

SELF-CONTAINED DRPE LOGIC

SECTION IGENERAL DESCRIPTION AND TECHNICAL DATA1. BASIC FUNCTION

1.1 The High Speed Reperforator control describes an arrangement of logic circuits required to drive a DRPE High Speed Reperforator.

1.2 The function of the Reperforator Control is to convert low level parallel wire, binary information to high power signals of proper voltage current and timing to operate the reperforator.

1.3 The circuitry and reperforator operate synchronously and can be driven at speed up to 240 characters per second.

42 MS per char.

1.4 The High Speed Reperforator control is used in Self-Contained Cabinet and Relay Rack Mounting DRPE Sets for 50 or 60 Hz. applications.

2. GENERAL TECHNICAL DATA

2.1 Input and Output Data

2.11 All inputs (sink or source) a maximum of 1.6 MA. at 0 and -6 volts, except external feed out supply a max. of 3.5 MA. at 0 and -6 volts. (Figure 1 Typical Input Circuit)

2.12 Code Level Input

a. Five (5), six (6), seven (7) or eight (8) level signals can be accommodated.

b. Nominal input voltage is 0 volts for mark and -6 volts for space. The -6 volts may vary $\pm 10\%$ and the 0 volts may vary from -.5 to +.5 volts.

c. Minimum pulse width is 200 microseconds.

d. Maximum rise and fall time is four (4) microseconds.

2.13 Character Sample Input

a. Positive pulse is from -6 volts to 0 volts.

b. Minimum pulse width is 100 microseconds.

c. The sample must occur sometime between the leading edge of the new code level signal and 75 microseconds before this code level signal is removed.

2.1h The output consists of six to nine signals: one to drive the feed level coil and 5, 6, 7 or 8 to drive the code level coils.

a. When idle, these signals provide a path from -5 volts through the coils and a resistor to ground. Minimum current in this path must be held to two (2) amperes. Because of the high current, careful consideration must be given to the wire length and resistance in the cabling between the punch and the Reperforator Control. Excessive wire resistance can cause reduction of the current below the two (2) ampere level.

b. When a character sample is received, the current path to the feed coil and to the code level coils, that are momentarily marking, opens to permit feeding and punching of the tape.

2.2 External Controls Available

2.21 Circuitry is provided for external control of letters and blank feedout of a rate of 150 to 1500 W.P.M. for Cabinet application, it is part of the reperforator control with the Relay Rack versions.

2.22 Inputs are provided for sample enable or feed-out inhibit.

2.23 An input is provided for external blank feed-out.

2.3 Customer Signals

2.31 Out of Service: Test switch in OFF position, ground on Pin 20. Test switch in any level position, open circuit on Pin 20.

2.32 Two wires from the tape out switch mounted on the reperforator are provided to the customer to indicate "Out of Service".

2.33 The customer will also be furnished with a -6 to 0 volts pulse of .4.1 milliseconds duration. This pulse is to be used by the customer to insure transmission of 2400 W.P.M. or less.

2.4 Power Requirements

2.41 When using the power supply, the primary A.C. input power is as follows:

a. Voltage - 115 volts \pm 10%.

b. Frequency - 60 or 50 Hz. \pm 2%.

c. A.C. Power - 8 level operation.

(1) Idle (no punching or feeding) 250 watts.

(2) Punching all levels at 1000 wpm - 250 watts.

(3) Punching all levels at 2400 wpm - 400 watts.

2.42 D.C. voltage and current requirements:

<u>Voltage</u>	<u>Maximum Average Current</u>
-12.6 +0%, -10%	500 milliamperes
- 5.3 +0%, -10%	25 amperes
+ 6.3 +0%, -10%	600 milliamperes
-58 +0%, -10%	4 amperes, 27 amp surge
- 6 (5.6 - 6.2)	

voltage regulation from no-load to full-load of +10% is permitted on all voltages.

2.5 Ambient temperature operating range is 0° C. to 55° C.

SECTION IIADJUSTMENTS AND TEST PROCEDURES1. ADJUSTMENTS

1.1 Preparation for adjustment on the High Speed Punch Driver to operate a High Speed DRPE Punch.

1.11 On the Magnet Driver Card EC672 adjust all the potentiometers fully counterclockwise, then five turns clockwise.

1.12 Adjust the timing pulse on the Logic Card EC675 to $2 \text{ ms.} \pm .1 \text{ ms.}$ and the timing pulse on the magnet driver card to 1.2 ms.

1.2 Logic Card EC675

1.21 Preparation

a. Remove Magnet Driver Z110 (Feed Level).

b. Clip Pin 13 to Pin 26 on the logic card. This causes the gated oscillator to oscillate.

c. Place oscilloscope probe on Pin 5. Set voltage scale to 2 volts per division, time scale to 200 microseconds per division and adjust to trigger on positive pulse.

1.22 Adjust potentiometer until output pulses are 1.9 milliseconds apart.

1.23 Preparation

a. Scope should be A.C. coupled.

b. Trigger on Pin 5 and check waveform on Pin 32 on the EC672 circuit card.

1.24 Taking each level individually and beginning with the feed level adjust magnet driver potentiometer for a maximum voltage of 13 ± 1 volt when operating at 2400 W.P.M. This peak shall fall between 1.1 and 1.5 milliseconds. (See allowed area for peak on Figure). The waveform shall fall within the limits shown on the figure. If the waveform does not fall within the limits check gap and bumper adjustments.

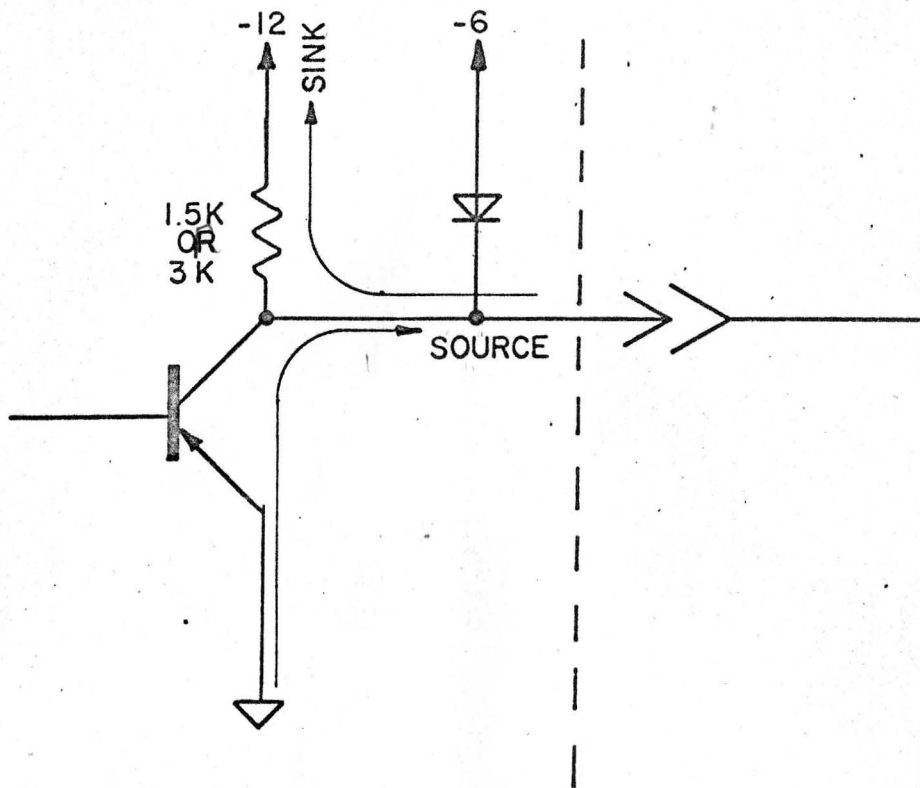
1.25 Taking each level individually and beginning with the feed level adjust magnet driver potentiometer for a maximum voltage of 13 ± 1 volt when operating with "letters - feed-out". This peak shall fall between 1.1 and 1.5 milliseconds. (See allowed area for peak on Figure). The waveform shall fall within the limits shown on the graph. If the waveform does not fall within the limits check perforator magnet gap and bumper adjustments.

1.3 Gated Oscillator EC116

1.31 Place oscilloscope probe on Pin 23. Set voltage scale to 2 volts per division, time scale to 1 ms. per division and adjust trigger on positive pulse.

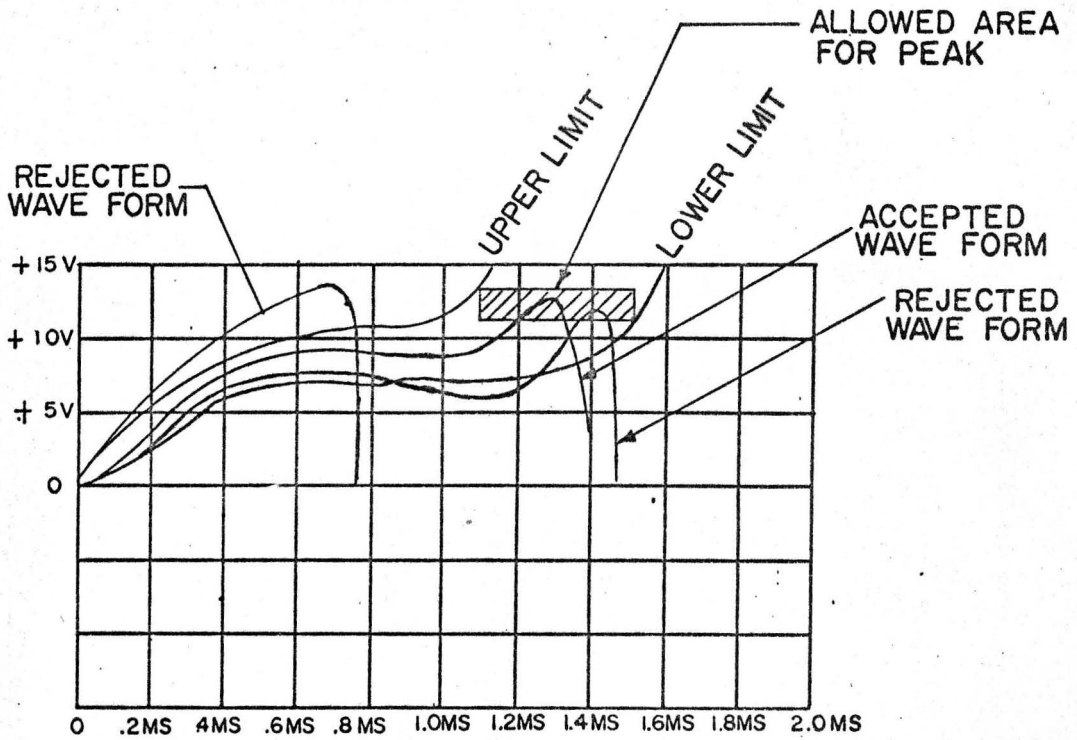
1.32 Clip Pin 29 to Pin 31 on the gated oscillator Z212.

1.33 Adjust potentiometer until output pulses are 4.1 milliseconds apart.



TYPICAL INPUT CIRCUIT
 PROVIDED BY THE CUSTOMER

FIG. 1



(OSCILLOSCOPE GRID)
 HORIZ = .2 MS / CM
 VERT = 5 V / CM

SECTION III

1. SIGNAL INPUT CABLE

1.1 The Signal Input Cable 147859 may be used to interconnect the High Speed Driver Module with the Transmitting Terminal (Customer). This cable provides all the necessary wiring between the Driver and Transmitter. External connections are brought out on spade lugs. The external connections are as follows:

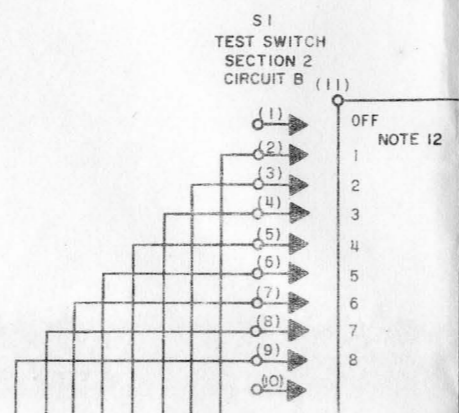
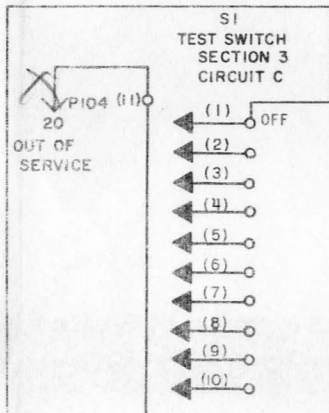
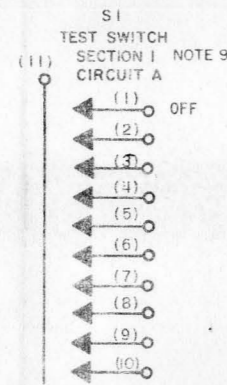
	<u>Function</u>	<u>Color</u>	<u>Pin Number</u>
✓	1. Ground	Red - Black	50*
✓	2. Code Level #1	Red - Brown	41
✓	3. Code Level #2	Orange - Brown	42
✓	4. Code Level #3	Slate - Black	43
✓	5. Code Level #4	Blue - Brown	44
✓	6. Code Level #5	Slate - Blue	45
✓	7. Code Level #6	Blue - Green	46
✓	8. Code Level #7	Slate - Green	47
✓	9. Code Level #8	Slate - Brown	48*
✓	10. Sample <i>enable</i>	Slate - Red	40* PUNCH.
✓	11. Sample Inhibit	White - Slate	38* ENABLE PUNCH
	12. Feed Out Inhibit	Blue	33
	13. External Feed Out	Yellow - Brown	32* EXTERNAL SWITCH
↖	14. Sample Feed Back	Slate	4* DOME PULSE
↖	15. Switch Contact (Tape-Out)	White	2* LOW TAP
↖	16. Switch Contact (Tape-Out)	Black	1*
	17. Spare	Green	18
	18. Spare	Green	19
↖	19. Out of Service	Brown	20*

↖ Test switch in off position (quad) otherwise open chit.

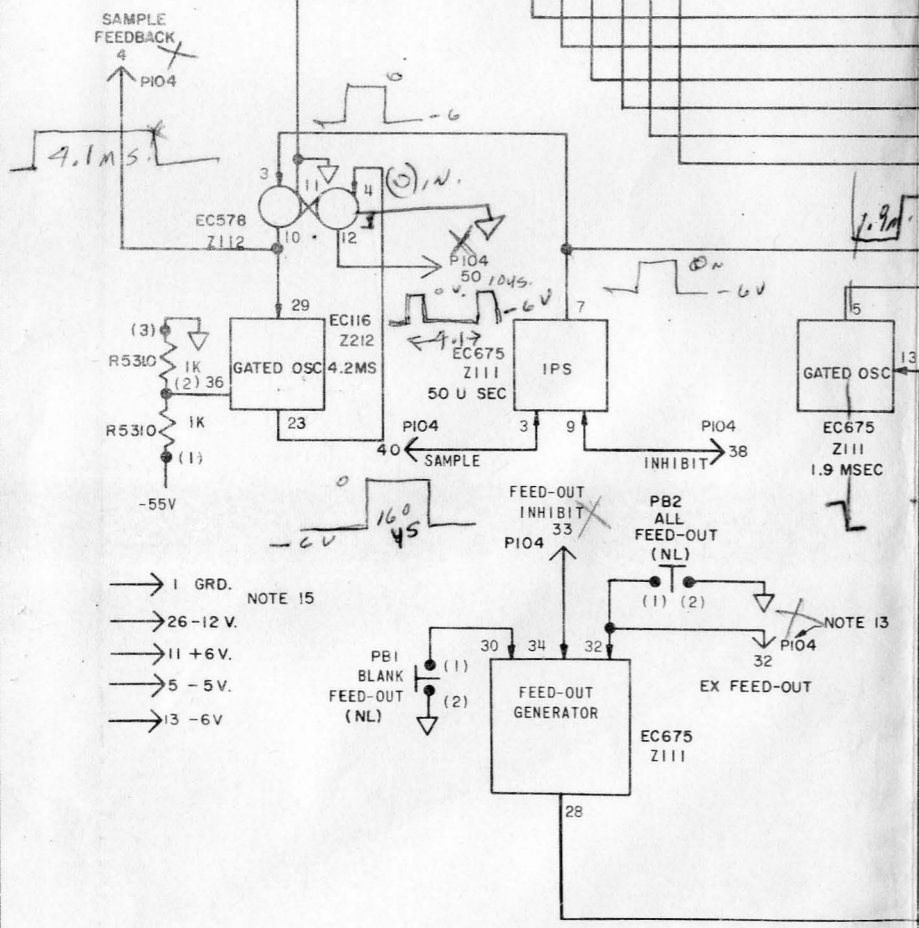
↖ 2 wires from Tape out switch mounted on reperforator to indicate "Out of Service". Low tape indicator may take 3A 115V. AC @ DC.

↖ -6V to 0V. pulse of 4.1MS - To insure transmission of 2400 W.P.M. or less. *Dome Pulse.*

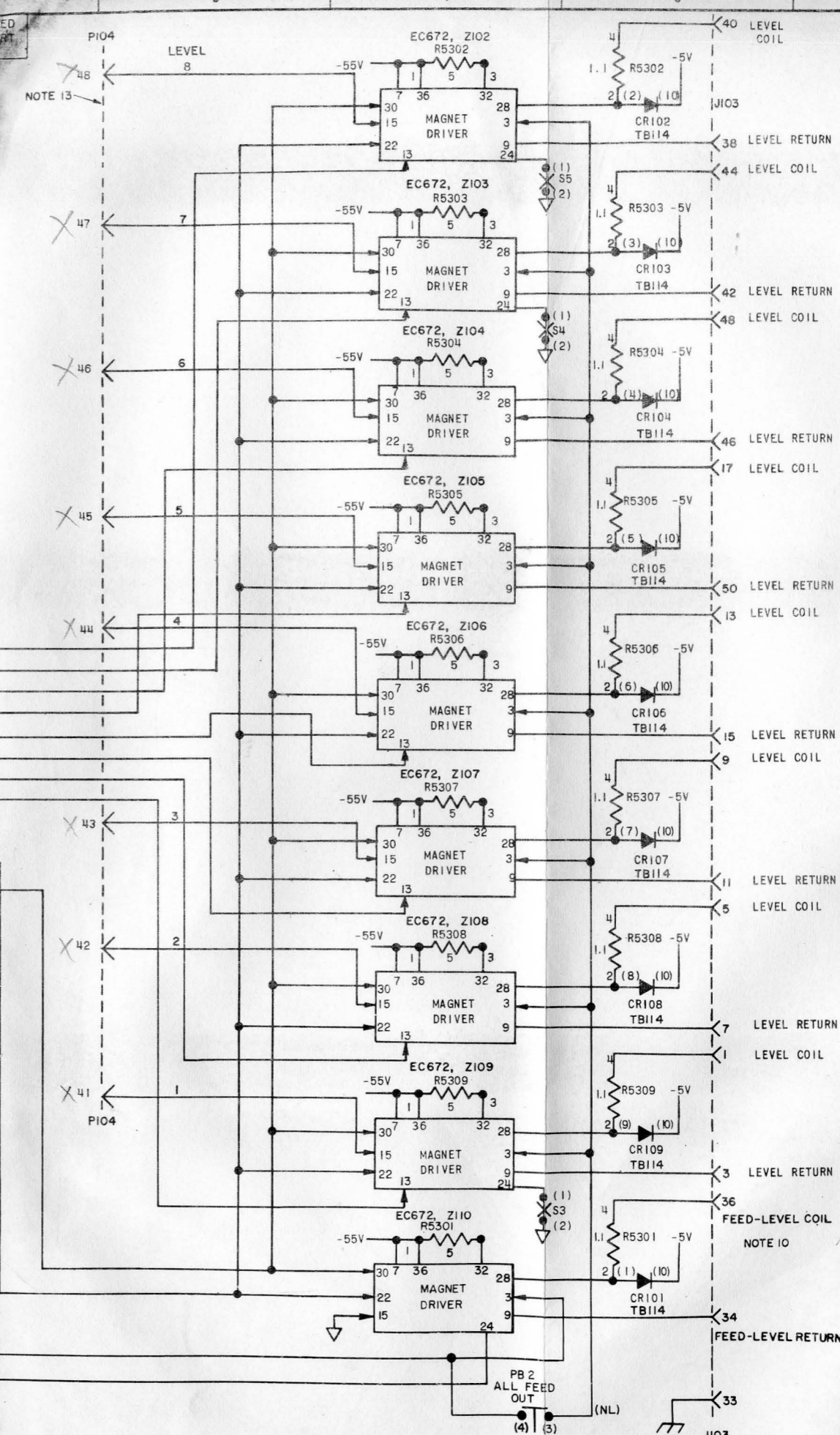
- NO. NOTES
- REFER TO 7559WD FOR ACTUAL WIRING DIAGRAM
 - ALL VOLTAGES DC, UNLESS OTHERWISE SPECIFIED.
 - TERMINAL DESIGNATIONS ENCLOSED IN PARENTHESES ARE FOR REFERENCE AND ARE NOT MARKED ON COMPONENTS.
 - ALL RESISTORS 15 WATT AND RESISTANCE VALUE IN OHMS UNLESS OTHERWISE SPECIFIED.
 - TELETYPE PERSONNEL REFER TO SPEC 61,135S FOR ADJUSTMENT OF VARIABLE TIMING CIRCUITS
 - SPARE CIRCUITS AVAILABLE: NONE
 - INDICATES FEMALE AND INDICATES MALE TERMINAL ON J103, J104, P103 AND P104 CONNECTORS.
 - SECTION 1 IS THE CLOSEST TO KNOB.
 - FEED LEVEL COIL AND LEVEL RETURN TERMINALS ARE ON J103 CONNECTOR. INPUT TERMINALS ARE ON J104 CONNECTOR.
 - DENOTES CIRCUIT GROUND.
 - OFF, 1, 2, 3, 4, 5, 6, 7 AND 8 ARE MARKED ON FRONT PANEL.
 - 147859 IS THE INPUT CABLE ASSEMBLY
 - DENOTES FRAME GROUND
 - REFER TO Z212 FOR PIN 13-6V REFER TO Z106 FOR PIN 1 GRD. REFER TO Z102-Z112 FOR PIN 26-12V REFER TO Z102-Z110 FOR PIN 11+6V REFER TO Z106 FOR PIN 5-5V
 - 147857 CABLE IS REQUIRED TO CONNECT POINT TO POINT FROM P103 TO "A" CONNECTOR ON DRPE PUNCH.
 - 147858 CABLE IS REQUIRED TO CONNECT FROM TERMINAL BLOCK A TO CONNECTOR P102



REVISION INFORMATION MUST ALSO BE REFLECTED ON THE ISSUE CONTROL RECORD, WHICH IS A PART OF THIS W.D.



- NOTE 15
- 1 GRD.
 - 26-12V.
 - 11 +6V.
 - 5 -5V.
 - 13 -6V



7560WD

REVISIONS		
ISSUE	DATE	AUTH. NO.
1	8-12-66	17813 R

NOTE: REVISION INFORMATION MUST ALSO BE REFLECTED ON THE ISSUE CONTROL RECORD, WHICH IS PART OF THIS W.D.

SFE ISSUE CONTROL RECORD FOR COMPLETE LIST OF SHEETS COMPRISING THIS W.D.

SHEET 1 OF 2

SCHEMATIC WIRING DIAGRAM FOR SELF-CONTAINED DRPE RECEIVER MODULE RELAY RACK MTG. ASSEM. NO. 147840-841

APPROVALS

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PROD. NO. 7560WD

DATE 1-4-66

P.D. FILE NO. 2-35.136AA

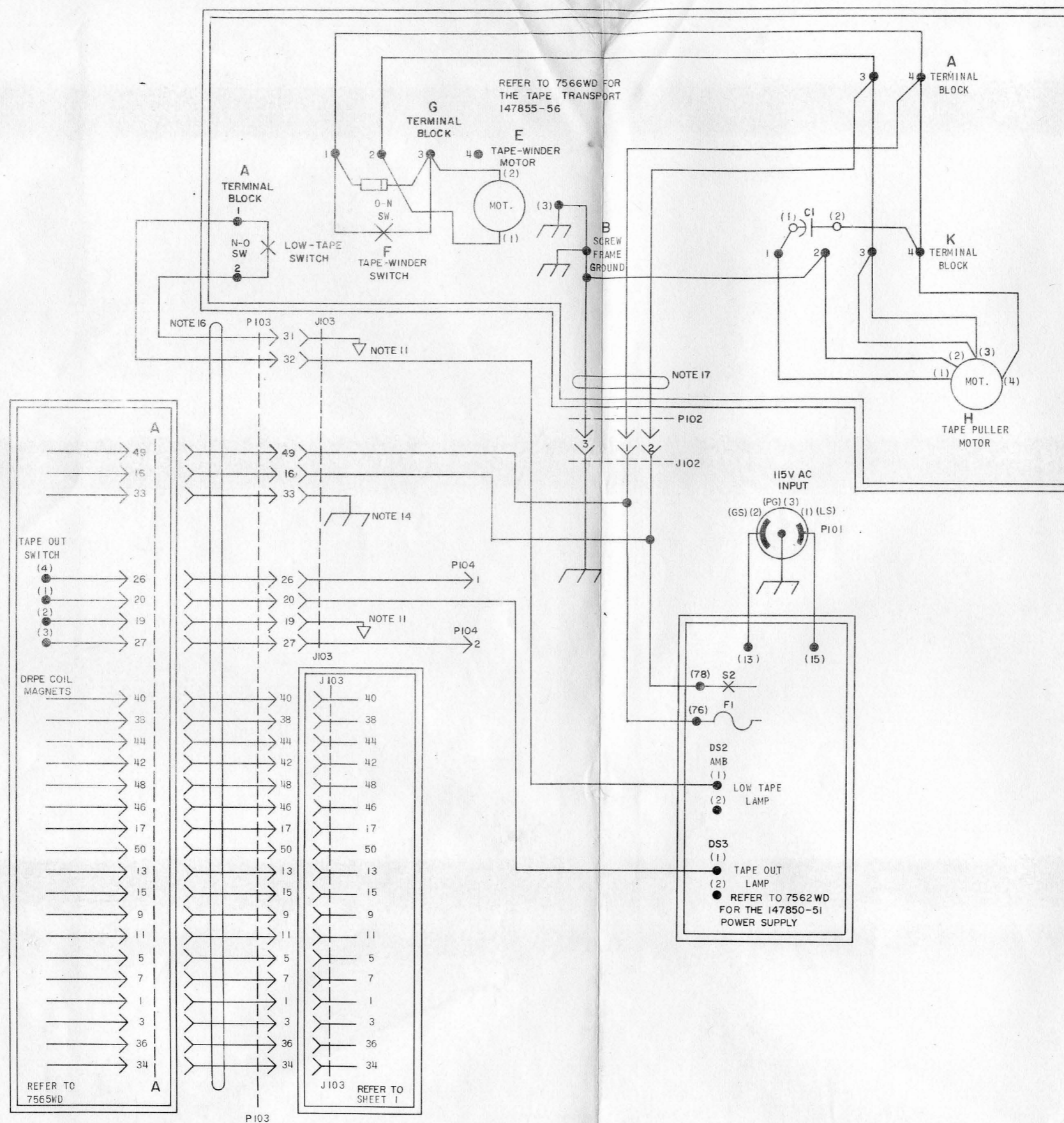
DRAWN RAL	CHKD. <i>[Signature]</i>
ENGD. KR	APPD. <i>[Signature]</i>

TELETYPE CORPORATION

7560WD

REVISIONS

ISSUE	DATE	AUTH. NO.
1	8-12-66	17813 R



SEE ISSUE CONTROL RECORD FOR COMPLETE LIST OF SHEETS COMPRISING THIS W.D.

SHEET 2 OF 2

SCHEMATIC WIRING DIAGRAM FOR SELF-CONTAINED DRPE RECEIVER MODULE RELAY RACK MTG.

ASSEM. NO. 147840-841

APPROVALS

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DRAWN R.F.

CHKD. *[Signature]*

ENGD. K.R.

APPD. *[Signature]*

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