T											
22 GA. DCL. (BLW) PRD. WITH BL	9T													
22 GA. DCL. (BK. WH.)	1B	1B		1B										
22 GA. DCL. (R. GR-WH.)	4B													
22 GA. DCL. (RED-SL.)	5B													
VACANT	7B													
VACANT	8B													
22 GA. DCL. (RED-BR.)		1T												SPARE TK. KEY TO BE USED FOR PU
22 GA. DCL. (SL) PRD. WITH (S.W)	7T		8B											
22 GA. DCL. (S.W) PRD. WITH (SL)	10T		1T											SEE NOTE 1
22 GA. DCL. (RED-BR-WH.)	2B		2B											SEE NOTE 2
22 GA. DCL. (RED-BK-SL.)	3B		4B											
22 GA. DCL. (SL) PRD. WITH (S.W)	7T													
22 GA. DCL. (S.W) PRD. WITH (SL)	10T													
DISCONNECT (Y) LEADS LISTED BELOW: —														
(Y) 22 GA. SLEEVED STRAP (GREEN)														
(GR-WH.)														
(RED-GR.)														
(R-W)(R-BL)(R-OR) OR (R-SL)			4B											DISCONNECTED LEADS TO BE SLEEVED WITH COTTON SLEEVING. SPARE TK KEY TO BE USED FOR P.U.

NOTES —

- (A) Wiring to be used when a station is to be picked-up.
- (B) Wiring to be used when a C.O. Trunk is to be picked-up. Use Pair 94.
- (PK) Wiring to be used when station to be picked up is a key station Not used for keyless stations or C.O. trunk pick-ups.



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 U-182 " 11-15-44
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SOUTHERN DIVISION PLANT SCHOOL
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