

F-OCT 23 1957
 NOTES 12, 13 &
 LINE RELAY ADDED
 D.L.

APPROVED *PLC*

E-OCT 4, 1956
 ADDED STRAP ACROSS
 INDICATOR LAMP. RES-
 ISTOR N

R-24

APPROVED *Bell*

OCT 26 1957

MEMORANDUM FOR THE RECORD
 SUBJECT: TELETYPE UNIT
 ADDITIONAL WORK
 DONE: REPAIRS TO
 C22

APPROVED *HB*

APPROVED *✓*

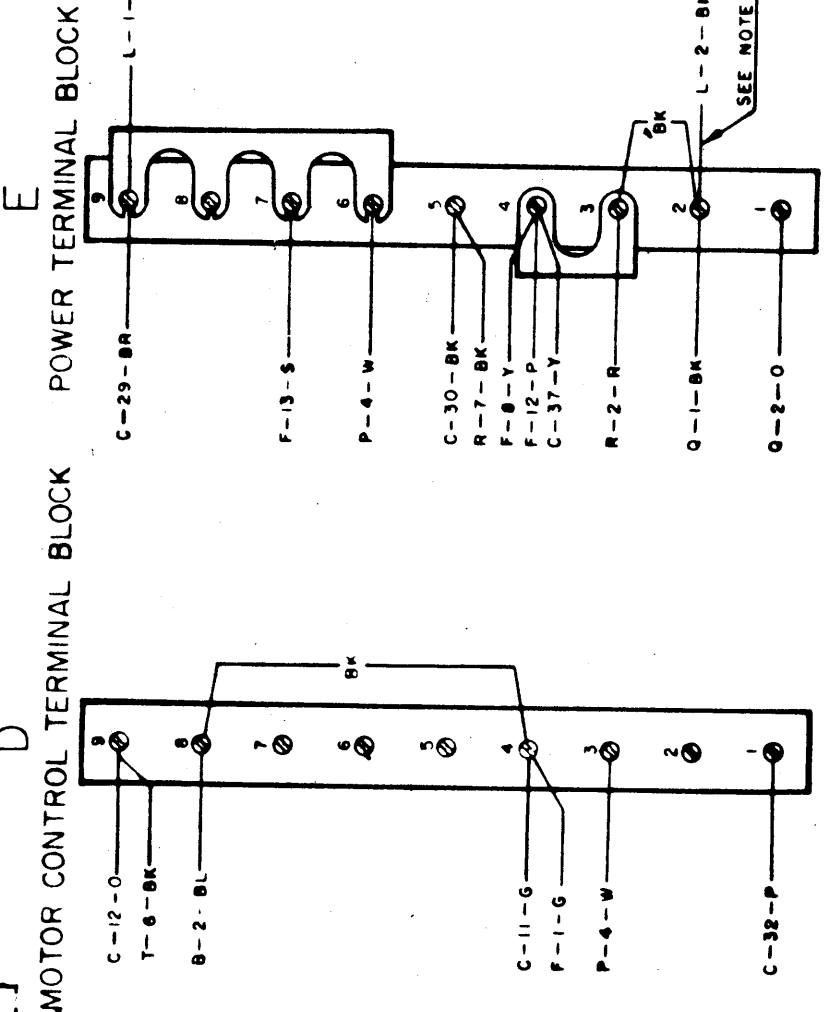
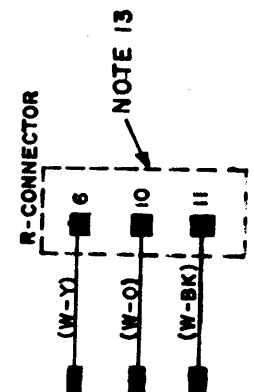
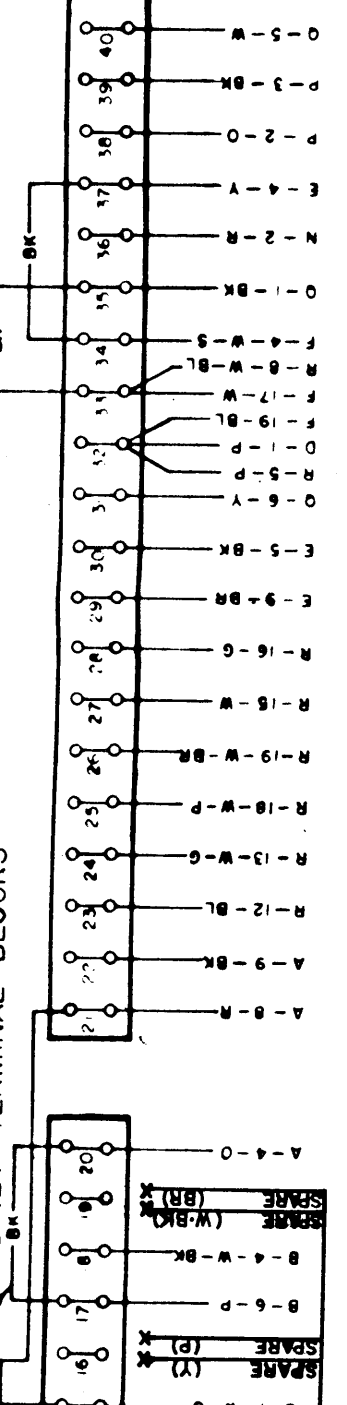
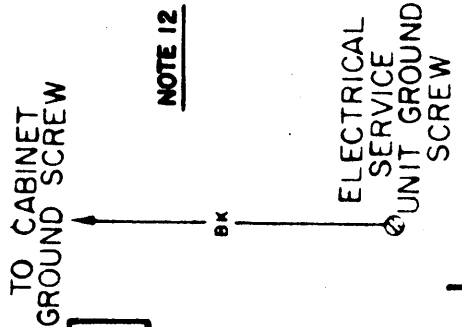
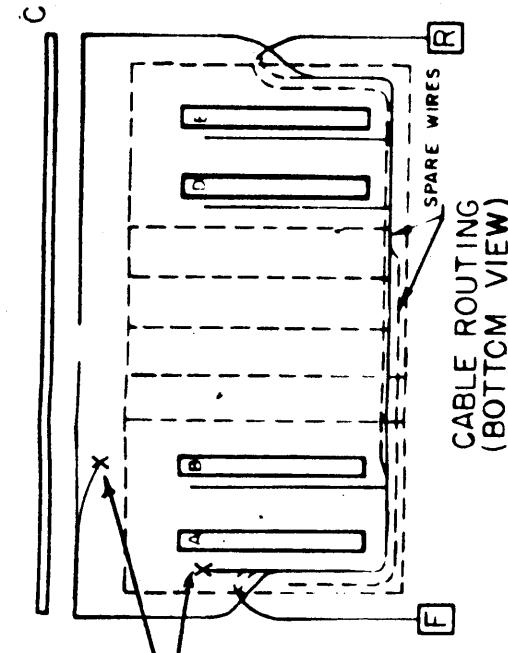
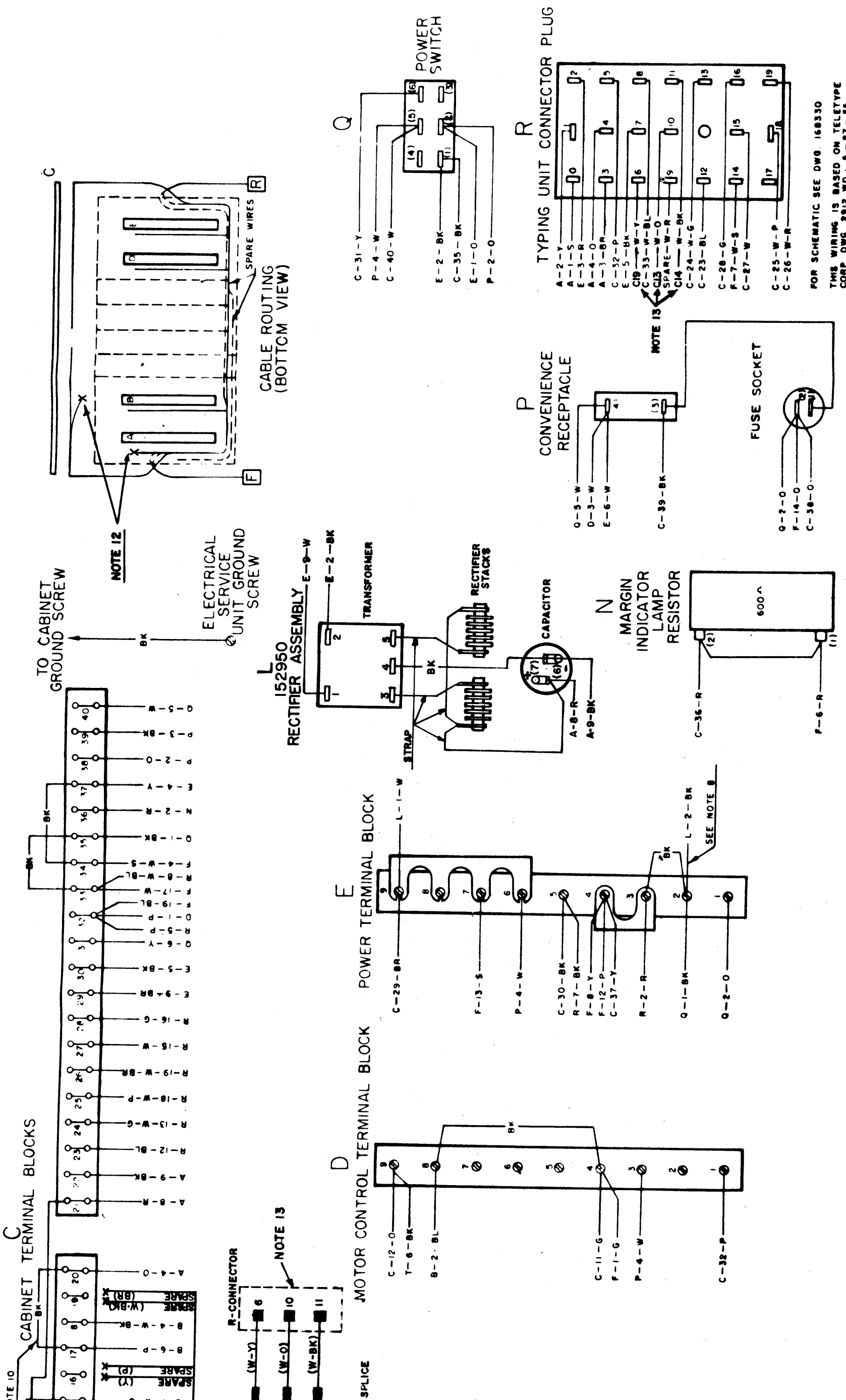
B AUG 1955
 REFERENCE TO
 CHMATIC DWG.
 168330 WAS SUB-
 MAT TO LMG
 58370

ADDED TO 168330
 168331-1

W 5 TEL CO

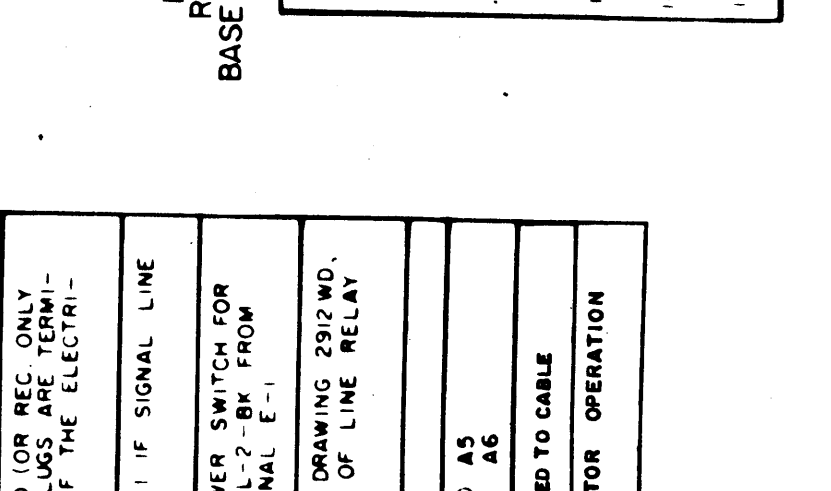
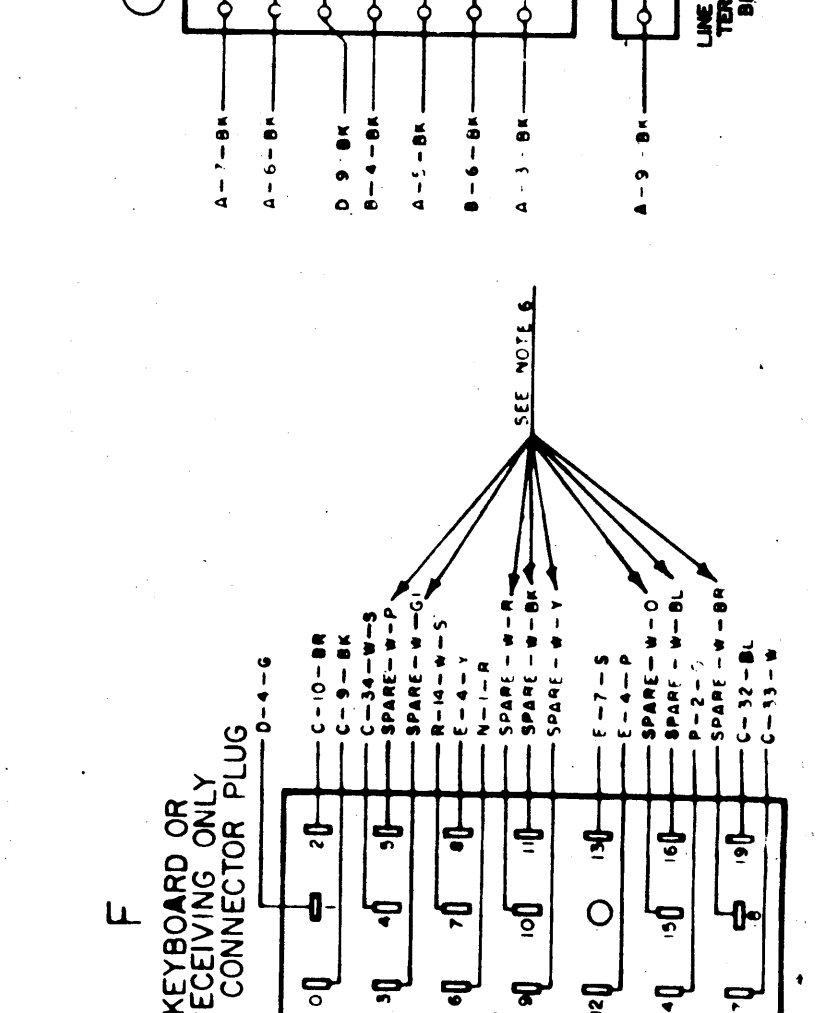
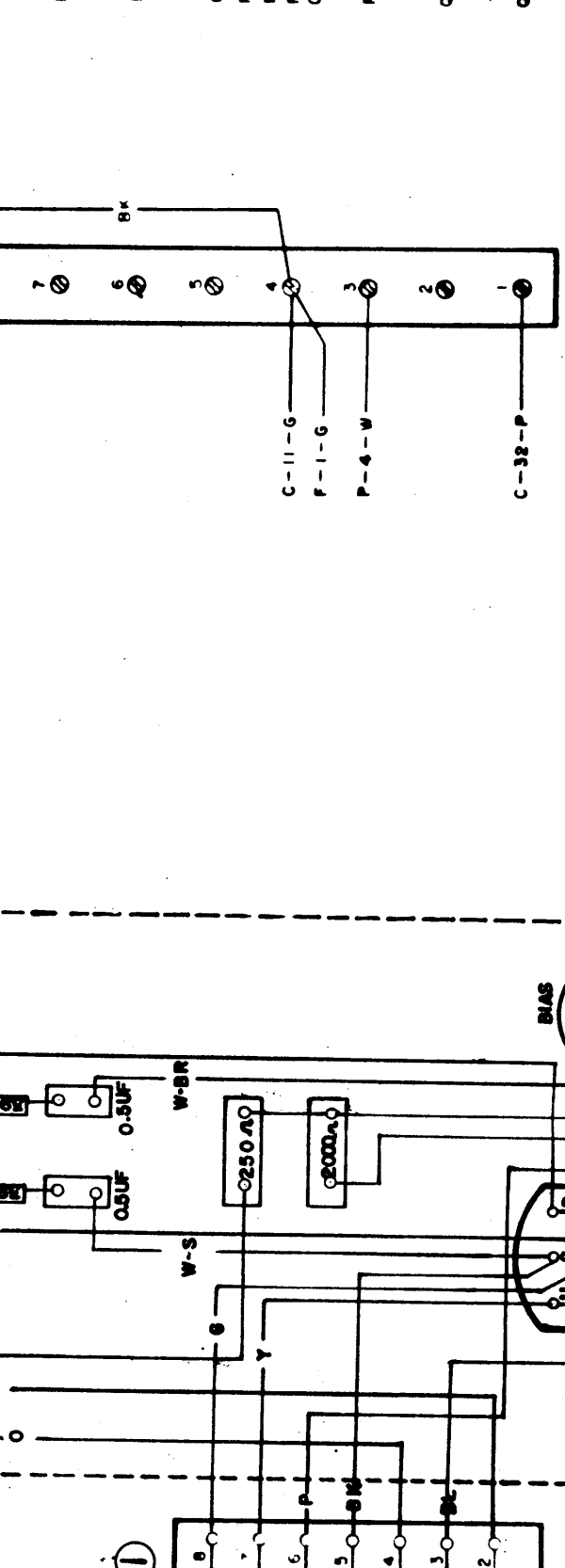
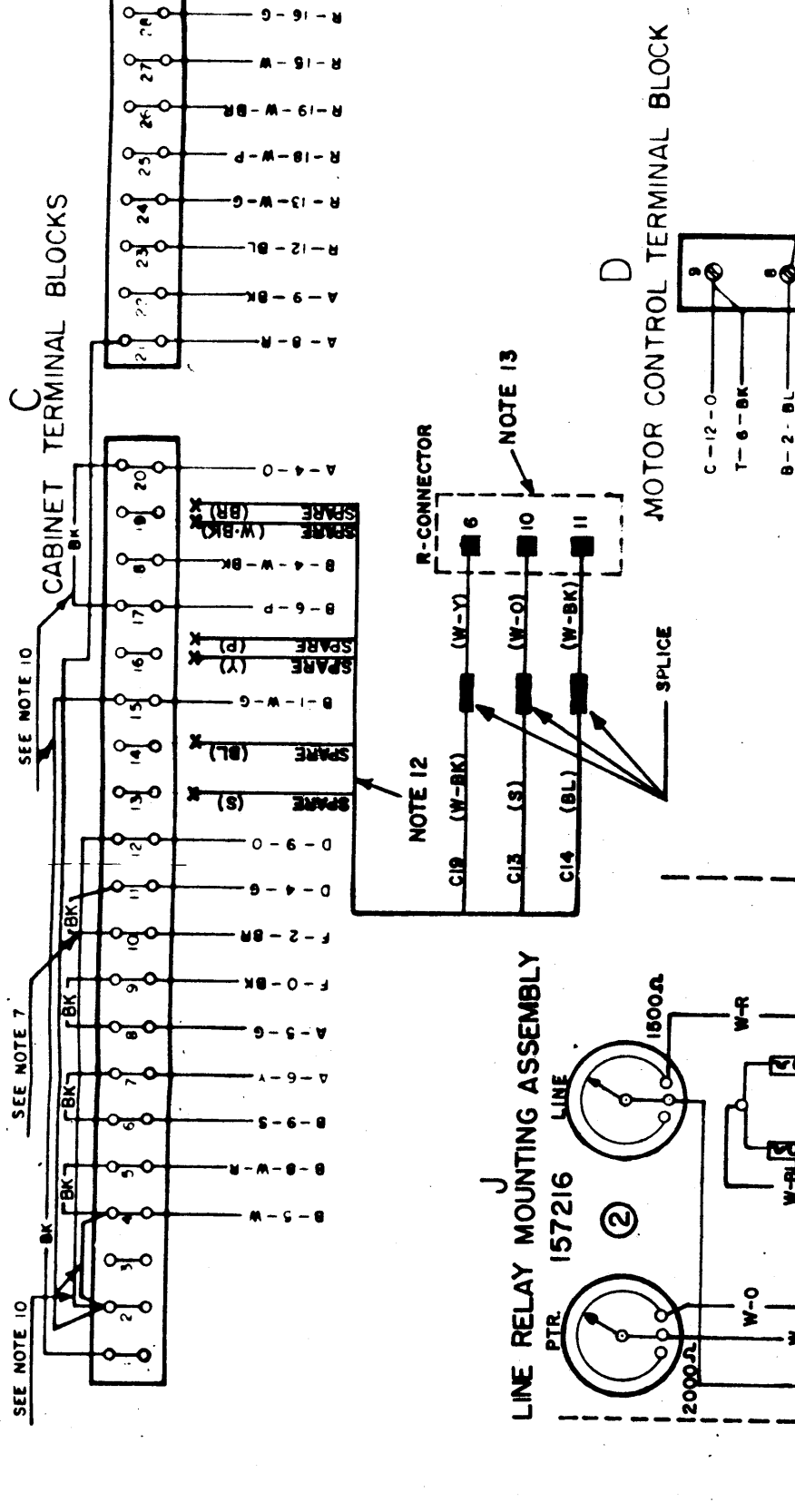
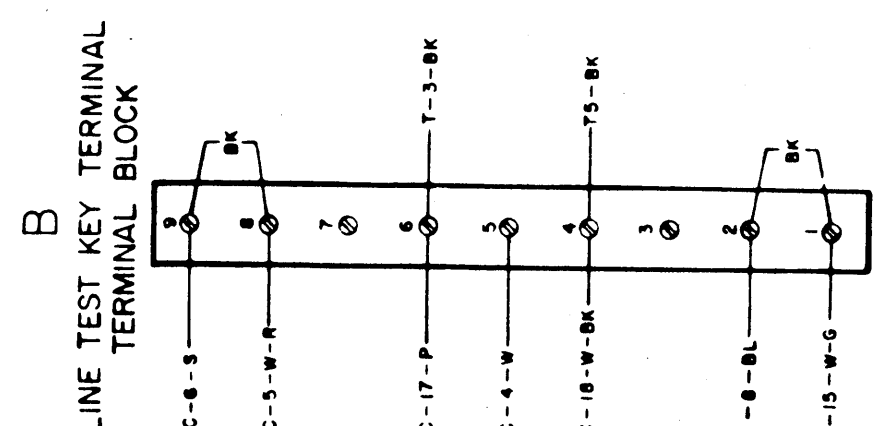
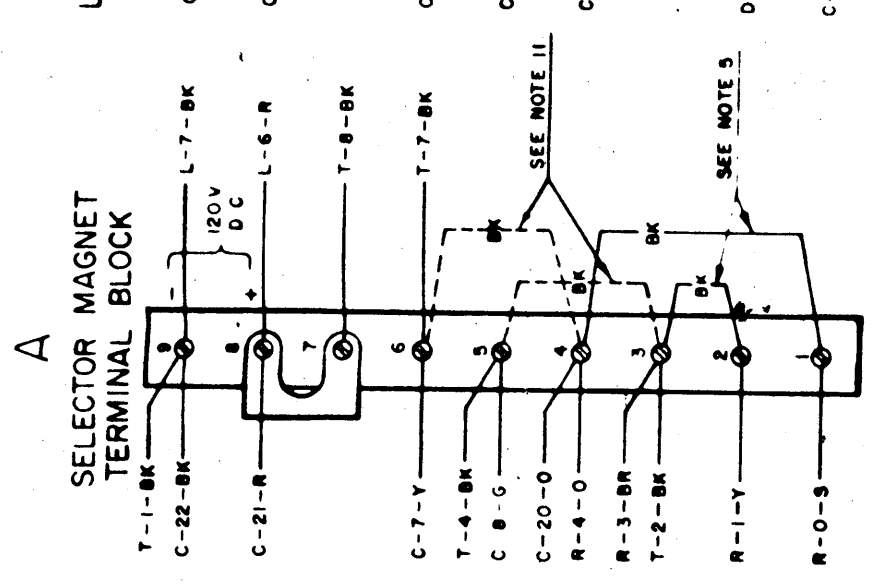
TELEPRINTERS
 TYPE 28
 ELECTRICAL
 SERVICE UNIT
 LESU 8/198
 WIRING

DRAWN BY
 CHECKED BY
 ENGINEER
 APPROVED BY

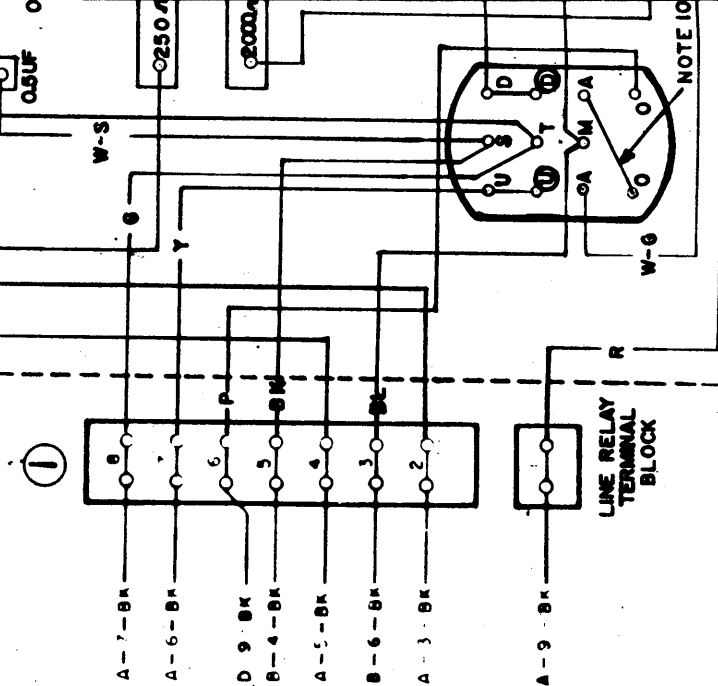
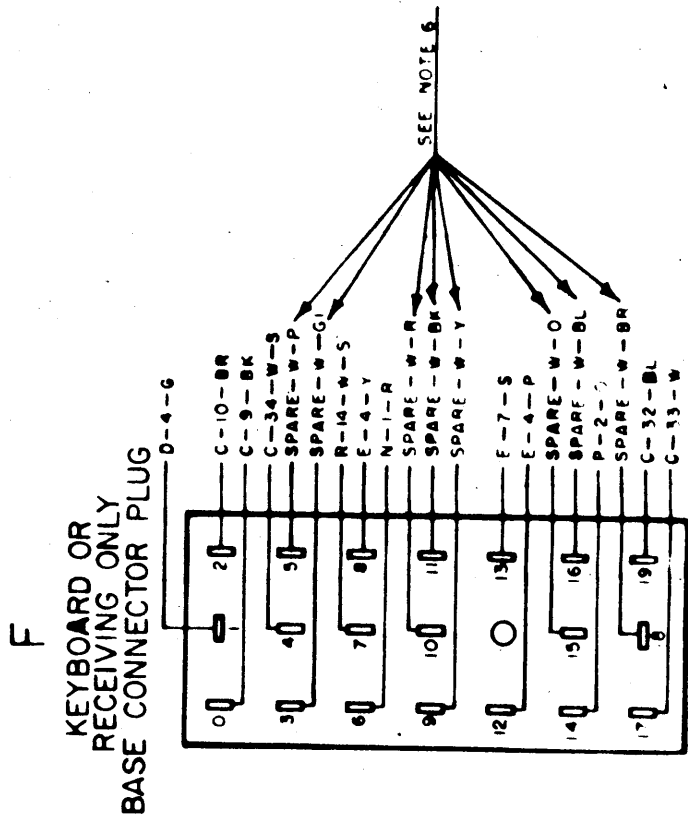
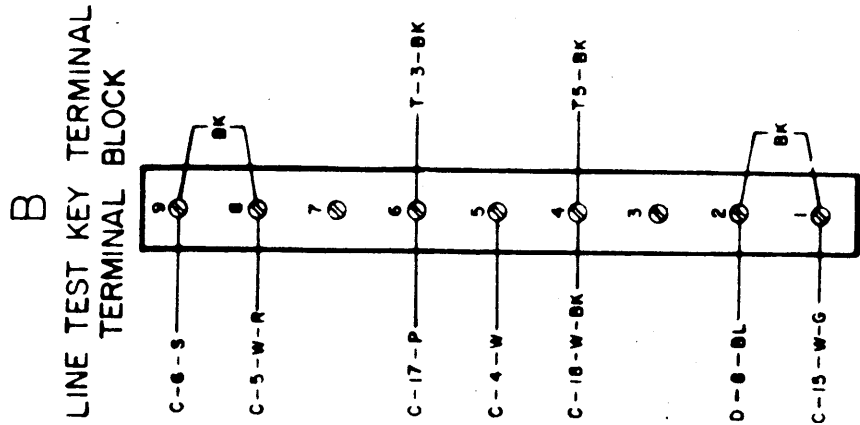
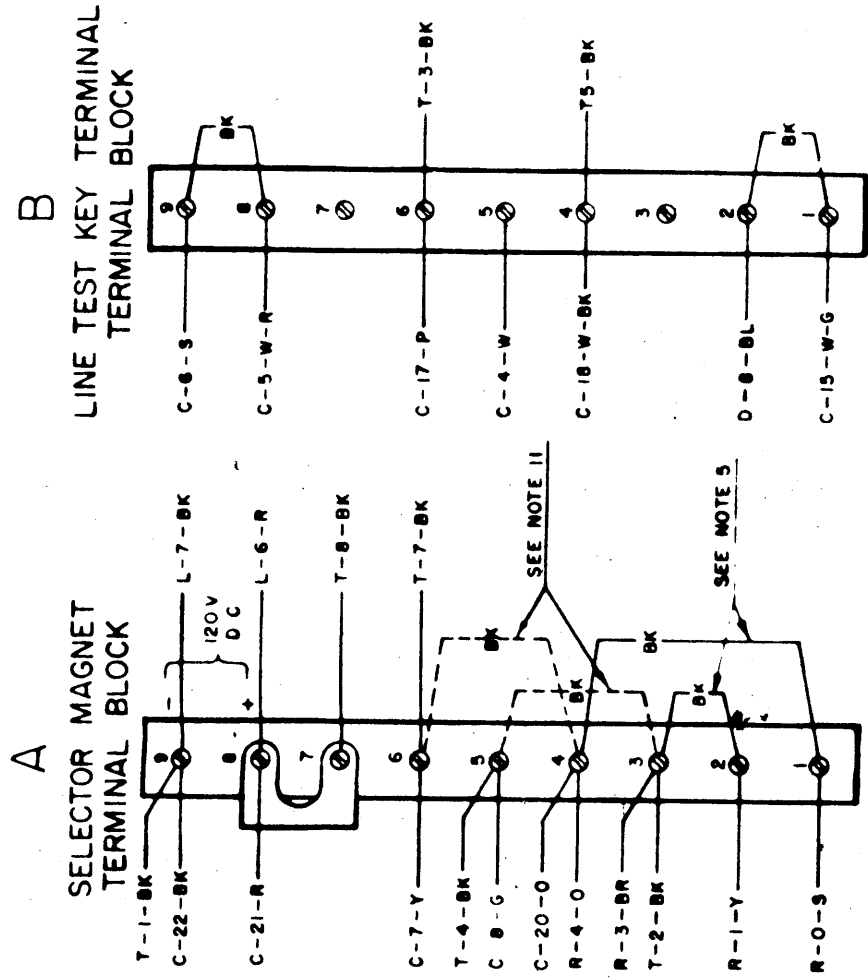


FOR SCHEMATIC SEE DWG. 168330
 THIS WIRING IS BASED ON TELETYPE
 CORP. DWG. 2812 WD; 5-27-55

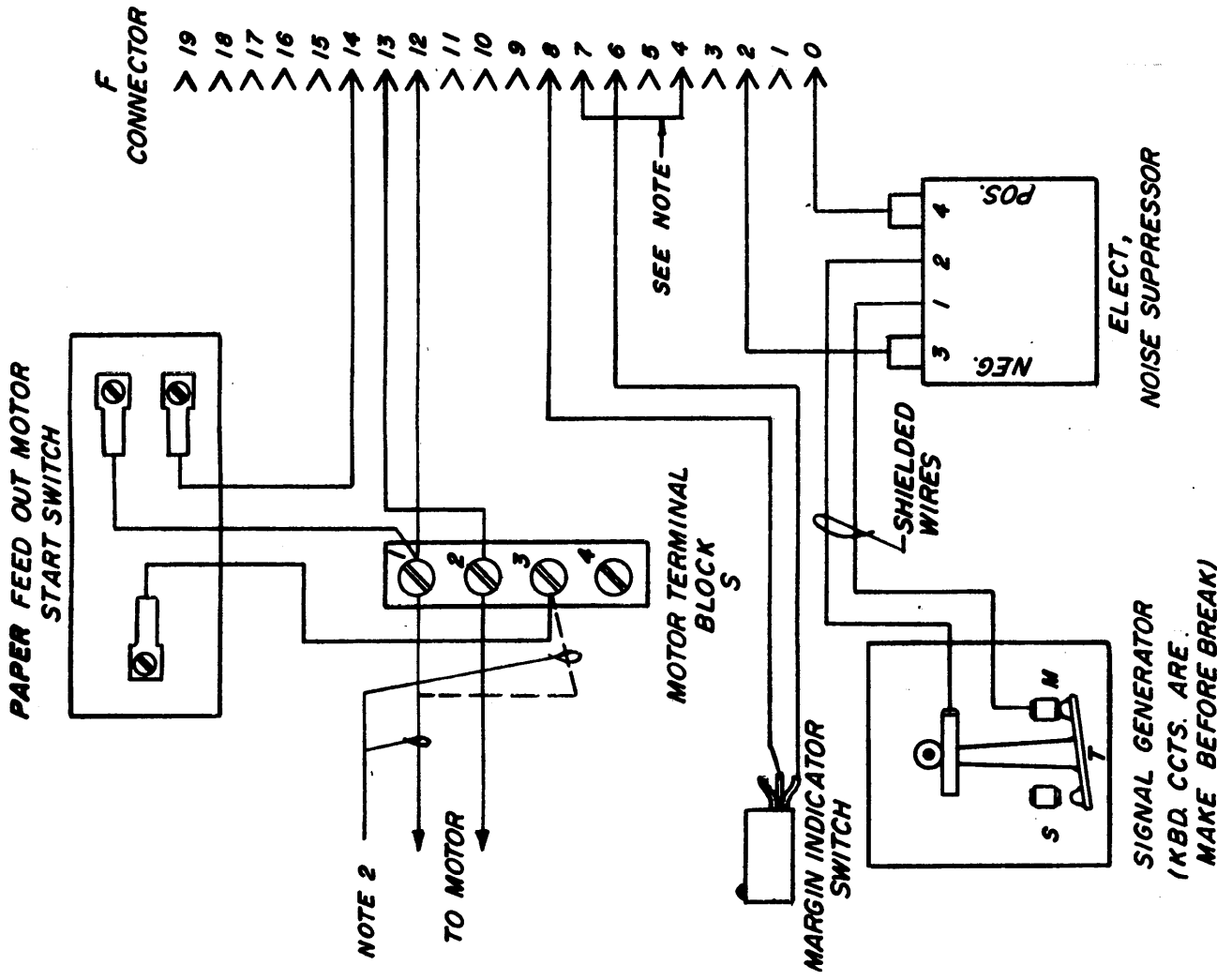
TERMINATING AREA	
TERMINAL DESIGNATION	
TERMINAL COLOR	
W	WHITE - BLACK
B	WHITE - BROWN
R	WHITE - RED
O	WHITE - ORANGE
Y	WHITE - YELLOW
G	WHITE - GREEN
P	WHITE - BLUE
U	WHITE - PURPLE
S	WHITE - SLATE
60	60 CYCLE A C
RM	RMINAL ENDS
N	NEUTRAL SIGNAL LINE
RD	BOARD (OR REC. ONLY) OR PLUGS ARE TERMINALS OF THE ELECTRICAL
D C	D C - 11 IF SIGNAL LINE
SW	POWER SWITCH FOR LEAD L-2 - BK FROM TERMINAL E-1
WD	TYPE DRAWING 2912 WD, POSITION OF LINE RELAY
A5	3 TO A5
A6	4 " A6
C	AND TIED TO CABLE
OP	SELECTOR OPERATION



NO.	WIRING LEGEND	NOTES
2	<p>WIRE COLOR CODE</p> <p> BK - BLACK BR - BROWN R - RED O - ORANGE Y - YELLOW G - GREEN BL - BLUE P - PURPLE W - WHITE S - SLATE </p> <p> W - BK - WHITE - BLACK W - BR - WHITE - BROWN W - R - WHITE - RED W - O - WHITE - ORANGE W - Y - WHITE - YELLOW W - G - WHITE - GREEN W - BL - WHITE - BLUE W - P - WHITE - PURPLE W - S - WHITE - SLATE </p>	<p>UNIT WIRED FOR 115 VOLTS 50 TO 60 CYCLE A C POWER INPUT ONLY.</p>
3		PLUGS VIEWED FROM SOLDER TERMINAL ENDS
4		CIRCUITS SHOWN FOR .060 AMP. NEUTRAL SIGNAL LINE OPERATION.
6		THE SPARE LEADS FROM THE KEYBOARD (OR REC. ONLY BASE) AND TYPING UNIT CONNECTOR PLUGS ARE TERMINATED IN THE RIGHT AND LEFT ENDS OF THE ELECTRICAL SERVICE UNIT RESPECTIVELY
7		REMOVE STRAP BETWEEN C-10 AND C-11 IF SIGNAL LINE BREAK SWITCH IS USED
8		RECTIFIER SHOWN CONTROLLED BY POWER SWITCH FOR CONTINUOUS OPERATION, REMOVE LEAD L-2-BK FROM TERMINAL E-2 AND CONNECT TO TERMINAL E-1
9		THIS DRAWING IS A COPY OF TELETYPE DRAWING 2912 WD, 5-27-55, AND COVERS THE ADDITION OF LINE RELAY UNIT 6271-A
10		STRAPS TO BE ADDED
11		STRAPS TO BE REMOVED FROM A3 TO A5 " " " " A4 " " A6
12		THESE SPARE WIRES ARE TAPED SEPARATELY AND TIED TO CABLE
13		ADD WIRING AS SHOWN FOR STUNT BOX SELECTOR OPERATION



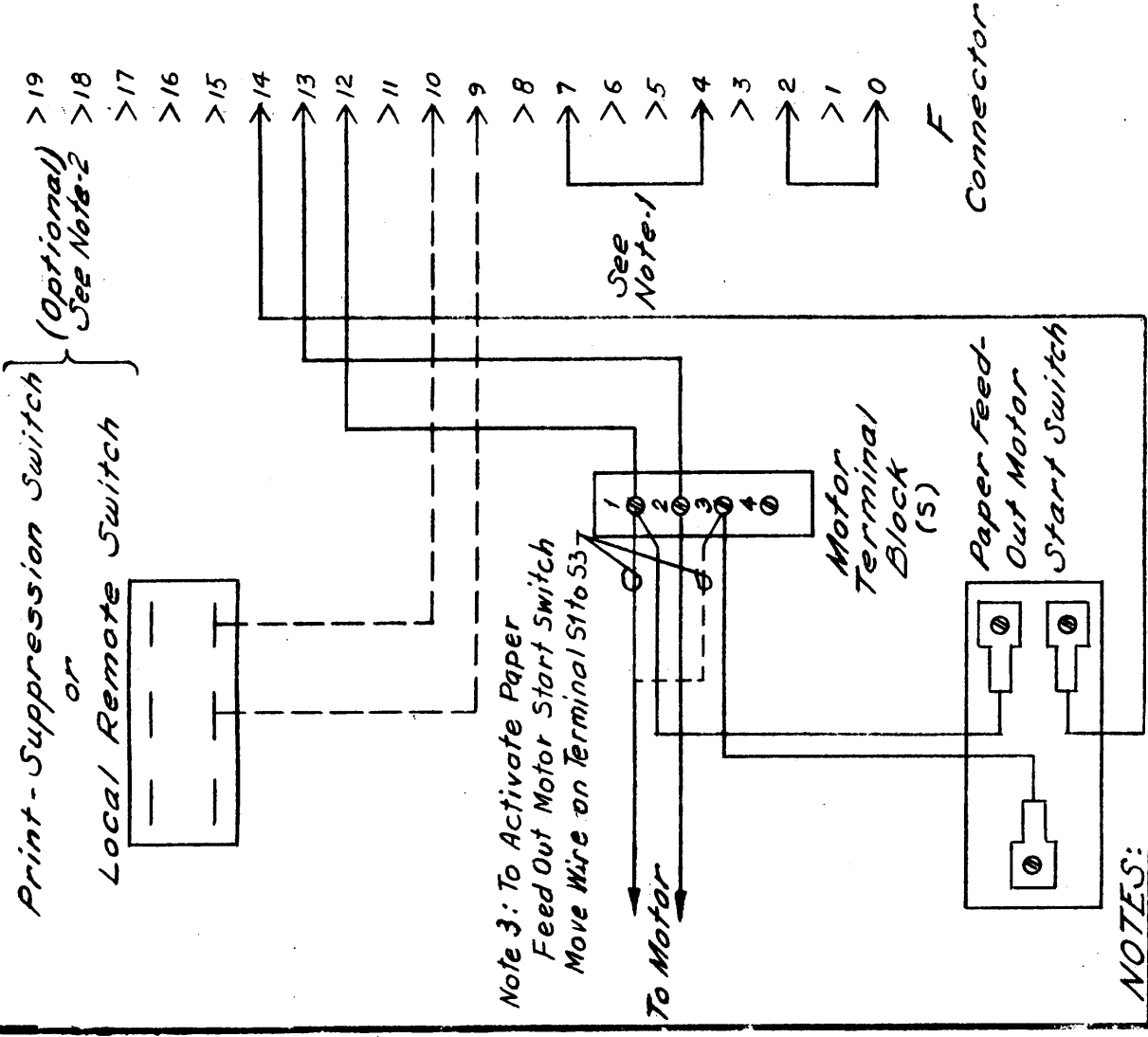
REVISIONS
D-OCT. 22, 1962 REDRAWN "C" ISSUE LOST A.K. HC <i>JH</i> <i>MC</i>



- NOTE**
1. STRAP NECESSARY FOR OPERATION WITH LESU 7 ELEC. SVCUNIT (NOT FOR W.U. USE)
 2. TO ACTIVATE PAPER FEED OUT MOTOR START SWITCH; MOVE WIRE ON TERMINAL S1 TO S3.

WESTERN UNION		SCALE	DRAWN	DES. ENG.	SP. ENG.	APPD.	ISSUE	DATE	DRAWING NUMBER
NEXT ASSY	USED ON	TOLERANCE UNLESS OTHERWISE SPECIFIED	DECIMAL	FRACTIONAL	ANGULAR	BET. H. LES	PRE	A OCT 28, 1955	171 948
MATERIAL:		MODEL 28 TPR. KEY BOARD LK4 B LK12 SCHEMATIC WIRING							
FINISH:		-1							

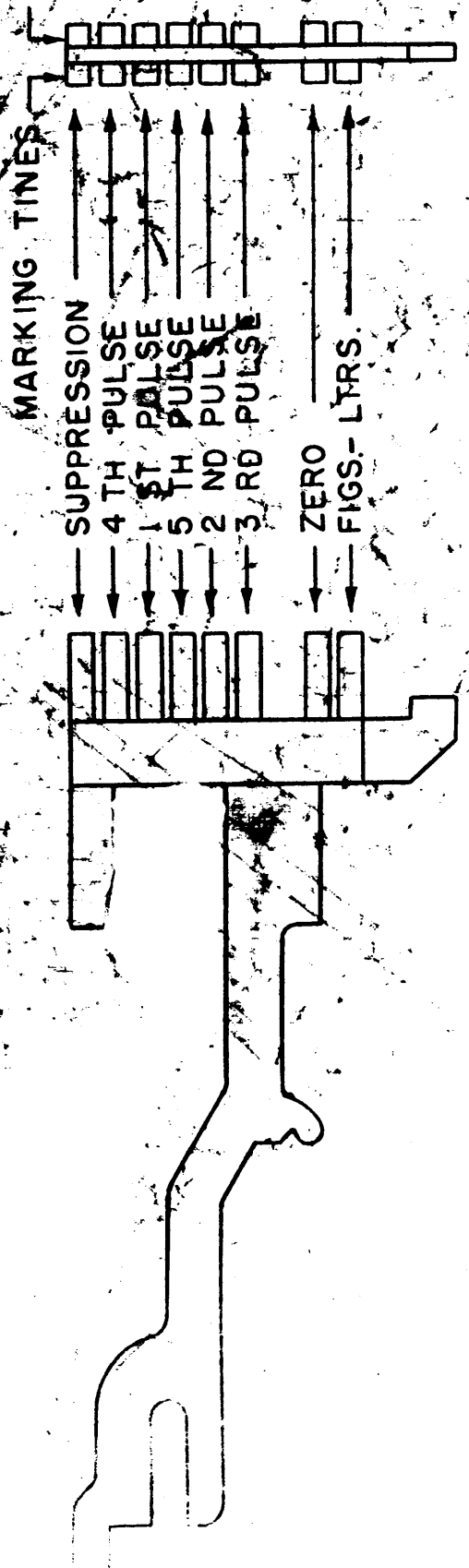
REVISIONS
B-NOV. 8, 1956 Added: Notes 2 & 3. Optional Switch Wiring Redrawn C.K. <i>MC</i>
C-OCT. 17, 1957 Note 4 Added OH. C.K. <i>MC</i>
D-APRIL 13, 1961 NOTE 3 REMOVED NOTE 4-REDESIGNATED AS NOTE 3 C.K. <i>MC</i>



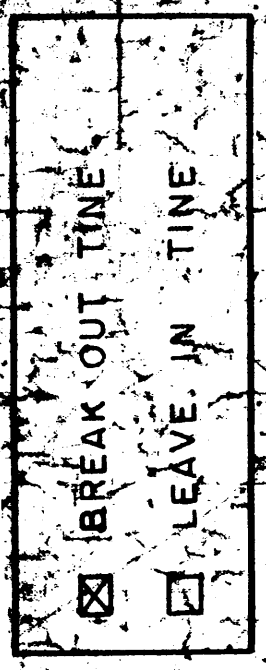
- NOTES:**
1. This strap necessary when used with an LESU7. (Not for W.U. use)
 2. The print-suppression Switch set of parts #154681 or Local Remote Switch #152342 is optional. The switch is used to energize the solenoid of the "Off Line" Stunt Shift Control set of parts #152345.

WESTERN UNION		SCALE	DRAWN	DES. ENG.	SP. ENG.	APPD.	ISSUE	DATE	DRAWING NUMBER
NEXT ASSY	USED ON	TOLERANCE UNLESS OTHERWISE SPECIFIED	DECIMAL	FRACTIONAL	ANGULAR	BET. HOLES	PRE	A 10-27-55	171 944-1
MATERIAL:		MODEL 28 TPR R.O. BASE LB4/180 WIRING							
FINISH:		-1							

UNIVERSAL FUNCTION BAR, 153440



KEY



FRONT VIEW

SIDE VIEW

CODING PROCEDURE

STEP #1 CODE FOR CHARACTER USE ONLY "5 PULSE" TIMES

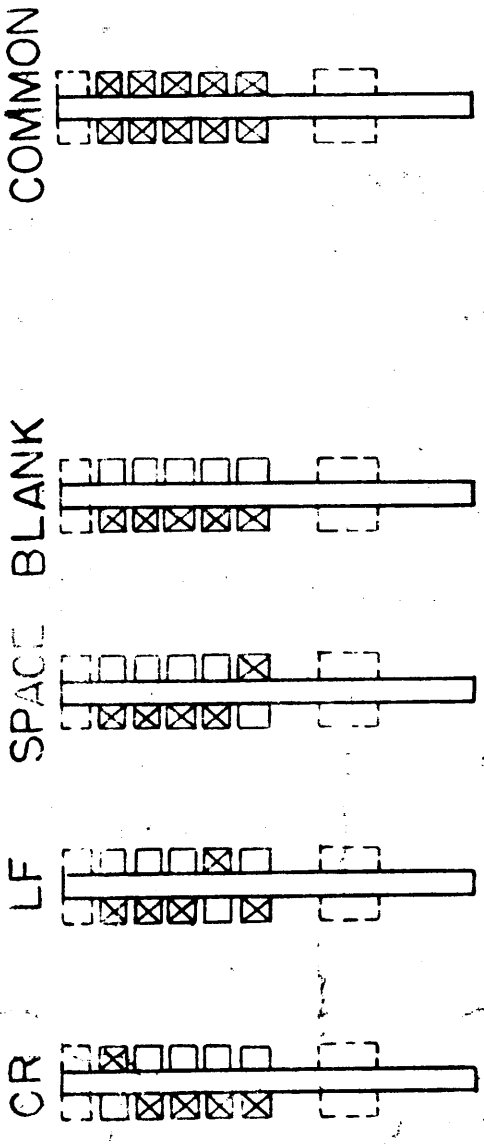
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
4TH 1ST 5TH 2ND 3RD														4TH 1ST 5TH 2ND 3RD											

FIG. 1 PERS.

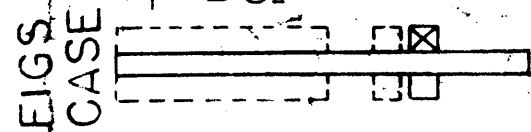
CR LF SPACE BLANK COMMON

NOTE (2) ALL STEPS (#1 THRU #4) MUST BE

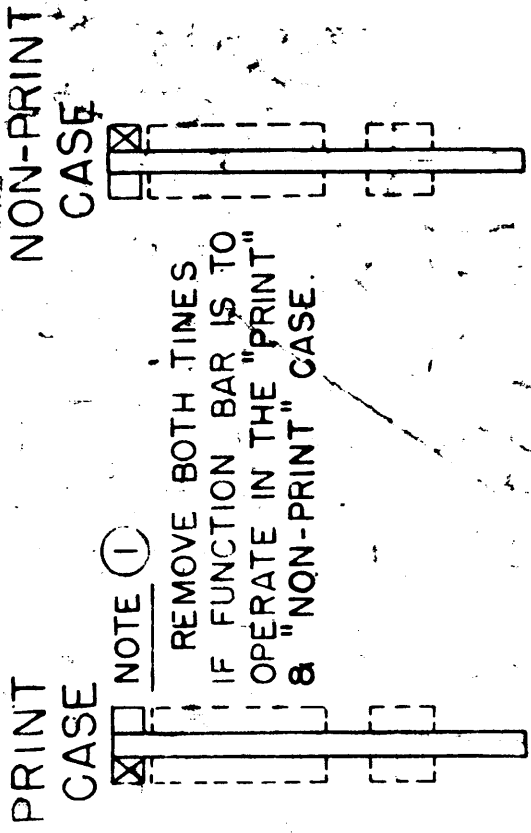
4 TH
5 TH
2 BL
3 RC



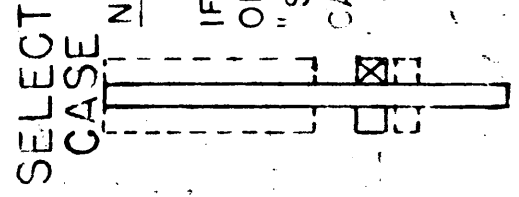
STEP #2 CODE FOR UPPER CASE OR LOWER CASE
USE "FIGS-LTRS" TINES.



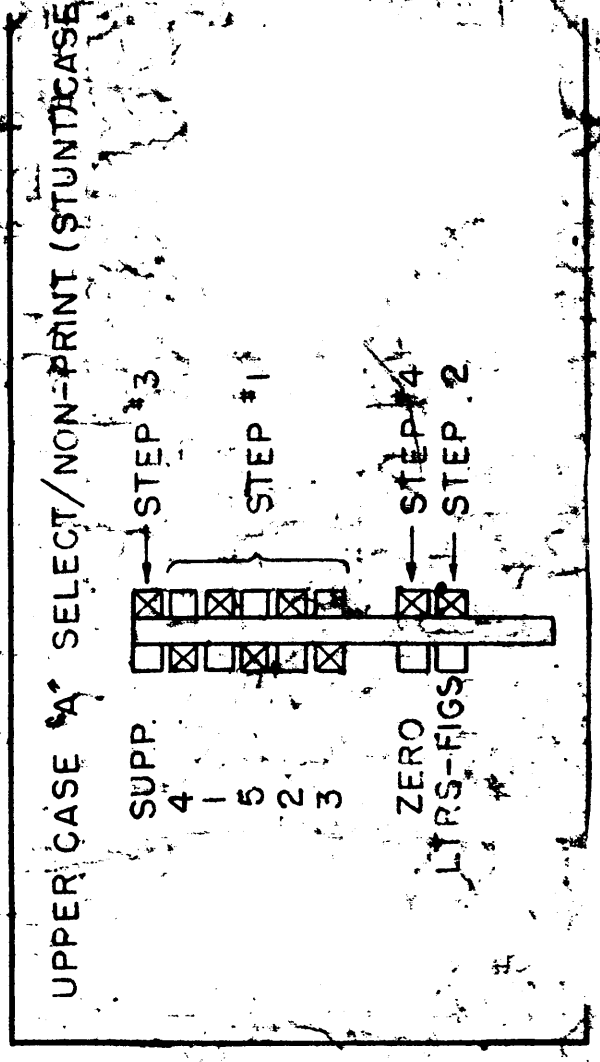
STEP #3 CODE FOR PRINT OR NON-PRINT (STUNT) CASE
USE "SUPPRESSION" TINES.



STEP #4 CODE FOR SELECT OR NON-SELECT CASE
USE "ZERO" TINES



STEP #4 CODE FOR SELECT OR NON-SELECT CASE
USE "ZERO" TINES



CODING EXAMPLE

NOTE (2) ALL STEPS, (#1 THRU #4) MUST BE PERFORMED WHEN CODING ANY UNIVERSAL FUNCTION BAR.

JAN. 22, 1958
NOTE (2) ADDED

APPROVED: [Signature]
D-MAR. 1957

NOTE (1) ADDED
M.S. C.K. [Signature]

APPROVED: [Signature]
C-AUG. 8, 1956
RE-DRAWN AND REVISED
DWG. WAS 1/2 SIZE

APPROVE: [Signature]
A-NOV. 11, 1955

DRAWING NUMBER
17198

W. U. DEL. CO.

MODEL 28

UNIVERSITY OF DELAWARE
FUNCTION # 15344G

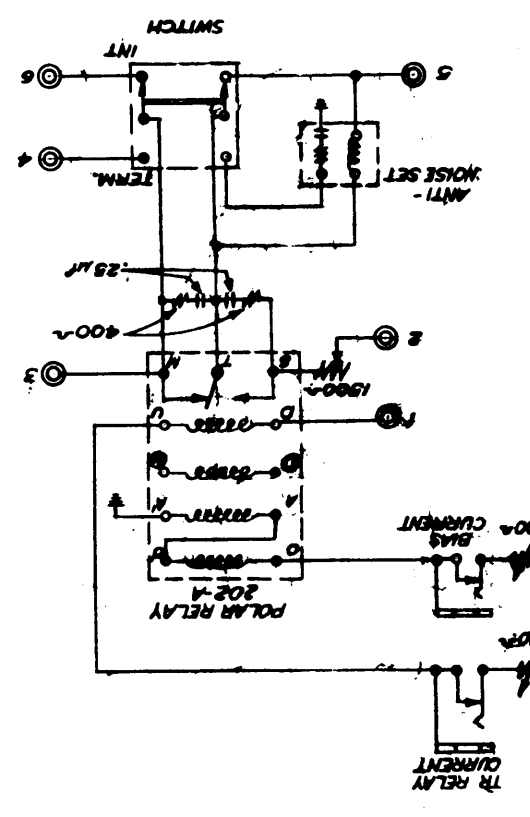
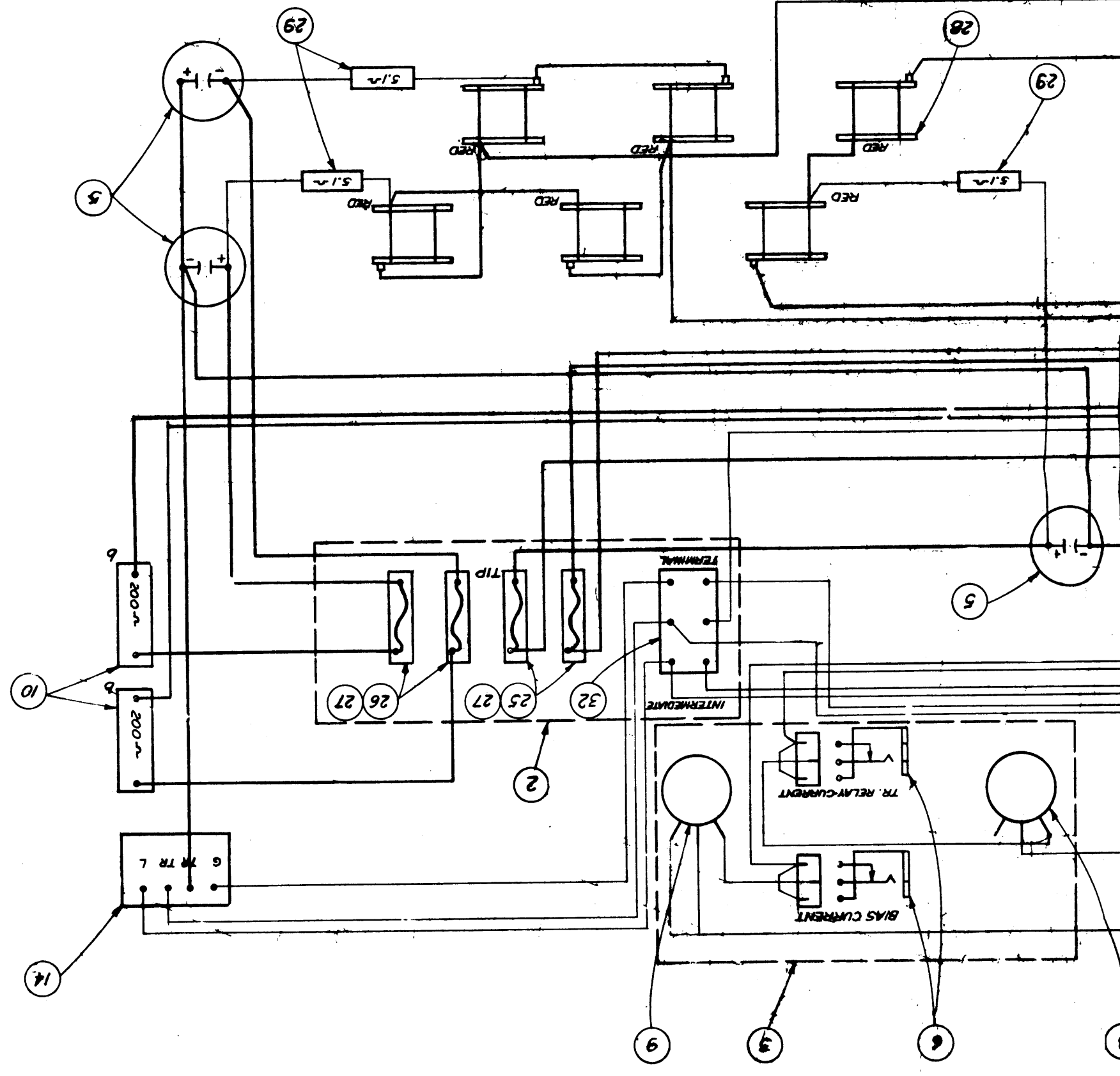
CODING

SCALE: 1/4" = 1"

PRINTED IN U.S.A.

D-JUL-V 29 1957
 Separate parts of leads added from transformer for secondary to main line rectifier. Connections to main line rectifier noted. Fuses connected from load to main line rectifier. Connections to secondary to main line rectifier noted. Transformer color coded.
 C-DEC-17 1956
 Redrawn. Super-
 Secs. 174189-B2
 174189-B
 DRAWING NUMBER
 WESTERN UNION
 TRANSMITTING
 PANEL
 9102-A
 WIRING
 SCALE
 DRAWN
 TRACED
 CHECKED
 ENGR. D.
 APPROVED

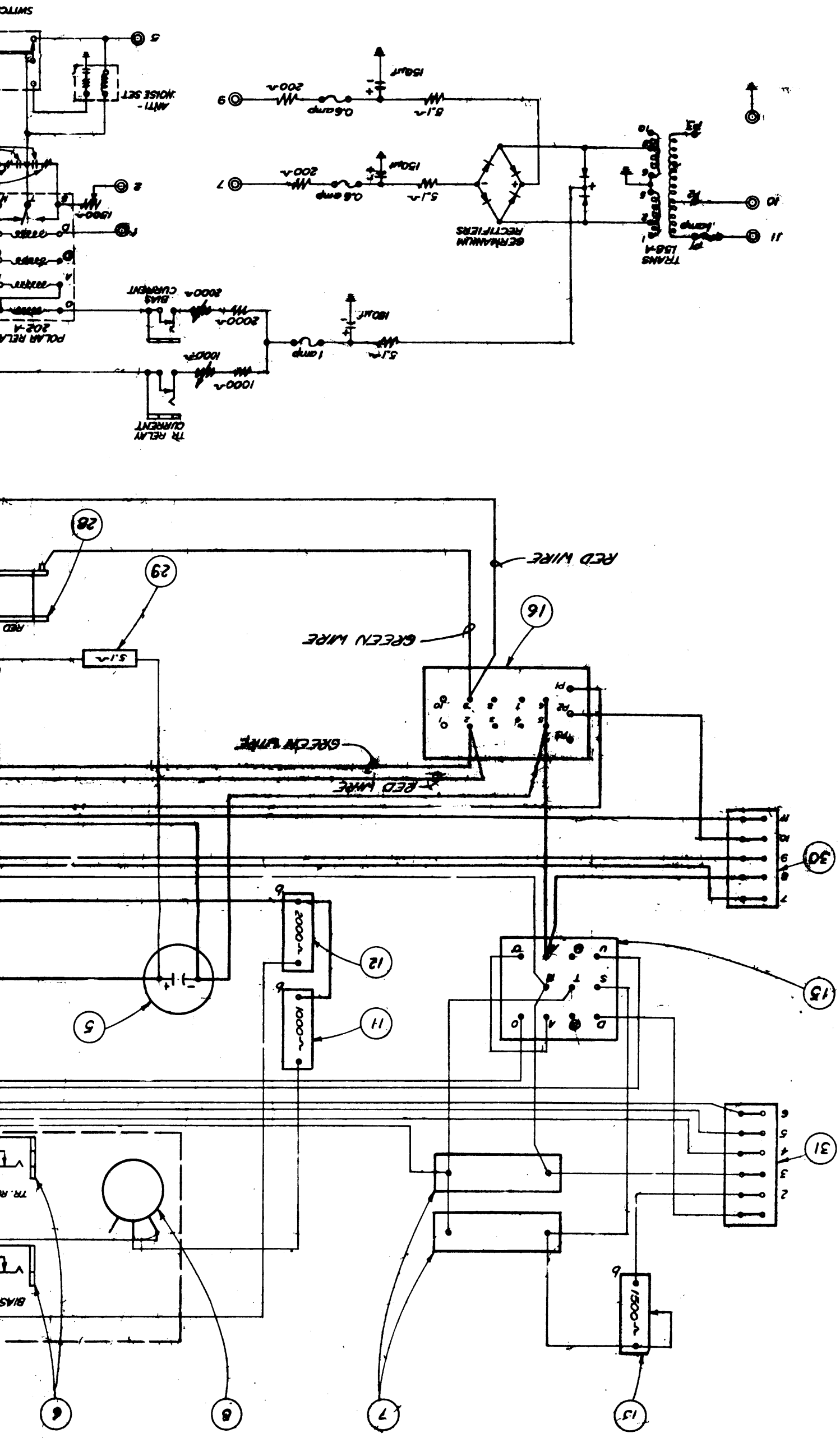
- 25 Fuse, Fusetron, Type FNM, 1.0 amp
- 26 Fuse, Fusetron, Type FNM, 0.6 amp
- 27 Holder, Fuse Type HPC
- 28 Rectifier, germanium Type IN158
- 29 Resistor 66-A, 5.1 ohms (Dwg. 211307)
- 30 Strip, Terminal No. 5-142-3/4 W
- 31 Strip, Terminal No. 6-140-3/4 W
- 32 Switch, Toggle D.P.D.T. No. 81027-JE
- 16 Fuse Bracket Bracket
- 5 Capacitor, Dry Electrolytic 4-A 150uF, 250V
- 6 Jack # 900107
- 7 Killer, Spark 3596-A
- 8 Potentiometer 17-A, 1000 ohms
- 9 Potentiometer 17-A, 2000 ohms
- 10 Resistor 1-B, 200 ohms
- 11 Resistor 1-B, 1000 ohms
- 12 Resistor 1-B, 2000 ohms
- 13 Resistor 66-A, 1500 ohms
- 14 Set, Anti-Noise 7-A
- 15 Subbase, Relay 302-A
- 16 Transformer 158-A



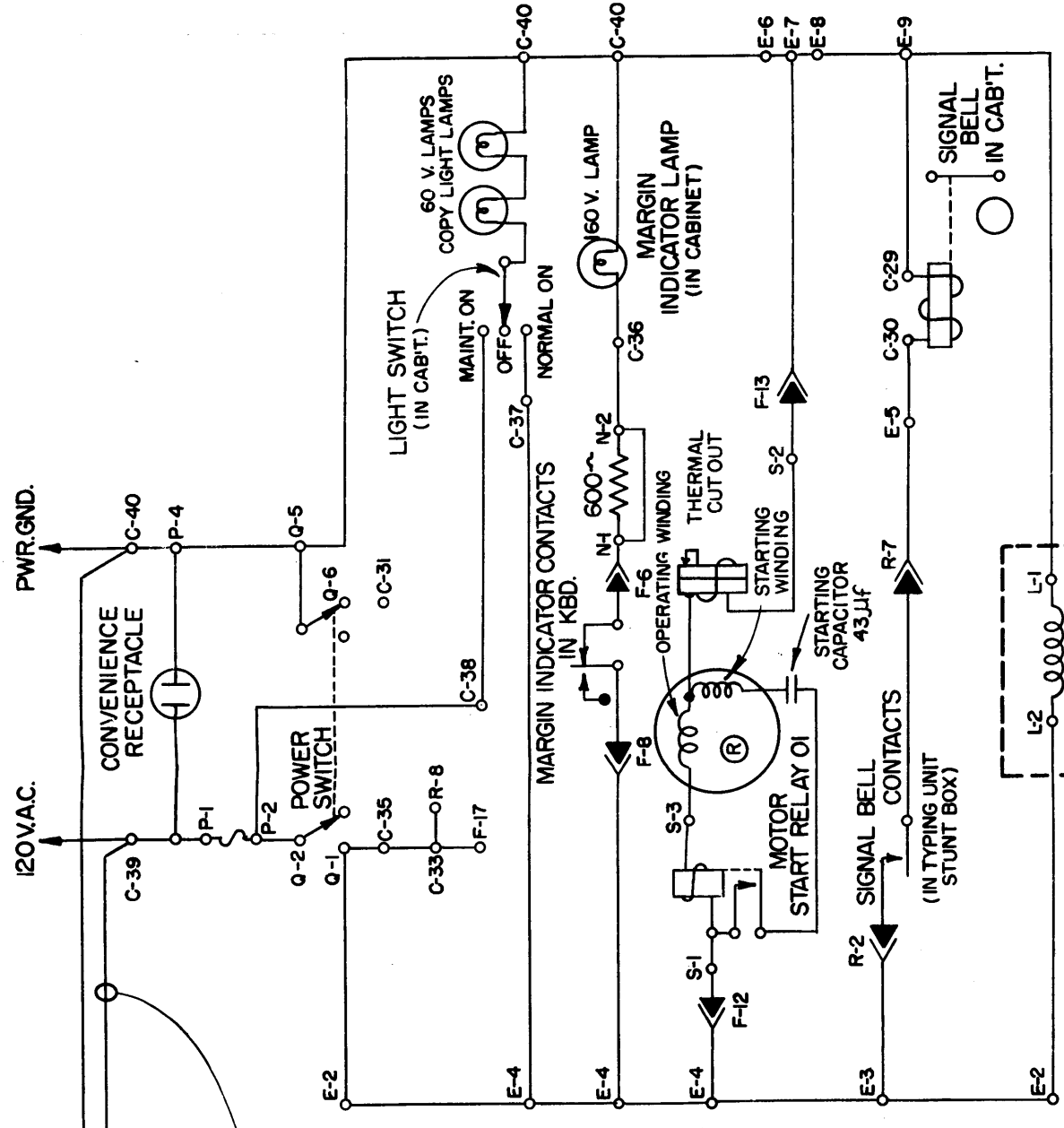
NOTES:
 22 AWG Solid Instrument Wire (Item 20)
 16 AWG Stranded, Type TF, Single Conductor
 Thermoplastic Fixture Wire (Item 33)
 The bare leads of the axial lead resistors shall be covered with #18 ASTM Flexible Varnished Impregnated Tubing (Item 18)
 b - Indicates terminal nearest mounting surface.
 Equipment mounted on Items 2 and 3 and Items 5 are shown as viewed from the solder lug side.

Indicates terminals on Jones Strips

THEORY



WHEN IT IS DESIRED TO TURN THE TRANSMITTING PANEL OFF WITH THE TYPE 28 TELEPRINTER, REMOVE THIS WIRE FROM LUG C-39 AND TRANSFER IT TO A LUG AFTER THE POWER SWITCH, SUCH AS LUG Q-1, C-35, E-2, E-3, OR E-4.

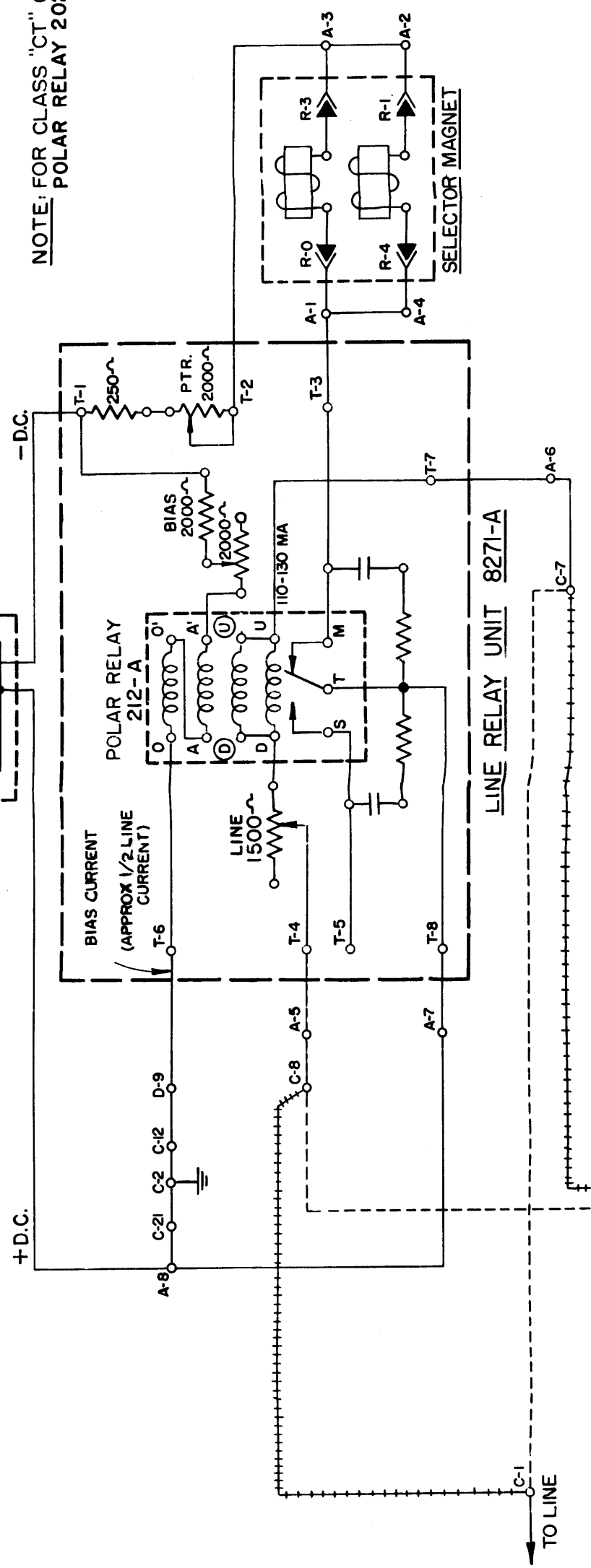


NOTES

- REMOVE STRAPS:**
 C-8 TO C-9
 C-6 TO C-7
 C-2 TO C-4
 C-4 TO C-5
 C-1 TO C-15

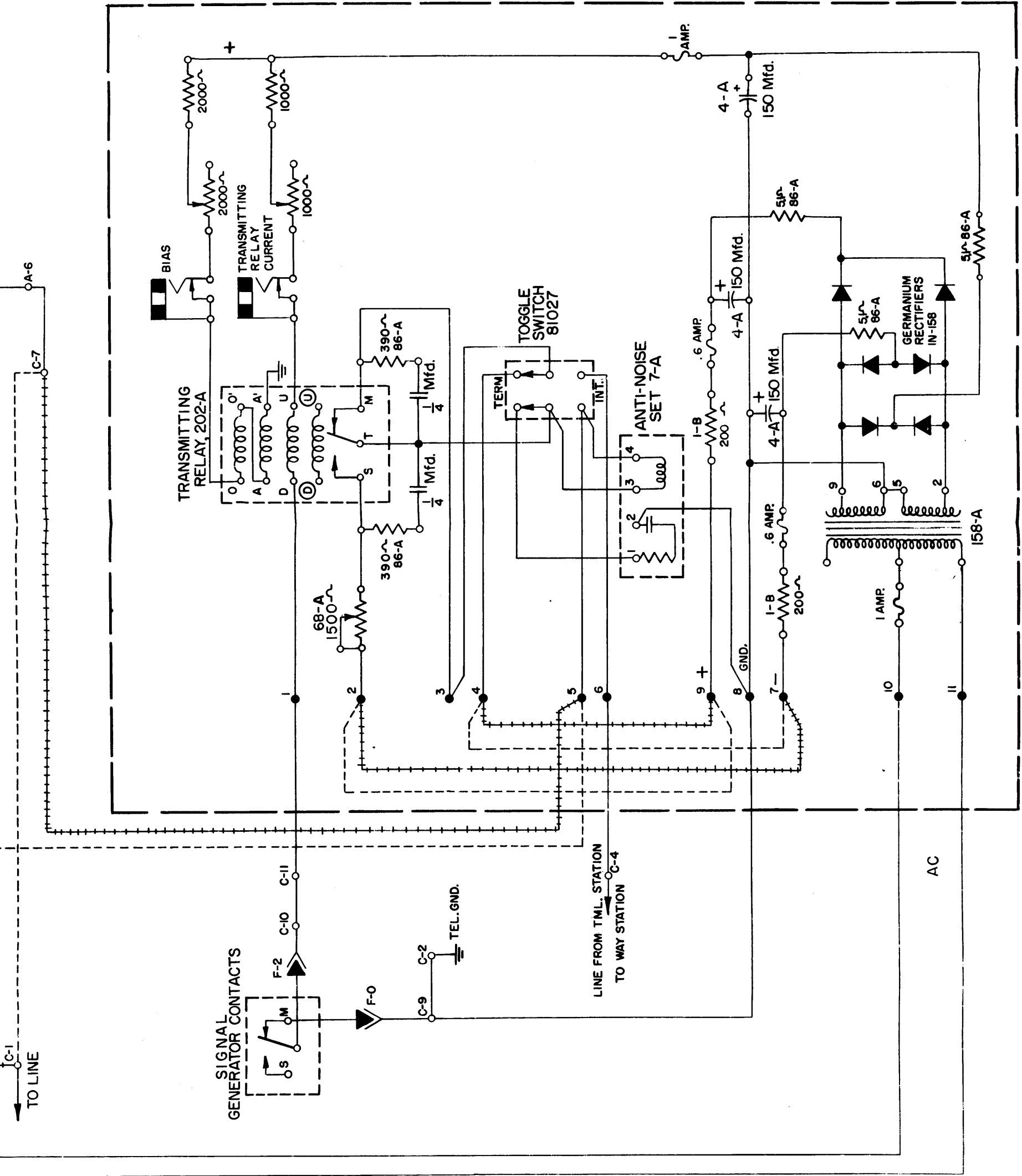
- WIRING DONE AT "CENTRAL OFFICE"
 - - - - - WIRING DONE AT "TERMINAL OFFICE"
 OR "WAY STATION."

NOTE: FOR CLASS "CT" OPERATION, POLAR RELAY 202-A IS USED.



SELECTOR MAGNET

LINE RELAY UNIT 8271-A



TRANSMITTING PANEL 9102-A

D-

APPROVED.....

C- FEB. 21, 1958
 LINE RELAY UNIT IS NOT CHANGED FOR CLASS "C" OPERATION
K.M.J.

APPROVED.....

B- JAN. 11, 1956
 NOTE ON "CT" OPERATION ADDED. RANGES FOR BIAS & LINE CURRENTS GIVEN
 L.N.T. *K.V.*
 APPROVED.....

A- NOV. 8, 1956.
 DRAWING NUMBER 174171-7
 W. U. TEL. CO.

TELEPRINTERS
 TYPE 28
 CLASS "C" OPERATION ONLY

INTERCONNECTIONS BETWEEN THE TRANSMITTING PANEL 9102-A AND TELEPRINTER EQUIPMENT

SCALE: DRAWN: J.H.L. TRACED: CHECKED: ENGR'D: L.N.T. APPROVED: *J.H.L.*

SCALE
DRAWN 174234
CHECKED
EMER D
APPROVED

WIRING AND WIRING CABINET 9100-A
W. U. TEL. CO.
DRAWING NUMBER 174234-9
A-
E-OCT31,1957
Supersedes Dwg. 174234-D-8.
F-
G-

(See Notes 8 and 9)

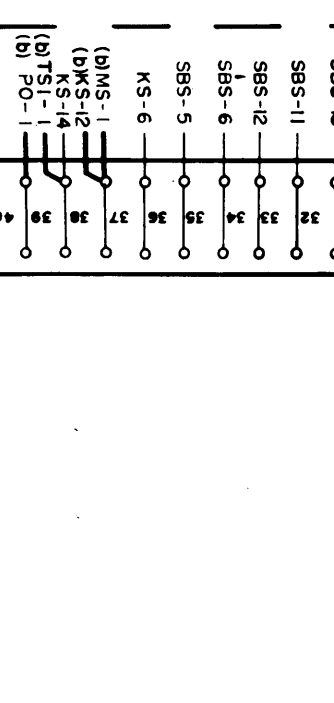
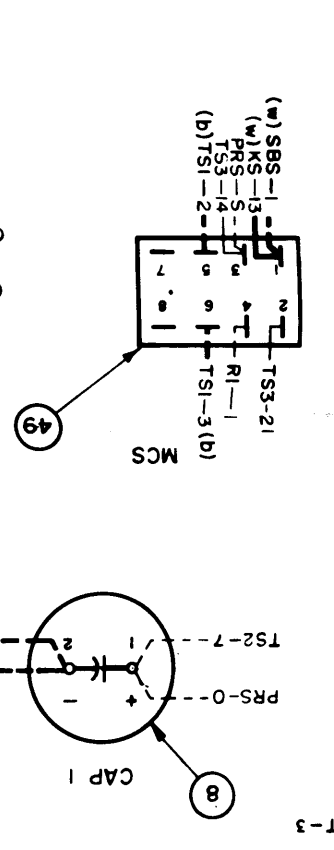
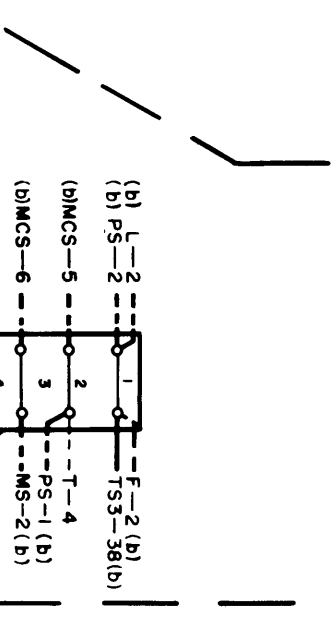
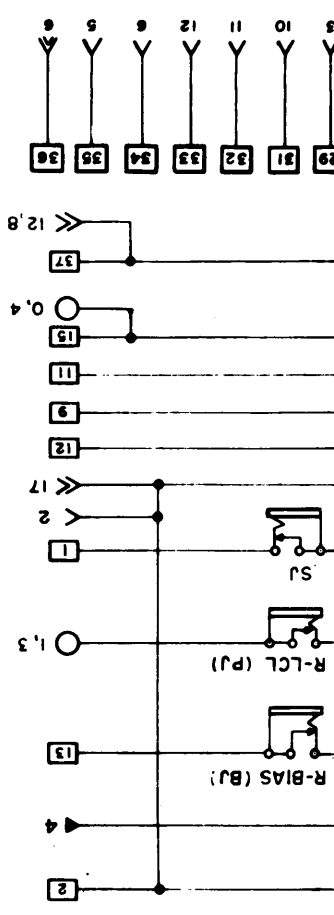
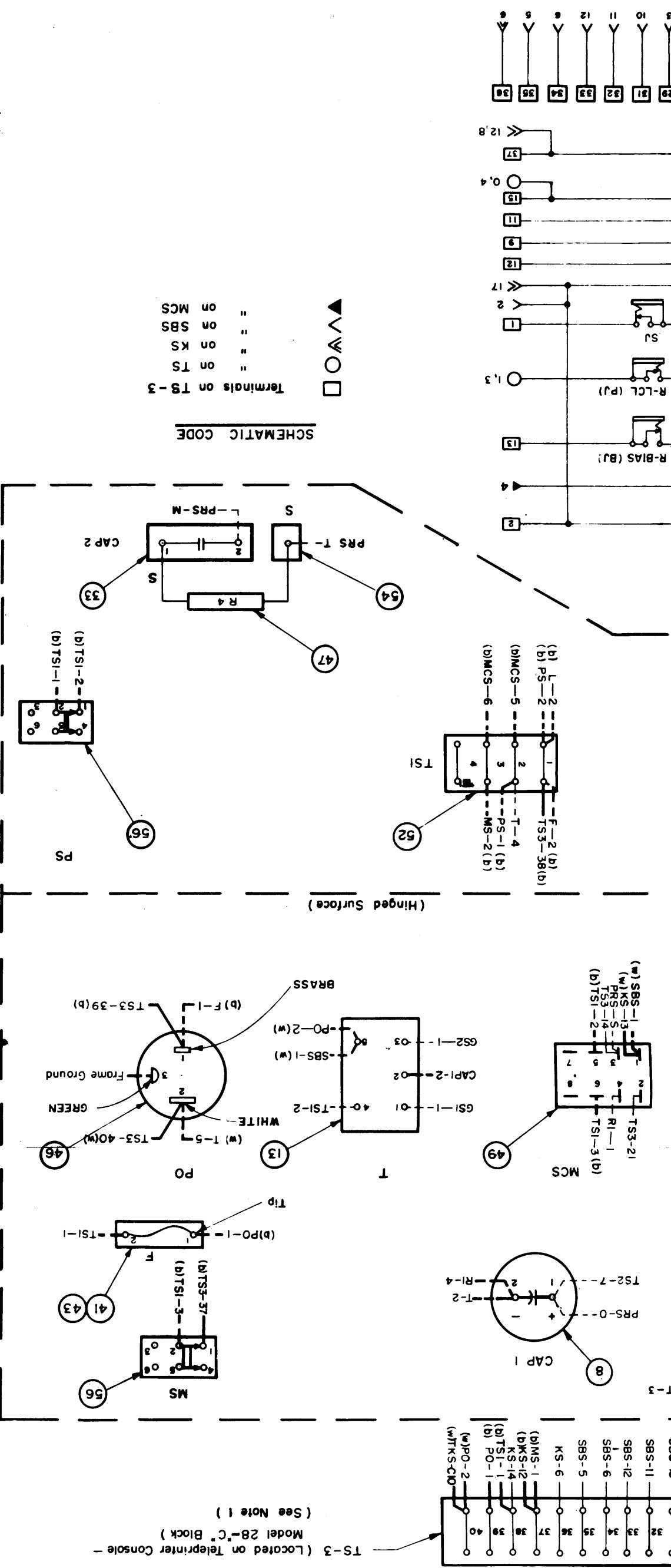
Wire, 18 AWG NEC, Type TFF (b) - black
Wire, 22 AWG Flexible Instrument per Specs. 9089
Wire, 22 AWG Solid Instrument per Specs. 9089

(w) = white
(b) = black

1. Terminal board TS-3 is not part of the wiring cabinet. TS-3 is shown brought out from the cables.
2. All wires shown terminated on TS-3 shall be equipped with solderless terminals #34080, AMP, Inc.
3. Whenever two 22 AWG gauge wires are shown connected to the same point on TS-3, they shall be connected to a single solderless terminal. Any other multiple connection shown on TS-3 shall have each individual wire equipped with one solderless terminal.
4. Wires shown terminated on points 1 through 20, and points 21 through 40 on TS-3, shall form the larger cables emerging from the left and right sides respectively, of the cabinet as shown on Drawing 174239.
5. The spacing between the wires emerging from the cables referred to in note 4 shall be as indicated on Drawings 174239 and this drawing.
6. For method of running cables see Drawing 174239.
7. For method of attaching wires to micro-connectors TS and KS see Drawing 174235. Before wires are connected, tubing shall be placed over the wires in accordance with Drawings 174235 and 174239.
8. All wiring from and to connectors KS and TS and Terminal board TS-3 shall consist of flexible wire of the gauges indicated by the code.
9. All other wiring shall consist of Solid Instrument wire of the gauges indicated by the code.

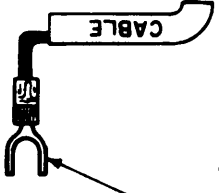
NOTES

900106	Jack	Capacitor, Dry Electrolytic, 4-A, 150 Mfd, 250 VW DC (CAP II)
(R2)	Resistor, 18, 200 ohm	
(R1)	Resistor, 59-A, 250 ohm	
(R1)	Resistor, 59-A, 2500 ohm	
(PRS)	Subbase, Polar Relay, 202-A, without color	
(T)	Transformer, 172-A	
(21)	Potentiometer 17-A, 2500- Ω	
(31)	Assembly, Pilot Light, #52408-99 100 K ohm built-in resistor for 125 Volt	Diaglight Corp. (L)
(33)	Capacitor, 0.5 Mfd, 600V, FM650 or Z2173	Tobe-Deutschen-Corp. (CAP2)
(37)	Connector, Micro, #14256-A	Cinch Mfg. Corp. (KS)
(38)	Connector, Micro, #14376-B	Cinch Mfg. Corp. (TS)
(41)	Fuse, #313004	Little Fuse Inc. (F)
(43)	Holder, Fuse HRP	Bussmann Mfg. Co. (F)
(46)	Receptacle, 3 Wire Grounding, 5284	Harvey Hubbell Inc. (PO)
(47)	Resistor, 86-A, 390 ohm (Dwg. 211308)	
(48)	Lamp, Neon NE-51	General Electric Co. (L)
(49)	Socket, S-308-AB	H.B. Jones Div. (MCS)
(50)	Socket, S-312-AB	H.B. Jones Div. (SBS)
(51)	Stack, Germanium Rectifier IN158	General Electric Co. (GS1) or Federal Tel. and Radio Corp. (GS2)
(52)	Strip, Terminal #4-140-W	H.B. Jones Div. (TS1)
(53)	Strip, Terminal #8-140-W	H.B. Jones Div. (TS2)
(54)	Strip, Mounting #5101	American Radio Hardware Co. (S)
(55)	Switch, Top #5-003-2, equipped with non-turn Washer #12C1087	Grayhill (TKS)
(56)	Switch, Toggle 81027-JE	Arrow Horit & Hegeman (PS) (MS)

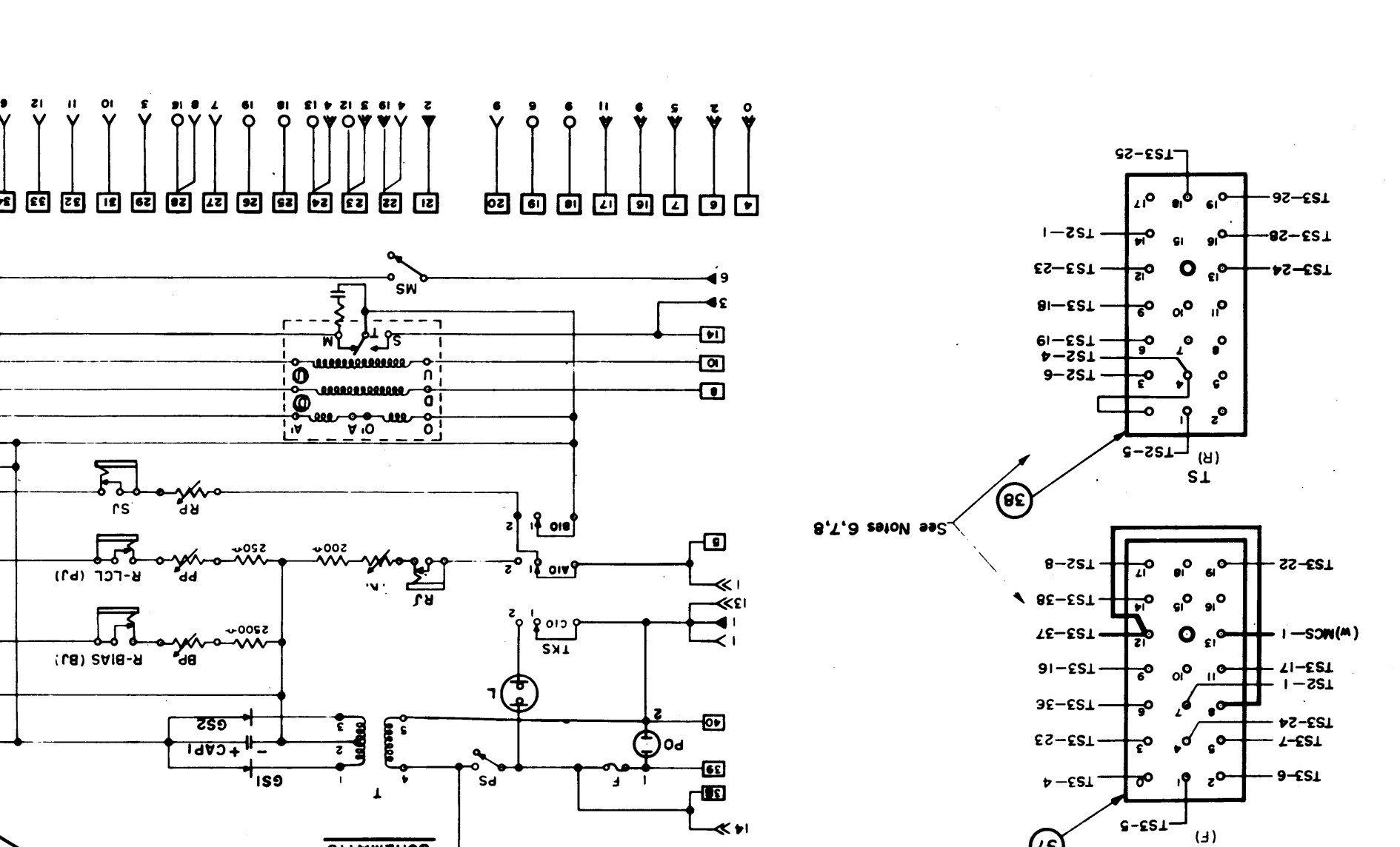
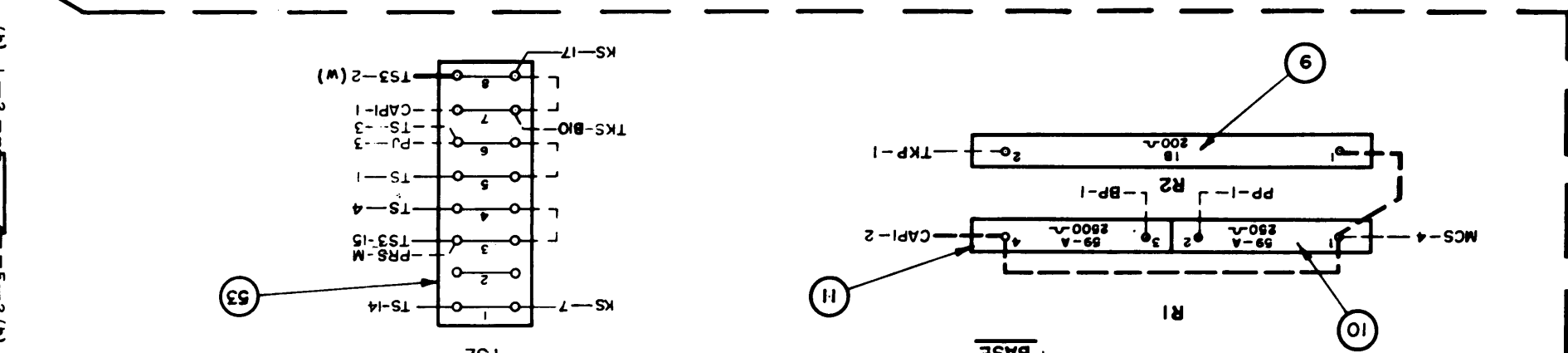
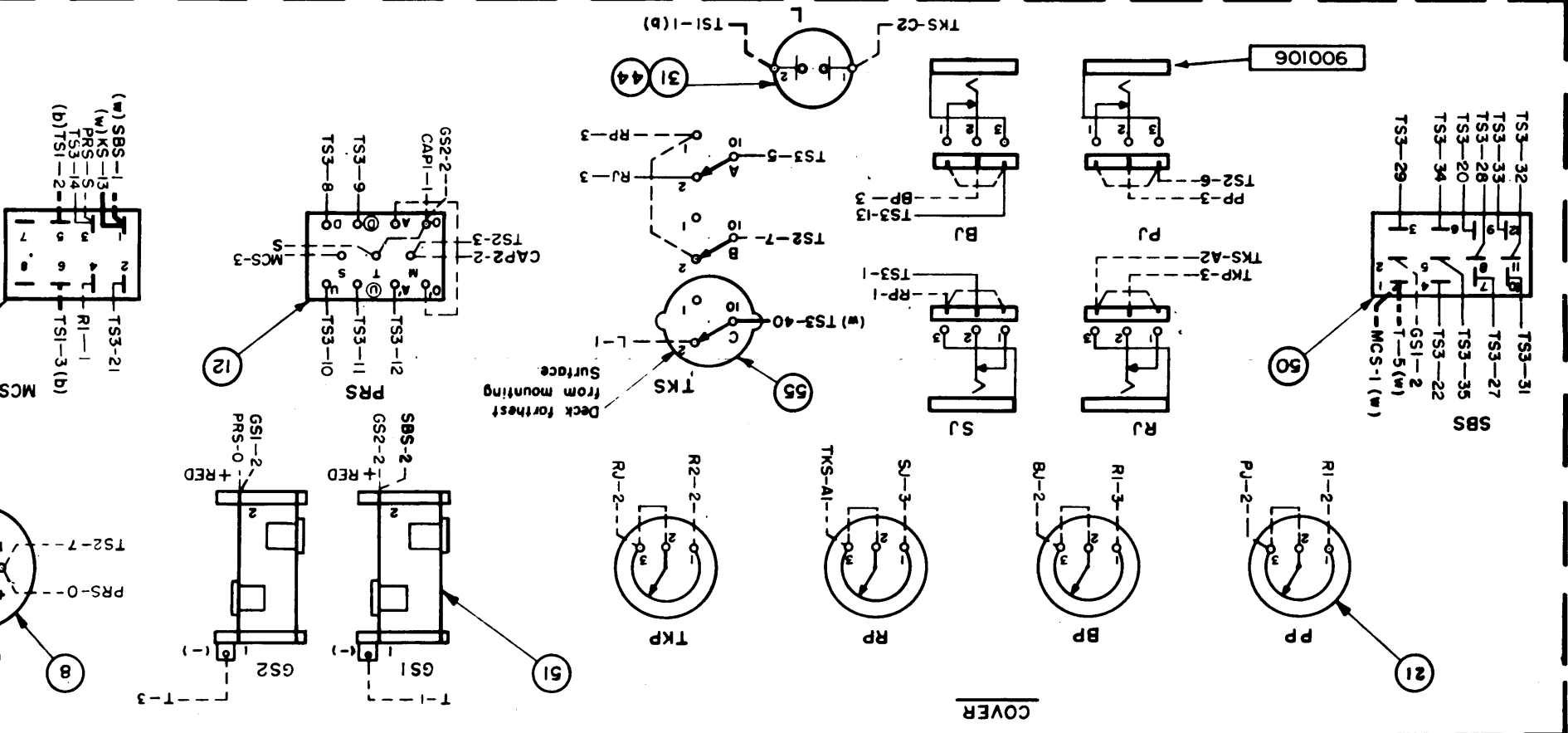
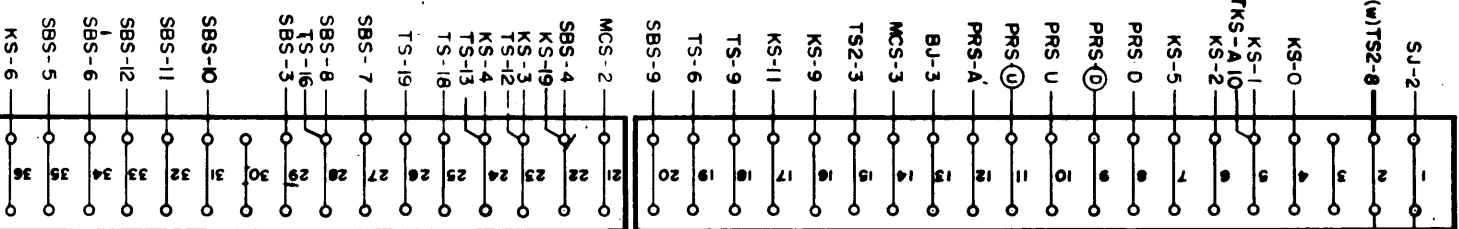


Solderless Terminal
34080 - AMP, INC.

Typical Cable-Wire
Termination. The Terminal
is attached by Crimping
as Recommended by
AMP, INC.



WIRING (as seen when cover is open)



APPROVED	C. DEG. 12, 1962
REDAWNING	CODE BAR CONTACT BLOCK
ADDED NOTES	
APPROVED	
APPROVED	B. JAN. 15, 1959
NEW CONTACT	
Block added	
APPROVED	
APPROVED	A. NOV. 18, 1955
DRAWING NUMBER	174313
WESTERN UNION	
MODEL 28 TPR	
STUNT BOX MECHANISMS	
MOUNTING	
SCALE:	
DRAWN	
CHECKED	
ENGINEER	
APPROVED	

SHIFT ON SPACE, CARRIAGE RETURN, LINE FEED, KBD. LOCK AND PAGE-OUT
 CODE-BAR MECHANISM IS INSTALLED IN THE SLOTS INDICATED ON THIS DWG.
 IT IS POSSIBLE TO UTILIZE A MAXIMUM 9 SHIFT MECHANISMS LOCATED

FIG. 3

WHEN THE CODE-BAR SHIFT MECHANISM IS MOUNTED
 ABOVE SLOTS 11, 17, 23, 29 & 35 THE CLOSEST THAT
 CONTACT BLOCKS CAN BE MOUNTED ON EITHER SIDE
 OF THE SHIFT MECHANISM IS PICTURED ABOVE. (SPANS 4 SLOTS)
 WHEN THE CODE BAR SHIFT MECHANISM IS MOUNTED ABOVE SLOT 11,
 NO CONTACT BLOCK CAN BE MOUNTED ON THE LEFT HAND SIDE.

(B) LOCATIONS

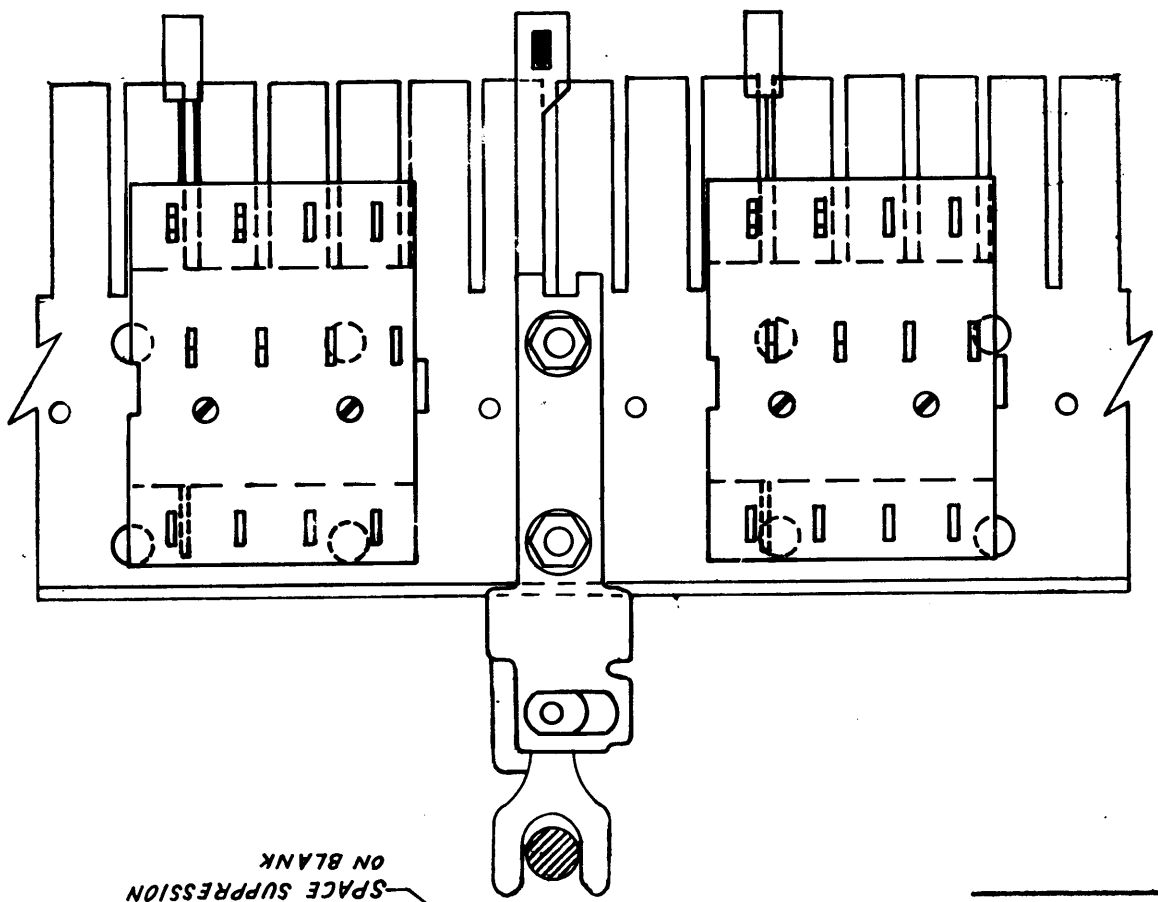
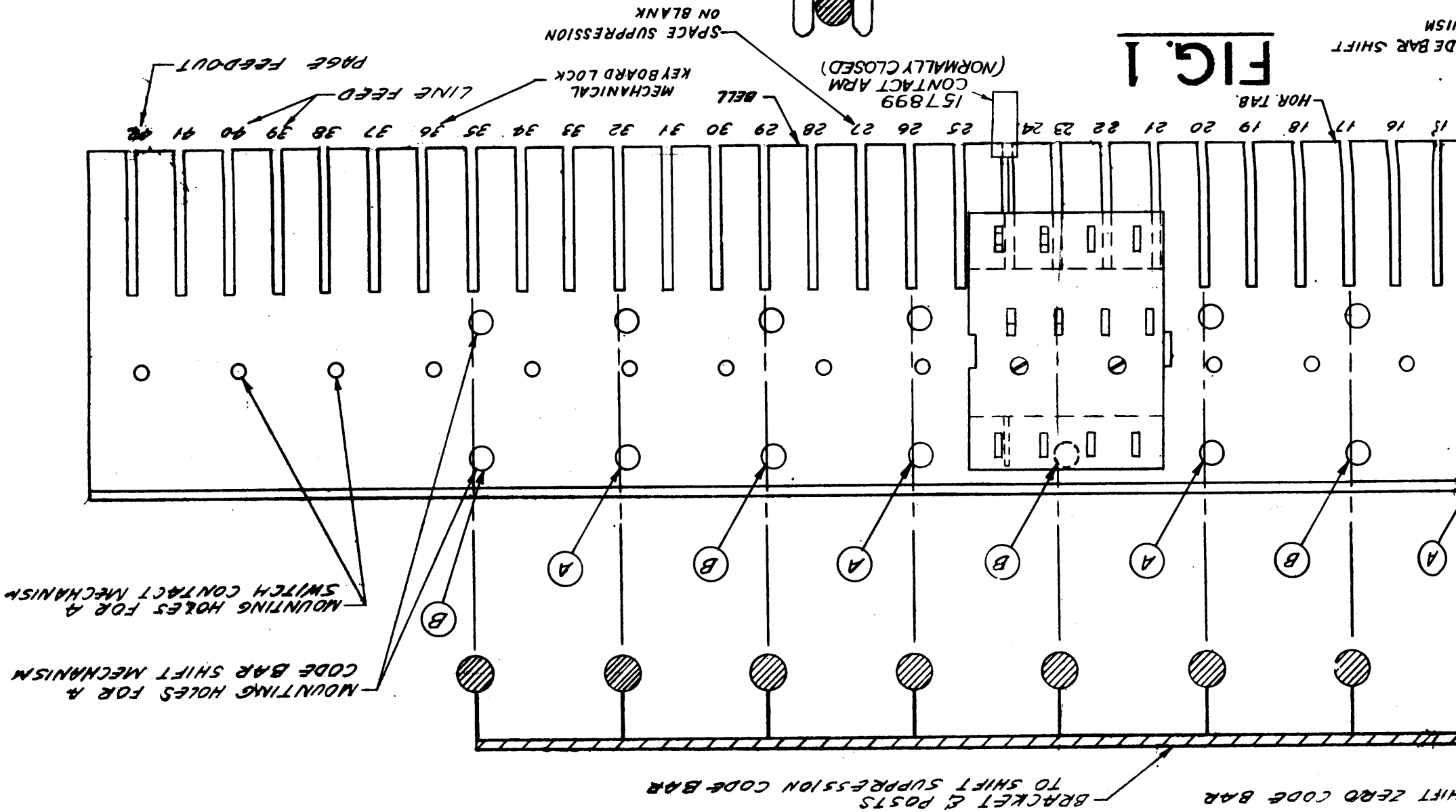


FIG. 1



NOTES:
 a. SUCH FUNCTIONS AS FIGURES, LETTERS, UNSHIFT ON SPACE, CARRIAGE RETURN, ZERO CODE BAR SHIFT MECHANISM ARE PERFORMED ONLY WHEN THE FUNCTION BAR MECHANISM IS MOUNTED ABOVE THE ZERO CODE BAR ONLY ONE CODE-BAR SHIFT MECHANISM IS MOUNTED ABOVE THE SUPPRESSION CODE-BAR, IT IS POSSIBLE TO UTILIZE ABOVE SLOTS B, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AND 0.

FIG. 2

WHEN THE CODE BAR SHIFT MECHANISM IS MOUNTED ABOVE SLOTS B, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AND 0, CONTACT BLOCKS CAN BE MOUNTED ON EITHER SIDE OF THE SHIFT MECHANISM IS PICTURED ABOVE (SPANS 2 SLOTS). WHEN THE CODE BAR SHIFT MECHANISM IS MOUNTED ABOVE SLOTS B, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AND 0, NO CONTACT BLOCK CAN BE MOUNTED ON THE LEFT HAND SIDE.

LOCATIONS

A

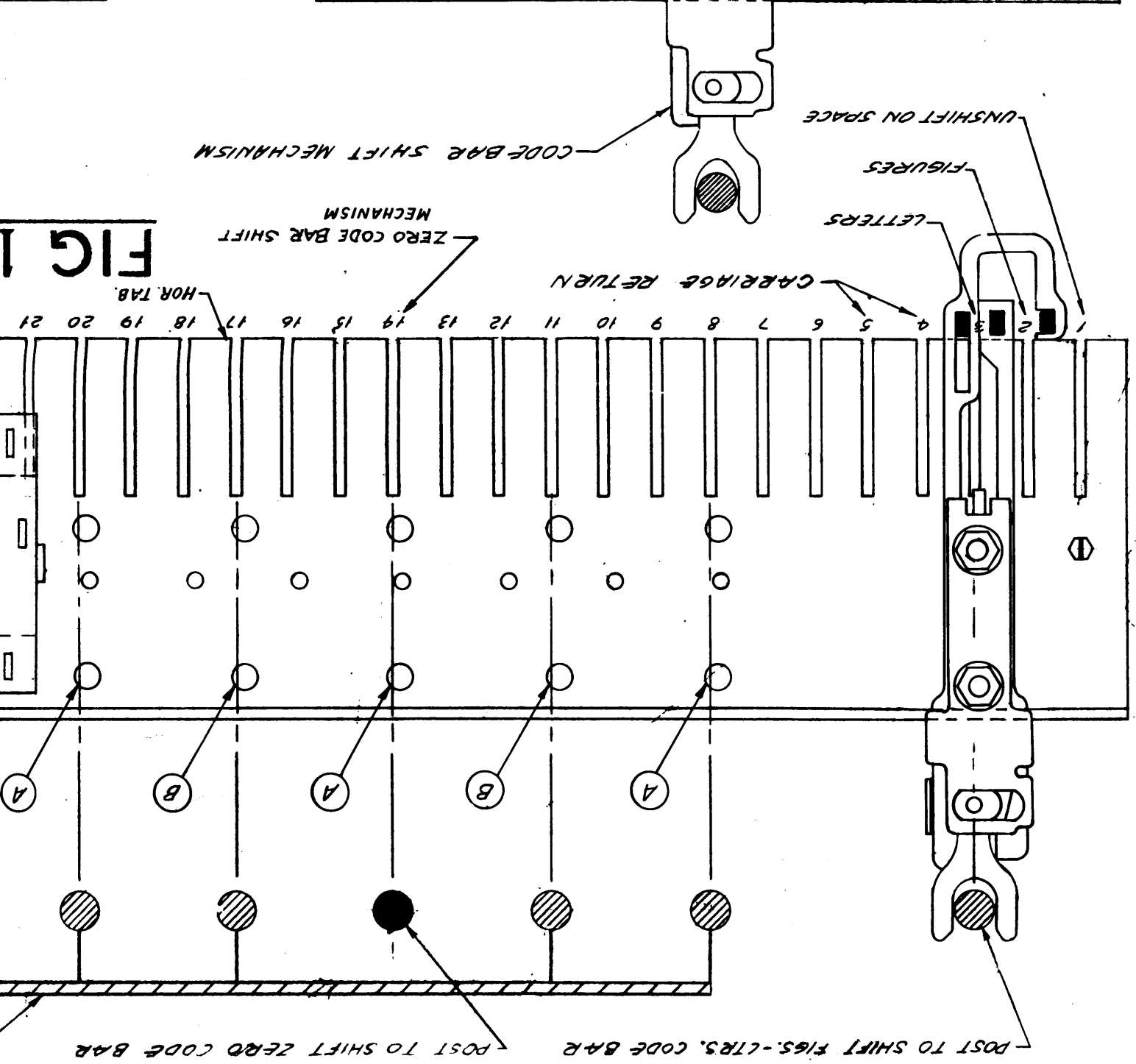
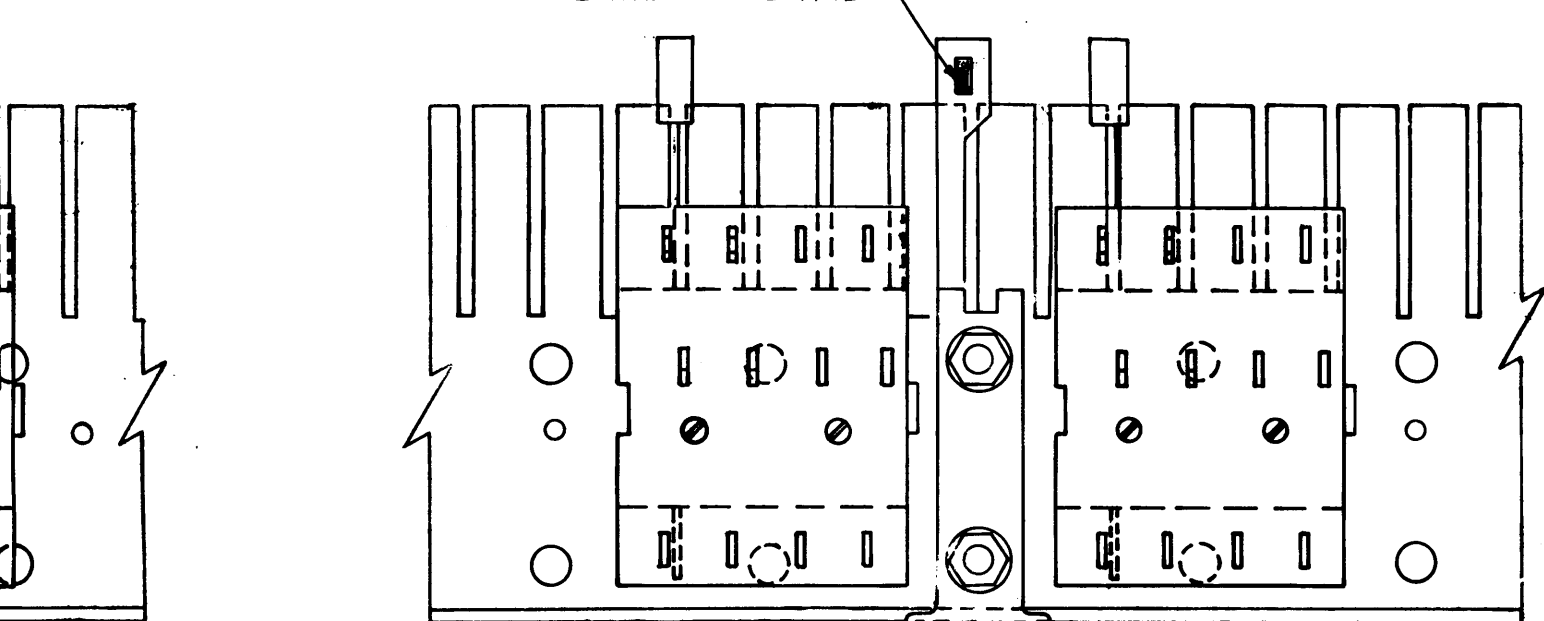


FIG. 1

B

WHEN THE CODE BAR SHIFT MECHANISM IS MOUNTED ABOVE SLOTS B, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AND 0, NO CONTACT BLOCK CAN BE MOUNTED ON THE LEFT HAND SIDE.

KEYB	7.42 Unit Transmission	Communication K Y Lever Arrangement	Keyboard Arrangement per	Keyboard Arrangement per	Type Box Arrangement per W.D. 56424-A-1	10 Characters per Inch	Left Hand Margin 1/2" (from Sprocket Pins)	Left Hand Margin 5/8"	75 Characters per Line	72 Characters per Line	Time Delay Mechanism	Signal Line Break Mechanism	Repeat Space Mechanism	Paper Feed Out Set of Parts	Keyboard, Lock	Overload Release Clutch	Local Carriage Return Mechanism	Special Keyboard Layout	7.42 Unit Transmission
LP3RS/AD002	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LP3RJ/AC002	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LP4RC/AF140	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LP4RN/AC141	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LP5RX/AC003	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LP6RX/AS166	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LP6RX/AS199	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LP6RX/AS216	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LP26RX/AS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LP38RX/AS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LP78RX/AGL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LP79RX/AGL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

WIRING CABINETS AND ELECTRICAL SERVICE UNITS	Line Shunt Relay	Line Relay Mounting	Line Test Key	Rectifier (100 M.A.)	Motor Control (Teletype)	Ordinarily used with LMC200 to 202 Inclusive	Ordinarily used with LMC203 to 204 Inclusive	Line Relay	W.U. Line Relay Unit 8271-A Included	Wiring designed to meet W.U. Line Relay Unit 8271-A	Rectifier (150 M.A.)	Motor Control (W.U.)	Line Relay Subbase (202)
LS3U5/108	X	X	X	X	X	X	X	X	X	X	X	X	X
LS3U5/110	X	X	X	X	X	X	X	X	X	X	X	X	X
LS3U7/102	X	X	X	X	X	X	X	X	X	X	X	X	X
LS3U8/181	X	X	X	X	X	X	X	X	X	X	X	X	X
LS3U8/198	X	X	X	X	X	X	X	X	X	X	X	X	X
W.C. 9100	X	X	X	X	X	X	X	X	X	X	X	X	X

RECEIVING ONLY BASES	Signal Line Break Mechanism	Time Delay Mechanism	Paper Feed Out Set of Parts (Local Line Feed)	Local Carriage Return Mechanism
LB3/000	X	X	X	X
LB4/146	X	X	X	X
LB4/180	X	X	X	X

LSU 1102 was recoded to LSU 7/184.

GEAR SETS

60 WPM (368 OPM)
67-1/2 WPM (404 OPM)
75 WPM (460 OPM)
100 WPM (600 OPM)

MOTORS

115 V. 60 Cycle A.C.
A.C. Governed and Radio F

TELETYPE CODE

W.U. CODE
TELETYPE CODE

U.S. St. 1
XZ
KI
C
XE
XD
RD
C
RS

CONSOLE

7.42 Unit Transmission
Communication K Y Lever Arrangement
Fraction K Y Lever Arrangement
Keyboard Arrangement per
Keyboard Arrangement per
Type Box Arrangement per W.D. 56424-A-1
Type Box Arrangement per Inch
10 Characters per Inch
Left Hand Margin 1/2" (from Sprocket Pins)
Left Hand Margin 5/8"
75 Characters per Line
72 Characters per Line
Time Delay Mechanism
Signal Line Break Mechanism
Repeat Space Mechanism
Paper Feed Out Set of Parts
Keyboard, Lock
Overload Release Clutch
Local Carriage Return Mechanism
Special Keyboard Layout

KEYB

LP3RS/AD002
LP3RJ/AC002
LP4RC/AF140
LP4RN/AC141
LP5RX/AC003
LP6RX/AS166
LP6RX/AS199
LP6RX/AS216
LP26RX/AS
LP38RX/AS
LP78RX/AGL
LP79RX/AGL

WIRING CABINETS AND ELECTRICAL SERVICE UNITS

Line Shunt Relay
Line Relay Mounting
Line Test Key
Rectifier (100 M.A.)
Motor Control (Teletype)
Ordinarily used with LMC200 to 202 Inclusive
Ordinarily used with LMC203 to 204 Inclusive
Line Relay
W.U. Line Relay Unit 8271-A Included
Wiring designed to meet W.U. Line Relay Unit 8271-A
Rectifier (150 M.A.)
Motor Control (W.U.)
Line Relay Subbase (202)

ELECTRICAL SERVICE UNITS AND WIRING CABINETS

LS3U5/108
LS3U5/110
LS3U7/102
LS3U8/181
LS3U8/198
W.C. 9100

RECEIVING ONLY BASES

Signal Line Break Mechanism
Time Delay Mechanism
Paper Feed Out Set of Parts (Local Line Feed)
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LSU 1102 was recoded to LSU 7/184.

GEAR SETS

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MOTORS

115 V. 60 Cycle A.C.
A.C. Governed and Radio F

TELETYPE CODE

W.U. CODE
TELETYPE CODE

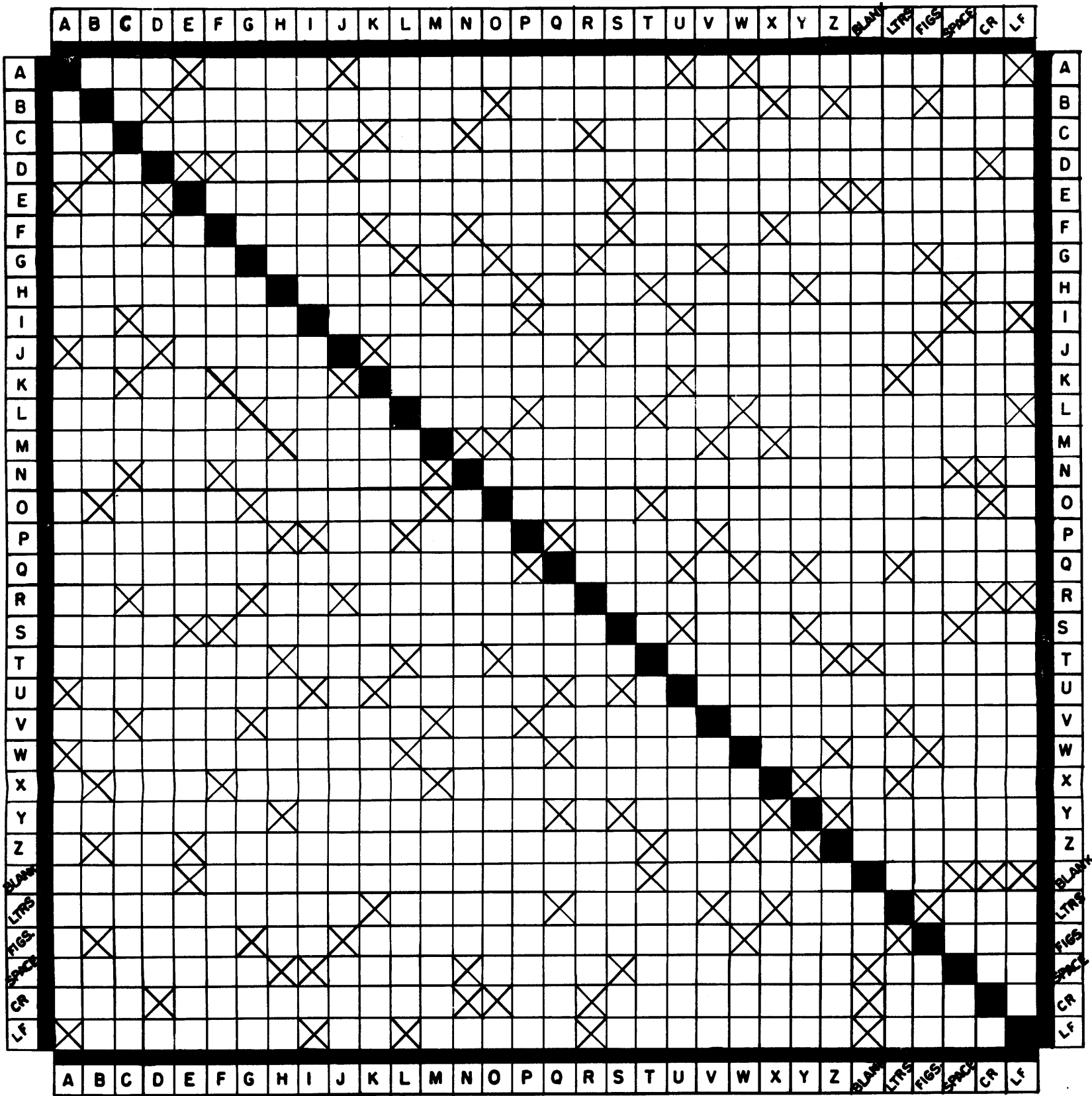
U.S. St. 1
XZ
KI
C
XE
XD
RD
C
RS

CONSOLE

7.42 Unit Transmission
Communication K Y Lever Arrangement
Fraction K Y Lever Arrangement
Keyboard Arrangement per
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Type Box Arrangement per W.D. 56424-A-1
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Keyboard, Lock
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Local Carriage Return Mechanism
Special Keyboard Layout

KEYB

LP3RS/AD002
LP3RJ/AC002
LP4RC/AF140
LP4RN/AC141
LP5RX/AC003
LP6RX/AS166
LP6RX/AS199
LP6RX/AS216
LP26RX/AS
LP38RX/AS
LP78RX/AGL
LP79RX/AGL



	1	1		1	1	1				1	1				1		1		1	1	1	1	1		1	1		1			1	1				
	2		2			2		2	2	2	2				2	2	2			2	2	2			2	2					2	2			2	
			3			3		3	3	3	3				3	3	3			3	3	3			3	3					3	3			3	
			4	4	4		4	4			4	4	4	4			4			4				4	4						4	4			4	
							5	5				5	5			5	5	5			5			5	5	5	5	5				5	5			

AN "X" ABOVE INDICATES THAT THE UNIV. FUNCTION LEVER ON TYPE 15 TPRS OR UNIV. FUNCTION BARS ON M-28 TPRS CAN BE MADE TO RESPOND TO THE CHARACTER IN THE VERTICAL ROW AS WELL AS THE CHARACTER IN THE HORIZONTAL ROW WHERE THE X APPEARS. THIS IS DONE BY BREAKING OUT BOTH THE "MARK" AND "SPACE" LUGS OF ONE PULSE. EACH CHAR. CAN BE COMBINED WITH ANY ONE OF FIVE OTHER CHARACTERS. AS AN EXAMPLE "A", WHICH HAS THE FIRST TWO PULSES MARKING AND THE OTHER THREE SPACING, CAN BE CODED ON (1) UNIV. LEVER OR UNIV. BAR WITH ANY ONE OF THE FIVE FOLLOWING CHARACTERS.

- E BY MAKING 2 ND PULSE RESPOND TO BOTH MARK AND SPACE
- J " " 4 TH " " " " " "
- U " " 3 RD " " " " " "
- W " " 5 TH " " " " " "
- LF " " 1 ST " " " " " "

THE OTHER FOUR PULSES ARE TO BE MARK OR SPACE AS REQUIRED BY THE CHARACTER "A".

SCALE: DRAWN: <i>KW</i> TRACED: CHECKED: ENGR. D.: APPROVED:	COMBINATION CODING CHART UNIVERSAL FUNCTION LEVER UNIVERSAL FUNCTION BAR	SWITCHING SYSTEM W. U. TEL. CO. A. MARCH 9, 1956 DRAWING NUMBER 174634 -2	APPROVED B-NOV 13, 1956 CHANGED NOTE & TITLE <i>OK BY MR. [Signature]</i>
APPROVED	APPROVED	APPROVED	APPROVED

MODEL 28 TELEPRINTER
 "SERIES B" STUNT BOX
 WAY STATION SELECTOR
 SEND AND RECEIVE TELEPRINTER

I BASIC PARTS:

(A) Printer Parts

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. REQ'D</u>
119649	Ring, Retaining	2
153440	Bar, Universal Function (See Note 1, Dwg. 175757)	1
154669	Shaft, Latch Lever Release Bail	1
154750	Parts, Set of (Code Bar Shift Mechanism)	1
211904	Parts, Set of (Basic Contact and Block Assembly with 1 "Break" Contact)	1
211905	Parts, Set of (Function Mechanism)	1
211907	Parts, Set of (Function Mechanism)	3
211909	Parts, Set of (Function Mechanism)	3
211910	Parts, Set of (Function Mechanism)	2
211911	Parts, Set of (Function Mechanism)	3
211912	Parts, Set of (Function Mechanism)	1
211913	Parts, Set of (Function Mechanism)	1
211916	Parts, Set of (Code Bar Shift Mechanism)	2
211925	Parts, Set of (Function Mechanism)	1
212243 (154751)	Parts, Set of (Basic Contact and Block Assembly with 1 "Break" Contact)	1****
212244 (154751)	Parts, Set of ("Make" Contact Assembly)	3****
212245 (154752)	Parts, Set of ("Break" Contact Assembly)	1****

(B) Console Parts

<u>DESCRIPTION</u>	<u>NO. REQ'D</u>
Assembly, Pilot Light Dialco 53408-991; with 51,000-Ohm Built-In Resistor	1
Assembly, Pilot Light Dialco 53408-995; with 51,000-Ohm Built-In Resistor	1
Plate, Designation 901335	1
NOTE 3 Switch, 4002, Push Button SPST Momentary Contact Grayhill (kbd UN BLIND) IDP No 280057	1

II OPTIONAL PARTS:

(A) Printer Parts

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>MAXIMUM NO. REQ'D</u>
152345	Parts, Set of ("Off Line" Stunt Shift Mechanism)	1***
211907	Parts, Set of (Function Mechanism)	5*
211909	Parts, Set of (Function Mechanism)	1**

(B) Console Parts

<u>DESCRIPTION</u>	<u>MAXIMUM NO. REQ'D</u>
Plate, Designation 900854	1***
Plate, Designation 901336	1***
Switch, Toggle DPDT, A.H.&H. 81027 (Monitor)	1***

- * Two required when two call letter selection is specified and three required when three character disconnect is specified.
 - ** Required when common call letter is specified.
 - *** Required when monitor switch is specified for control station. All basic outstations have keyboard unblind switch as standard equipment.
 - **** These replace old part numbers in parenthesis.
- NOTES: 1. See Drawing 175757 for stunt box arrangement.
 2. See Drawing 175755 for installation of lamps, monitor switch and designation plates.
 3. Not required when monitor switch is specified.

SCALE: DRAWN: Edm TRACED: CHECKED: CK ENGR'D: 5/4 APPROVED: 3/2	BILL OF MATERIAL SEND & REC. TFR, BOX WAY STATION SELECTOR	MODEL 28 TFR, "SERIES B" STUNT BOX WAY STATION SELECTOR	SWITCHING SYSTEM WESTERN UNION DRAWING NUMBER 1 7 5 9 4 1 -2	A-July 25, 1956 RETIRED AND REVISED MARCH 31, 1958 Revised to include unblind switch.	F-4 NOV 64 Approved: [Signature]
--	---	--	---	--	-------------------------------------

0	1	2	3	4	5	6	7	8	9	10
A	E	U	J	W	E	E	U	U	J	J
M	L.F.	L.F.	L.F.	L.F.	U	J	W	J	W	W
M	BL	I	R	L	S	D	Z	X	Q	FIGS
S	S	S	S	S	S	S	S	S	S	S

0	1	2	3	4	5	6	7	8	9	10
B	O	O	O	O	FIG	FIG	FIG	X	X	Z
M	FIGS	X	Z	D	X	Z	D	Z	D	D
M	G	M	T	CR	LTR	W	J	Y	F	E
M	M	M	M	M	M	M	M	M	M	M

0	1	2	3	4	5	6	7	8	9	10
C	K	K	K	K	N	N	N	R	R	I
M	N	R	I	V	R	I	V	I	V	V
M	F	J	U	LTR	CR	SP	M	L.F.	G	P
M	M	M	M	M	M	M	M	M	M	M

0	1	2	3	4	5	6	7	8	9	10
D	CR	CR	CR	CR	J	J	J	F	F	E
M	J	F	E	B	F	E	B	E	B	B
M	R	N	BL	O	K	A	FIG	S	X	Z
M	S	S	S	S	S	S	S	S	S	S

0	1	2	3	4	5	6	7	8	9	10
E	BL	BL	BL	BL	A	A	A	S	S	D
M	A	S	D	Z	S	D	Z	D	Z	Z
M	L.F.	SR	CR	T	U	J	W	F	Y	B
M	S	S	S	S	S	S	S	S	S	S

0	1	2	3	4	5	6	7	8	9	10
F	N	N	N	N	K	K	K	D	D	S
M	K	D	S	X	D	S	X	S	X	X
M	C	CR	SP	M	J	U	LTR	E	B	Y
M	M	M	M	M	M	M	M	M	M	M

0	1	2	3	4	5	6	7	8	9	10
G	FIG	FIG	FIG	FIG	O	O	O	V	V	L
M	O	V	L	R	V	L	R	R	R	R
M	B	LTR	W	J	M	T	CR	P	C	L.F.
M	M	M	M	M	M	M	M	M	M	M

0	1	2	3	4	5	6	7	8	9	10
H	Y	Y	Y	Y	P	P	P	T	T	M
M	P	T	M	SR	T	M	SR	M	SR	SR
M	Q	Z	X	S	L	V	I	O	BL	N
M	S	S	S	S	S	S	S	S	S	S

THE CHART SHOWS TEN GROUPS OF THREE CHARACTERS, EACH OF WHICH MAY BE COMBINED WITH THE CHARACTER IN COLUMN 0 ON A UNIVERSAL FUNCTION LEVER. THE FUNCTION LEVER CAN BE MADE TO RESPOND TO THE FOUR CHARACTERS BY BREAKING OUT THE 'MARK' AND 'SPACE' LUGS OF TWO PULSES, BESIDES BEING CODED AS REQUIRED BY THE CHARACTER IN COLUMN 0. THE TWO PULSES TO BE BROKEN OUT ARE AS FOLLOWS:

COLUMN	1	2	3	4	5	6	7	8	9	10
PULSES	1,2	1,3	1,4	1,5	2,3	2,4	2,5	3,4	3,5	4,5

EXAMPLE:
TO CODE A UNIVERSAL FUNCTION LEVER FOR "K-2" (i.e. K,C,J,R)
PROCEED AS FOLLOWS:
STEP 1 - CODE THE FUNCTION LEVER SO IT WILL RESPOND TO "K"
STEP 2 - BREAK OUT THE MARKING AND SPACING LUGS CORRESPONDING TO THE 1ST AND 3RD PULSES AS PER COLUMN-PULSE CHART ON THE LEFT.

D- APPROVED: _____

C- APPROVED: _____

AUG. 23, 1956

DRAWING NUMBER 176,076-2

W. U. TEL. CO.

SWITCHING SYSTEM

UNIVERSAL FUNCTION LEVER COMBINATION CHART

SCALE: 1/32

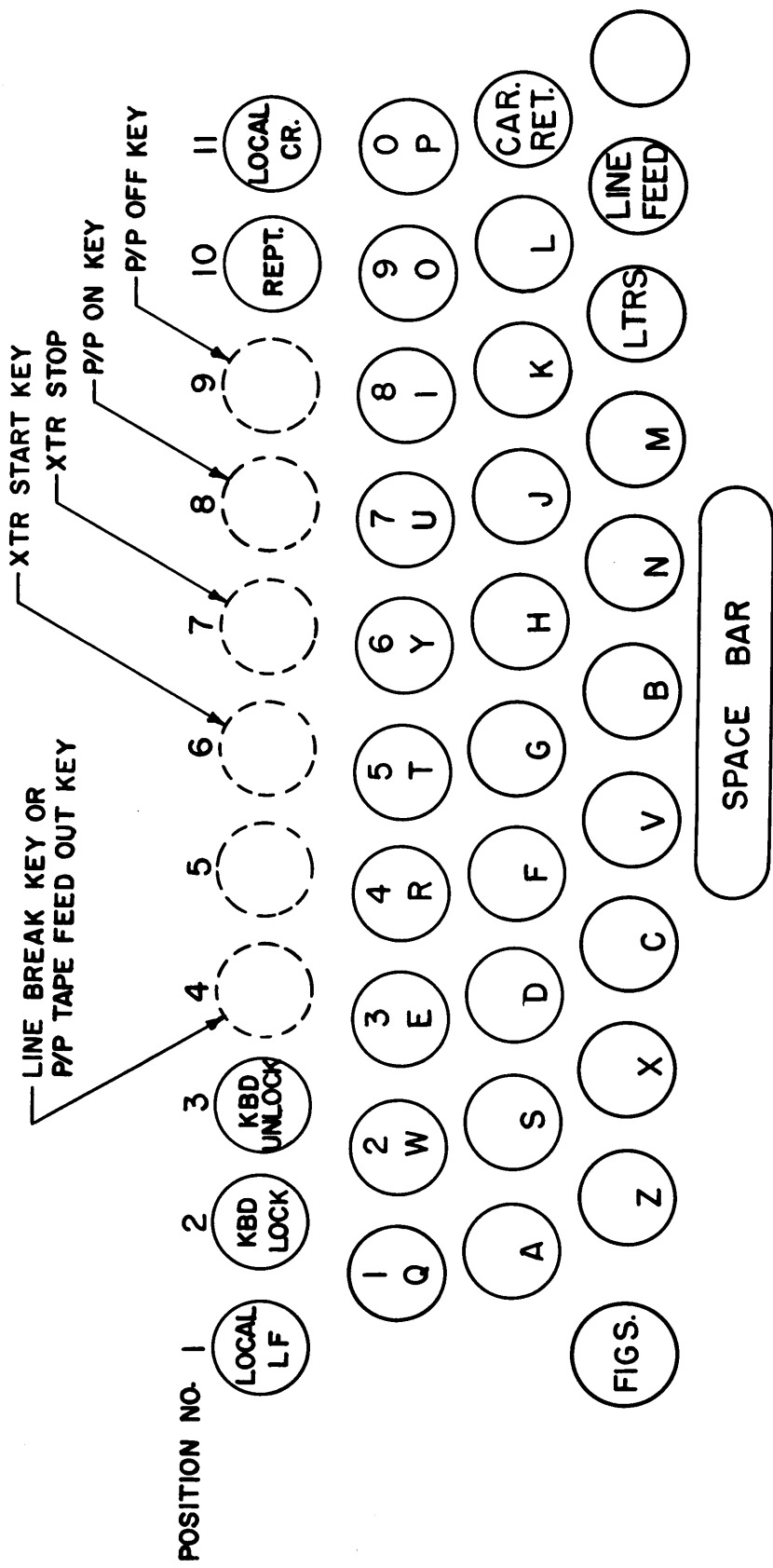
DRAWN: _____

TRACED: _____

CHECKED: _____

ENGR'D: _____

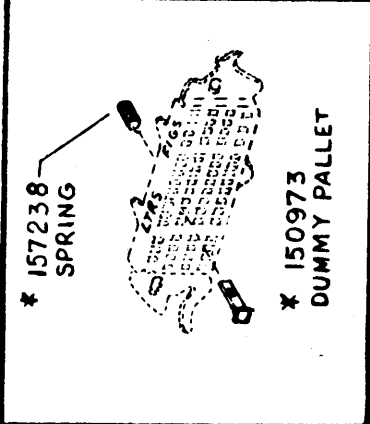
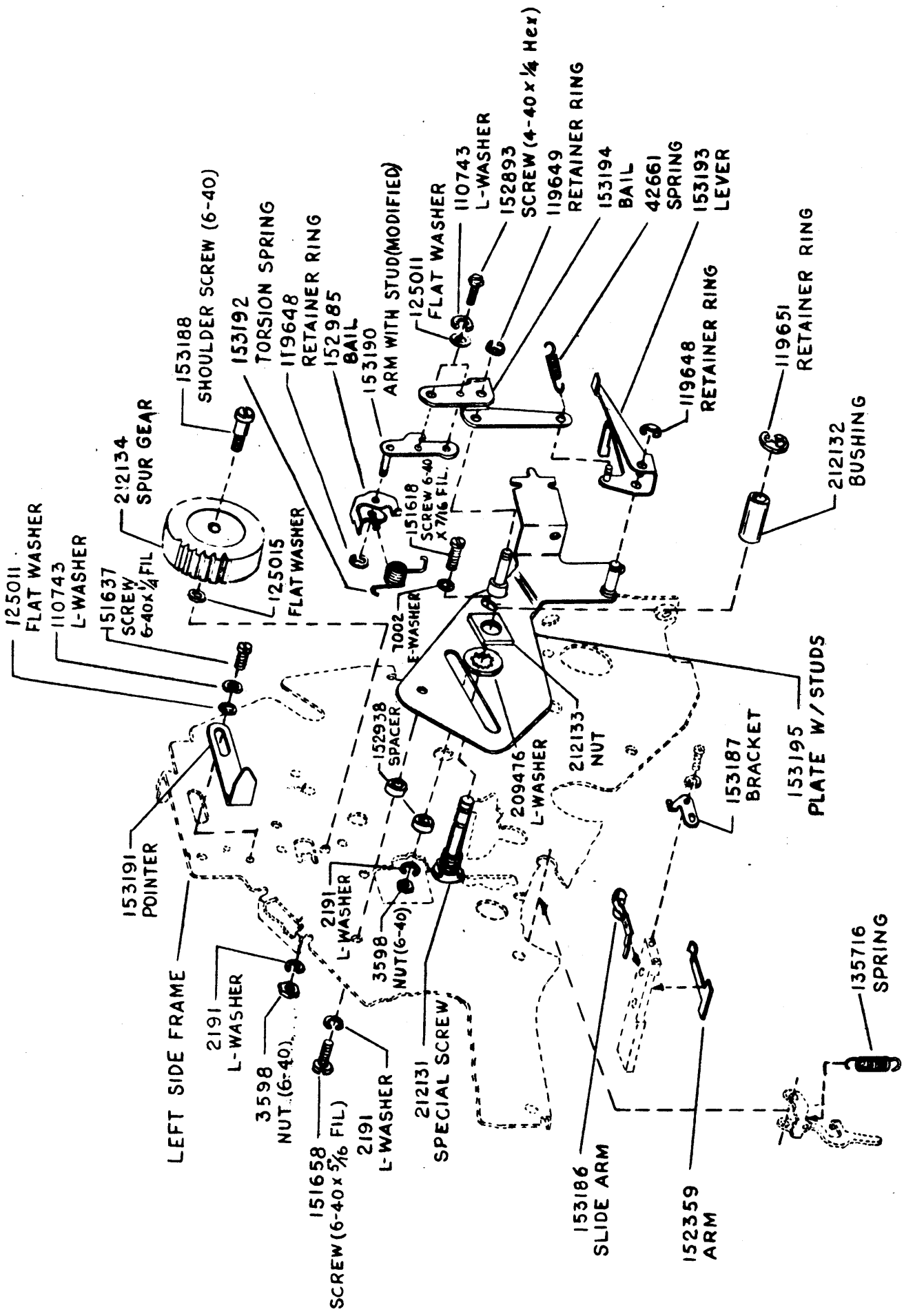
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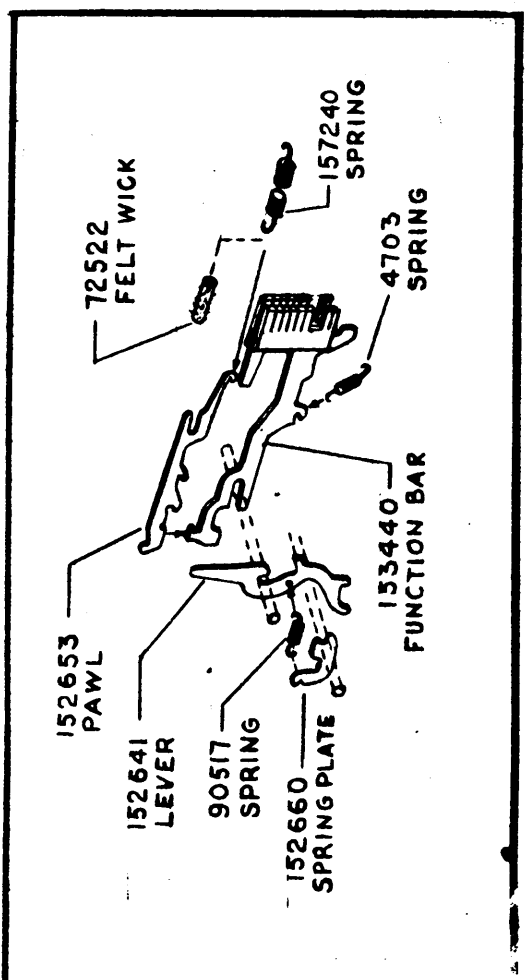
NOTES:

1. DOTTED KEYTOPS INDICATE KNOCKOUT PLUGS ON OUR LK 4 & LK 5 KEYBOARDS.
2. POSITION 5 CANNOT BE USED SINCE THE SPACE BAR EXTENSION BAR IS LOCATED UNDER THIS POSITION.

D-
APPROVED _____
C-
APPROVED _____
B-
APPROVED _____
A- MAY 18, 1957
DRAWING NUMBER 179959 -1
W. U. TEL. CO.
SWITCHING SYSTEM
SPECIAL KEYBOARD LAYOUT FOR MODEL 28 TPR
SCALE: _____
DRAWN: JSS
TRACED: _____
CHECKED: _____
ENGR'D: <i>L.K. mtc</i>
APPROVED: _____

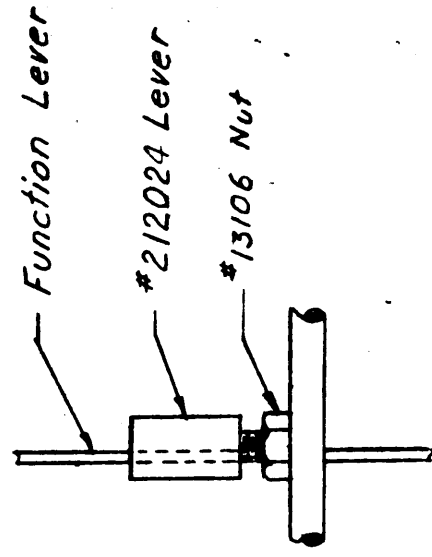
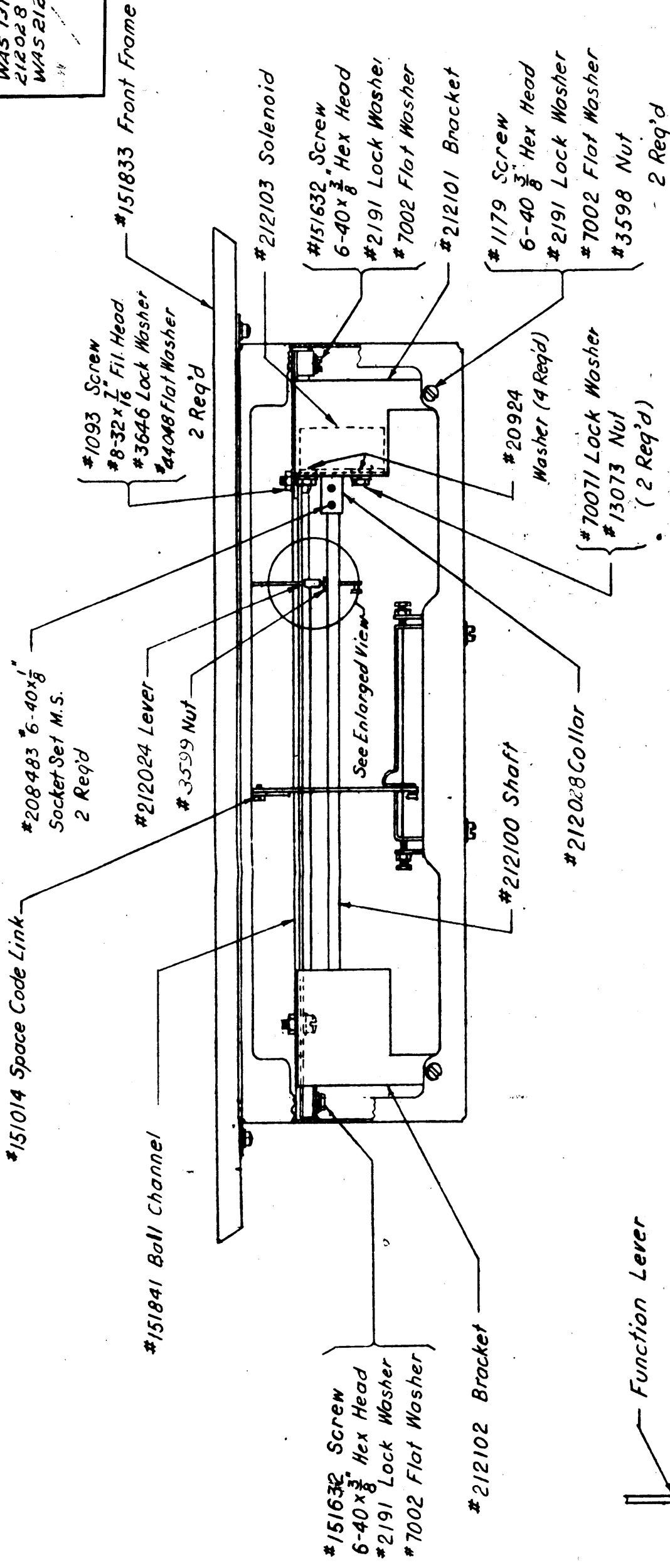


* USED ONLY WITH LP6 OR LP9 TYPING UNIT.
NOT REQUIRED ON LP26 OR LP38



WESTERN UNION		SCALE	DRAWING	DATE	DRAWING NUMBER
SWITCHING SYSTEMS		DECIMAL	D.P.H.	A Jan. 28, 1958	179919 -2
MODEL 28 TPR		FRACTIONAL	REV. 1	ASSEMBLY	
VERTICAL TABULATION		ANGULAR	DR. ENG.		
BASIC SET OF PARTS 212130		EXT. HOLES	APP.		

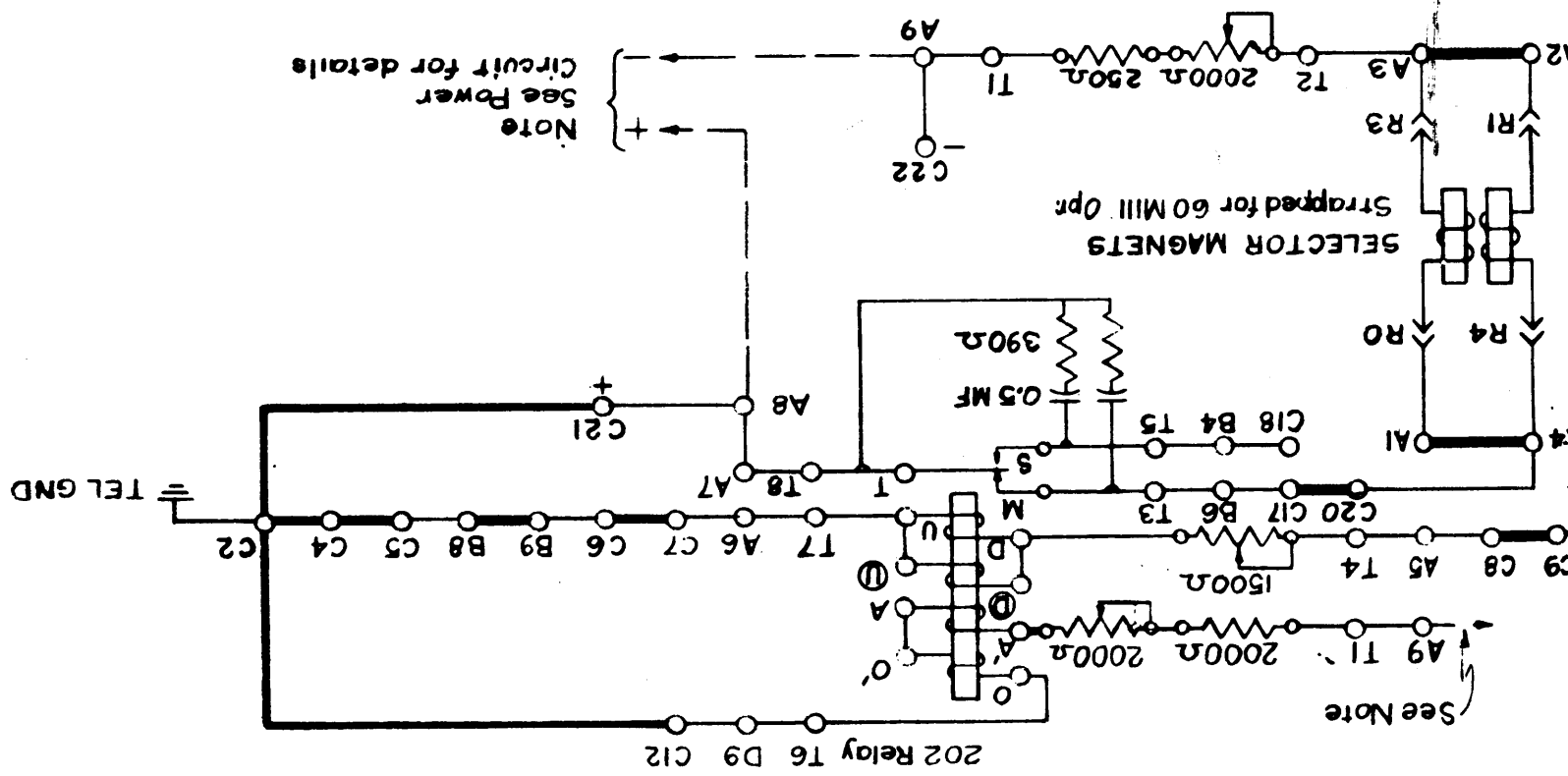
REVISIONS
B-MAR. 3, 1958
212024 LEVER WAS 212029.
3599 NUT WAS 13106.
212028 COLLAR WAS 21208.



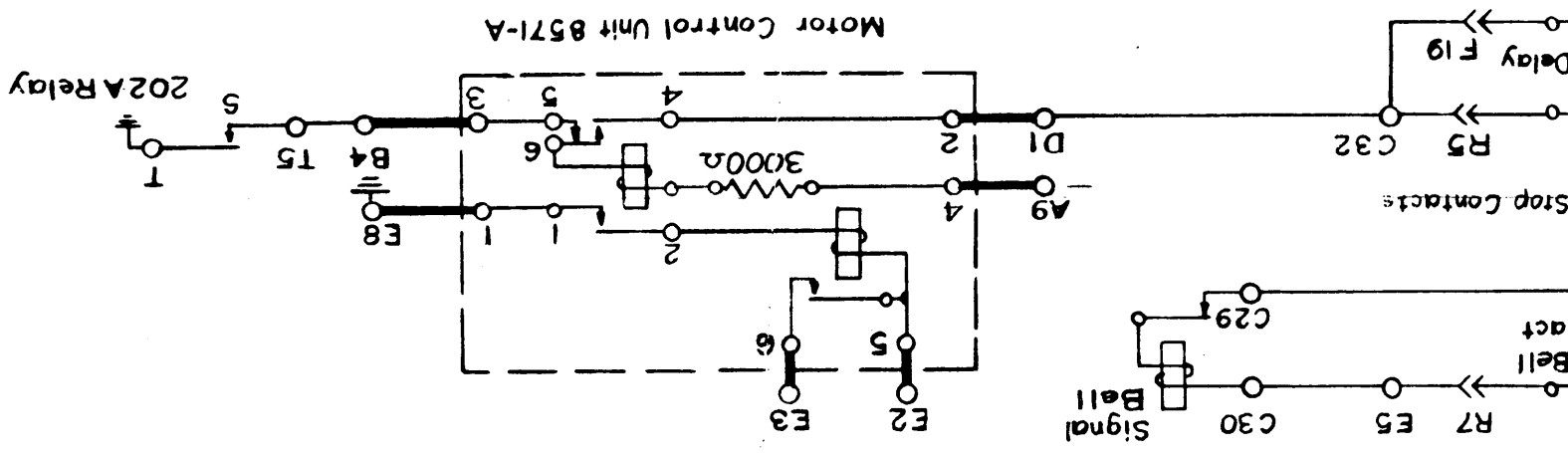
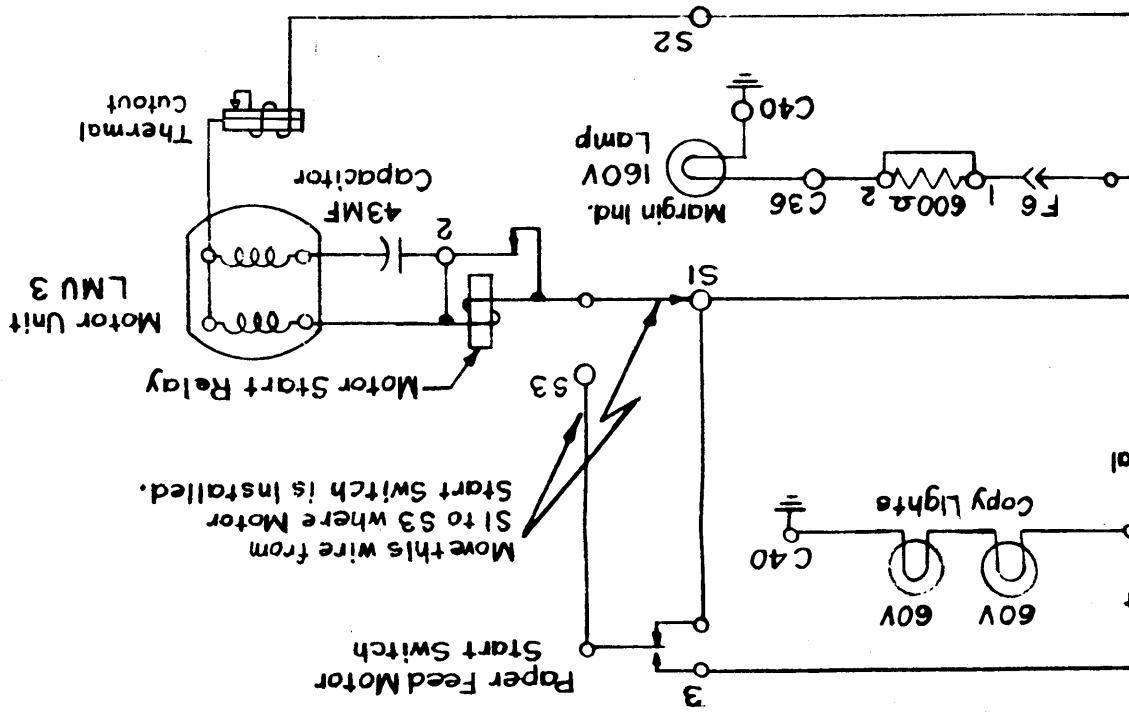
TOP VIEW

ENLARGED VIEW

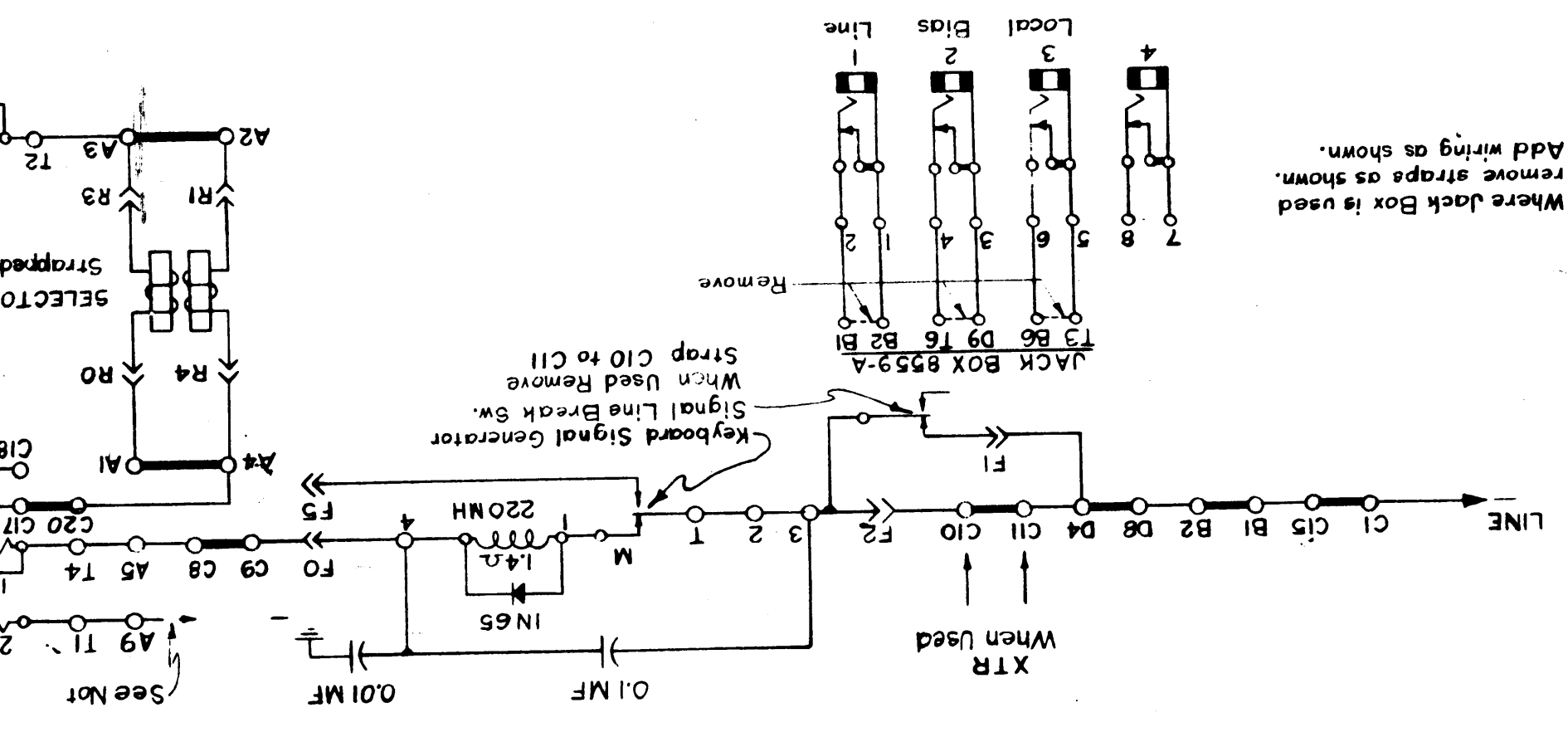
WESTERN UNION		SCALE	2" = 1"
SWITCHING SYSTEM		DRAWN	C.H.
M-28 TPR. Answer Book		DES. ENG.	T.W.
Set of Parts 212099		SP. ENG.	J.P.
Keyboard Assembly.		APP.	ME
ISSUE	DATE	DRAWING NUMBER	-2
A-Aug. 15, 1957		182426	
NEXT ASBY		USED ON	
MATERIAL:		FINISH:	



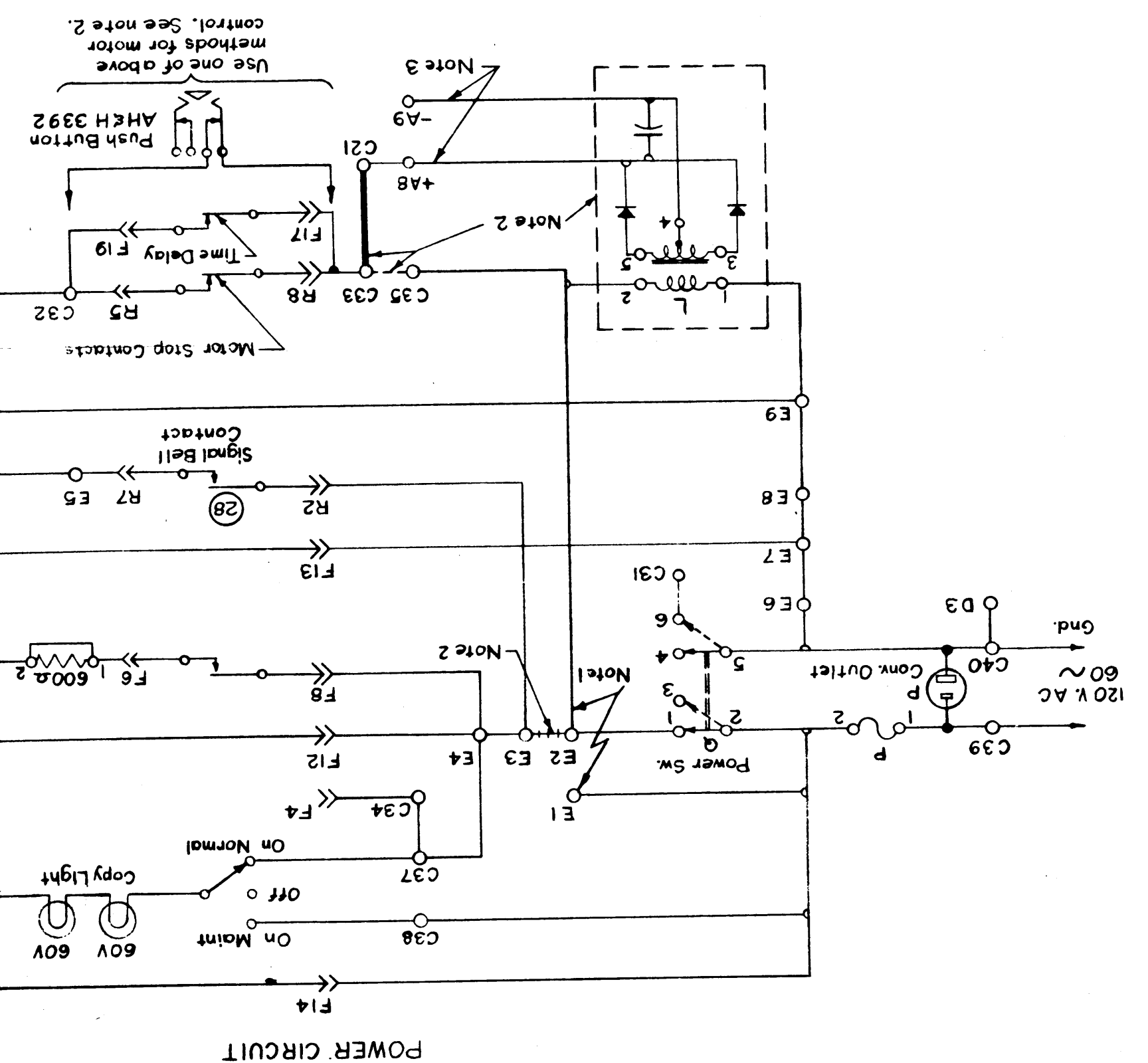
- NOTES
1. For continuous operation of rectifier move wire from E2 to E1
 2. Where motor control is used, install per Spec 11273.
 3. For DC distribution see line circuit above.
 4. See Dwg. 168331-5 for wiring diagram.
- A=Selector Magnet T.B.
 B=Line Test Key --"
 C=Console --"
 D=Motor Control --"
 E=Power --"
 F=Keyboard Connector
 R=Typing Unit --"
 T=Line Relay Unit T.B.
 4. See Dwg. 168331-5 for wiring diagram.



LINE CIRCUIT CLASS

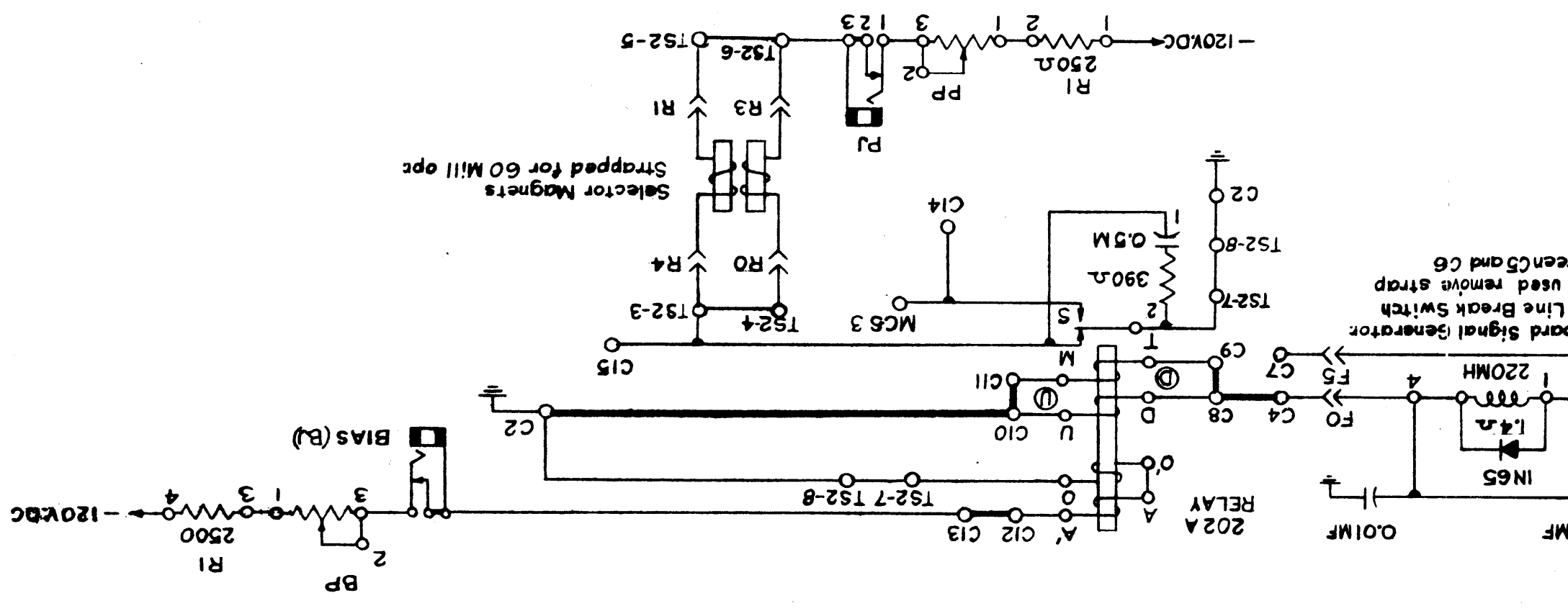


Where Jack Box is used
remove straps as shown.
Add wiring as shown.

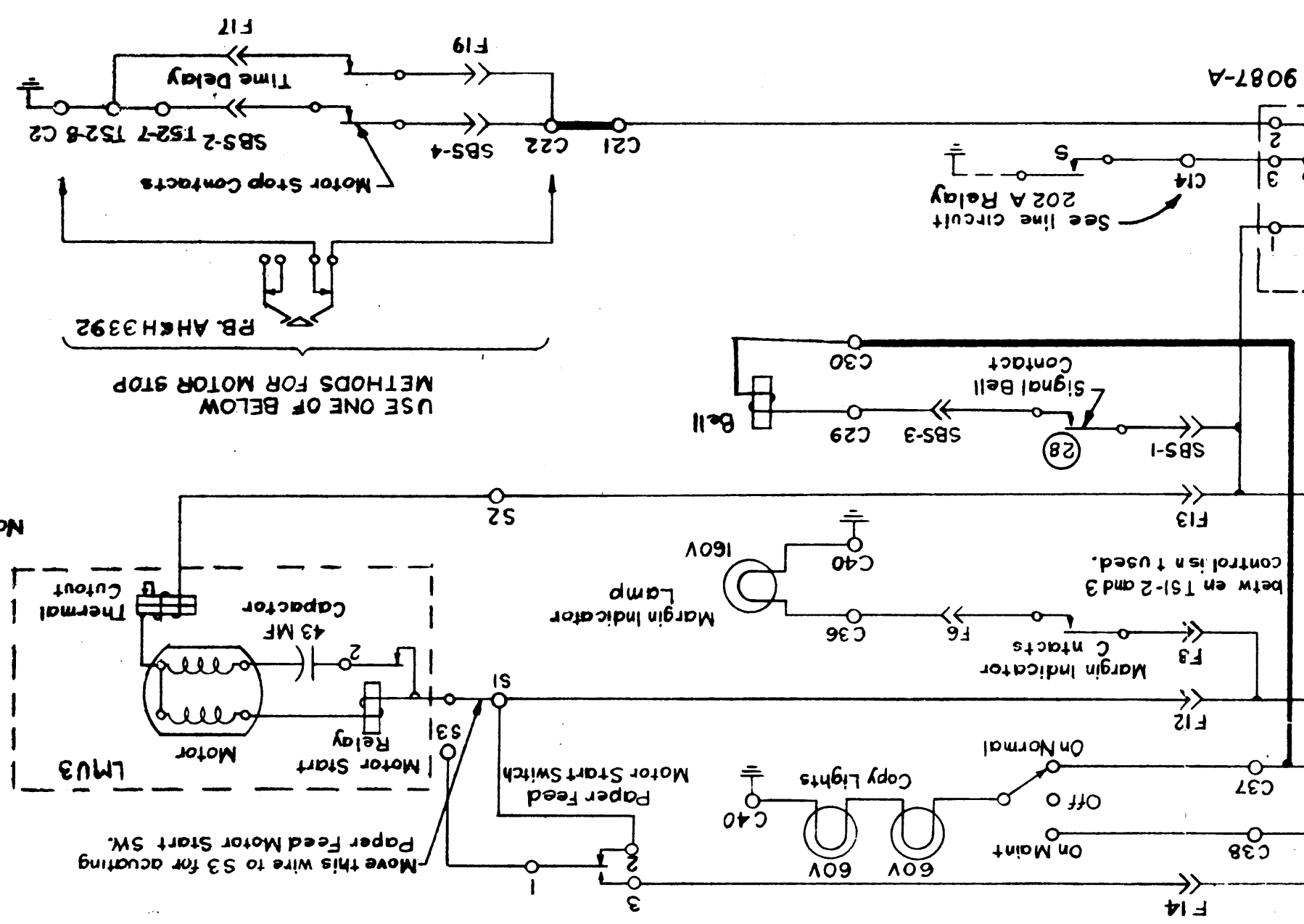


WESTERN UNION		SCALE	TYPE	ISSUE	DATE	DRAWING NUMBER
SWITCHING SYSTEM		DRAWN	DES. ENG.	A	NOV. 14, 1957	164620
MODEL 28 TELEPRINTER WITH ELECTRICAL SERVICE		HHR	BY	107		
UNIT LESU 8/198		FRACTIONAL	APPROV.			
SCHEMATIC		ANGULAR	DATE			
TOLERANCE UNLESS OTHERWISE SPECIFIED		DEC. HOLES				
NEXT ASSY		USED ON				
MATERIAL:						
FINISH:						

LINE CIRCUIT CLASS A



POWER CIRCUIT

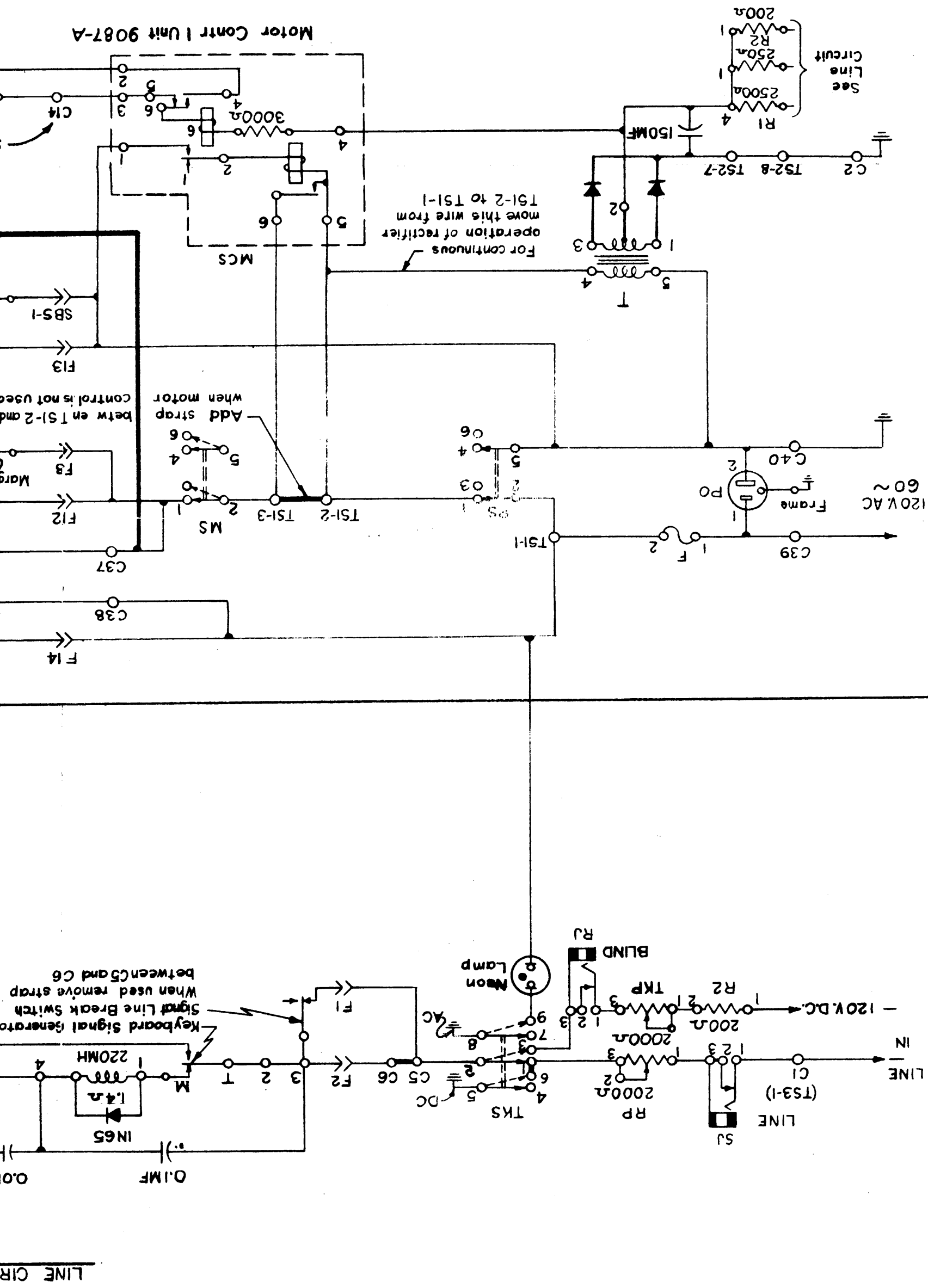


Notes:
For wiring of WC.
9100A See Dwg.
174234
On wiring diagram
C Term shown as 1B3
R TS
F KS

USE ONE OF BELOW
METHODS FOR MOTOR STOP
RB. AHK3392

9087-A

See line circuit
202A Relay

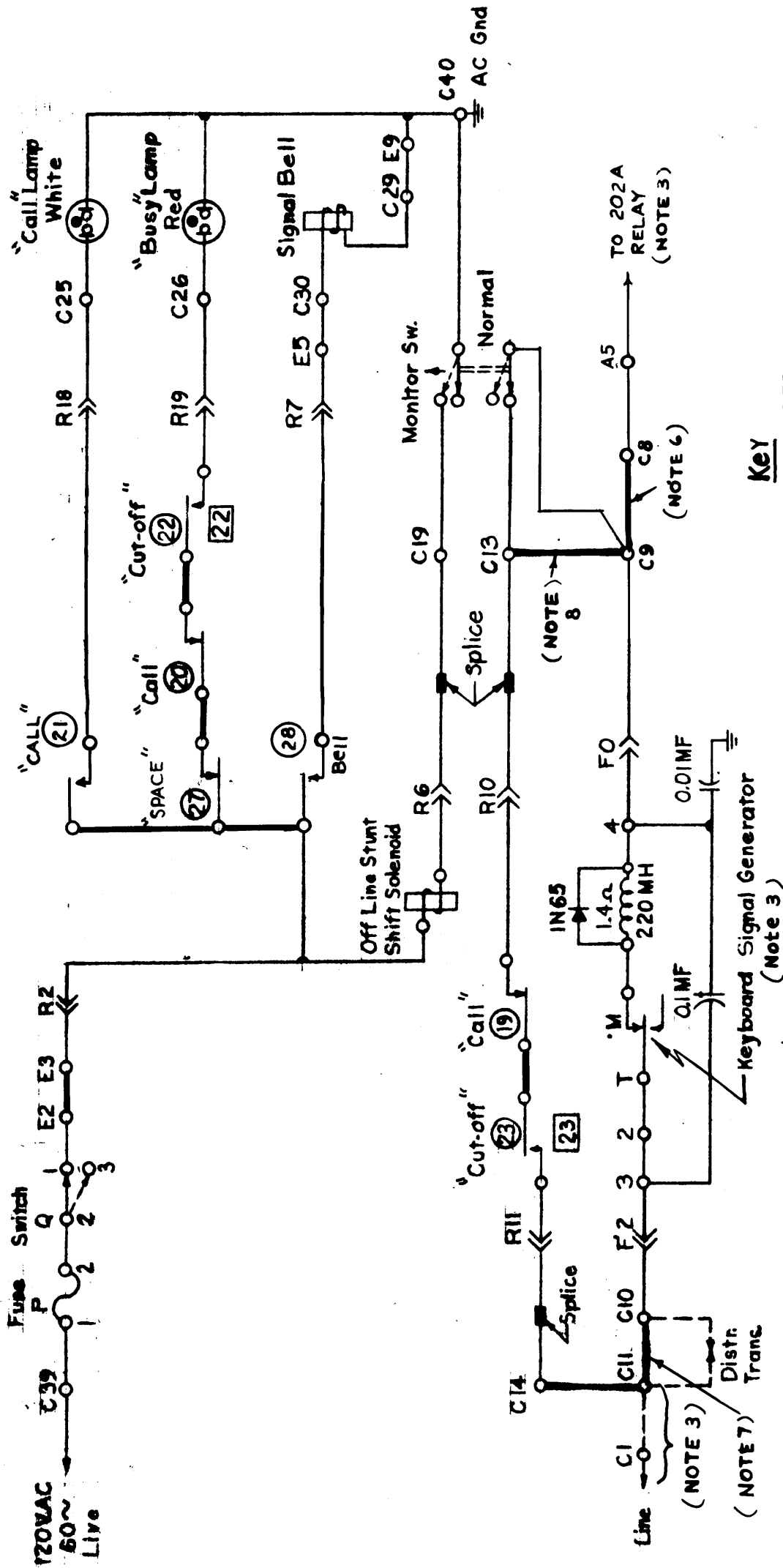


WESTERN UNION		SCALE	DRIVEN	DES. ENG.	SP. ENG.	ISSUE	DATE	DRAWING NUMBER
SWITCHING SYSTEM		TOLERANCE UNLESS OTHERWISE SPECIFIED	HHR			A	NOV. 14, 1957	184621 - 7
MODEL 28 TELEPRINTER WITH WIRING CABINET 9100-A		DECIMAL						
SCHEMATIC		FRACTIONAL						
		ANGULAR						
		BET. HOLES						
		USED BY						
		MATERIAL:						
		FINISH:						

REVISIONS
B- May-5, 1958
ADDED:
NOTES 1-8
CHANGED:
TITLE BOX C.K.
C-Jan.10,1961
DWG. Revised
HC

Send And Receive TPR.

Stunt Box Way Station Selector Series A or Series B



Key STRAPS

- (21) NUMBERS ENCIRCLED ARE STUNT BOX SLOT NUMBERS USED BY BOTH SELECTORS.
- (29) NUMBERS IN SQUARES ARE S. B. SLOTS USED IN SERIES B SELECTOR INSTEAD OF ENCIRCLED NUMBER.

NOTES:

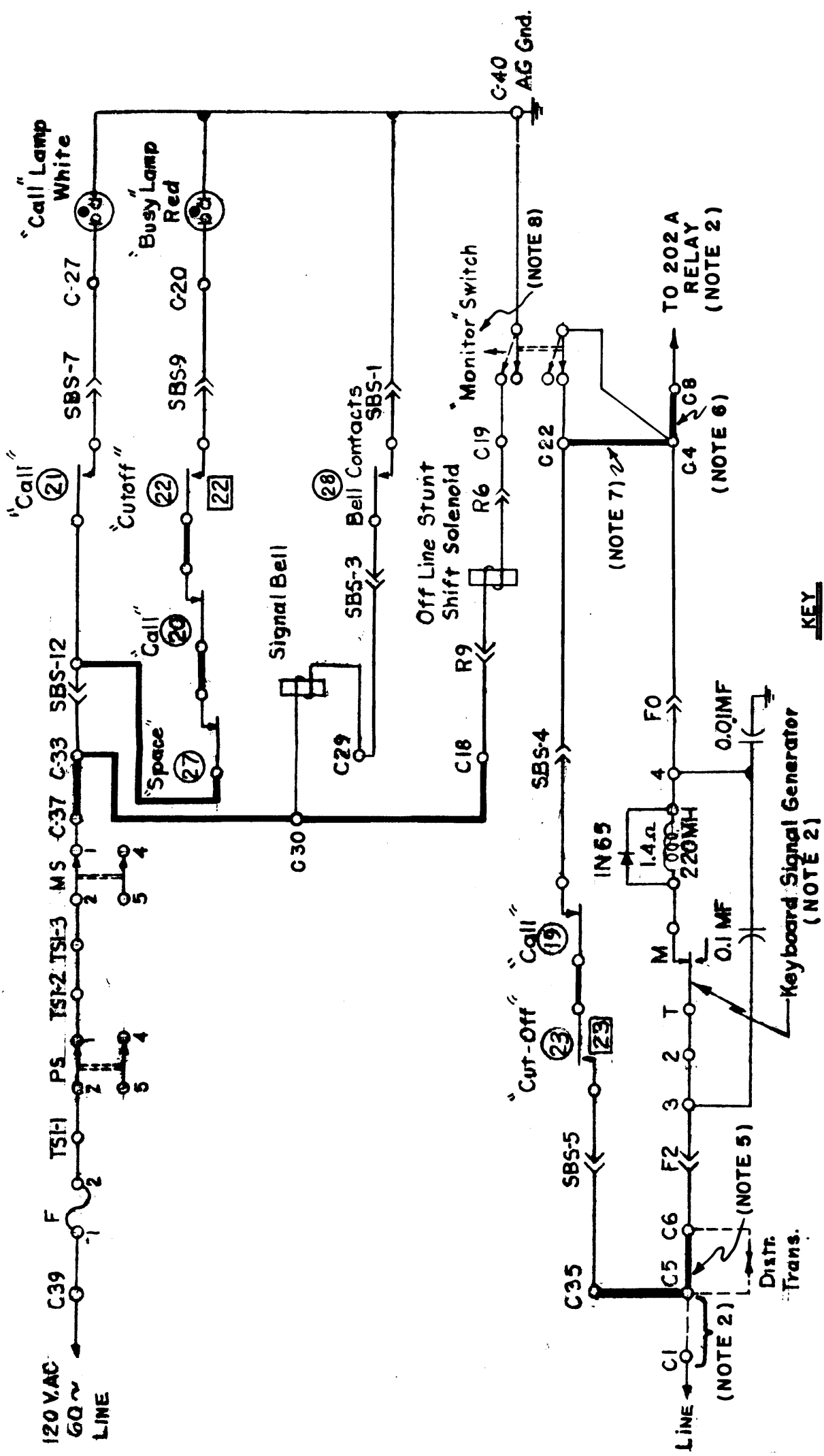
1. THIS DWG. IS RETAINED ONLY FOR USE ON EXISTING INSTALLATIONS. FOR NEW INSTALLATIONS SEE SPECS. 11545
2. FOR SELECTOR WIRING (OLD METHOD) SEE DWG. 175737 (SPEC. 11545)
3. FOR COMPLETE SCHEMATIC SEE DWG. 184620 (SPECS. 11753)
4. FOR WIRING OF LESU 8/198 SEE DWG. 168331 (SPECS. 11753)
5. BILLS OF MATERIAL SEE DWGS. 175941 (SPEC. 11545)
6. OMIT THIS STRAP FOR CLASS C CIRCUIT OPERATION (SEE DWG. 174171 SPECS. 11753)
7. OMIT THIS STRAP WHEN USING A DIST-TRANSMITTER.
8. OMIT THIS STRAP WHEN A MONITOR SWITCH IS SPECIFIED.
9. FOR STUNT BOX ARRANGEMENTS SEE DWG. 197668 (SPECS 11545)

SCALE	WESTERN UNION
TOLERANCE UNLESS OTHERWISE SPECIFIED	SWITCHING SYSTEM
DECIMAL	MODEL 28 TELEPRINTER
FRACTIONAL	Stunt Box Way Station Selector
ANGULAR	WITH LESU 8/198
BET. HOLES	SCHEMATIC (OLD METHOD)
FINISH:	ISSUE DATE
NEXT ASST	A NOV 14, 1957
MATERIAL:	DRAWING NUMBER
USED ON	184622 -2.
DES. ENG.	
APP'D.	

REVISIONS
B-MAY 13, 1958 CHANGED NOTES & TITLE BOX ADDED: KEY C.K. <i>AD</i>
C-Jan. 10, 1961 DWG. Revised K/C
D-21 OCT. 64 DWG. REVISED H.B.

SEND & RECEIVE TPR.

STUNT BOX WAY STATION SELECTOR "SERIES A" "SERIES B"
WITH "MONITOR SWITCH" OPTION



NOTES

- FOR SELECTOR WIRING SEE DWG. 187972. SPECS. 11545
- FOR COMPLETE SCHEMATIC AND WIRING DRAWINGS OF WC9100-A AND WC9100-B SEE SPECS. 11753.
- FOR SELECTOR BILL OF MATERIAL SEE DWG. 175941 SPECS 11545.
- FOR STUNT BOX ARRANGEMENTS SEE DWG. 197668 (SPECS 11545)
- OMIT THIS STRAP WHEN USING A DIST-XTR
- OMIT THIS STRAP FOR CLASS "C" CIRCUIT OPERATION AND SEE DWG. 184633 SPECS 11753 FOR OTHER CHANGES.
- OMIT THIS STRAP WHEN A "MONITOR" SWITCH OPTION IS SPECIFIED.
- THE MONITOR SWITCH OPTION IS TO BE INSTALLED AT THE CONTROL STATION.
- THE KEYBOARD UNBLIND SWITCH SHALL BE INSTALLED AT ALL OUTSTATIONS. SEE WIRING DWG 509835

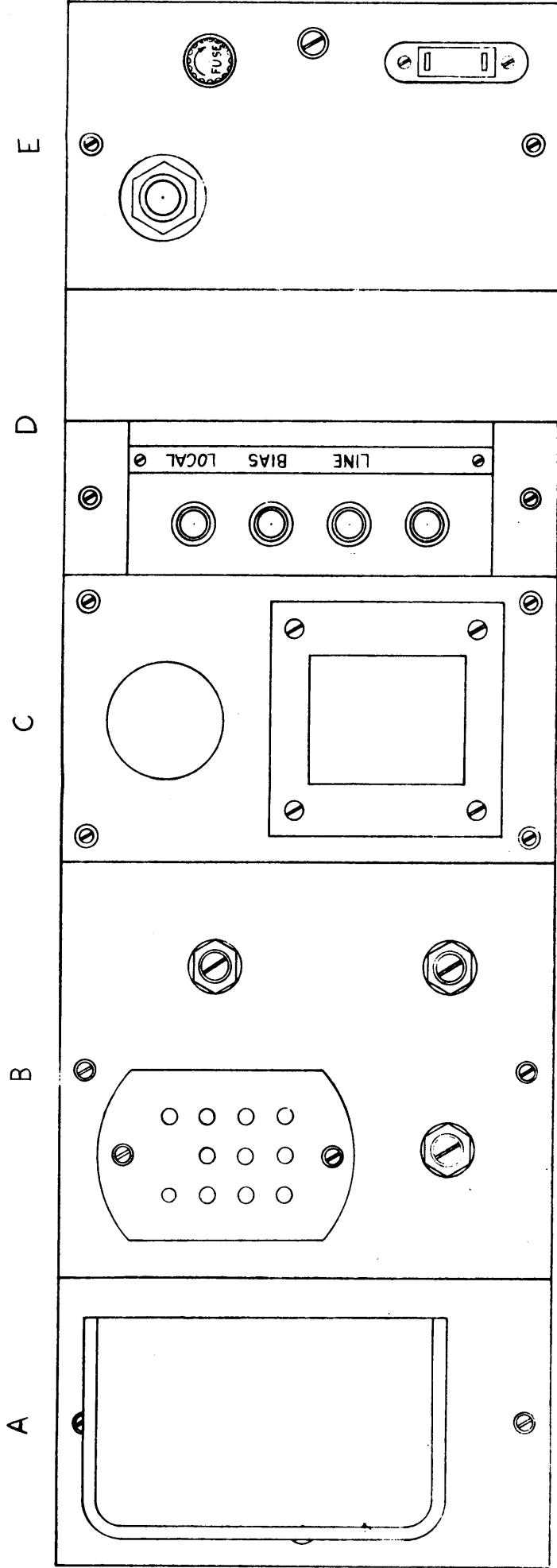
KEY

— STRAPS

- (21) NUMBERS ENCIRCLED ARE STUNT BOX SLOT NUMBERS USED BY BOTH SELECTORS
- (23) NUMBERS IN SQUARES ARE S.B. SLOTS USED IN "SERIES B" SELECTOR INSTEAD OF ENCIRCLED NUMBER.

TOLERANCE UNLESS OTHERWISE SPECIFIED	SCALE	WESTERN UNION
DECIMAL		SWITCHING SYSTEM
FRACTIONAL		
ANGULAR		M-28 TPR STUNT BOX W.S.S. WITH W.C. 9100 AND MONITOR SWITCH
BET. HOLES		SCHMATIC
DATE	DATE	DRAWING NUMBER
A NOV 19 1957		184623 -2

When D.C. Power is Supplied
 To the 28 TPR Replace the
 Rectifier Unit with Resistor
 Assembly 9312-A. Specs. 12402-A
 Dwg. 184627 shows the Wiring
 Of the Resistor Assembly to the
 LESU



MOTOR CONTROL UNIT
 W.U. #8571-A
 SPEC. #11327
 To Be Installed When Specified
 Per Spec. #11273

LINE RELAY UNIT
 Teletype #157216
 W.U. #8271-A
 SPEC. #11071
 Comes Installed On The LESU

RECTIFIER UNIT
 Teletype #152950
 Comes Installed On The LESU
 or
 Rectifier Unit
 W.U. #8494-A
 SPEC. #11138 (150 ma)
 To Be Ordered When Using
 Motor Control Unit
 W.U. #8571
 Or For Class "C" Operation,
 Or When Specified

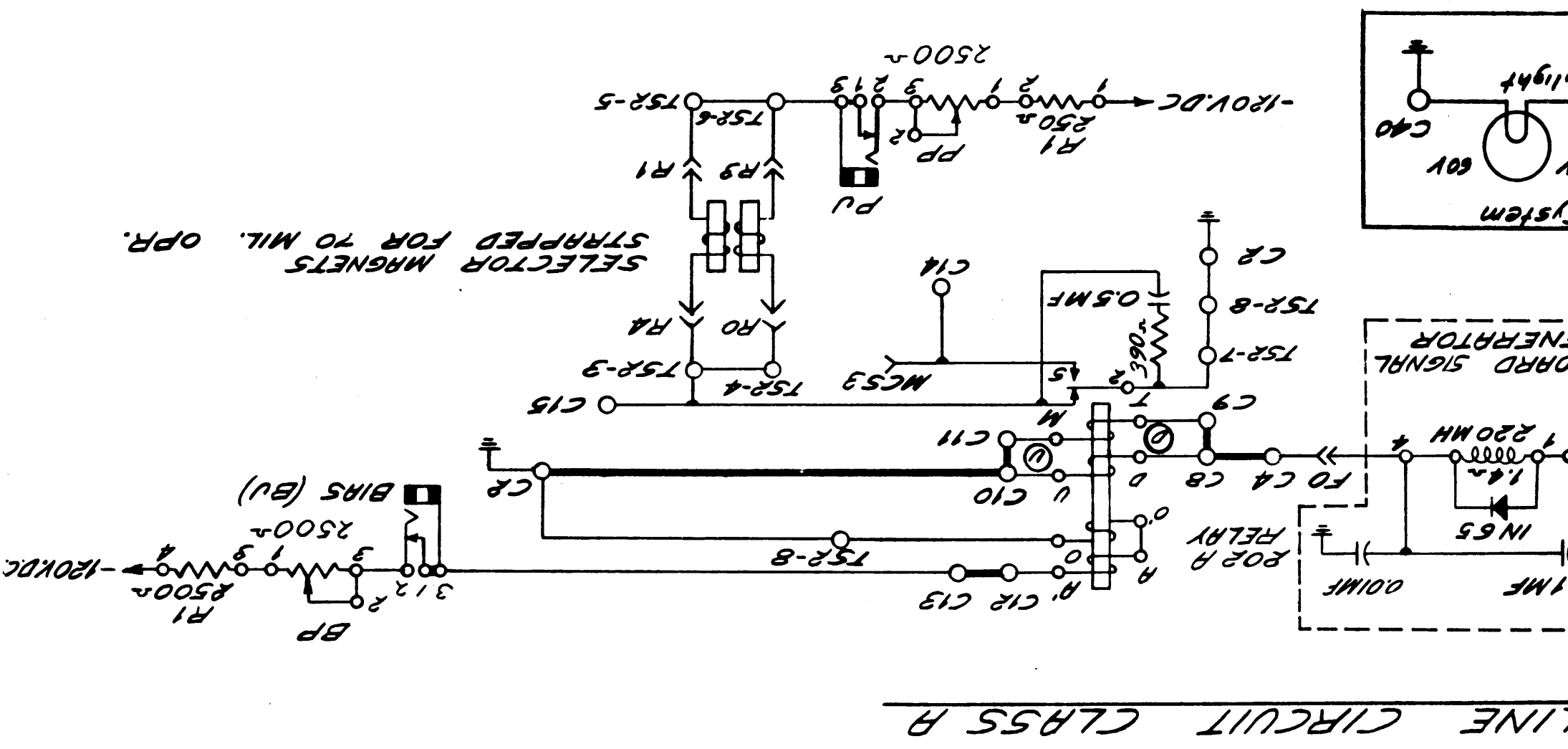
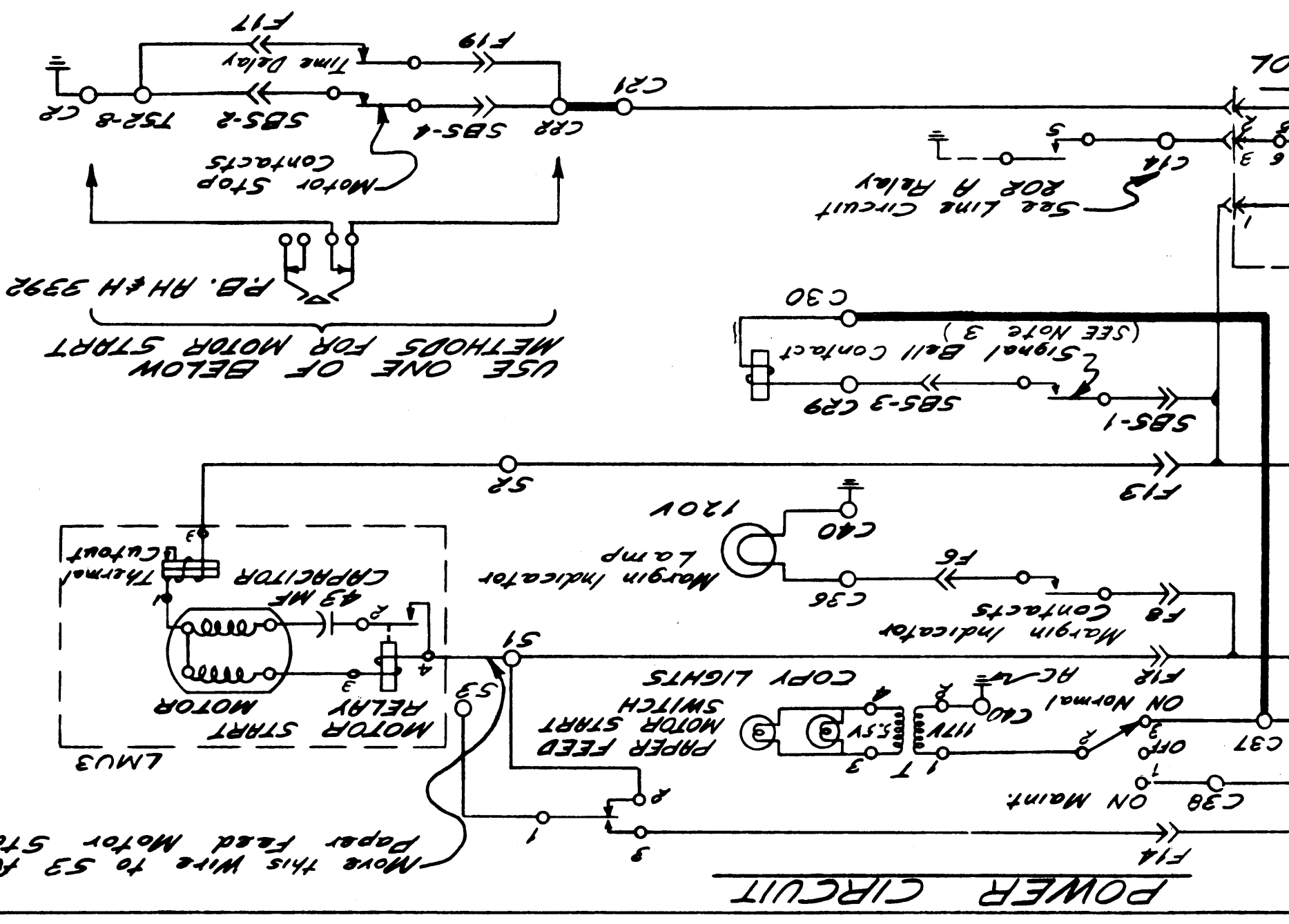
JACK BOX UNIT
 W.U. #8559-A
 SPEC. #11309
 Is To Be Installed When Specified
 As Shown, And Wired To
 Conform With Dwg #184626

AC POWER CONTROL UNIT
 Switch, Fuse and Outlet
 Assembly Comes
 Installed On The LESU

A-JAN 2, 1957
DRAWING NUMBER /B-624-3
WESTERN UNION
SWITCHING SYSTEM
LESU 8/198 EQUIPMENT INFORMATION
SCALE: _____
DRAWN: _____
CHECKED: _____
ENGR'D: _____
APPROVED: _____

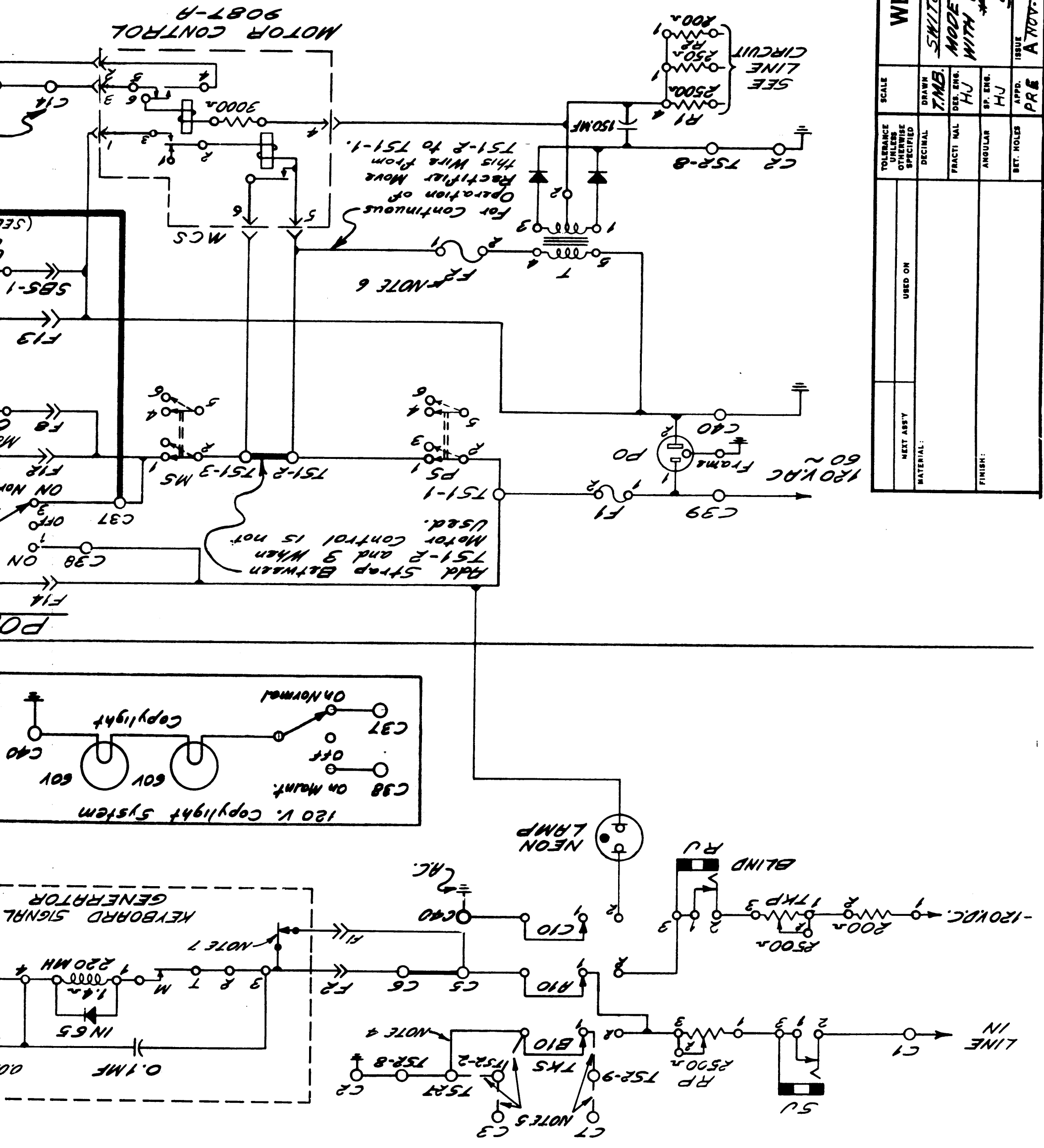
REVISION:
 B-OCT. 14, 13
 SCHEMATIC
 REDRAWN
 AND ADDITION
 OF 55V. A.C.
 COPYLIGHT
 SYSTEM TO
 APPROVED
 C-JUNE 5, 1961
 NOTES 4, 5, 6 &
 7 ADDED.
 TITLE CHANGED
 BY C.K. PRY
 C.P.

WIRING OF WC 9100-B AND WC 9100-C SEE DWG 232623
 WIRING OF WC 9100-B AND WC 9100-C ONLY
 WIRING OF WC 9100-B AND WC 9100-C ONLY
 LINE BREAK SWITCH WHEN USED, REMOVE
 WIRE BETWEEN C5 & C6.



LINE CIRCUIT CLASS A

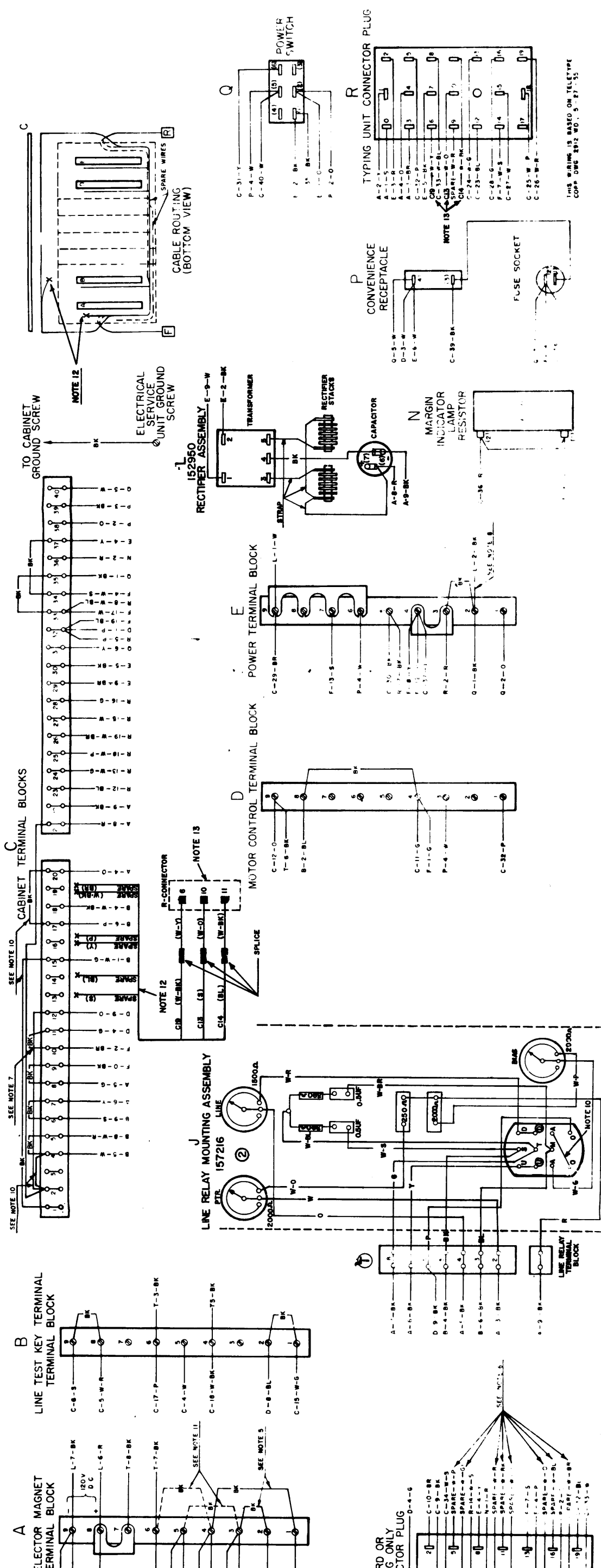
WESTERN UNION		SCALE	DRAWN	DATE	ISSUE	DRAWING NUMBER
SWITCHING SYSTEM		TOLERANCE UNLESS OTHERWISE SPECIFIED	T.M.B.		A	184625-7
MODEL 28 TELEPRINTER WITH WIRING CABINET # 9100-AB-0-C		DECIMAL	DES. ENG.			
		FRACTI NAL	HU			
		ANGULAR	SP. ENG.			
		BET. HOLES	HU			
		USED ON	APPD.			
		MATERIAL:	P.R.E.			
		FINISH:				



- NOTES:**
1. FOR WIRING OF W.C. 9100-C SEE DWG. 232623
 2. ON WIRING DIAGRAM, C TERM SHOWN AS TS3,
 3. NORMALLY LOCATED IN STUPT BOX SLOT 28
 4. THIS WIRE IS IN WC 9100-A ONLY
 5. THESE WIRES ARE FOR WIRING OF WIRING CABINET # 9100-AB-0-C
 6. THIS FUSE IS IN SIGNAL LINE BRG STRAP BETWEEN C
 7. SIGNAL LINE BRG STRAP BETWEEN C
 8. THIS FUSE IS IN SIGNAL LINE BRG STRAP BETWEEN C
 9. THIS FUSE IS IN SIGNAL LINE BRG STRAP BETWEEN C
 10. THIS FUSE IS IN SIGNAL LINE BRG STRAP BETWEEN C

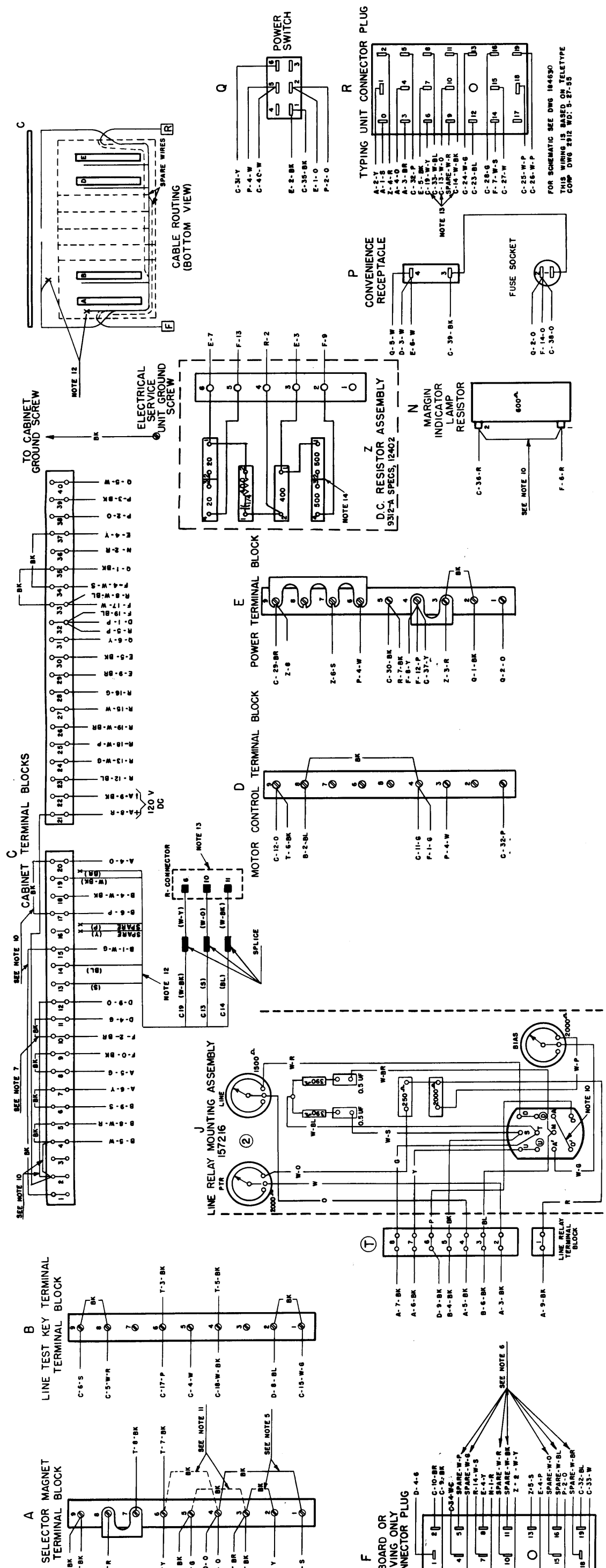
LINE C

F-OCT 23 1957
 NOTES 12, 13 &
 LINE RELAY ASSEMBLY
 APPROVED: *[Signature]*
 E-OCT 4 1957
 DESIGNED BY: *[Signature]*
 INDICATOR LAMP RESISTOR W-12
 APPROVED: *[Signature]*
 E-OCT 26 1957
 CHECKED BY: *[Signature]*
 TELEPHONE ROOM
 ELECTRICAL SERVICE UNIT
 LES 8750
 AIRING

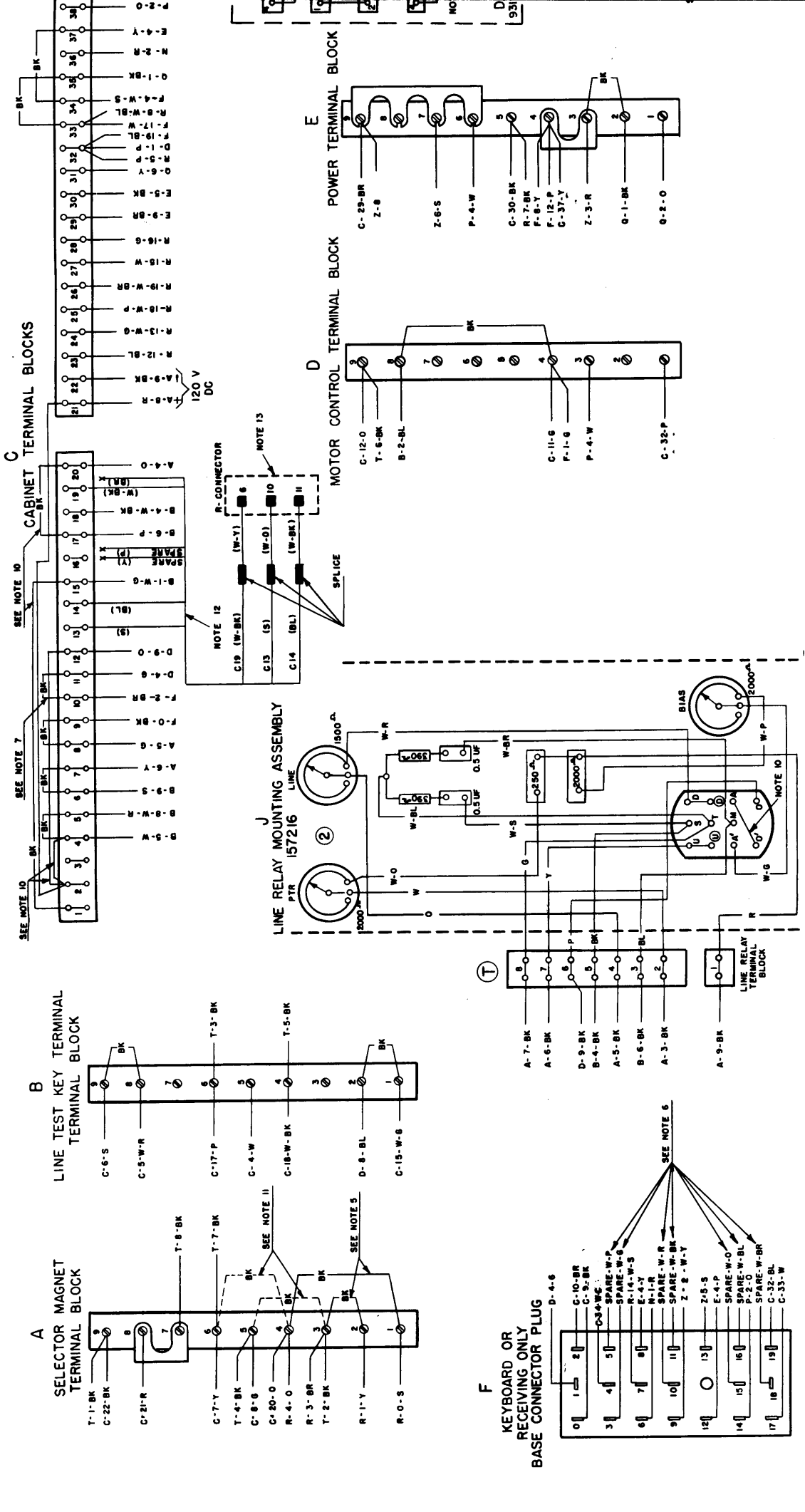


THIS WIRING IS BASED ON TELETYPE COMP. DWG 2812 WD. 5-27-55

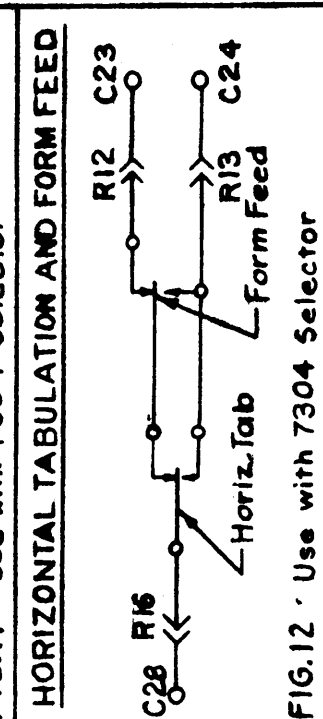
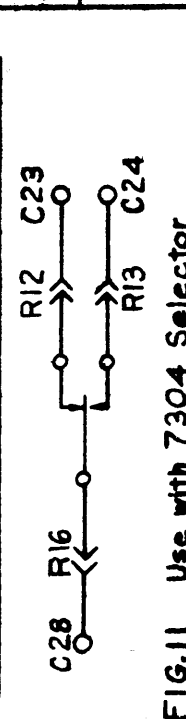
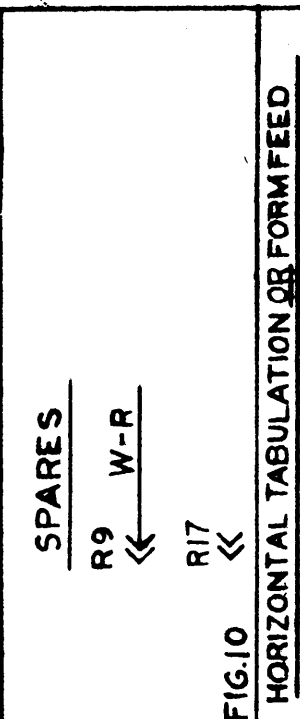
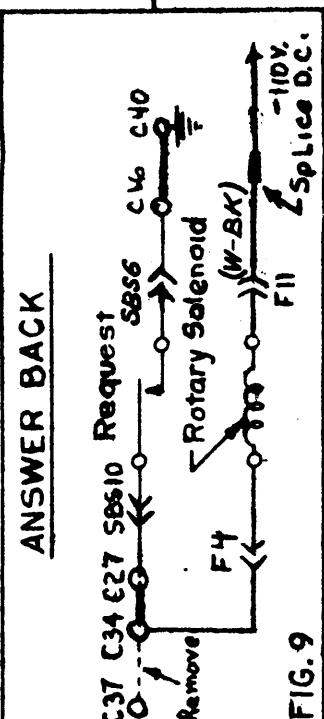
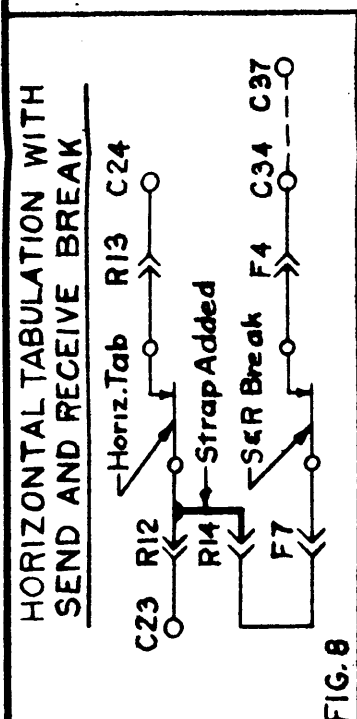
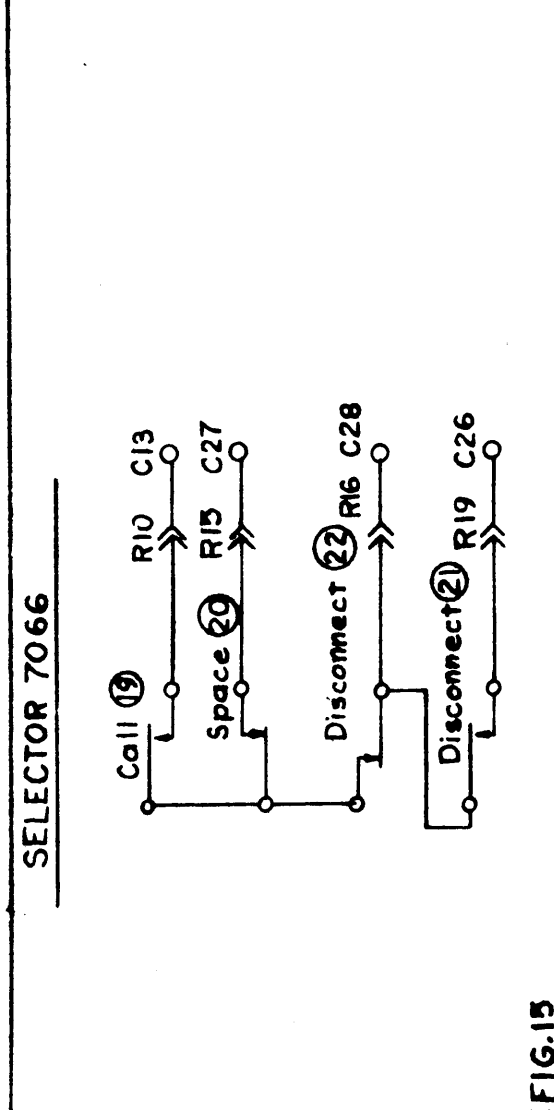
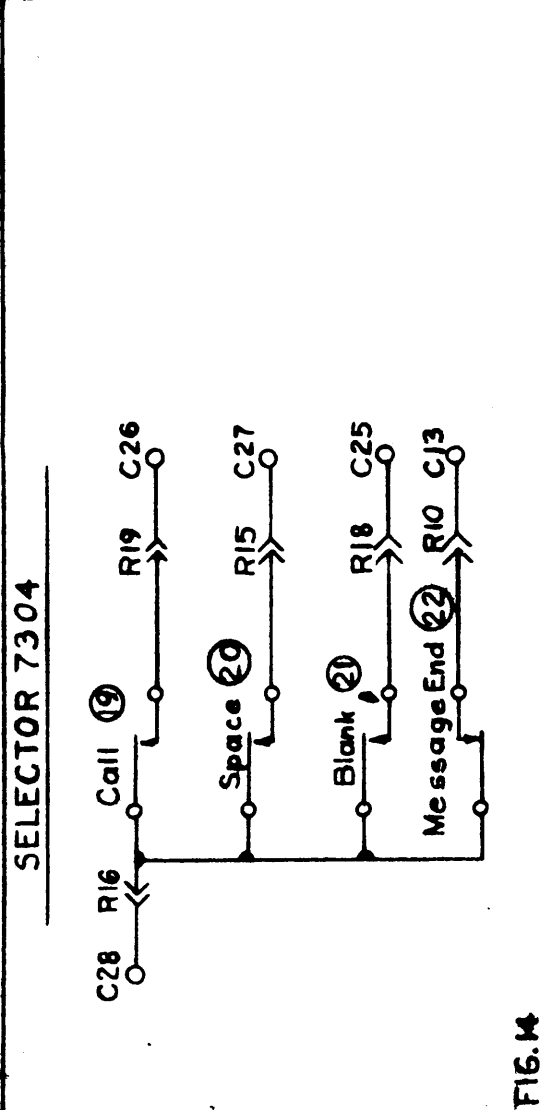
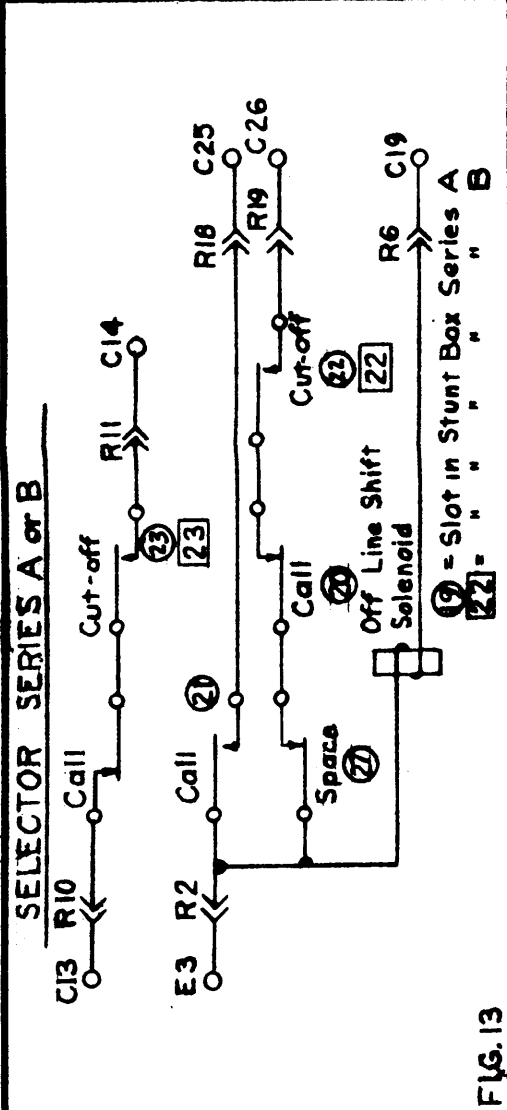
A - NOV. 20, 1957
 DRAWING NUMBER
 184627 - 5
 W. U. TEL. CO.
 TELEPRINTERS
 TYPE 28
 ELECTRICAL
 SERVICE UNIT
 LESU 8/198
 FOR DC
 OPERATION
 WIRING
 DRAWN - G.V.C.
 CHECKED - R.V.
 ENGR'D - R.V.
 APPROVED - R.V.



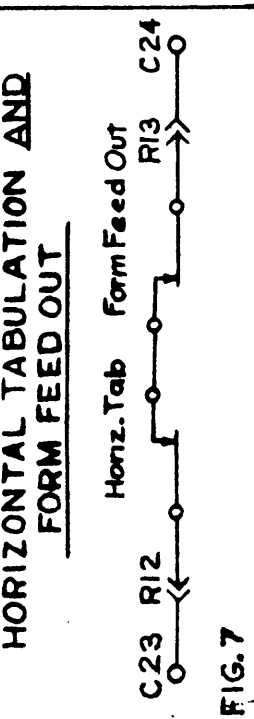
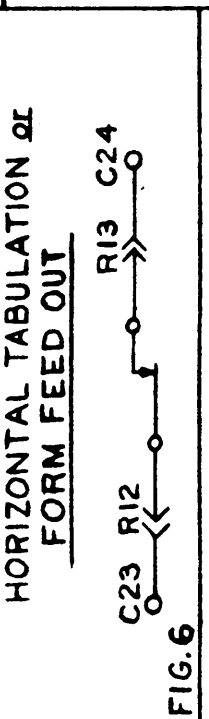
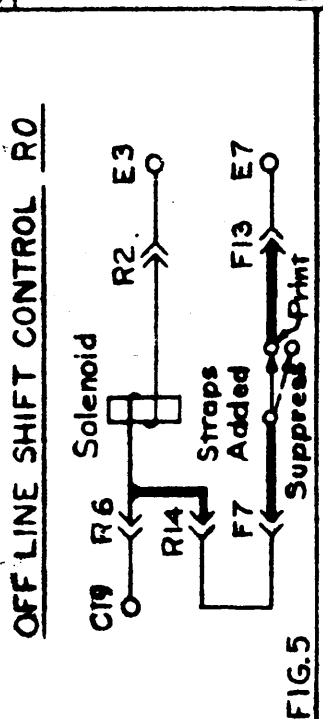
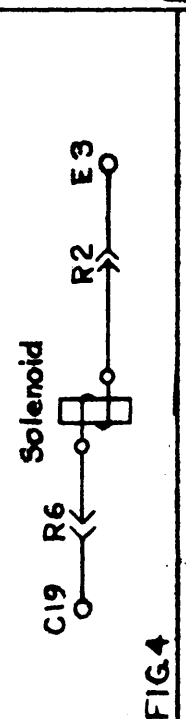
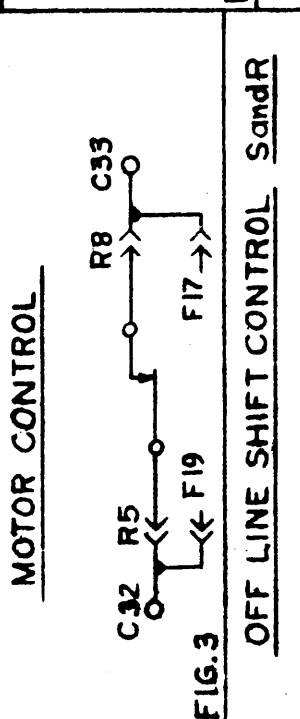
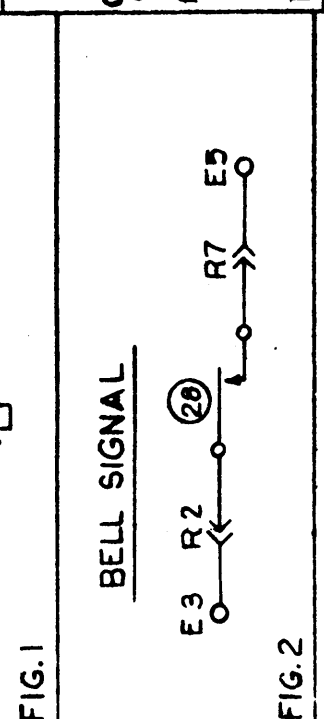
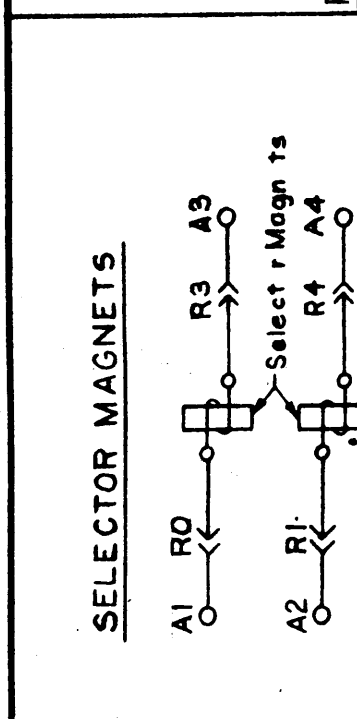
NO	NOTES
1	<p>WIRING LEGEND</p> <p>WIRE COLOR CODE</p> <p>BK - BLACK BR - BROWN W - BR - WHITE - BROWN W - R - WHITE - RED R - RED O - ORANGE Y - YELLOW G - GREEN BL - BLUE P - PURPLE S - SLATE W - WHITE</p> <p>W - BK - WHITE - BLACK W - BR - WHITE - BROWN W - R - WHITE - RED W - O - WHITE - ORANGE W - Y - WHITE - YELLOW W - G - WHITE - GREEN W - BL - WHITE - BLUE W - P - WHITE - PURPLE W - S - WHITE - SLATE</p>
2	<p>UNIT WIRED FOR 115 VOLTS 50 TO 60 CYCLE A.C. POWER INPUT ONLY</p>
3	<p>PLUGS VIEWED FROM SOLDER TERMINAL ENDS</p>
4	<p>CIRCUITS SHOWN FOR .060 AMP. NEUTRAL SIGNAL LINE OPERATION</p>
5	<p>THE SPARE LEADS FROM THE KEYBOARD (OR REC. ONLY BASE) AND TYPING UNIT CONNECTOR PLUGS ARE TERMINATED IN THE RIGHT AND LEFT ENDS OF THE ELECTRICAL SERVICE RESPECTIVELY</p>
6	<p>REMOVE STRAP BETWEEN C-10 AND C-11 IF SIGNAL LINE BREAK SWITCH IS USED</p>
7	
8	
9	<p>THIS DRAWING IS A COPY OF TELETYPE DRAWING 2912 WD 5-27-55, AND COVERS THE ADDITION OF LINE RELAY UNIT 8271-A</p>
10	<p>STRAPS TO BE ADDED</p>
11	<p>STRAPS TO BE REMOVED FROM A3 TO A5 " " " " A4 " A6</p>
12	<p>THESE SPARE WIRES ARE TAPED SEPARATELY AND TIED TO CABLE</p>
13	<p>ADD WIRING AS SHOWN FOR STUNT FOR SELECTOR OPERATION</p>
14	<p>Z2 WILL BE THE BATTERY TAP FOR THE ANSWER BACK MECHANISM WHEN USING THE MULTIPLE-WIRE DISTRIBUTOR (LD) STRAP RESISTOR TERMINALS 3 & 2.</p>



REVISIONS
 B- Feb. 7, 1961
 Series "A" Stunt
 Box Contacts
 changed.
 MC

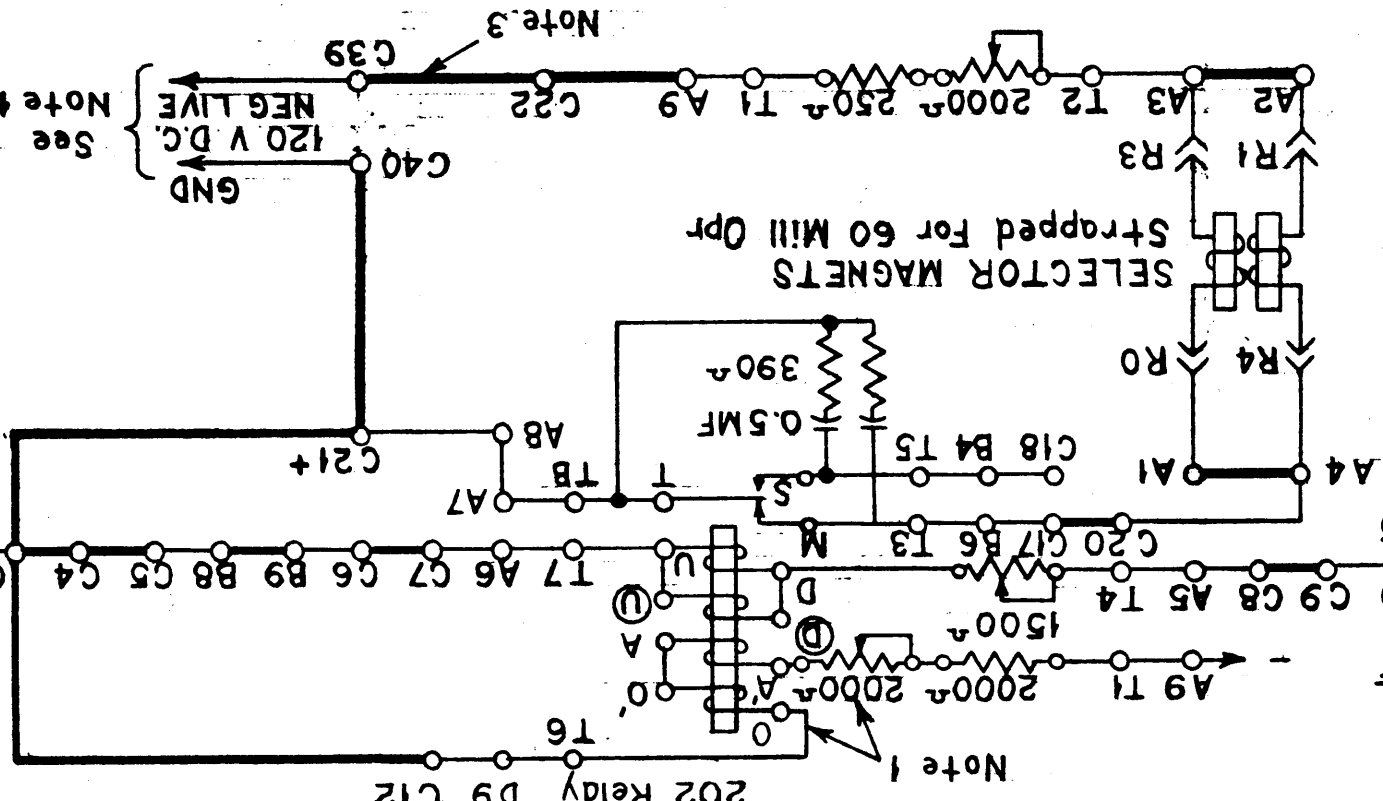


NOTES
 A - Selector Magnet TB
 C - Console
 E - Power
 F - Keyboard Connector
 R - Typing Unit Connector
 For wiring diagram of LESU 8/198 see Dwg. 168331
 (19) - Slots in Stunt Box.



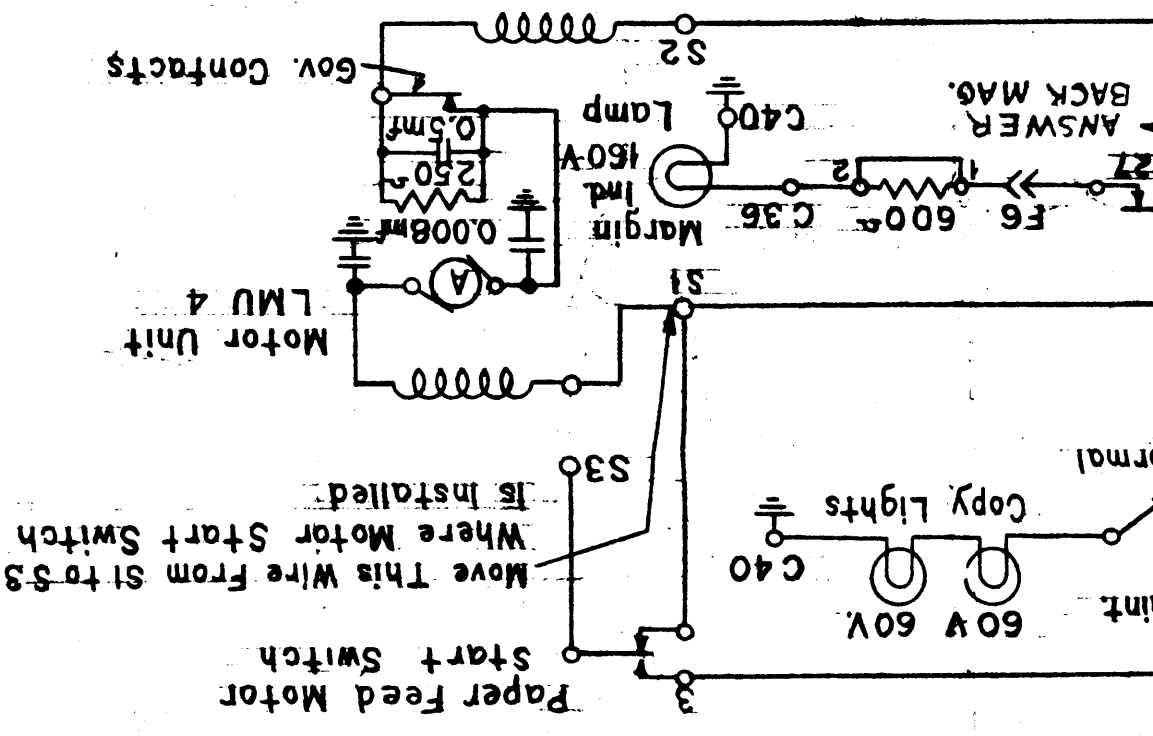
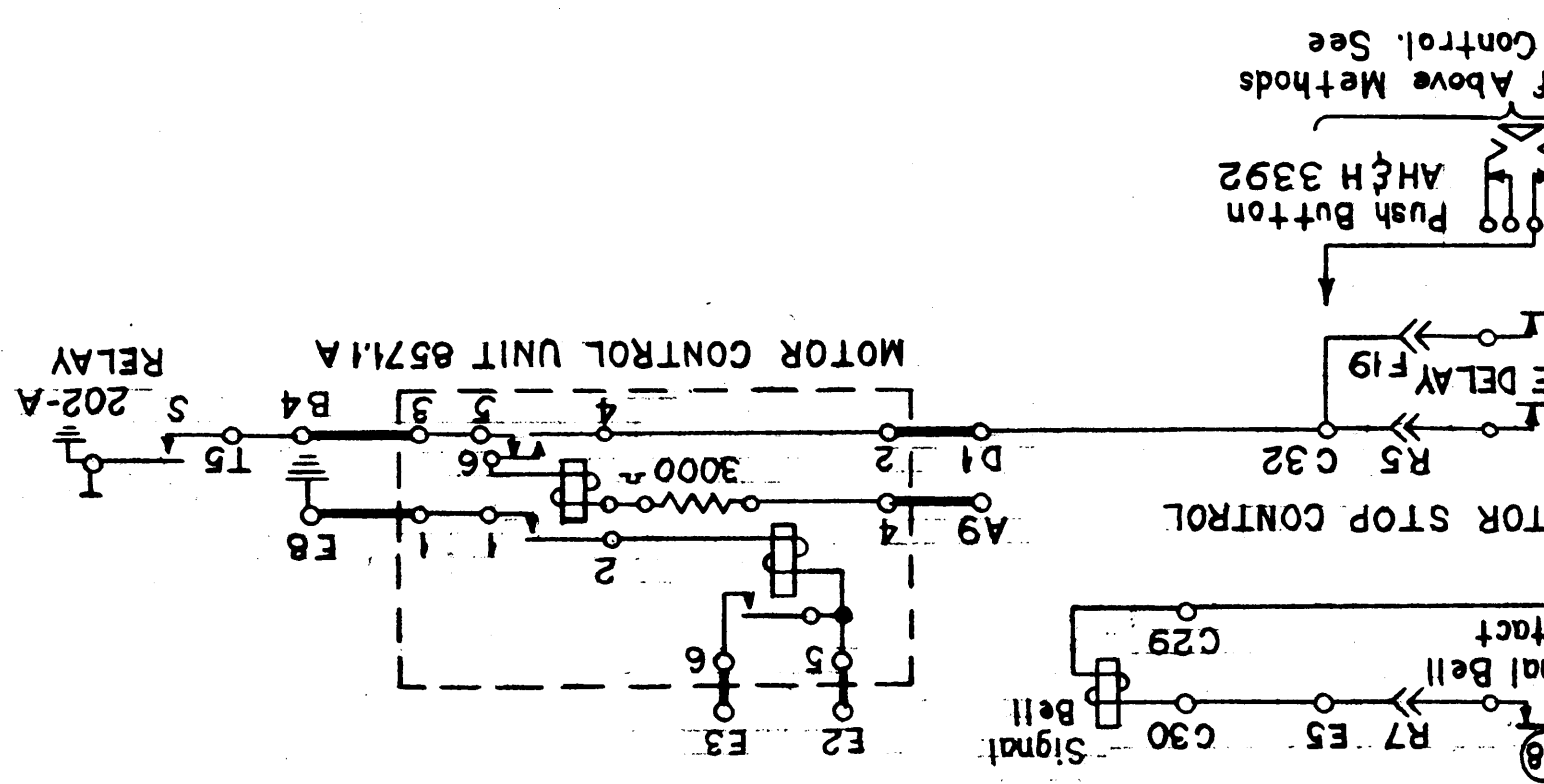
SCALE		WESTERN UNION	
TOLERANCE UNLESS OTHERWISE SPECIFIED	ORIGINAL	DRAWN	HHR
FRACTIONAL	ANGULAR	DES. ENG.	SP. ENG.
BET. H. LES		DATE	ISSUE
		A NOV 11, 1957	A NOV 11, 1957
		DRAWING NUMBER	184628 - 2

LINE CIRCUIT CLASS - A



- NOTES:
- 1 Circuit shown for D.C. operation with negative pole live. Where only positive live is available reverse polarity of bias winding at line relay MTG Assembly.
 - 2 Where motor control is used, install per spec 11273.
 - 3 Where local D.C. is to be controlled by power switch, remove strap between C22 & C39. Add strap between C22 & C35.
 - 4 See Dwg 184627 For wiring diagram.

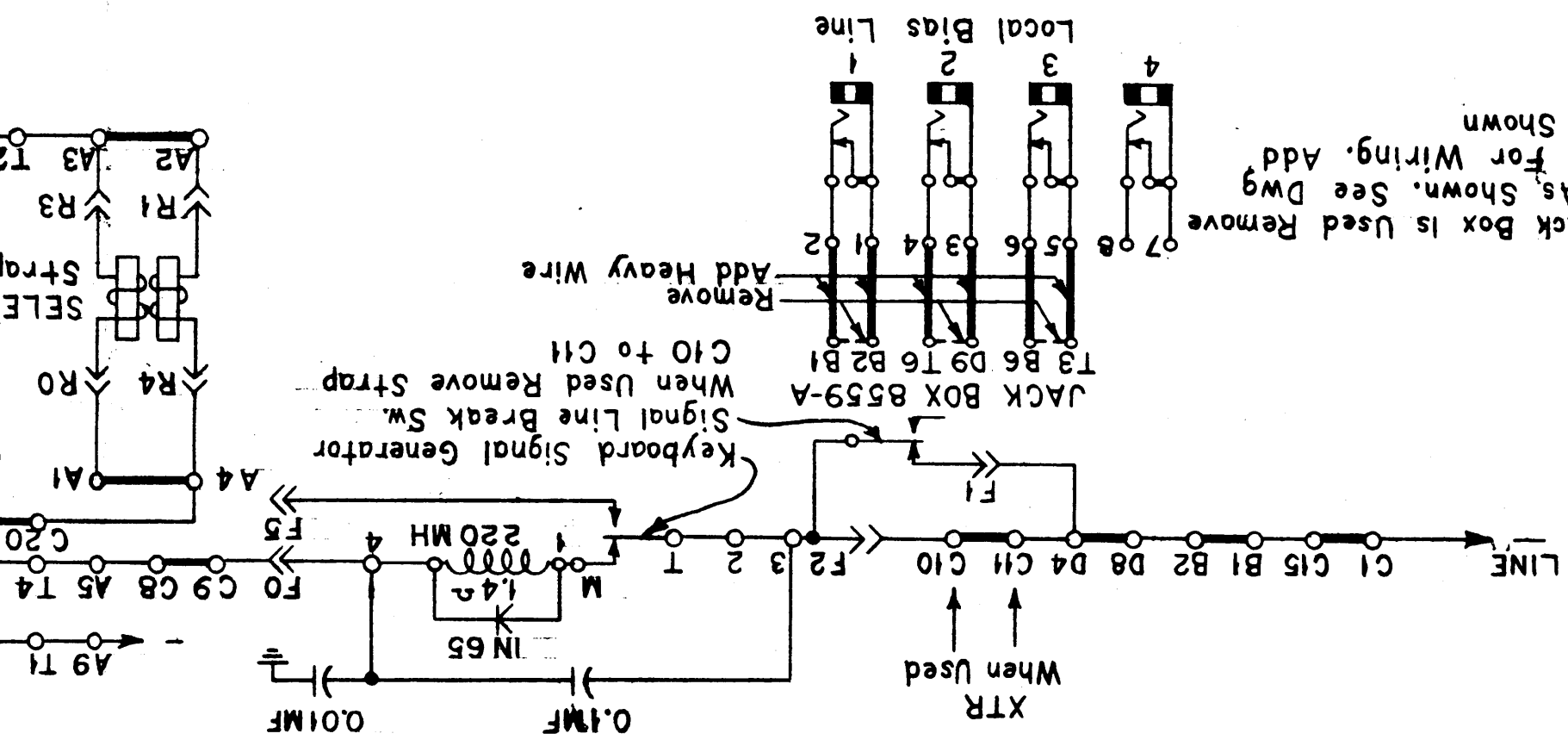
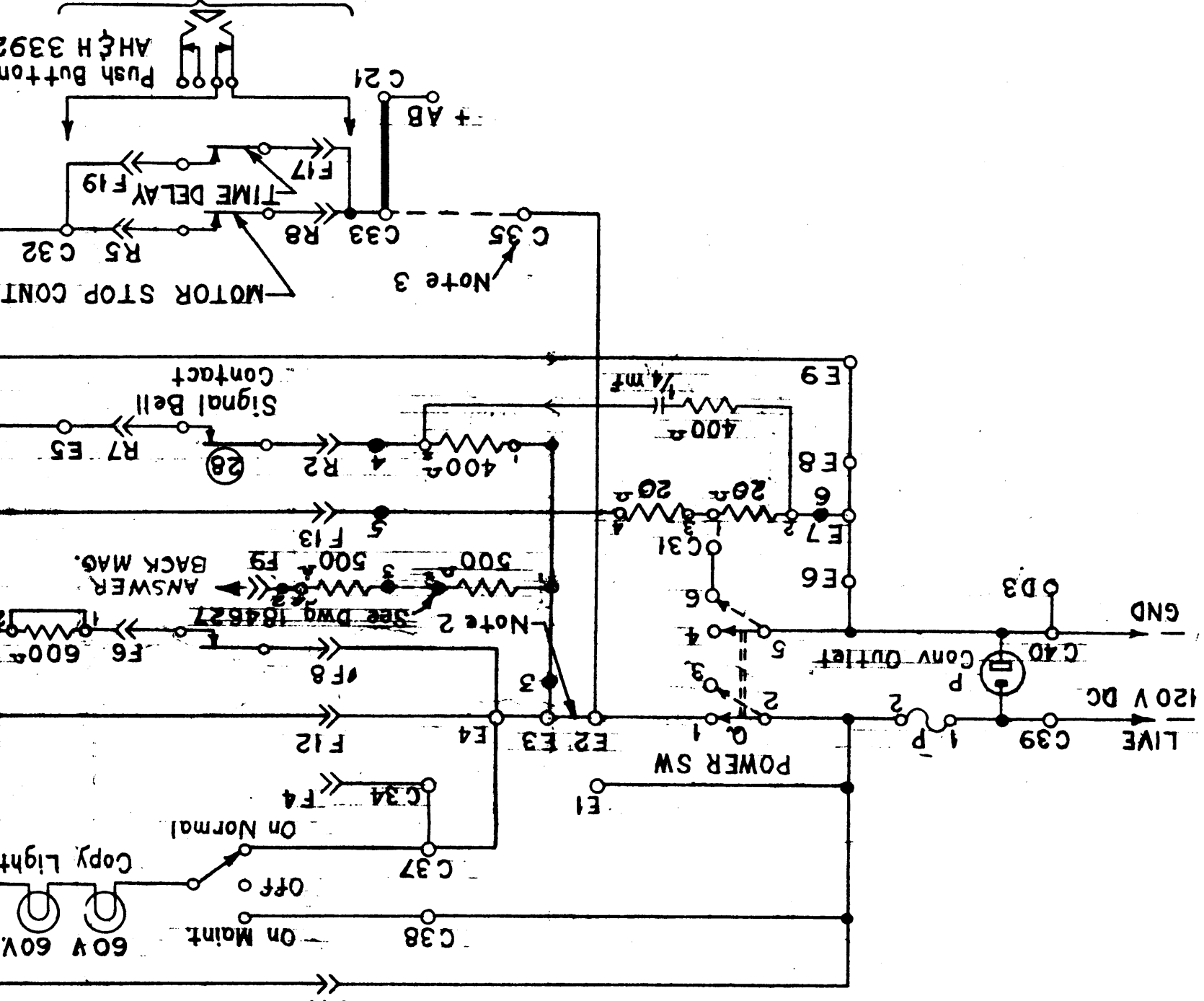
- A Selector Magnet TB
- B Line Test Key
- C Console
- D Motor Control
- E Power
- F Keyboard Connector
- R Typing Unit
- T Line Relay Unit T.B.



of Above Methods of Control. See

D	APPROVED	C	APPROVED	B	APPROVED	A-NOV 26, 1957	DRAWING NUMBER 184630 -7	WESTERN UNION	SWITCHING SYSTEM	MODEL 28 TELEPRINTER WITH ELECTRIC SERVICE UNIT LESU 8/198	D.C. OPERATION	SCHMATIC	SCALE: DRAWN: G.V.C. TRACED CHECKED ENGR'D APPROVED
---	----------	---	----------	---	----------	----------------	-----------------------------	---------------	---------------------	--	----------------	----------	--

Note 2
Use One Of Above Methods
For Motor Control. See
Note 2



Where Jack Box is Used Remove Straps As Shown. See Dwg 184626 for Wiring. Add Wiring As Shown

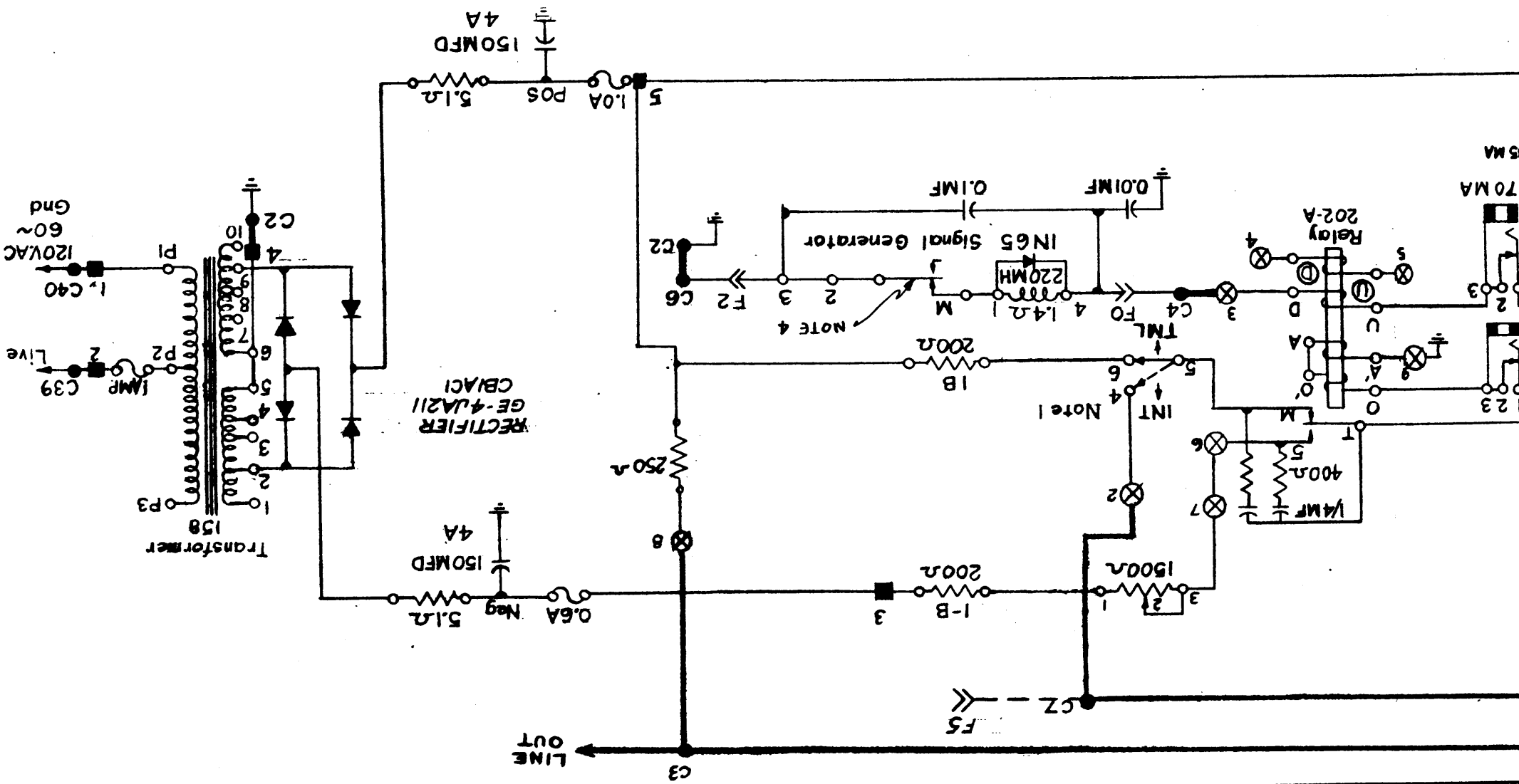
LINE CIRCUIT

REVISIONS
 B. OCT. 20, 1959
 NOTE &
 CHANGED
 AMO
 3008

5. Relay 212-A is used for class "C" operation only. For class "CT" operation relay coil (1) is connected in the line circuit.
 6. For complete schematic of Model 28 Teleprinter Ckt. See Dwg. 184621
 7. Symbols:
 ⊗ TSI-Transmitting Shelf 8582-A
 ■ TS2-Transmitting Shelf 8582-A
 ○ TS2-9100 Wiring Cabinet
 ● Terminal in Console
 8. For complete schematic of Transmitting Shelf Ckt. See Dwg. 234369
 9. For complete wiring and schematic of Wiring Cabinet 9100-A See Dwg. 174234, and for Wiring Cabinet 9100-B see Dwg. 232623.

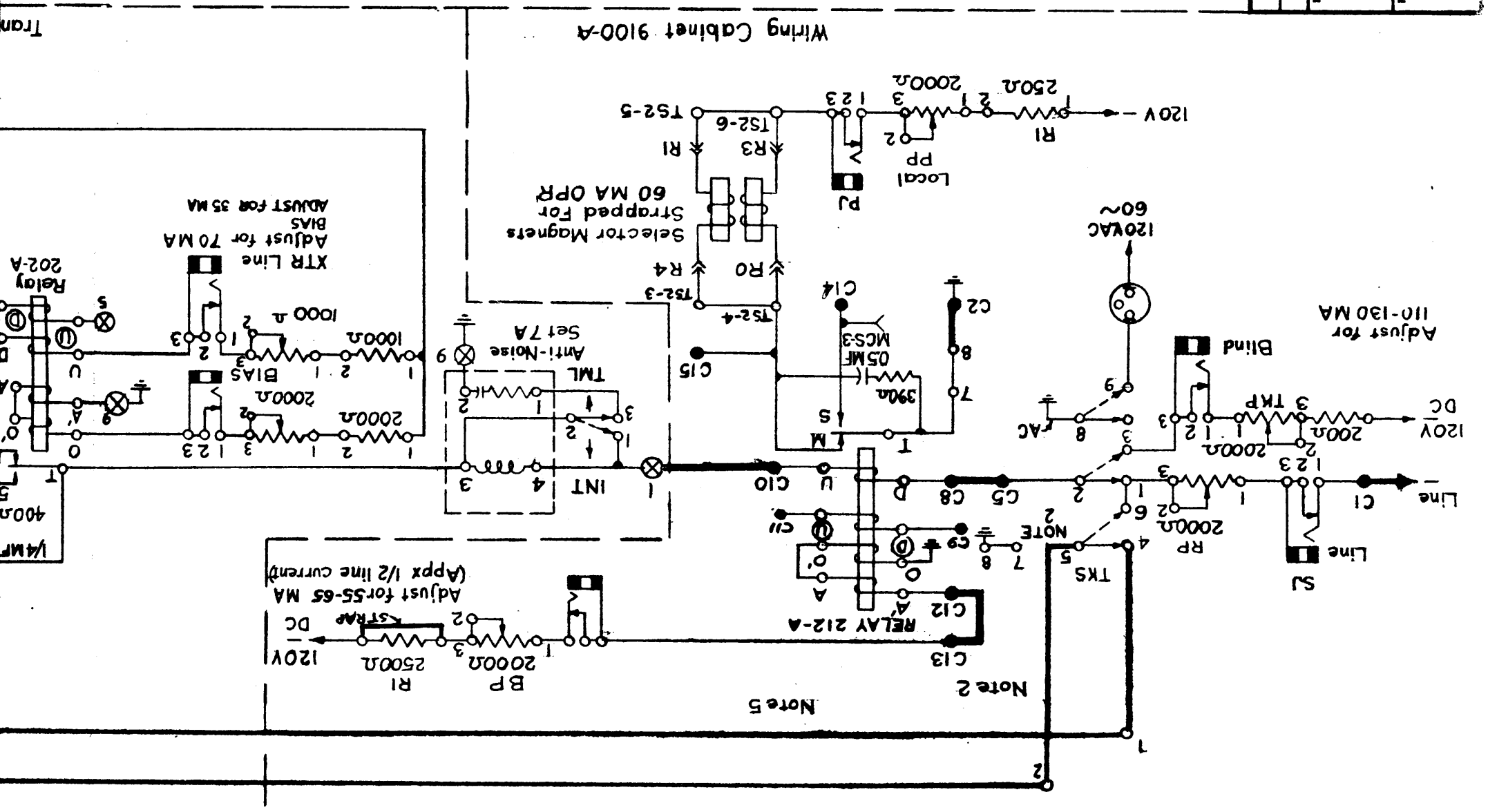
ML" shown for terminal station. Strap between transmitter panel and "C3" is added to provide when blinded.
 inding of set switch "TKS" is modified as follows: wire at TS2-7 running to TKS-5. Move to TS2-2 re at CT and tape.
 between: TKS-4 and TS2-1 } These changes will TS2-1 to CT } not be required on the 9100-B Wiring Cabt. TS2-2 to C3 }
 the stations line out terminates at "C3". Strap and term. 8 of transmitter panels is not used.
 BREAK KEY IS RECOMMENDED
 BASE (LK)

Transmitting Shelf 8582-A



CIRCUIT CLASS C

LINE CIRCUIT CLAS

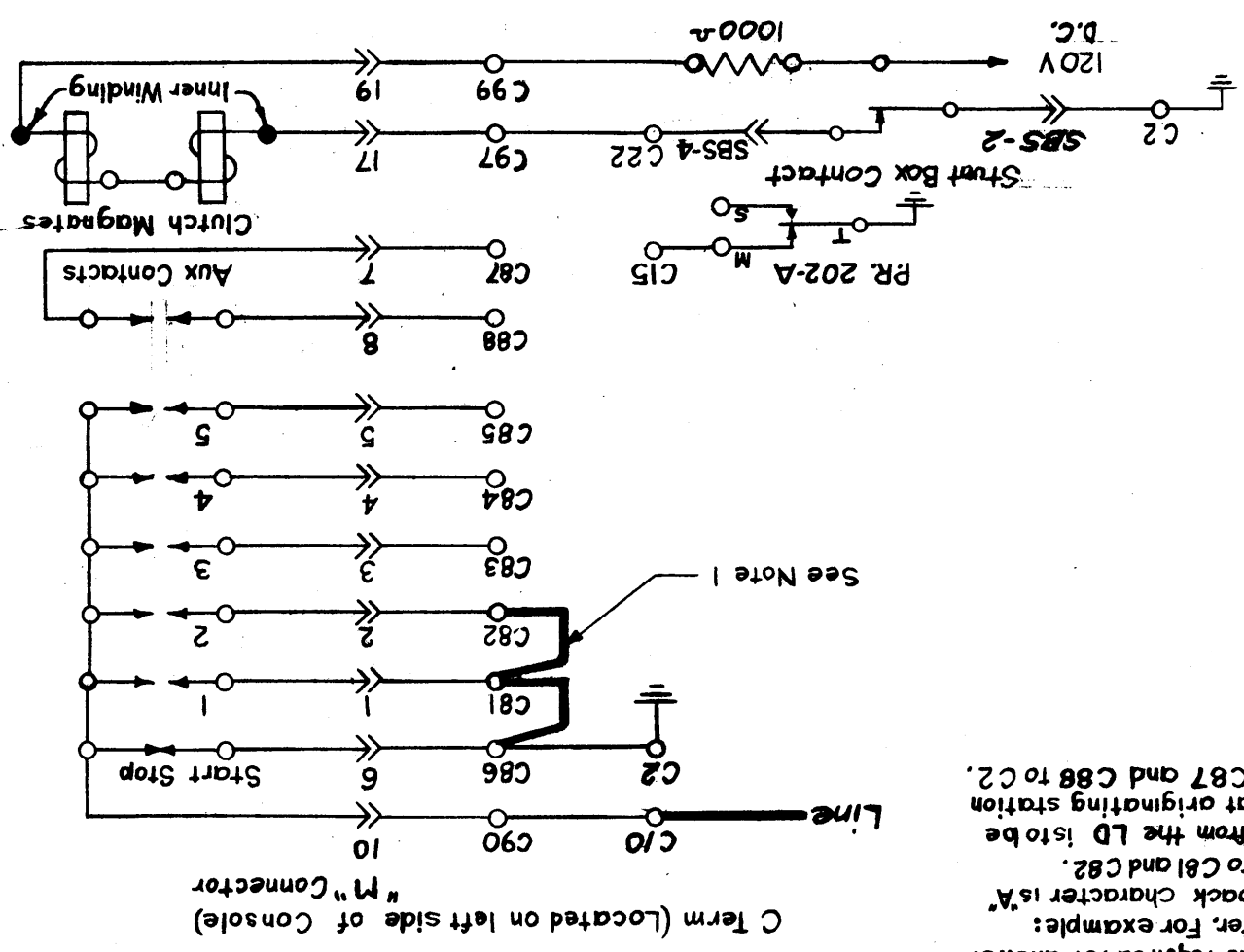


Wiring Cabinet 9100-A

- NOTES
1. Switch "INT-TML" shown for terminal 8 of transmitter panel and terminal 8 of transmitter panel and battery to line when blinded.
 2. To provide blinding of set switch TK Remove wire at TS-7 running Remove wire at C7 and tape. Add wire between: TKS-4 and TS-2-1 to TS-2-2 to
 3. At intermediate stations line out terminal between C3 and term. 8 of transmitter 4. MECHANICAL BREAK KEY IS RECOMM FOR KEYBOARD BASE (LK)

WESTERN UNION		SCALE	DRAWN	ISSUE	
SWITCHING SYSTEM		UNLESS UNLESS OTHERWISE SPECIFIED	HHR	DATE	DRAWING NUMBER
MODEL 28 TELEPRINTER		DECIMAL	DES. ENG.	A DEC 16, 1957	184633-7
FOR CLASS 'C' OPERATION		FRACTI. MAL.	WMS		
WITH WIRING CABINET 9100		ANGULAR	SP. ENG.		
SCHEMATIC		DET. H. LES	APP. ENG.		
NEXT ASSY		USED ON	ONE		
MATERIAL:					
FINISH:					

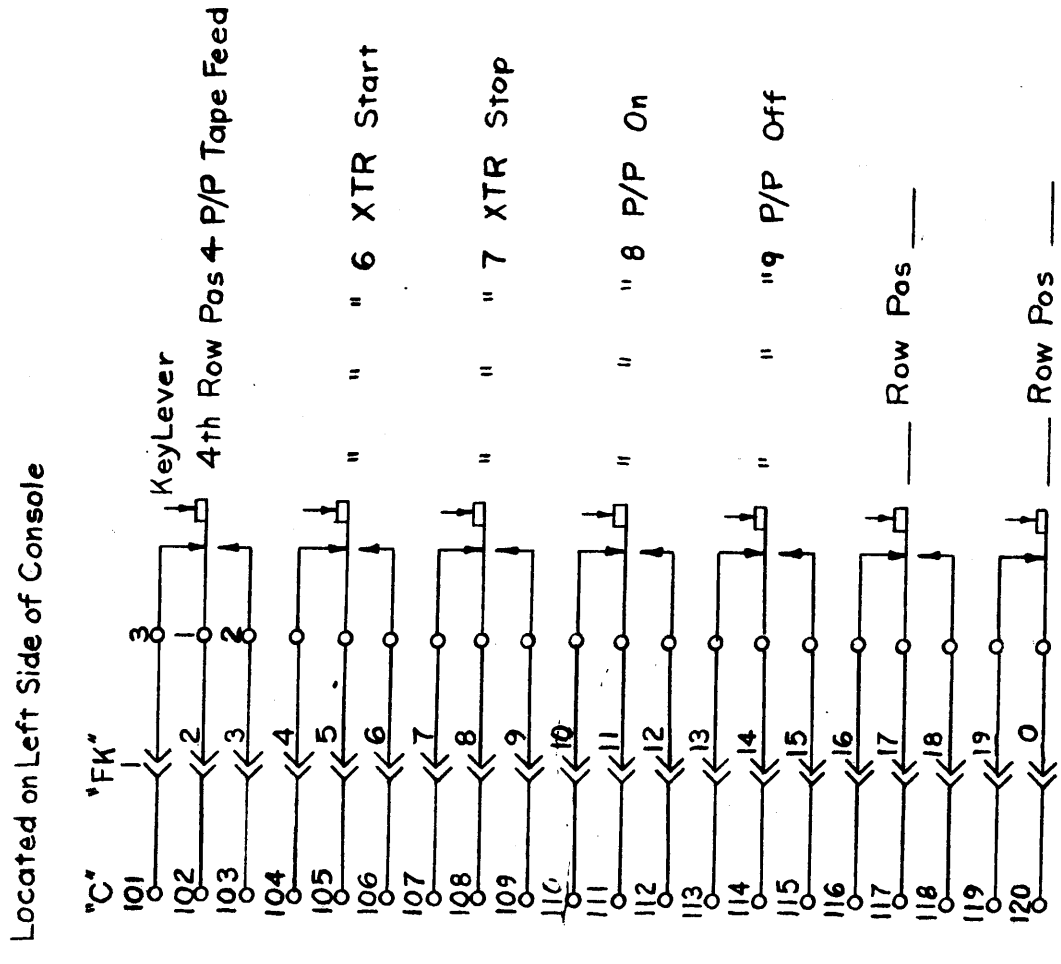
REVISIONS
 B- JAN. 12, 1959
 REVISED AND
 RE-DRAWN.
 TFW RS



NOTES:
 1. Add straps as required for answer back character. For example: If answer back character is "A" strap C2 to C81 and C82.
 2. If transmission from the LD is to be suppressed at originating station strap C15 to C87 and C88 to C2.

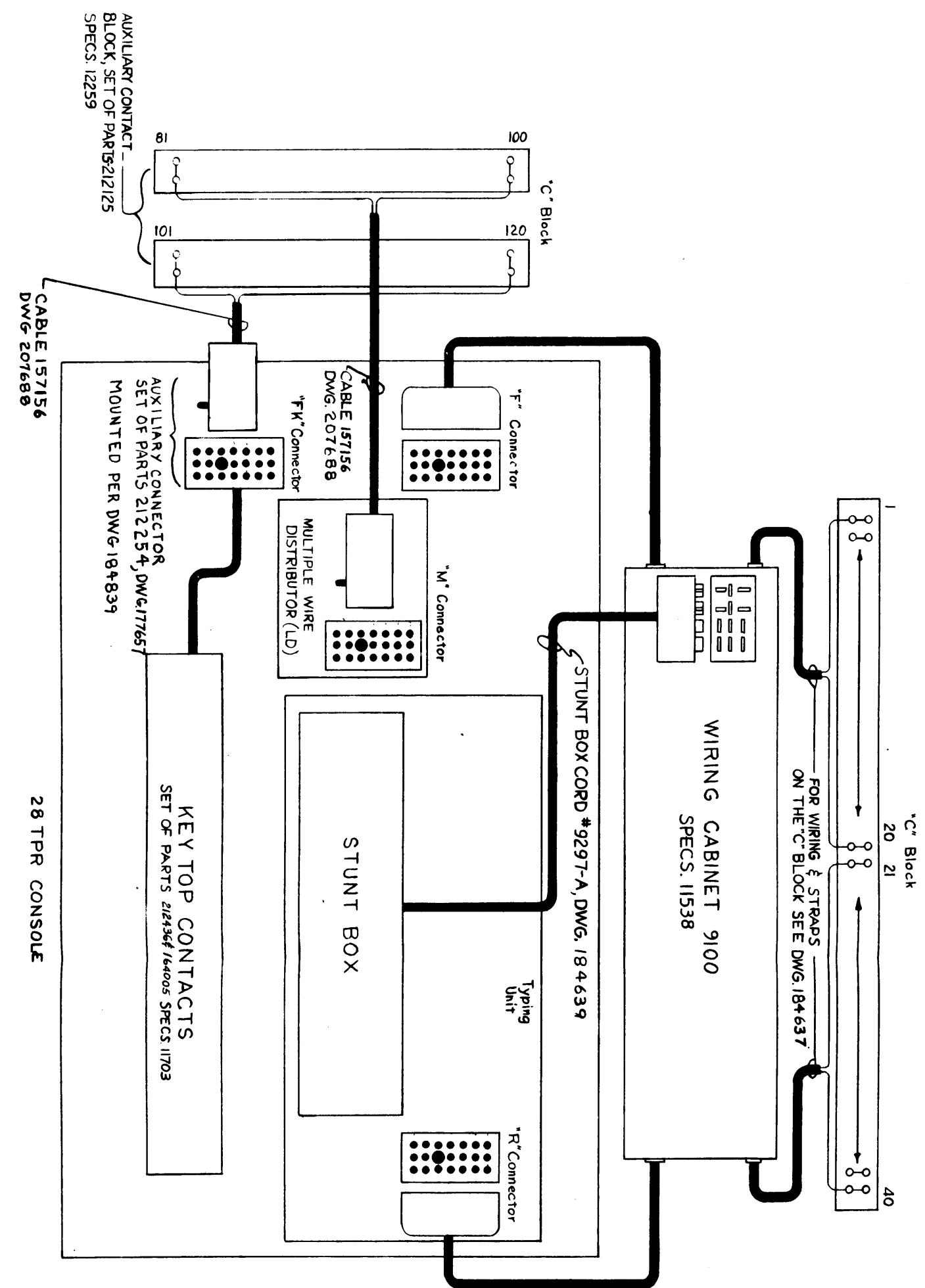
WESTERN UNION		SCALE	DRAWN	HHR	DES. ENG.	SP. ENG.	DATE	DRAWING NUMBER
SWITCHING SYSTEM		TOLERANCE UNLESS OTHERWISE SPECIFIED	DECIMAL				A DEC 4, 1957	184635 -1
MODEL 28 TELEPRINTER		FRACTIONAL						
LD 142		ANGULAR						
SCHEMATIC		BET. HOLES						
NEXT ASSY		USED ON						
MATERIAL:								
FINISH:								

REVISIONS
 B- Mar. 12, 1959
 Keylever
 Positions Changed.
 TFW RS

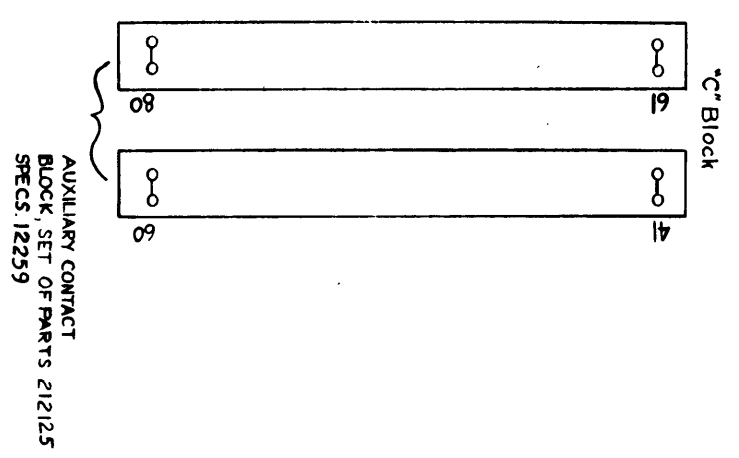


NOTE
 1. For installation of parts see Spec 11703
 2. For associated keyboard layout see dwg. 179959-1.
 Microswitch 212255

WESTERN UNION		SCALE	DRAWN	HHR	DES. ENG.	SP. ENG.	DATE	DRAWING NUMBER
SWITCHING SYSTEM		TOLERANCE UNLESS OTHERWISE SPECIFIED	DECIMAL				A DEC 4, 1957	184634 -1
MODEL 28 TELEPRINTER		FRACTIONAL						
AUXILIARY KEYBOARD CONTACTS		ANGULAR						
SCHEMATIC		BET. HOLES						
NEXT ASSY		USED ON						
MATERIAL:								
FINISH:								

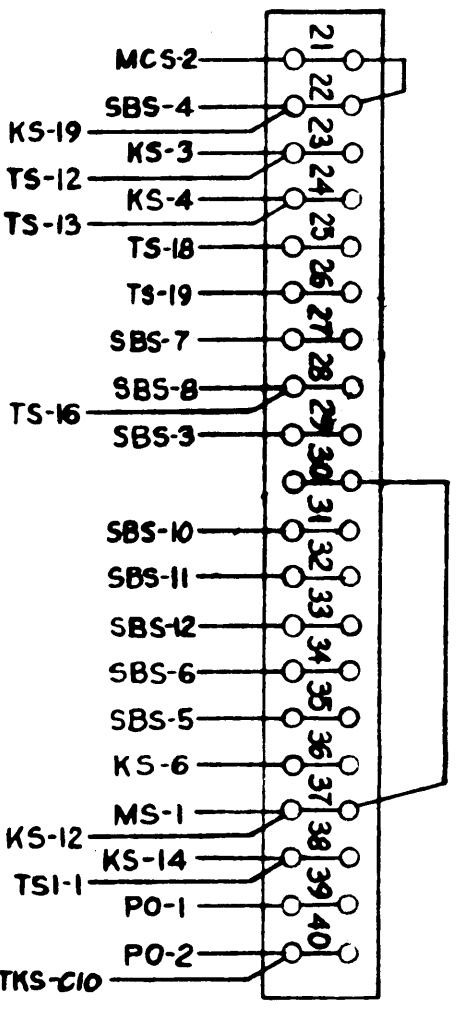
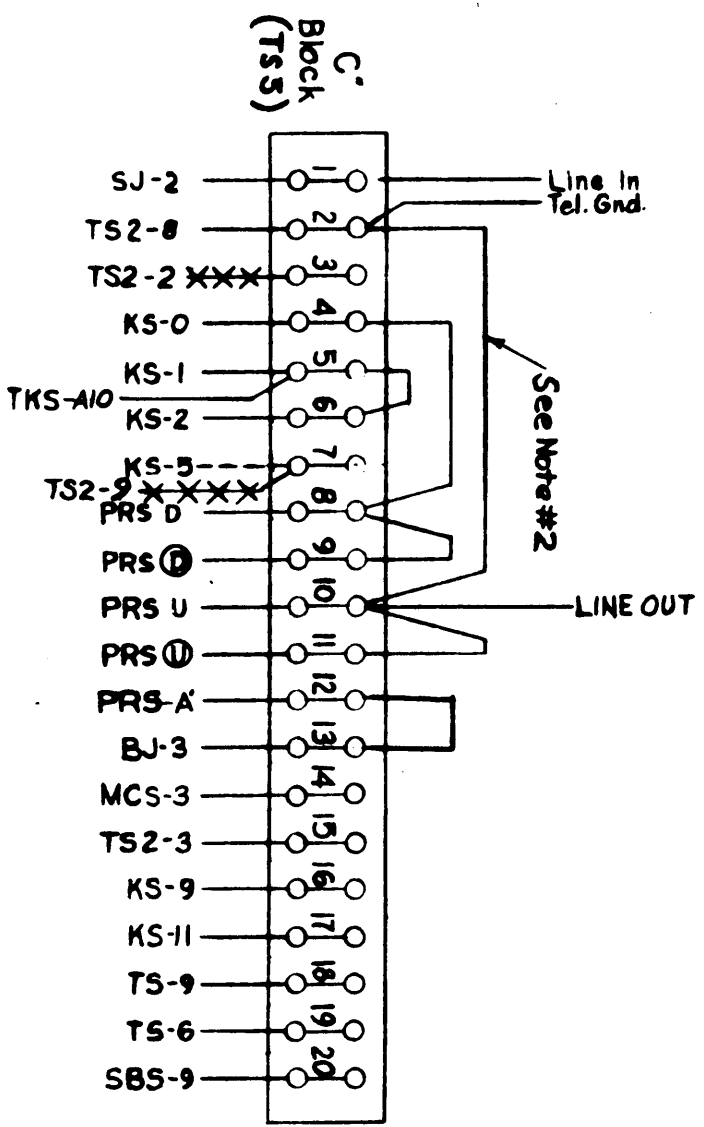


NOTES:
 1. WHEN USING THE LESU INSTEAD OF THE 9100 WIRING CABINET, THE STUNT BOX CORD WILL PLUG INTO ADAPTER CORD # 9297 B. THE ADAPTER CORD WILL BE CONNECTED TO THE 'C' BLOCK AS SHOWN ON DRAWING 184625 AND IS MANUFACTURED PER DWG. 184835



C--JAN 17, 1961	DWG. REVISED
Mc	
B - JAN 16, 1959	157156 WMS
	157156
	TEW 4
A. DEC. 5, 1957	
DRAWING NUMBER	184636 -3
WESTERN UNION SWITCHING SYSTEM	
28 TELEPRINTER INTERCONNECTION BETWEEN UNITS	
SCALE	KRR
DRAWN	KRR
TRACED	KRR
CHECKED	KRR
APPROVED	KRR

CLASS "A" OPERATION



NOTES

1. When Signal Line Break Switch is used, remove strap between C5 & C6.
2. For intermediate operation of Teleprinter, remove strap between terminal C2 and C10. Line out will then be connected to C10.
3. The wiring of the 9100A Wiring Cabinet is covered by drawing 174234.
4. The wiring of the 9100B Wiring Cabinet is covered by drawing 232623.

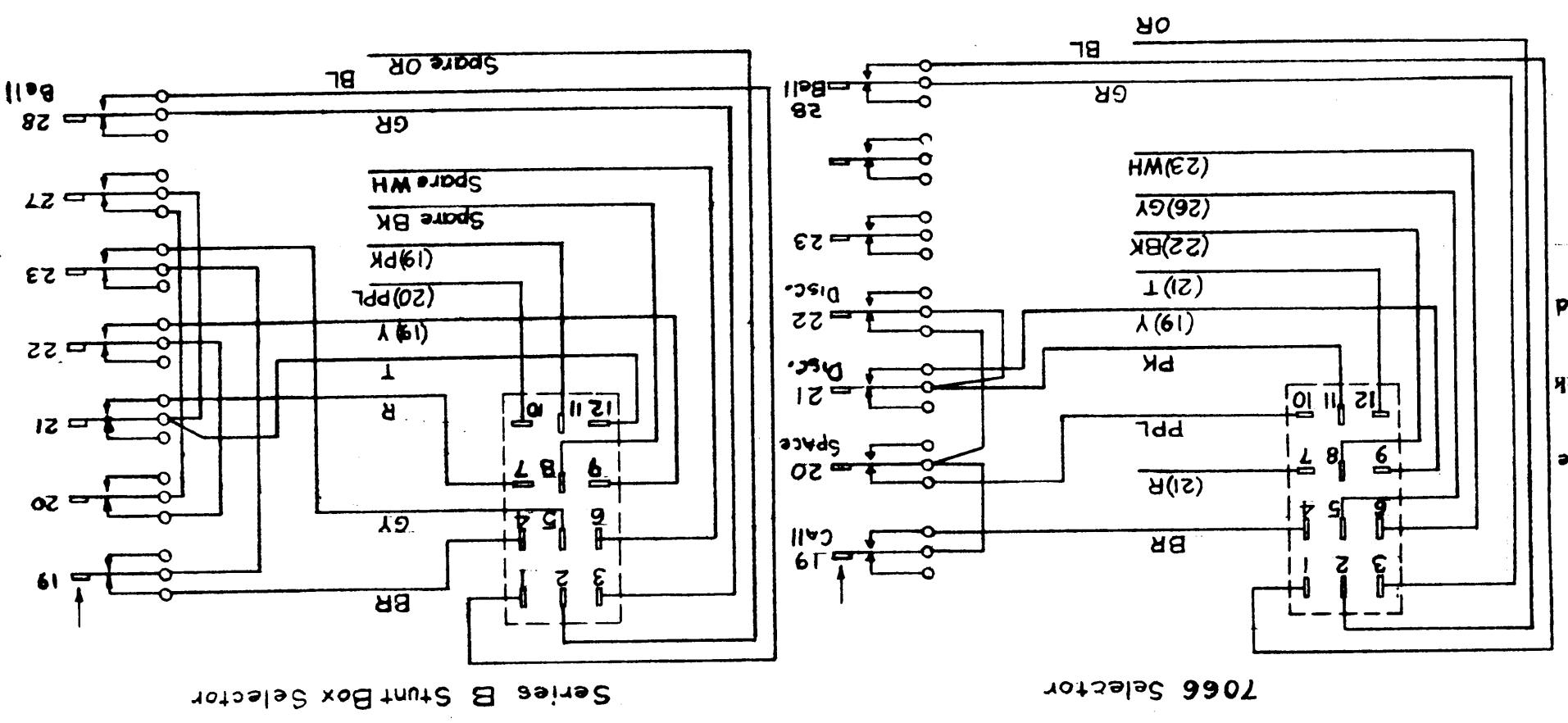
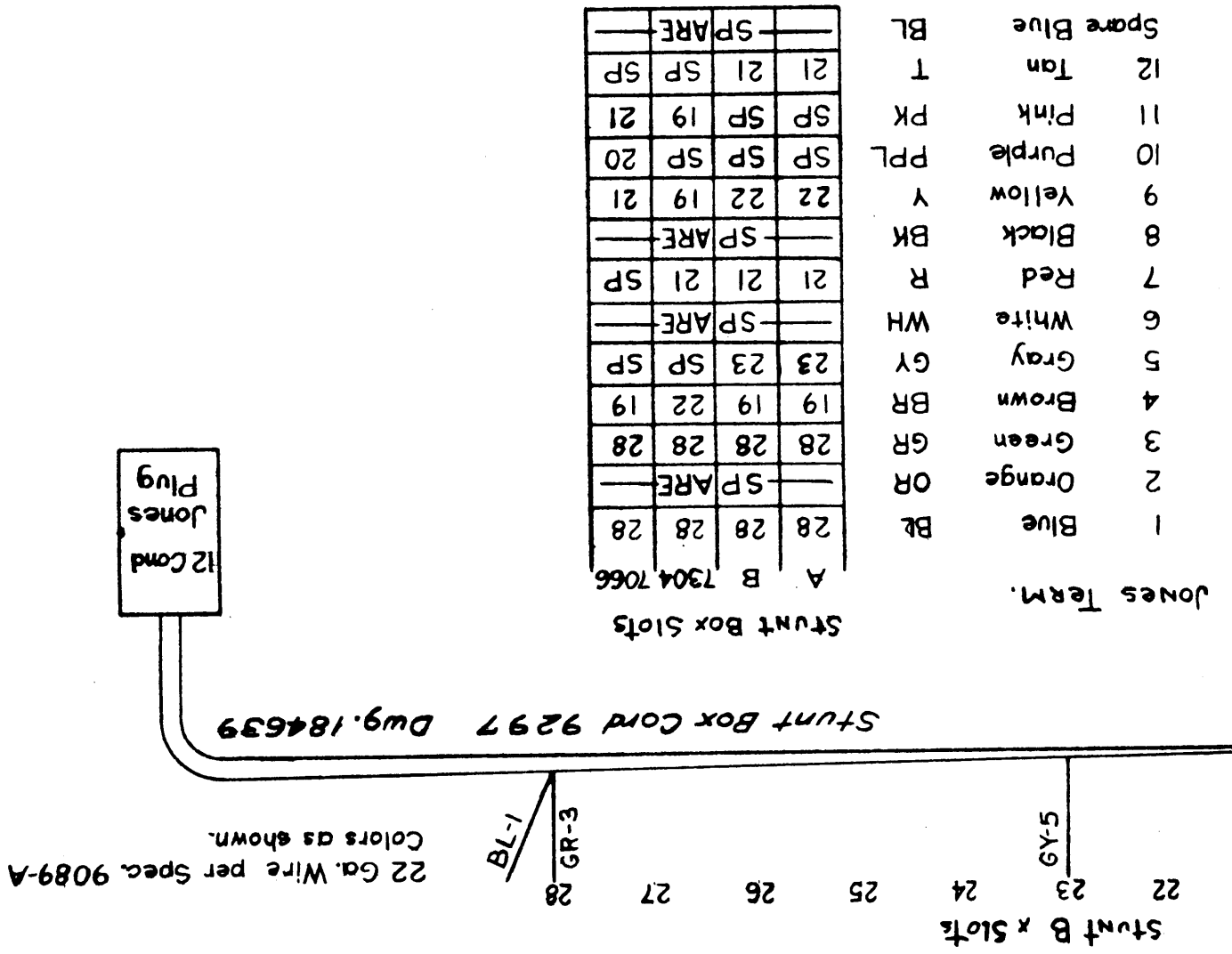
SYMBOLS

- Wiring for the 9100A & the 9100B Wiring Cabinets.
- - - Wiring for only the 9100A Wiring Cabinet.
- XXX Wiring for only the 9100B Wiring Cabinet.

WESTERN UNION		TOLERANCE UNLESS OTHERWISE SPECIFIED		SCALE	
NEXT ASBY		DECIMAL		DRAWN	
MATERIAL		FRACTIONAL		DES. ENG.	
FINISH:		ANGULAR		DR. ENG.	
DRAWN ON		BET. HOLE		ISSUE DATE	
WESTERN UNION SWITCHING SYSTEM 28 TPR		"C" BLOCK CONNECTIONS USING THE 9100 WIRING CAB.		A JAN 7, 1957	
				DRAWING NUMBER 184637 -2	

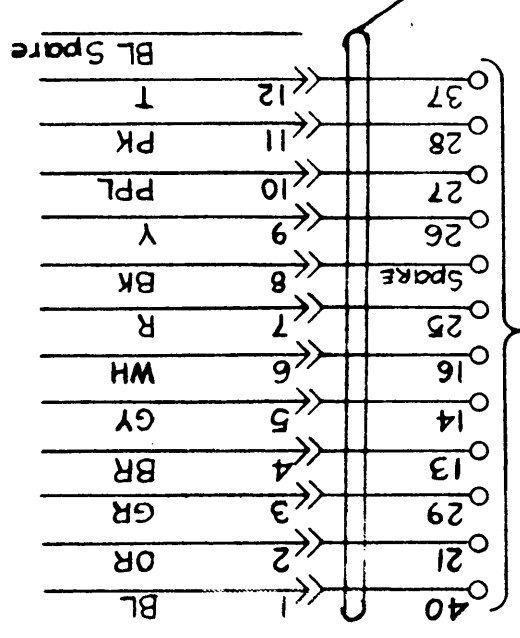
REVISIONS	
B- AUG. 5, 1958	WIRE ADDED TO 'SPACE' CONTACT UNDER 7304 SELECTOR PRER
C- Feb. 6, 1961	Series A "stunt box" CTR changed MLC

- NOTES:
1. When the stunt box cord is used with the 9100 Wiring Cabinet, the cord will plug into the cabinet which will provide the wiring to the "C" Block.
 2. When the stunt box cord is used with the LESU8/198, the cord will plug into Adapter Cord 9298 which will bring the wiring to the "C" Block.
 3. Drawing 184835 covers the manufacturing information on Adapter Cord 9298.
 4. When installing the adapter cord remove wires at "C" Block Terminals 29 and 30 which terminate at E9 and E5 in the LESU and tape. Add a strap between "C" Block Terminals 30 and 37.
 5. The wiring of the stunt box contacts will conform to this drawing or as specified in some special stunt box arrangements.

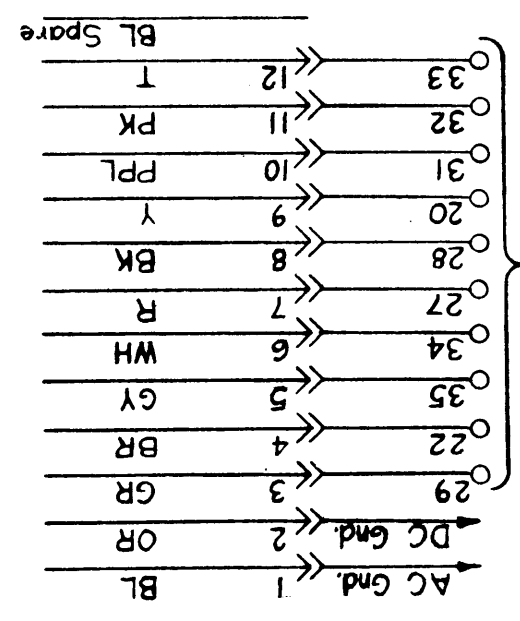


WESTERN UNION		SCALE	DRAWN	DES. ENG.	SP. ENG.	DATE	DRAWING NUMBER
SWITCHING SYSTEM		TOLERANCE UNLESS OTHERWISE SPECIFIED	DECIMAL	FRACTIONAL	ANGULAR	ISSUE	A-FEB.26,1958 184638-7
MODEL 28 TPR		USED ON		MATERIAL:		FINISH:	
STUNT BOX CORD AND ADAPTER CORD		NEXT ASSY		AC		WIRING	
AND ADAPTER CORD		BL		OR		GR	
WIRING		BR		WH		PK	
DATE		Y		PPL		T	
A-FEB.26,1958		BK-8		WH-6		OR-2	
DRAWING NUMBER		BL-Spare		T-12		R-7	
184638-7		PPL-10		PK-11		Y-9	
		BR-4					

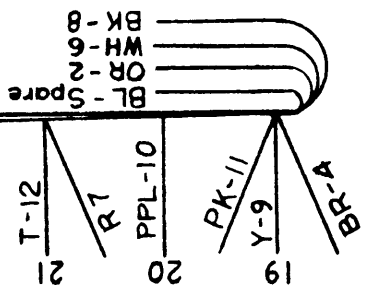
Adapter Cord 9298, DWG. 184835 (See Notes 2, 3 & 4)



"C" Term (8/198)

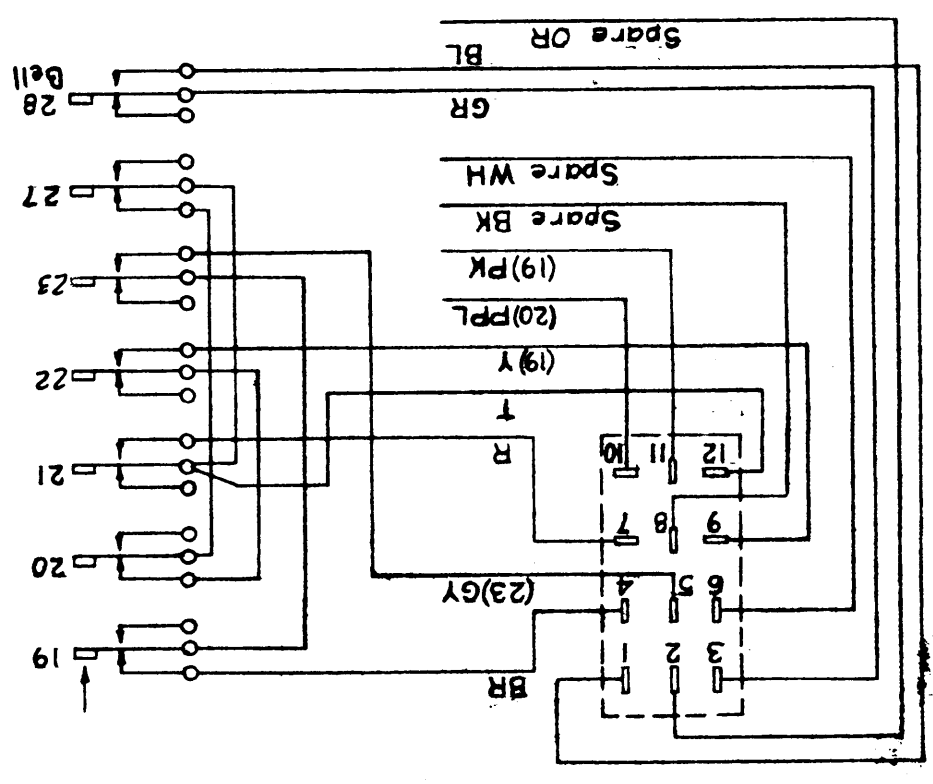


"C" Term (9100) (Wiring Cab.)

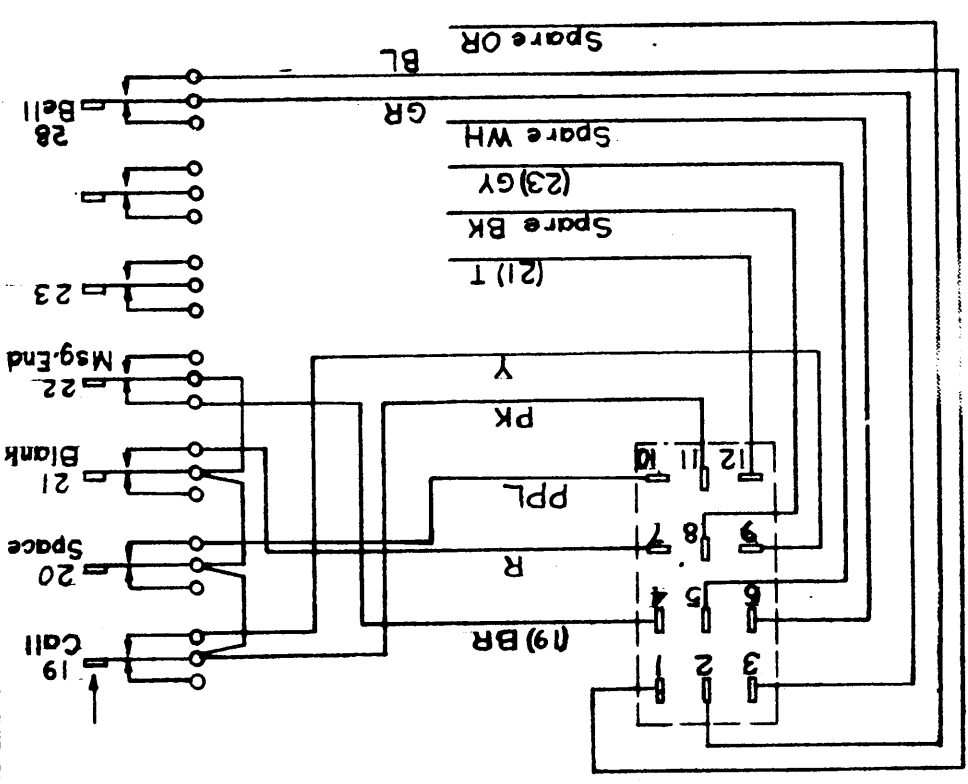


- 5. T
- 4. M
- 3. D
- 2. M
- 1. Wh

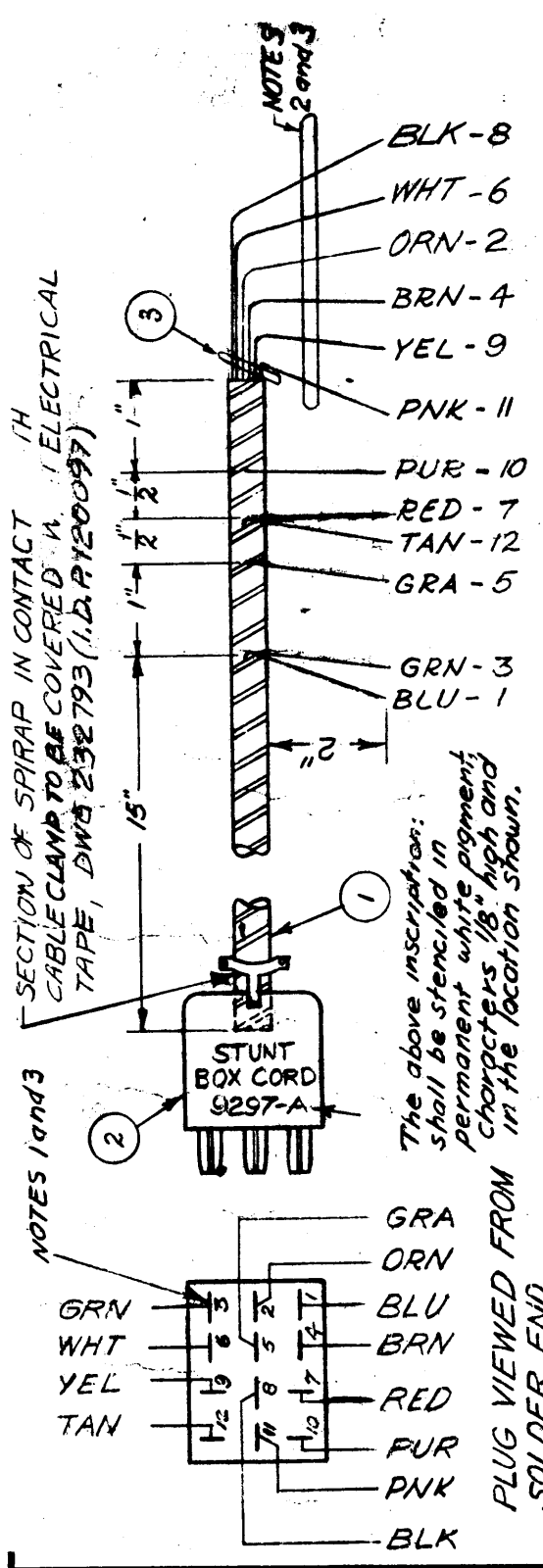
Spares
12
11
10
9
8
7
6
5
4
3
2
1
Jones



Series A Stunt Box Selector



7304 Selector



- MATERIAL:**
- 1. 18" SPIRAL AMP INC. (I.D.P. 270264)
 - 2. 1 PLUG, #P-312-CCT, H.B. JONES DIV., CINCH MFG. CORP. (I.D.P. 219642)
 - 3. WIRE, 22 AWG, FLEXIBLE INSTRUMENT (SINGLE CONDUCTOR) SPECS. 7371 (SEE COLOR CODE FOR I.D.P. NOS.)

I.D.P. NOS. COLOR CODE

(308874)	BLACK	BLK
(308890)	BROWN	BRN
(308965)	RED	RED
(308932)	ORANGE	ORN
(308999)	YELLOW	YEL
(308924)	GREEN	GRN
(308882)	BLUE	BLU
(308957)	PURPLE	PUR
(308916)	GRAY	GRA
(308981)	WHITE	WHT
(308940)	PINK	PNK
(308973)	TAN	TAN

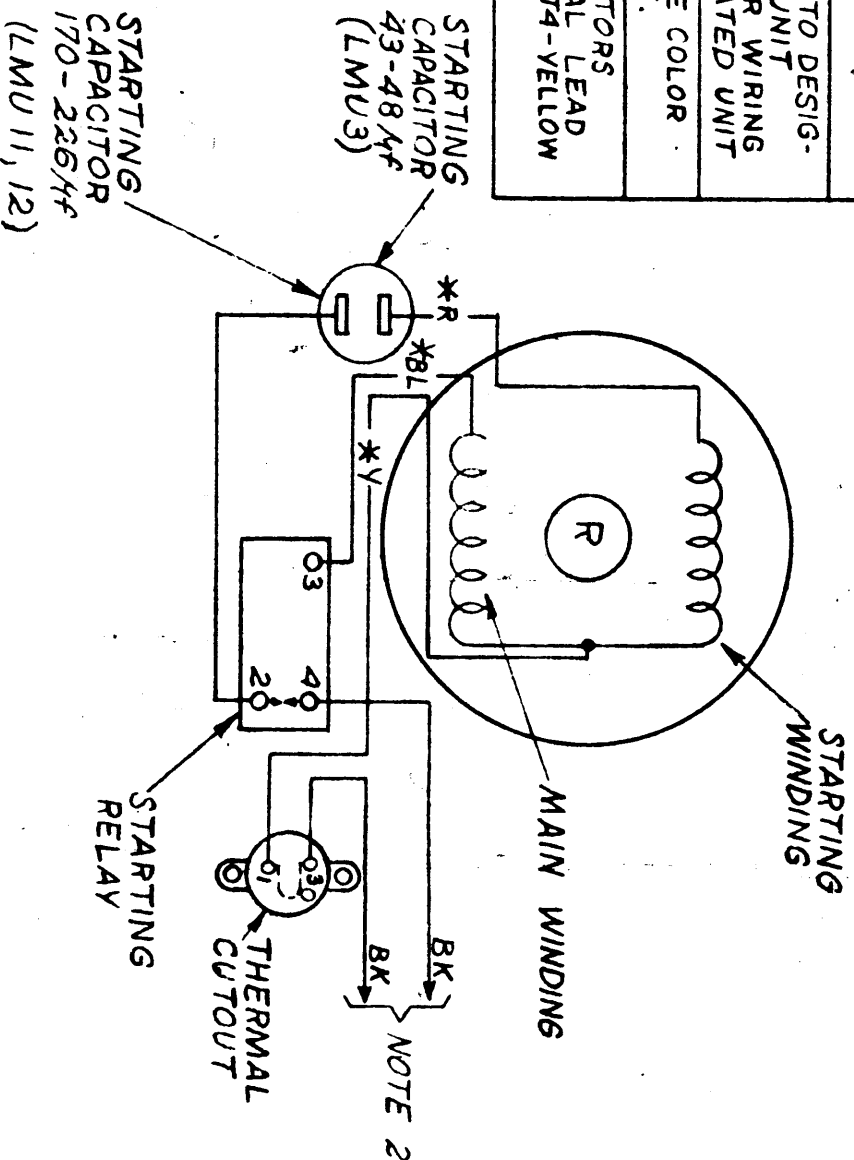
- NOTES:**
1. SOLDER WIRE TO TERMINALS USING TIN-LEAD WIRE
 2. SOLDER, ROSIN-CORE - SPECS 1635 (I.D.P. 269092)
 3. THESE WIRES ARE SPREAD OUT ONLY FOR CLARITY, (LENGTH IS SAME FOR ALL)
 4. SKIN EACH CONDUCTOR 1/4" TWIST STRANDS AND TIN ENDS.
 5. ALL DIMENSIONS TO BE APPROXIMATE.

* TO BE FURNISHED BY THE TELEGRAPH CO.

REVISIONS	
AUG. 25, 1959.	REDRAWN.
	INSCRIPTION
	W. S. ARS
D-NOV. 30, 1960	
I.D.P. NOS. NOTES	
1, 3, 4 ADDED.	
ARS WCH	

NEXT ASSY	USED ON	TOLERANCE UNLESS OTHERWISE SPECIFIED	SCALE	WESTERN UN.		
MATERIAL:		DECIMAL	DRAWN	STUNT BOX CORD 9297- (I.D.P. 170324)		
		FRACTIONAL	DES. ENG.			
		ANGULAR	SP. ENG.			
FINISH:		BET. HOLES	APPD.	ISSUE	DATE	DRAWING NUMBER
			AW	A		184639 -1

NOTES	
1a	SYNCHRONOUS MOTOR OPERATES ON REGULATED 60~ (±1%) A.C. ONLY.
1b	ASSOCIATED LESU OR WIRING CABT. MUST BE EQUIPPED WITH CAPACITOR RESISTOR ASSEMBLY FOR D.C. OPERATION OF GOVERNED MOTORS.
2	CONNECT EITHER WIRE TO DESIGNATED TERMINALS OF UNIT TERMINAL BLOCK, PER WIRING DIAGRAM OF ASSOCIATED UNIT
3	MOTOR LEADS OF SAME COLOR ARE INTERCHANGEABLE.
*	COLOR CODE FOR MOTORS FURNISHED WITH METAL LEAD MARKERS: T1-BLUE, T4-YELLOW T8-RED



STARTING CAPACITOR
43-48 μF
(LMU 3)

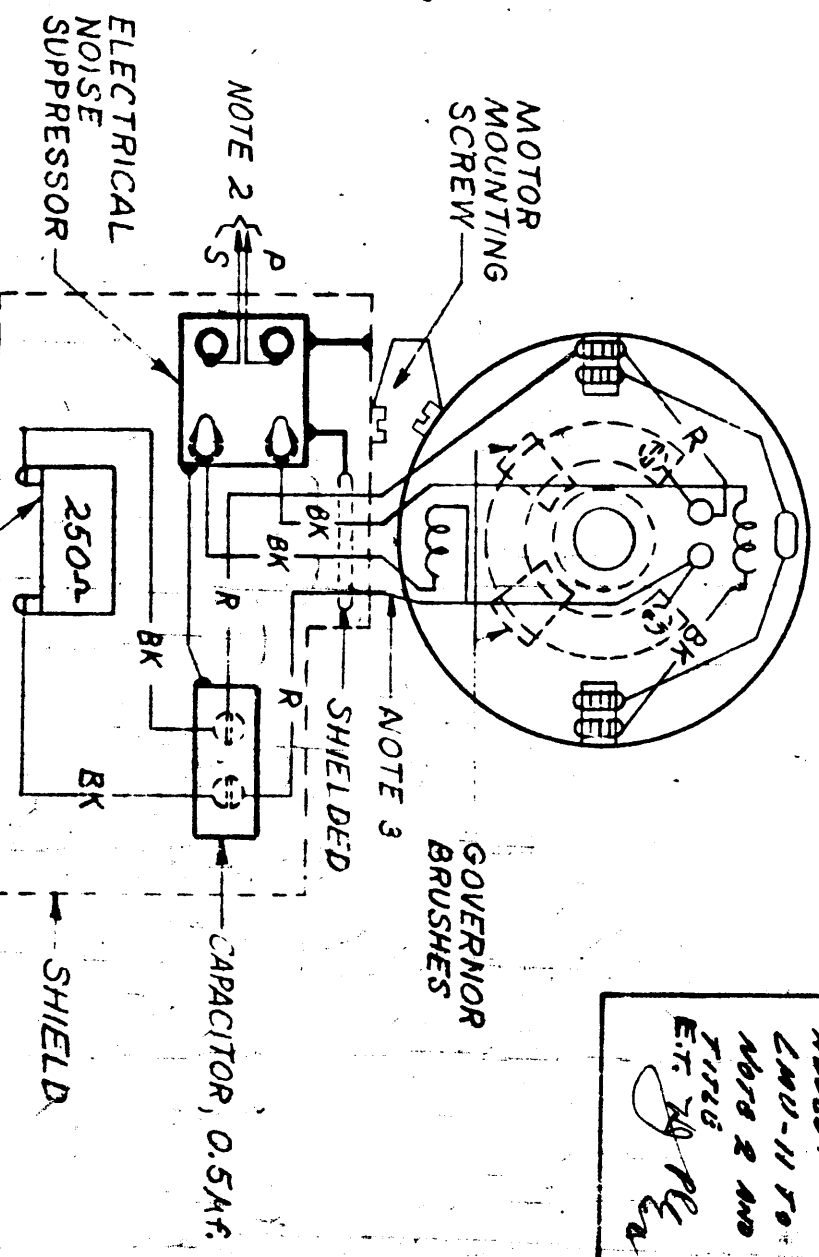
STARTING RELAY

THERMAL CUTOUT

NOTE 2

LMU 3, LMU 11, LMU 12 MOTOR UNIT (SYNCHRONOUS)

FOR USE WITH 115 V. A.C. 60~ POWER SUPPLY.
(NOTE 1a)



RESISTOR (NOTE 1) THIS CHANGED TO TWO 500 Ω RESISTORS IN PARALLEL IN LATER MODELS.

LMU 4 OR LMU 14 MOTOR UNIT (UNIVERSAL SERIES 60V)

WITH RADIO FREQUENCY SUPPRESSORS
FOR USE WITH EITHER 115 V. A.C. 50-60~ OR 115 V. D.C. POWER SUPPLY (NOTE 1b)

REVISIONS
B-MAY 14, 1959
ADDED: LMU-14 NOTES 1 + 2 CK. TJP NRE
C. J. J. 1959 ADDED: LMU-11 TO MOTOR 2 AND FILED E.T. J.P.C.

NOTE 2

FOR M-28 TELEPRINTER

LMU-3 (A.C. OPRN.)

LMU-4 (D.C. OPRN.)

FOR M-28 A.S.R. SET

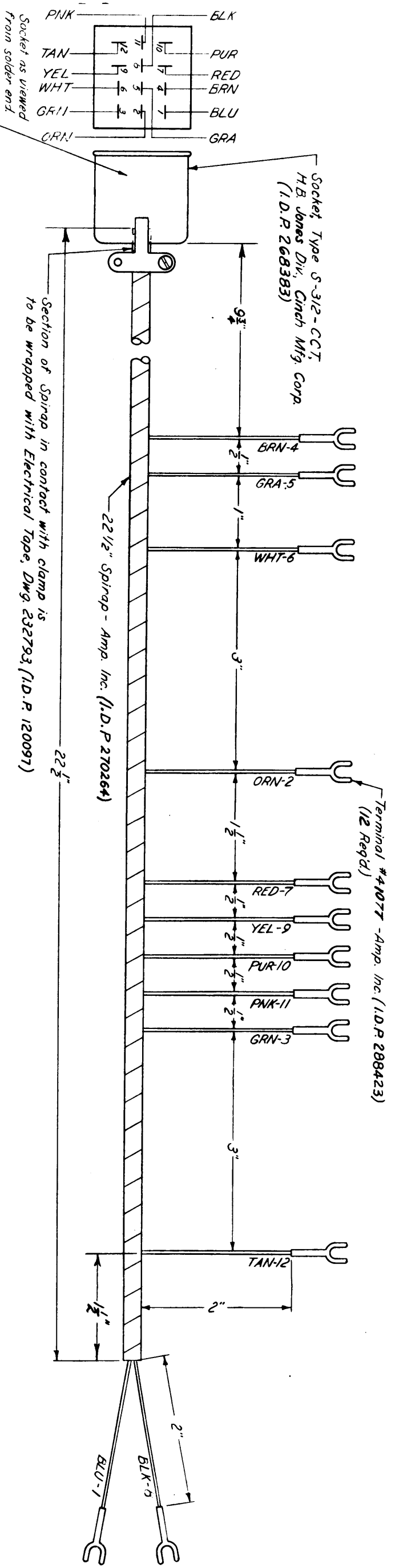
LMU-12 (A.C. OPRN.)

LMU-14 (D.C. OPRN.)

FOR M-28 CTR. STAND. (A.S.R.)

THIS IS A PARTIAL COPY OF
T.T. DRAWING 2900 WD

TOLERANCE UNLESS OTHERWISE SPECIFIED		SCALE		WESTERN UNION	
NEXT ASSY	USED N	DECIMAL	SCALE	SWITCHING SYSTEMS	
MATERIAL:		TRACIIONAL	DRAWN	M-28 EQUIPMENT	
		ANGULAR	SP. ENG.	MOTOR UNITS LMU-2, 4, 11, 12, 14	
FINISH:		BET. HOLES	ISSUE	WIRING	
			A-FEB. 17, 1959	DRAWN NUMBER	
			184750	-2	



The inscription:
 ADAPTER CORD
 9298-A
 shall be stenciled in permanent white pigment, characters 1/8" high and in the location shown.

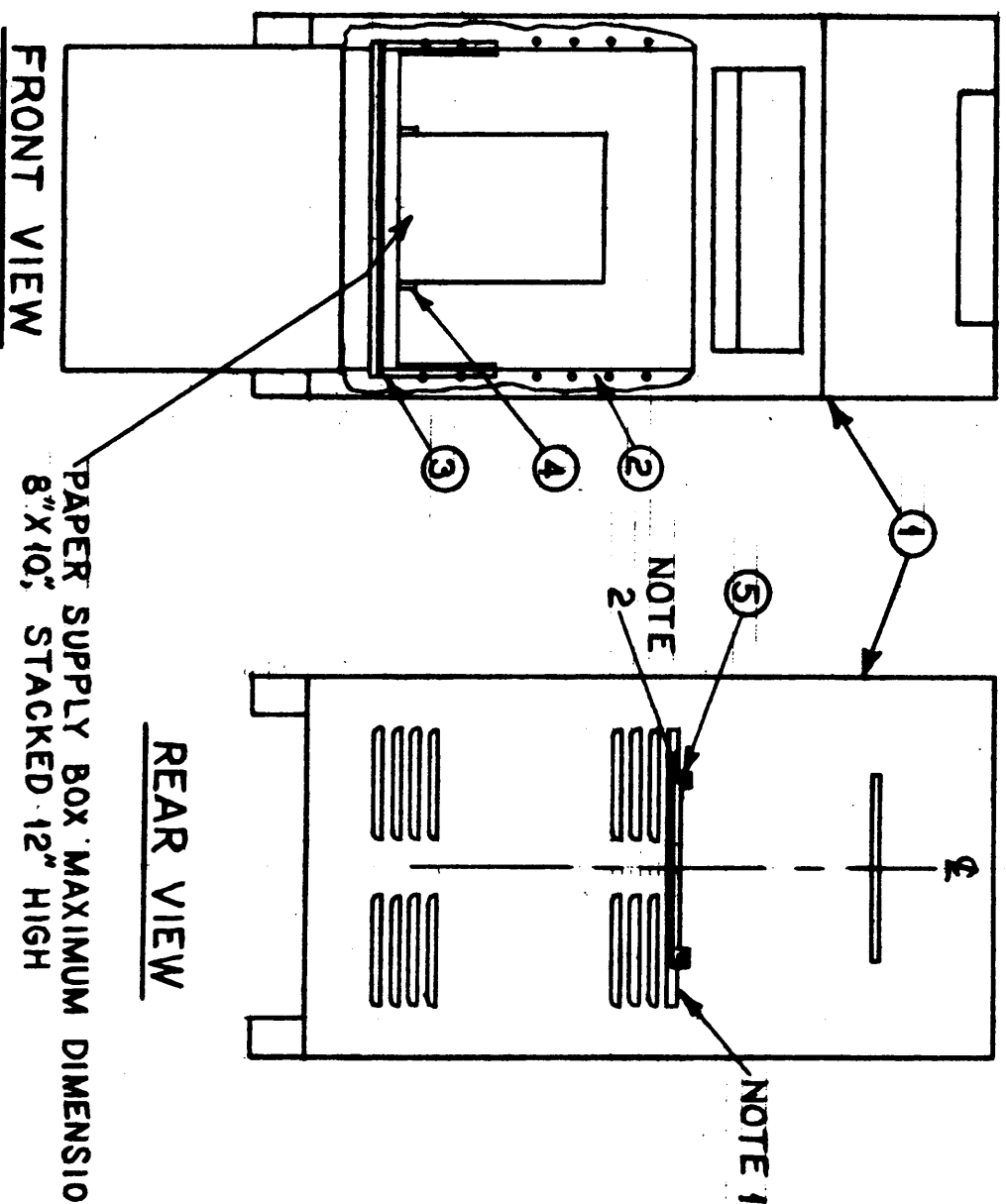
NOTES

- 1- All wires to be #22 AWG Flexible Instrument (Single Conductor)
- 2- All soldering to be done using Specs. 7371. (To be furnished by The Telegraph Co.) (See Color Code for I.D.P. Nos.). (To be furnished by the Polygraph Co.)
- 3- Dimensions of Leads spacing are approximate.

COLOR CODE	LDP Nos.
BLK	Black (308874)
BRN	Brown (308890)
RED	Red (308965)
ORN	Orange (308932)
YEL	Yellow (308999)
GRN	Green (308924)
BLU	Blue (308882)
PUR	Purple (308957)
GRA	Gray (308916)
WHT	White (308981)
PNK	Pink (308940)
TAN	Tan (308973)

REVISIONS
D-SEPT 18, 1969 RE-DRAWN WAS 1575 E. AS per [initials]
E-NOV 11, 1960 I.D.P. Nos. added GWS WEM

WESTERN UNION	
ADAPTER CORD 9298-A (I.D.P. 170340)	
MATERIAL:	USED ON:
FINISH:	
TOLERANCE UNLESS OTHERWISE SPECIFIED:	SCALE: 1/8" = 1"
DECIMAL:	DRAWN: LHS
FRACTIONAL:	DES. ENGR. ARS
ANGULAR:	SP. ENGR. [initials]
REF. NOISE:	DATE: APR 30, 1962
	DRAWING NUMBER: 154-835-3



FRONT VIEW

REAR VIEW

PAPER SUPPLY BOX MAXIMUM DIMENSION OF PAPER USED
8" X 10"; STACKED 12" HIGH

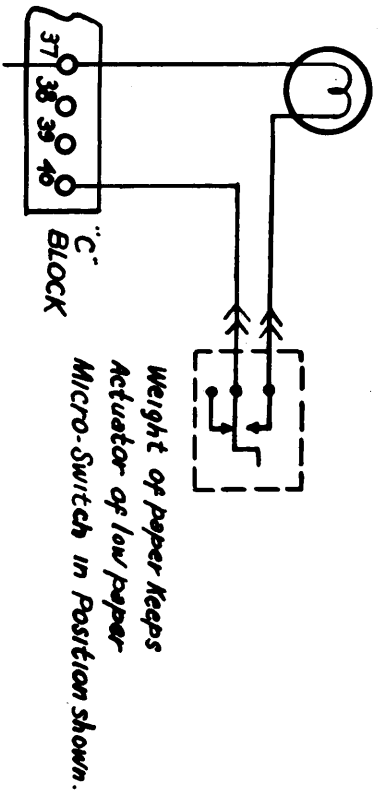
- NOTES:**
1. At topmost louvers, cut Slot 14-3/4" x 1/2", smooth all edges.
 2. Drill holes as shown on rear wall of console using Paper Guide 212106 as template. Use #30 Drill (.128").

MATERIALS NEEDED:

- 1 Console, Model 28 Teleprinter, Floor Type; 1 Req'd.
- 2 Set of Parts 152909, Teletype Specs. 5730-S mounted on Item 1; 1 Req'd.
- 3 Shelf, Paper Supply, Dwg. 234348-1, mounted on Item 2 with four #12-24 x 5/8" Long R.H.M.S. Screws; 1 Req'd.
- 4 Bracket, Paper Supply Adjusting 212104, Dwg. 234347-1, fastened to Item 3 with two #8-32 Hex Steel Nuts and two #8 Flat Washers; 2 Req'd.
- 5 Guide, Console Paper 212106, Dwg. 234349-1, fastened to Item 1 with two #4-40 x 1/2" R.H.M.S. Screws, two #4 Flat Washers and two #4-40 Hex Nuts; 1 Req'd.

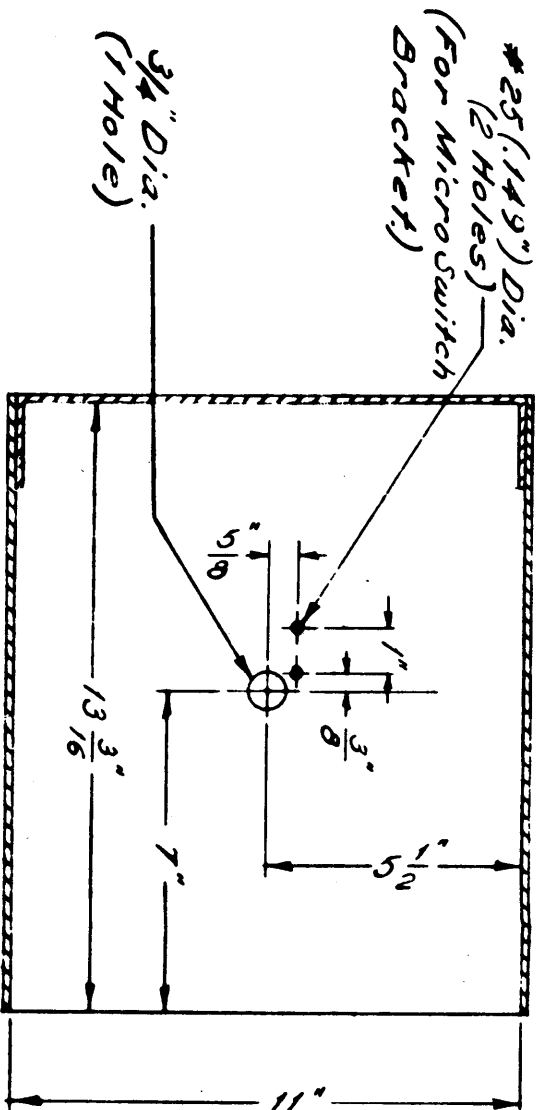
A-MAR. 51958	
DRAWN	GVC
TRACED	
CHECKED	
ENGR'D	AAO
APPROVED	<i>[Signature]</i>
SCALE:	
WESTERN UNION	
SWITCHING SYSTEM	
MODEL 28PTR	
FAN FOLD PAPER SHELF FRONT LOADING	
INSTALLATION & PARTS	

WIRING



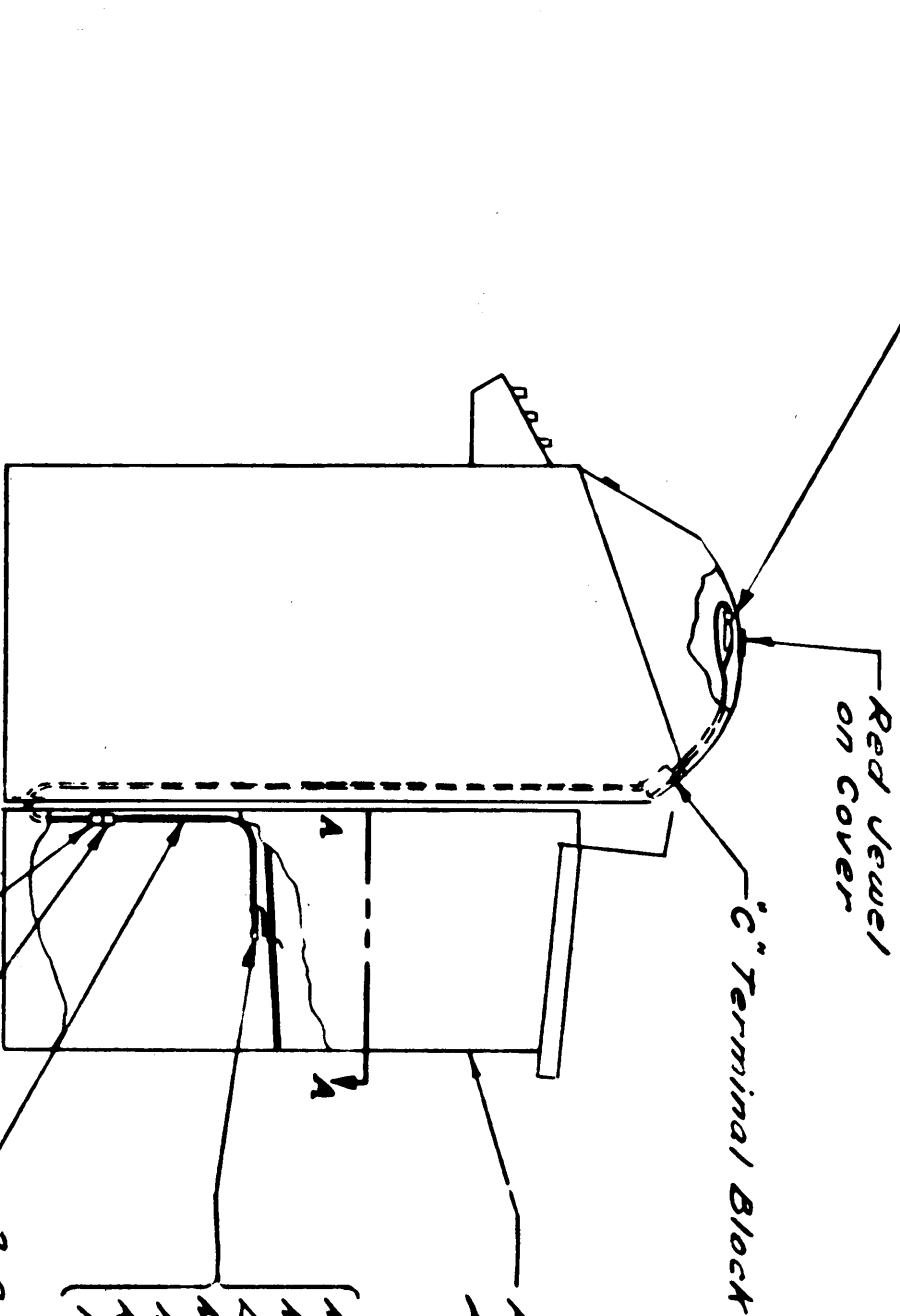
Paper Supply Box and Form Accumulating Shelf #152349AB

Detail for Drillings.



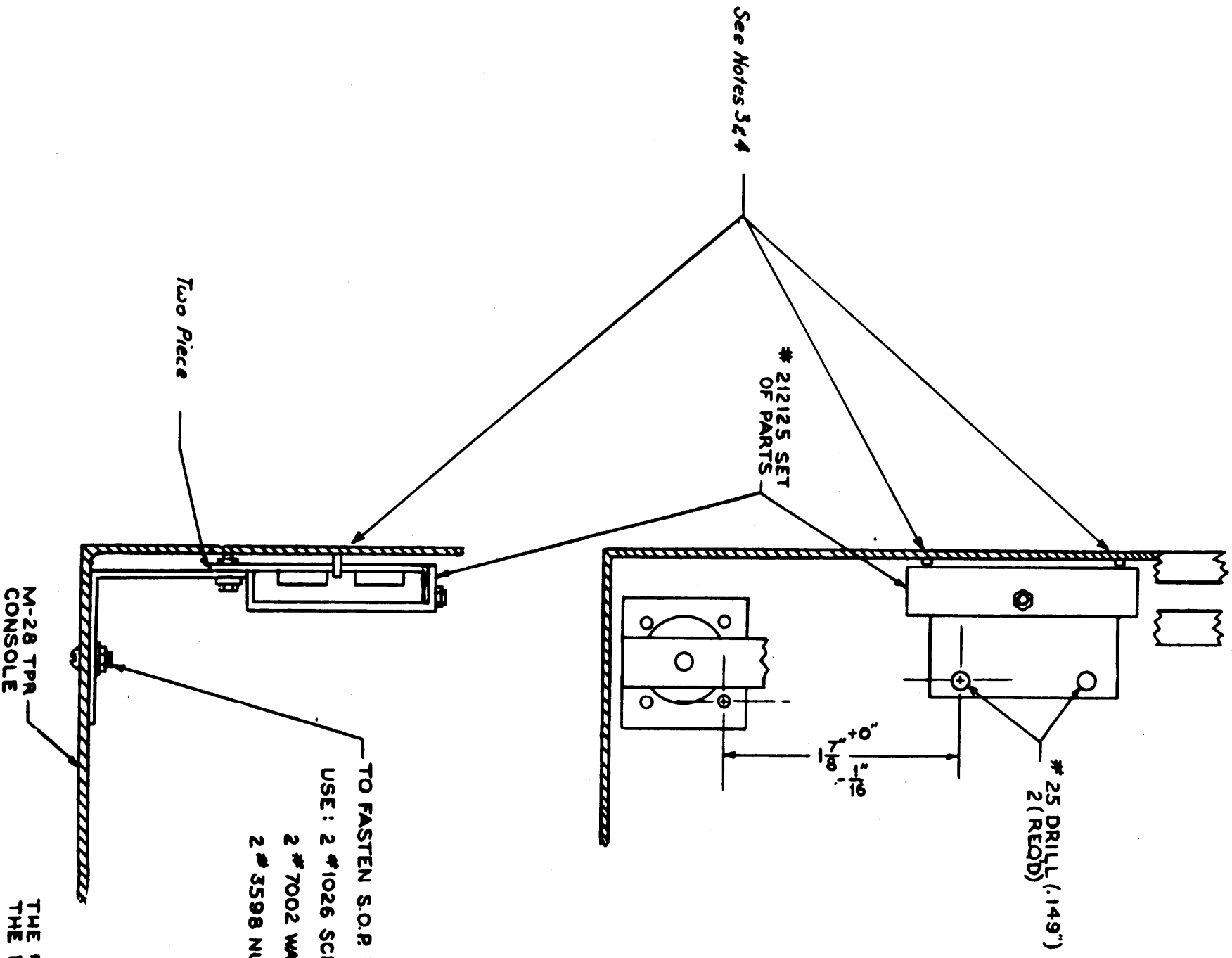
SECTION A-A
Scale: $\frac{1}{4} = 1"$

Socket, Dial Light Co, #12-271-6" (151540)
Mount to Cover using one #6-32 x $\frac{1}{8}$ " RWSMS, lockwasher & Nut. (9797), (2191), (20362)
Lamp, Incandescent, 6 Watt, 125 V.D.C. Bayonet Base, Bulb Size S-6. (11890)



FOR BILL OF MATERIAL - DWG. 20770A

B-OCT 4, 1961	S.O.P NUMBER ADDED.	TITLE BOX CHANGED	CK BY: PRC
A-FEB 21, 1958	DRAWING NUMBER 184837	-2	
WESTERN UNION SWITCHING SYSTEM			
MODEL 28 TPR			
LOW RANGE INDICATOR S.O.P. 28240			
WIRING AND MOUNTING DETAILS			
SCALE: $\frac{1}{16} = 1"$			
DRAWN: _____			
TRACED: _____			
CHECKED: _____			
EMBED: _____			
APPROVED: _____			



NOTES:

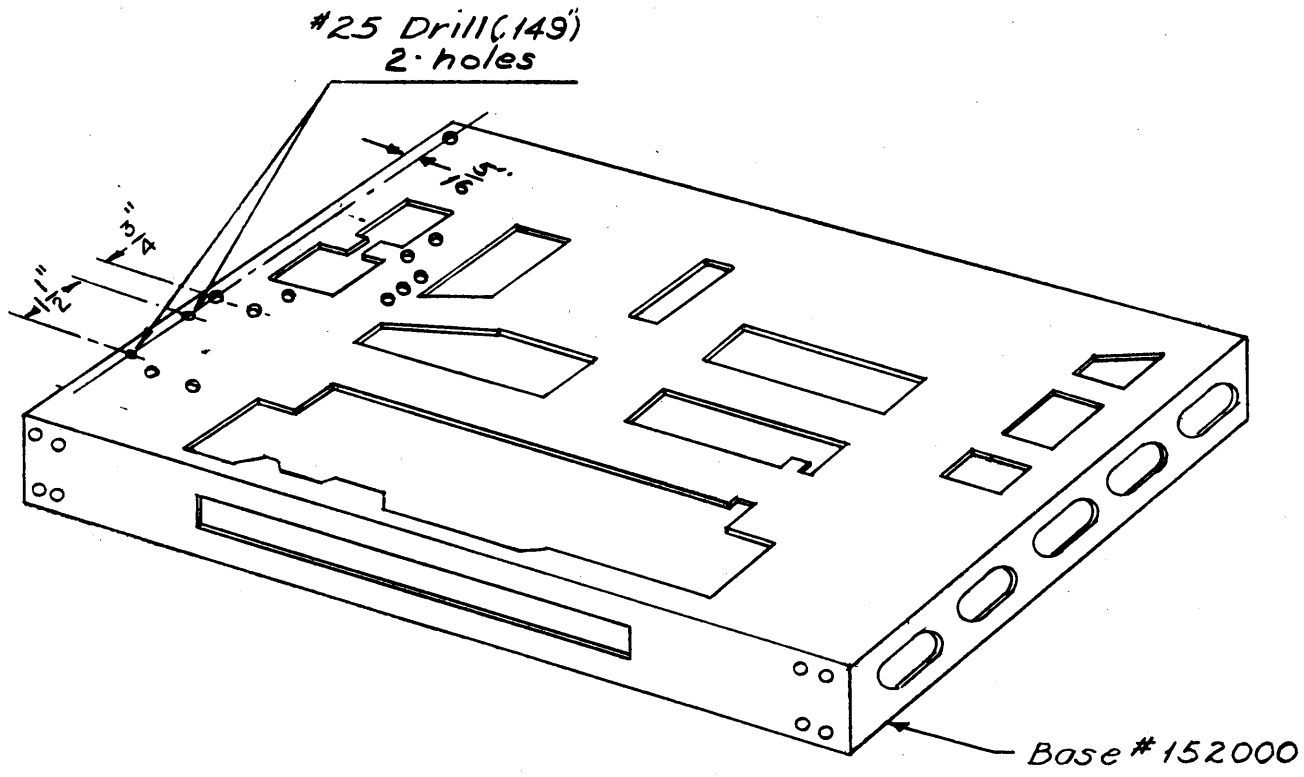
1. Set of Parts 212125 can be installed on the Automatic Send Receive Set.
2. When Set of Parts 212125 is installed on the right hand side of the console, teleprinter or ASR Set, it should be assembled so that the side of Insulator 212125 with numbers 41-80 is facing out, i.e. visible. When installed on the left side of the console, numbers 81-120 on the insulator should be facing out.
3. On Newer Consoles #6-40 Screw & Nut Used for Mounting Set of Parts 212125 To Side of Console. For This Type Installation The Bottom of Bracket 212128 shall Not Be Used.
4. ON OLDER CONSOLES BRACKET # 212128 SHOULD REST AGAINST WALL OF CONSOLE. USE IT AS A TEMPLATE TO LOCATE HOLES TO BE DRILLED.

TO FASTEN S.O.P # 212125 TO M-28 TPR CONSOLE OR RSR CONSOLE
 USE: 2 # 1026 SCREWS (6-40 x 3/8)
 2 # 7002 WASHER (#6)
 2 # 3598 NUTS (6-40)

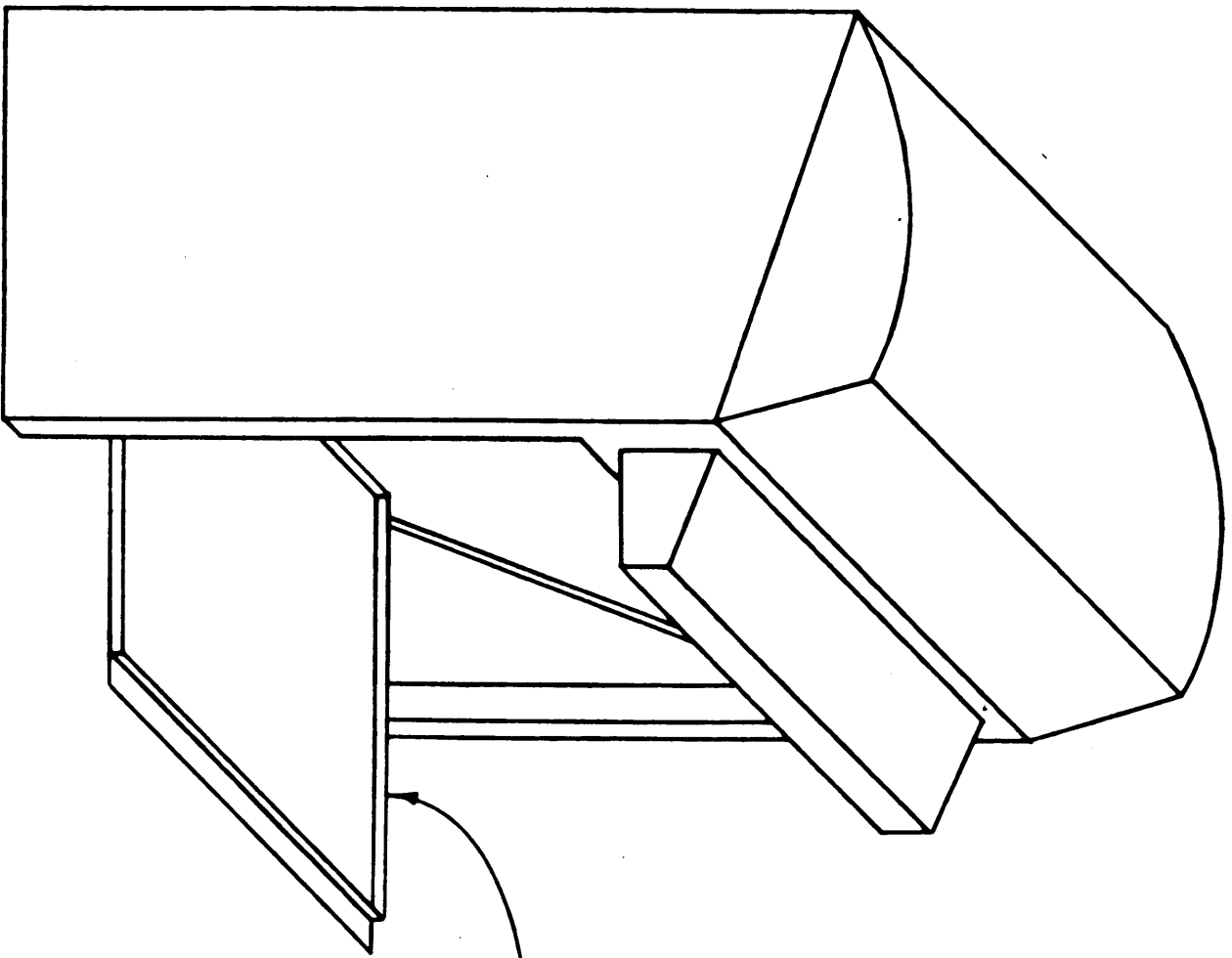
THE # 212125, S.O.P CAN BE MOUNTED ON THE RIGHT OR LEFT SIDE OF THE CONSOLE

C-OCT. 6, 1961, NOTES 3 & 4 ADDED BRACKET 212128 WAS ONE PIECE	
B-JAN 30, 1958	
NOTES ADDED	
A-MAR 12, 1958	
DRAWING NUMBER	184836
	-2
WESTERN UNION	
SWITCHING SYSTEM	
M-28 TPR	
M-28 RSR SET	
AUXILIARY	
"C" BLOCK	
SET OF PARTS	# 212125
INSTALLATION	
SCALE	
DRAWN	L.M.
CHECKED	
ENGRD	A.A.O.
APPROVED	

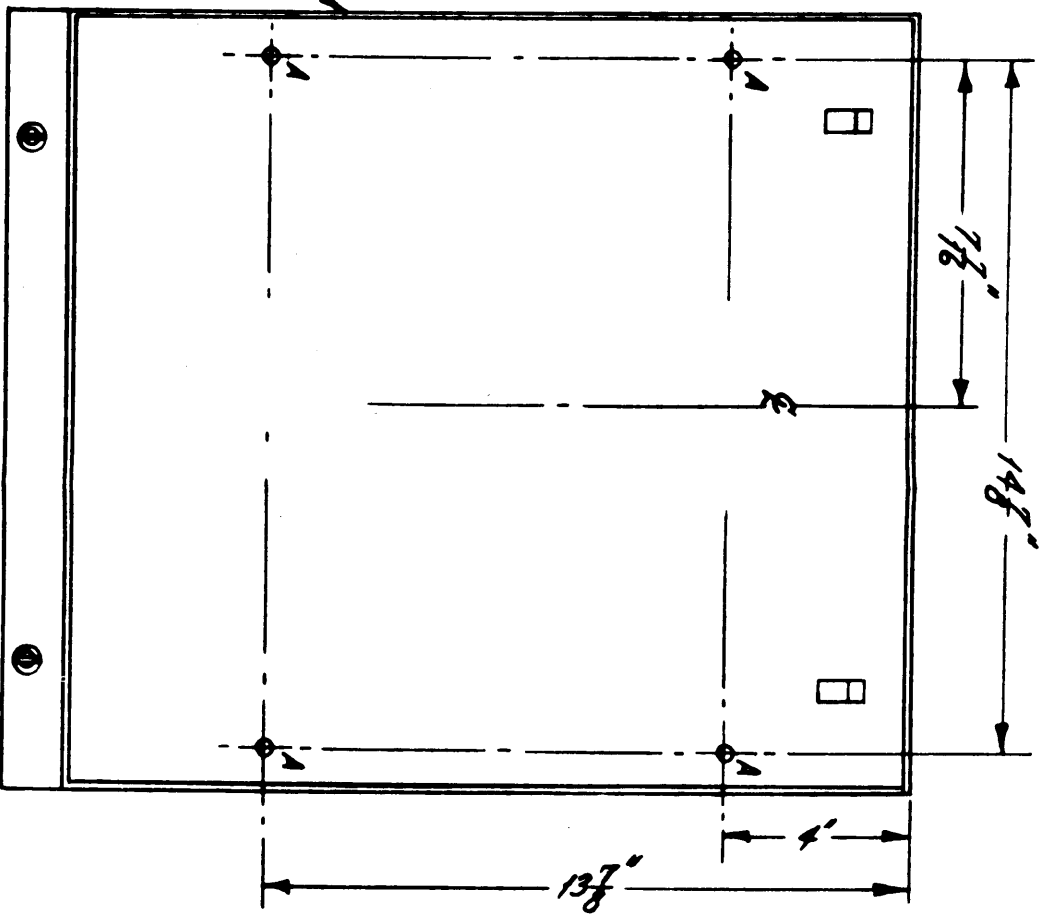
REVISIONS
B-



		TOLERANCE UNLESS OTHERWISE SPECIFIED	SCALE	WESTERN UNION	
NEXT ASS'Y	USED ON	DECIMAL	DRAWN <i>HJW</i>	SWITCHING SYSTEM MODEL 28 TPR MODIFICATIONS OF KEYBOARD BASE FOR ADDITION OF "FK" CONNECTOR	
MATERIAL:		FRACTIONAL	DES. ENG. <i>CB</i>		
FINISH:		ANGULAR	SP. ENG. <i>AK</i>		
		BET. HOLES	APPD. <i>AK</i>			ISSUE DATE A Mar. 7, 1958	DRAWING NUMBER 184839 -1



CONSOLE DOOR



A-#7 DRILL (.177" DIA.) 4 HOLES
 MOUNT TRANSMITTING PANEL 9102-A TO
 INSIDE OF CONSOLE DOOR WITH 4 #10-32 X 7/8"
 R.H.S.M.S., NUT AND LOCKWASHER.
 MOUNT PANEL WITH RECTIFIERS TOWARD THE FLOOR.
 HEADS OF MACHINE SCREWS TO BE ON OUTSIDE
 OF CONSOLE DOOR.

TYPE 28 TELEPRINTER
 MODEL CAC-204-AB-222

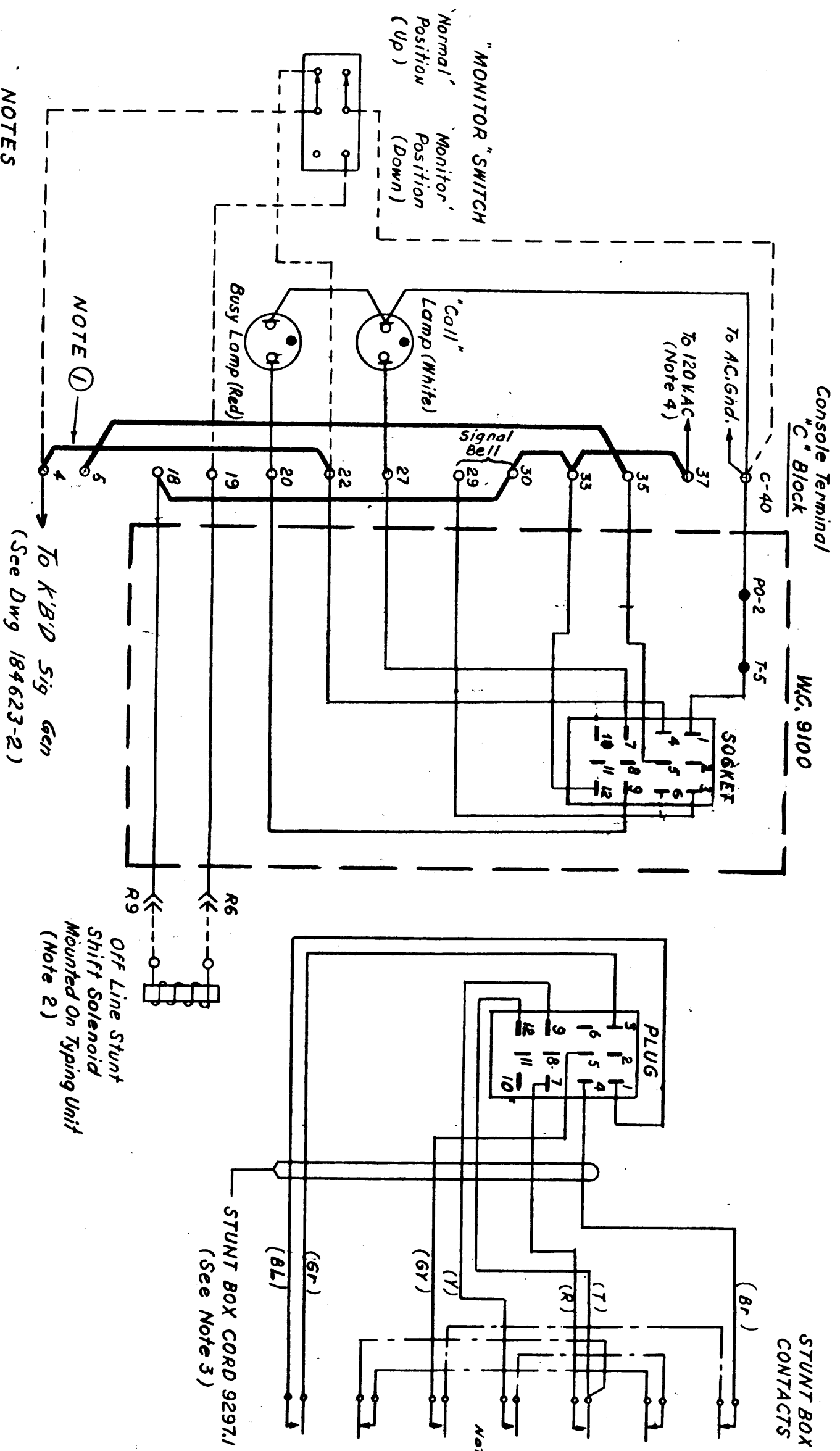
A-FEB 26, 1958
 DRAWING NUMBER
 184862 -2
 WESTERN UNION
 SWITCHING
 SYSTEM
 MODEL 28
 TPR
 TRANSMITTING
 PANEL
 9102-A
 INSTALLATION

SCALE:

DRAWN: FA
 TRACED: [initials]
 CHECKED: KHS
 ENGR'D: [initials]
 APPR. VED: [initials]

**SERIES "A" & SERIES "B" STUNT BOX WAY STATION SELECTOR
SEND AND RECEIVE TPR WITH WIRING CABINET 9100
AND MONITOR SWITCH OPTION**

STUNT BOX
SLOTS



19	"SERIES-A"	19	"SERIES-B"
20		20	
21		21	
22		22	"CALL"
25		22	
23		23	"CUT-OFF"
26		23	
27		27	"SPACE"
28		28	
28		28	"BELL"

NOTES

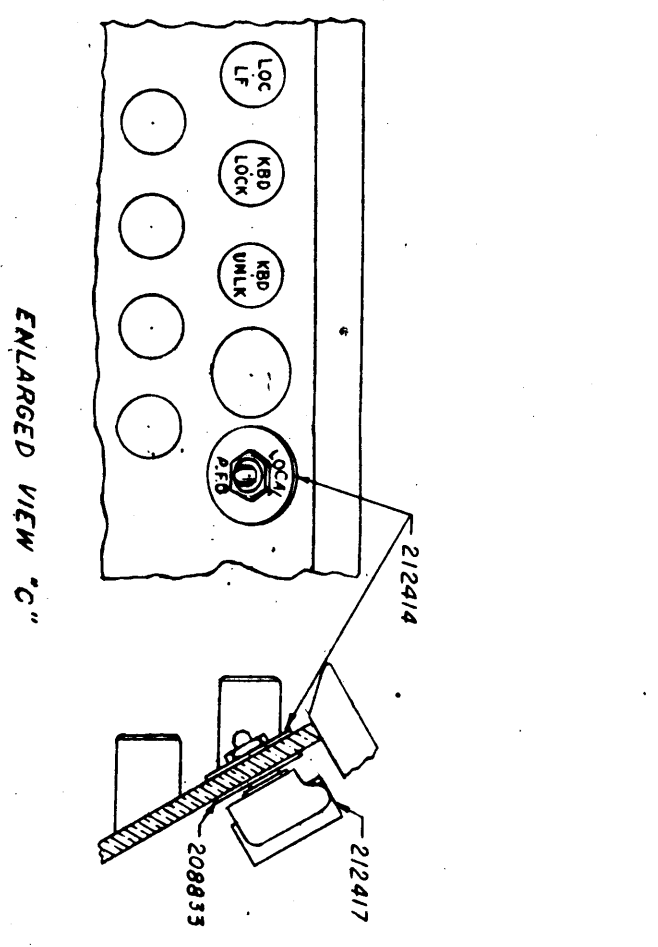
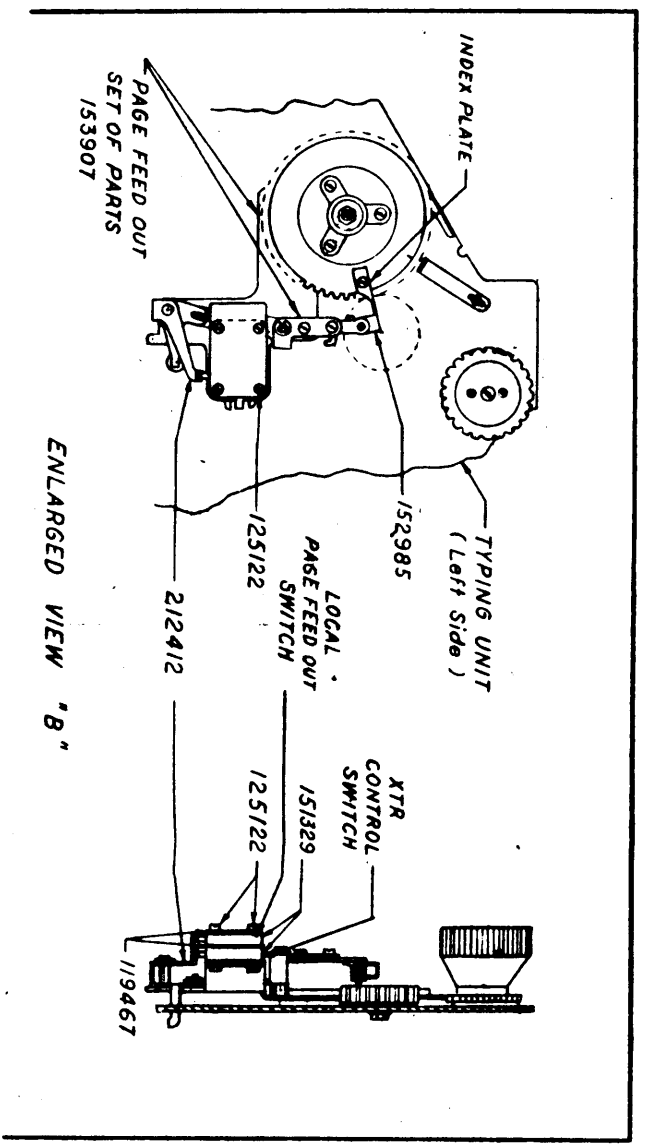
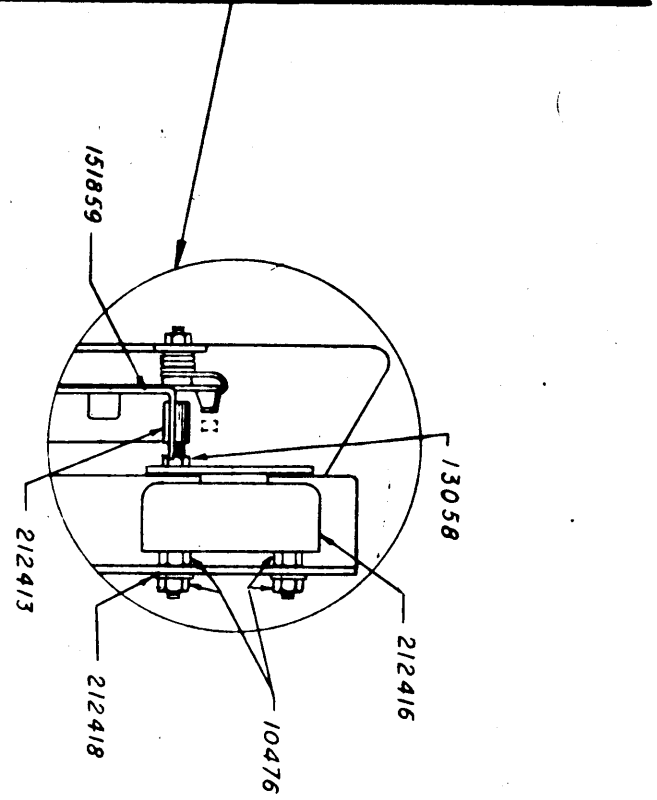
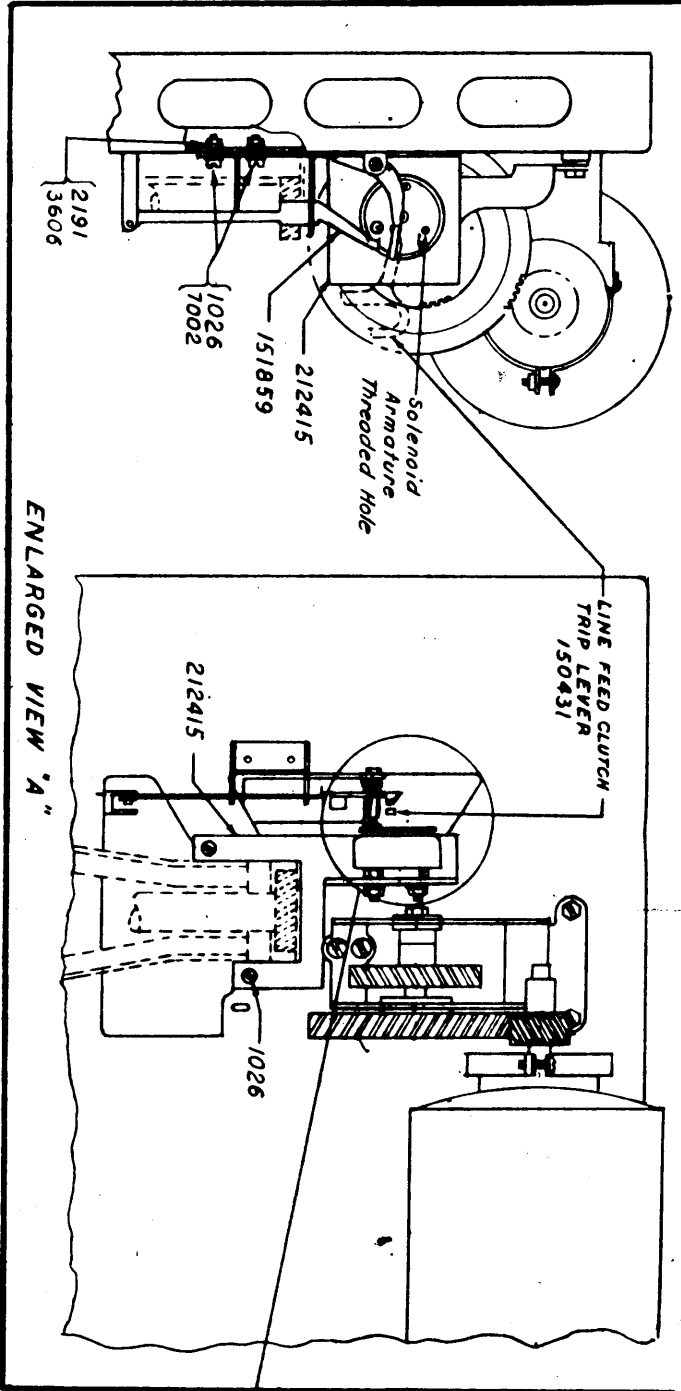
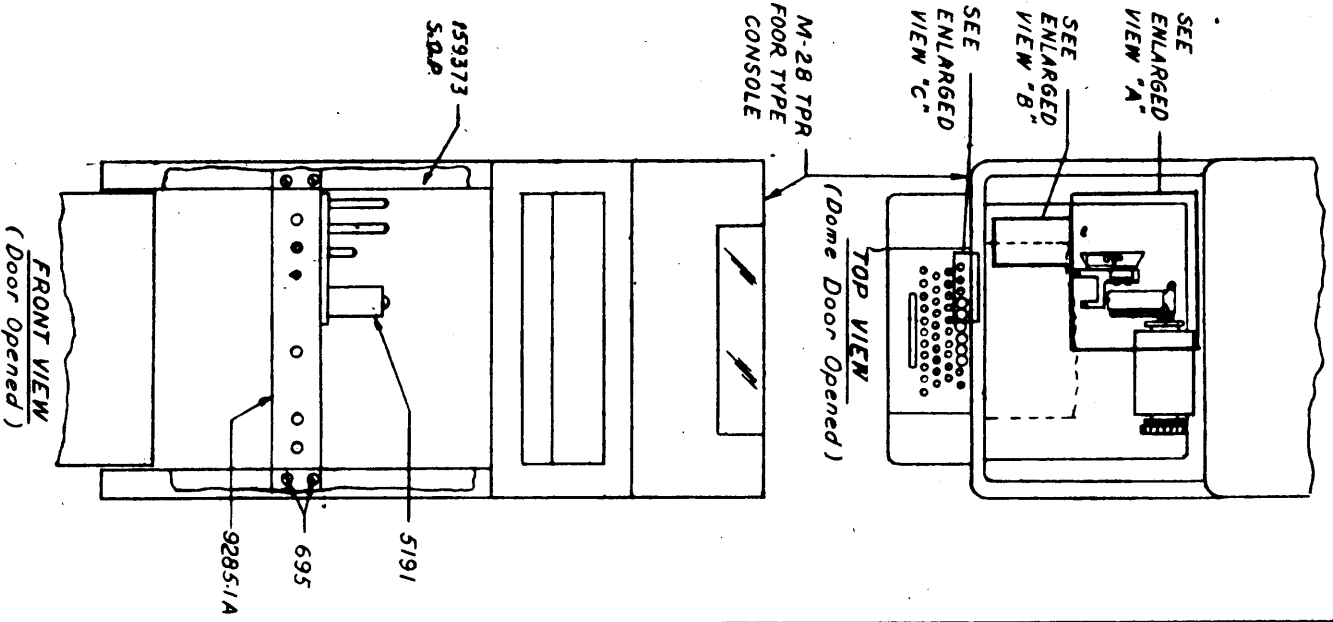
- 1 Remove This Strap When "Monitor" Switch Option Is Used.
- 2 In This Application This Solenoid Is Used Only When A "Monitor" Switch Is Specified.
- 3 Only Wires Being Used For This Application Are Shown Here. Spare Wires Are To Be Taped And Fastened To Cord. (See Dwg 184638 of Specs. 11753)
- 4 See Dwg 184623 For Schematic of Selector.
- 5 Bill of Material Dwg 175940 or 175941
- 6 Stunt Box Arrangment Lwgs. 175756 or 175757
- 7 Install Lamps & Monitor Switch per Dwg. 175755.
8. S.B. slot 22 & 23 are used for "AGL" arrangement.

KEY

- Strapping between Stunt Box Contacts
 - - - Wiring to be added when optional "Monitor" Switch is specified
 - Straps on "C" Block on Console
9. The Monitor Switch Option is to be installed at the Control Station. The K'BD Unblind Switch shall be installed at all Outstations. See Dwg. 509836 For Wiring.

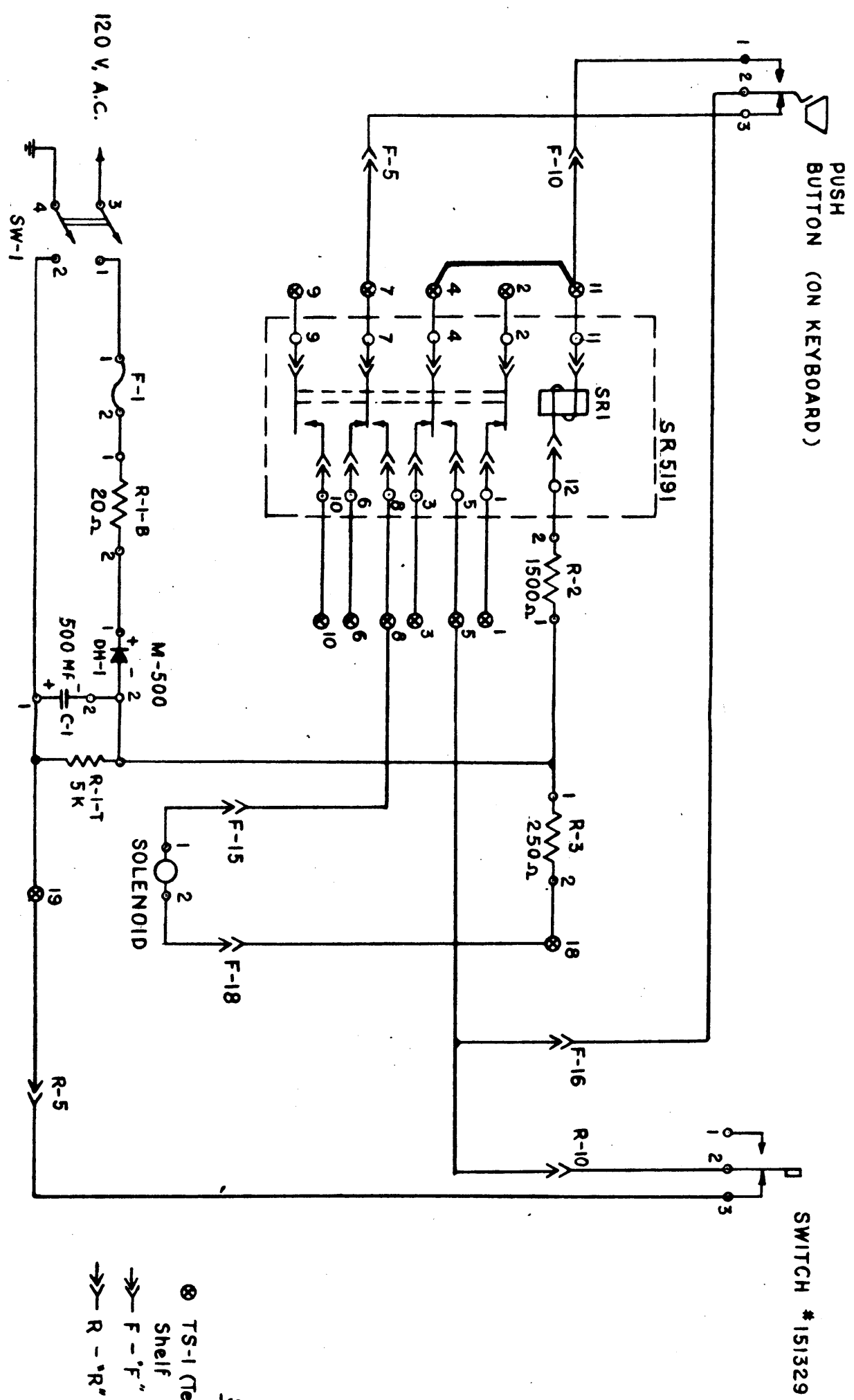
C-22 Oct 64	B-JAN 10, 1961
NOTE 9 & TYPE ADDED	DWG Revised
SCALE: 1/8"	A-MAY 5 1958
DRAWING NUMBER 187972 -2	WESTERN UNION
SWITCHING SYSTEM	
"SERIES A" AND "SERIES B" STUNT BOX WAY STATION SELECTOR	
SEND&REC TPR WIRING	
WITH W.C. 9100 & Monitor Switch	
DRAWN: GH	SCALE:
CHECKED: [Signature]	APPROVED: [Signature]

DRAWN: GH	SCALE:
CHECKED: [Signature]	APPROVED: [Signature]
ENG'D: [Signature]	



A-MAY 8, 1958
 DRAWING NUMBER 788037
 WESTERN UNION SYSTEM
 SWITCHING
 M-28 TPR LOCAL PAGE FEED OUT S.Q.P. 212417-
 ASSEMBLY & INSTALLATION
 SCALE: 2X
 DRAWN: J.H.
 CHECKED: M.R.
 ENGINEER: M.R.
 APPROVED:

REVISIONS
B-



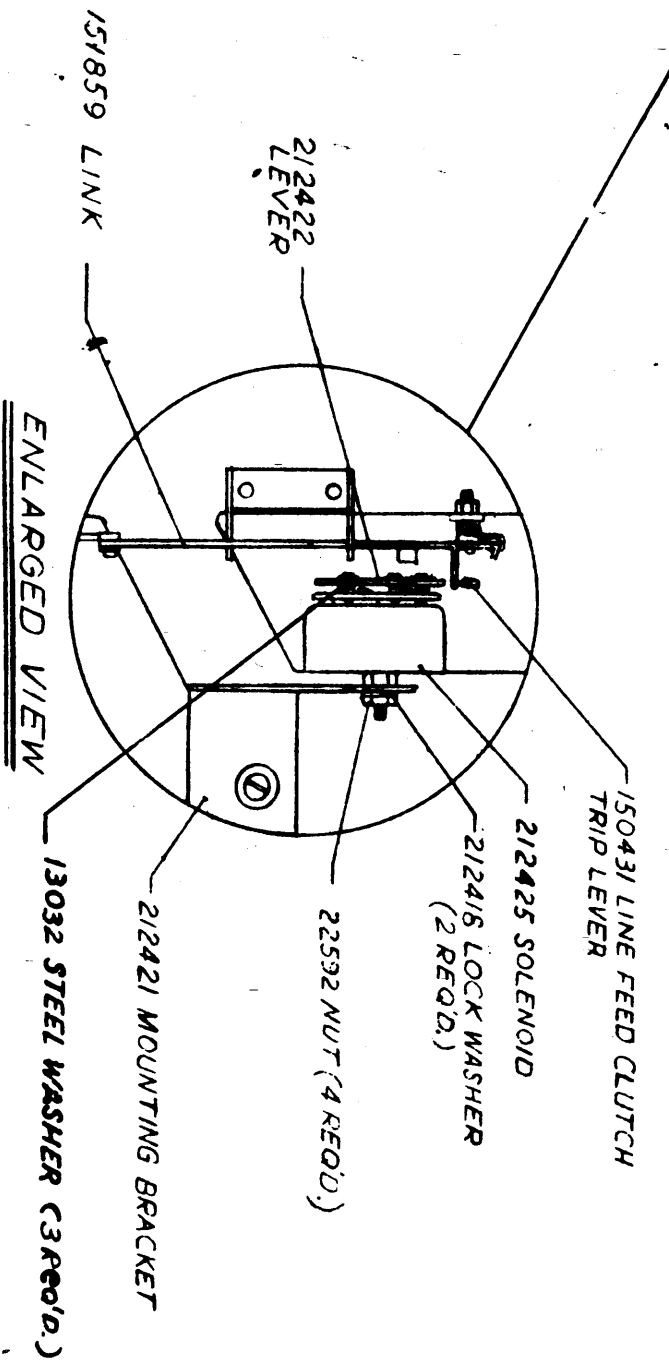
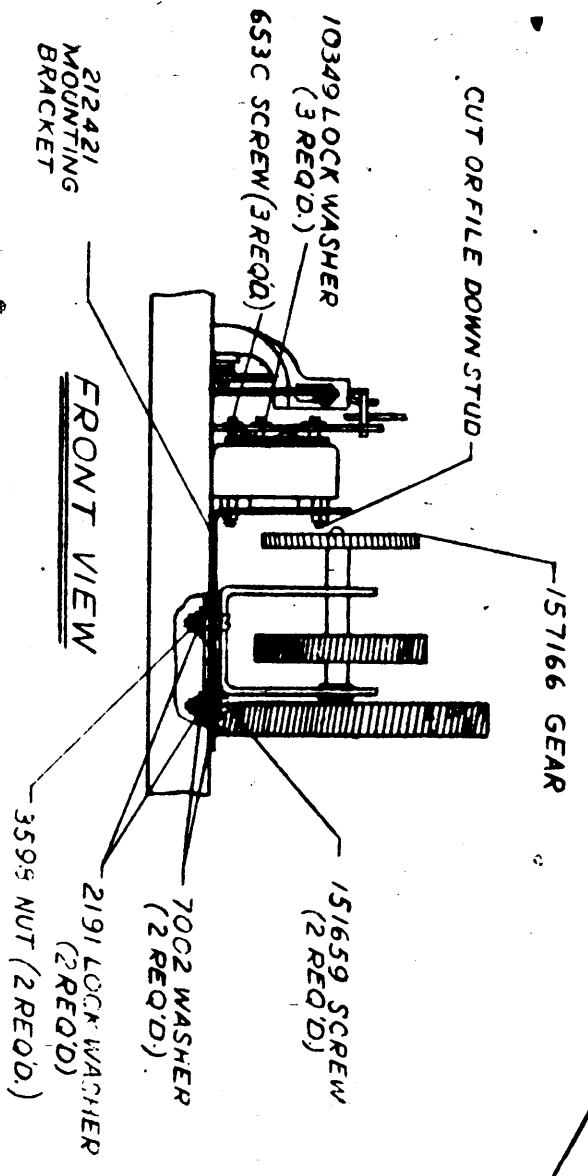
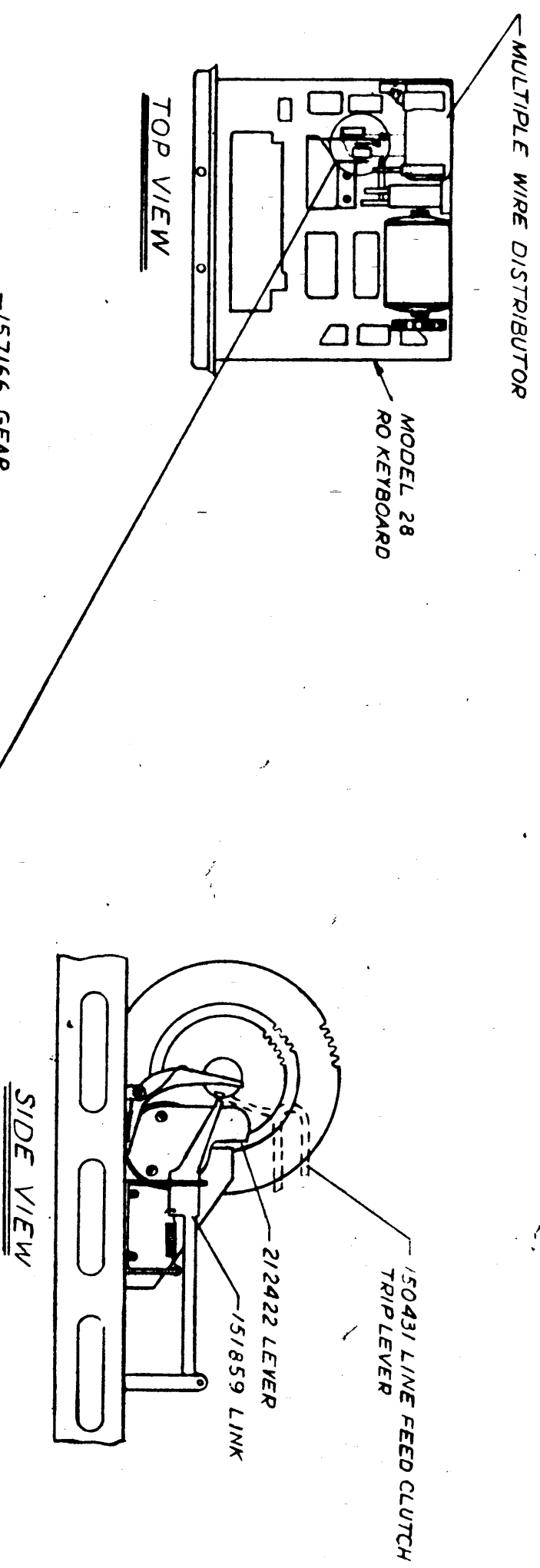
- SYMBOLS**
- ⊗ TS-1 (Terminal Strip) On 9285.1 Equip't Shelf
 - F - "F" Connector Of M-28 TPR
 - R - "R" Connector Of M-28 TPR

NOTES:

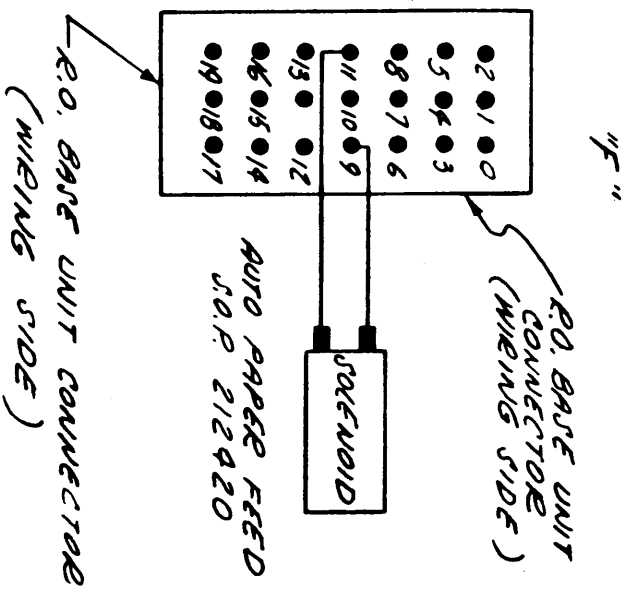
1. For Wiring Of Wiring Cabinet 9100-B
See Dwg. 232623-9

TOLERANCE UNLESS OTHERWISE SPECIFIED		SCALE	
DECIMAL		AS SHOWN	
FRACTIONAL		O.H.	
ANGULAR		WESTERN UNION SWITCHING SYSTEM M-28 TPR. *212411 LOCAL PAGE FEED OUT SET OF PARTS WITH 9100-B W.C.	
DRY HOLES			
MATERIAL:		FINISH:	
NEXT ASST.		USED ON	
DATE		DRAWING NUMBER	
A-MAY 9, 1958		188068	
ISSUE		-2	

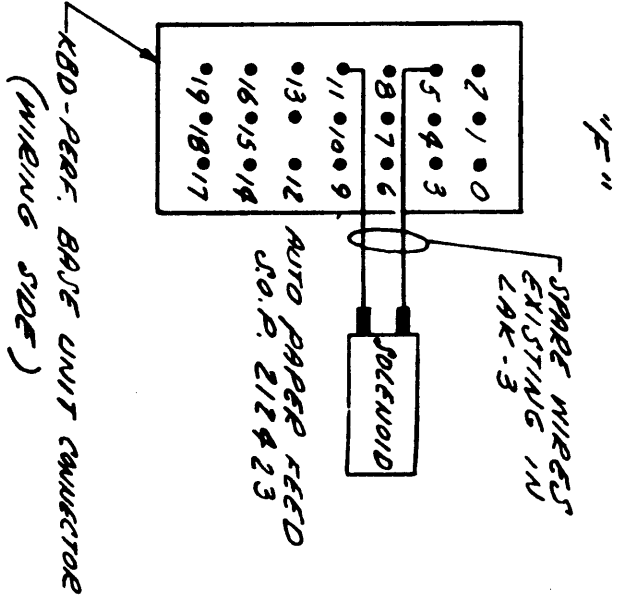
REVISIONS	
B	APR. 17/1959
	41675 Removed
	13032 Added



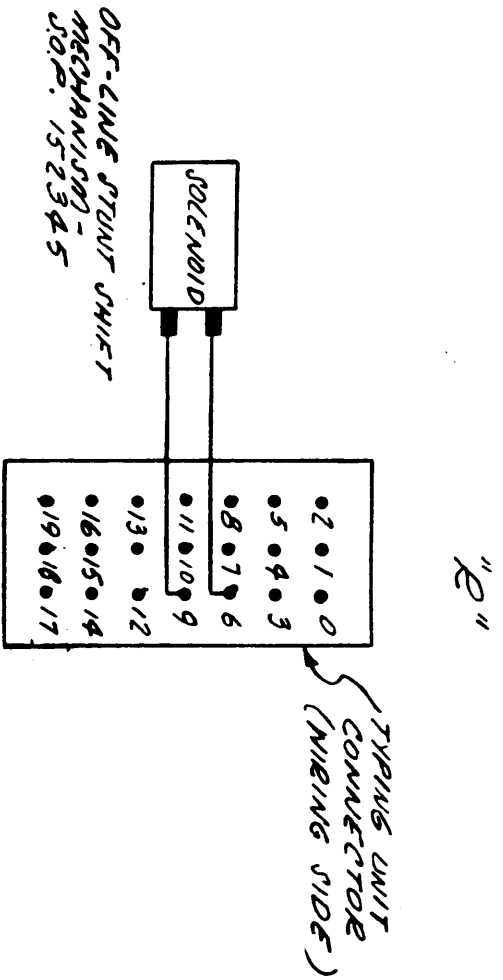
NEXT ASSY		USED ON		TOLERANCE UNLESS OTHERWISE SPECIFIED		SCALE		WESTERN UNION	
MATERIAL:		DECIMAL		DRAWN HV		MODEL 28 TELEPRINTER (RO)		SWITCHING SYSTEMS	
FINISH:		FRACTIONAL		DES. ENG. TW		AUTOMATIC PAPER FEED CUT SET OF PARTS 212420			
		ANGULAR		DR. ENG. JJA		ASSEMBLY			
		BET. HOLES		DATE		ISSUE		DRAWING NUMBER	
				OCT 10, 58		A		188324	
								-2	



R.O. TPR BASE (CB) FIG-1

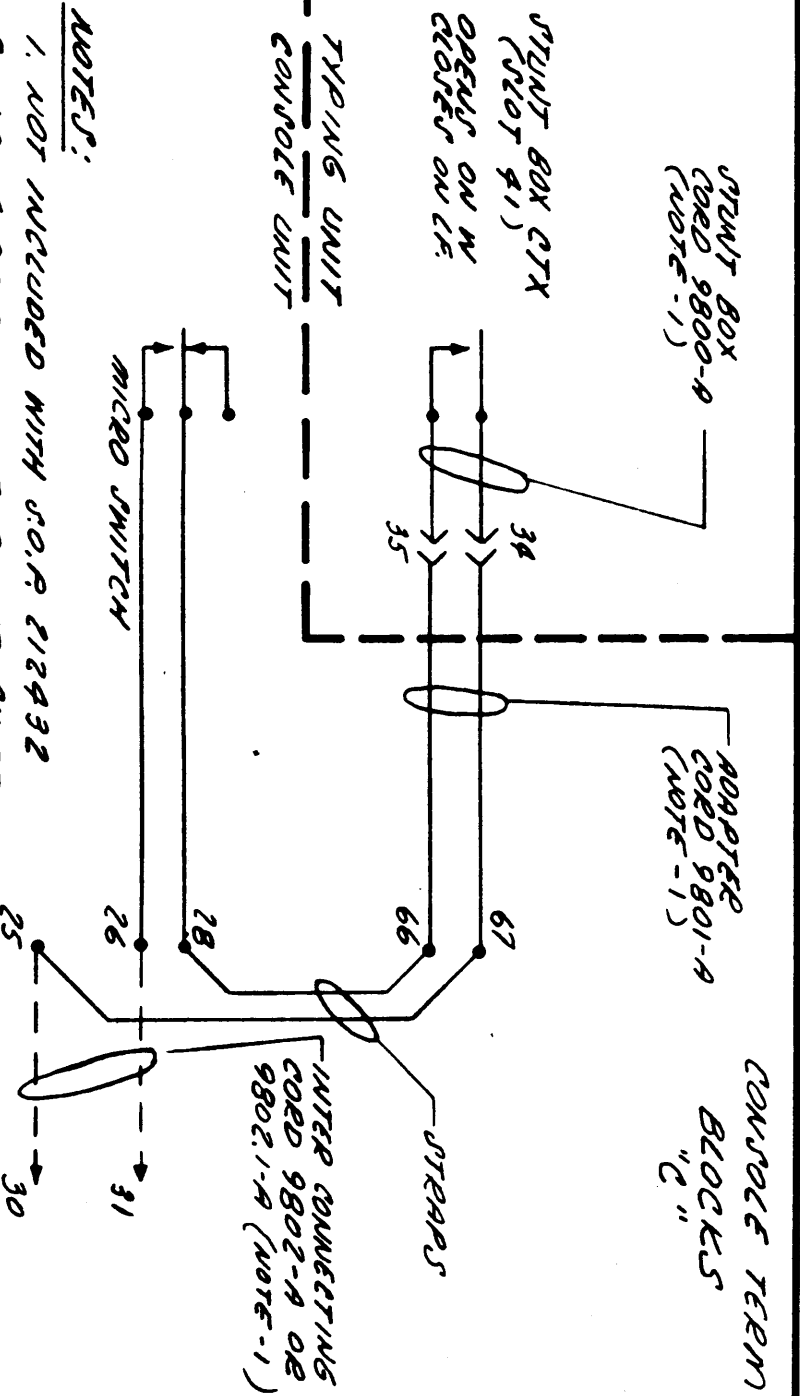


KEYBOARD-PERFORATOR BA (LAK) OF SPLIT M-28 ABR SET FIG-2



TYPING UNIT FIG-3

REVISIONS	
B-MAY 11, 1959	FIG 2 REWSED
C-JUNE 15, 1960	FIG 1 & FIG 2 REWSED
	FIG 5 ADDED
	MC 79 PRE
D-MAR, 9, 1961	REMOVED S.O.P. 212419 FROM FIG. 3. PRE



NOTES:
 1. NOT INCLUDED WITH S.O.P. 212432
 2. MECHANISM OF OFF LINE STUNT SWITCH HERE IS THE SAME AS IN FIG. 3.
 LINE FEED DETECTOR MECHANISM S.O.P. 212432. SPROCKET FEED TPR ONLY FIG-4

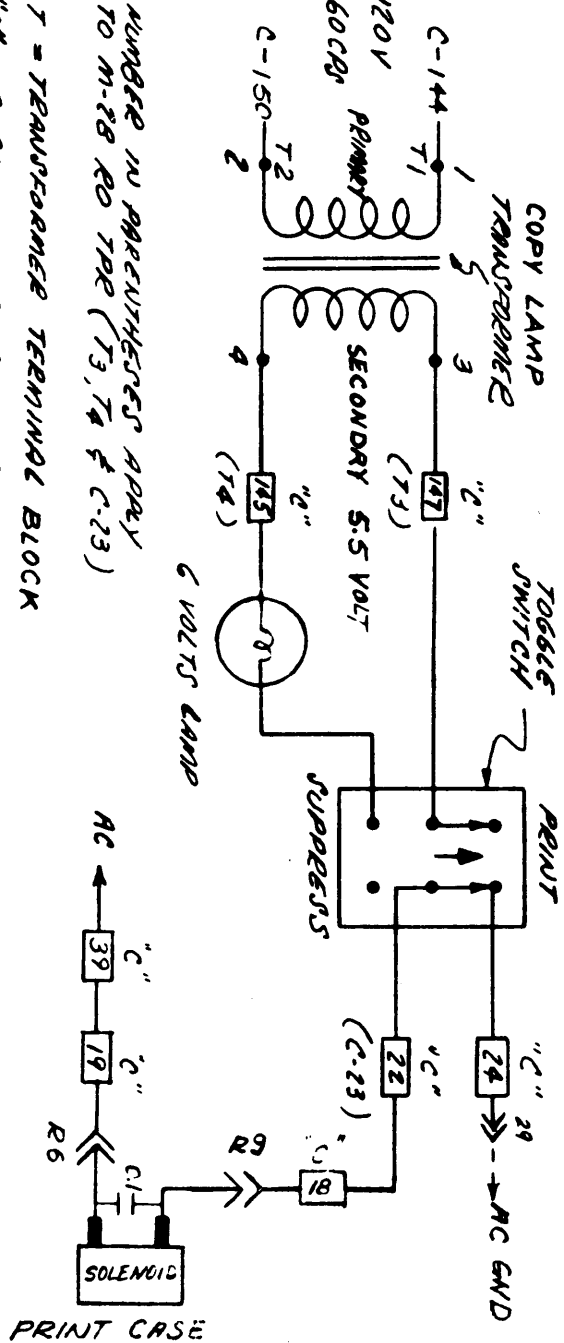
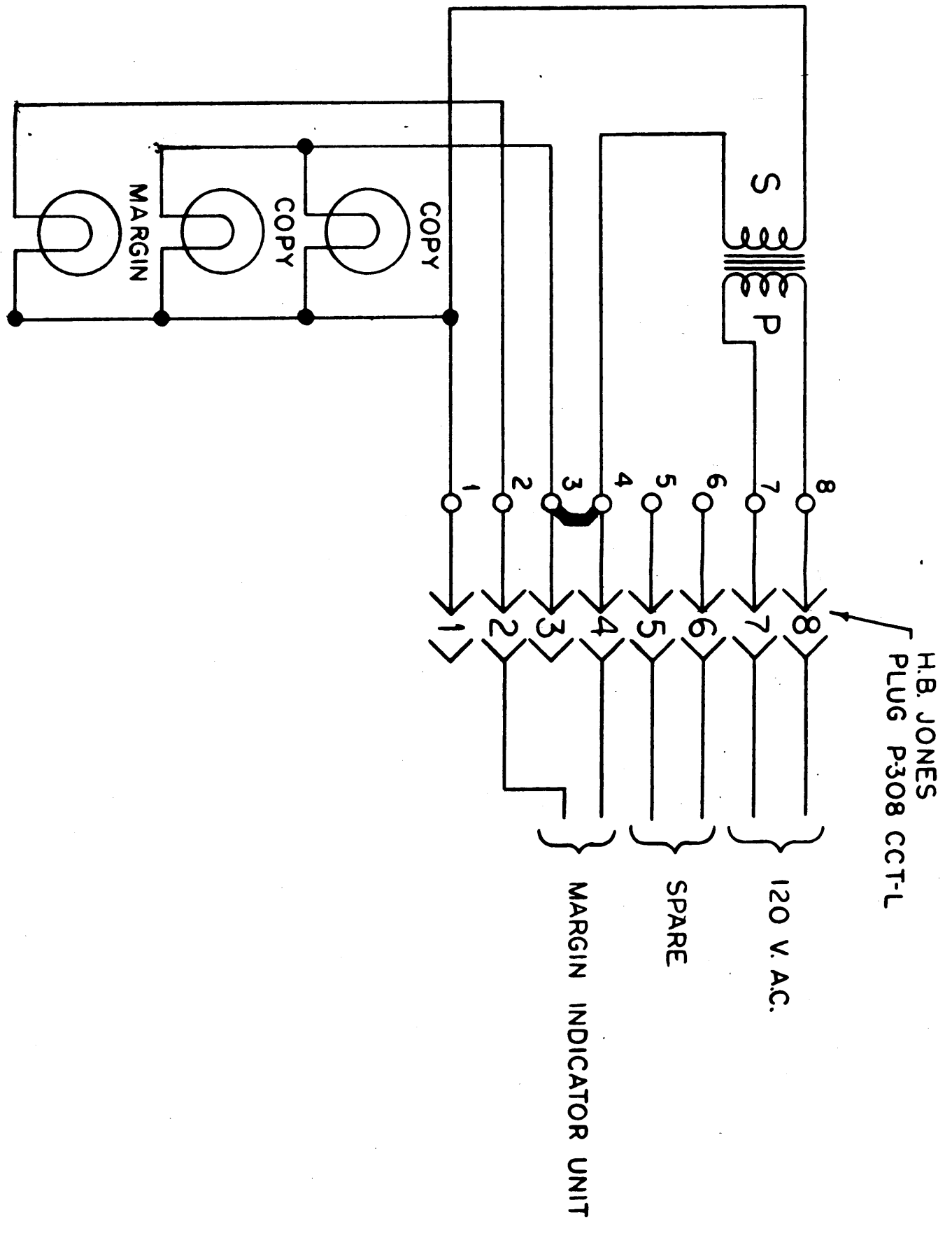


FIG-5
 See DWG. 197208 For Assembly and Bill of Material

TOLERANCE UNLESS OTHERWISE SPECIFIED		SCALE	
DECIMAL		WESTERN UNION SWITCHING SYSTEMS PLAN 57	
FRACTIONAL		SPECIAL FEATURES FOR RECEIVING TYPERS OF M-28 RO OR SPLIT ABR SET	
ANGULAR		WIRING	
BET. HOLES		ISSUE DATE	DRAWING NUMBER
		AJANU 29, 1959	188363
			-2

REVISIONS
B.



TOLERANCE UNLESS OTHERWISE SPECIFIED		SCALE	WESTERN UNION	
DECIMAL		R.H.	SWITCHING SYSTEM	
FRACTIONAL		DR. ENG. <i>R.W.</i>	WIRING OF MODEL	
ANGULAR		SP. ENG. <i>RCA</i>	28 PTR. SKIN	
BET. HOLES		APPD. <i>gpc</i>	TIGHT COVERS	
		ISSUE DATE	DRAWING NUMBER	
		AAPR.23,1959	190301 -2	

NEXT ASY' USED N

MATERIAL:

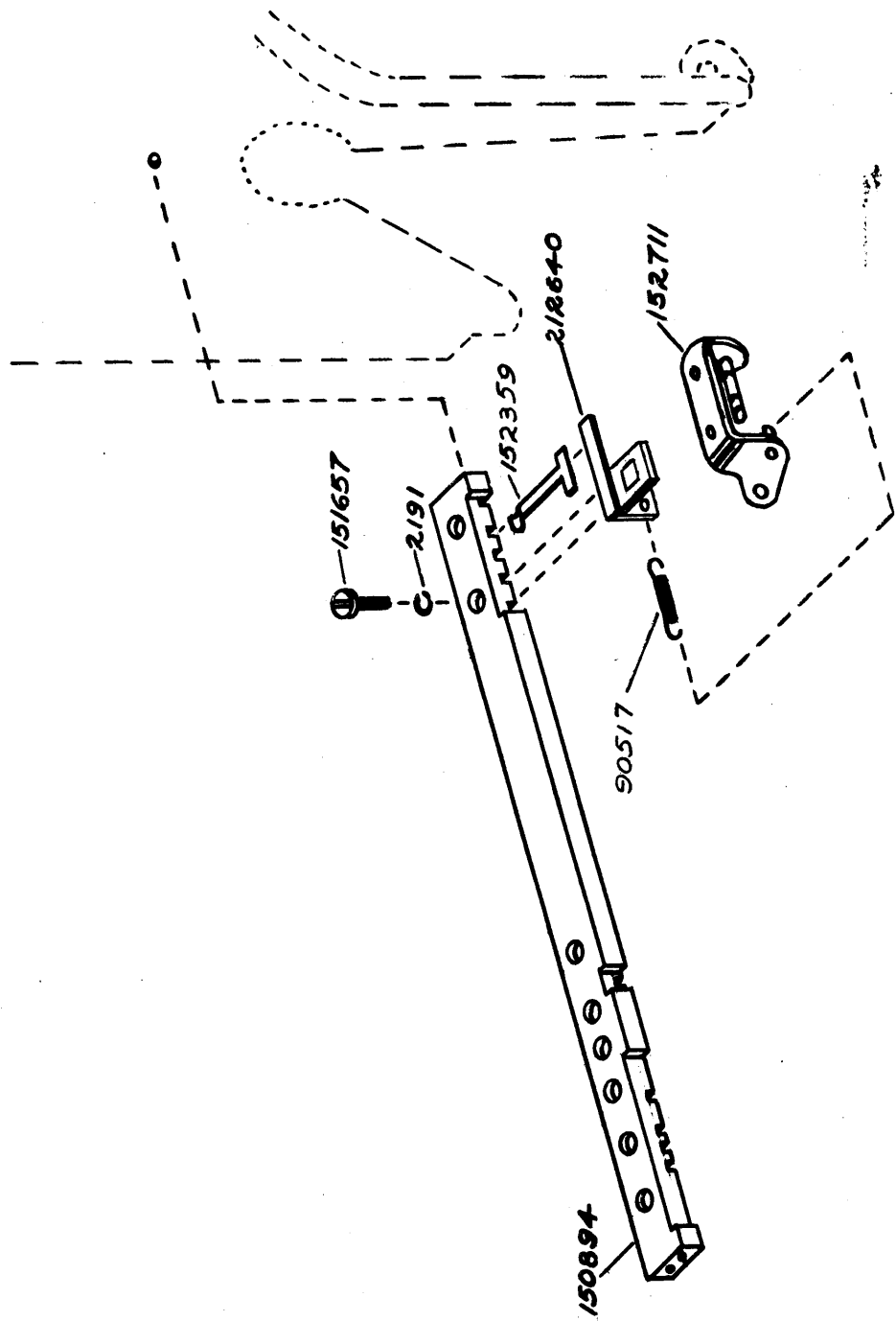
FINISH:

UNIT	ASSEMBLY NO	ARRANGEMENT	TYPE	CHARACTER OR FUNCTION IN UPPER CASE ASSOCIATED WITH CHARACTER IN LOWER CASE																									
				A	B	C	D	F	G	H	J	K	L	M	N	P	S	V	X	Z	BL	CR	LF	LTR	FIG	SP			
TYPE BOX (LP)	153508	W.U."A"	RS	—	?	?	\$	NONE	8	#	(	)	.	9	0	9	9	/	9	NONE								
	153139	W.U."C"	RJ	—	5/8	1/8	\$	1/4	8	#	9	3/4	.	9	0	9	/	9	NONE										
	151937	W.U."W"	RD	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
	155710	U.S.A.F.	XJ	—	?	?	\$	—	8	#	(	)	.	9	0	9	/	9	NONE									
	162056	US STEEL	XZ	—	?	?	\$	BLANK	8	#	BELL	()	.	9	0	9	/	9	NONE									
	151930	BELL ON S	RA	—	?	?	\$	—	8	#	9	()	.	9	0	9	/	9	NONE									
KEYBOARD (LK & LAK)	151683	C.A.A.	RE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
	162393	W.U."A"	ARM	—	?	?	\$	NONE	8	#	BELL	(	)	.	9	0	9	/	9	NONE								
	162390	W.U."C"	ARJ	—	5/8	1/8	\$	1/4	8	#	9	3/4	.	9	0	9	/	9	NONE										
	162385	W.U."W"	ARD	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
	162413	U.S.A.F.	BRJ	—	?	?	\$	—	8	#	9	(	)	.	9	0	9	/	9	NONE								
	162418	US-STEEL	BRP	—	?	?	\$	NONE	8	#	BELL	()	.	9	0	9	/	9	NONE									
TYPE WHEEL (LPR)	162382	BELL ON S	ARA	—	?	?	\$	—	8	#	9	(	)	.	9	0	9	/	9	NONE								
	162386	C.A.A.	ARE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
	156359	W.U."A"	ARS	—	?	?	\$	—	8	#	9	(	)	.	9	0	9	/	9	NONE								
	156358	W.U."C"	ARJ	—	5/8	1/8	\$	1/4	8	#	9	3/4	.	9	0	9	/	9	NONE										
	156357	W.U."W"	ARD	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
	156356	U.S.A.F.	AWA	—	?	?	\$	—	8	#	9	(	)	.	9	0	9	/	9	NONE								
156354	BELL ON S	ARA	—	?	?	\$	—	8	#	9	(	)	.	9	0	9	/	9	NONE									
156360	C.A.A.	ARE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		

- NOTES
- ① GOTHIC STYLE FOR "12 TO INCH" SPACING
 - ② FOR UNSHIFT ON SPACE ORDER MOD. KIT 162375

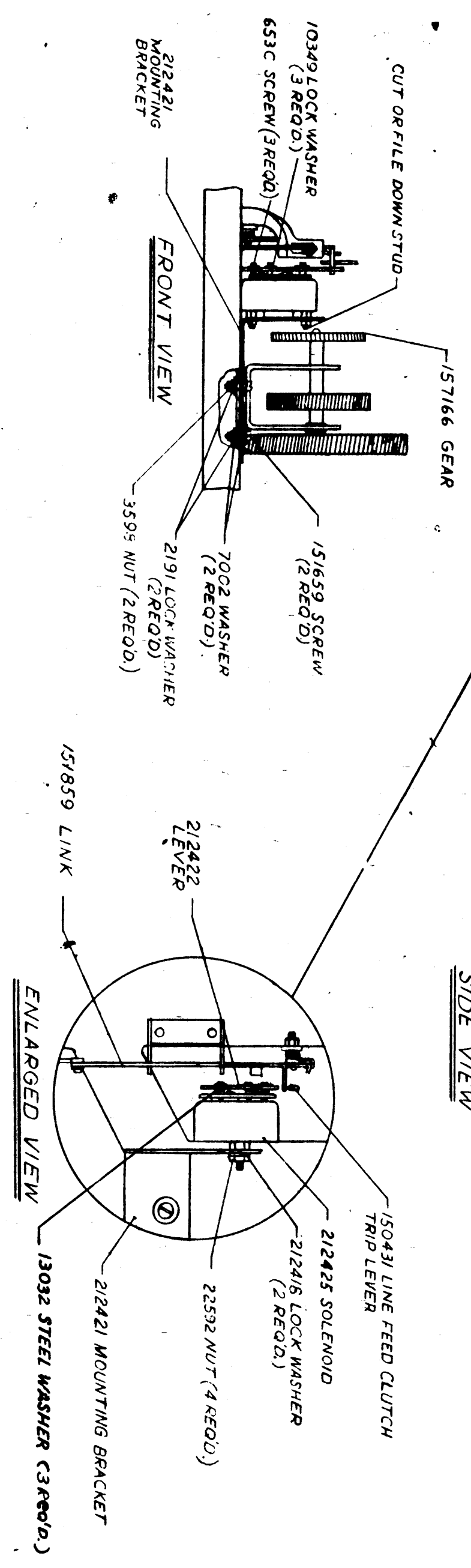
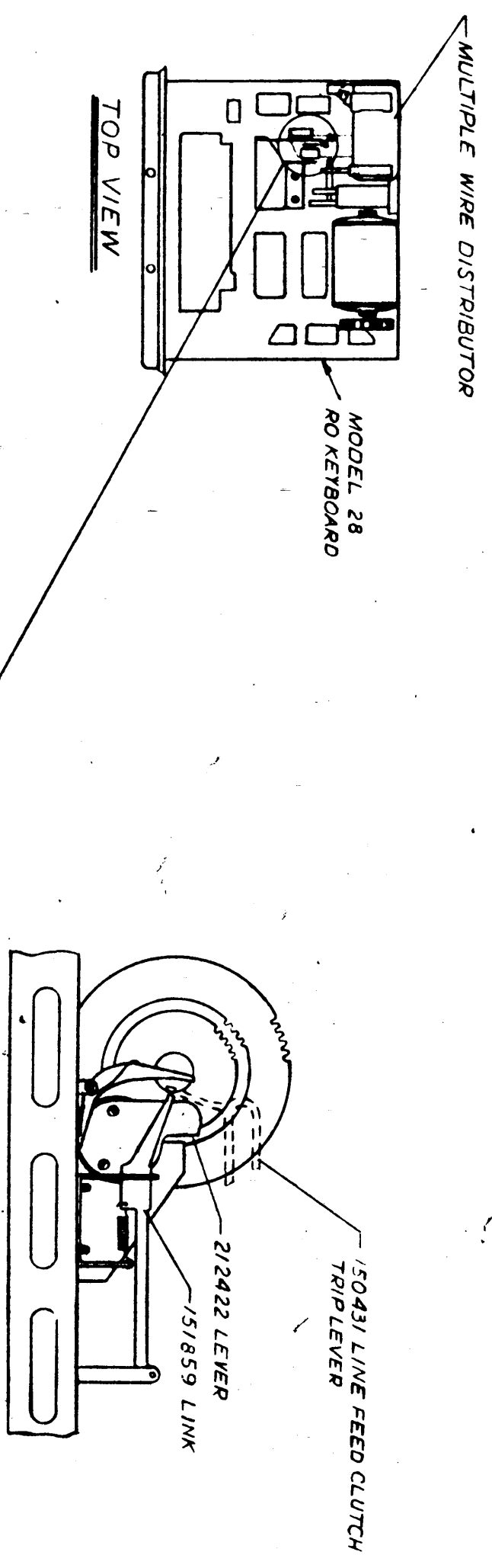
D. APPROVED: _____
 C. APPROVED: _____
 B. APPROVED: _____
 A. SEPT 23, 1955
 DRAWING NUMBER: 790545
 W. U. TEL. CO.
 MODEL 28
 TYPE BOX
 KEYBOARD
 AND
 TYPEWHEEL
 STANDARD
 ARRANGEMENTS
 SCALE: _____
 DRAWN: _____
 CHECKED: _____
 ENGR'D: _____
 APPROVED: _____

REVISIONS
B-

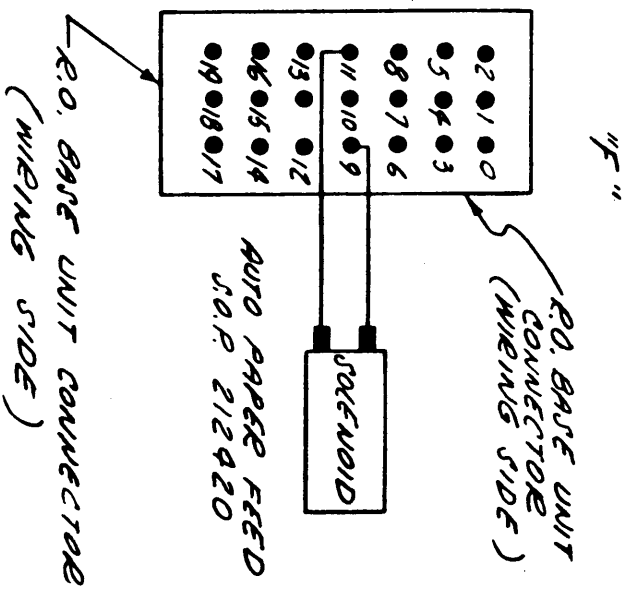


	SET OF PARTS 212641	TOLERANCE UNLESS OTHERWISE SPECIFIED	SCALE	WESTERN UNION	
NEXT ASS'Y	USED ON	DECIMAL	DRAWN	<u>SWITCHING SYSTEMS</u>	
MATERIAL:		FRACTIONAL	DES. ENG.	<u>M-28 TPR</u>	
FINISH:		ANGULAR	SP. ENG.	INSTALLATION OF LEVER	
		BET. HOLES	DATE	212640 FOR THREE SEQ.	
			ISSUE	CHAR. PAGE FEED OUT	
			DATE	ISSUE	DRAWING NUMBER
			A Sept. 30, 1959		190558 -1

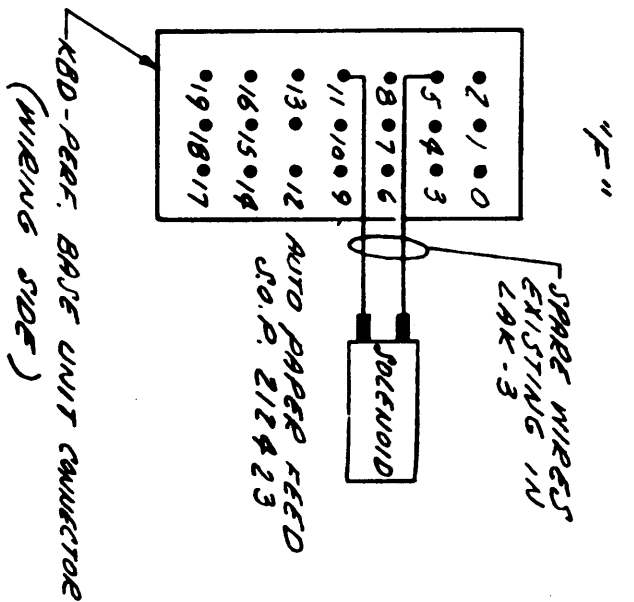
REVISIONS
B. APR. 17, 1959
41675 Removed
13032 Added
TPW



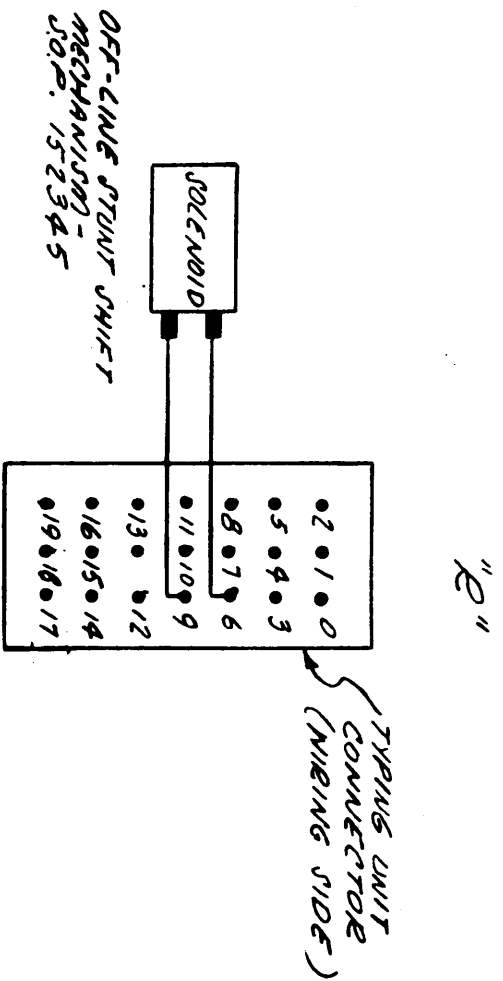
WESTERN UNION		SWITCHING SYSTEMS	
MODEL 28 TELEPRINTER (RO)	SCALE	DRYER	HV
AUTOMATIC PAPER FEED CUT SET OF PARTS 212420	TOLERANCE UNLESS OTHERWISE SPECIFIED	DES. ENG.	TPW
ASSEMBLY	DECIMAL	SP. ENG.	TPW
	FRACTIONAL	CHKD.	TPW
	ANGULAR	DATE	OCT 10, 58
	BET. HOLES	ISSUE	188324
		DRAWING NUMBER	-2



R.O. TPR BASE (CB) FIG-1

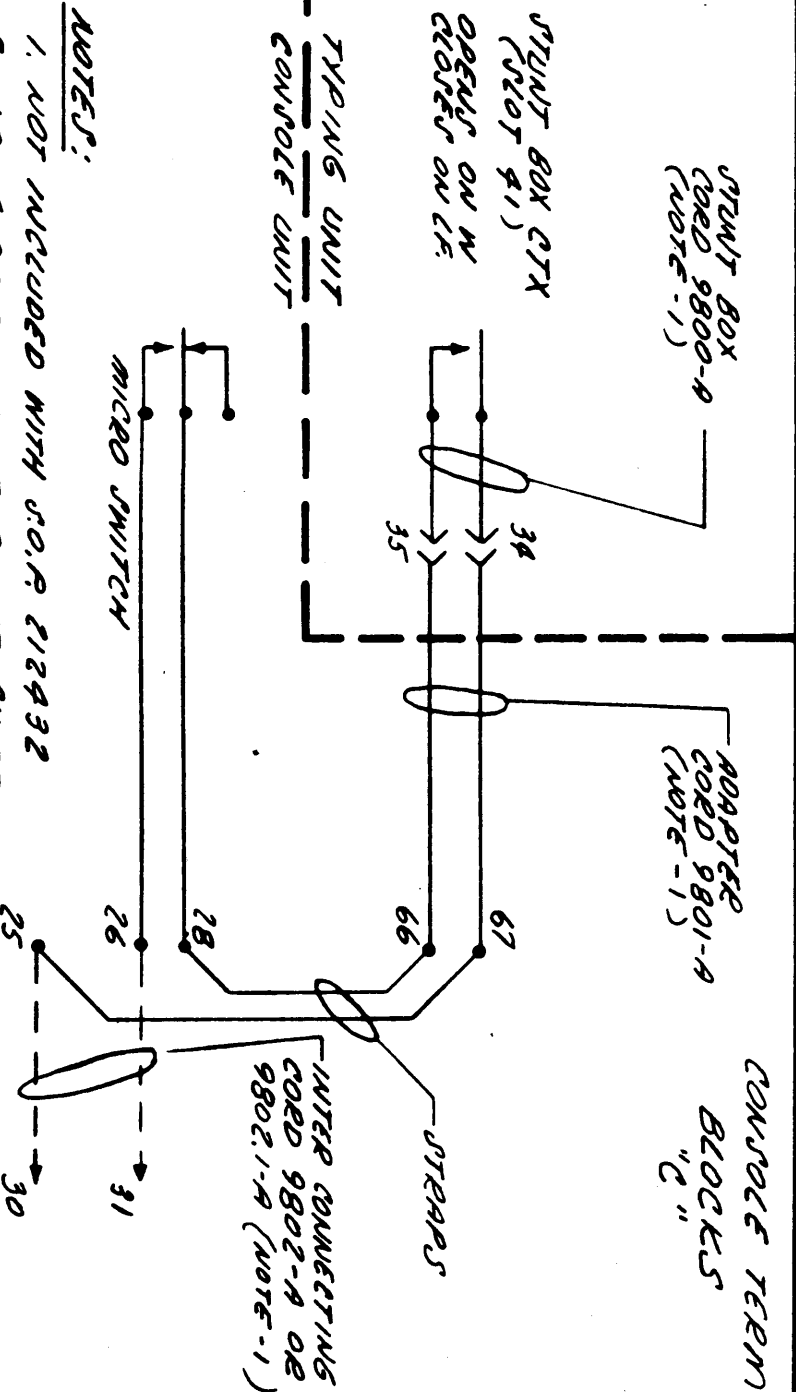


KEYBOARD-PREPARATOR BA (LAK) OF SPLIT M-28 ABR SET FIG-2



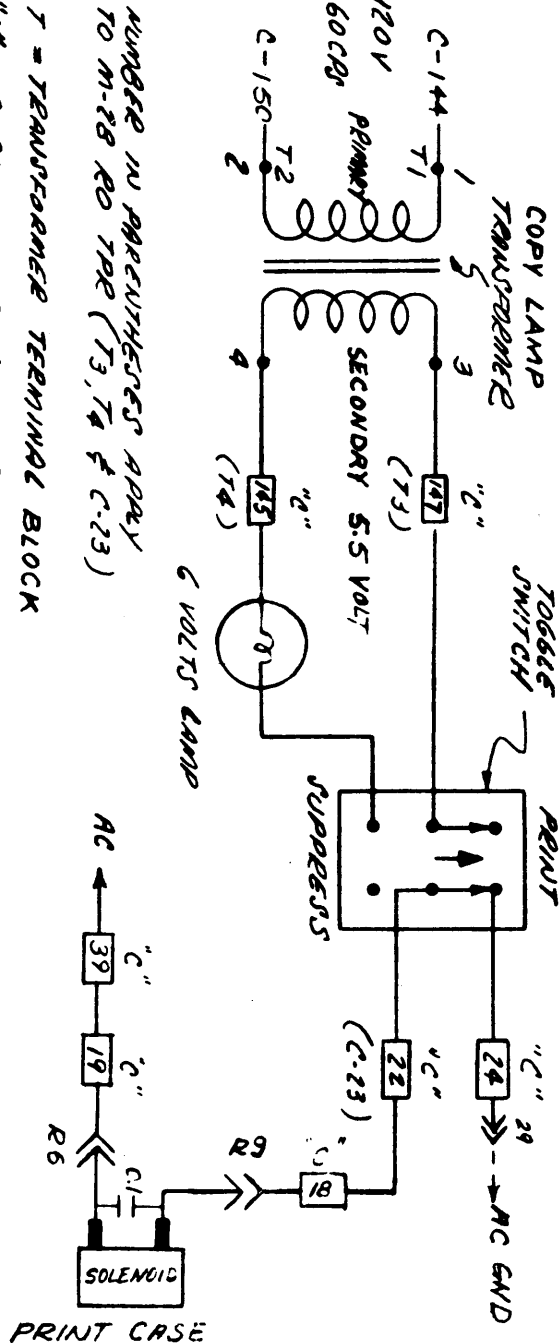
Typing Unit FIG-3

REVISIONS	
B-MAY 11, 1959	FIG 2 REVISED
C-JUNE 15, 1960	FIG 1 & FIG 2 REVISED
	FIG 5 ADDED
	HE TD PRE
D-MAR, 9, 1961	REMOVED S.O.P. 212419 FROM FIG. 3. PRE



NOTES:
 1. NOT INCLUDED WITH S.O.P. 212432
 2. WIRING OF OFF LINE STUNT SWITCH MECHANISM S.O.P. 152345 (NOT SHOWN HERE) IS THE SAME AS IN FIG. 3.
 LINE FEED DETECTOR MECHANISM S.O.P. 212432. SPROCKET FEED TPR ONLY

FIG-4



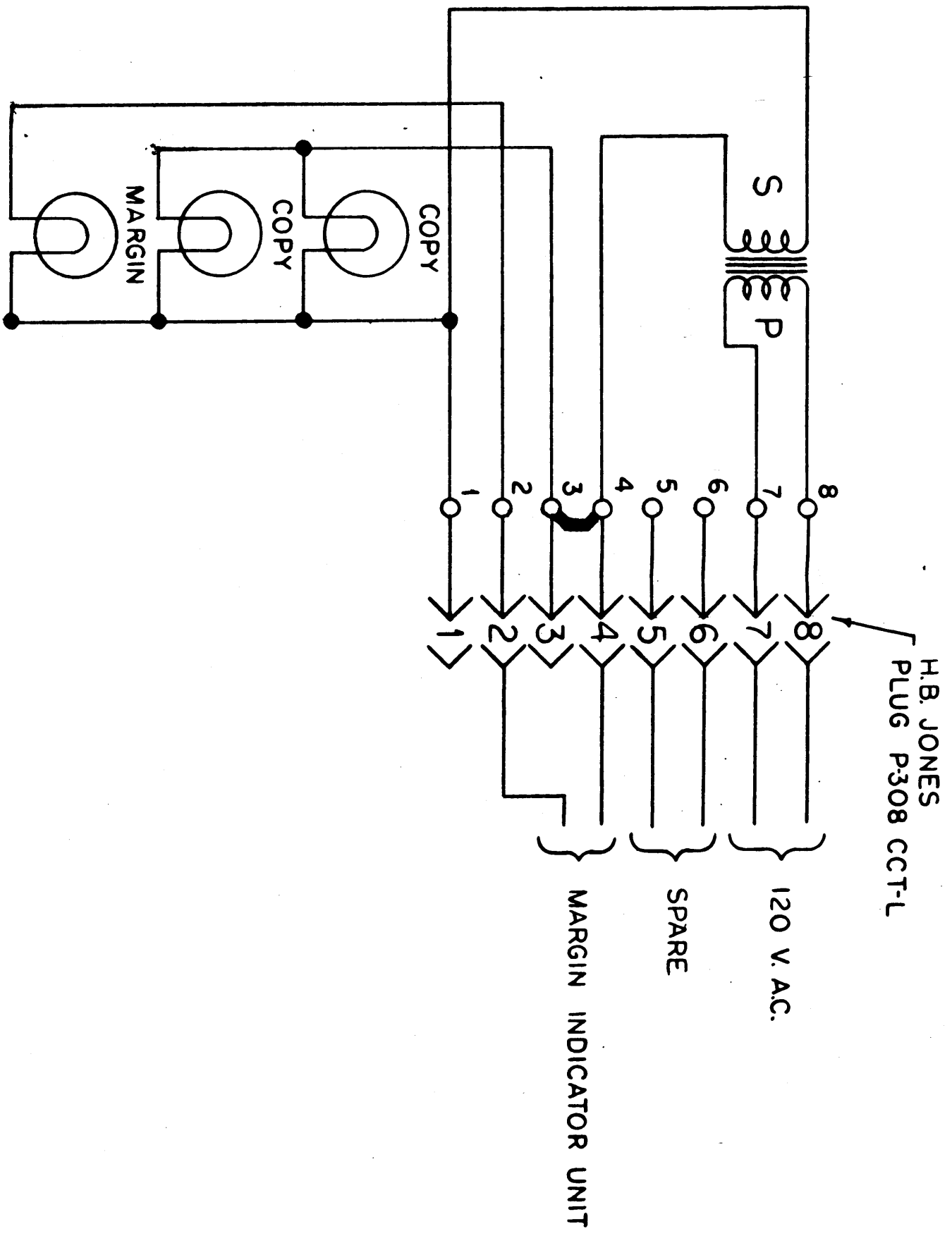
NUMBER IN PARENTHESES APPLY TO M-28 RO TPR (T3, T4 & C-23)
 T - TRANSFORMER TERMINAL BLOCK
 "C" - C BLOCK OF M-28 RO TPR OR M-28 ABR SET
 See DWG. 197206 For Assembly and Bill of Material

FIG-5

TOLERANCE UNLESS OTHERWISE SPECIFIED		SCALE	
NEXT ASBY	USED ON	DECIMAL	DRAWN
		FRACTIONAL	D.S.
		ANGULAR	DEC. ENG.
			SP. ENG.
MATERIAL:		DRAWN	
FINISH:		D.S.	
		DEC. ENG.	
		SP. ENG.	
		WIRING	
		DATE	
		ISSUE	
		DRAWING NUMBER	
		-2	

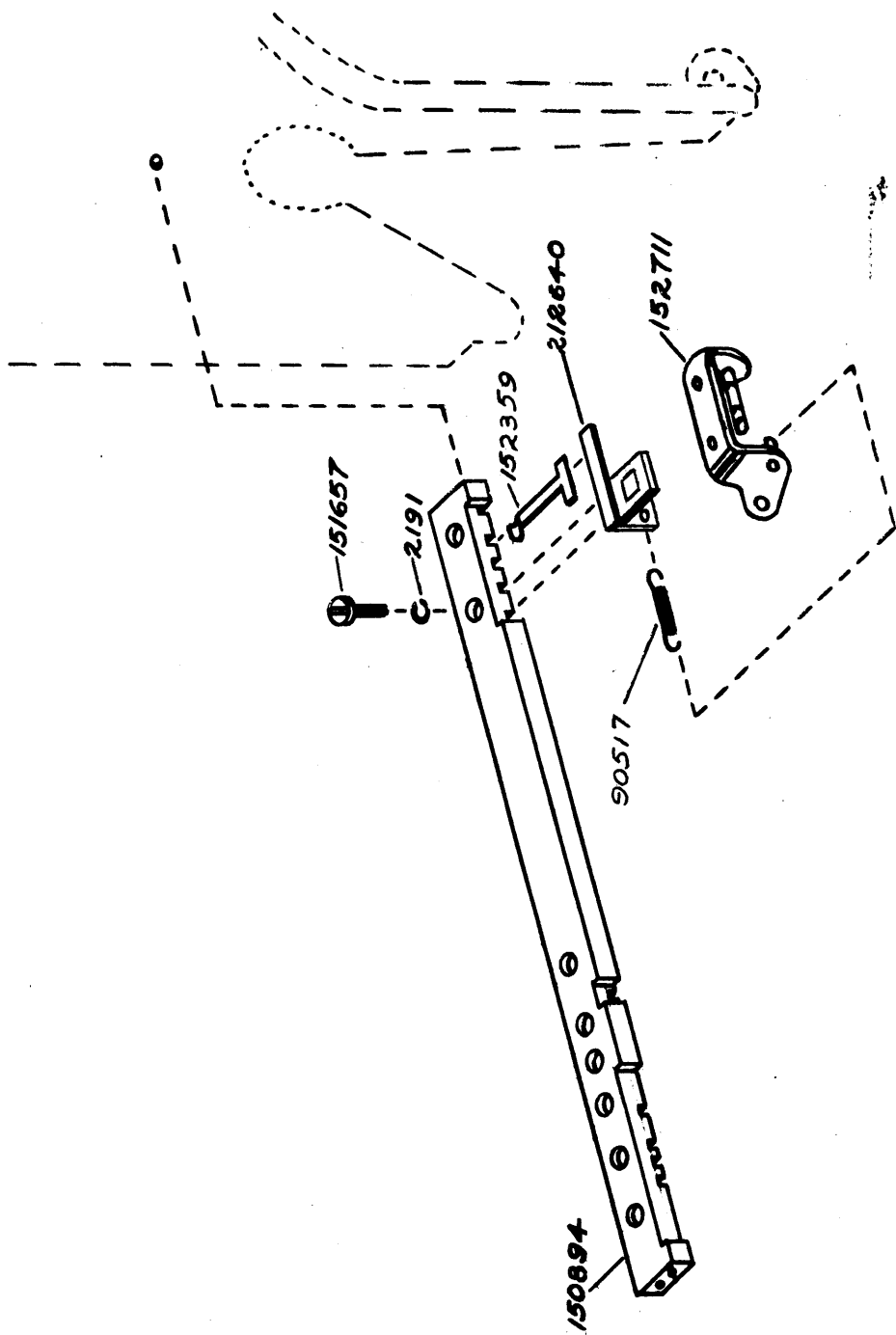
WESTERN UNION SWITCHING SYSTEMS PLAN 57 SPECIAL FEATURES FOR RECEIVING TYPERS OF M-28 RO OR SPLIT ABR SET

REVISIONS
B.



NEXT ASSY		USED N		TOLERANCE UNLESS OTHERWISE SPECIFIED		SCALE		WESTERN UNION	
MATERIAL:		DECIMAL		DRAWN R.H.		R.H.		SWITCHING SYSTEM	
		FRACTIONAL		CHK. ENG. <i>R.W.</i>		SP. ENG. <i>RCA</i>		WIRING OF MODEL	
FINISH:		ANGULAR		RCA		ISSUE DATE		TIGHT COVERS	
		BET. HOLES		APPRO. <i>RCA</i>		A APR. 23, 1959		DRAWING NUMBER	
								190301 -2	

REVISIONS
B-



	SET OF PARTS 212641	TOLERANCE UNLESS OTHERWISE SPECIFIED	SCALE	WESTERN UNION	
NEXT ASS'Y	USED ON	DECIMAL	DRAWN	SWITCHING SYSTEMS	
MATERIAL:		FRACTIONAL	DES. ENG.	M-28 TPR	
		ANGULAR	SP. ENG.	INSTALLATION OF LEVER	
FINISH:		BET. HOLES	APPROV.	212640 FOR THREE SEQ.	
			DATE	ISSUE	DRAWING NUMBER
			A Sept. 30, 1959	A	190558

10P # 682443-BILL OF MATERIAL FOR SET OF PARTS 212436

REVISIONS
B DEC. 19, 1960
FEOLAWN
10P 10000
BY PEEH
HC

NO. REQD 10P PART NO PART DESCRIPTION

1	519074	212417	MICRO SWITCH (1005)
1	812234	208833	WASHER, FEAT.

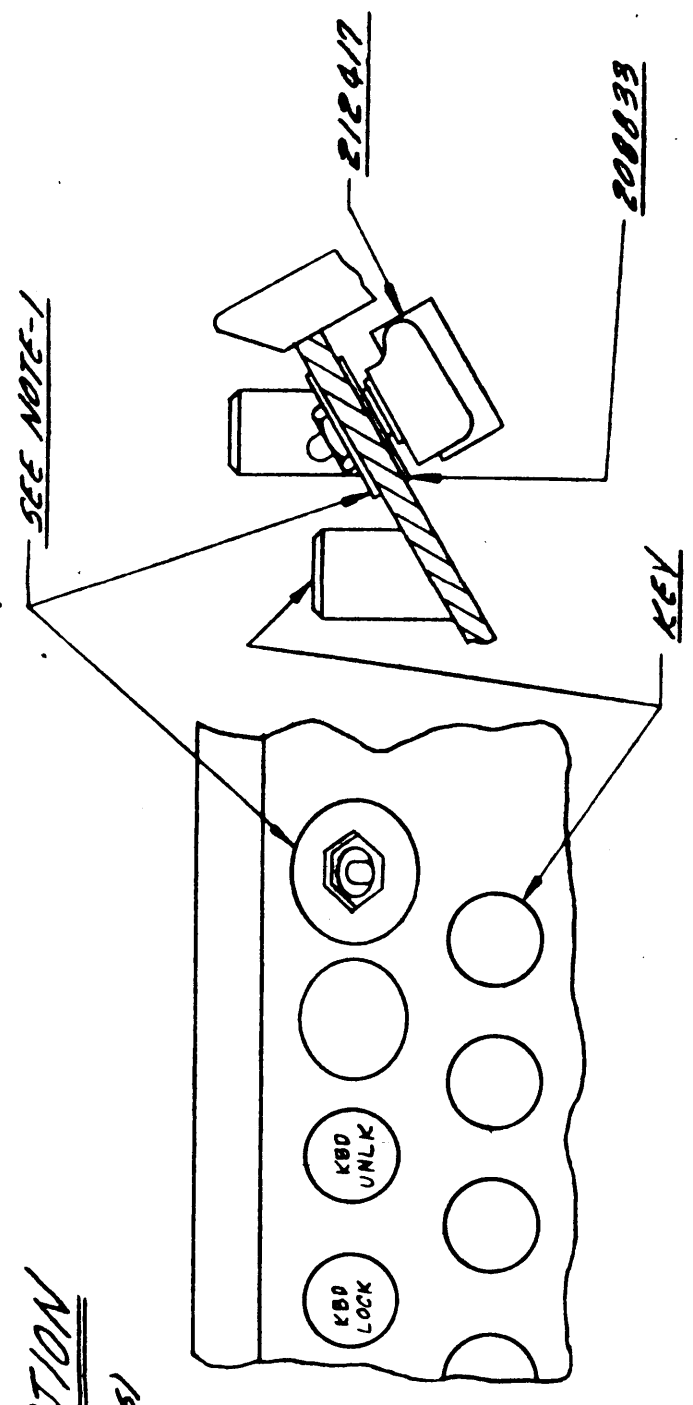
NOTES

1- ONE DESIGNATION PLATE SHOULD BE ORDERED FOR EACH S.O.P. 212436.

THE FOLLOWING ARE DESIGNATION PLATES NOW AVAILABLE

- * 212414 - "LOCAL P.F.O. KEY DWG. NO. 29492-1
- * 212720 - "MOTOR STOP KEY DWG. NO. 29181-1
- * 212721 - "START KEY DWG. NO. 29182-1
- * 212637 - "PRINT-SUPPRESS" SWITCH DWG. NO. 291161

ADDITIONAL DESIGNATION PLATE MAY BE ORDERED AND MANUFACTURED TO FIT THE PARTICULAR INSTALLATION.

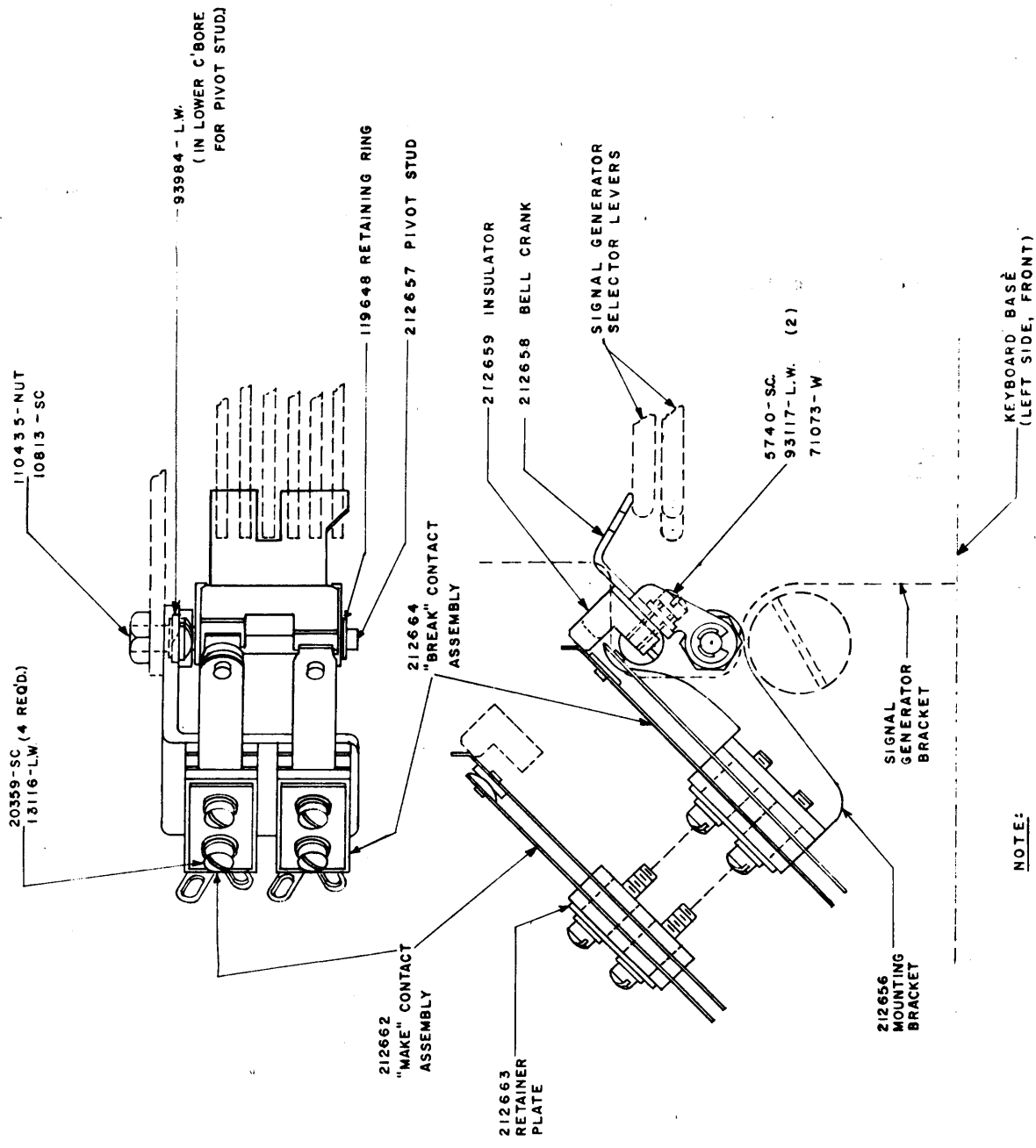


TOP VIEW

SIDE VIEW

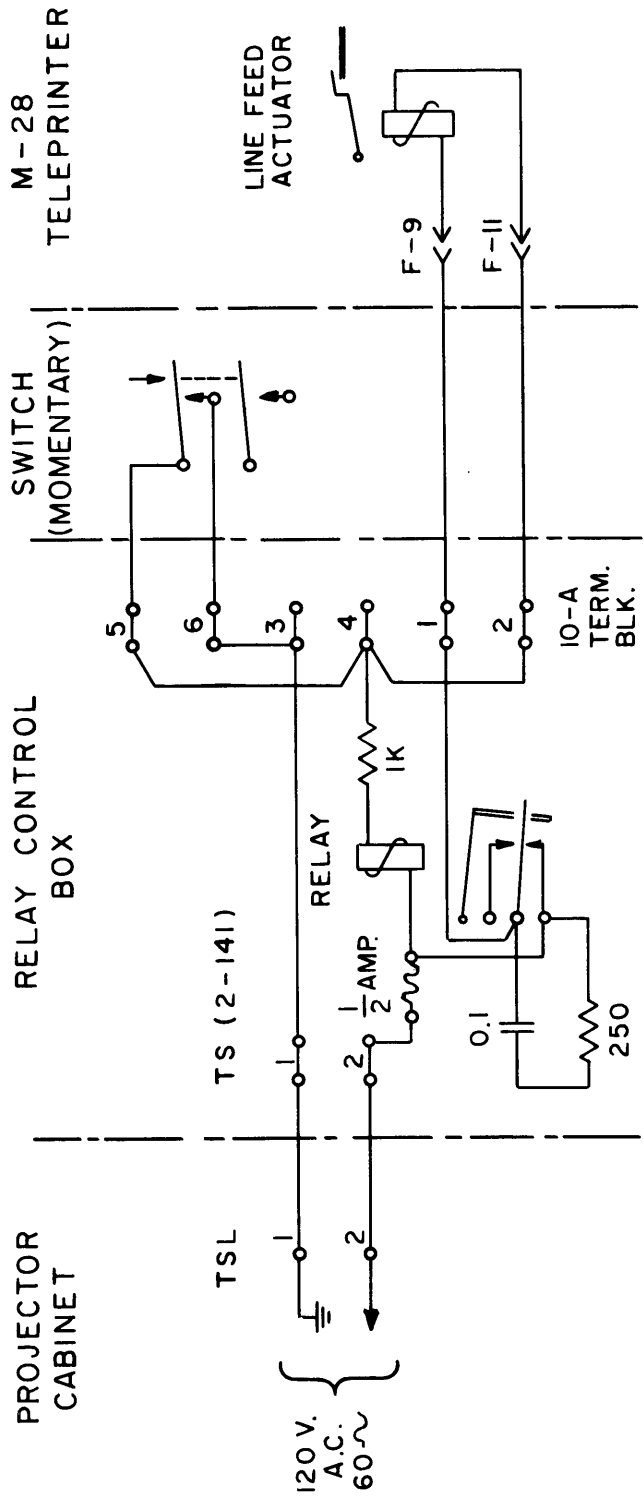
SECTION OF CAX 3 OR CKA KEYBOARD

NEXT ASSY		USED ON		SCALE		WESTERN UNION	
MATERIAL:		DECIMAL		DRAWN		SWITCHING SYSTEMS	
FINISH:		FRACTIONAL		LUCIA		MODEL 20	
		ANGULAR		DES. ENG.		KEYBOARD SWITCH	
		BET. HOLES		HC		SET OF PARTS 212436	
				SP. ENG.		ASSEMBLY SET OF PARTS	
				APPD.		ISSUE DATE	
				PCH		DRAWING NUMBER	
						A DEC. 19, 1960 / 100800 -2	



NOTE:
 SEE DWG. 207720
 FOR PREBENDING
 OF CONTACT SPRINGS
 ON KEYBOARD
 CONTACT ASSEMBLY
 212660

D-	APPROVED	APPROVED	APPROVED	APPROVED	SCALE
	C-AUG. 22, 1961 SOP 212648 ADDED TO TITLE BOX DJ	B-AUG. 14, 1959 "PROBE" WAS "LOCK" E.C.S. P.S.	A-MAY 4, 1959	W. U. TEL. CO.	1/2
			DRAWING NUMBER 191316-3	TELETYPE UNIT 28	DRAWN
				KEYBOARD PROBE CONTACTS AND BELL CRANK ETC.	TRACED
				ASSEMBLY AND MOUNTING	ENGINEER
				SET OF PARTS 212648	IN CHARGE



M-28 TELEPTR. PROJECTOR		TOLERANCE UNLESS OTHERWISE SPECIFIED	SCALE	WESTERN UNION	
NEXT ASS'Y	USED ON				
MATERIAL:		DECIMAL	DRAWN	REMOTE LINE FEED CONTROL MECHANISM	
		FRACTIONAL	M.W.		
FINISH:		ANGULAR	DES. ENG.	SET OF PARTS 212722 SCHEMATIC WIRING DIAGRAM	
		BET. HOLES	<i>O.W.S.</i>		
		APPRO. <i>PWS</i>	ISSUE	DATE	DRAWING NUMBER
			A	JAN 11, 1961	196259 -1

REVISIONS
5-MAR-59, 1961 REVISION AND REVISIONS REMAINING HAS A & STAT.
MC BY ONE

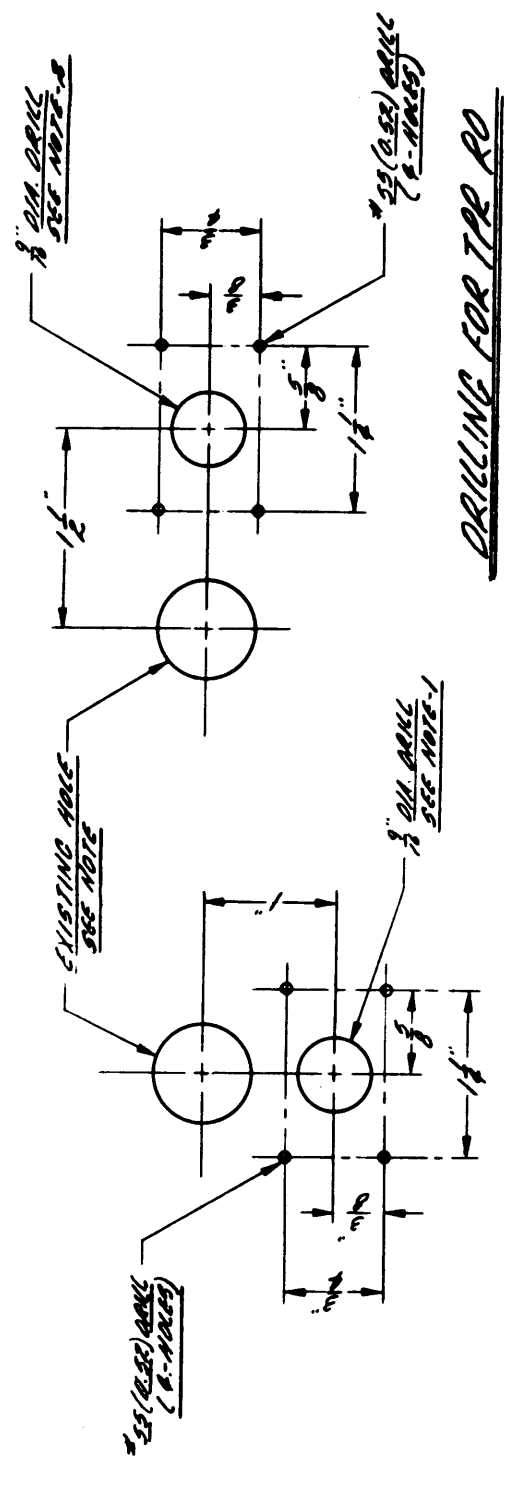
BILL OF MATERIAL

SET OF PARTS 212734 - I/P 677369

QUANTITY	DESCRIPTION	I/P
1	SWITCH, MOORE	201405
1	DESIGNATION PLATE "SWITCH" 212735	677308
1	DESIGNATION PLATE "PART" 212736	677351
1	CAMP, OF "A" OR "B" TYPE	601398
1	SOCKET, CAMP MOORE A-571 (WITH SET SCREW)	601395
1	SCREW, MINOR 1/8" x 3/16" MARKER - KAMIN OR	260279

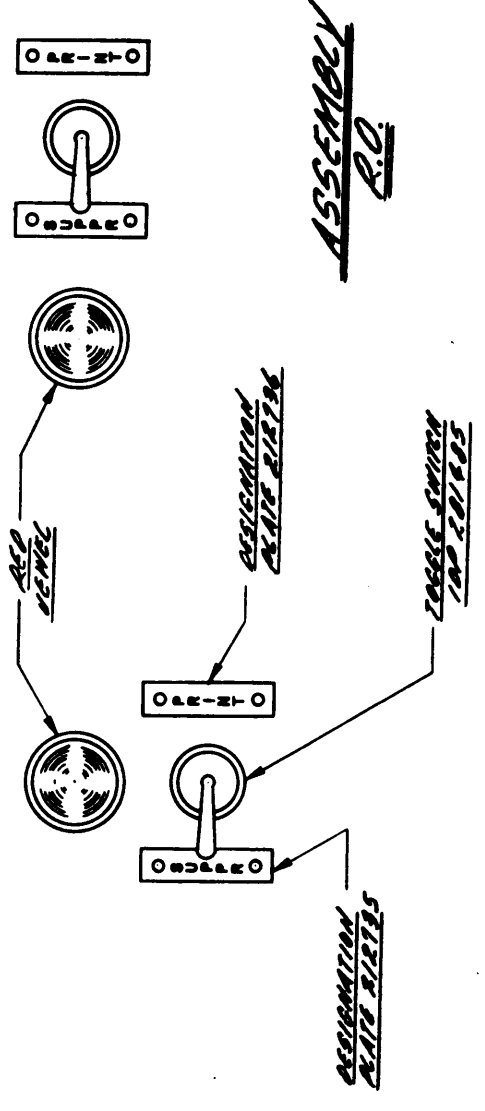
NOTES

- 1-8" DIA. HOLE LOCATED 1" FROM THE RED CENTER AT THE FRONT CENTER OF THE M-28 FIRE SET.
- 2-8" DIA. HOLE LOCATED 1/2" FROM THE RED CENTER AT THE FRONT CENTER OF THE M-28 P.O.
- 3- SEE AMB. 100309 FOR MARKING



DRILLING FOR ASR SET

DRILLING FOR TPR PO

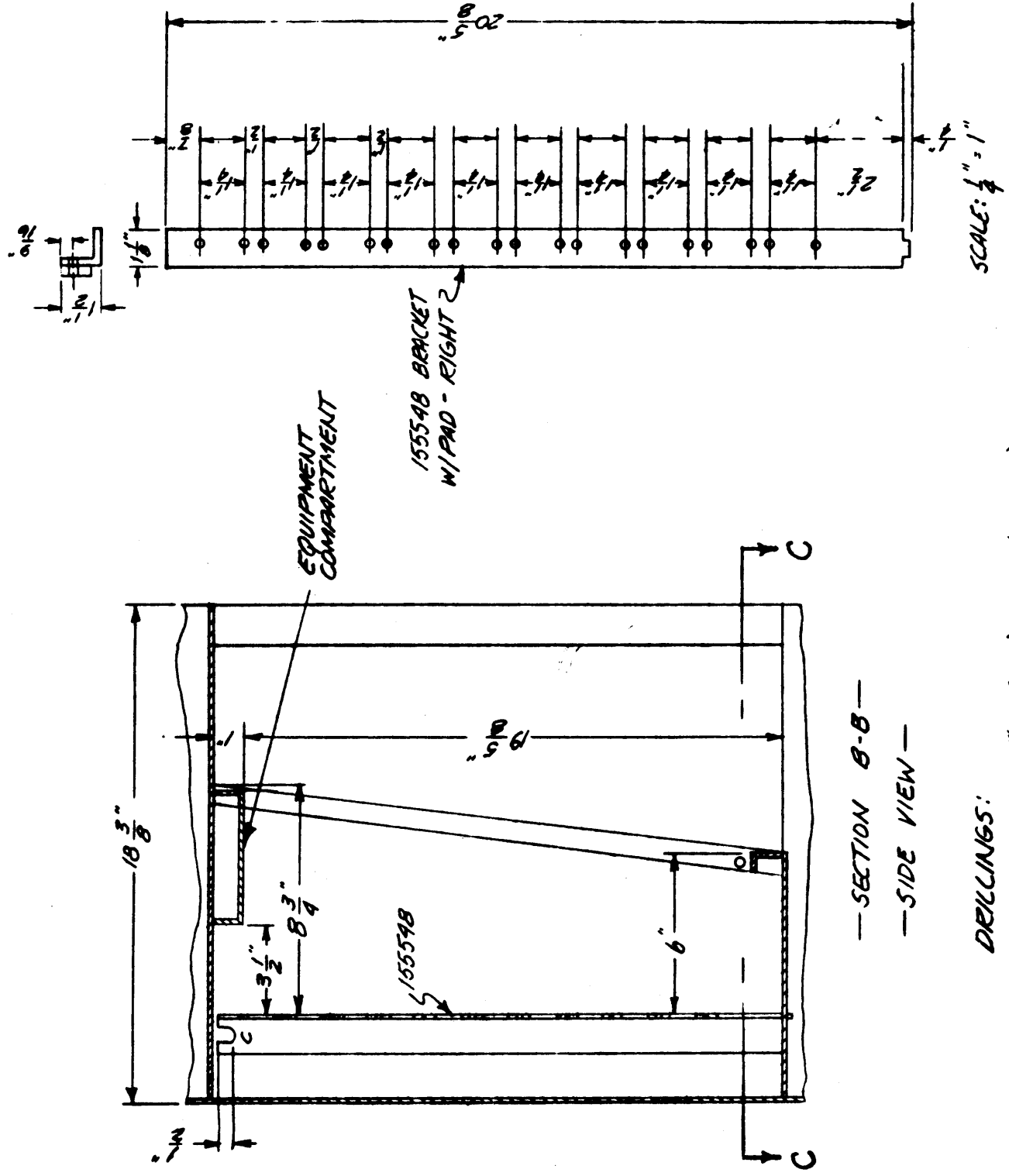
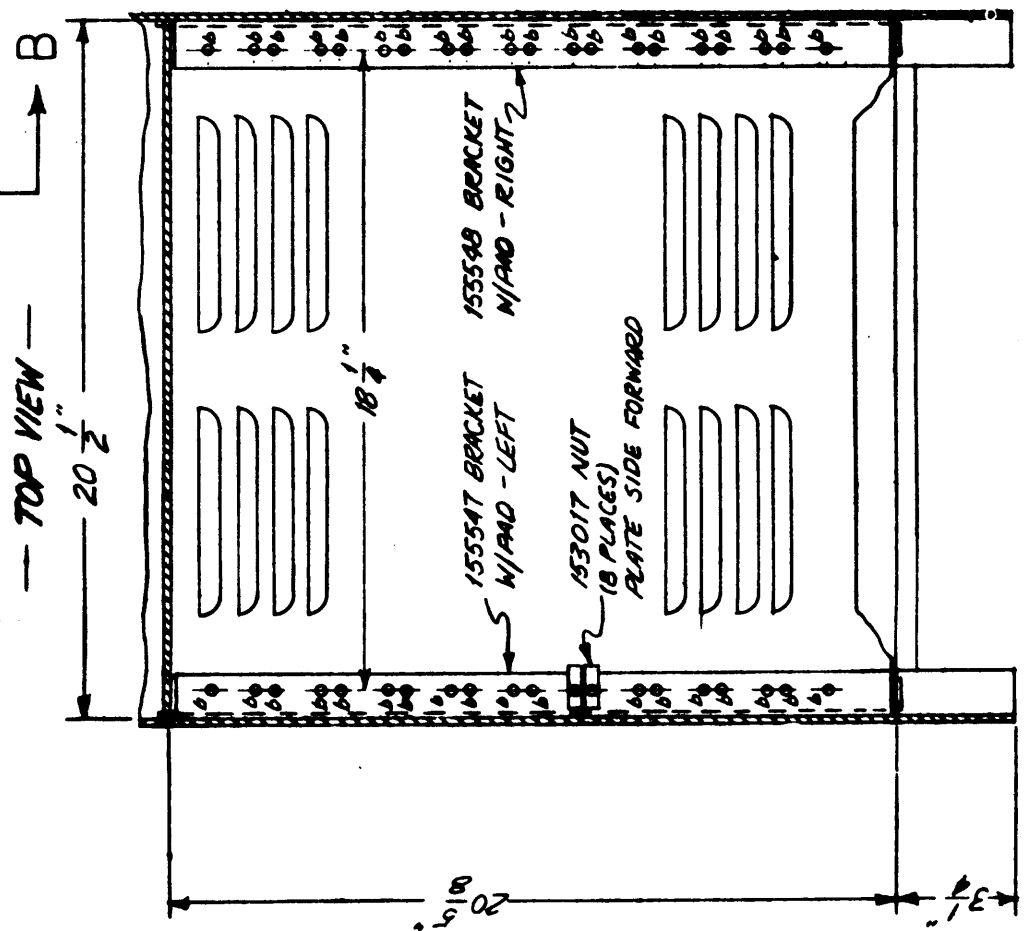
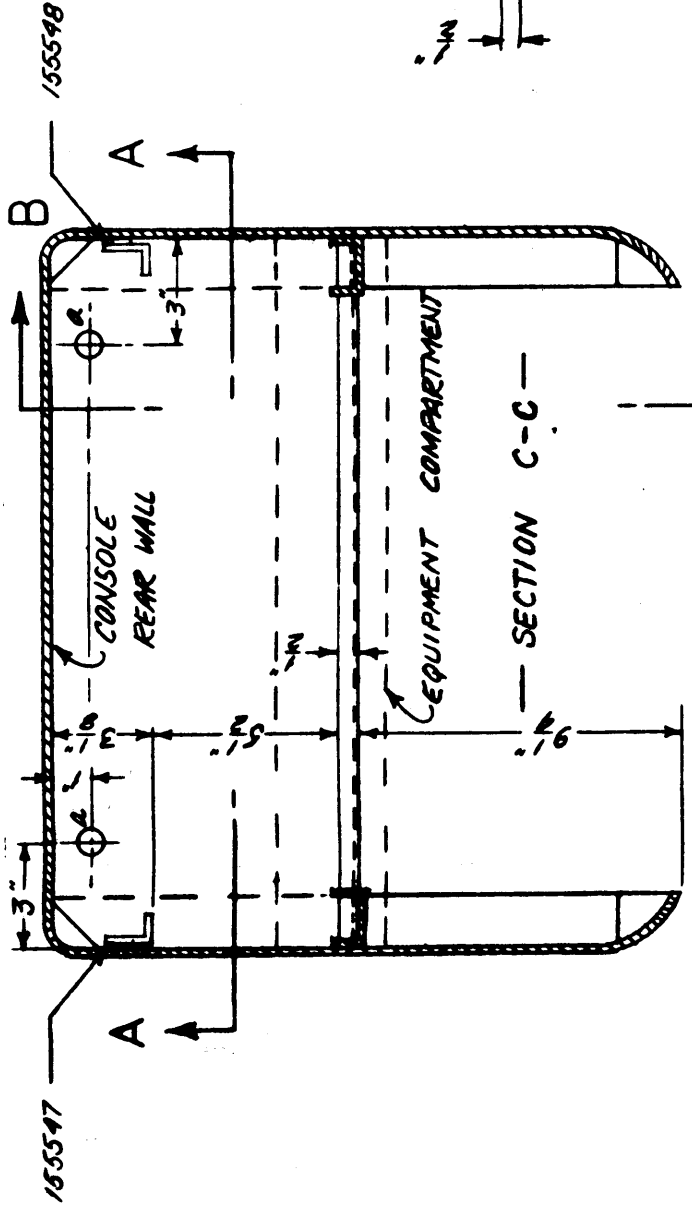


ASSEMBLY ASR

ASSEMBLY T.P.R.

WESTERN UNION		SCALE	TOLERANCE	UNIT
		1/8"	1/16"	INCHES
		1/16"	1/32"	DECIMAL
		1/32"	1/64"	FRACTIONAL
		1/64"	1/128"	ANGULAR
		1/128"	1/256"	BET. HOLES
		1/256"	1/512"	APPROX.
		1/512"	1/1024"	PRE
		1/1024"	1/2048"	DRAWING NUMBER
		1/2048"	1/4096"	ISSUE
		1/4096"	1/8192"	DATE
		1/8192"	1/16384"	197208
		1/16384"	1/32768"	-3

REVISIONS
B.

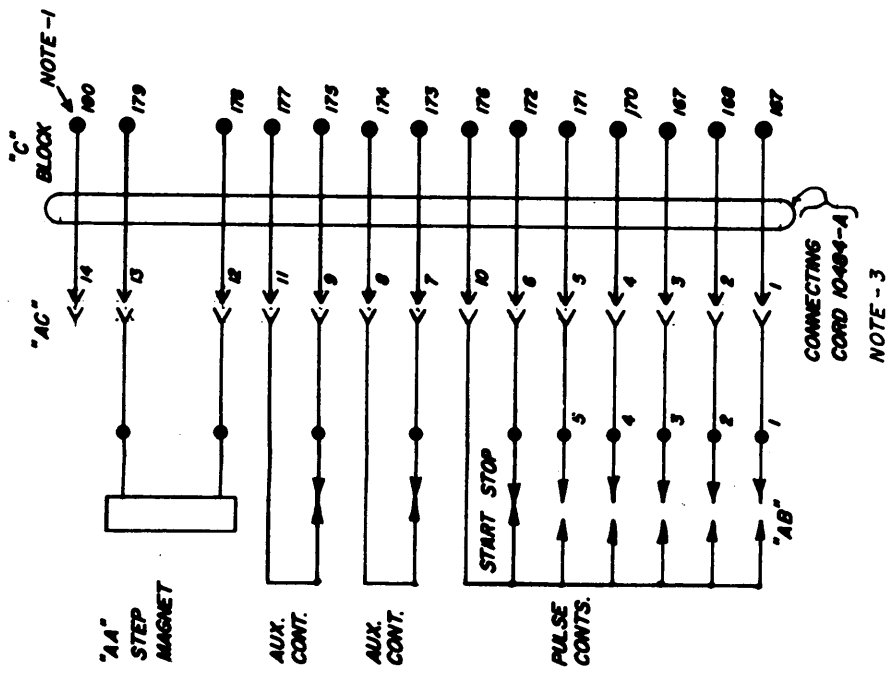


DRILLINGS:
 A: #18 (625) DRILL (2 HOLES)
 B: 1/4" DIA. HOLE
 C: 3/16" "

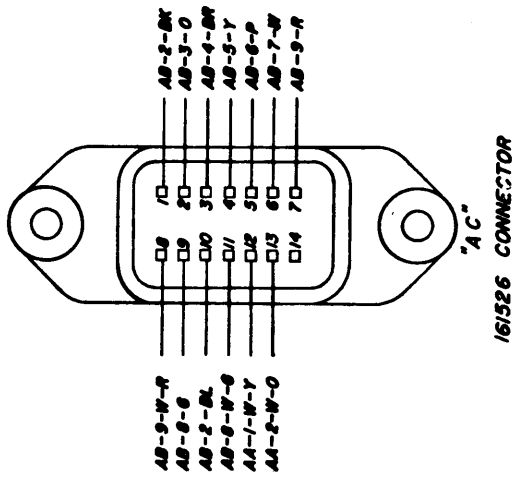
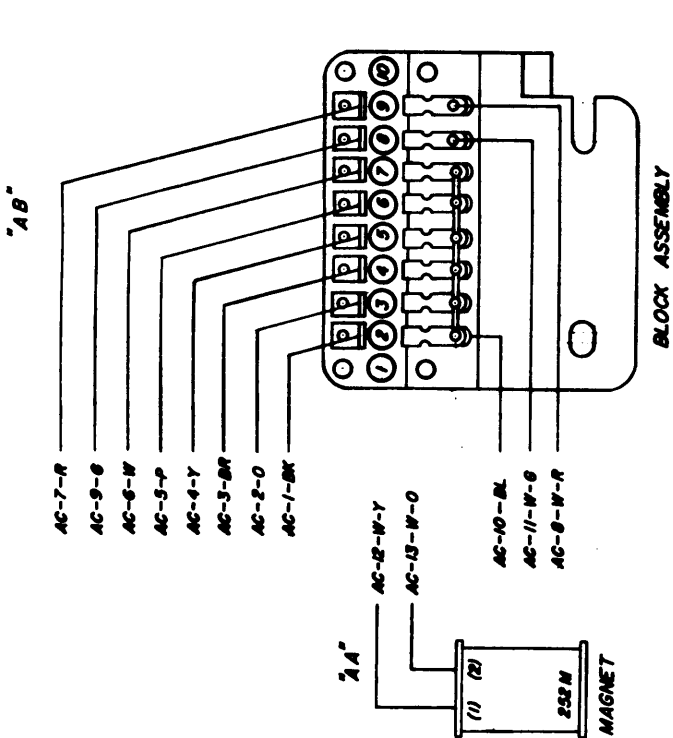
WESTERN UNION	SCALE 3/16" = 1"	TOLERANCE UNLESS OTHERWISE SPECIFIED	DECIMAL ± 0.005	DRAWN K.R.	WESTERN UNION
	FRACATIONAL ± 1/4	ANGULAR		DES. ENG. M.C.	SWITCHING SYSTEM
	BET. HOLDER			SP. ENG. J.D.	M-28 TELEPRINTER
				ISSUE DATE AUG 6, 1960	MODIFICATION KIT # 159373
				DRAWING NUMBER 197210	APPARATUS MOUNTING RACK
					INSTALLATION
					-2

REVISIONS
 B-MAY-1-1962
 LD 10 AND
 NOTE-3 ADDED
 C.B. G.A.
 PEE

NOTES:
 1- DESIGNATED TERMINATIONS ON "C" BLOCK ARE SUGGESTED TERMINATIONS AND MAYBE CHANGED TO FIT SPECIFIC INSTALLATION.
 2- THIS IS A PARTIAL COPY OF T.T. DRAWING 413 WD.
 3- CONNECTING CORD 10484-A IS NOT SUPPLIED WITH THE LD 10



CONNECTING CORD 10484-A
 NOTE - 3

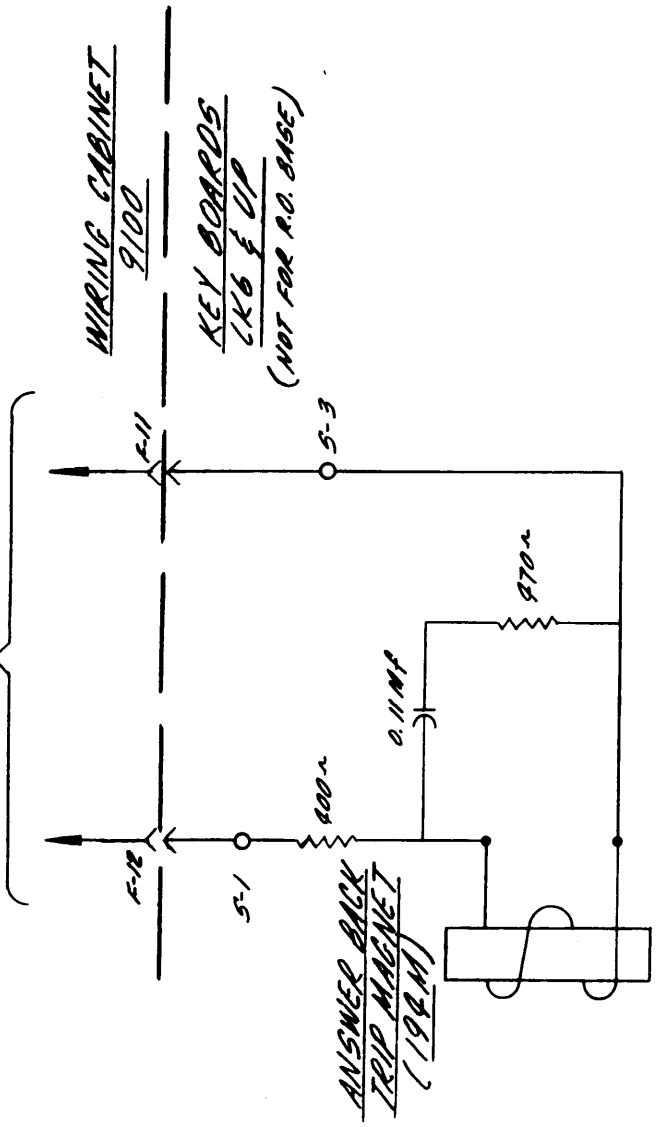


NOTE-2

WESTERN UNION		SCALE	SWITCHING SYSTEM	
WEST ARMY MATERIAL	USED ON	DRAWN	J.F.	MODEL 28
FINISH		FUNCTIONAL	C.B.	MULTIPLE WIRE DISTRIBUTOR
		ANGULAR		LD8, LD9 & LD10
		DET. HOLES		WIRING & SCHEMATIC
		TOLERANCE WHICH IS SPECIFIED		
		DET. HOLES		
		DATE	A-DEC. 3, 1960	197412
		DATE		-3

SCHEMATIC DIAGRAM OF ANSWER BACK FEATURE

A.C. POWER
115 V. 60 ~
SEE NOTE 2

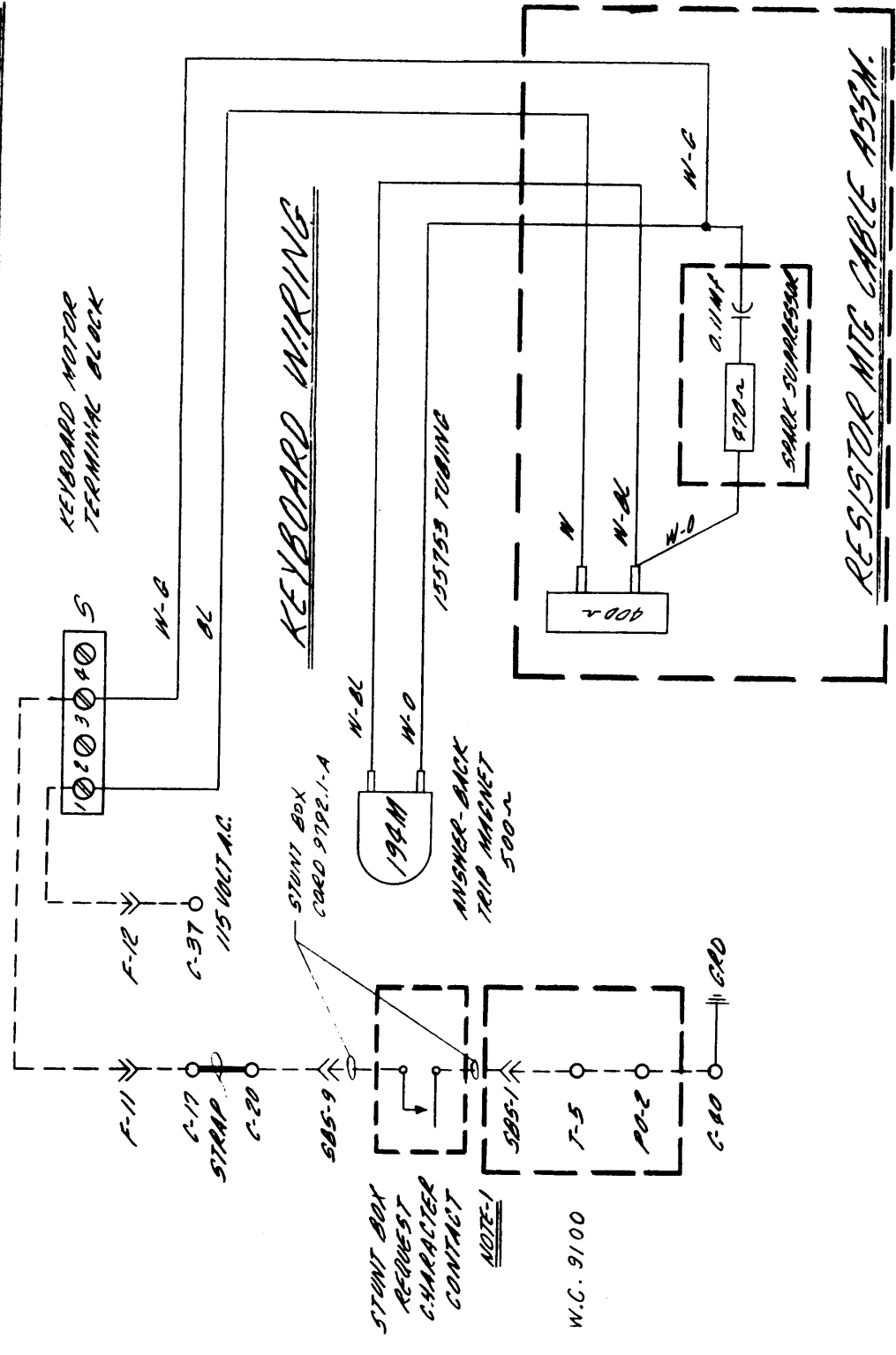


NOTES:

- 1- STUNT BOX CONTACT SHOULD BE MANDATORY CONTACT.
- 2- FOR 115 V. D.C. OPERATION ADD A 1000 ~ RESISTOR IN SERIES WITH THE 400 ~ RESISTOR.

REVISIONS
B.

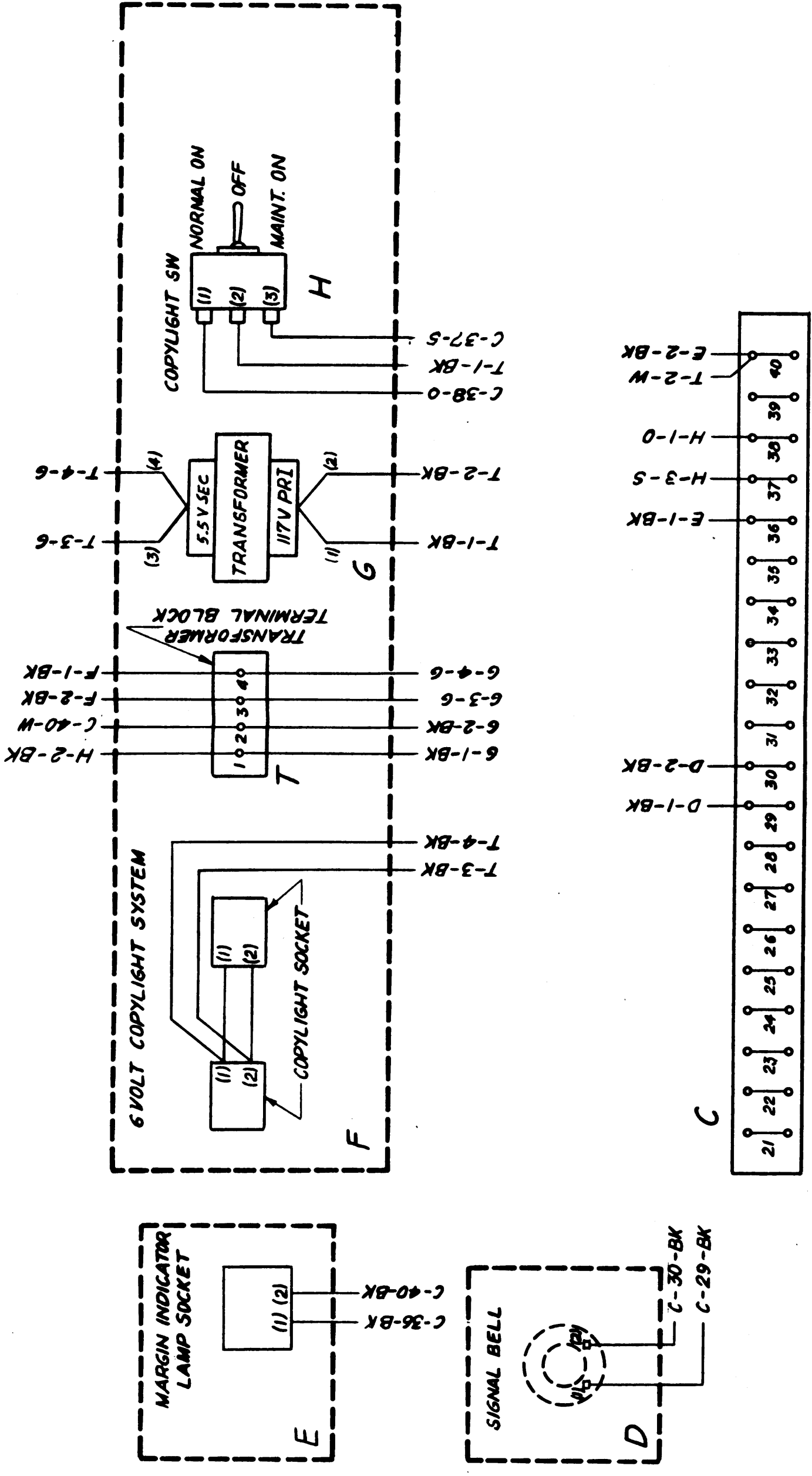
ACTUAL WIRING DIAGRAM OF ANSWER BACK FEATURE



--- WIRES FURNISHED IN 122905 MOD. KIT.

TOLERANCE UNLESS OTHERWISE SPECIFIED	SCALE	DRAWN	WESTERN UNION
DECIMAL	1:1	LOGA	SWITCHING SYSTEMS
FRACTIONAL	DES. ENG.	ACI	M. 28 TELETYPE UNIT (M-28)
ANGULAR	SP. ENG.	PAE	ANSWER BACK SET OF PARTS
NET. HOLES	ISSUE	DATE	12905 FOR M-28 MOD
	NO.	DATE	SYNCHRONIC WIRING
	DATE	NO.	197466
	NO.	NO.	3

REVISIONS
 B- JAN. 10, 1961
 NO. 2 RESISTOR
 REMOVED.
 E.L.G.
 Mc 29 P.E.E.

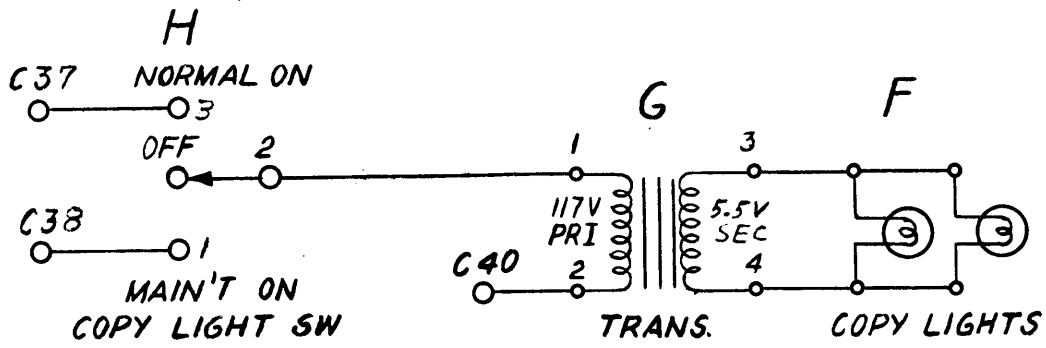
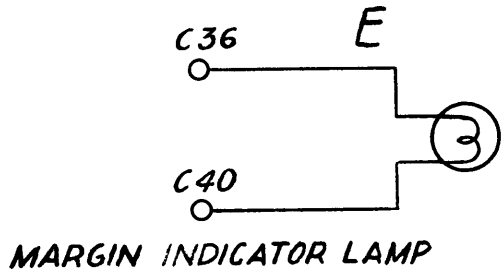
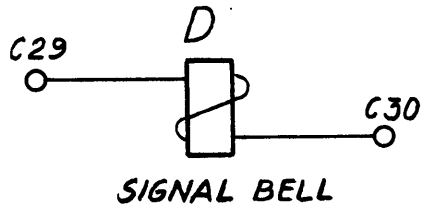


NOTES

1. WIRING LEGEND - A - DISTANT TERMINATING AREA, I - DISTANT TERMINAL DESIGNATION, W - WIRE COLOR CODE. (A-1-W)
2. COLOR CODE - BK - BLACK, G - GREEN, O - ORANGE, W - WHITE, S - SLATE.
3. FOR SCHEMATIC SEE DWG. 197470.

WESTERN UNION		SCALE	TOLERANCE UNLESS OTHERWISE SPECIFIED
SWITCHING SYSTEM		DRAWN	DECIMAL
M-28 TELEPRINTER		E.L.G.	FRACTIONAL
LAC 203 AB221 LAC204 AB222		DES. ENG.	ANGULAR
CONSOLE		SP. ENG.	BET. H LES
WIRING		MT/CK	
ISSUE	DATE	APPROV.	DRAWING NUMBER
1	ASEPT. 22, 1960		197469
			-2

REVISIONS
B-JAN. 9, 1961 100- Ω RESISTOR REMOVED. E.L.C. P.L.E.



NOTES:

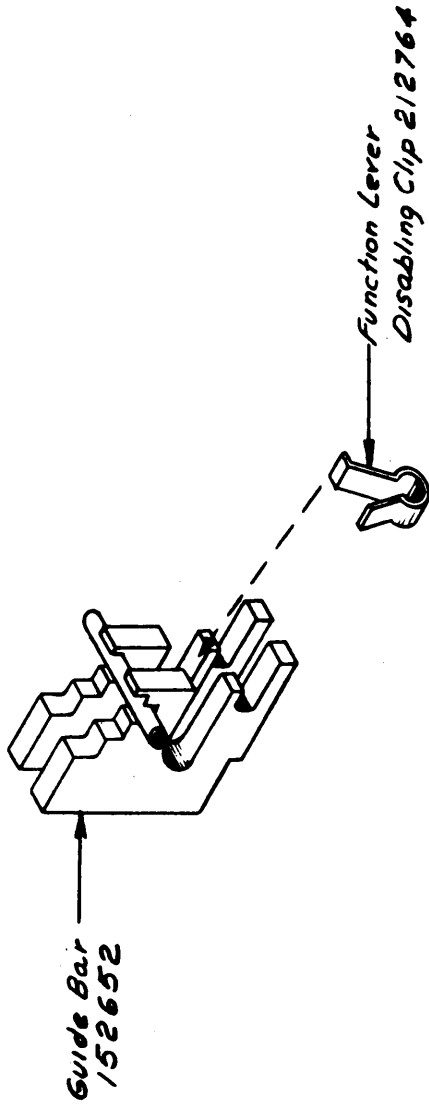
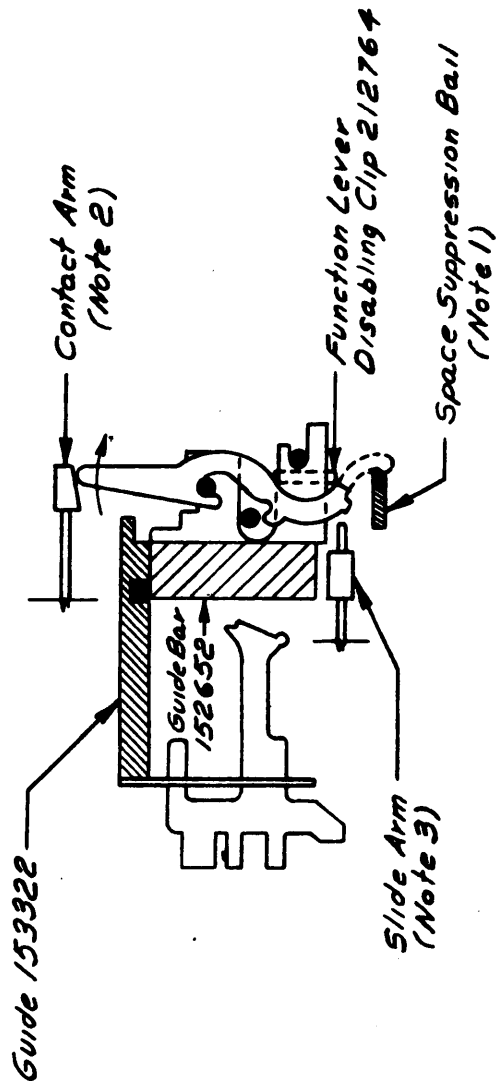
1. - FOR WIRING DIAGRAM SEE DWG. 197469

		TOLERANCE UNLESS OTHERWISE SPECIFIED	SCALE	WESTERN UNION	
NEXT ASS'Y*	USED ON	DECIMAL	DRAWN E.L.C.	<u>SWITCHING SYSTEM</u> <u>M-28 TELEPRINTER</u> <u>LAC 203 AB221 & LAC 204 AB222</u> <u>CONSOLE</u> <u>SCHEMATIC</u>	
MATERIAL:		FRACTIONAL	DES. ENG. JR		
FINISH:		ANGULAR	SP. ENG. H.J.		
		BET. HOLES	APPD. P.L.E.		
			ISSUE DATE A SEPT. 22, 1960	DRAWING NUMBER 197470	-1

REVISIONS
B- 8/22/61
Notes Added.
DWG WAS
size 1
HC

NOTES:

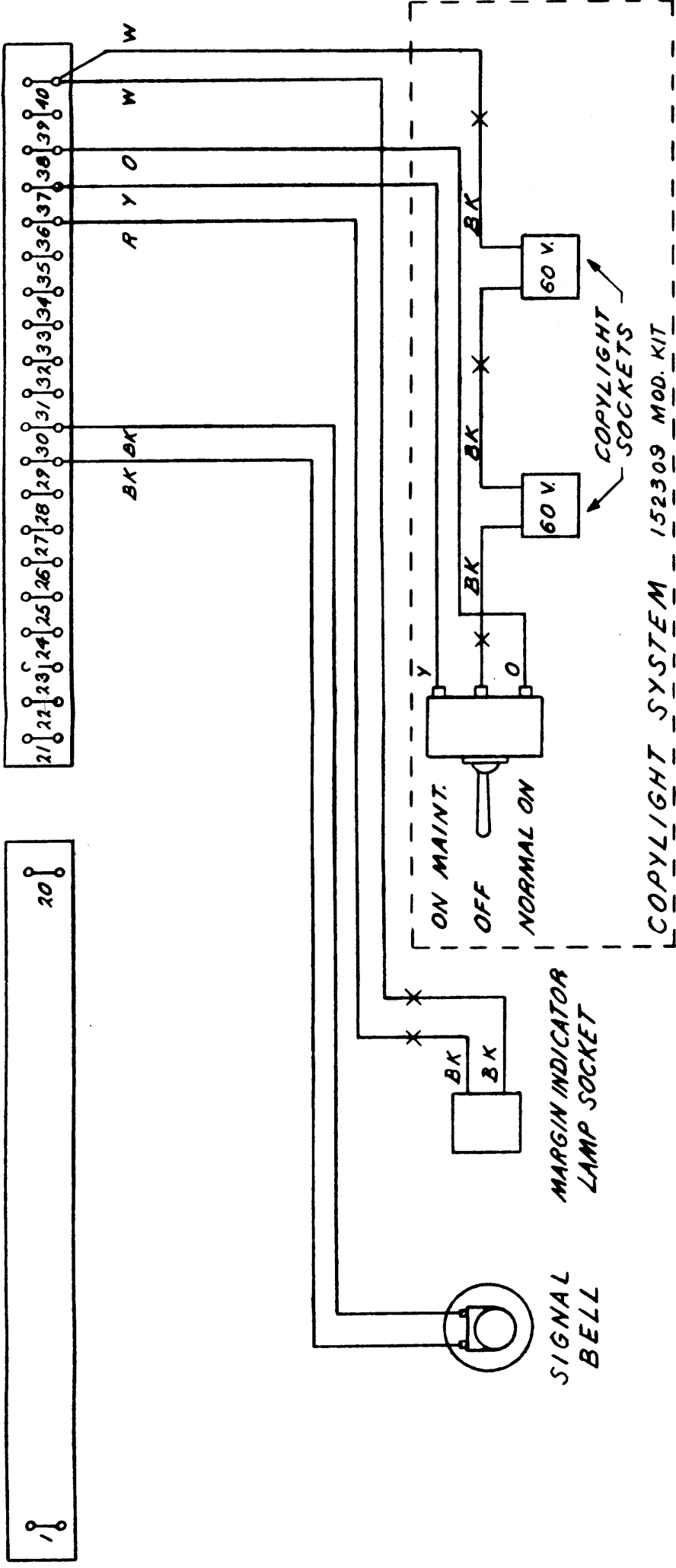
1. Function Lever With Space Suppression Feature Cannot Be Disabled In The Manner Since Space Suppression Bail Will Be Locked In Suppression Position.
2. If Contact Assembly Is Associated With Lever Being Disabled Then, Contact Lever Must Also Be Removed.
3. Caution Must Be Exercised So That One Of The Main Features (CR, LF, PFO, H.Tab., U.Tab., and Blank) Are Not Locked In Their Operating Position Inadvertently.
4. For Clip Dimensions Refer To Dwg. 238292-1.



WESTERN UNION		SCALE	DRAWN	TOLERANCE UNLESS OTHERWISE SPECIFIED	USED ON
Switching System		DECIMAL	AM	DECIMAL	
M-28		FRACTIONAL	DES. ENG.	FRACTIONAL	
Function Lever Disabling Clip		ANGULAR	HC	ANGULAR	
2/2764		BET. H LES	SP. ENG.	BET. H LES	
Installation		APPRO.	HJ	APPRO.	
ISSUE	DATE	PRE		ISSUE	DRAWING NUMBER
A	Aug 9, 1961			A	197659-2

"C" BLOCK

"C" BLOCK



NOTES:

1. * DENOTES SPLICED, SOLDERED AND TAPED WIRES.
2. CABINET POWER CIRCUIT WIRED FOR 115 VOLT A.C. OPERATION
3. COLOR CODE:
 BK - BLACK
 W - WHITE
 R - RED
 G - GREEN
 O - ORANGE
 BL - BLUE
 Y - YELLOW
 BA - BROWN
 P - PURPLE
 S - SLATE

SCALE	WESTERN UNION
TOLERANCE UNLESS OTHERWISE SPECIFIED	SWITCHING SYSTEMS
DECIMAL	MODEL 28 TPA CONSOLE
FRACTIONAL	LAC 203 AB 150,
ANGULAR	LAC 204 AB 130,
BET. HOLES	60 WAC. COPYRIGHT SYSTEM
WIRING	
ISSUE	DATE
AWD.	1976
PLS	ADEC. 29, 1960
DRAWING NUMBER	197661 -2

UC--UPPER CASE
 LC--LOWER CASE
 P--PRINT CASE
 F--NON-PRINT CASE
 S--SELECT CASE
 *--NON SELECT CASE
 IF A CASE IS NOT SPECIFIED, THEN BOTH TIMES ASSOCIATED WITH THAT CASE SHOULD BE BROKEN OUT.

CODE KEY:
 * * * Required ONLY when a COMMON call is specified.
 * * * Required ONLY for two character call.
 * * * Required ONLY when two or three character disconnect is req'd.
 * These characters to be specified for a particular installation.

1. Universal function bars to be coded per Drawing 171987 and for coding for combinations see Drawing 176076 or 174634.
 2. To identify parts see Engineering Catalog 92.
 For Bill of Material see Drawing 307281-1.
 For Wiring of Contacts see Drawing 307281-2.
 5. "AGL" arrangement is equivalent to series "B" Send and Receive arrangement. However, it is also used for Series "B" RO, Series "A" RO and Series A Send and Receive.
 6. Series "A" Stunt Box arrangement for Send and Receive TPR. The function mechanism in Slots 30, 31, 32, 33 should be disabled. Also Slots 14 and 22 should be coded for "S. Space."
 7. For Series "B" RO only the function mechanism in Slots 19, 20, 21, 22, 23 and 27 should be disabled. Also Slot 14 should be coded for "S. Space."
 8. For Series "A" RO only, the function mechanism in Slots 19, 20, 21, 22, 23, 27, 30, 31, 32, and 33 should be disabled. Also Slot 14 should be coded for "S. Space."
 9. "Space" will be used as the "Cut-Off" character unless otherwise specified.
 10. Function mechanism in Slots 17 and 42 should be disabled unless specified. If other character is required, separate universal function bar (153440) and function bar spring 4703 should be ordered. Latch I or release ball shaft and retaining rings are used with this mechanism. (1-154669 Shaft; 2-119649 Retaining Ring)

SPECIAL NOTES:
 Any function mechanism may be disabled by using the # 212764 Function Lever Disabling Clip (for installation see Dwg. 197659) # 157274 Pawl Hook and Removing Function Bar and Function Bar Spring. All of which do not require Disassembly of Stunt Box.

SLOT NO.	FUNCTION PERFORMED	CODE	FUNCTION MECHANISM	SHIFT MECHANISM	CONTACT ASSEMBLY
1	Unshift on Space.				
2	Figures Shift	FIG			
3	Letters Shift	LTR			213226
4					
5	Carriage Return	CR			212751
6	Disconnect character permits sequential selection of mechanism in Slot 7	*			211907
7	Disconnect character permits sequential selection of mechanism in Slot 8	*			211907
8	Disconnect character restores teleprinter to idle condition.	*			No. 11 211910
9	"Call" shift teleprinter to (P) case if received before "Cut-Off" character.	S.LC*			211907
10	"Call" shift teleprinter to (P) case if received before "Cut-Off" character.	S.LC*			211909
11	"Common Call" shift teleprinter to (P) case if received before "Cut-Off" character.	S.LC*			212762
12	"Common Call" shift teleprinter to (P) case if received before "Cut-Off" character.	S.LC*			211909
13	"Cut-Off" character shifts teleprinter to (S) Case	Notes			162013
14	"Cut-Off" character shifts teleprinter to (S) Case	6 & 9			211909
15	(Reserved for Motor Control--see spec. 11273)				
16	(Reserved for Motor Control--see spec. 11273)				
17	Horizontal Tabulation (Note 10)	UC.G			211905
18					
19	First "Call" Character	S.LC*			No. 7 & 8 211922
20	Second "Call" character activates contacts in keyboard circuit Slot 19, in busy lamp circuit Slot 20 and in call lamp circuit Slot 21.	S.LC*			No. 7 & 8 212761
21	Activates "Make" contact in call lamp circuit	S.LC*			No. 7 & 8 211911
22	"Cut-Off" character activates "Make" contact in busy lamp circuit, and mechanism in slot 23.	Notes			No. 7 & 8 211912
23	Activates "Make" Contact in keyboard circuit.	No. 7 & 9			211911
24	Disconnect character permits sequential selection of mechanism in Slot 25.	*			211907
25	Disconnect character permits sequential selection of mechanism in Slot 26.	*			211907
26	Disconnect character restores teleprinter to idle condition	*			No. 11 211910
27	Activates "Break" contact in busy lamp circuit.	P.G. Space			211905
28	Activates Signal Bell in the Printing Case.	P.UC (der S)			211906
29	Deletes Space on upper and lower case blank.	BL.			211906
30	Disconnect character permits sequential selection of mechanism in Slot 31.	*			No. 6 & 8 211907
31	Disconnect character permits sequential selection of mechanism in Slot 32	*			No. 6 & 8 211907
32	Disconnect character restores teleprinter to idle condition.	*			No. 6 & 8 211909
33	Cut-Off character; shifts teleprinter to (P) case if received before "Call".	Note 9			No. 6 & 8 211925
34					
35	(Reserved for Mechanical Keyboard Lock)				
36					
37					
38	Delete Space on Line Feed	LF			211906
39					
40	Line Feed in the Print Case.	P. LF			211905
41					
42	Page Feed-Out (Note 10)	UCZ			211906

ORIGINAL FORM DWG. # 197518-A
 SCALE: DRAWN: 1:1
 CHECKED: [Signature]
 ENGRS.: [Signature]
 APPROVED: [Signature]

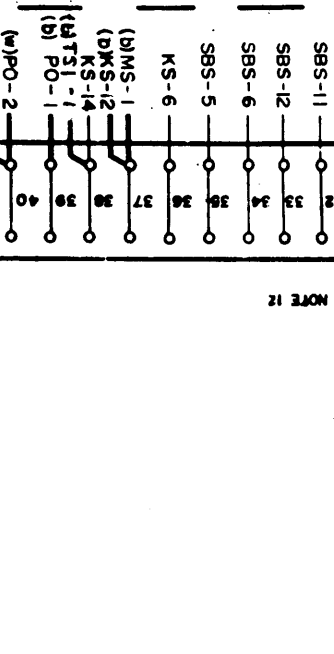
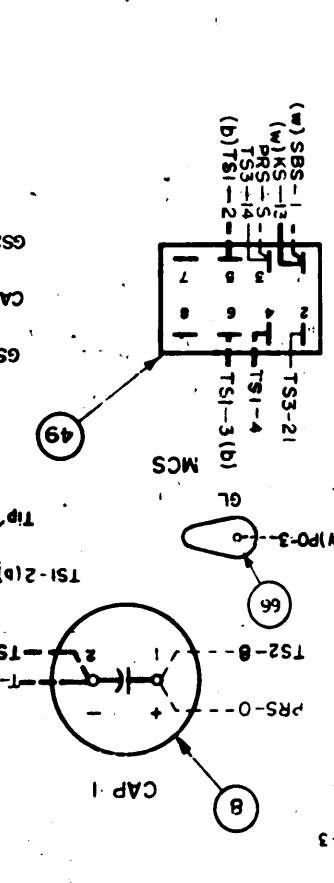
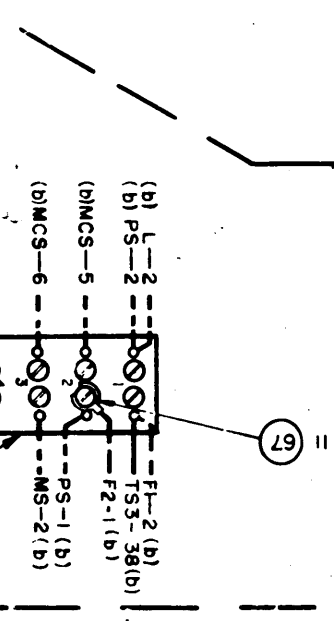
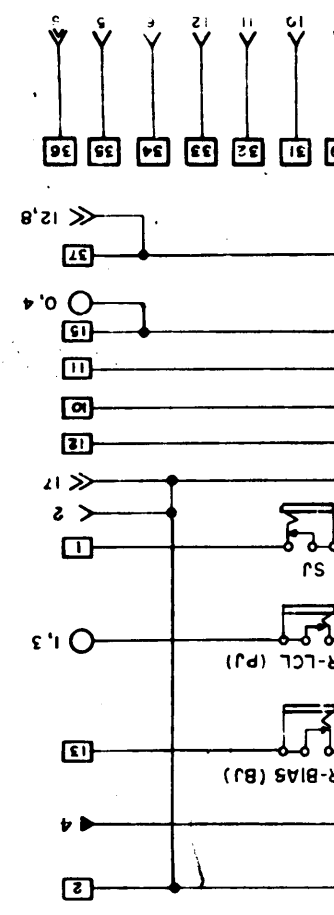
A-1718/61
 1 9 7 6 6 8
 WESTERN UNION SWITCHING SYSTEMS
 M-28 TPR
 "AGL" Stunt Box Arrangement
 For Series "A" or Series "B" Stunt Box S lectors
 S & R r RO

C--Sept. 8, 1961
 Shift Mech. changed to 213226
 H. K. [Signature]
 B--July 15, 1961
 15, 16, 35 and 36 Added
 Sp. dial Note Changed
 P. B. A.
 C. R. M. [Signature]

I.D.P. NO.	661777	212722 SET OF PARTS, REMOTE LINE FEED CONTROL MECHANISM	DWG. NO.	B/M Dwg. 207735 Specs. 13557
NO. REQ'D	1			
	1			
	680603	212725 Set of Parts, Line Feed Actuator		
	680637	212730 Set of Parts consisting of one each of the following:		
	680595	212749 Set of Parts, Control Box		B/M Dwg. 238284
	680645	212750 Set of Parts, Switch Box		B/M Dwg. 238285

REVISIONS
B-

NEXT ASS'Y		USED ON		TOLERANCE UNLESS OTHERWISE SPECIFIED		SCALE		WESTERN UNION M-28 TPR PROJECTOR SET OF PARTS 212722 BILL OF MATERIAL		
MATERIAL:				DECIMAL	DRAWN					
				FRACTIONAL	DES. ENG.					
FINISH:				ANGULAR	SP. ENG.					
				BET. HOLES	APPD.	ISSUE.	DATE	DRAWING NUMBER		
					<i>Pls</i>	A	11/21/60	207732	-1	

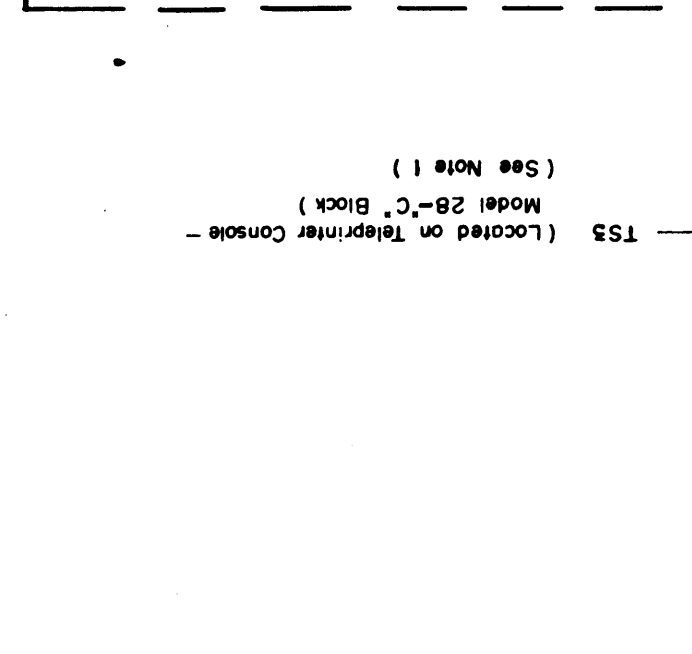
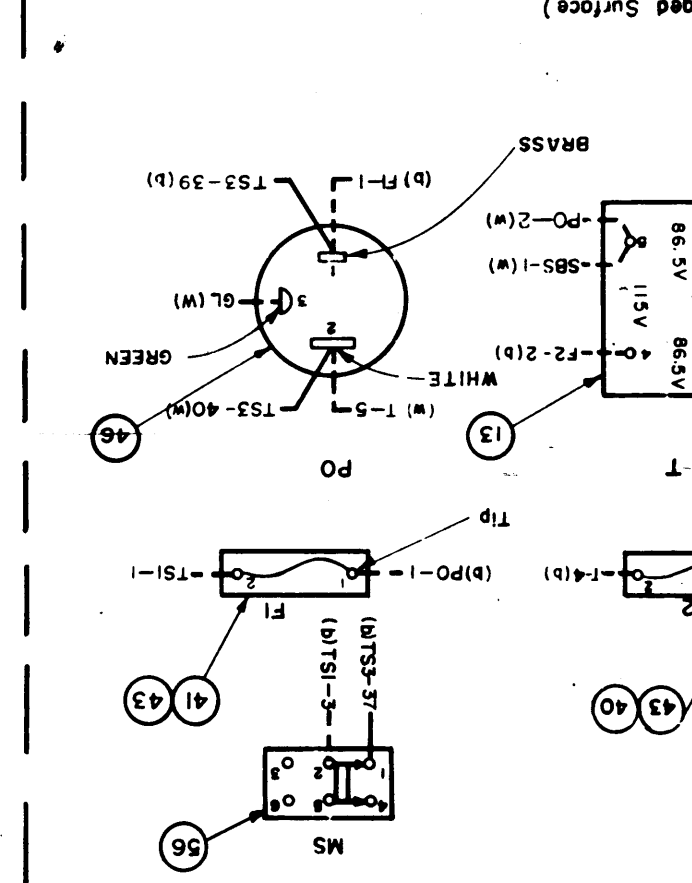
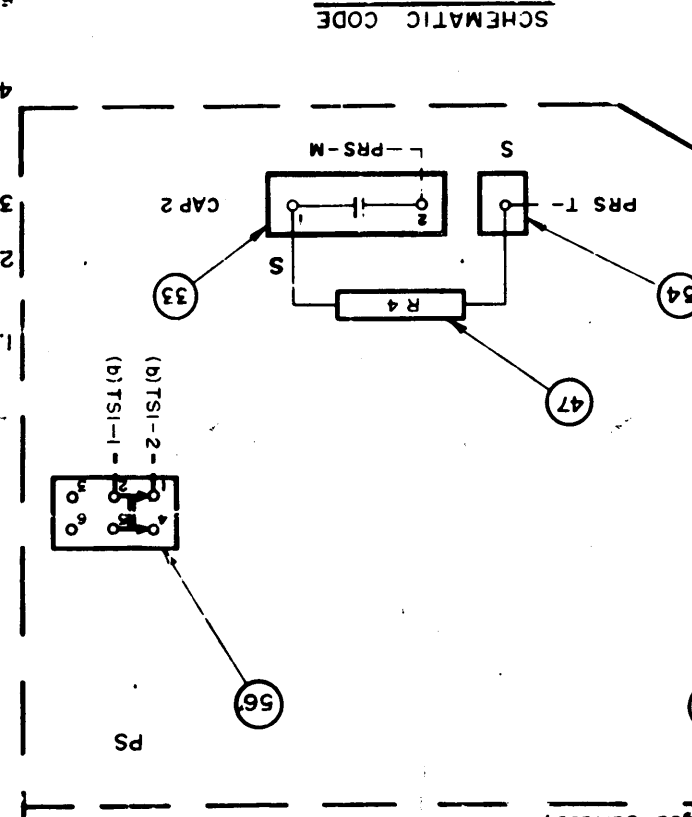


(67) Terminal, Solderless, #41077 — Amp Inc.
 Note 11, Connection on TSI-2 marked F2-1 shall be equipped with Item 67.

* Note: All asterisked wires shown on the wiring diagram (connectors KS and TS) are not shown in the schematic, since their terminations are not specified.

Terminals on TS3
 on TS
 on KS
 on SBS
 on MCS

SCHEMATIC CODE
 ◀ ▶ ◃ ◅ ◆ ◇ ◈ ◉ ◊ ◌ ◍ ◎ ● ◐ ◑ ◒ ◓ ◔ ◕ ◖ ◗ ◘ ◙ ◚ ◛ ◜ ◝ ◞ ◟ ◠ ◡ ◢ ◣ ◤ ◥ ◦ ◧ ◨ ◩ ◪ ◫ ◬ ◭ ◮ ◯ ◰ ◱ ◲ ◳ ◴ ◵ ◶ ◷ ◸ ◹ ◺ ◻ ◼ ◽ ◾ ◿ ◰ ◱ ◲ ◳ ◴ ◵ ◶ ◷ ◸ ◹ ◺ ◻ ◼ ◽ ◾ ◿

| Item No. | Description | Quantity | Notes |
| --- | --- | --- | --- |
| 8 | Capacitor, Dry Electrolytic, 4-A, 150 MFD, 250 VV DC | (CAP 1) | |
| 9 | Resistor, 18, 200 ohm | (R2) | |
| 10 | Resistor, 59-A, 250 ohm | (R1) | |
| 11 | Resistor, 59-A, 2500 ohm | (R1) | |
| 12 | Subbase, Polar Relay, 202-A, without coil | (PRS) | |
| 13 | Transformer, 172-A | (T) | |
| 21 | Potentiometer 17-A, 2500- Ω | (PP, BR, RP, TKP) | |
| 31 | Holder, Indicator Light, Neon with built-in 100,000 ohm Resistor, 52408-9-Dialight Corp or IOIN-LC - Drake Mfg Co | | |
| 32 | Lens, Indicator Light, 52-991 - Dialight Corp or 25 PF (Red) - Drake Mfg Co | | |
| 33 | Capacitor, 0.5 MFD, 600V, FM650 or Z2173 | (L) | |
| 37 | Connector, Micro, 47A-17803 | (KS) | |
| 38 | Connector, Micro, 47A-17804 | (TS) | |
| 41 | Fuse, # 313004 | (F1) | |
| 43 | Holder, Fuse HRP | (F1) & (F2) | |
| 46 | Receptacle, 3 Wire Grounding, 5284 | (PO) | |
| 47 | Resistor, 86-A, 390 ohm | (R4) | |
| 49 | Lamp, Neon NE-51 | (L) | |
| 40 | Fuse, # 313,500 | (F2) | |
| 48 | Socket, S-308-AB | (MCS) | |
| 49 | Socket, S-312-AB | (SBS) | |
| 51 | Stack, Germanium Rectifier IN158 | (GS1) | |
| 52 | Strip, Terminal #4-140-W | (TS1) | |
| 53 | Strip, Terminal #9-140-W | (TS2) | |
| 54 | Strip, Mounting #5101 | (S) | |
| 55 | Switch, Top #5-003-2, equipped with non-turn Washer #12C1087 | (TKS) | |
| 56 | Switch, Toggle 81027-JE | | |
| 66 | Lug, Grounding #573 | | |
| 67 | Zierick Mfg Co. (GL) | | |

NOTES
 1. Terminal board TS-3 is not part of the wiring cabinet. TS-3 is shown brought out from the cables.
 2. All wires shown terminated on TS-3 shall be equipped with Solderless Terminals # 41077, Amp, Inc.
 3. Whenever two 22 AWG gauge wires are shown connected to the same point on TS-3, they shall be connected to a single solderless terminal. Any other multiple connection shown on TS-3 shall have each individual wire equipped with one solderless terminal.
 4. Wires shown terminated on points 1 through 20, and points 21 through 40 on TS-3, shall form the larger cables emerging from the left and right sides respectively, of the cabinet as shown on Drawing 174239.
 5. The spacing between the wires emerging from the cables referred to in note 4 shall be as indicated on Drawings 174239 and this drawing.
 6. For method of running cables see Drawing 174239.
 7. For method of attaching wires to micro-connectors TS and KS see Drawing 174235. Before wires are connected, tubing shall be placed over the wire in accordance with Drawing 174235 and 174239.
 8. All wiring from and to connectors KS and TS and Terminal board TS-3 shall consist of flexible wire of the gauges indicated by the code.
 9. All other wiring shall consist of Solid Instrument Wire of the gauges indicated by the code.
 10. All wires on KS and TS indicated by * shall be brought into the cabinet through their respective cables. The free length of the wires inside the cabinet as measured from the cable clamps shall be 2 feet. The wires shall be coiled and staped as described in the Bill of Material, Dwg 174238, 229631

WIRING AND SCHEMATIC CABINET WIRING 9100-C W.U.TEL.CO. SCALE: DRAWING NO. 232623

APPROVED: [Signature]

REVISIONS:

NO.	DATE	DESCRIPTION
1	JUN 19 1958	ISSUED FOR TS-2
2	MAY 2 1958	TS & KS CONNECTORS
3	MAY 2 1958	TS & KS CONNECTORS
4	MAY 2 1958	TS & KS CONNECTORS
5	MAY 2 1958	TS & KS CONNECTORS
6	APRIL 17 1958	(F2) FUSE HOLDER
7	APRIL 17 1958	AND FUSE
8	OCT 20 1958	ITEMS 37 & 38
9	OCT 20 1958	WERE #14256-A
10	OCT 20 1958	AND #14376-B
11	OCT 20 1958	CINCH
12	APRIL 8 1955	SCHEMATIC CORRECTED
13	APRIL 8 1955	APPROVED
14	MARCH 20 1956	REVISIONS
15	MARCH 20 1956	REVISIONS
16	MARCH 20 1956	REVISIONS
17	MARCH 20 1956	REVISIONS
18	MARCH 20 1956	REVISIONS
19	MARCH 20 1956	REVISIONS
20	MARCH 20 1956	REVISIONS
21	MARCH 20 1956	REVISIONS
22	MARCH 20 1956	REVISIONS
23	MARCH 20 1956	REVISIONS
24	MARCH 20 1956	REVISIONS
25	MARCH 20 1956	REVISIONS
26	MARCH 20 1956	REVISIONS
27	MARCH 20 1956	REVISIONS
28	MARCH 20 1956	REVISIONS
29	MARCH 20 1956	REVISIONS
30	MARCH 20 1956	REVISIONS
31	MARCH 20 1956	REVISIONS
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33	MARCH 20 1956	REVISIONS
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40	MARCH 20 1956	REVISIONS

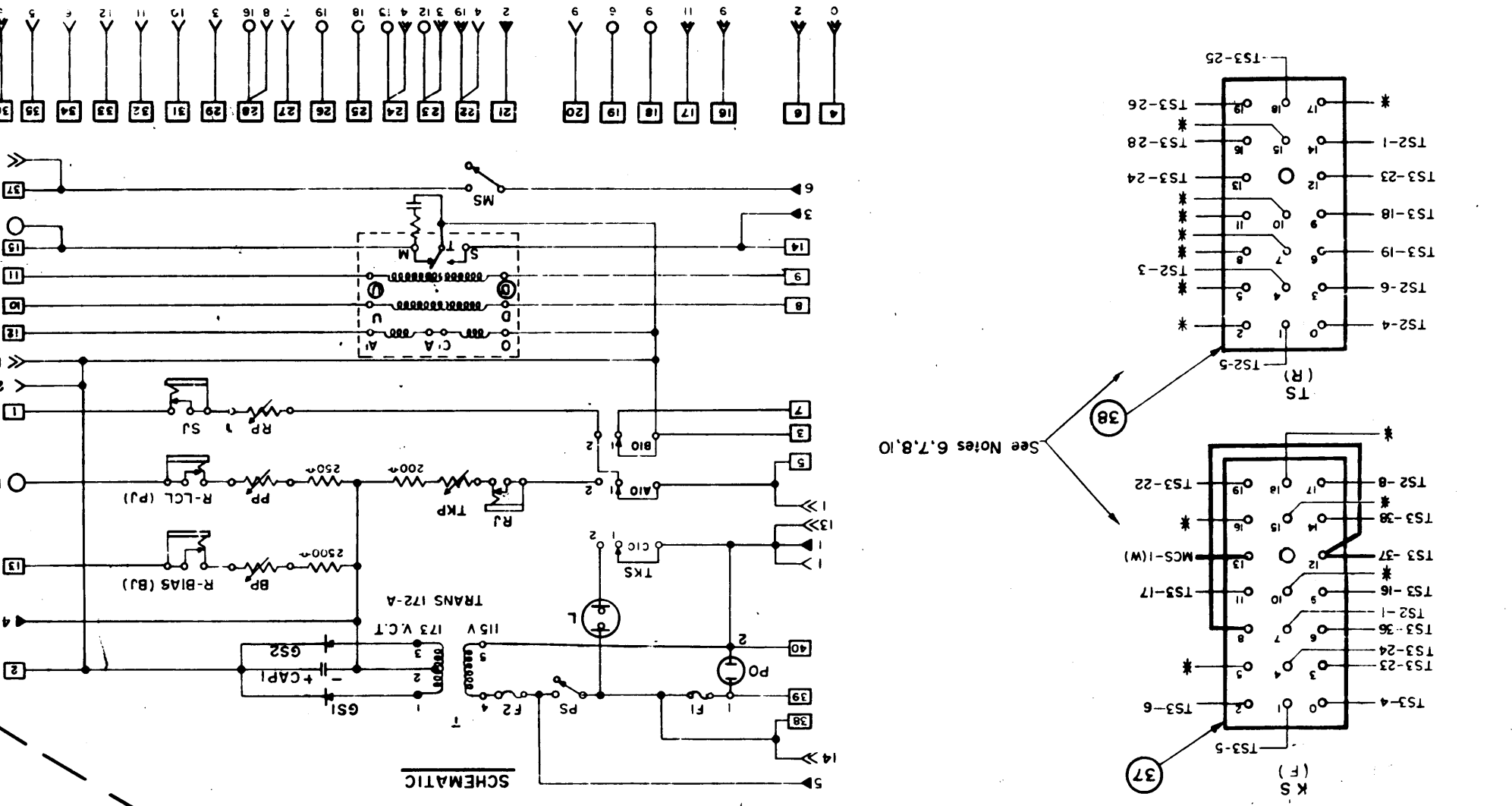
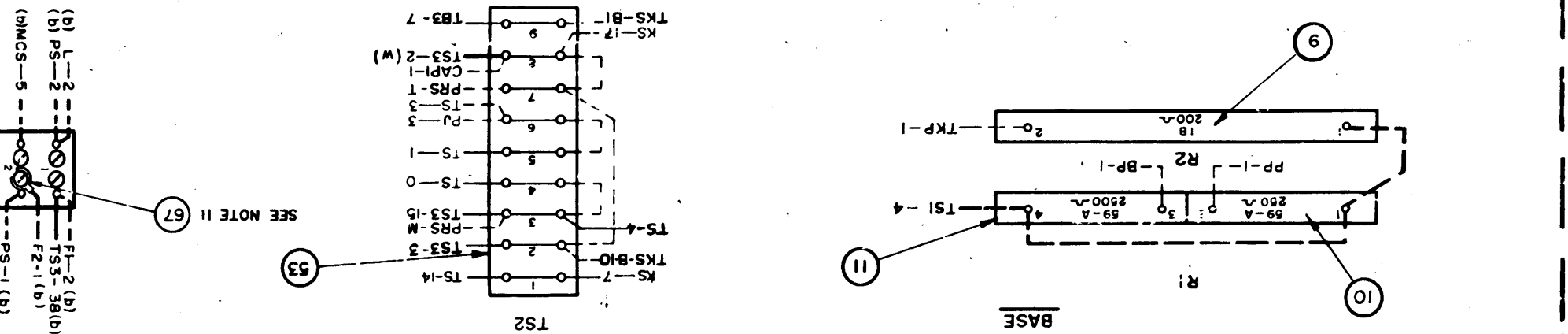
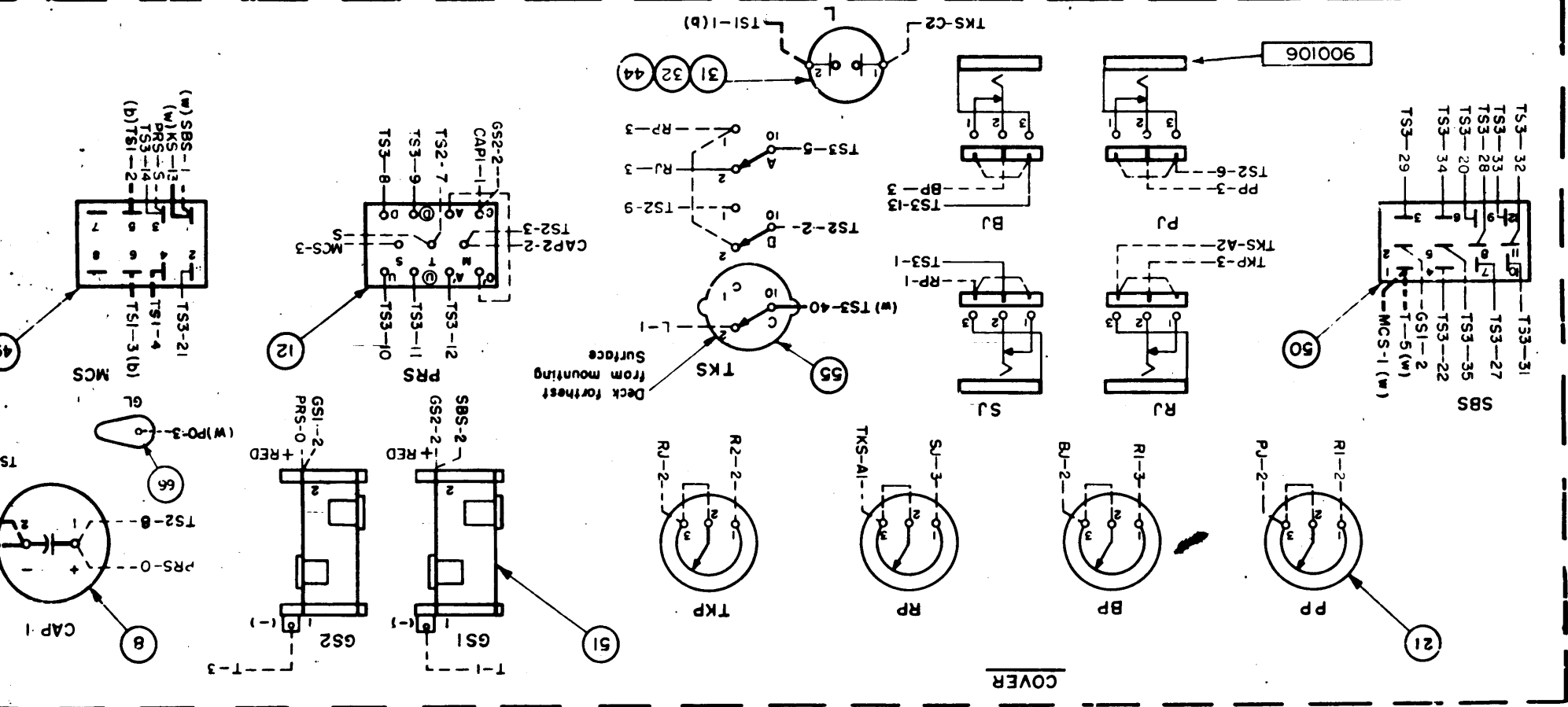
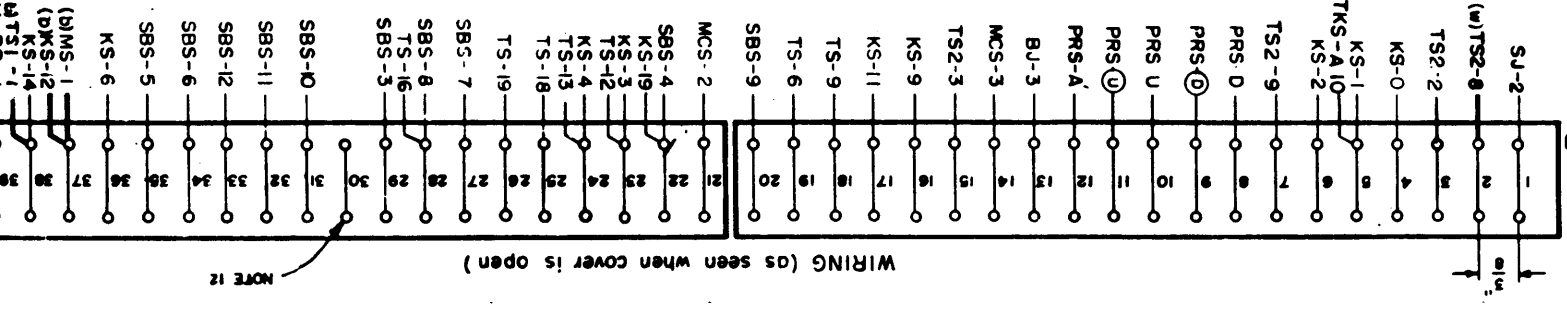
W.U.TEL.CO. 9100-C WIRING AND SCHEMATIC CABINET WIRING

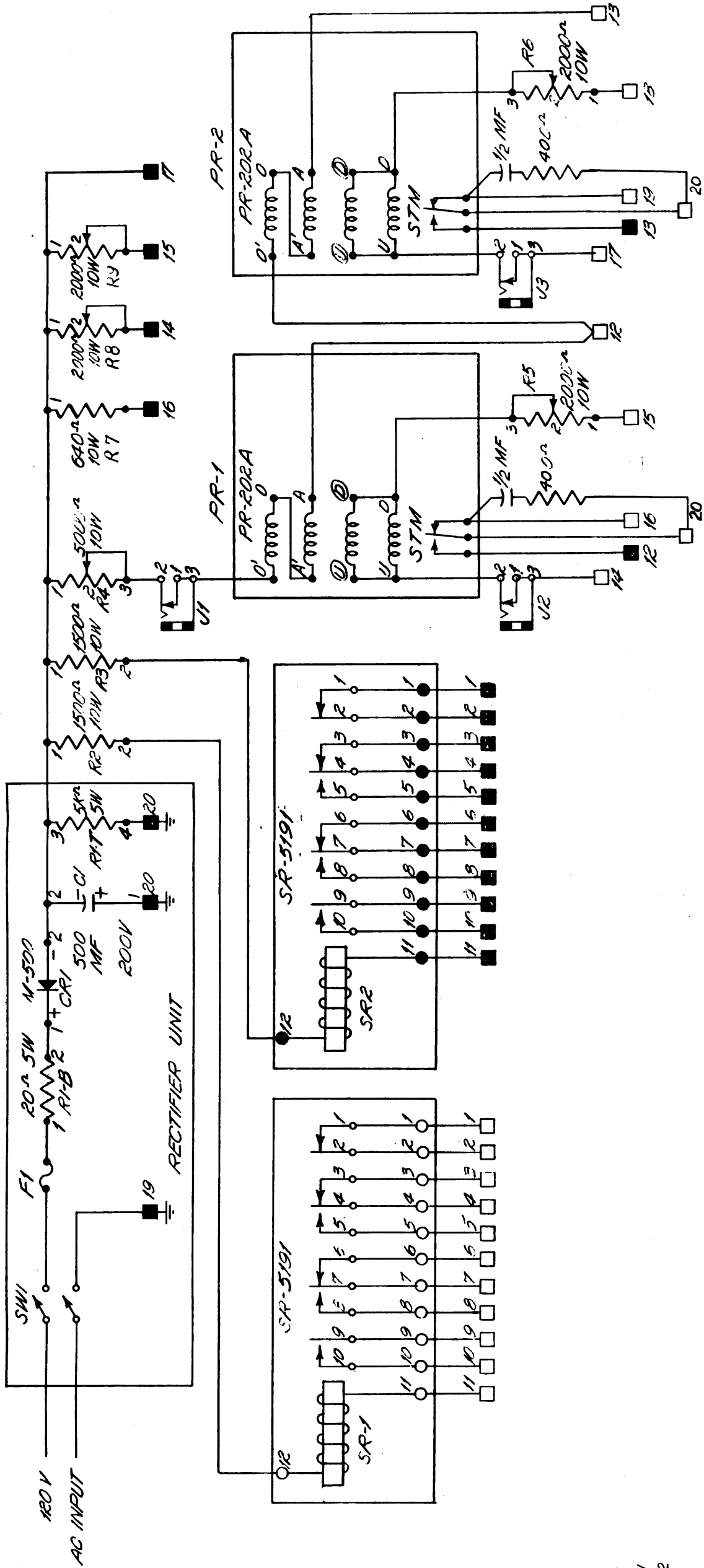
Bill of Material, Dwg 174238, 229631 (See Notes 8 and 9)

EQUIPMENT

(See Note 1)
 Model 28-C Block
 (Located on Teleprinter Console - TS3)

Solderless Terminal #41077-AMP, INC. Typical Cable-Wire Termination. The Terminal is Attached by Crimping as Recommended by AMP, INC.





□ TS1
 ■ TS2
 ○ SR-1
 ○ SR-2

C- JAN. 14, 1956
 REMOVED & BOUND
 FROM TSI-20
 C. B. APPROVED
 B JAN. 31, 1958
 1/2" MF WGS
 1/4" MF 900
 WGS 390
 TSI-20 gr. unided.
 EF APPROVED
 A-ZERO-2-2-17
 DRAWING NUMBER
 234,285-3
 WESTERN UNION
 SWITCHING
 SYSTEM
 EQUIPMENT
 SHELF
 9285-A
 SCHEMATIC

SCALE:
 DRAWN:
 TRACED:
 CHECKED:
 ENGINEER:
 APPROVED:

DRAWING NUMBER: 234368
 W. U. TEL. CO.
 TRANSMITTING SHELF 8582-A
 WIRING 3
 THEORY
 APPROVED: [Signature]
 DATE: [Blank]

B-MAY 8, 1958
 Redrawn, Superseded
 234366-3 and
 234369-2. List
 of equipment added,
 itemized, item 6
 r. 5, 7 and 8 redrawn.
 Signs added
 capacitor and
 rectifier stock in
 theory, item 34
 added.

AMP Inc.
 Littlefuse Inc.
 General Electric Co.
 H.B. Jones Div, Cinch Mfg. Corp.
 H.B. Jones Div, Cinch Mfg. Corp.
 Arrow-Hart & Hegeman Elec. Co.
 Littlefuse Inc.
 Littlefuse Inc.
 Redown, Superseded
 234366-3 and
 234369-2. List
 of equipment added,
 itemized, item 6
 r. 5, 7 and 8 redrawn.
 Signs added
 capacitor and
 rectifier stock in
 theory, item 34
 added.

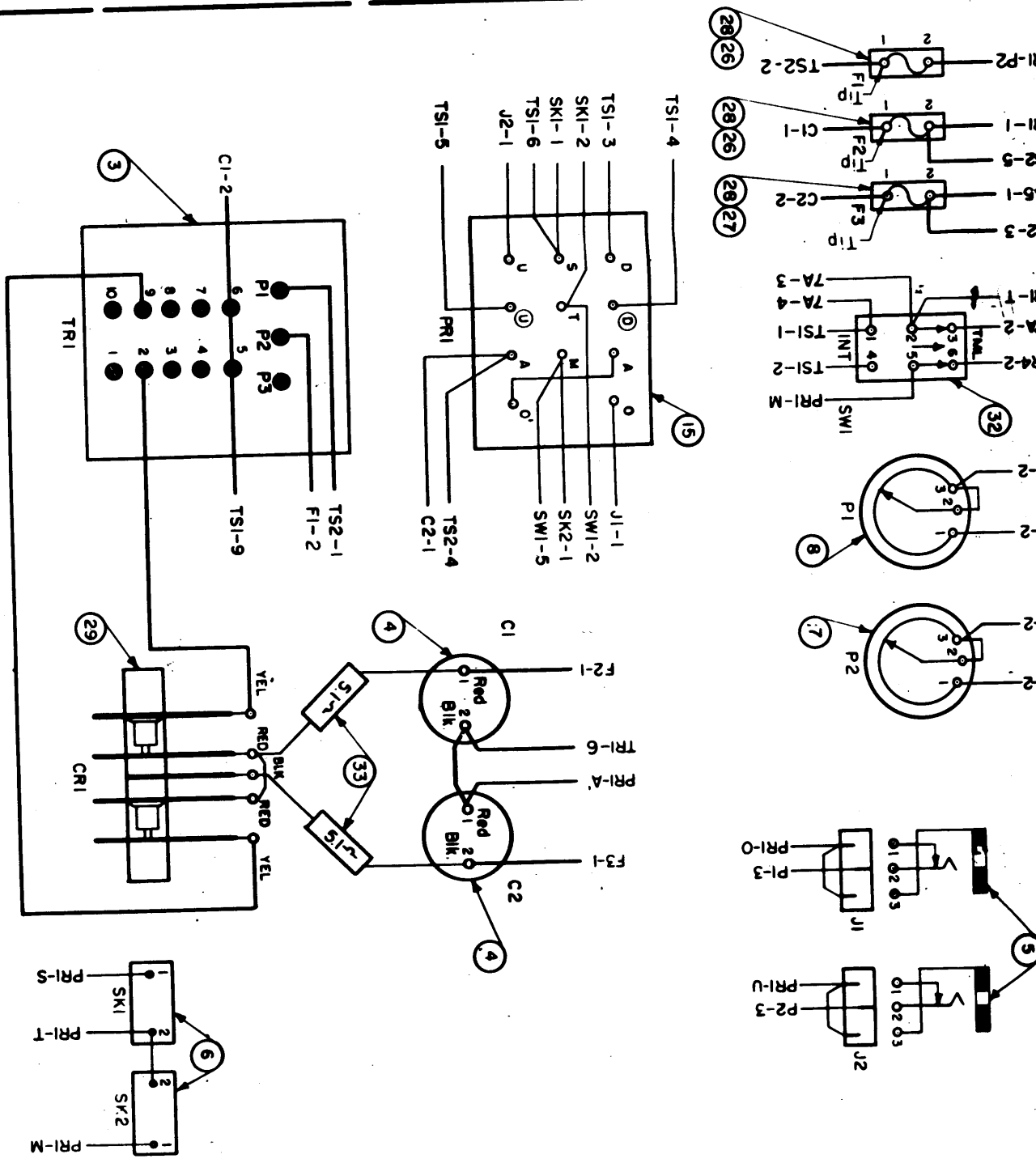
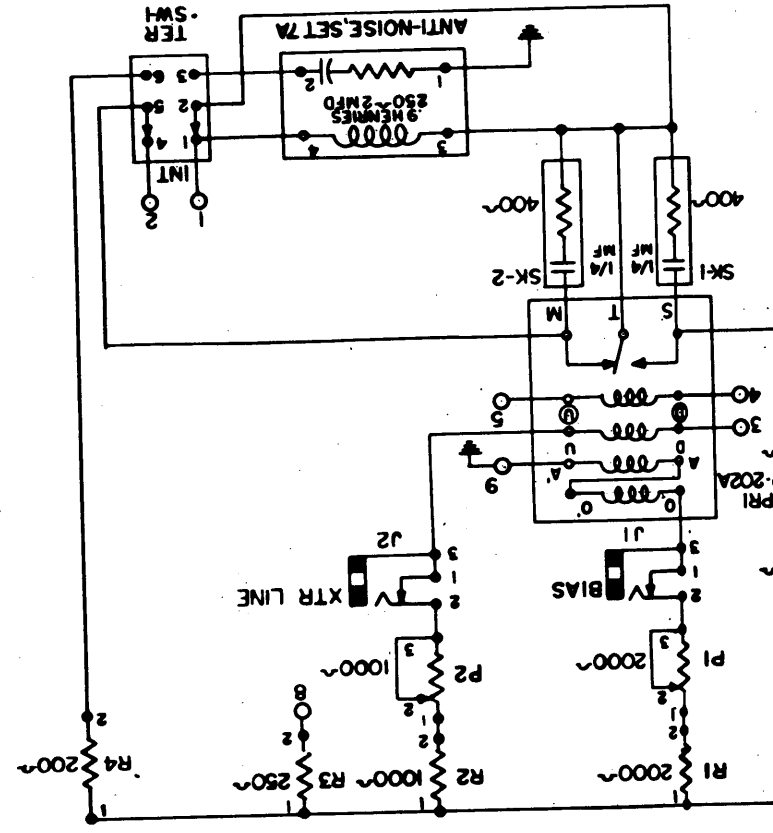
Bare leads of axial type resistors shall be covered with #18 ASTM
 Flexible Varnished Impregnated Tubing.
 Terminals #1 of resistors are nearer chassis.

22 AWG Solid Instrument Wire
 18 AWG Single Conductor Block Office Wire

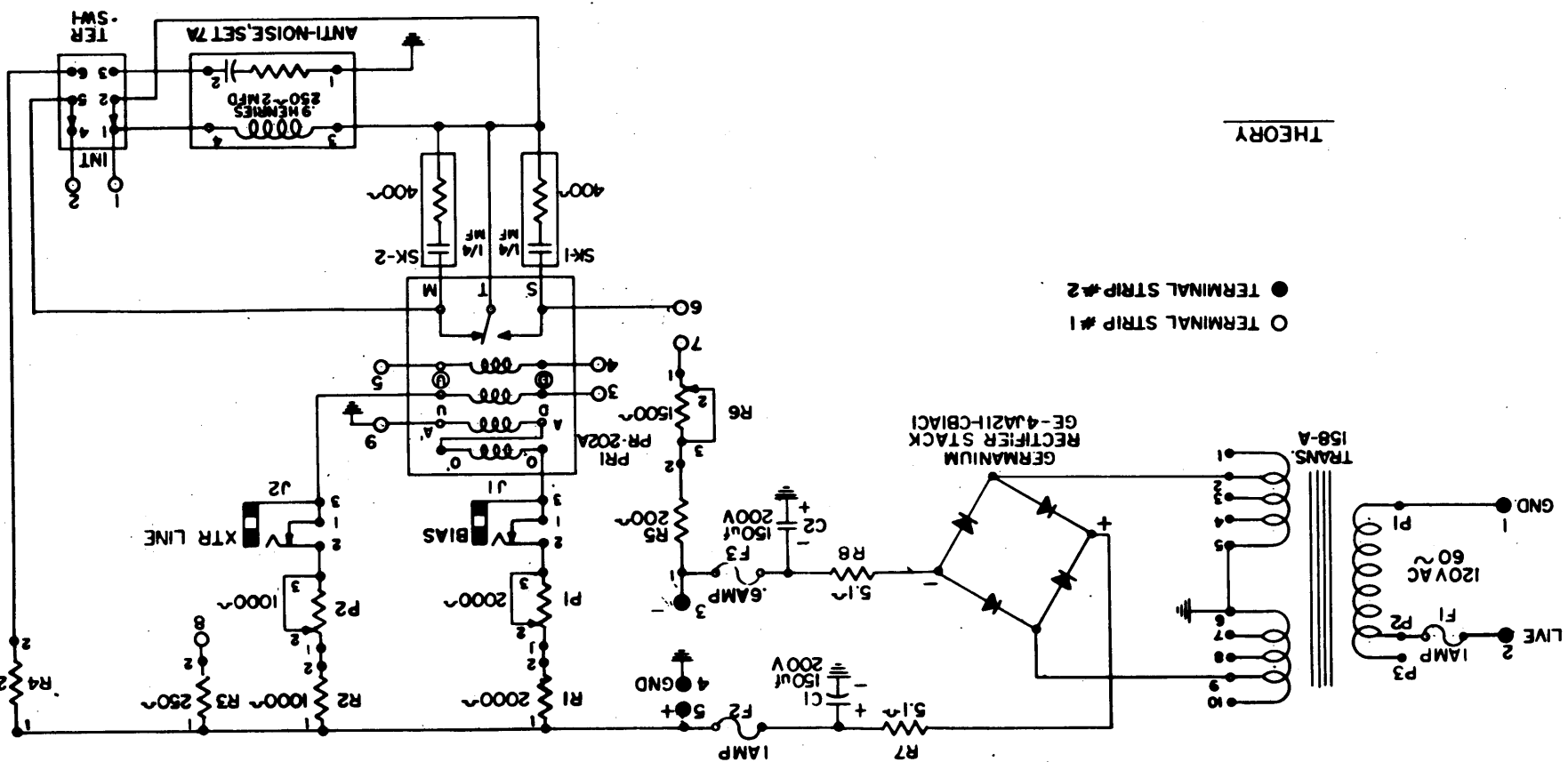
- Transformer 158-A Capacitor, Dry Electrolytic, 4-A, 150 uf, 250 DCWV
- Jack 900107
- Killer, Spark 8596-A
- Potentiometer 17-A, 2000 ohms
- Potentiometer 17-A, 2000 ohms
- Resistor 1-B, 200 ohms
- Resistor 1-B, 250 ohms
- Resistor 1-B, 1000 ohms
- Resistor 1-B, 2000 ohms
- Resistor 68-1-A, 1500 ohms
- Resistor 68-1-A, 1500 ohms
- Set, Anti-Noise, 7-A
- Subbase, Relay, 202-A
- Fuse, 510-B10, 1 Amp, 313001
- Fuse, 510-B10, 6 Amp, 313,600
- Post, Fuse Extractor, 342001
- Stock, Germanium Rectifier, #4JA211CB1ACI
- Strip, Terminal 10-141-3/4W
- Strip, Terminal 5-142
- Switch, Toggle, #B1027CU
- Resistor 86-A, 5.1 ohms
- Terminal, Solderless, 318B3

ITEM NO. 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
 26 27 28 29 30 31 32 33 34

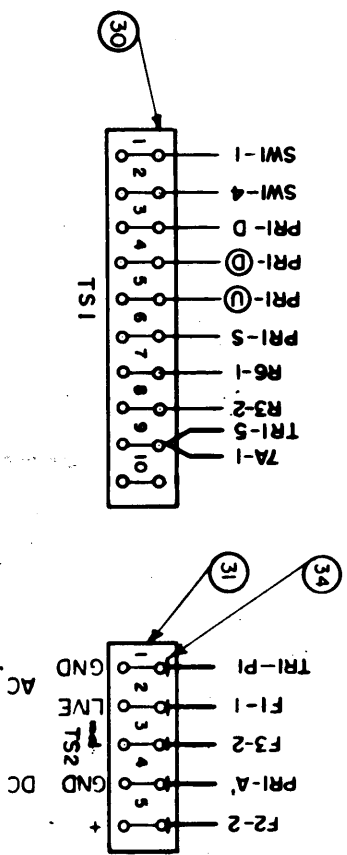
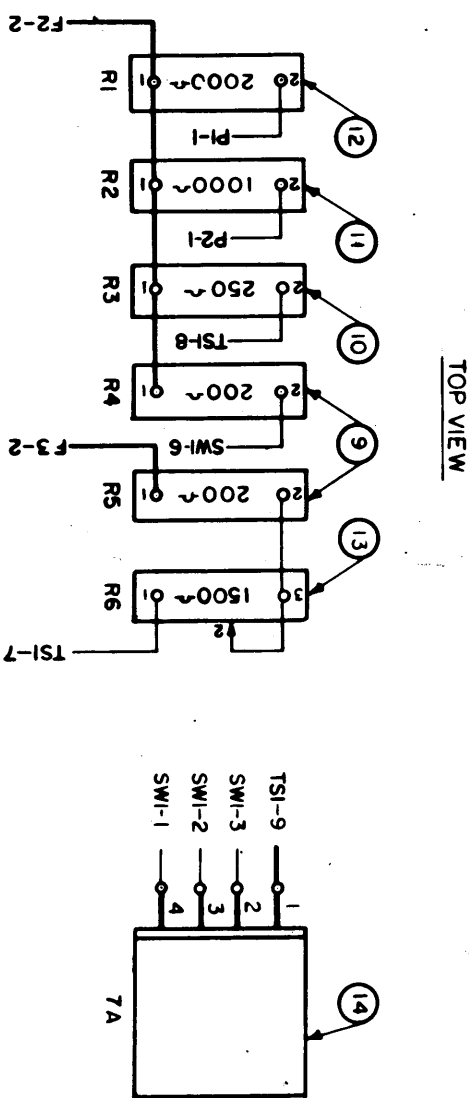
EQUIPMENT



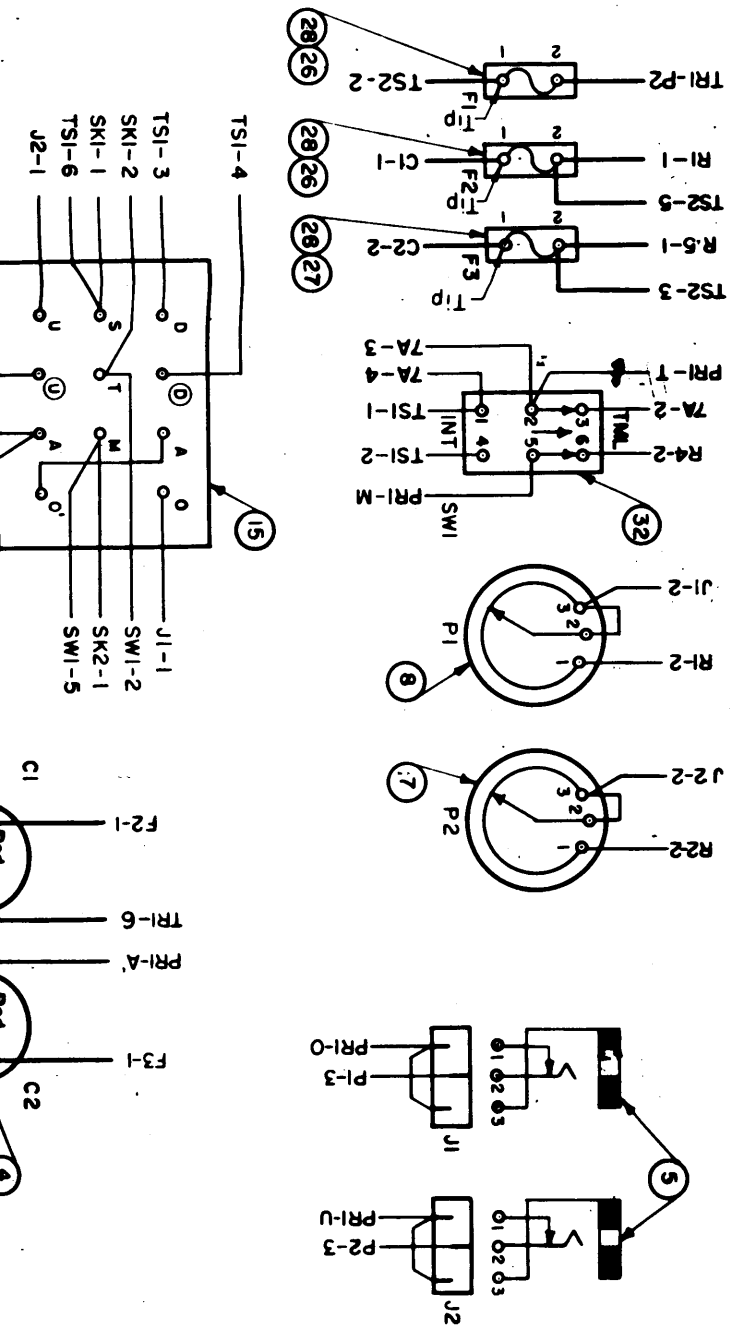
THEORY



○ TERMINAL STRIP #1
● TERMINAL STRIP #2



BOTTOM VIEW



EQUIPMENT

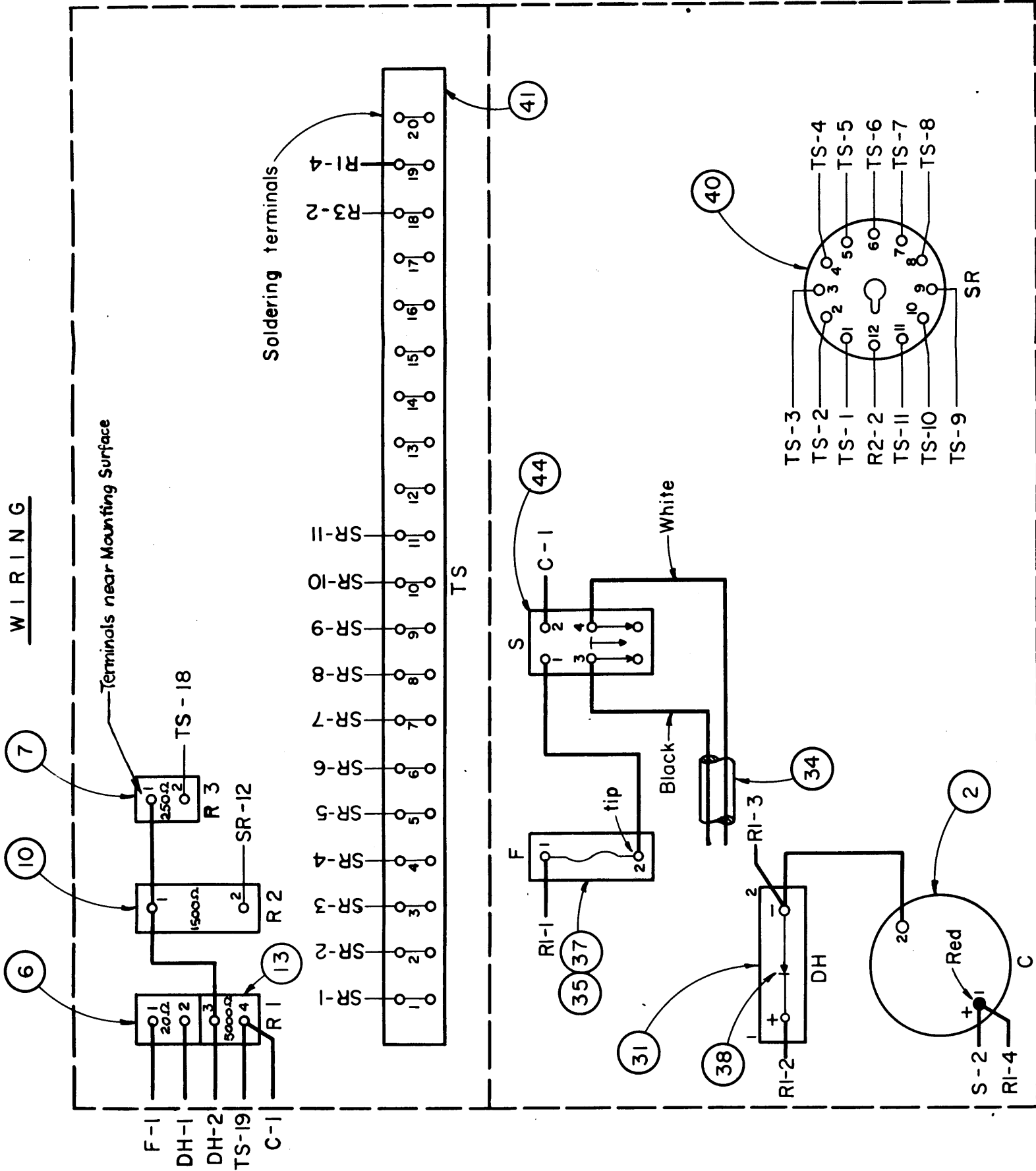
- ② Capacitor, Dry Electrolytic 5-A, 500 mfd, 200 WVDC
- ⑥ Resistor 59-A, 20 ohms
- ⑦ Resistor 59-A, 250 ohms
- ⑩ Resistor 1-B, 1500 ohms
- ⑬ Resistor 56-A, 5000 ohms
- ③① Block, Fuse, Solder Terminals, # 4520 - Bussman Mfg. Co.
- ③④ Cord, Flexible, U/L approved, Type SJT, 18 AWG, 2 Conductor
- ③⑤ Fuse, 8295-A, 1Amp. - Dwg. 234684
- ③⑦ Holder 342012, Fuse - Littelfuse, Inc.
- ③⑧ Rectifier, Silicon, M500 #IN 1084 - Sarkes Tarzian, Inc.
- ④① Socket, 77 MIP 12TM-Amphenol Electronics Corp.
- ④① Strip, Terminal 20-140-3/4 W - H.B. Jones Div., Cinch Mfg. Corp.
- ④④ Switch, Toggle, DPDT, # 81027-CE - Arrow-Hart & Hegeman Elec. Co.

- Wire, 18 AWG Office, black
- Wire, 22 AWG, Solid Instrument

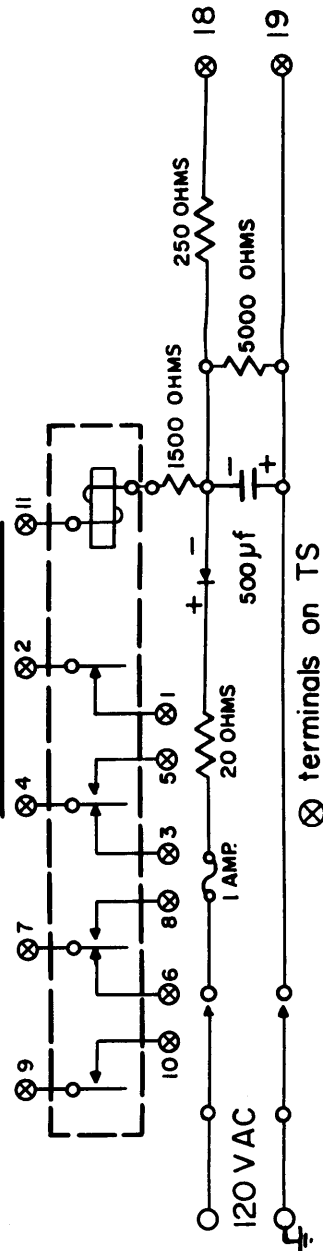
NOTES:

Bill of Material, Dwg. 234288.

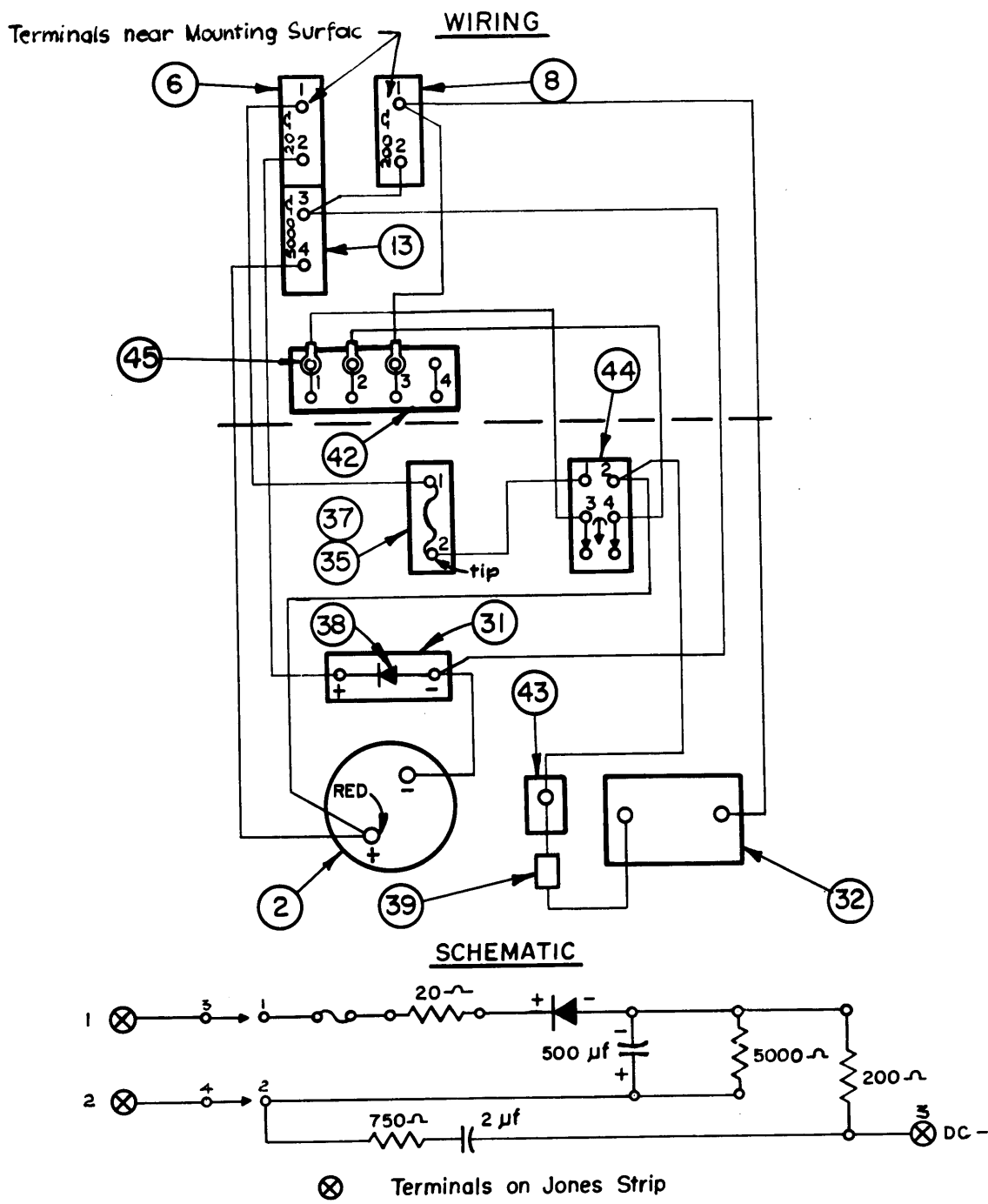
WIRING



SCHEMATIC



D-	APPROVED	
C-	APPROVED	
	APPROVED	B- APR 5, 1960 Switch was 81027-CE ITEMS 35727 RE-SPECIFIED
	APPROVED	ARS MEM APPROVED
	APPROVED	A-MAY 6, 1958
	DRAWING NUMBER	237023-2
		W. U. TEL. CO.
	EQUIPMENT SHELF	92851-A
	WIRING AND SCHEMATIC	
	SCALE:	
	DRAWN	
	TRACED	
	CHECKED	
	ENGR'D	
	APPROVED	PPS



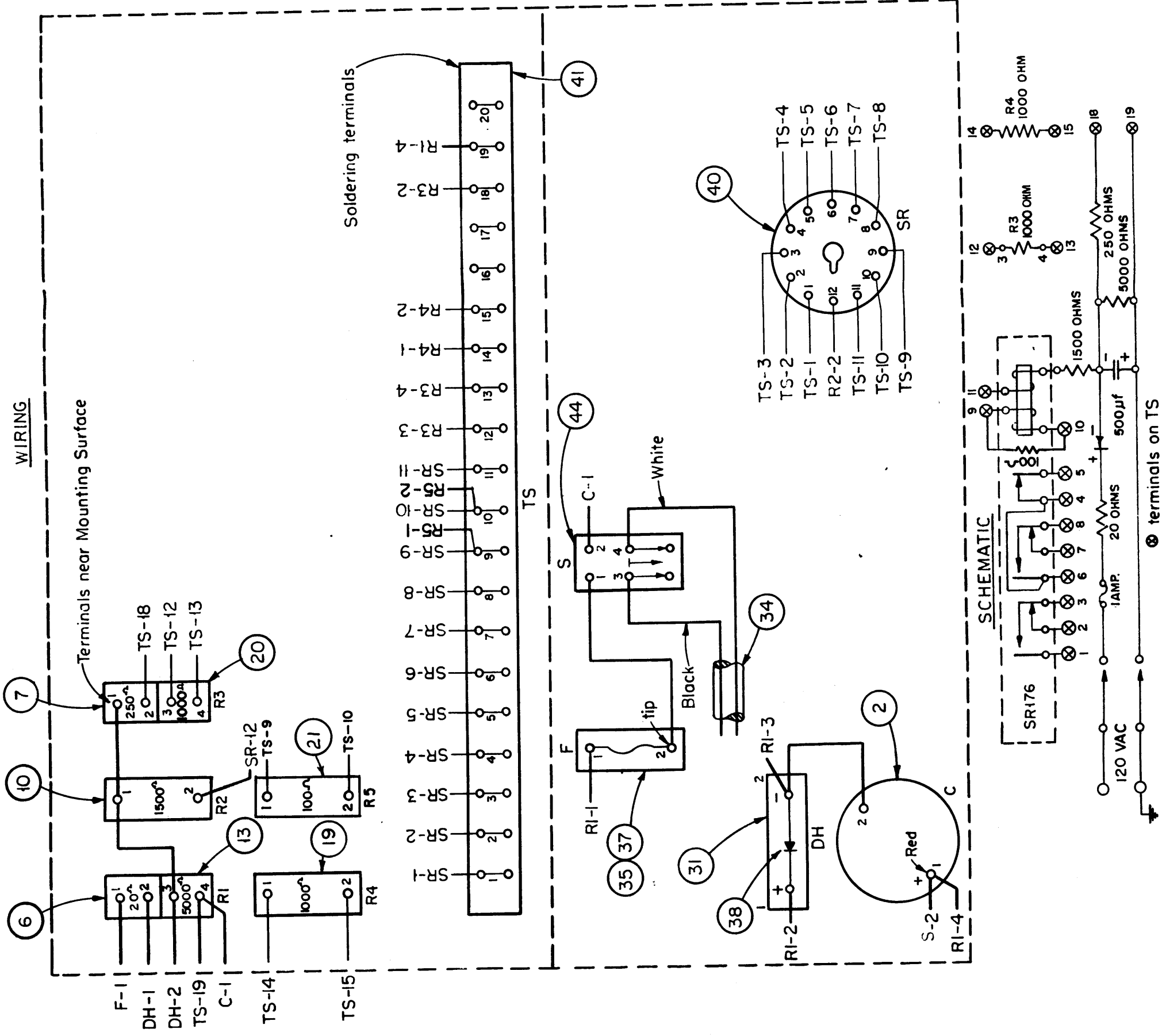
EQUIPMENT

- (2) Capacitor, Dry Electrolytic 5-A, 500 Mfd, 200 WVDC.
 - (6) Resistor 59-A, 20 ohms
 - (8) Resistor, I-B 200 ohms
 - (13) Resistor, 56-A, 5000 ohms
 - (31) Block, Fuse, Solder terminals #4250 Bussmann Mfg. Co.
 - (32) Capacitor, 40-A, 600 WVDC, 2 MFD. - Dwg. 234675
 - (35) Fuse, 8295-A, 1 Amp. - Dwg. 234684
 - (37) Holder 342012, Fuse Littelfuse, Inc.
 - (38) Rectifier, Silicon, M500 # 1N 1084 Sarkes Tarzian, Inc.
 - (39) Resistor, 83-A, 750 ohms (Dwg. 209770)
 - (42) Strip, Terminal #4-142 - H.B. Jones Div., Cinch Mfg. Corp.
 - (43) Strip, Terminal # 1510 - Cinch Mfg. Corp.
 - (44) Switch, Toggle, DPDT, # 81027-CE Arrow-Hart and Hegeman Elec. Amp Inc.
 - (45) Terminal, Solderless #31883
- Wire 18 AWG Office, Black

Notes : Bill of Material, Dwg. 234288

D-
APPROVED
C-
APPROVED
B- APR. 5, 1960
Switch was 81027-CJ
Item 32, 35, 37 & 43
respecified.
ARS WEM
APPROVED <i>[Signature]</i>
A- MAY 8, 1958
DRAWING NUMBER
237025 -1
W. U. TEL. CO.
EQUIPMENT SHELF
9285.2-A
WIRING AND SCHEMATIC
SCALE:
DRAWN <i>[Signature]</i>
TRACED
CHECKED <i>[Signature]</i>
ENGR'D <i>[Signature]</i>
APPROVED

WIRING



EQUIPMENT

- 2 Capacitor, Dry Electrolytic 5-A, 500 mfd. 200 WVDC
- 6 Resistor 59-A, 20 ohms
- 7 Resistor 59-A, 250 ohms
- 10 Resistor 1-B, 1500 ohms
- 13 Resistor 56-A, 5000 ohms
- 19 Resistor 1-B, 1000 ohms
- 20 Resistor 59-A, 1000 ohms
- 21 Resistor 1-B, 100 ohms
- 31 Block, Fuse, Solder Terminals, #4520 Bussman Mfg. Co.
- 34 Cord, Flexible, U/L approved, Type SJT, constant service, 18 AWG, 2 Conductor
- 35 Fuse, 8295-A, 1 Amp. - Dwg. 234684
- 37 Holder 342012, Fuse - Littelfuse, Inc.
- 38 Rectifier, Silicon, M500 #IN 1084 - Sarkes Tarzian, Inc.
- 40 Socket, 77 MIP 12TM - Amphenol Electronics Corp.
- 41 Strip, Terminal 20-140-3/4 W H. B. Jones Div. Cinch Mfg. Corp.
- 44 Switch, Toggle, DPDT, #81027-CE Arrow-Hart & Hegeman Elec. Co.

- Wire, 18 AWG Office, black.
- Wire, 22 AWG, Solid Instrument

Notes:

Bill of Material, Dwg. 234288

D- APPROVED	C- APPROVED	B-FEB. 10, 1960 ITEM 21 ADDED. ITEM 20 WAS 600-Ω ITEM 44 WAS 81027-CE ITEMS 35-37 RESPECIFIED. AKS 148M APPROVED	A-JULY 16, 1959 DRAWING NUMBER 237605-2 W. U. TEL. CO.	EQUIPMENT SHELF 9285.3-A	WIRING AND SCHEMATIC	SCALE: DRAWN: J. J. J. TRACED: CHECKED: ENGRD.: J. J. J. APPROVED:
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Model 28 Teleprinter

(701235) 213104 Set of Parts Dwg 307158-1
To convert Keyboard Type A (Std.) to Type C (Erok.)

List (11 items)

IDP	Detail #
(407072)	151902 Keylever F-1/4
(407098)	151904 Keylever J-,
(407106)	151905 Keylever K-1/2
(407114)	151906 Keylever L-3/4
(407122)	151907 Keylever C-1/8
(407130)	151908 Keylever V-3/8
(407148)	151909 Keylever E-5/8
(407155)	151910 Keylever N-7/8
(404863)	151309 Keylever S-BELL

*(701771)

213109 Label, Kbd. Dwg. 307175.

*Include Label in each S.O.P. Peel off and apply the proper label over the existing name plate marking and if label card still contains a complete set of labels, include the partly used card with the salvage S.O.P. If converted back to its original type scrape off the label. If no label available, letter the new type number on the Kbd. base and order a label card for later use.

The above S.O.P. will convert
One (313338) Keyboard LK12ARM (A-Type) to
One (313320) Keyboard LK12ARJ (C-Type) and
will convert other types of Keyboards from A to C.

When the conversion from A to C is made:

Salvage:
One (701243) 213105 Set of Parts Dwg 307159-1

B-Dec 18, 1963 Removed 15344 Function lever Not reworked	A-June 30, 1961 DRAWING NUMBER 307159 1
WESTERN UNION	
PATRON SYSTEM Model 28 TPR KEYBOARD	
Set of Parts #213105 CONVERT Type C to Type A	
SCALE:	DRAWN
	TRACED
	CHECKED
	ENGR'D.

Model 28 Teleprinter

(701243) 213105 Set of Parts Dwg 307159-1

To convert Keyboard (Type C (Erok.) to Type A (Std.)

List (11 items)

IDP	Detail #
(405001)	151317 Keylever B-?
(404921)	151309 Keylever K-(
(404939)	151310 Keylever L-(
(405019)	151318 Keylever N-,
(404996)	151316 Keylever V-;
(404988)	151315 Keylever C-:
(413245)	154520 Keylever F-(BLANK)
(407692)	152132 Keylever J-BELL
(407684)	152131 Keylever S-

*(701771)

213109 Label, Kbd. Dwg. 307175.

*Include Label in each S.O.P. Peel off and apply the proper label over the existing name plate marking and if label card still contains a complete set of labels, include the partly used card with the salvage S.O.P. If converted back to its original type scrap off the label. If no label available, letter the new type number on the Kbd. base and order a label card for later use.

The above S.O.P. will convert
One (313320) Keyboard LK12ARJ (C) to
One (313338) Keyboard LK12ARM (A) and
will convert other types of Keyboards from C to A.

When the conversion from C to A is made:

Salvage:
One (701235) 213104 Set of Parts Dwg 307158-1

Model 28 Teleprinter

(701268) 213107, Set of Parts. To convert TYPE BOX - from Brokers C to Standard A.

List (7 items) Murray Type

IDP	Detail #
(416628)	157644 Type-Pallet ?
(416586)	157640 Type-Pallet ;
(416578)	157639 Type-Pallet ;
(416594)	157641 Type-Pallet :
(416636)	157645 Type-Pallet)
(416644)	157646 Type Pallet (
(406397)	151738-RS Screw Ident.

Move Type Pallet " ; " on UC "J" to UC "N".

Note: The above S.O.P. will convert one (410357) 153139-RJ Type-Box (C) to (411496) 153508-RS Type-Box (A).

When the conversion from C to A-Type is made: Salvage- One (701250) 213106 Set of Parts Dwg 307160-1

The salvage shall be carefully checked with drawing list of parts and tagged to show it is a complete set, or if incomplete, tag should show shortage.

A- June 22, 196
DRAWING NUMBER 307161-1
WESTERN UNION
PATRON'S SYSTEM
Model 28 TPR
TYPE BOX LAYOUT
Set of Parts #213107
CONVERT Type C to Type A.
SCALE: DRAWN TRACED CHECKED ENGR'D. APPROVED

CAUTION: See Page 2-69 T.T. Bul. 1149B
(part of E.C. 92-C)

Model 28 Teleprinter

(701250) 213106, Set of Parts. To convert TYPE BOX - from Standard A to Brokers C.

List (8 items) Murray Type

IDP	Detail #
(416693)	157651 Type-Pallet 1/8
(416701)	157652 Type-Pallet 1/4
(416719)	157653 Type-Pallet 3/8
(416727)	157654 Type-Pallet 1/2
(416735)	157655 Type-Pallet 5/8
(416743)	157656 Type-Pallet 3/4
(416750)	157657 Type-Pallet 7/8
(406389)	151738-RJ Screw Ident.

Move Type-Pallet " ; " on UC "N" to UC "J".

Note: The above S.O.P. will convert one (411496) 153508-RS Type Box (A) to (410357) 153139-RJ Type Box (C).

When the conversion from A to C-Type is made, Salvage- One (701268) 213107 Set of Parts Dwg 307161-1

The salvage shall be carefully checked with drawing list of parts and tagged to show it is a complete set, or if incomplete, tag should show shortage.

A- June 22, 196
DRAWING NUMBER 307160-1
WESTERN UNION
PATRON SYSTEM
Model 28 TPR
TYPE BOX LAYOUT
Set of Parts #213106
CONVERT Type-A to Type-C
SCALE: DRAWN TRACED CHECKED ENGR'D.

CAUTION: See Page 2-69 T.T. Bul. 1149B
(part of E.C. 92-C)

(701771) #213109 Labels, Kbd. Conversion M-28. Dwg. 307175

1 1/8"	3 3/16"	1 1/8"	
LK3 RJ135	LK3 RD135	LK3 RJ101	3/16"
LK3 RS135	LK3 RG106	LK3 RS000	3/16"
LK4 RJ158	LK4 RN126		do
LK4 RS158	LK4 XJ179	LK5 BV131	"
LK4 RJ179	LK4 HJ179	LK4 EJ179	"
LK4 RS179	LK4 RS179	LK4 RS179	"
LK4 RJ244	LK4 RJ244	LK4 RJ244	"
LK4 RS244	LK4 RS244	LK4 RS244	"
LK12ARM	LK12ARM	LK12ARM	
LK12ARM	LK12ARM	LK12ARM	
LK12ARJ	LK12ARJ	LK12ARJ	
LK12ARJ	LK12ARJ	LK12ARJ	
LAK3ARM	LAK3ARM	LTK1ARM	
LAK3ARJ	LAK3ARJ	LTK1ARJ	
LAK3BRJ	LAK3RS	LAK3XZ	
LAK3BRF	LAK3YE	LAK7XJ	
SPECIAL LAYOUT			
SPECIAL LAYOUT			

3 3/8" spread to approx.

Note: Make Card 1/16" larger than above dimensions and score at lines so that each label 1 1/8" x 3/16" may be peeled off. (Not to scale)

(Print on rear of card)

The Western Union Telegraph Company

(701771) #213109 Labels Keyboard Conversion M-28, DWG. 307175-1.

1. Clean surface before applying.
2. Peel off label desired.
3. Press label in place.

Cut and peel off the label desired and save balance of the card for inclusion with salvage set.

Material:
Equal to Chicago Decalcomania Co. #3310 Elston Ave. Chicago, Ill. Their "No. 1-60 Vimar"

AJune 30, 1961
DRAWING NUMBER 307175 -1
WESTERN UNION
FATEON SYSTEM
#213109
LABELS for Kbd. conversion M-28.
SCALE:
DRAWN:
TRACED:
CHECKED:
ENGR'D:
APPROVED: <i>F.H.H.</i>

DESCRIPTION	PARTS											
	1	2	3	4	5	6	7	8	9	10	11	12
Arm, Contact	X											
212109 IDP 518704			X									
Block, Contact			X									
212668 IDP 672576												
Plat, Contact				X								
212107 IDP 518688												
Plate, Contact					X							
212108 IDP 518696												
Block, Contact						X						

- NOTES:**
1. See Drawing 310796 for stunt box function and code bar shift fork mechanisms.
 2. The 211901, 902, 903 and 904 Set of Parts are the old style basic assemblies. "Make" and "Break" assemblies 154751 & 154752 are associated with these basic contact blocks. All these parts are obsolete.
 3. The 212242, 243, 246 and 207 Set of Parts are the new style basic assemblies. Make and Break assemblies 212244 and 212245 are used with these basic contact blocks.
 4. The old and new contact block parts are not interchangeable.
 5. For physical layout of parts and assemblies see Engineering Catalog 92-D.

WESTERN UNION		SCALE		TOLERANCE UNLESS OTHERWISE SPECIFIED		NEXT ASSY		USED ON	
SWITCHING SYSTEMS		DRAWN HTM		DECIMAL					
M-28 TPR		DES. ENG. RW		FRACTIONAL					
STUNT BOX CONTACT ASSEMBLY		SP. ENG. <i>[Signature]</i>		ANGULAR					
COMPONENT CHART		APPRO. <i>[Signature]</i>		BET. HOLES					
ISSUE DATE		ISSUE DATE							
A FEB. 14, 1962		A FEB. 14, 1962							
DRAWING NUMBER		DRAWING NUMBER							
310795 - 7		310795 - 7							

CROSS REFERENCE -- SETS OF PARTS FOR STUNT BOX -- MODEL 28 TELEPRINTER

QUANTITY	51019	51020	51021	51022	51023	51024	51025	51026	51027	51028	51029	51030	51031	51032	51033	51034	51035	51036	51037	51038	51039	51040	51041	51042	51043	51044	51045	51046	51047	51048	51049	51050	51051	51052	51053	51054	51055	51056	51057	51058	51059	51060	51061	51062	51063	51064	51065	51066	51067	51068	51069	51070	51071	51072	51073	51074	51075	51076	51077	51078	51079	51080	51081	51082	51083	51084	51085	51086	51087	51088	51089	51090	51091	51092	51093	51094	51095	51096	51097	51098	51099	51100	51101	51102	51103	51104	51105	51106	51107	51108	51109	51110	51111	51112	51113	51114	51115	51116	51117	51118	51119	51120	51121	51122	51123	51124	51125	51126	51127	51128	51129	51130	51131	51132	51133	51134	51135	51136	51137	51138	51139	51140	51141	51142	51143	51144	51145	51146	51147	51148	51149	51150	51151	51152	51153	51154	51155	51156	51157	51158	51159	51160	51161	51162	51163	51164	51165	51166	51167	51168	51169	51170	51171	51172	51173	51174	51175	51176	51177	51178	51179	51180	51181	51182	51183	51184	51185	51186	51187	51188	51189	51190	51191	51192	51193	51194	51195	51196	51197	51198	51199	51200	51201	51202	51203	51204	51205	51206	51207	51208	51209	51210	51211	51212	51213	51214	51215	51216	51217	51218	51219	51220	51221	51222	51223	51224	51225	51226	51227	51228	51229	51230	51231	51232	51233	51234	51235	51236	51237	51238	51239	51240	51241	51242	51243	51244	51245	51246	51247	51248	51249	51250	51251	51252	51253	51254	51255	51256	51257	51258	51259	51260	51261	51262	51263	51264	51265	51266	51267	51268	51269	51270	51271	51272	51273	51274	51275	51276	51277	51278	51279	51280	51281	51282	51283	51284	51285	51286	51287	51288	51289	51290	51291	51292	51293	51294	51295	51296	51297	51298	51299	51300	51301	51302	51303	51304	51305	51306	51307	51308	51309	51310	51311	51312	51313	51314	51315	51316	51317	51318	51319	51320	51321	51322	51323	51324	51325	51326	51327	51328	51329	51330	51331	51332	51333	51334	51335	51336	51337	51338	51339	51340	51341	51342	51343	51344	51345	51346	51347	51348	51349	51350	51351	51352	51353	51354	51355	51356	51357	51358	51359	51360	51361	51362	51363	51364	51365	51366	51367	51368	51369	51370	51371	51372	51373	51374	51375	51376	51377	51378	51379	51380	51381	51382	51383	51384	51385	51386	51387	51388	51389	51390	51391	51392	51393	51394	51395	51396	51397	51398	51399	51400
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NOTES
 1- SEE DWG. 310795 FOR CONTACT
 BLOCK ASSEMBLIES.
 2- FOR PHYSICAL LAYOUT OF MECHANISMS
 AND PARTS SEE ENGINEERING CATALOG
 92-D.

SCALE: _____
 DRAWN: _____
 TRACED: _____
 CHECKED: _____

SWITCHING SYSTEMS
 M-28 TPR
 STUNT BOX
 FUNCTION AND
 SHIFTS MECHANISMS,
 COMPONENT
 CHART

DRAWING NUMBER
 310795 -10

W.U. TEL. CO.

A-FEB 27 1962

APR 5 1962

APR 5 1962

APR 5 1962

APR 5 1962

APR 5 1962

SCALE: _____
 DRAWN: _____
 TRACED: _____
 CHECKED: _____

SWITCHING SYSTEMS
 M-28 TPR
 STUNT BOX
 FUNCTION AND
 SHIFTS MECHANISMS,
 COMPONENT
 CHART

DRAWING NUMBER
 310795 -10

W.U. TEL. CO.

A-FEB 27 1962

APR 5 1962

APR 5 1962

APR 5 1962

APR 5 1962

APR 5 1962

