

BELL SYSTEM PRACTICES
Teletypewriter and Data Stations

SECTION P34.302
Issue 8, August, 1963
AT&TCo Standard

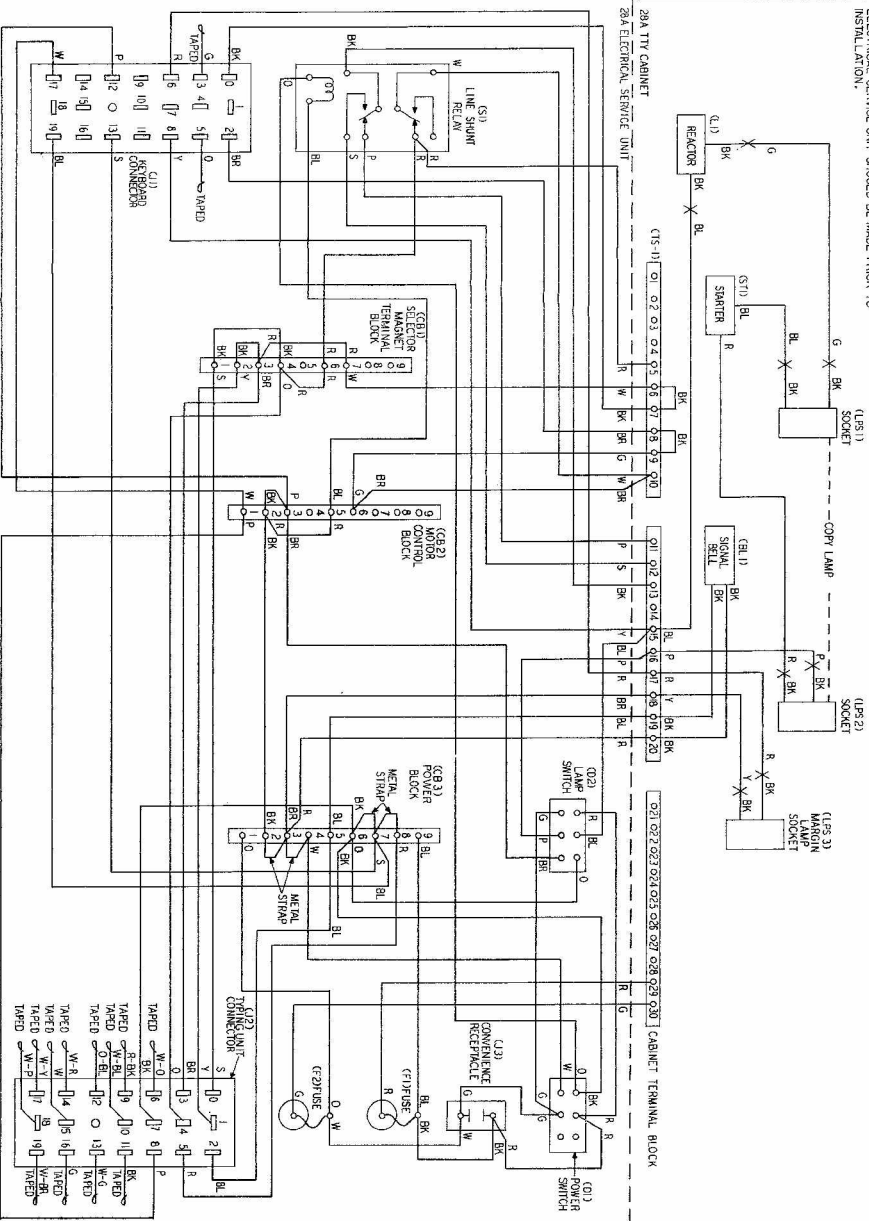
28KSR AND RO TELETYPEWRITER CABINETS AND ELECTRICAL SERVICE UNITS WIRING DIAGRAM

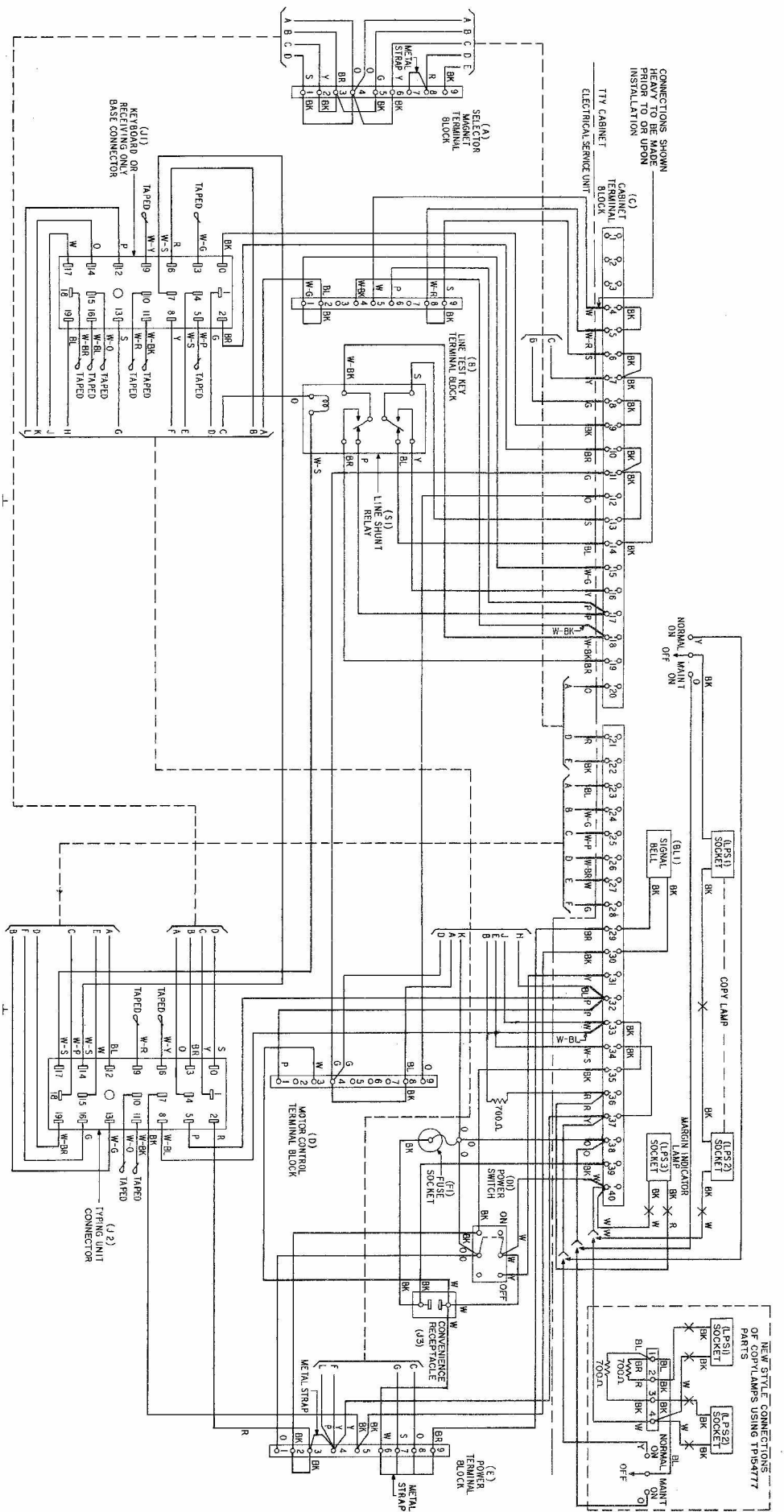
1. GENERAL

1.01 This section shows the wiring of the 28A, B, C, D, E, J, K, and L teletypewriter cabinets and the 28A, B, E, E-1 M, N, N-1, R, S, T, and W electrical service units for use with 28KSR and RO teletypewriters.

1.02 This section is reissued to incorporate the addendum and to add the wiring for the 28L teletypewriter cabinet and the T and W electrical service units.

CONNECTORS BETWEEN CABINET TERMINAL BLOCK AND ELECTRICAL SERVICE UNIT SHOULD BE MADE PRIOR TO INSTALLATION.

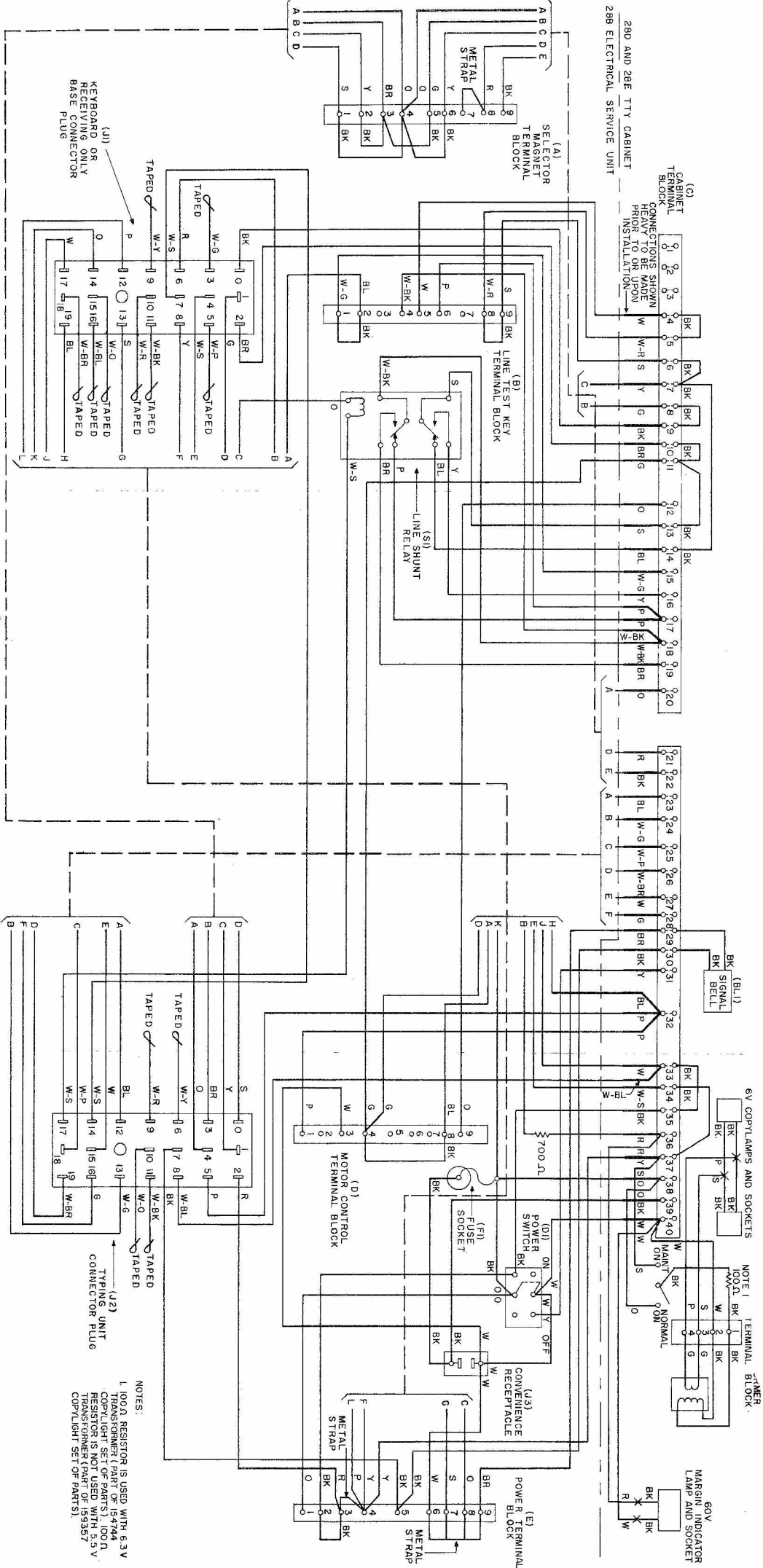




CONNECTIONS SHOWN
HEAVY TO BE MADE
PRIOR TO OR UPON
INSTALLATION

28B and 28C Teletypewriter Cabinet and 28B Electrical Service Unit

28 KSR AND RO TTY
CABINETS AND
P34.302
ELECTRICAL
SERVICE
UNITS

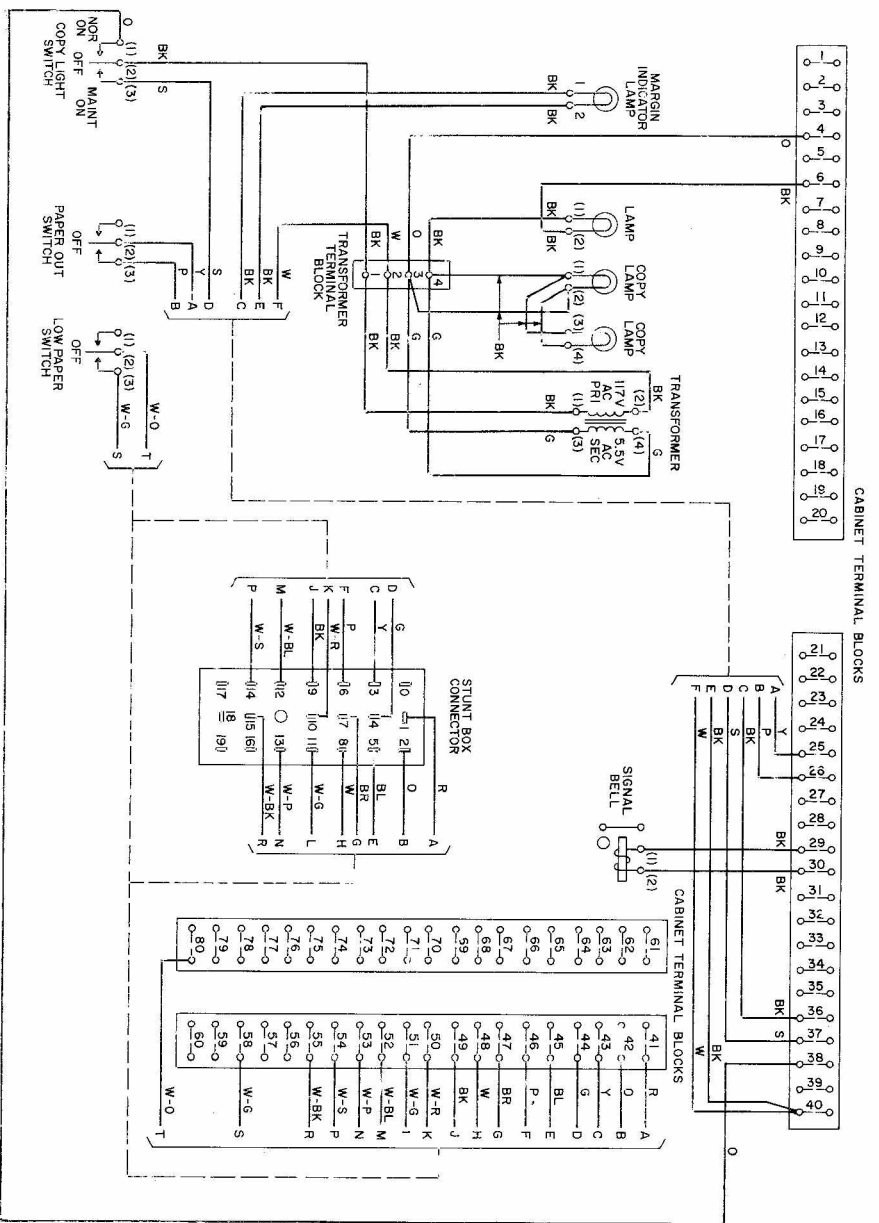


(11) KEYBOARD OR RECEIVING ONLY BASE CONNECTOR PLUG

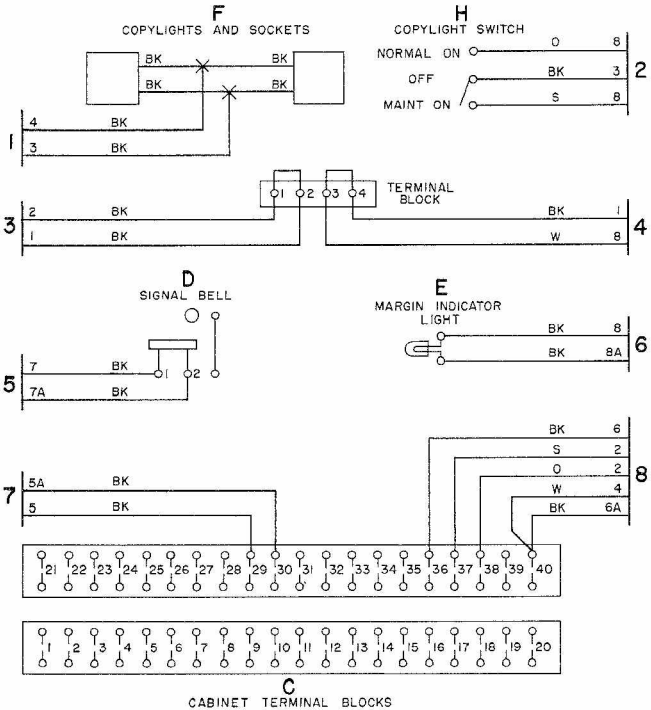
NOTES:
 1. 100 Ω RESISTOR IS USED WITH 6.3 V TRANSFORMER (PART OF 154724 COPYLIGHT SET OF PARTS). 100 Ω RESISTOR IS NOT USED WITH 5.5 V COPYLIGHT SET OF PARTS.

28D and 28E Teletypewriter Cabinet and 28B Electrical Service Unit

28J T teletypewriter Cabinet

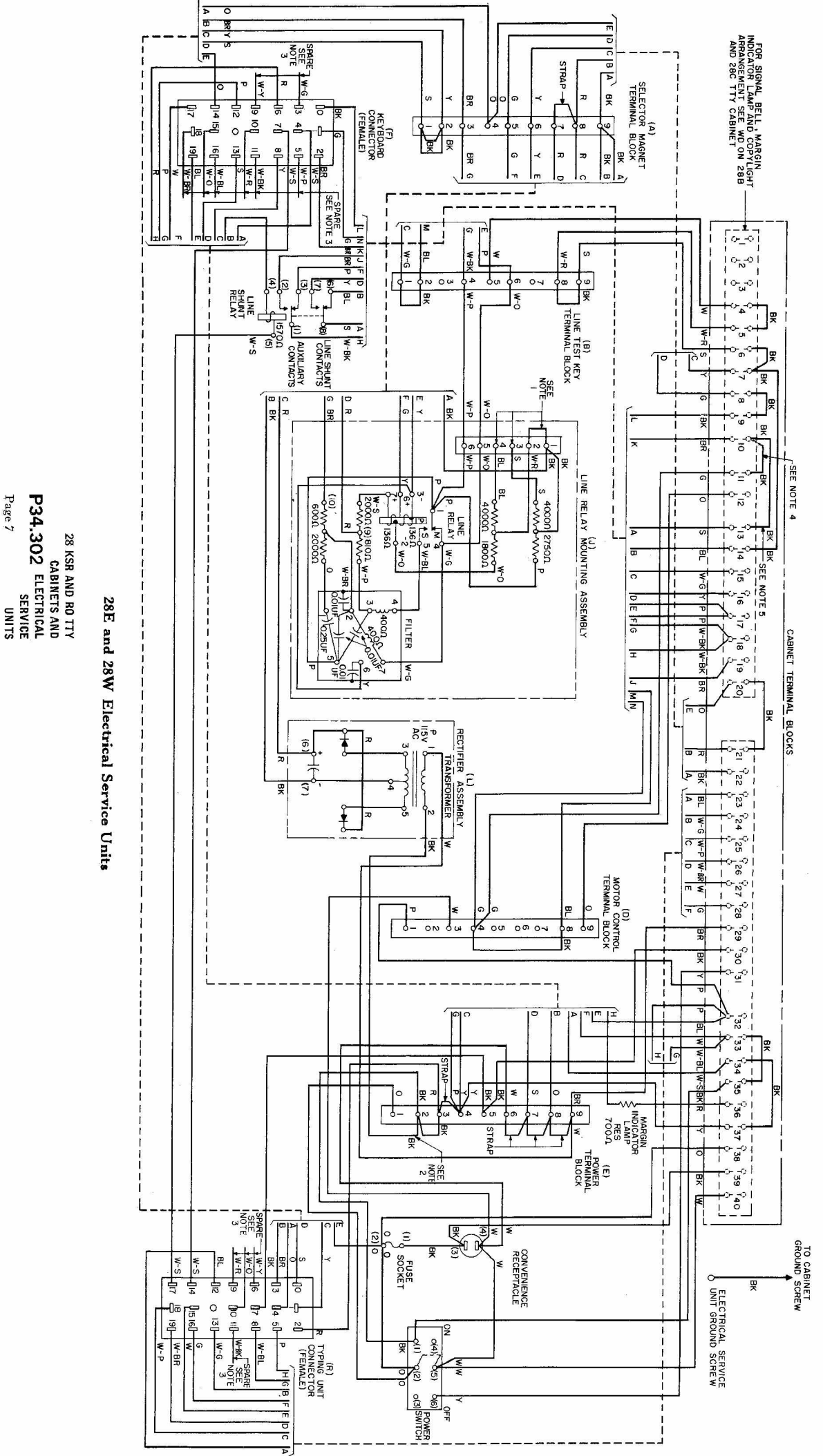


CABINET TERMINAL BLOCKS



NOTE:
 1. CABINET POWER CIRCUIT WIRED FOR 48 VOLT DC.

28K Teletypewriter Cabinet



FOR SIGNAL BELL MARGIN INDICATOR ARRANGEMENT SEE WD ON 28B AND 28C TTY CABINET

SEE NOTE 4

CABINET TERMINAL BLOCKS

TO CABINET GROUND SCREW

ELECTRICAL SERVICE UNIT GROUND SCREW

28E and 28W Electrical Service Units

NOTES:

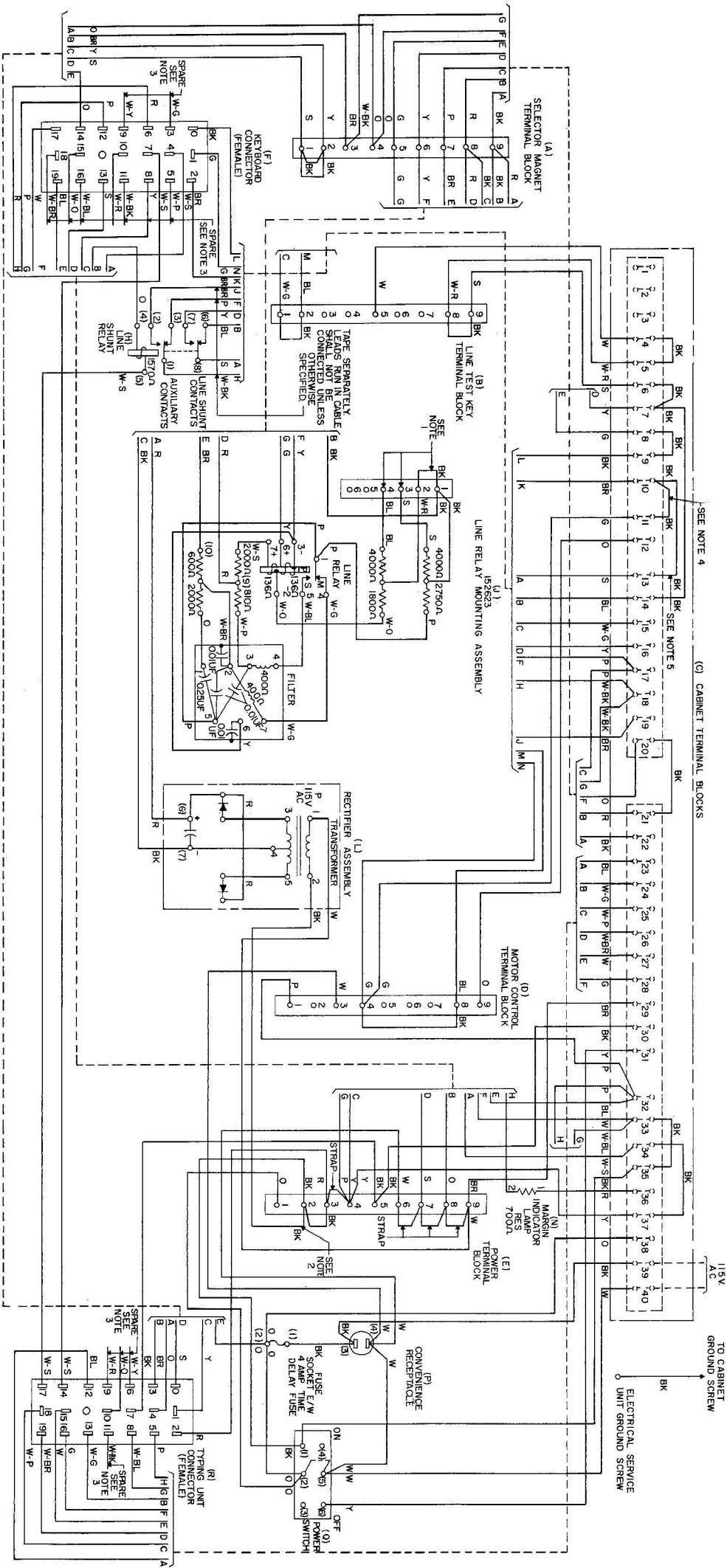
1. CIRCUITS SHOWN FOR 0.060 AMP NEUTRAL SIGNAL LINE OPERATION. FOR 0.020 AMP OPERATION, REMOVE AND ADD CONNECTIONS AS TABULATED BELOW:

SIGNAL LINE CURRENT	0.020 AMP
CONNECTION REMOVED	J1- J2
CONNECTIONS ADDED	J3-J4

2. RECTIFIER SHOWN CONTROLLED BY POWER SWITCH FOR CONTINUOUS OPERATION, REMOVE L2 BLK LEAD FROM E-2 TERMINAL AND CONNECT TO E-1 TERMINAL.
3. THE SPARE LEADS FROM THE KEYBOARD AND TYPING UNIT CONNECTORS ARE TERMINATED IN THE RIGHT AND LEFT ENDS OF THE ELECTRICAL SERVICE UNIT RESPECTIVELY.
4. FOR RECEIVING ONLY BASES: CONNECT C-10 TO C-11.
5. FOR KEYBOARD OPERATION: C-13 TERMINAL MAY BE CONNECTED TO EITHER C-9, C-10, C-11 OR C-15 TERMINAL TO OBTAIN DESIRED SHUNTING OF THE SIGNAL LINE CIRCUIT.
6. THE 28W ELECTRICAL SERVICE UNIT IS THE SAME AS THE 28E ELECTRICAL SERVICE UNIT EXCEPT THAT IT IS EQUIPPED WITH AN ELECTRONIC MAGNET DRIVER INSTEAD OF A LINE RELAY MOUNTING ASSEMBLY AND RECTIFIER. SEE SPECIFICATION 50,042S.

28E and 28W Electrical Service Units

28E-1 Electrical Service Unit



SEE NOTE 4

SEE NOTE 5

SEE NOTE 2

152523

4000012750N

4000011800N

4000012000N

4000011960N

4000011800N

4000011960N

4000012000N

4000011800N

115V A.C.

ON OFF

CONVENIENCE RECEPTACLE

SOCKET FUSE 4 AMP TIME DELAY FUSE

MAIN INDICATOR LAMP RES 700Ω

MOTOR CONTROL TERMINAL BLOCK

RECTIFIER ASSEMBLY TRANSFORMER

LINE RELAY MOUNTING ASSEMBLY

TAPE SEPARATELY LEADS RUN IN CABLE CONNECTION UNLESS OTHERWISE SPECIFIED

KEYBOARD CONTROL TERMINAL BLOCK (FEMALE)

SELECTOR MAGNET TERMINAL BLOCK

TO CABINET GROUND SCREW ELECTRICAL SERVICE UNIT GROUND SCREW

SEE NOTE 4

SEE NOTE 5

SEE NOTE 2

SEE NOTE 3

SEE NOTE 1

SEE NOTE 4

SEE NOTE 5

SEE NOTE 2

SEE NOTE 3

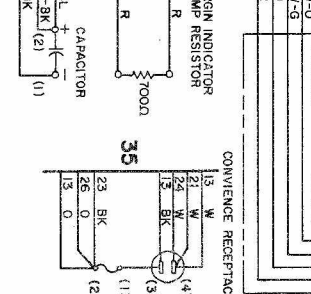
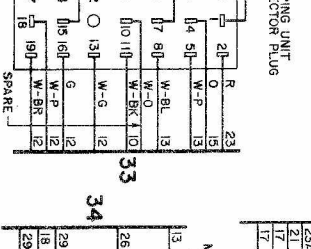
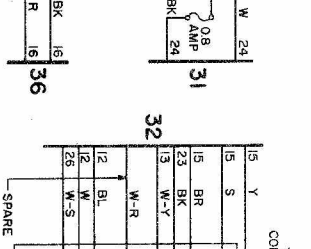
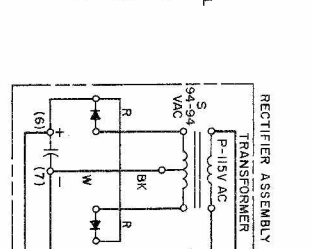
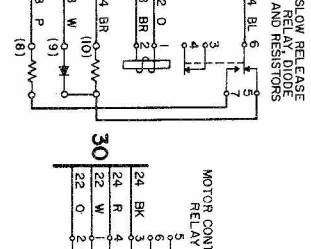
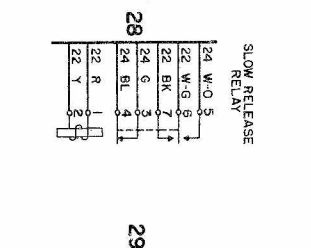
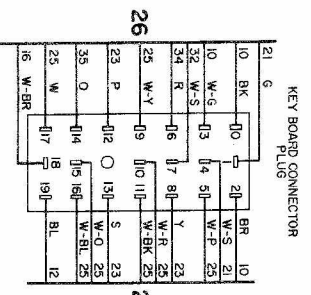
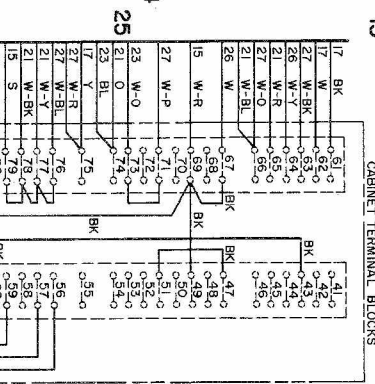
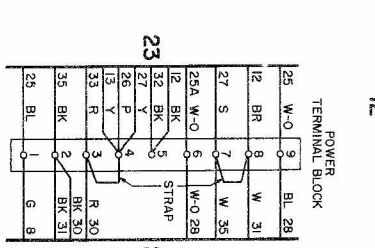
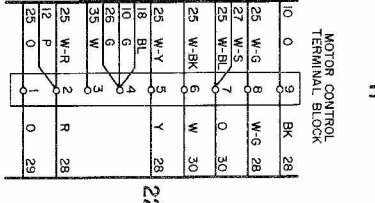
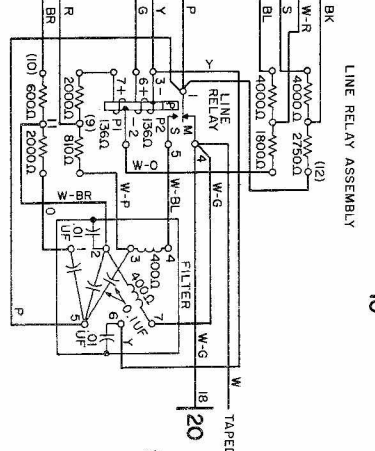
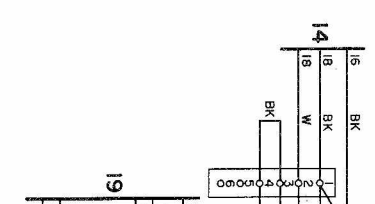
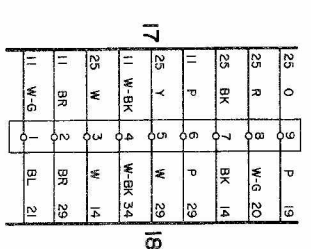
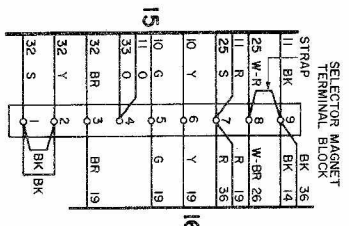
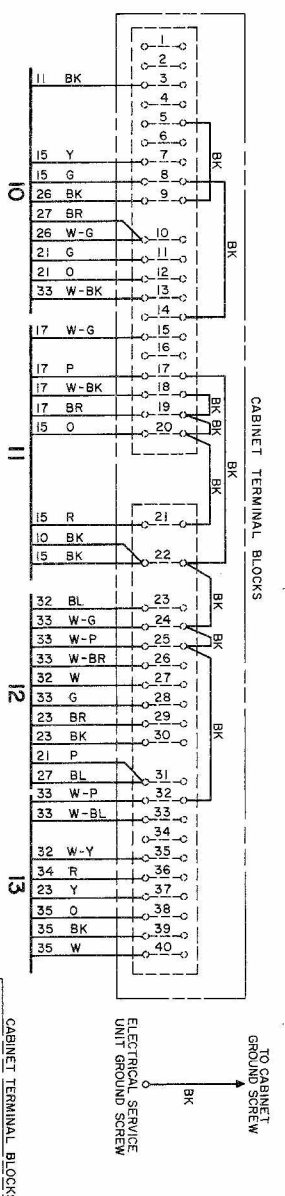
28E-1 ELECTRICAL SERVICE UNIT

NOTES:

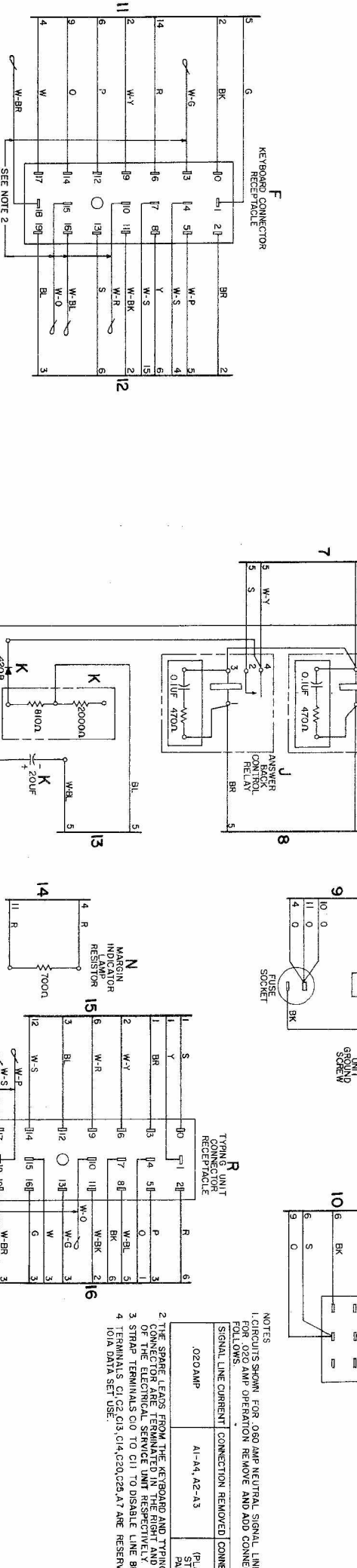
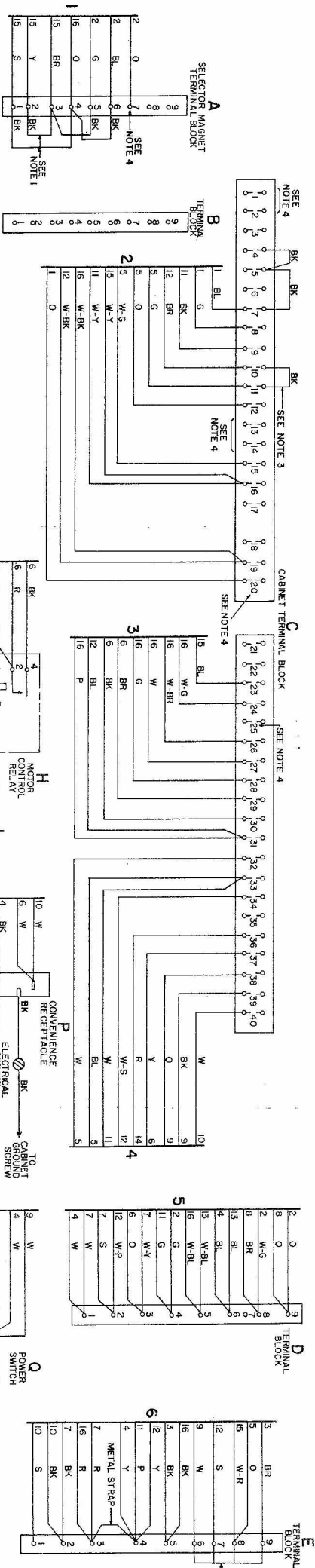
1. CIRCUITS SHOWN FOR 0.060 AMP NEUTRAL SIGNAL LINE OPERATION. FOR 0.020 AMP OPERATION REMOVE AND ADD CONNECTIONS AS TABULATED BELOW:

SIGNAL LINE CURRENT	0.020 AMP
CONNECTION REMOVED	J1-J2
CONNECTION ADDED	J3-J4

2. RECTIFIER SHOWN CONTROLLED BY POWER SWITCH. FOR CONTINUOUS OPERATION, REMOVE LEAD L-2-BK FROM TERMINAL E2 AND CONNECT TO TERMINAL E1.
3. THE SPARE LEADS FROM THE KEYBOARD AND TYPING UNIT CONNECTOR PLUGS ARE TERMINATED IN THE RIGHT AND LEFT ENDS OF THE ELECTRICAL SERVICE UNIT RESPECTIVELY.
4. FOR RECEIVING ONLY BASES: CONNECT C-10 TO C-11.
5. FOR KEYBOARD OPERATION: TERMINAL C-13 MAY BE CONNECTED TO EITHER TERMINAL C-9, C-10, C-11, OR C-15 TO OBTAIN DESIRED SHUNTING OF THE SIGNAL LINE CIRCUIT.

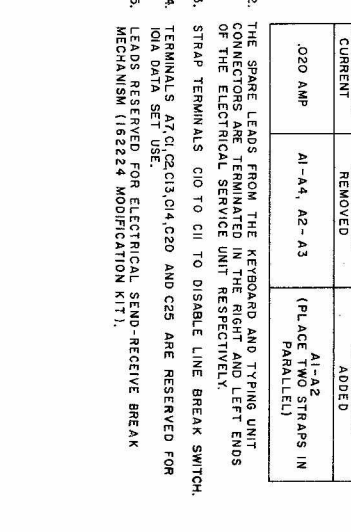
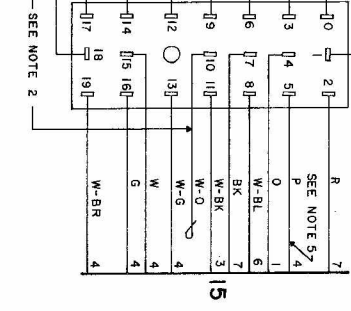
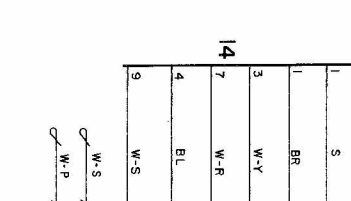
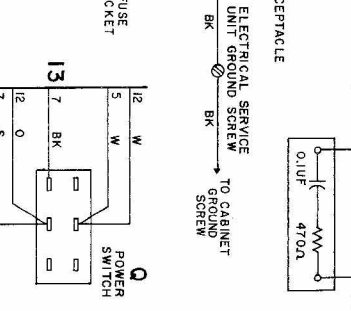
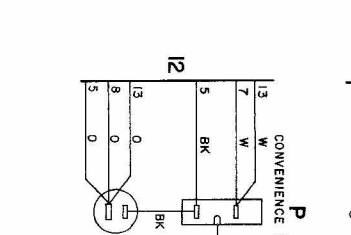
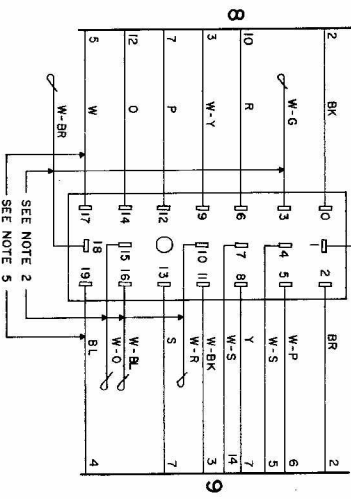
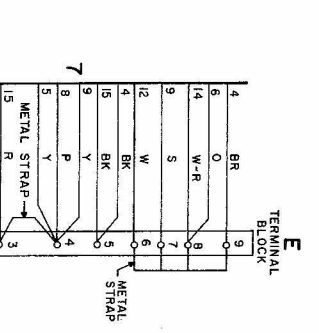
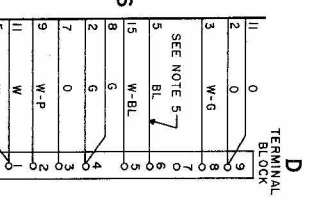
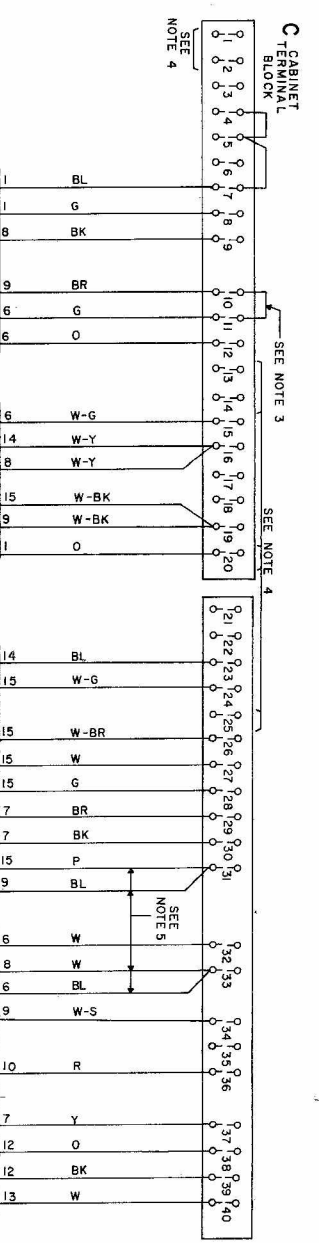
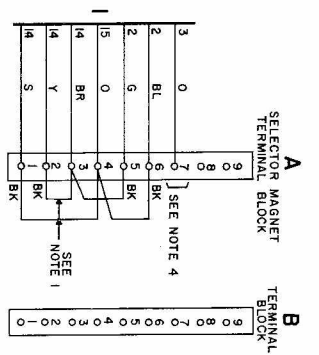


28M Electrical Service Unit



- NOTES
1. CIRCUITS SHOWN FOR .020 AMP NEUTRAL SIGNAL LINE OPERATION. FOR .020 AMP OPERATION REMOVE AND ADD CONNECTIONS AS FOLLOWS.
 2. THE SPARE LEADS FROM THE KEYBOARD AND TYING UNIT CONNECTED TO TERMINALS C11 AND C12 TO DISABLE LINE BREAK SWITCH.
 3. STRAP TERMINALS C13, C14, C20, C25, A7 ARE RESERVED FOR I/OA DATA SET USE.
 4. TERMINALS C13, C14, C20, C25, A7 ARE RESERVED FOR

SIGNAL LINE CURRENT	CONNECTION REMOVED	CONNECTION ADDED
.020 AMP	A1-A4, A2-A3	A1-A2 (PLACE TWO STRAPS IN PARALLEL)



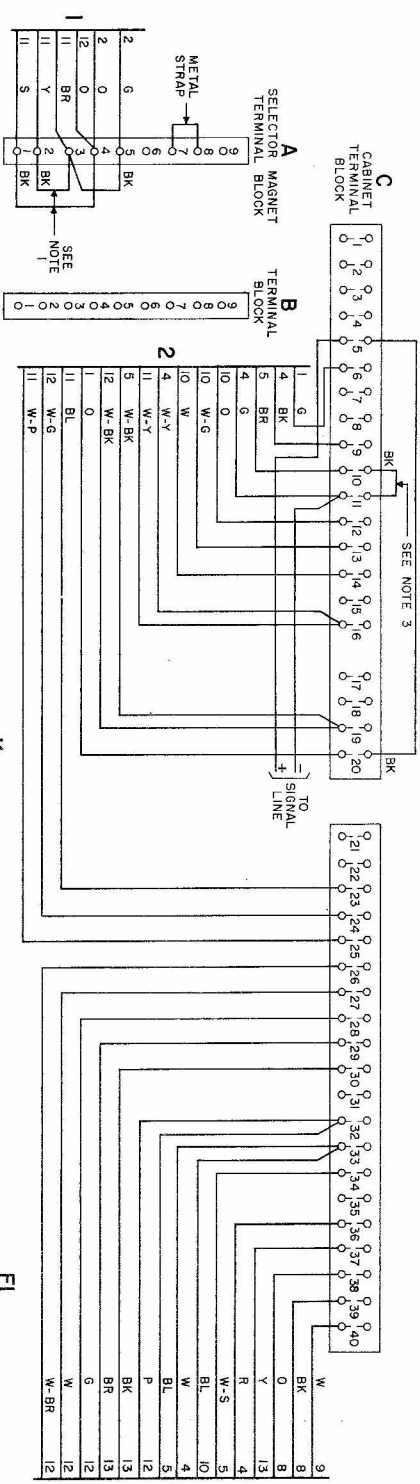
28N-1 Electrical Service Unit

28 KSR AND RO TTY
CABINETS AND
P34,302 ELECTRICAL
SERVICE
UNITS

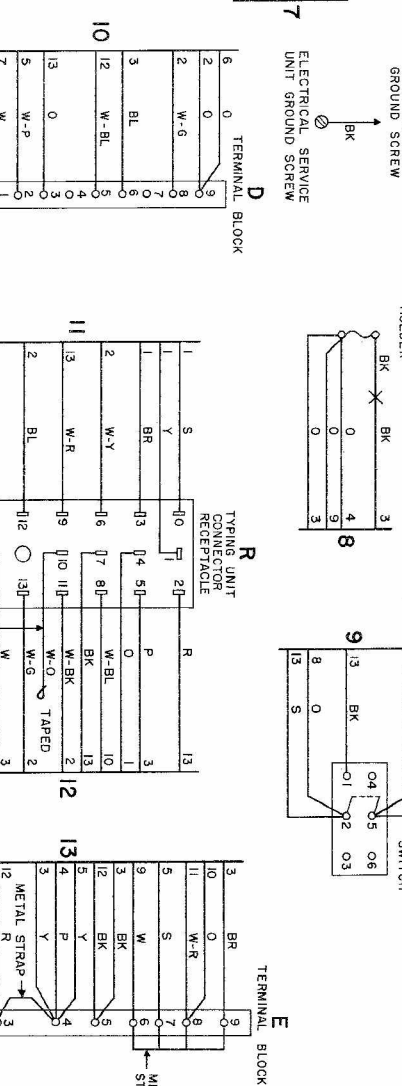
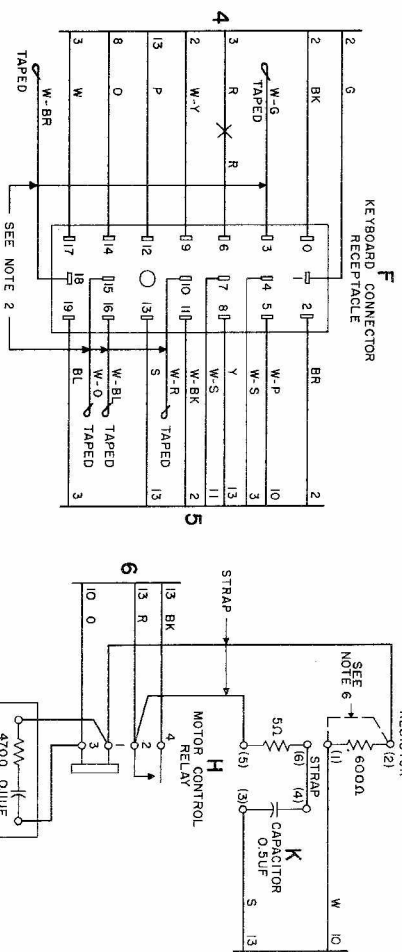
NOTES:
1. CIRCUITS SHOWN FOR .050 AMP NEUTRAL SIGNAL LINE OPERATION.
FOR .020 AMP OPERATION REMOVE AND ADD CONNECTIONS AS
FOLLOWS:

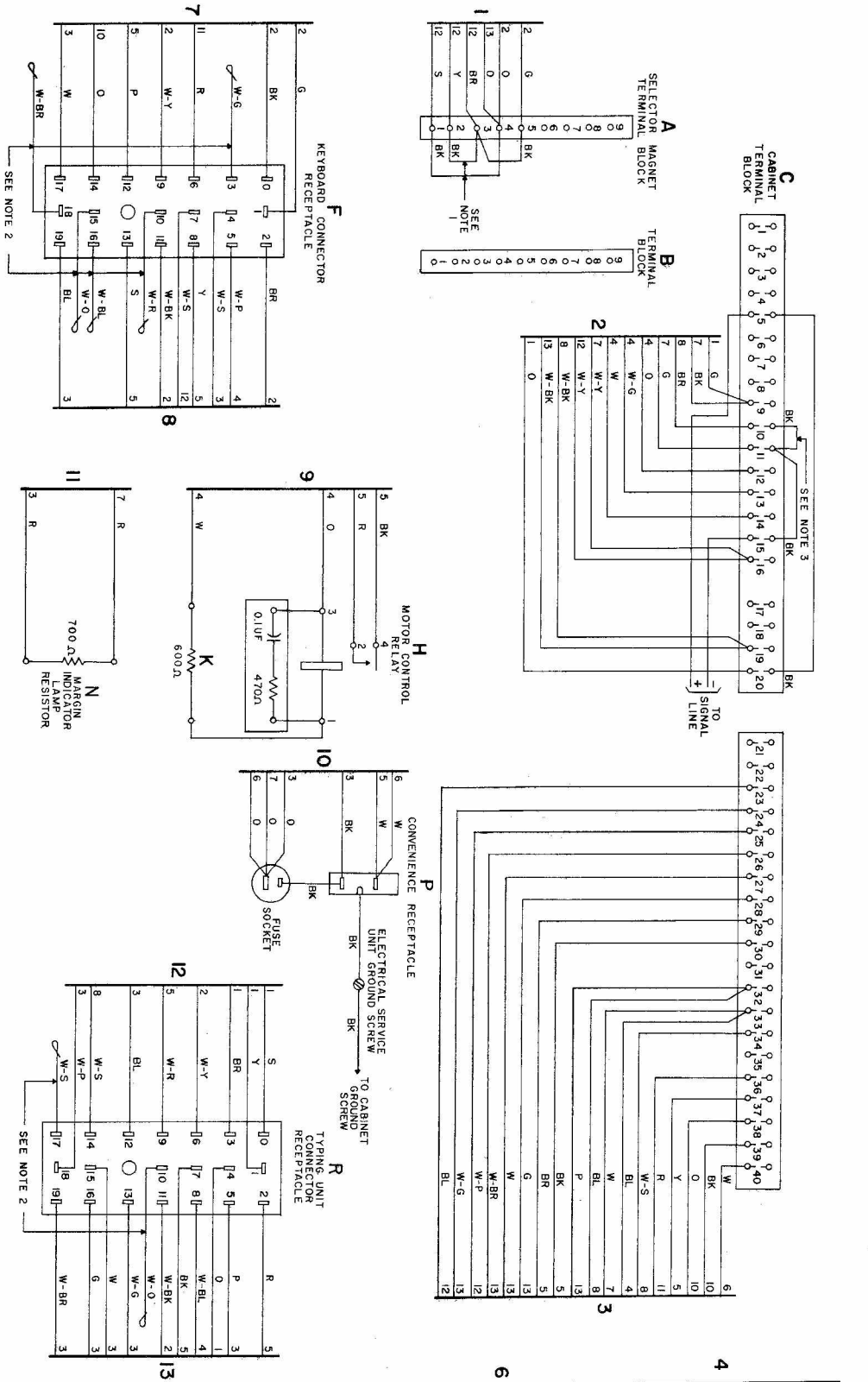
SIGNAL LINE CURRENT	CONNECTION REMOVED	CONNECTION ADDED
.020 AMP	A1-A4, A2-A3	A1-A2 (PLACE AND STRAPS IN PARALLEL)

- THE SPARE LEADS FROM THE KEYBOARD AND TYPING UNIT COMMANDS ARE TERMINATED IN THE RECEPTACLE LEFT ENDS OF THE ELECTRICAL SERVICE UNIT RESPECTIVELY.
- STRAP TERMINALS C10 TO C11 TO DISABLE LINE BREAK SWITCH.
- TERMINALS A7,C1,C2,C13,C14,C20 AND C29 ARE RESERVED FOR I/OA DATA SET USE.
- LEADS RESERVED FOR ELECTRICAL SEND-RECEIVE BREAK MECHANISM (16522& MODIFICATION KIT).



- NOTES:
- CIRCUITS SHOWN FOR .020 AMP NEUTRAL SIGNAL LINE OPERATION. FOR .020 AMP OPERATION REMOVE AND ADD CONNECTIONS AS FOLLOWS:
- | SIGNAL LINE CURRENT | CONNECTION REMOVED | CONNECTION ADDED |
|---------------------|--------------------|--|
| .020 AMP | A1 - A4, A2 - A3 | A1 - A2 (PLACE TWO STRAPS IN PARALLEL) |
- THE SPARE LEADS FROM THE KEYBOARD AND TYPING UNIT CONNECTORS ARE TERMINATED IN THE RIGHT AND LEFT ENDS OF THE ELECTRICAL SERVICE UNIT RESPECTIVELY.
 - STRAP TERMINALS C10 TO C11 TO DISABLE LINE BREAK SWITCH.
 - X— SPLICE
 - THE 28R ELECTRICAL SERVICE UNIT IS FOR USE WITH 48 VOLT DC TELETYPEWRITERS.
 - IF 600 OHM RESISTOR IS PRESENT, STRAP AS INDICATED.





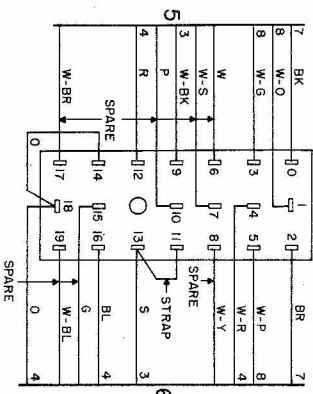
NOTES:

- CIRCUITS SHOWN FOR .050 AMP NEUTRAL, SIGNAL LINE OPERATION. FOR .020 AMP OPERATION REMOVE AND ADD CONNECTIONS AS FOLLOWS:
- THE SPARE LEADS FROM THE KEYBOARD AND TYPING UNIT CONNECTORS ARE TERMINATED IN THE RIGHT AND LEFT ENDS OF THE ELECTRICAL SERVICE UNIT RESPECTIVELY.
- STRAP TERMINALS C10 TO C11 TO DISABLE LINE BREAK SWITCH.

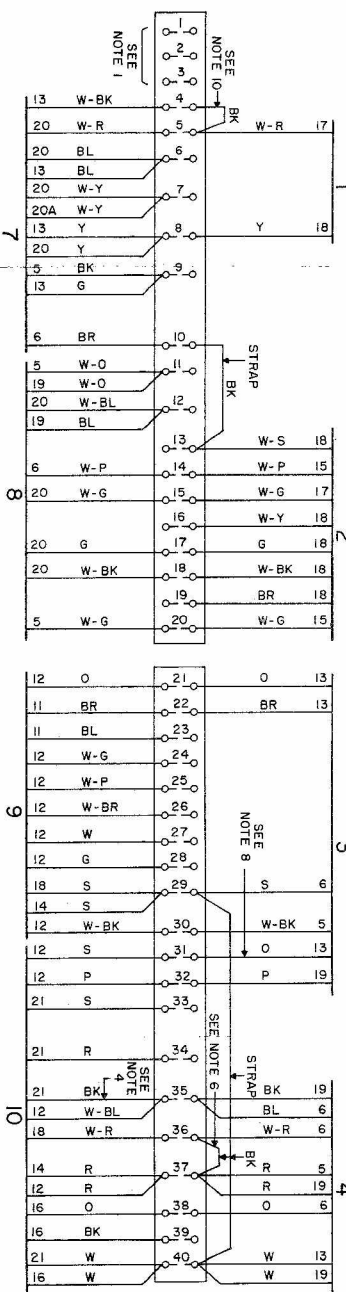
SIGNAL LINE CURRENT	CONNECTION REMOVED	CONNECTION ADDED
.020 AMP	A1-A4, A2-A3	A1-A2 (PLACE TWO STRAPS IN PARALLEL)

28S Electrical Service Unit

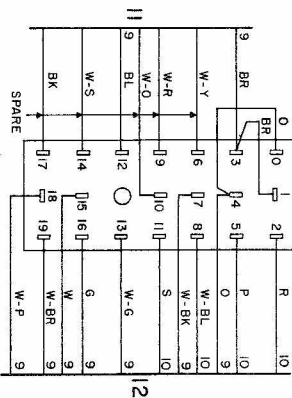
F KEYBOARD CONNECTOR RECEPTACLE



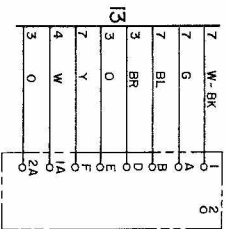
C ELECTRICAL SERVICE UNIT TERMINAL BLOCKS



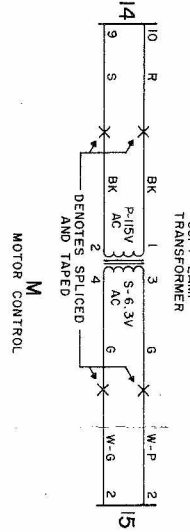
R TYPING UNIT CONNECTOR RECEPTACLE



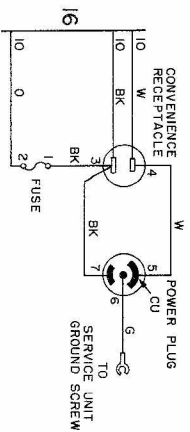
ED SELECTOR MAGNET DRIVER CARD



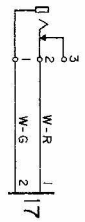
DF COPPER LAMP TRANSFORMER



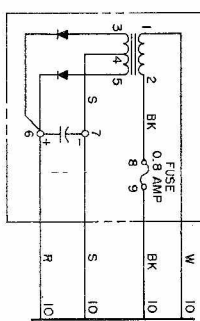
P AC SERVICE FACILITY



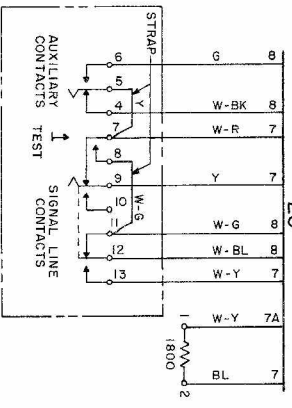
LJ LINE JACK



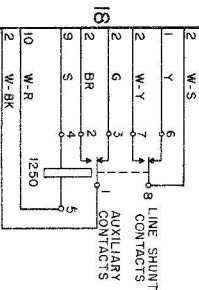
L RECTIFIER



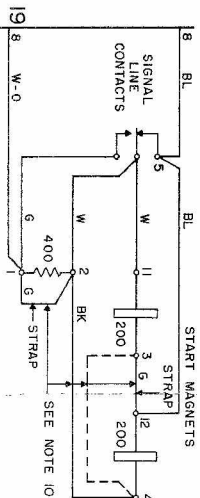
K LINE TEST KEY



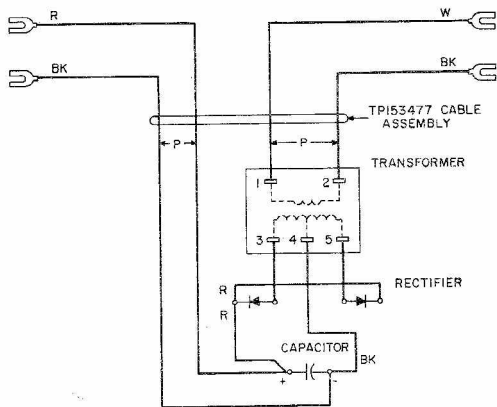
H LINE SHUNT RELAY



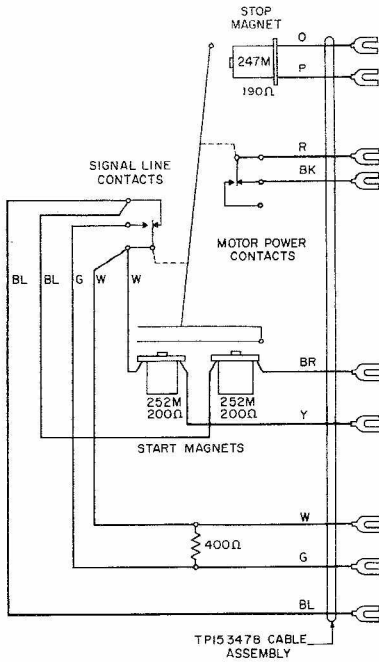
M MOTOR CONTROL



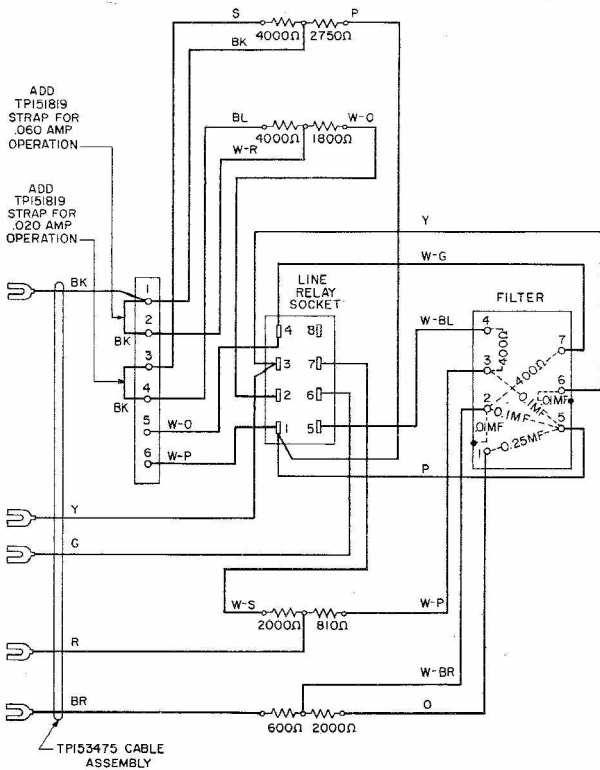
- NOTES:
1. TERMINALS C1-C3 ARE RESERVED FOR CUSTOMER USE.
 2. CONTACTS SHOWN IN UN-OPERATED OR DE-ENERGIZED POSITIONS.
 3. SPARE LEADS FROM THE KEYBOARD CONNECTOR PLUG ARE TERMINATED AT THE LEFT END OF THE ELECTRICAL SERVICE UNIT. SPARE LEADS FROM THE TYPING UNIT CONNECTOR ARE TERMINATED AT THE RIGHT END OF THE ELECTRICAL SERVICE UNIT.
 4. RECTIFIER SHOWN CONTROLLED BY POWER SWITCH. FOR CONTINUOUS OPERATION MOVE L-9 BK WIRE FROM C-35 TO C-39. C-34 + 110V DC. C-33 = 0V DC.
 5. WHEN SIGNAL LINE BREAK SWITCH IS NOT USED, ADD STRAP BETWEEN C-10 AND C-11.
 6. LINE SHUNT RELAY SHOWN CONTROLLED BY MOTOR CONTROL POWER CONTACTS. FOR DIRECT CONTROL OF LINE SHUNT RELAY, REMOVE STRAP BETWEEN C-35 AND C-37. THEN ADD STRAP BETWEEN C-35 AND C-37.
 7. TO DISABLE MOTOR CONTROL FEATURE ELECTRICALLY ADD STRAP BETWEEN C-35 AND C-37.
 8. SELECTOR MAGNET DRIVER SHOWN CONTROLLED BY POWER SWITCH. FOR CONTINUOUS OPERATION MOVE ED-2A ORANGE WIRE FROM C-51 TO C-58.
 9. BEFORE INSTALLING SELECTOR MAGNET DRIVER, REMOVE STRAP BETWEEN TERMINALS 1 AND 2 ON CIRCUIT CARD.
 10. WIRING SHOWN FOR 0.60 AMP NEUTRAL SIGNAL LINE OPERATION. FOR 0.20 AMP NEUTRAL SIGNAL LINE OPERATION REMOVE STRAPS BETWEEN:
 - C-4 AND C-5
 - M-1 AND M-2
 - M-2 AND M-3
 - M-3 AND M-4.
 11. FOR INTERNAL WIRING OF SELECTOR MAGNET DRIVER SEE SPECIFICATION 50,042S.



**TP152950 Rectifier Assembly
(120 Mil Output)**



TP153251 Electrical Motor Control Assembly

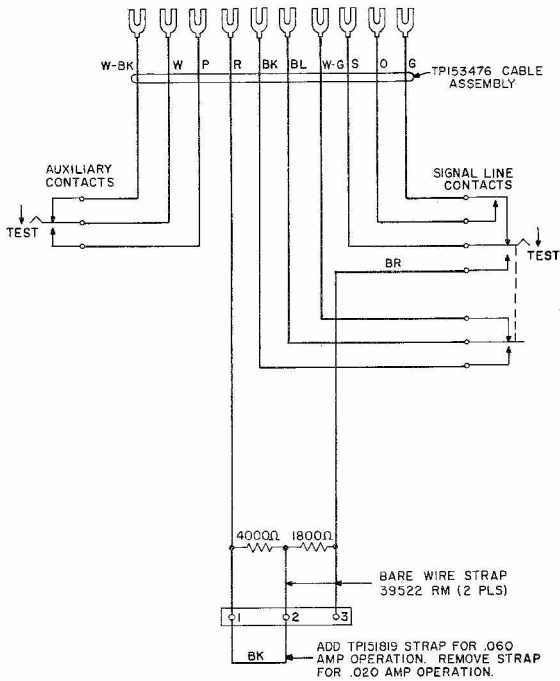


TP152623 Line Relay Mounting Assembly

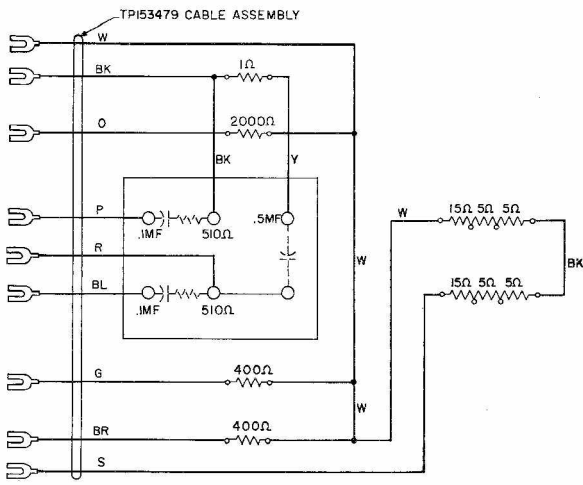
28 KSR AND RO TTY
CABINETS AND

P34.302 ELECTRICAL
SERVICE

Page 19 UNITS



TP152625 Line-Test Key Assembly



TP152624 Capacitor Resistor Assembly

28 KSR AND RO TTY
CABINETS AND

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ELECTRICAL
SERVICE
UNITS

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