TA201C DATA MODEM
INSTALLATION AND CONNECTIONS

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1. GENERAL

A. Introduction

1.01 This section contains eight parts. Part 1 contains information on unpacking and inspection of the RIXON® TA201C. It also lists some of the data modem uses in a service applications table. Part 2 is a detailed description of how to prepare or option the data modem for particular applications. Part 3 contains connection requirements and description of signals on the data modem connectors. Part 4 contains modification instructions for telephones used in some of the applications. Part 5 contains installation test procedures, Part 6 lists instructions for returning equipment to Rixon Inc. Part 7 contains a listing of references. Part 8 is connection and schematic diagrams.

1.02 This section is being reissued to reflect the following new information:

- Addition of new cable information in Table 2-A.
- Addition of AE186 telephone information in Table 2-B.

- Consolidation of option Tables 2-D and 2-E into telephone company and user selected option Tables 2-D and 2-E.
- Correction of numbering to S3 and addition of note 1 to Fig. 2-2.
- Addition of card edge connector designation and signal type columns in Table 2-G.
- Addition of card edge connector designation column in Table 2-H.
- Corrections to lamp indications in Figs. 2-5 and 2-6.
- Addition of AE186 telephone modifications in paragraphs 4.04, 4.05, and 4.07.
- Addition of AE186 telephone schematic in Fig. 2-42.

B. Unpacking and Inspection

1.03 Inspect the data modem thoroughly after delivery. If the data modem has been damaged in transit, please report it to the carrier and to Rixon Inc., Customer Engineering Department, at (301) 622-2121 or TWX 710-825-0071. Make an operational check after installation is complete. If necessary, verify that circuit card connectors are properly seated by following disassembly and reassembly instructions in paragraph 2.02 of this section. Ensure that the ordered mounting cable is included with the data modem.

C. DDD Service Applications

1.04 The TA201C DDD switched network applications include manual or automatic answering, compatibility with Automatic Calling Units (ACUs), and multiple line installations. Typical FCC service applications for the DDD Switched Network are listed in Table 2-A. Special applications for privately owned systems or applications which do not require FCC registration are listed in Table 2-B.

NOTE: *This data modem cannot be used with party lines or coin lines.*

TABLE 2-A

FCC REGISTERED APPLICATIONS

APPLICATION	TELEPHONE TYPE	AUXILIARY EQUIP. USED	TRANSMIT LEVEL APPLICATION	RECOMMENDED CONNECTION CONFIGURATION USOC	TEL. LINE INTERCONNECT CABLE	CONN. DIAG. FIG. NO.
Data and voice only; or alternate voice and data with automatic answer	*500 or 2500; or †500 or 2500 with isolated hookswitch contacts	None	Permissive	RJ11, RJ12, RJ13, RJ41S, RJ45S	905-6611-01 905-6611-02 Series 0	2-13
				RJ11	905-6611-01 905-6611-02 Series 1	
				RJ11, RJ12, RJ13, RJ41S RJ45S	905-6675-01	2-14
			Programmable	RJ41S or RJ45S	905-6592-01	2-15
			Fixed loss loop	RJ41S	905-6592-02	2-16

TABLE 2-A (Cont)

FCC REGISTERED APPLICATIONS

APPLICATION	TELEPHONE TYPE	AUXILIARY EQUIP. USED	TRANSMIT LEVEL APPLICATION	RECOMMENDED CONNECTION CONFIGURATION USOC	TEL. LINE INTERCONNECT CABLE	CONN. DIAG. FIG. NO.
Data only; or alternate voice and data with automatic answer	500 or 2500 with isolated hookswitch contacts	None	Fixed loss loop	RJ41S	905-6608-02	2-17
			Programmable	RJ41S or RJ45S	905-6608-01	2-18
			Permissive	RJ41S, RJ45S, or RJ11W	905-6609-01	2-19
					‡905-6609-02	2-19
	RTC	RJ36X	Fixed loss loop	RJ41S	905-6557-02	2-20
			Programmable	RJ41S or RJ45S	905-6557-01	2-21
			Permissive	RJ41S, RJ45S, or RJ16X	905-6557-03	2-22
	565 or 2565	None		RJ41S, RJ45S, or RJ11W	905-6414-05	2-23
			Programmable	RJ41S or RJ45S	905-6414-03	2-24
			Fixed loss loop	RJ41S	905-6414-02	2-25
Automatic answer only	None	None	Permissive	RJ41S, RJ45S, or RJ11W	905-6557-03	2-26
			Fixed loss loop	RJ41S	905-6557-02	2-27
			Programmable	RJ41S or RJ45S	905-6557-01	2-28
Multiple lines and multiple data modems	Refer to Installation and Maintenance Manual for the RM40A3 Data Mounting (Bulletin 5243)					

* 500 or 2500 telephone with isolated hookswitch contacts may be used in systems which are subject to excessive startup errors.

† The 500 or 2500 telephone with isolated hookswitch contacts can be used with cables 905-6611-01, -02, and 905-6592-01, -02 Series 1 and above only.

‡ Includes lamp on cable switch assembly for data mode indication.

TABLE 2-B
SPECIAL APPLICATIONS FOR PRIVATELY OWNED SYSTEMS OR APPLICATIONS WHICH DO NOT REQUIRE FCC REGISTRATION

APPLICATION	‡‡TELEPHONE TYPE	TRANSMIT LEVEL APPLICATION	AUXILIARY EQUIP. USED	TEL. LINE INTERCONNECT CABLE	CONN. DIAG. FIG. NO.
Data with alternate voice	*565, 2565, or AE186	Adjustable	None	†905-6414-01	2-29
				905-6414-04	2-30
Data with automatic answer only	None			†905-4962-01	2-31
				†905-4962-03	
Data with automatic calling and alternate voice	‡§565, 2565, or AE186		801C L1/2	905-6630-01	2-32
				905-6630-04	2-33
		Fixed loss loop		905-6630-02	2-34
		Programmable		905-6630-03	2-35
		Permissive		906-6630-05	2-36
	**565, 2565, or AE186	Adjustable	¶801A or 801C	†905-6414-01 *149B adapter and **D10P cable	2-37
Data with alternate voice for up to five individually housed data modems	††Modified 565, 2565, or AE186		Five-way adapter	905-6414-01 and B25A cable	2-38

* Telephone can be modified per paragraph 4.02 of this section for auto-answer inhibit.
† Cable must be series 2 or higher.
‡ Telephone may be removed in this application if no voice communication is required.
§ AE186 telephone must be modified per paragraph 4.04 of this section.
¶ 801A is normally used with rotary dial telephone and 801C is normally used with tone dial telephone.
** Not supplied by Rixon Inc.
†† Telephone must be modified as per paragraph 4.03 of this section.
‡‡ Telephones can be modified per paragraphs 4.06 and 4.07 for removal of telephone exclusion key.

1.05 Prior to installation, the telephone company must be notified of the intended installation. The Universal Service Order Code (USOC) number for the telephone service jacks are listed in Table 2-A. One of the codes must be specified for installation by the telephone company. The FCC registration number and ringer equivalence number (located on label on outside of data modem) must also be provided.

NOTE: *This data modem (as of the date of manufacture) is compatible with telephone company communications facilities with which it was intended to operate. However, if the telephone company changes its communications facilities, equipment, operations, or procedures such that this equipment is no longer compatible, RIXON is not responsible for the cost of modification or replacement of the data modem.*

1.06 The transmit line level of a TA201C Data Modem is determined by an internal adjustable attenuator and by a resistance connected across programming pins 18 and 19. A series of different telephone interface cable assemblies allows the data modem to be applied to different level setting arrangements:

- Adjustable (for applications not requiring FCC registration) — uses cable with jumper between pins 18 and 19. Transmit level is set by internal attenuator.
- Fixed loss loop — uses cable with 866 ohms resistance between pins 18 and 19. Transmit level is −4 dBm maximum.
- Permissive — uses cable with 9310 ohms and resistance between pins 18 and 19. Transmit level maximum is −9 dBm.
- Programmable — uses cable with leads from pins 18 and 19 to connect to resistance built into telephone company supplied interconnection point.

NOTE: *When either fixed loss loop, permissive, or programmable level setting applications are used, the data modem internal attenuator must remain in factory set 0 dBm position. Doing otherwise adds additional attenuation to transmitted signals.*

D. Private Line Service Applications

1.07 The TA201C Data Modem service applications for private line operation are listed in Table 2-C.

2. ACCESS TO DATA MODEM OPTIONS

2.01 The data modem is equipped with a number of options that can be selected at the installation site without test equipment or tools other than a screwdriver. Option selection is determined by the servicing telephone company and customer. Telephone company selected options for private line and DDD network applications are provided in Table 2-D. User selected options for private line and DDD network applications are provided in Table 2-E. Read the description of each option before installing; many are interrelated.

A. Data Modem Disassembly and Reassembly

2.02 It is necessary to remove data modem circuit cards from the desk-top enclosure to inspect or install options. Use Fig. 2-1 and the following procedure:

(a) Use a flat-blade screwdriver in access slot on bottom of bezel to pry card assembly from case. Loosen and disconnect assembly from rear housing connector.

READ Never use force while removing assembly from case because damage may result. Handle assembly by front panel and card edges only. Static changes may damage ICs.

(b) Slide card assembly from case while gripping front panel. Set card assembly on a nonconductive surface. Card assembly consists of three circuit card layers separated by nylon spacers.

(c) Options are accessible at card edges between circuit card layers.

B. Option Installation

2.03 Determine the correct option positions for the particular data installation then refer to Fig. 2-2 for option locations and Tables 2-D and

TABLE 2-C

PRIVATE LINE SERVICE APPLICATIONS FOR TA201C

APPLICATION	TEL. SET USED	DAS USED	DAS HOUSING	MOUNTING CORD	CONN. DIAG. FIG. NO.
Two- or four-wire	None	None	None	*905-4962-01, -02, -03	2-8
Four-wire	None	C829	DM44A1/T with terminal board	*905-6399-01	2-9
			DM44A1/T with connectors	905-6277-01	2-10
			DM44R2	Refer to Installation and Maintenance Manual for connectors (Bulletin 5270).	
Multiple four-wire	Refer to Installation and Maintenance Manual for RM40B1A Data Mounting (Bulletin 5220).				
Alternate voice four-wire	Refer to Installation and Maintenance Manual for RM46A1 (Bulletin 5328) and RM46B1 (Bulletin 5215) Data Mounting.				
Alternate voice or dial backup four-wire	Modified 565, 2565, or AE186	C829 and C48A1, or C829 and C48B1	DM45R1	905-6277-01	2-11
Alternate voice and dial backup		C829, C48A1 and C48B1	DM45A1		2-12

* Must be series 2 or later.

2-E for switch settings. To install selected options remove the data modem circuit card assembly from the enclosure. Locate appropriate switches or straps between card layers, and set options to applicable positions.

C. Automatic Calling Unit Options

2.04 An 801 ACU may be used when the TA201C Data Modem is configured for two-wire operation. Certain ACU options are required with the TA201C Data Modem. Refer to Table 2-F for ACU option information.

3. CONNECTIONS

A. Location Requirements

3.01 The data modem must be physically located within the length of customer-supplied interface cable required to connect business machine to the data modem. Fig. 2-3 provides the data modem dimensions required for installation.

TABLE 2-D

TELEPHONE COMPANY SELECTED OPTIONS

FEATURE	OPTION	GENERAL DESCRIPTION	WECO DESIG		SWITCH OR JUMPER POSITION	LOCATION
			DDD	PL		
Transmit line signal level	Signal range 0 to −15 dBm. Switch S3 attenuates transmit signal the sum total of all toggle switch positions	0 dB setting is recommended in private line installations using a DAS829 and in registered DDD installations.	**0 dBm	*0 dBm	0 0 0 0 S3 [switch diagram] 1 2 4 8 = −9 dBm	S3 on analog (middle) card
Use with DAS 828/ 829 type	Yes	During facility loopback test, DAS829 indicates to the terminal that data modem is in not-in-data mode.	N/A	*YI	S1-3D	S1 on main (bottom) card
	No	Data Set Ready indication to terminal is controlled by the data modem.	N/A	YJ	S1-3U	
4-Wire local analog line loopback (+16 dB)	In	Enables data modem to loop four-wire telephone line via a 16 dB amplifier when in the analog loopback test mode. Recommended for four-wire private line configurations.	N/A	—	S2-2D	
	Out	Disables four-wire line loopback.	N/A	*—	S2-2U	
Satellite option	In	Inhibits Request To Send signal at the called data modem for 275 ms after the end of answer tone. Delay interval allows echo suppressors which were disabled by answer tone frequency to enable. Recommended in DDD satellite links.	**YQ	N/A	S5-4D	S5 on digital (top) card

TABLE 2-D (Cont)

TELEPHONE COMPANY SELECTED OPTIONS

FEATURE	OPTION	GENERAL DESCRIPTION	WECO DESIG		SWITCH OR JUMPER POSITION	LOCATION
			DDD	PL		
Satellite option (cont)	Out	Request To Send signal at called data modem is not inhibited.	YR	N/A	S5-4U	S5 on digital (top) card (cont)
Grounding option	Signal ground connected to frame ground	Ties signal ground to the metal case (frame ground) of the data modem. Used to reduce longitudinal noise from the power line.	**YK	*YK	Screw switch closed	Screw switch on rear panel
	Signal ground not connected to frame ground	Isolates signal ground from frame ground.	YL	YL	Screw switch open	

* Factory setting for TA201C L1D.
** Factory setting for TA201C L1C/D.

TABLE 2-E

USER SELECTED OPTIONS

FEATURE	OPTION	GENERAL DESCRIPTION	WECO DESIG.		SWITCH OR JUMPER POSITION	LOCATION
			DDD	PL		
Data modem configuration	2-Wire PL	Selects two-wire private line operation. Enables the functions which are normal for two-wire private line configuration.	N/A	—	†E5-E6, E7-E8, S1-2D, S2-1D	Main (bottom) card
	4-Wire PL	Selects four-wire private line operation. Enables the functions which are normal for four-wire private line configuration.	N/A	*—	†E5-E6, E8-E9, S1-2D, S2-1U	

TABLE 2-E (Cont)

USER SELECTED OPTIONS

FEATURE	OPTION	GENERAL DESCRIPTION	WECO DESIG.		SWITCH OR JUMPER POSITION	LOCATION
			DDD	PL		
Data modem configuration (cont)	2-Wire DDD	Selects two-wire DDD switched network operation. Enables the functions which are normal for two-wire DDD switched network configuration.	**—	N/A	E4-E5, E7-E8, S1-2U, S2-1U	Main (bottom) card (cont)
Function of EIA interface pin 18	Initiates local analog loopback	Enables analog loopback when Data Terminal Equipment (DTE) connector pin 18 is raised to a positive voltage.	YS	YS	E1-E2	
	Provides receive symbol clock	Applies dibit receive clock to DTE connector pin 18.	**YT	*YT	E2-E3	
Automatic answer	DTR control only	Data modem will automatcally answer data calls if Data Terminal Ready lead (CD) is on. Normally used to provide unattended answering.	**YF	N/A	S1-4U	
	Not provided	Disables automatic answer.	YE	N/A	S1-4D	
‡DSR in analog loopback	DSR on	Data Set Ready is not inhibited in analog loopback mode. Used for analog loopback testing through data terminal equipment.	—	YM	S1-5U	
	DSR off	Data Set Ready off in analog loopback mode.	**—	*YN	S1-5D	
Transmitter timing	Internal	Data modem provides serial clock via internal crystal controlled oscillator.	**YC	*YC	S4-6U, S4-8D	S4 on digital (top) card
	External	Customer provides serial clock via SCT lead on DTE interface. Useful in time division multiplexing and digital repeater applications.	YD	YD	S4-6U, S4-8U	

TABLE 2-E (Cont)

USER SELECTED OPTIONS

FEATURE	OPTION	GENERAL DESCRIPTION	WECO DESIG.		SWITCH OR JUMPER POSITION	LOCATION
			DDD	PL		
Transmitter timing (cont)	Controlled by receiver bit clock	Internal transmit clock is phased locked to internal received serial clock providing a system clock that is synchronized between data modem incoming and outgoing data. Typically used at remote stations in multiplex applications.	—	WI	S4-6D, S4-8U	S4 on digital (top) card (cont)
Abort timer	In	Data modem automatically drops line after 20 seconds ±4 seconds if data modem does not receive a Request To Send or has not detected carrier.	—	N/A	S2-3U	S2 on main (bottom) card
	Out	Disables abort timer.	**—	N/A	S2-3D	
Telephone type	Use 500/565 telephone	Required in standard configurations which do not use RTC telephone.	**—	N/A	S2-4D	
	FCC RTC arrangement	Only required in configurations which use RTC telephones.	—	N/A	S2-4U	
4-Wire type operation and CTS delay	Switched carrier 7 ms CTS delay	Allows data modem to transmit only when Request To Send signal is on from the terminal. Provides 7 ms Clear To Send delay. Typically used on polling system remote stations.	N/A	*XA	S1-1D	S1 on main (bottom) card
					S4-1D, S4-2U, S4-5U	S4 on digital (top) card
	Continuous carrier 7 ms CTS delay	Sets internal Request To Send signal on so that the transmitter stays on continuously. Provides 7 ms Clear To Send delay. Typically used on polling system master stations.	N/A	XB	S4-1D, S4-2U, S4-5D	
					S1-1D	S1 on main (bottom) card

TABLE 2-E (Cont)

USER SELECTED OPTIONS

FEATURE	OPTION	GENERAL DESCRIPTION	WECO DESIG.		SWITCH OR JUMPER POSITION	LOCATION
			DDD	PL		
4-Wire type operation and CTS delay (cont)	Continuous carrier 0 ms CTS delay	Allows data modem to transmit data only when Request To Send signal is on from the terminal and provides 0 ms Clear To Send delay. Typically used on point-to-point systems.	N/A	XC	S1-1D	S1 on main (bottom) card
					S4-1D, S4-2D, S4-5D	S4 on digital (top) card
2-Wire type operation and CTS delay	Switched carrier 150 ms CTS delay	Allows data modem to transmit only when Request To Send signal is on from the terminal. Provides 150 ms of Clear To Send delay. Recommended in two-wire DDD switched network applications.	**—	XE	S4-1U, S4-2U, S4-5U	
					S1-1U	S1 on main (bottom) card
Continuous receiver bit clock	In	Provides a continuous receiver bit clock signal of 2400 bps on DTE connector pin 17	YO	YO	S4-3U	S4 on digital (top) card
	Out	Provides receiver bit clock signal only when receiving carrier signal.	**YP	*YP	S4-3D	
New sync	Under customer control	Permits squelching of receiver clock recovery system at the end of a message. Typically used in polling system master stations.	N/A	YB	S4-4D	
	Not used	New sync option is disabled for normal operation.	N/A	*YA	S4-4U	

TABLE 2-E (Cont)

USER SELECTED OPTIONS

FEATURE	OPTION	GENERAL DESCRIPTION	WECO DESIG.		SWITCH OR JUMPER POSITION	LOCATION
			DDD	PL		
Antistream control	Used with 3 second delay	Request To Send is internally inhibited after 3 seconds of continuous Request To Send on condition. Option automatically resets when Request To Send is in the off condition. Typically used in polling system remote stations.	N/A	—	S5-1D, S5-2D	S5 on digital (top) card
	Used with 27 second delay	Request To Send is internally inhibited after 27 seconds of continuous Request To Send on condition. Option automatically resets when Request To Send is in the off condition. Typically used in polling system remote stations.	N/A	—	S5-1D, S5-2U	
	Not used	Antistream not used. Request To Send is not inhibited. Typically used in point-to-point and polling system master stations.	N/A	*—	S5-1U	

* Factory setting for TA201C L1D.
** Factory setting for TA201C L1C/1D.
† E5-E6 permanently strapped on TA201C L1D.
‡ On series 1 and higher data modems.

B. Power Requirements

3.02 A standard three-wire grounding power receptacle is required to provide ac power for the data modem. Refer to the specifications table in the Description and Operation section for the power specifications. This power receptacle should not be controlled by a switch.

3.03 To avoid possible errors due to potential difference between grounds for the data modem and business machine, the power receptacles for the data modem and business machine must be served from the same ac distribution panel. When an 801 Automatic Calling Unit (ACU) is used with the data modem; data modem, business machine, and ACU grounds must all be served from the same ac distribution panel.

C. Business Machine Interface Requirements

3.04 The interface cable must not be more than 50 ft (15m) long. It must be equipped with a 25-pin Cinch or Cannon connector (DB-19604-432 or equivalent) to mate with the data modem connector labeled DTE J1. Table 2-G identifies and describes the signals on the interface connector pins. Unused pins are not shown.

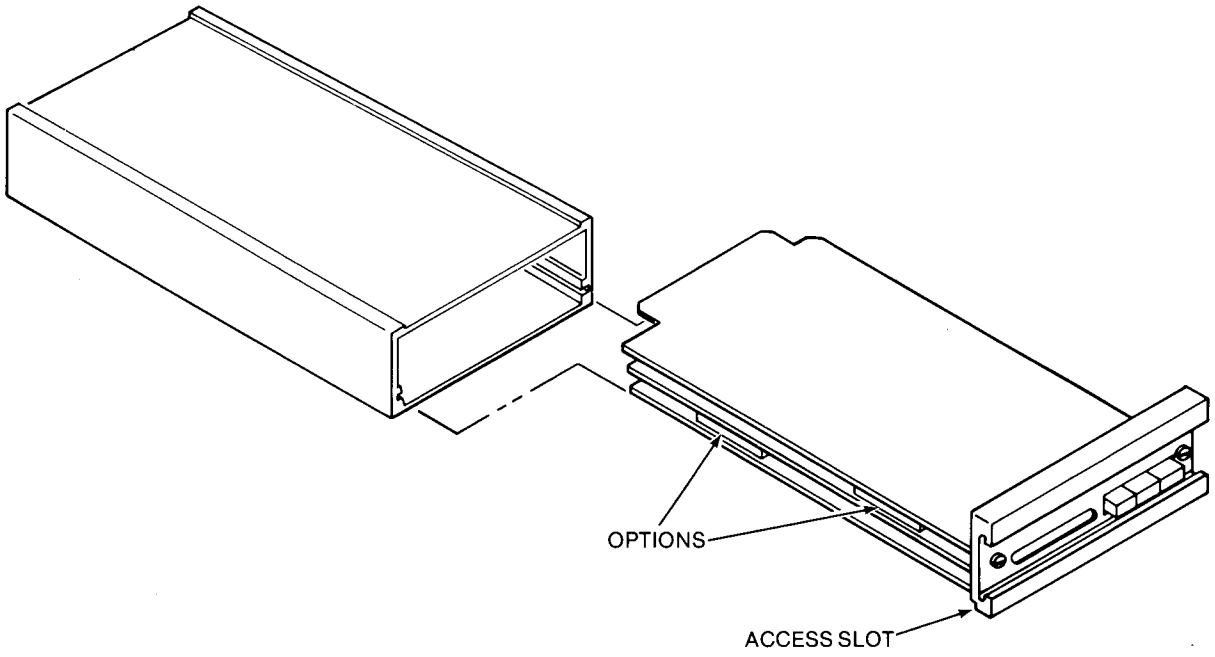


Fig. 2-1. Data Modem Assembly

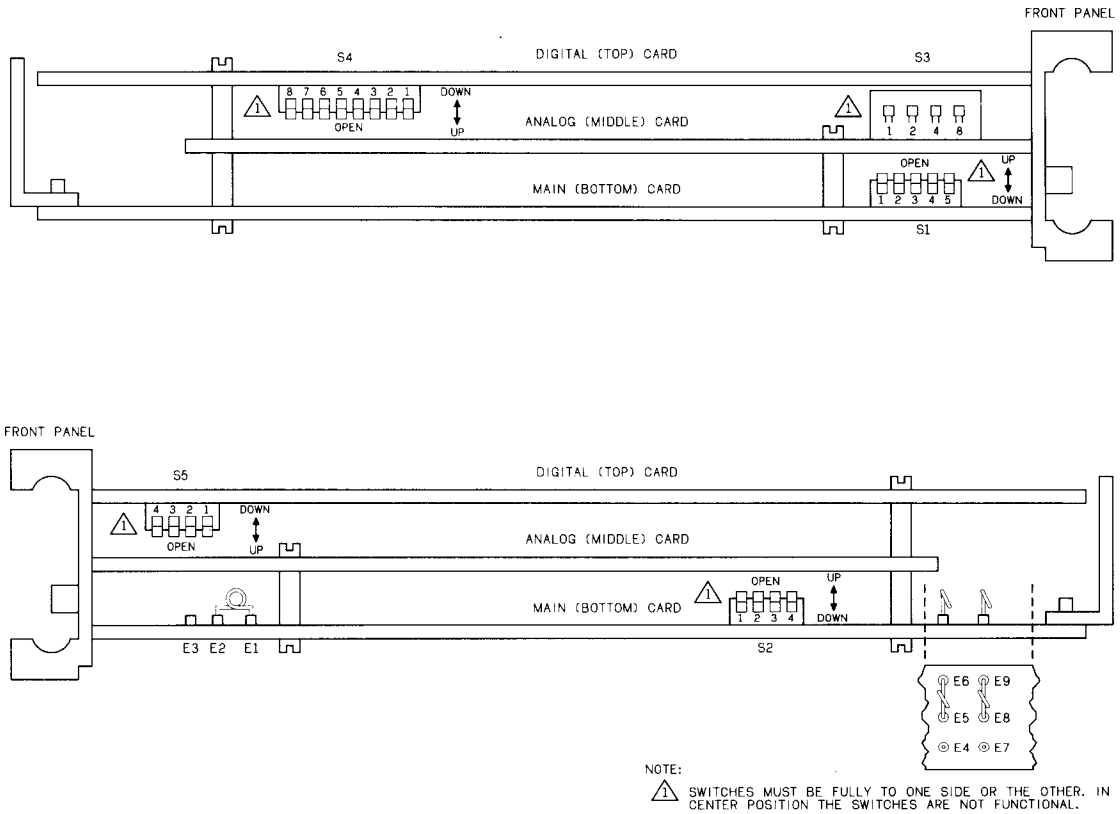


Fig. 2-2. TA201C Option Locations

TABLE 2-F

801 ACU OPTIONS USED WITH TA201C DATA MODEM

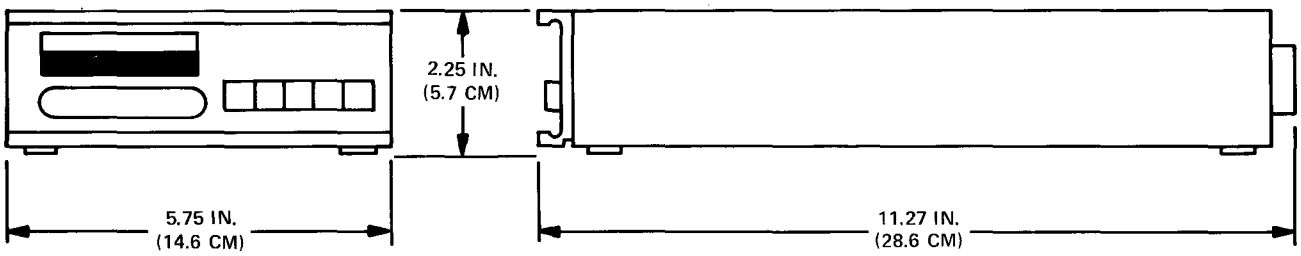
OPTION DESCRIPTION	OPTION DESIGNATIONS			REQUIREMENT
	801C L1/2	801A6	801C4	
Mounting cord 13-conductor	*M13G	†	†	Use only specified options
Mounting cord 10-conductor	†	M	M	
ACU answer detection or end of number code	B	B	B	
Detect end of answer tone	W	W	W	
Detect 2025-Hz answer tone	S	S	S	
DLO controlled by ACU	*	*	ZM	
Data modem to data mode by grounded contact	ZG	ZG	ZG	
Isolated TK contact	ZA out	‡ZA	‡ZA	
No clear signal, no TK contact	ZN	†	†	
Two-wire operation	*	*	ZH	
Ground start (two-wire)	V	*	V	Telco selects one
Loop start	Y	†	Y	
Short loop (under 400 ohms)	†	ZU out	†	Telco selects one
Long loop (over 400 ohms)	†	ZU in	†	
Stop ACR timer when DSS goes ON	R	R	R	Customer selects one
Do not stop ACR timer when DSS goes ON	H	H	H	
Terminate call via data modem after DSS goes ON (line transfer in test)	G	G	G	Customer selects one
Terminate call via CRQ after DSS ON (line transfer	Z	Z	Z	
7-sec ACR timing	ZQ	Screwdriver adjust		Customer selects one
14-sec ACR timing	ZR			
28-sec ACR timing	ZS			
56-sec ACR timing	ZT			

TABLE 2-F (Cont)

801 ACU OPTIONS USED WITH TA201C DATA MODEM

OPTION DESCRIPTION	OPTION DESIGNATIONS			REQUIREMENT
	801C L1/2	801A6	801C4	
Terminal contact interface	†	ZE	†	Customer selects one
Terminal voltage interface	*	ZF	*	
SG connected to FG	ZU	Strap in		Customer selects one
SG not connected to FG	ZV	Strap out		

* Factory wired.
† Not available.
‡ TK contacts are not used by data modems connected to 801A6 and 801C4 ACUs. Option is specified to provide uniformity of installations.



78040-0

Fig. 2-3. Installation Dimensions

D. Telephone Interface Requirements

3.05 The private line version of the telephone interface cable requires a maximum of six conductors, while the switched network version requires a 15-conductor cable terminated in a connector to mate with the 565 telephone. Table 2-H identifies and describes the signals on the pins of the data modem telephone connector labeled TEL/LINE P1. Unused pins are not shown. Table 2-I lists resistor Rp values to be connected between pins 18 and 19 of the telephone interface connector for programmed transmit levels.

E. Data Line Requirements

3.06 To avoid interference during data transmission, use only individual data (telephone) lines and do not connect extension telephones. To minimize inductive interference to the data signals, data lines should not be carried in the same cable run with cables between data modems and business machines or with lines connected to DC teletypewriter services. If this requirement cannot be met, run data lines in shielded (SK) station wire between the data modem and cable distribution terminal or building entrance. The shield should be terminated on one end only, perferably the distribution terminal end.

TABLE 2-G

DATA TERMINAL EQUIPMENT CONNECTOR SIGNALS

*CUST. INT. CONN. PIN NUMBER (RS-232-C DESIG.)	CARD EDGE CONN. DESIG.	†SIGNAL TYPE	SIGNAL FROM	CCITT DESIG.	DESCRIPTION
1 (AA)	B	Ground	—	101	Frame ground connected to data modem housing and local power ground through third conductor in power cord. Also connected to signal ground through an option. See pin 7.
2 (BA)	C	Data	Terminal	103	Business machine transmits positive and negative voltages to data modem on this lead, using positive transitions of serial clock transmit as an indication of when to change data bits. Voltage levels should be in accordance with RS-232-C.
3 (BB)	D	Data	Data modem	104	Data received from telephone line is converted to positive and negative voltages which are presented to business machine on positive transitions of serial clock receive. Polarities on this lead agree with those on Send Data lead of distant transmitter. Received Data is clamped negative when Carrier On signal is off.
4(CA)	E	Control	Terminal	105	Signals on this lead are generated by business machine to turn on local data modulator. Request To Send must be held high as long as data needs to be transmitted. Request To Send is overridden in all test modes except analog loopback.
5 (CB)	F	Control	Data modem	106	Signals present on this lead are generated by local data modem to indicate to business machine that it is ready to transmit data. ON condition of Clear To Send is in response to an ON condition of Request To Send. RS-CS time interval may be adjusted to 0 ms, 7 ms, or 150 ms through various options. Clear To Send goes off with essentially no delay when Request To Send is turned off.

TABLE 2-G (Cont)

DATA TERMINAL EQUIPMENT CONNECTOR SIGNALS

*CUST. INT. CONN. PIN NUMBER (RS-232-C DESIG.)	CARD EDGE CONN. DESIG.	†SIGNAL TYPE	SIGNAL FROM	CCITT DESIG.	DESCRIPTION
6 (CC)	H	Control	Data modem	107	Provides an ON indication to business machine when data modem is in data mode and is capable of transmitting or receiving data. **NOTE:** *An ON indication should not be interpreted as an indication that a communication channel has been established to a remote station.*
7 (AB)	J	Ground	—	102	Establishes common ground reference for all interface leads. Is connected to frame ground at power supply. Can be disconnected if desired by customer.
8 (CF)	K	Control	Data modem	109	Indicates to business machine that data signals are being received by data modem.
9 (+ P)	8	Test point	Data modem	—	+ 12 volts for telephone company testing
10 (−P)	7	Test point	Data modem	—	−12 volts for telephone company testing.
14 (NS)	A	Control	Terminal	118	In some arrangements, business machine may use this lead to quench data modem receiver clock to prepare data modem receiver for a new message. At end of a received message, if customer wishes to quench slowly decaying timing signals in the receiver, new sync lead should be pulsed on for at least 1 ms. New synch lead may be inhibited by an installer option when it is not desired.
15 (DB)	M	Clock	Data modem	114	Transmitter bit rate clock, a squarewave of 2400 Hz.
16 (—)	V	Clock	Data modem	119	A squarewave at one-half the bit rate (1200 Hz) appears on this lead. Transitions of this lead coincide with positive transitions of Serial Clock Transmit lead.

TABLE 2-G (Cont)

DATA TERMINAL EQUIPMENT CONNECTOR SIGNALS

*CUST. INT. CONN. PIN NUMBER (RS-232-C DESIG.)	CARD EDGE CONN. DESIG.	†SIGNAL TYPE	SIGNAL FROM	CCITT DESIG.	DESCRIPTION
17 (DD)	L	Clock	Data modem	115	Provides a squarewave timing signal which is used for clocking received data. This timing signal is at the bit rate (2400 Hz). Negative transitions of this signal are used by business machine to sample signals appearing on Receive Data lead. It is clamped positive when carrier detector is off and when transmitter timing option is set for controlled by receiver bit clock.
18 (—)	1	Clock/ Control	Data modem/ Terminal	—	Determined by option YS/YT. When option YT is selected a 1200 Hz square-wave clock used internally by the data modem appears on pin 18. When option YS is selected, pin 18 becomes an input for an externally activated analog loopback test. An ON voltage initiates analog loopback and lights data modem TM lamp.
20 (CD)	3	Control	Terminal	108/1	Used by data modem line control. Data Terminal Ready must be on before entering data mode, and off at least 10 ms to terminate call while in data mode. When data modem operates on private line facilities, Data Terminal Ready is not used by data modem.
22 (CE)	4	Control	Data modem	125	During EIA interface, signals on this lead indicate that ringing signal is being received on telephone channel.
24 (DA)	10	Clock	Terminal	—	Furnishes bit rate timing to transmitter from business machine for externally timed data modems.

* Unused pins not shown.
† Control and Clock signals: On = +3 to +25 V; Off = −3 to −25 V.
Data signals: binary 0 = space = +3 to +25 V; binary 1 = mark = −3 to −25 V.

TABLE 2-H

TELEPHONE/LINE CONNECTOR SIGNALS

TEL/LINE P1 CONN. PIN NO.	LEAD DESIGNATION	CARD EDGE CONN. DESIG.	DESCRIPTION
1	L	W	Data modem provides contact closure to −12 V through 75 ohms by either ring or data relay. Normally used to control telephone line lamp in associated telephone.
2	−12	R	−12-volt power to telephone or external units.
3	+5	21	+ 5-volt power to telephone or external units
4	LG	16	Connected to signal ground in data modem. Normally used to provide return path for telephone line lamp in associated telephone.
5	TD	S	Normally talk-data control from telephone. An input to data modem, this circuit responds to open circuit which gives data mode and contact closure to ground that provides talk mode.
7 8	T R	Y X	Four-wire transmit pair or two-wire transmit/receive pair.
9 10	DT DR	15 14	Four-wire receive pair.
11	TEK6	18	Normally used for Data Set Ready control from 828 or 829 DAS. Connected to signal ground in data modem.
12	RNG	20	Contact closure to ground during ringing. Open circuit at all other times.
13	TEK5	19	Normally used as external control for Data Set Ready from equipment such as 828 or 829 DAS. Open circuit turns off Data Set Ready. Contact closure to ground gives Data Set Ready on indication.
14	C	T	Normally contact closure indication to 828 or 829 DAS. Data mode relay in data modem gives contact closure to ground on this lead when in data mode. Open circuit at all other times.
16	D1	U	Input to data modem from external equipment such as 801 ACU. Contact closure to ground controls this input.
18 19	PR PC	22 Z	Used in programmable applications. Programming resistor Rp connected between pins 18 and 19 controls transmit level circuits. See Table 2-I for Rp values.
20	+12	0	+ 12 volt power to telephone or external units.

TABLE 2-H (Cont)

TELEPHONE/LINE CONNECTOR SIGNALS

TEL/LINE P1 CONN. PIN NO.	LEAD DESIGNATION	CARD EDGE CONN. DESIG.	DESCRIPTION
21	T1	15	Leads extended from tip and ring to interconnect with telephone network to allow alternate voice-data operation.
22	R1	14	
23	A	18	Data modem provides contact closure between A and A1 to indicate that data modem or associated telephone is holding line. Leads are open at all other times. Indication is provided for KTU on ACU equipment.
24	A1	19	See pin 23.

4. TELEPHONE MODIFICATIONS

4.01 In some applications it may be necessary to modify the multiple line telephone. The following procedures are for modifications which are referred to in the service application tables and connection diagrams. Figure 2-4 may be used for terminal locations in the 565 telephone.

A. Auto-Answer Inhibit Modification

4.02 When automatic answer is required the data modem is normally optioned for permanent automatic answer. However, the multiple line telephone can be modified to provide auto-answer inhibit in single line applications.

4.03 Modify the 565 or 2565 telephone as follows:

(a) Remove telephone set cover by removing two slotted screws in front and rear of base plate.

(b) Disconnect orange-white lead from terminal 1B (see Fig. 2-4) and connect to terminal N.

(c) Reinstall dial assembly and telephone set cover.

(d) Mark base of telephone MODIFIED FOR TA201C/T201C/T202S AUTO-ANSWER INHIBIT.

(e) Verify proper data modem automatic answer option is installed.

4.04 Modify the AE186 telephone as follows:

(a) Remove telephone cover by removing two slotted screws at the front of the baseplate and one slotted screw at the rear of the baseplate.

(b) Disconnect orange-white lead from terminal 1B and connect to terminal N.

(c) Reinstall telephone cover.

(d) Mark base of telephone MODIFIED FOR TA201C/T201C/T202S AUTO—ANSWER INHIBIT.

(e) Verify proper data modem automatic answer option is installed.

TABLE 2-I

PROGRAMMING RESISTOR, Rp, VALUES Vs. TRANSMIT LEVEL OF TA201C

TRANS LEVEL (dBm)	Rp VALUE (OHMS)	LOOP LOSS RANGE (dBm)
0	Short	12 or more
−1	150	11—12
−2	336	10—11
−3	562	9—10
−4	866	8—9
−5	1,240	7—8
−6	1,780	6—7
−7	2,520	5—6
−8	3,610	4—5
−9	5,490	3—4
−10	9,200	2—3
−11	19,800	1—2
−12	Open	0—1

B. Modification of AE186 Telephone with LEDs for Operation with TA201C Data Modem

4.05 When using an AE186 telephone (manufacturers part number prefixed HC) equipped with LEDs the telephone must be modified to prevent the TA201C from reverse biasing the LEDs. The telephone is modified as follows:

(a) Remove telephone cover by removing the two slotted screws at the front of the baseplate and one slotted screw at the rear of the baseplate.

(b) Locate terminals 1L, 1G through 6L, 6G on the telephone terminal board. Starting with 1L, 1G, loosen each pair of L and G terminal screws and move the color coded leads as follows:

- White-Green from terminal 1G to 1L.
- Green-White from terminal 1L to 1G.
- Red-Blue from terminal 2G to 2L.
- Blue-Red from terminal 2L to 2G.
- Red-Brown from terminal 3G to 3L.
- Brown-Red from terminal 3L to 3G.
- Black-Orange from terminal 4G to 4L.
- Orange-Black from terminal 4L to 4G.
- Black-Slate from terminal 5G to 5L.
- Slate-Black from terminal 5L to 5G.
- Yellow-Green from terminal 6G to 6L.
- Green-Yellow from terminal 6L to 6G.

(c) Place telephone cover on telephone and install three screws in baseplate.

C. Exclusion Key Removal Modification for 565 or 2565 Telephone

4.06 When an exclusion key is incorporated in a 565 or 2565 telephone, the telephone must be modified as follows:

(a) Remove telephone cover by removing two slotted screws in front and rear of baseplate.

(b) Remove dial assembly by loosening two slotted screws, one on each side of dial assembly. Lift dial assembly up to one side of dial assembly brackets.

(c) Disconnect black-white lead from terminal 1H, tape and store.

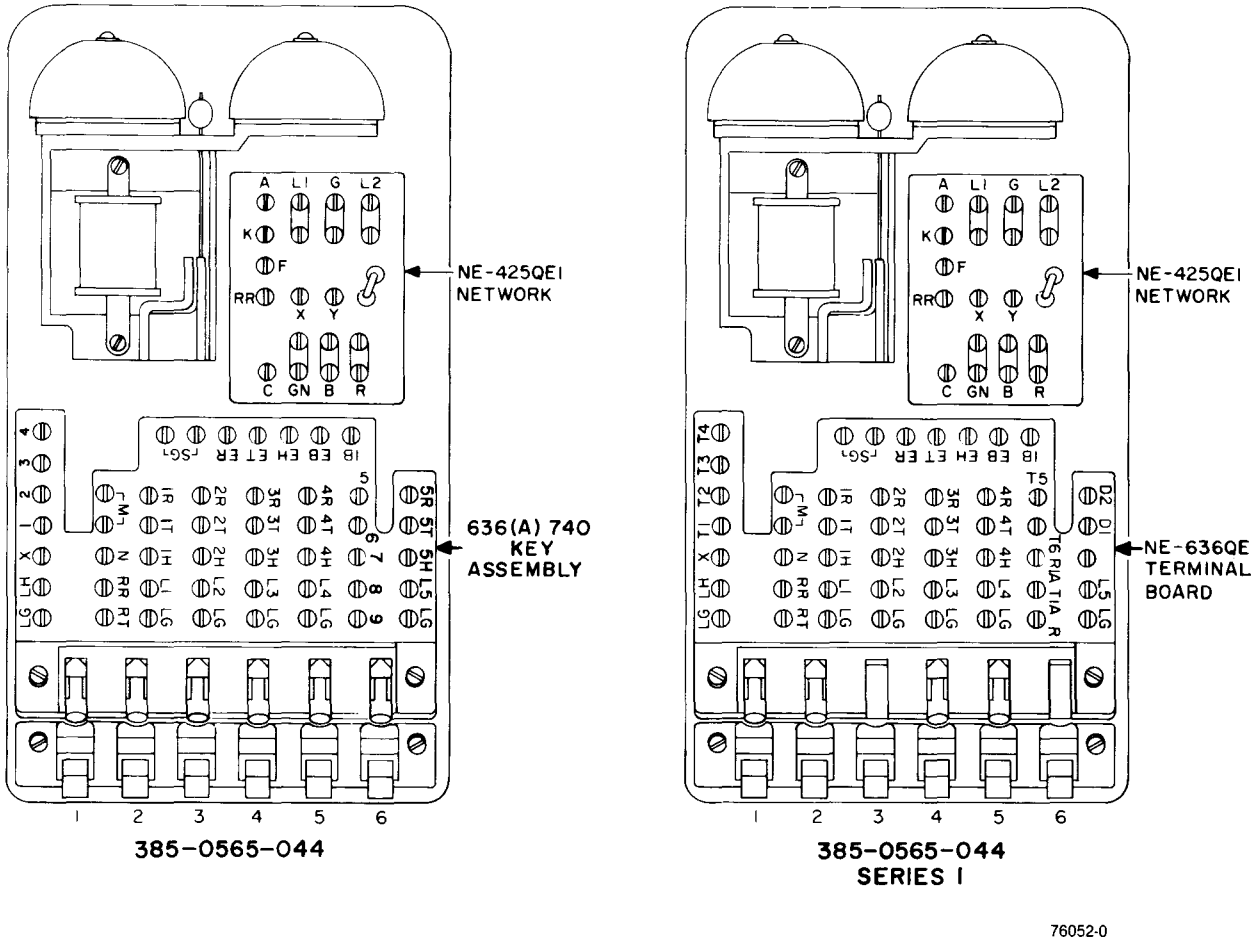


Fig. 2-4. 565 Telephone Terminal Locations

(d) Reinstall dial assembly and telephone cover.

(e) Exclusion key is now nonfunctional. Operation of modified telephone is the same as described in paragraph 6.03 of the 100 section in this manual.

D. Exclusion Key Removal Modification for AE186 Telephone

4.07 When an exclusion key is incorporated in an AE186 telephone, the telephone must be modified as follows:

(a) Remove telephone cover by removing two slotted screws at the front of the baseplate and one slotted screw at the rear of the baseplate.

(b) Locate terminal 1H on the telephone terminal board. Disconnect yellow lead from terminal 1H, tape and store.

(c) Reinstall telephone cover.

(d) Exclusion key is now nonfunctional. Operation of modified telephone is the same as described in paragraph 6.03 of the 100 section in this manual.

E. Telephone Buzzer Installation for Multiple Data Modem Configurations

4.08 A buzzer, (RIXON part number 112-0005) is added to 565 telephones for multiple line configurations. The ringer in the telephone does not function correctly when used with five lines.

When using telephones other than RIXON 385-0565-044 or 385-2565-044 see manufacturers instructions for installing buzzer. Install the buzzer inside the telephone as follows:

(a) Remove telephone cover by removing two slotted screws in front and rear of base plate.

(b) Remove dial assembly by loosening two slotted screws, one on each side of dial assembly. Lift dial assembly up and to one side of dial assembly brackets.

(c) Note and record color coding on all wires going to six LG terminals (6 of 8 terminals in first row) on key assembly.

(d) Remove screws in six LG terminals. Remove bus bar interconnecting all LG terminals and replace screws.

(e) Connect buzzer leads to terminals LH and LG (first two terminals in first row on left-hand side).

(f) Place dial assembly in dial assembly brackets and tighten screw on right-hand side only.

(g) Mount buzzer under screw on left-hand side of dial assembly. Buzzer should extend back toward rear of telephone. Tighten screw.

READ Added telephone wiring must not interfere with operation of hookswitch or any other mechanical parts.

(h) Place telephone cover on telephone and install two screws in base plate.

5. INSTALLATION TEST

5.01 Figures 2-5 and 2-6 provide system checkout diagrams for two-wire and four-wire systems. Refer to the Self-Diagnostics section of this manual for test procedures. In addition, a remote test for DDD network installations is provided in the 500 section of this manual.

6. REPAIRING DATA MODEM

NOTE: *This data modem can be repaired only by RIXON or one of its authorized agents. On modems using a main power fuse, customer replacement of the power fuse with one of the same type and rating is authorized.*

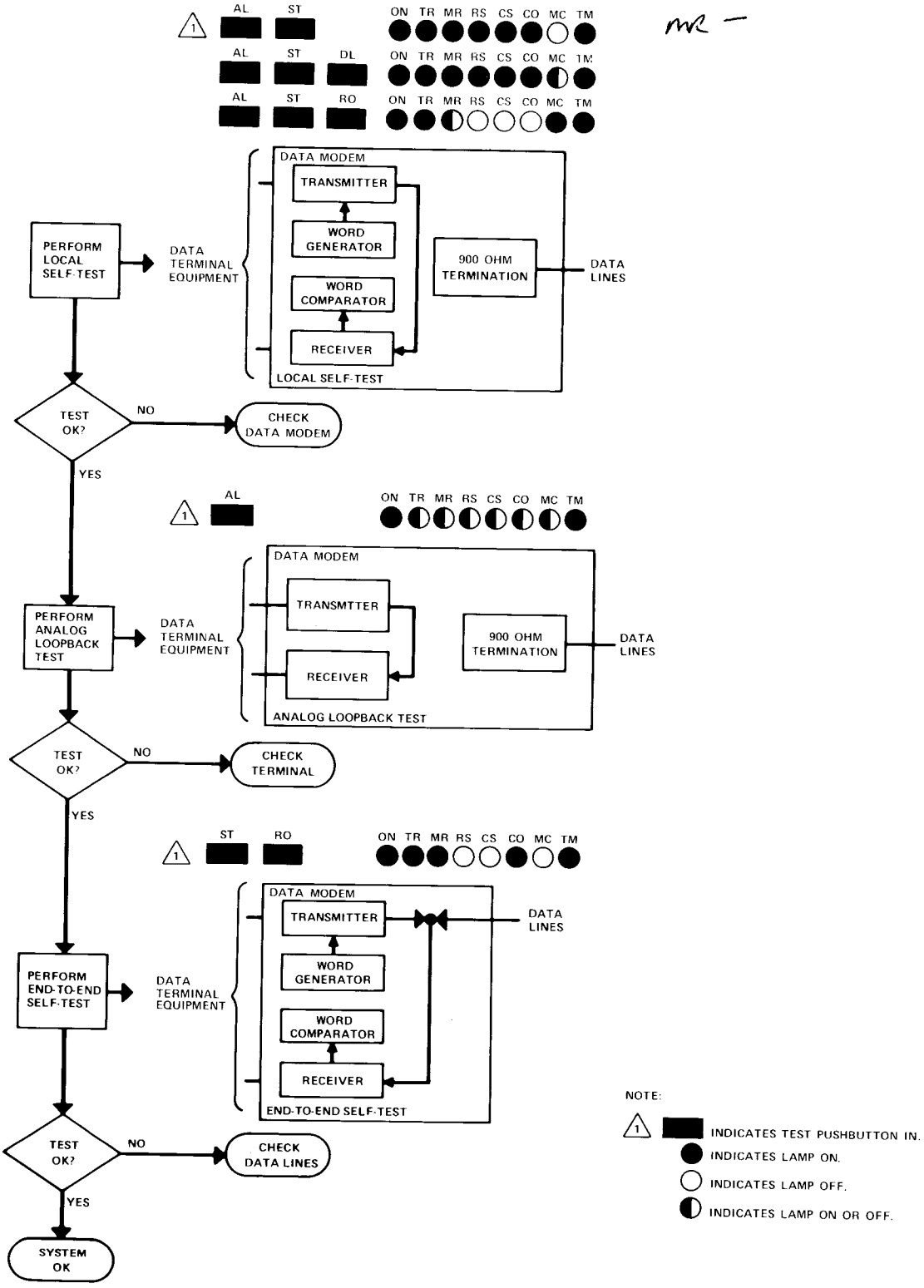
6.01 If it becomes necessary to return the data modem to RIXON for repair or any other reason, contact Rixon Inc., Customer Engineering Department, 2120 Industrial Parkway, Silver Spring, MD 20904. However do not return the unit unless specifically directed to do so by Customer Engineering. At that time a Return Goods Authorization (RGA) number is assigned to the unit. This number must appear on the outside shipping container for proper identification and routing. It must also be referenced in any inquiries or correspondence about the unit.

NOTE: *If there are problems with the data modem or a malfunction is suspected, immediately disconnect the data modem from the communications facility. Do not reconnect the data modem to the communications facility until the malfunction is corrected or it is determined that the data modem is operating properly. The telephone company can, at its option, discontinue service to a malfunctioning data modem if the data modem is causing harm to the telephone network. Once the malfunction is corrected service can be restored.*

7. REFERENCES

7.01 The following publications provide additional information for standalone and multiple installations using TA201C Data Modem.

SECTION	TITLE
5214-100	TA201C Data Modem Description and Operation
5214-300	TA201C Data Modem Self-Diagnostics
5214-500	TA201C Data Modem Tests Using External Test Equipment



80087-2

Fig. 2-5. Two-Wire System Checkout

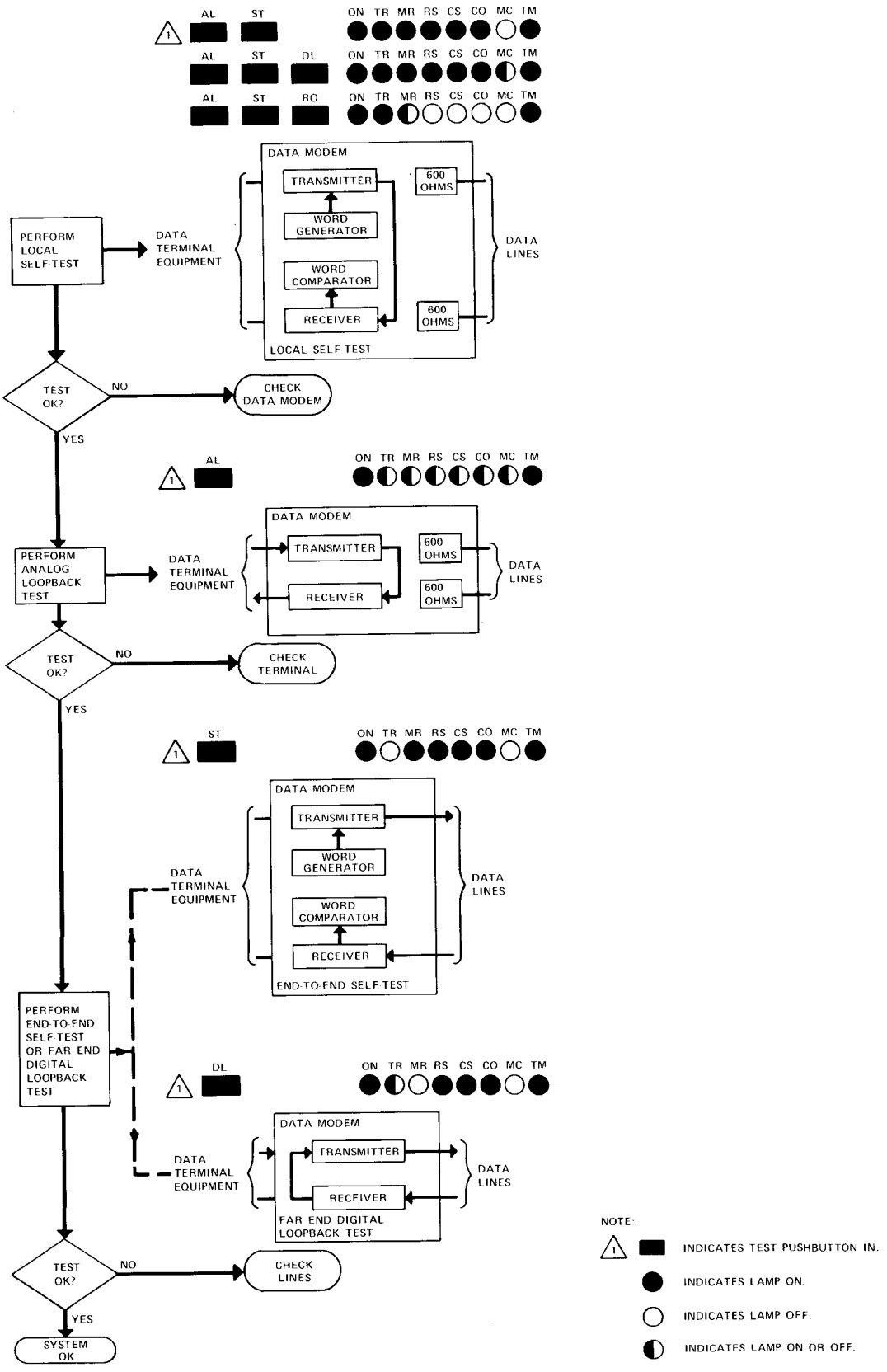


Fig. 2-6. Four-Wire System Checkout

5225	TA201C Users Manual
5219	TA201C Maintenance Manual
5243	RM40A3 Data Mounting Installation and Maintenance Manual
5220	RM40B1 and RM40B1A Data Mounting Installation and Maintenance Manual
5270	DM44R2 Data Mounting Installation and Maintenance Manual
5328	RM46A1 Data Mounting Installation and Maintenance Manual
5215	RM46B1 Data Mounting Installation and Maintenance Manual

8. CONNECTION DIAGRAMS

8.01 The following list contains connection diagrams and schematics for TA201C applications.

FIG. NO.	FIGURE CAPTION
2-7	Data Modem Power Connection
2-8	TA201C DDD or Private Line Interconnections Without Voice
2-9	TA201C Private Line Interconnections Using T829 DAS and DM44A1/T (Using Terminal Board)
2-10	TA201C Private Line Interconnections Using T829 DAS and DM44A1/T (Using Connectors)
2-11	TA201C Private Line Interconnections Using DM45R1 for T829 DAS and Alternate Voice or Dial Backup Units
2-12	TA201C Private Line Interconnections Using DM45A1 for T829 DAS and Alternate Voice and Dial Backup Units
2-13	TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6611-01 or -02 Telephone Cord For Permissive Applications
2-14	TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6675-01 Telephone Cord for Permissive Applications
2-15	TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6592-01 Telephone Cord for Programmable Applications
2-16	TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6592-02 Telephone Cord for Fixed Loss Loop Applications
2-17	TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6608-02 Telephone Cord for Fixed Loss Loop Applications
2-18	TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6608-01 Telephone Cord for Programmable Applications
2-19	TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6609-01 or -02 Telephone Cord for Permissive Applications
2-20	TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6557-02 Telephone Cord for Fixed Loss Loop Applications
2-21	TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6557-01 Telephone Cord for Programmable Applications
2-22	TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6557-03 Telephone Cord For Permissive Applications

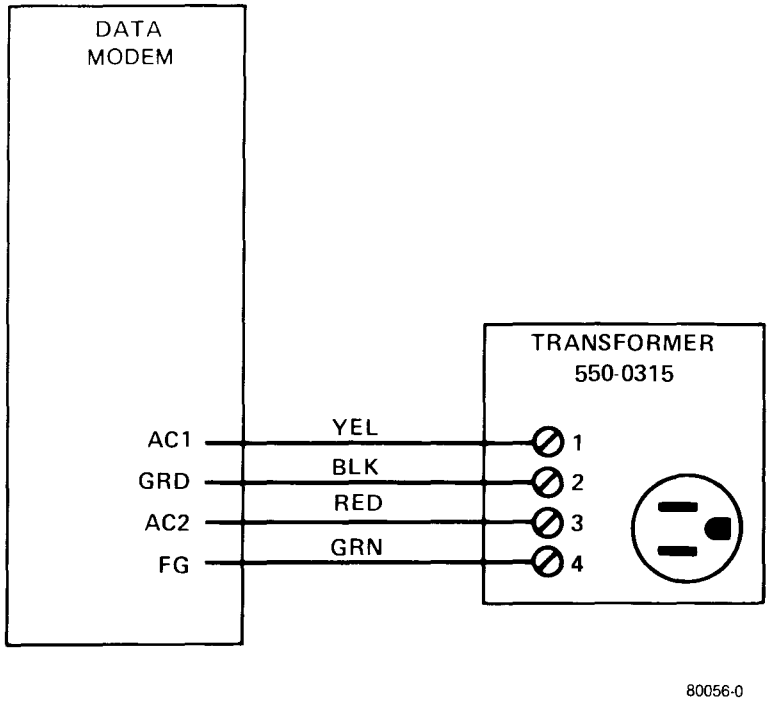
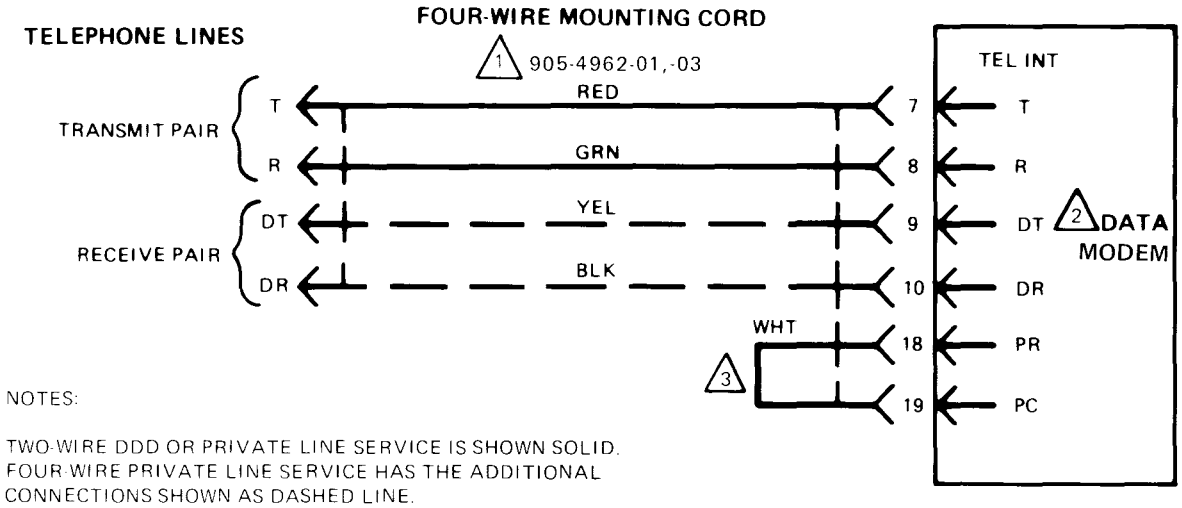


Fig. 2-7. Data Modem Power Connection



NOTES:

TWO-WIRE DDD OR PRIVATE LINE SERVICE IS SHOWN SOLID. FOUR-WIRE PRIVATE LINE SERVICE HAS THE ADDITIONAL CONNECTIONS SHOWN AS DASHED LINE.
TAPE SEPARATELY AND STORE ANY SPARE LEADS.

1. -01 IS EQUIPPED WITH 283B4 PLUG AND -03 IS EQUIPPED WITH SPADE LUGS.

2. USE M23B MOUNTING CORD, 905-6366-01, BETWEEN BUSINESS MACHINE CABLE AND DATA MODEM CUST INT CONNECTOR J1 WHEN REMOTE TA201C IS CONNECTED TO A T209A DATA MODEM.

3. JUMPER INSIDE CONNECTOR SHELL INCLUDED ON SERIES 2 AND LATER, REQUIRES SERIES 2 OR LATER.

Fig. 2-8. TA201C DDD or Private Line Interconnections Without Voice

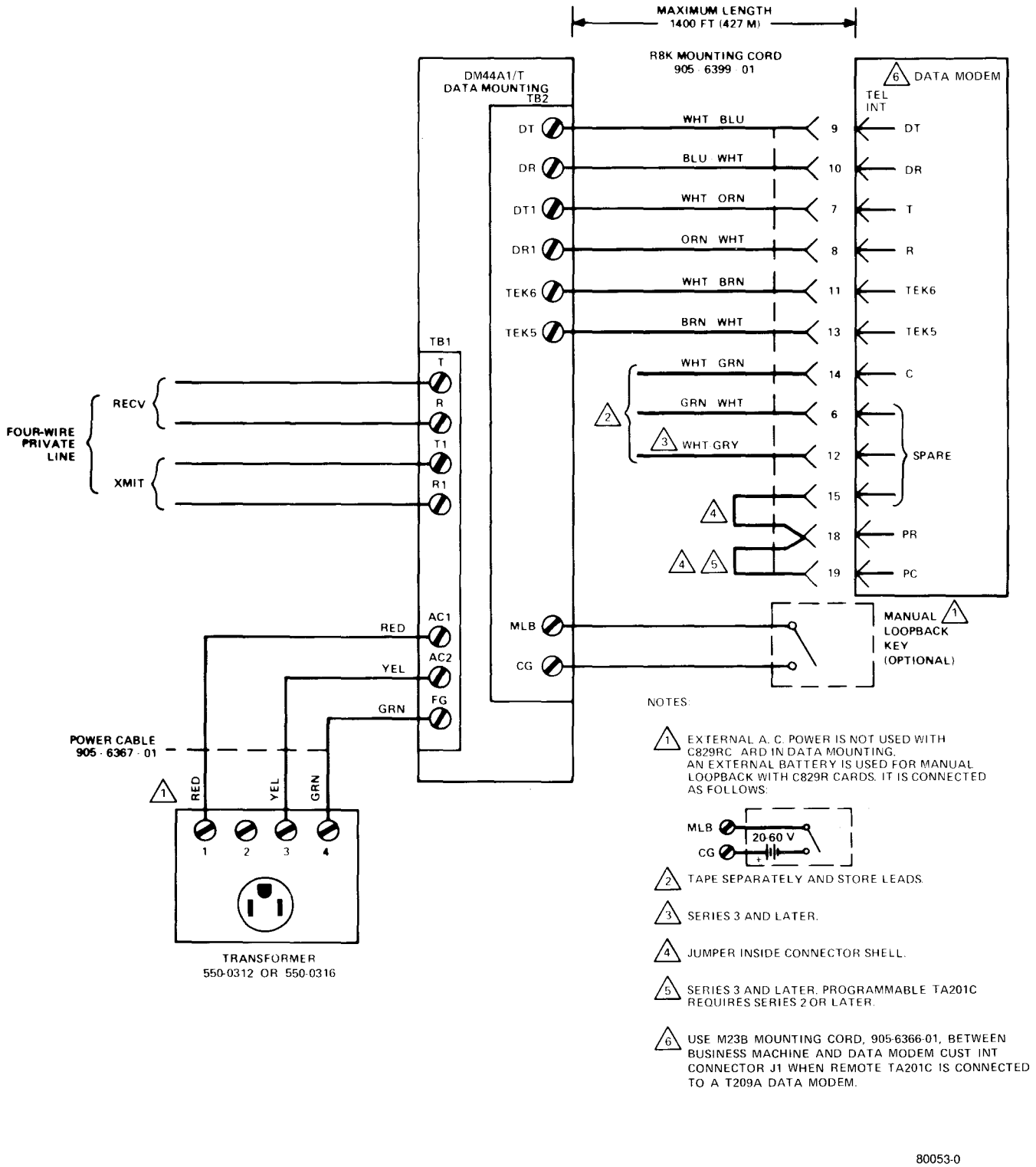


Fig. 2-9. TA201C Private Line Interconnections Using T829 DAS and DM44A1/T (Using Terminal Board)

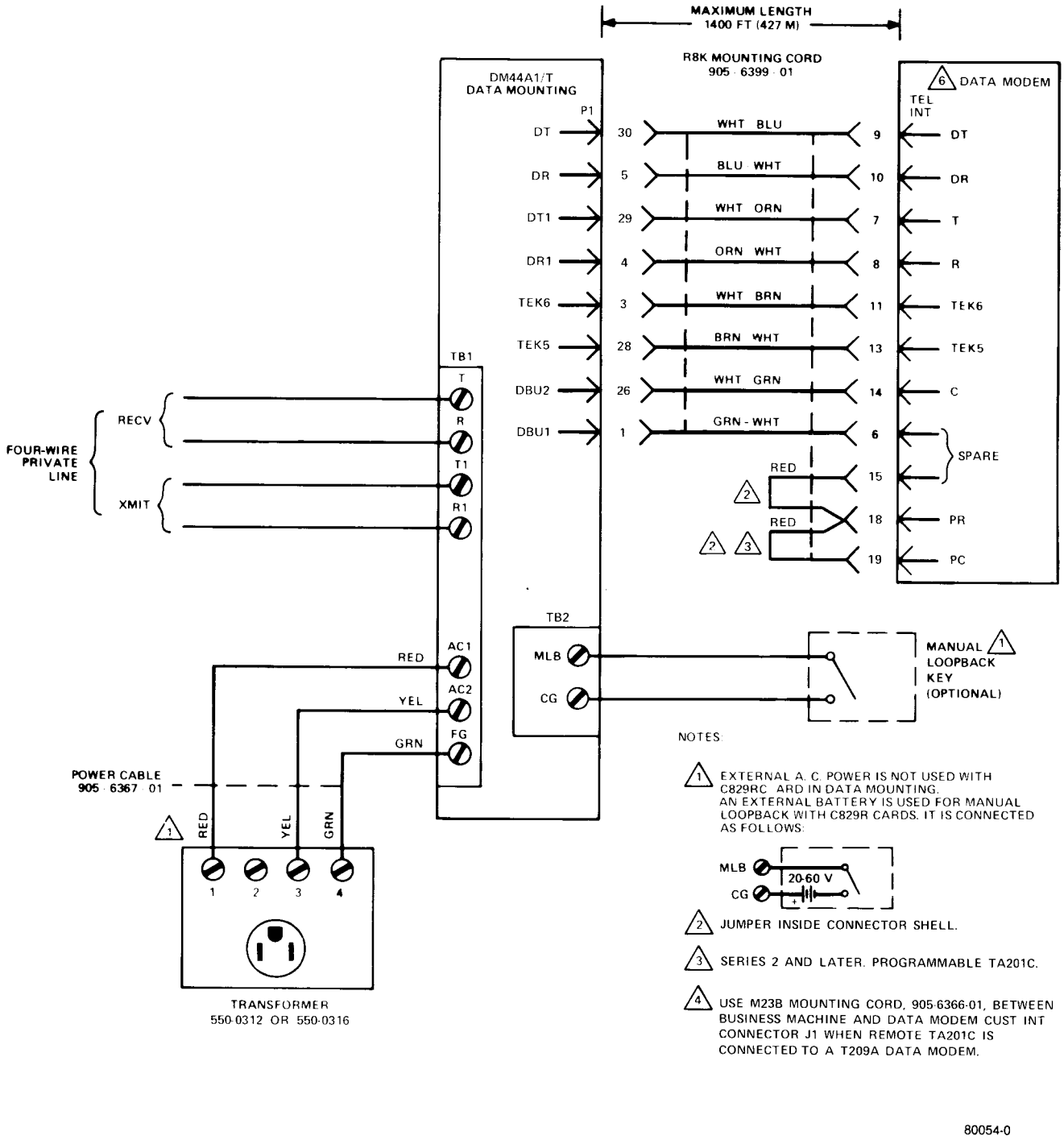


Fig. 2-10. TA201C Private Line Interconnections Using T829 DAS and DM44A1/T (Using Connectors)

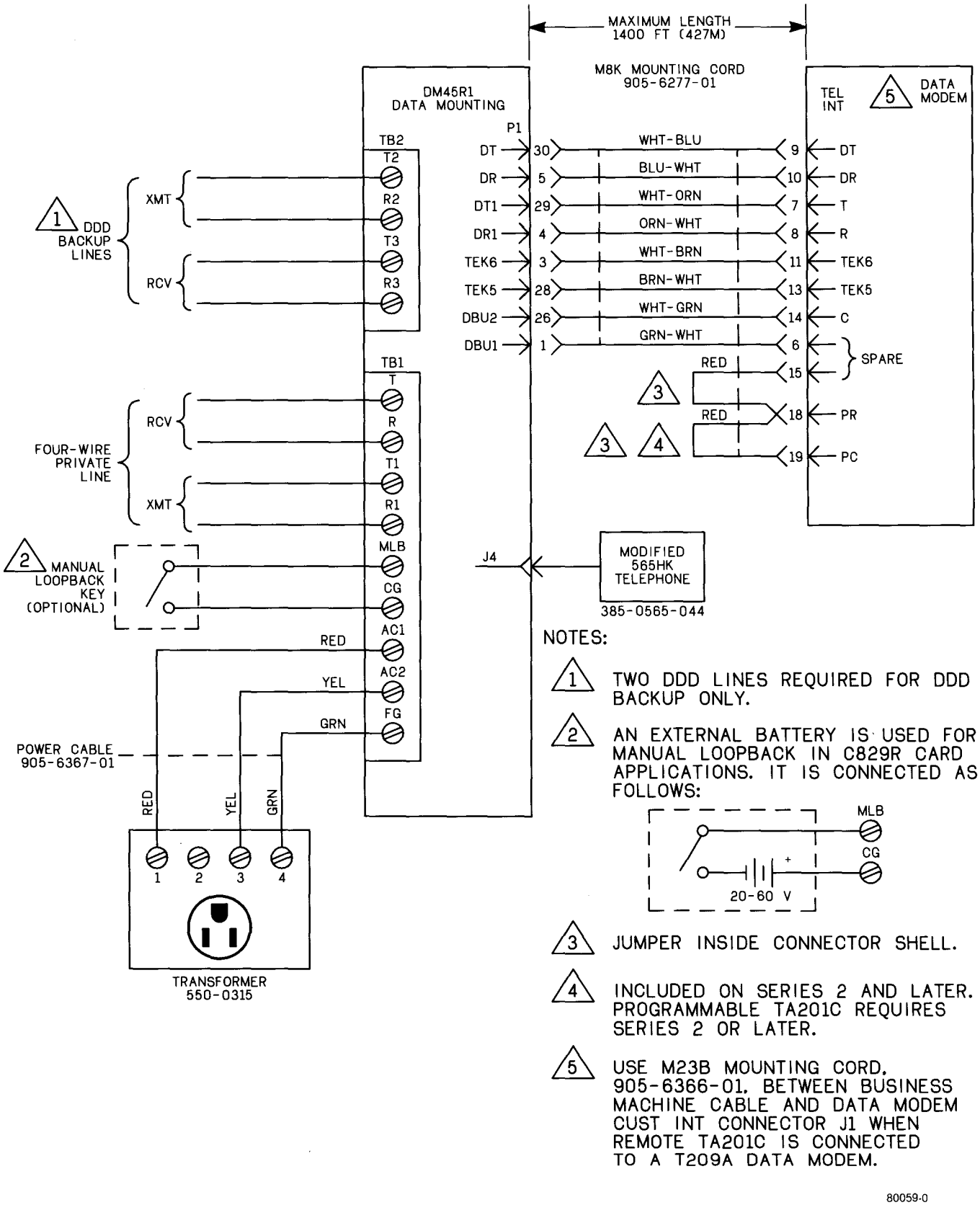
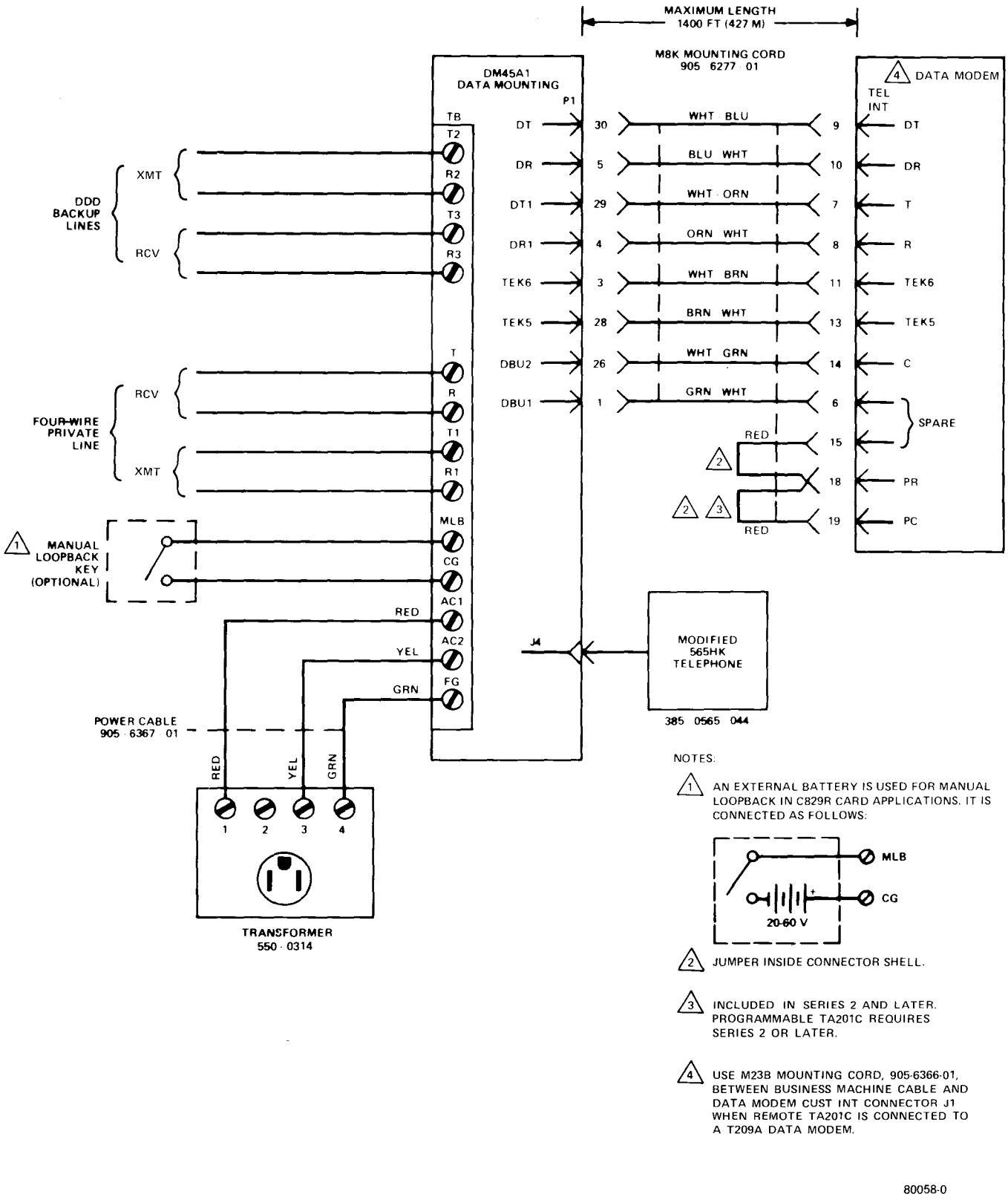


Fig. 2-11. TA201C Private Line Interconnections Using DM45R1 for T829 DAS and Alternate Voice or Dial Backup Units



NOTES:

1. AN EXTERNAL BATTERY IS USED FOR MANUAL LOOPBACK IN C829R CARD APPLICATIONS. IT IS CONNECTED AS FOLLOWS:

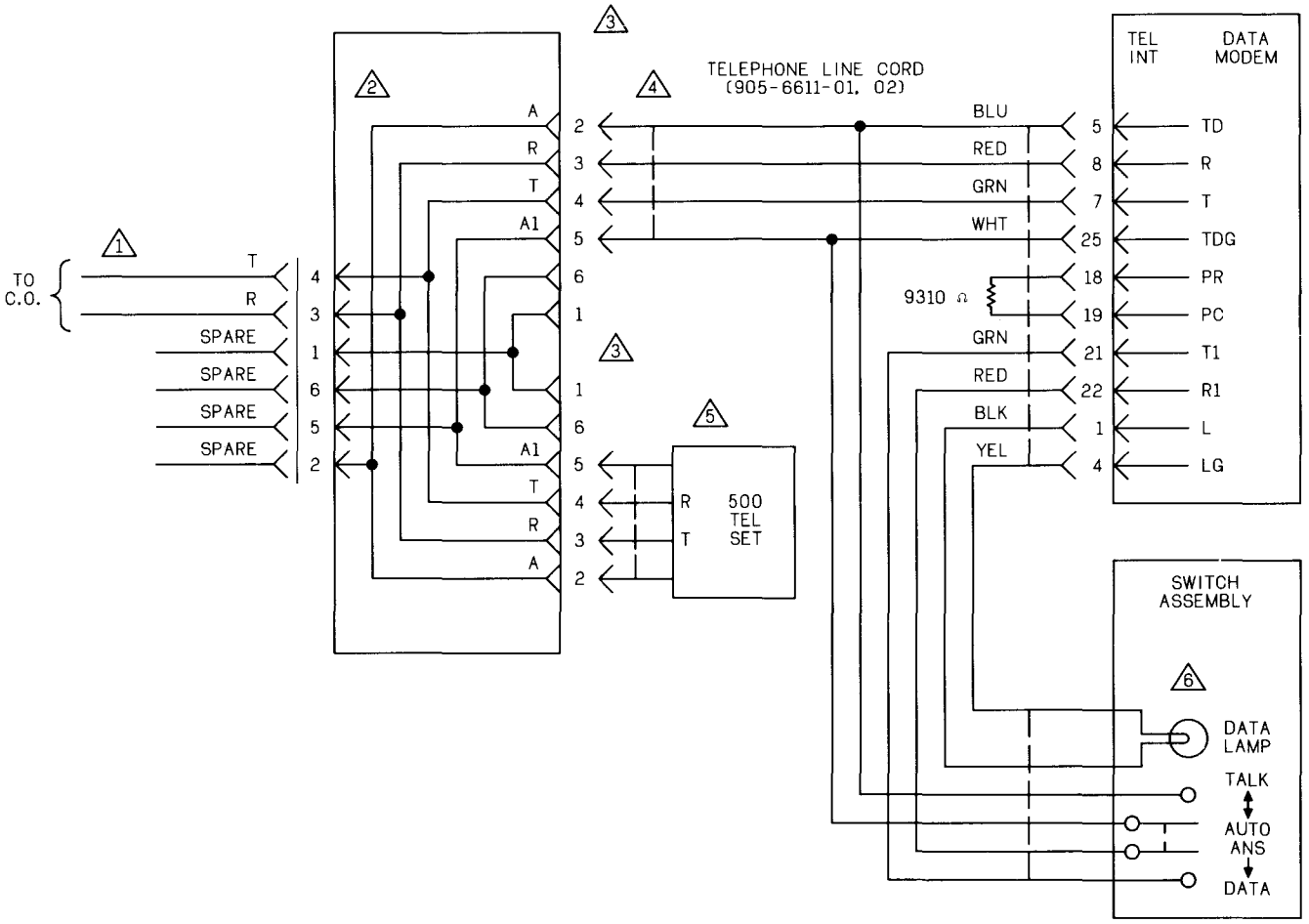
2. JUMPER INSIDE CONNECTOR SHELL.

3. INCLUDED IN SERIES 2 AND LATER. PROGRAMMABLE TA201C REQUIRES SERIES 2 OR LATER.

4. USE M23B MOUNTING CORD, 905-6366-01, BETWEEN BUSINESS MACHINE CABLE AND DATA MODEM CUST INT CONNECTOR J1 WHEN REMOTE TA201C IS CONNECTED TO A T209A DATA MODEM.

80058-0

Fig. 2-12. TA201C Private Line Interconnections Using DM45A1 for T829 DAS and Alternate Voice and Dial Backup Units



NOTES:

1. CONNECTION CONFIGURATION USOC FOR AVAILABLE JACKS:

SINGLE	MULTIPLE	OTHER
RJ41S	RJ41M	RJ11C
RJ45S	RJ45M	RJ12C
		RJ13C

RJ12C AND RJ13C ON SERIES 0 CABLE ONLY.

2. RJ2AX ADAPTER SUPPLIED WITH 905-6611-01, 02 CABLE.

3. SIX POSITION MODULAR PLUG.

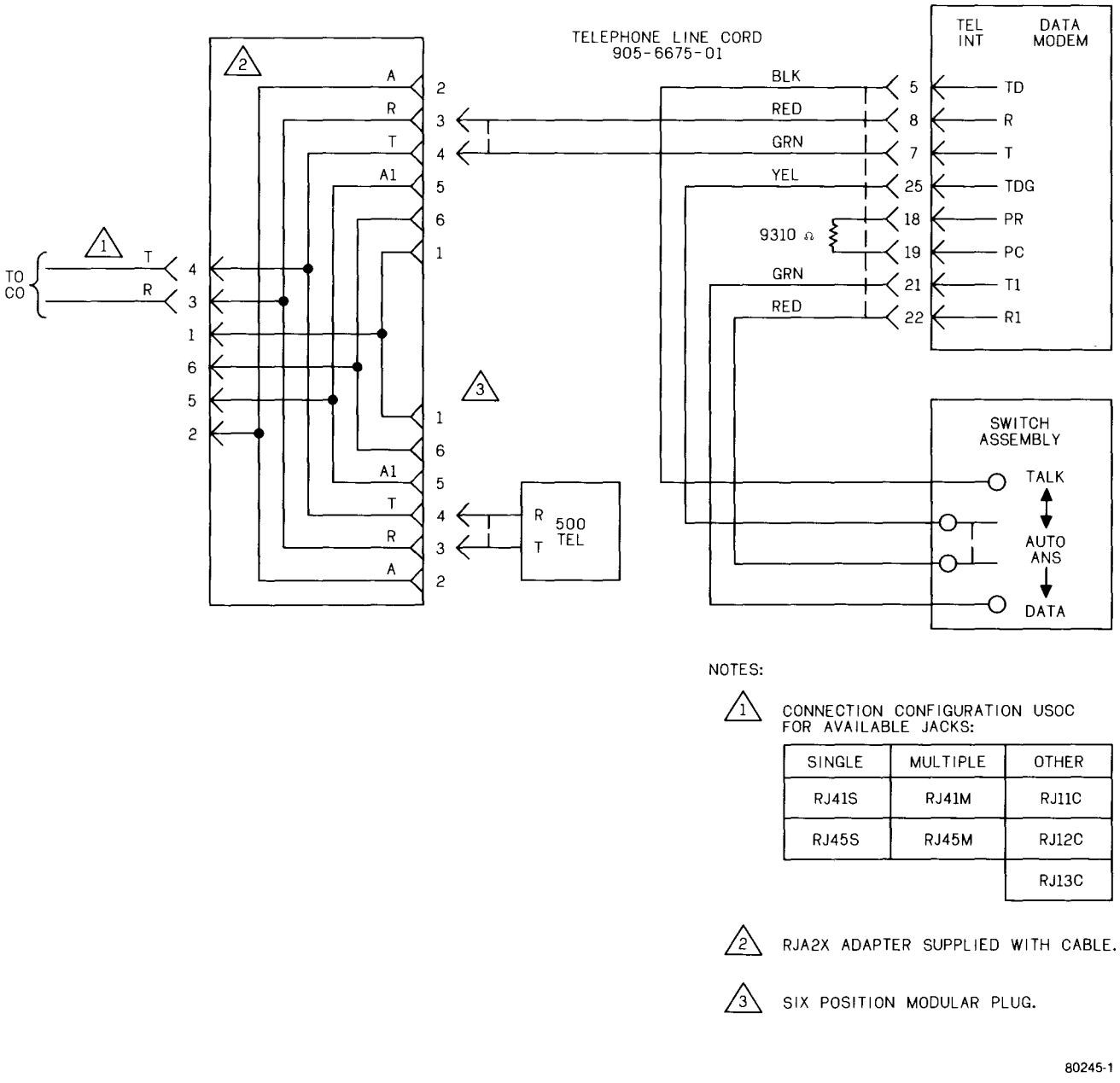
4. PINS 2 AND 5 ON SERIES 1 AND ABOVE CABLE ONLY.

5. A AND A1 LEADS AT PINS 2 AND 5 ON 500 TELEPHONE WITH ISOLATED HOOKSWITCH CONTACTS ONLY.

6. LAMP PROVIDED WITH 905-6611-02 ONLY.

79175-3

Fig. 2-13. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6611-01 or -02 Telephone Cord For Permissive Applications



SINGLE	MULTIPLE	OTHER
RJ41S	RJ41M	RJ11C
RJ45S	RJ45M	RJ12C
		RJ13C

Fig. 2-14. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6675-01 Telephone Cord for Permissive Applications

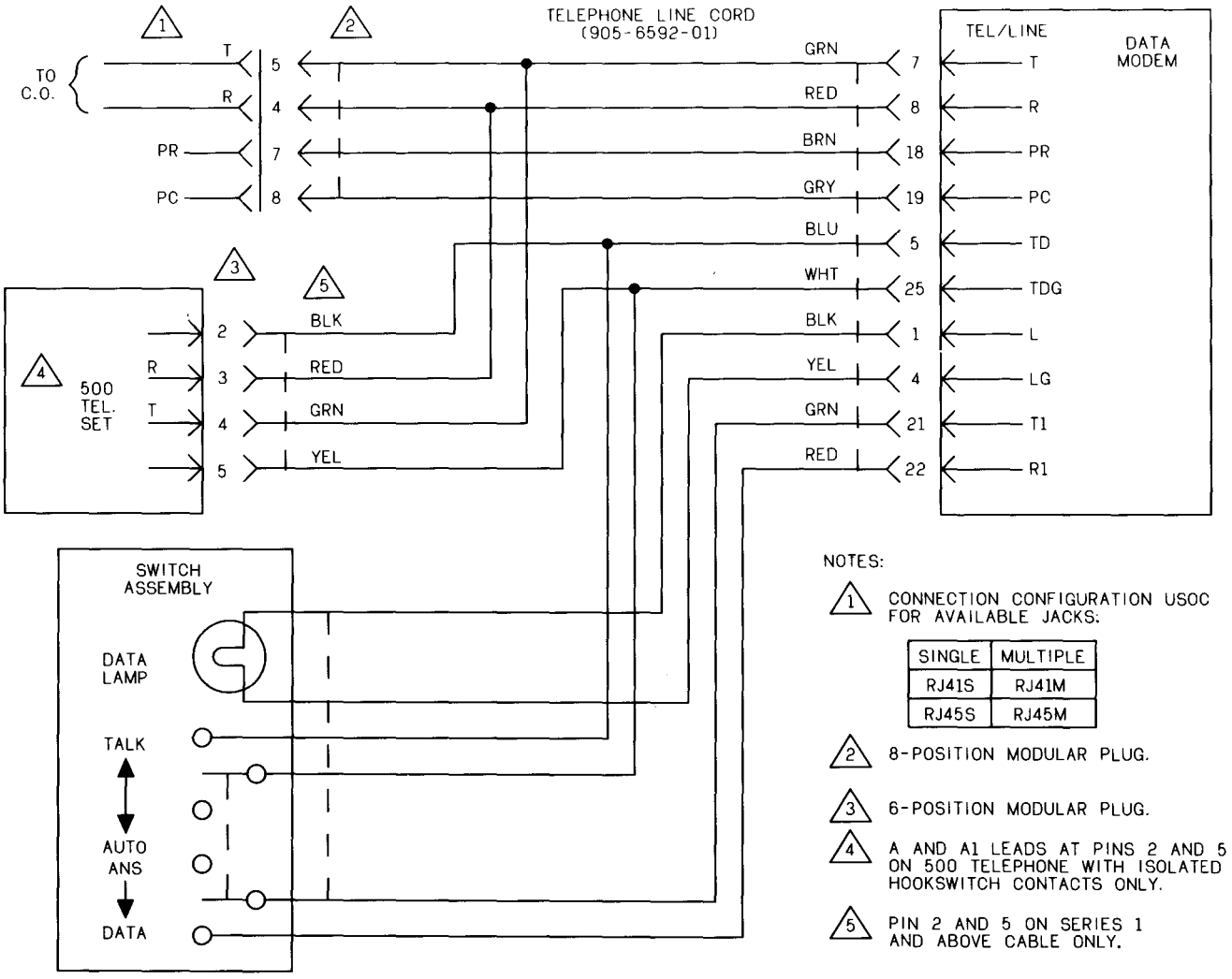


Fig. 2-15. TA201C and Telephone Incerconnection to DDD Network Via Telco Jack Using 905-6592-01 Telephone Cord for Programmable Applications

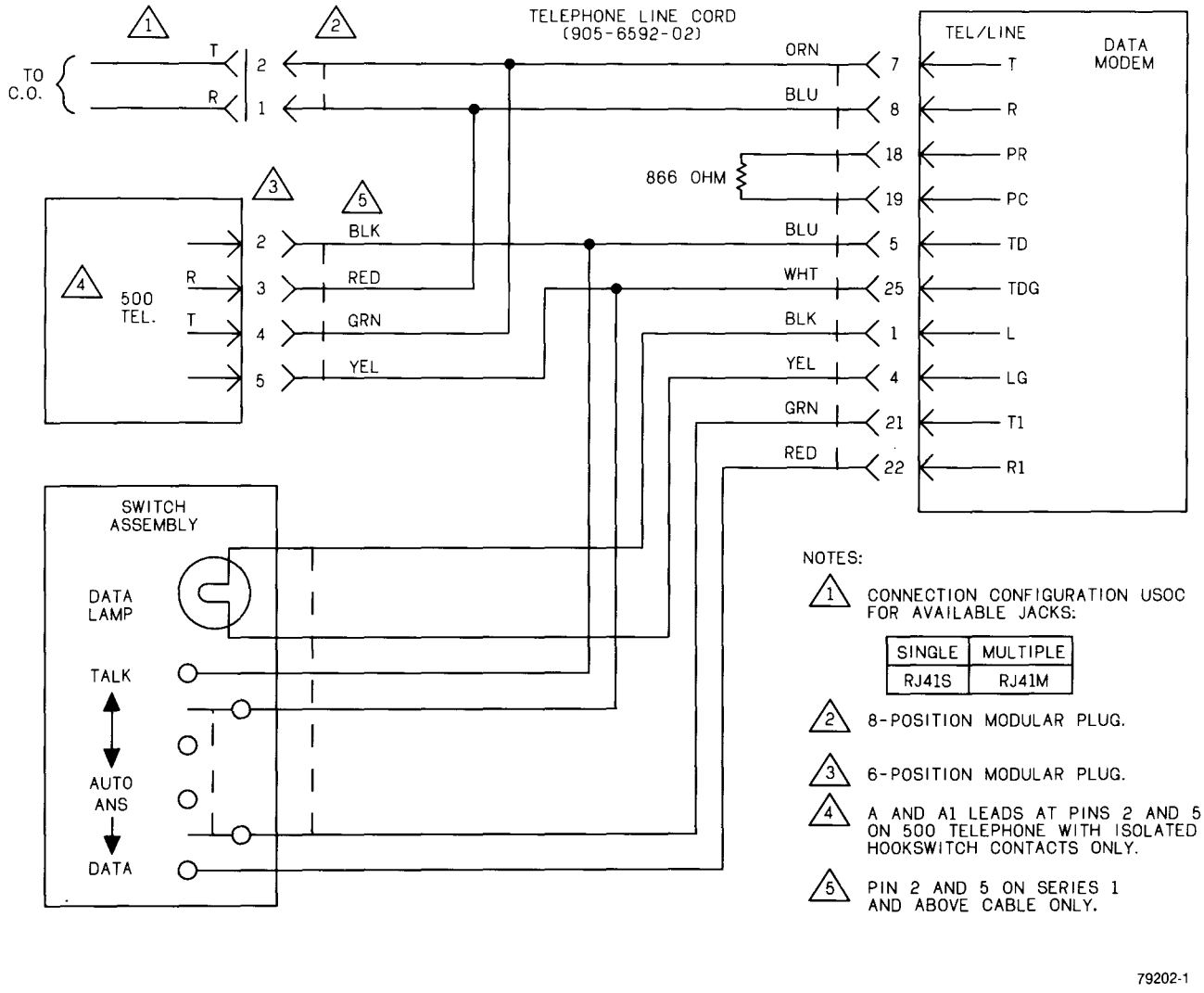


Fig. 2-16. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6592-02 Telephone Cord for Fixed Loss Loop Applications

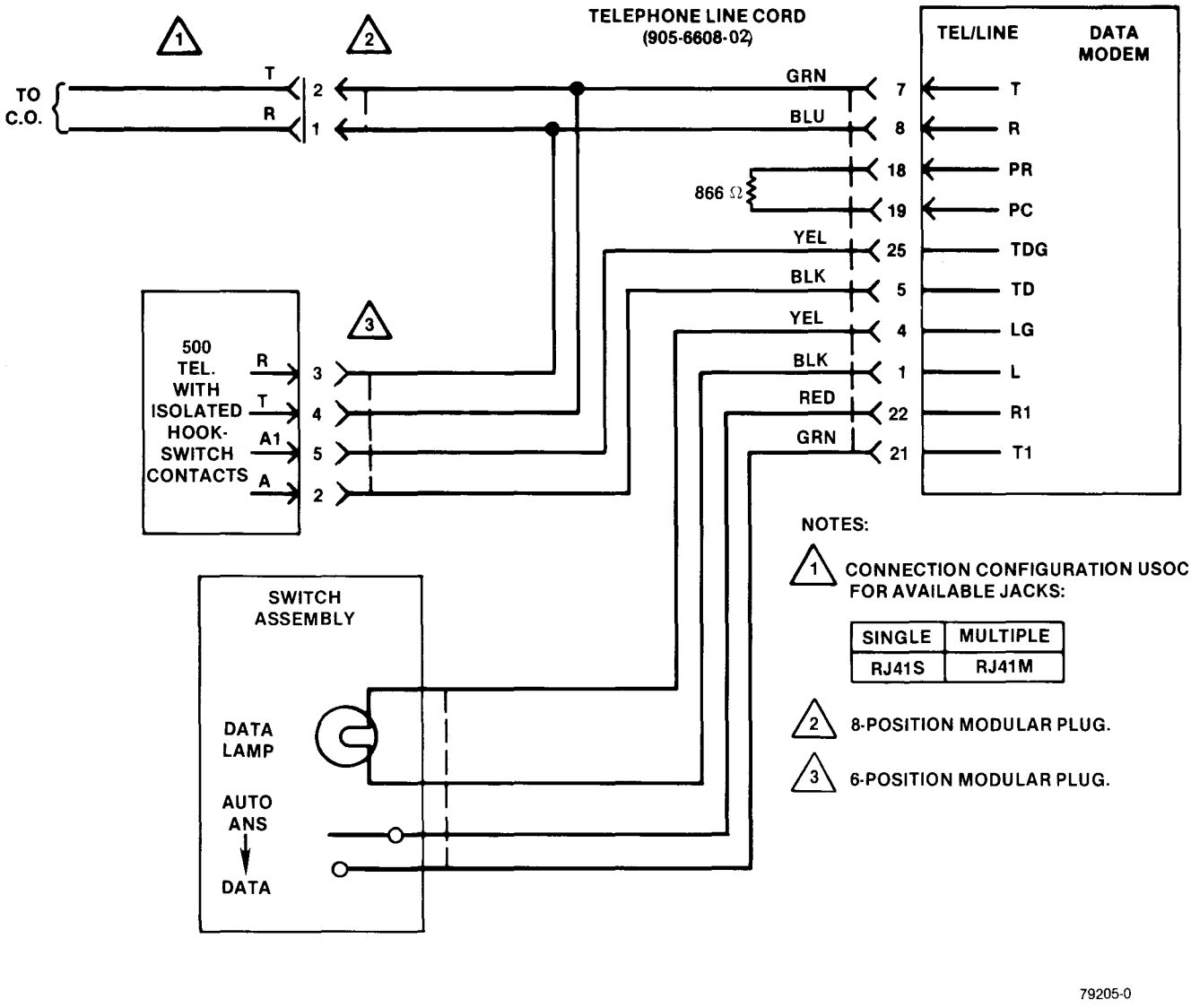


Fig. 2-17. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6608-02 Telephone Cord for Fixed Loss Loop Applications

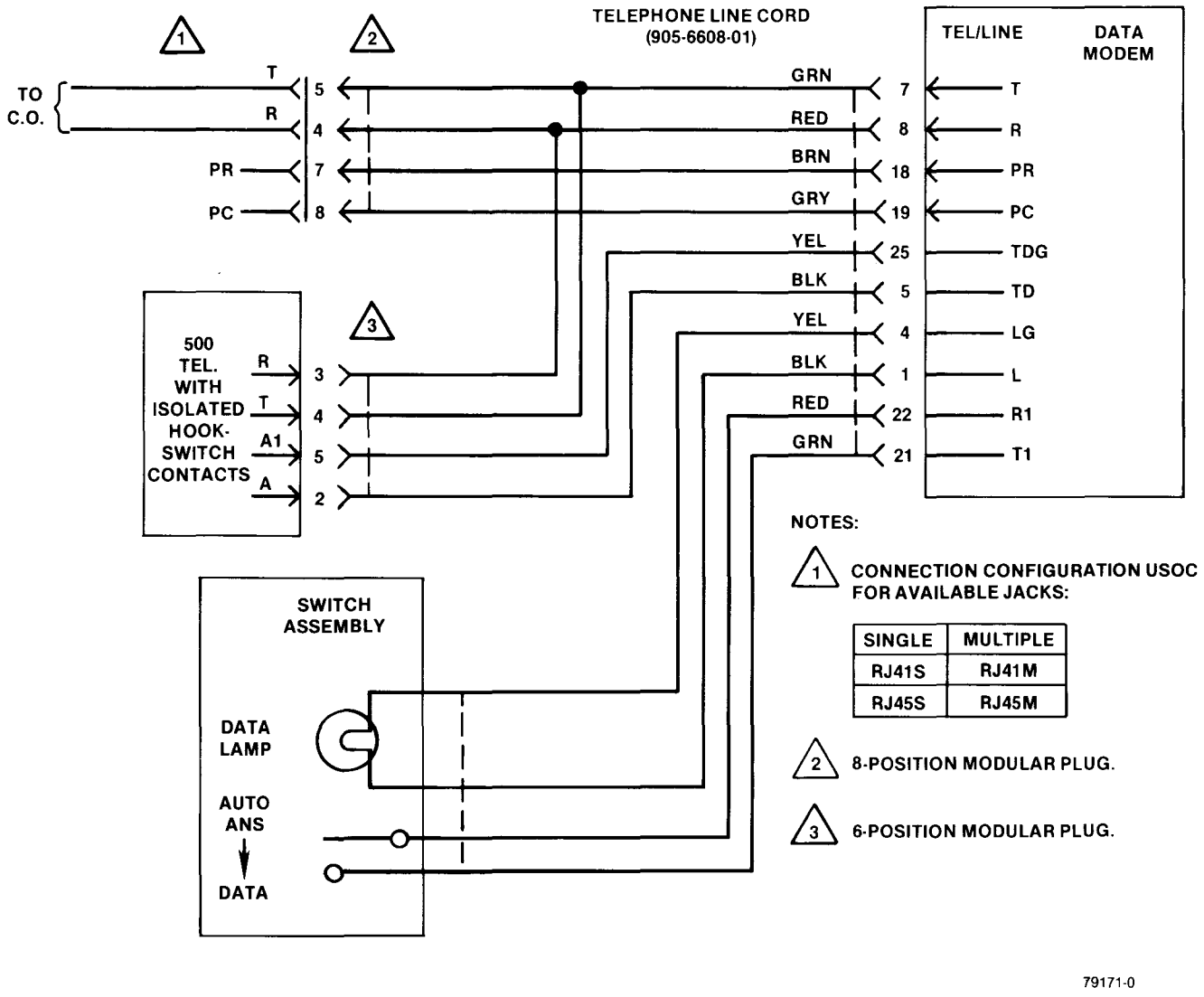
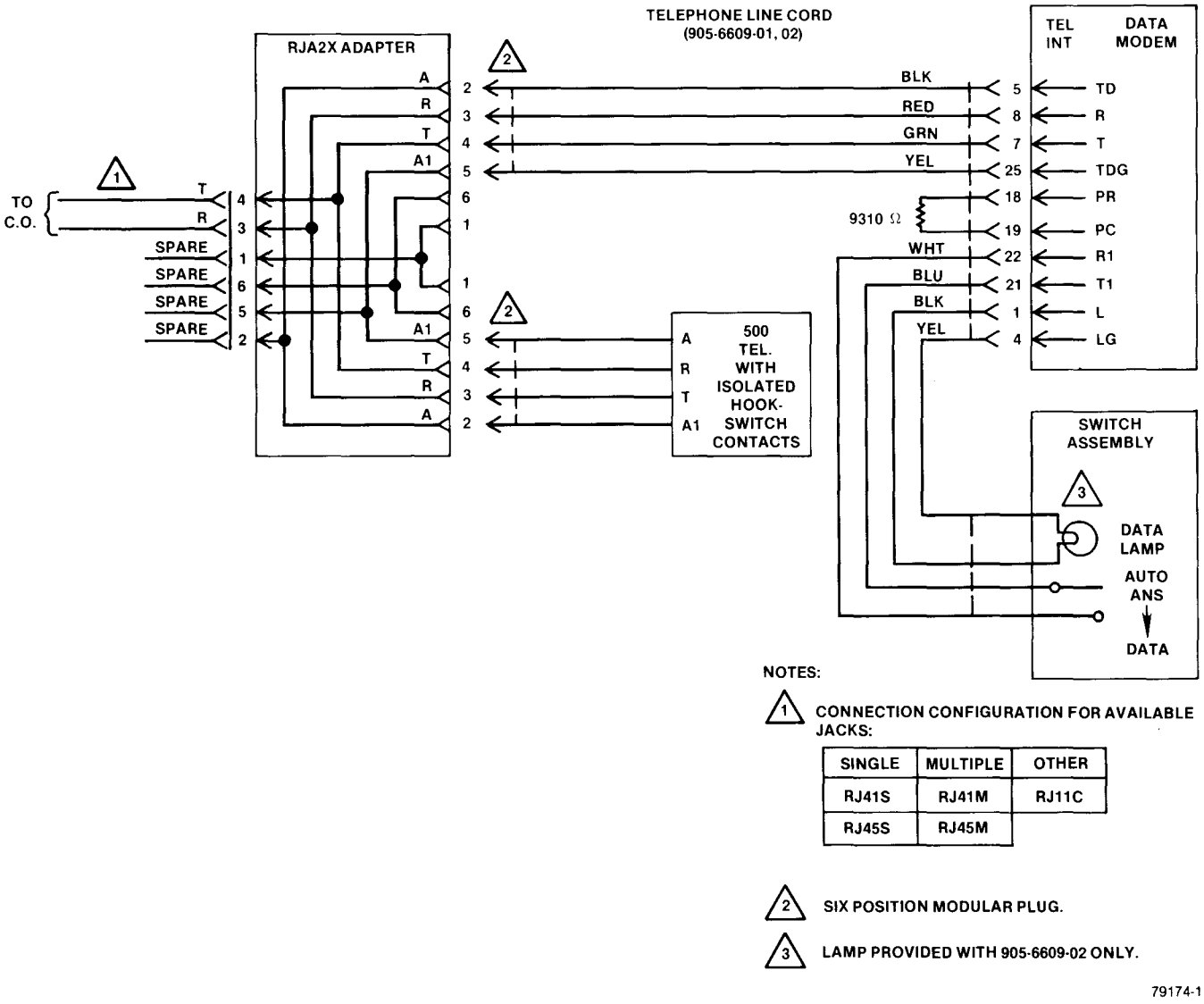
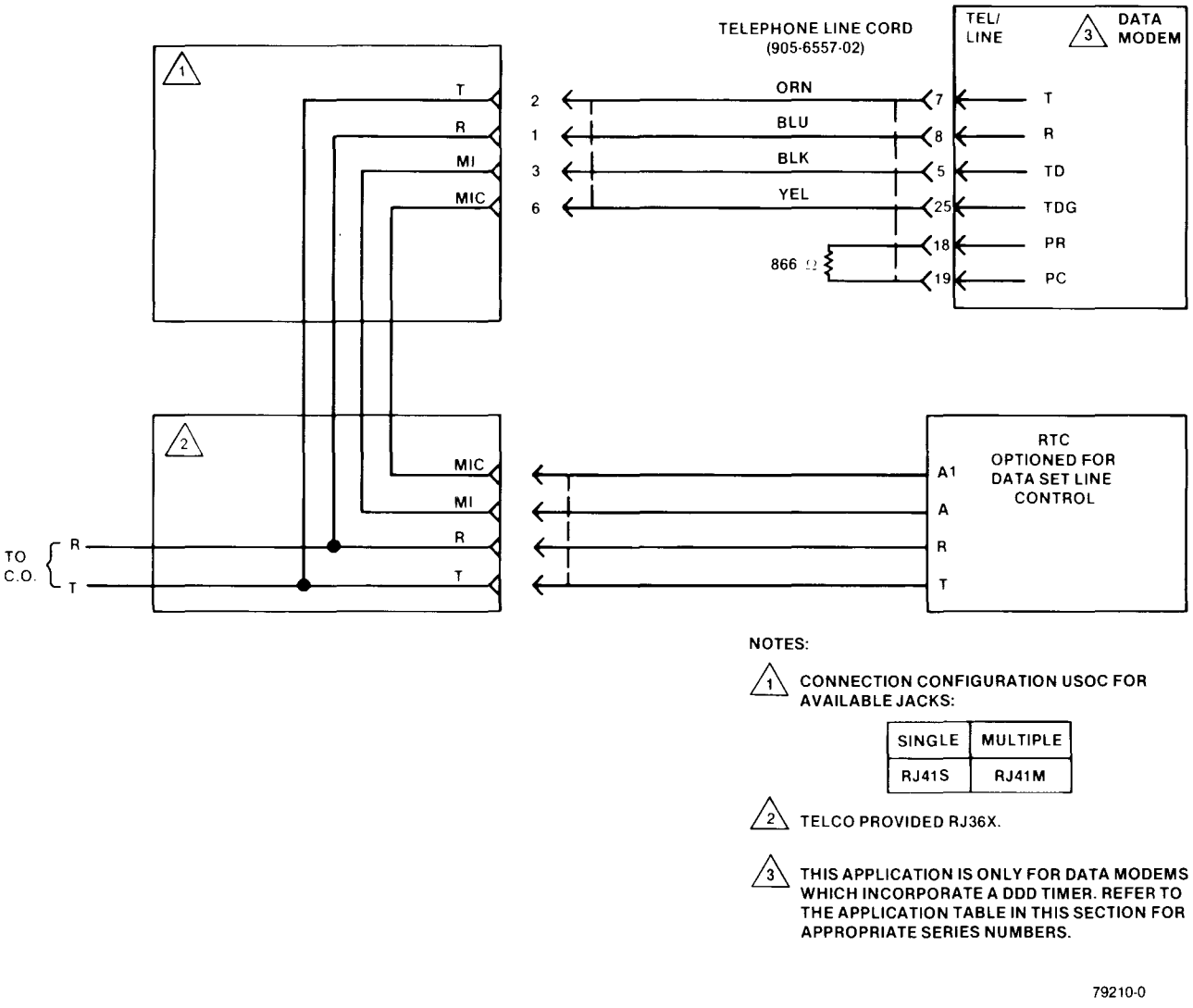


Fig. 2-18. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6608-01 Telephone Cord for Programmable Applications



SINGLE	MULTIPLE	OTHER
RJ41S	RJ41M	RJ11C
RJ45S	RJ45M	

Fig. 2-19. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6609-01 or -02 Telephone Cord for Permissive Applications



NOTES:

1. CONNECTION CONFIGURATION USOC FOR AVAILABLE JACKS:

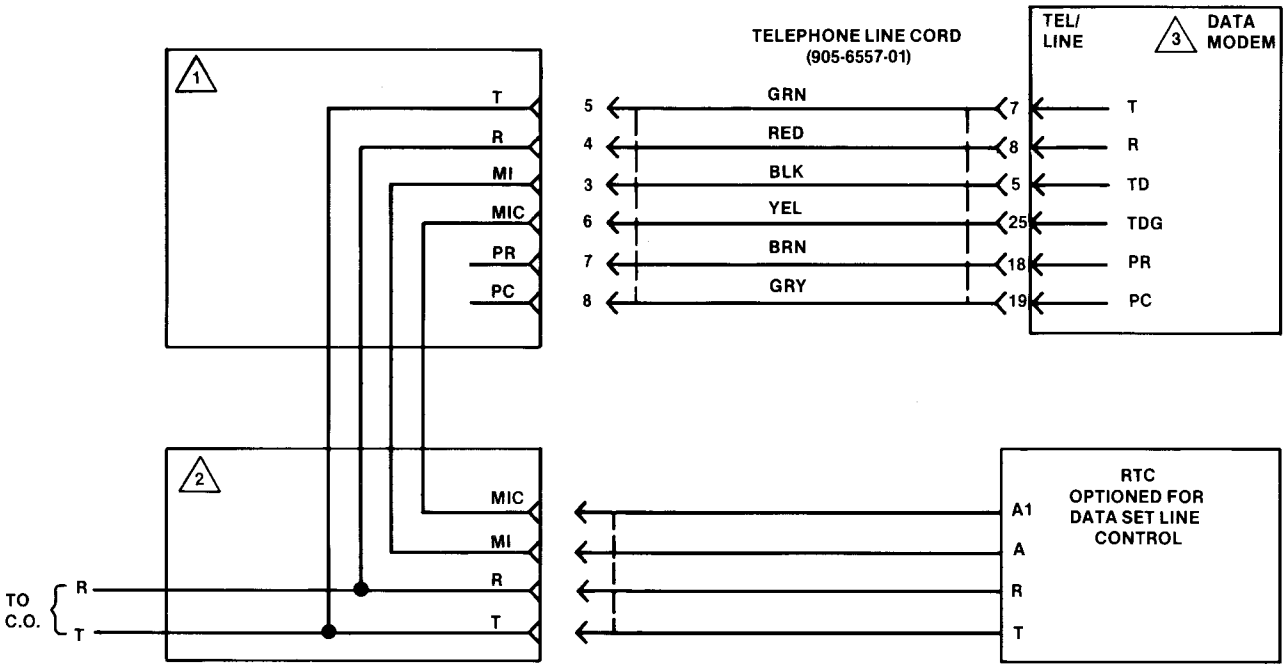
SINGLE	MULTIPLE
RJ41S	RJ41M

2. TELCO PROVIDED RJ36X.

3. THIS APPLICATION IS ONLY FOR DATA MODEMS WHICH INCORPORATE A DDD TIMER. REFER TO THE APPLICATION TABLE IN THIS SECTION FOR APPROPRIATE SERIES NUMBERS.

79210-0

Fig. 2-20. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6557-02 Telephone Cord for Fixed Loss Loop Applications



NOTES:

1. CONNECTION CONFIGURATION USOC FOR AVAILABLE JACKS.

SINGLE	MULTIPLE
RJ41S	RJ41M
RJ45S	RJ45M

2. TELCO PROVIDED RJ36X.

3. THIS APPLICATION IS ONLY FOR DATA MODEMS WHICH INCORPORATE A DDD TIMER. REFER TO THE APPLICATIONS TABLE IN THIS SECTION FOR APPROPRIATE SERIES NUMBERS.

79167-0

Fig. 2-21. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6557-01Telephone Cord For Programmable Applications

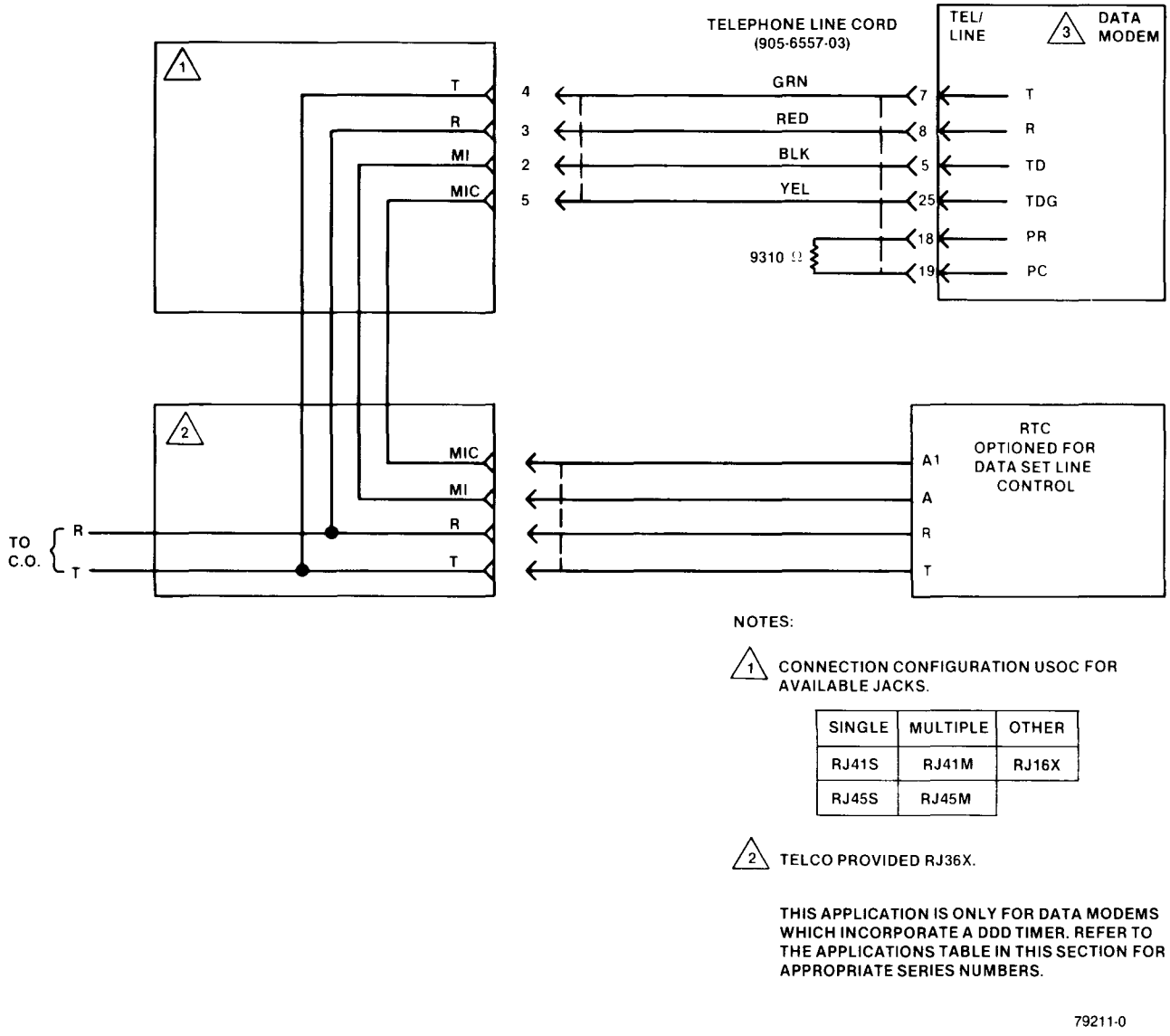
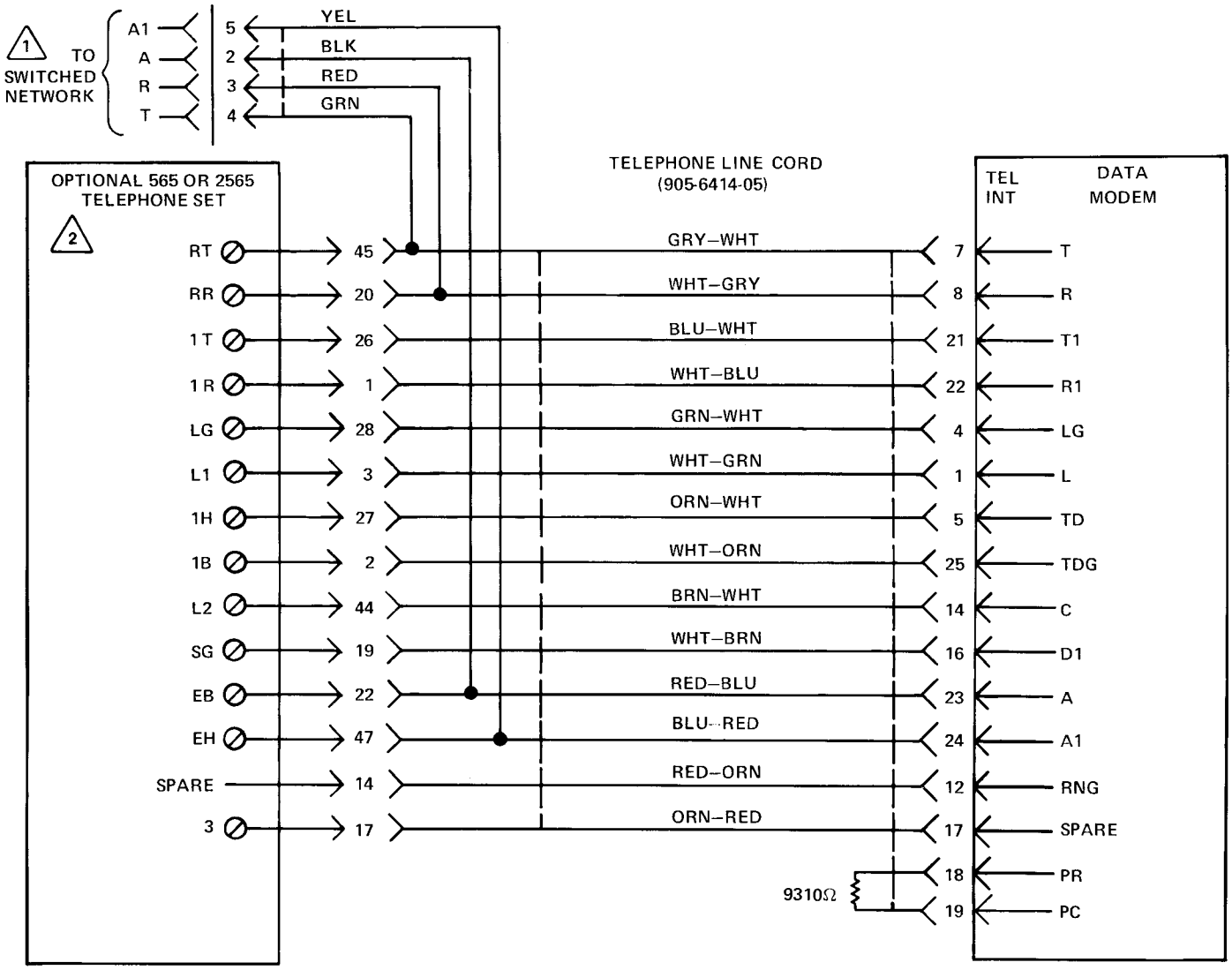


Fig. 2-22. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6557-03 Telephone Cord For Permissive Applications



NOTES:

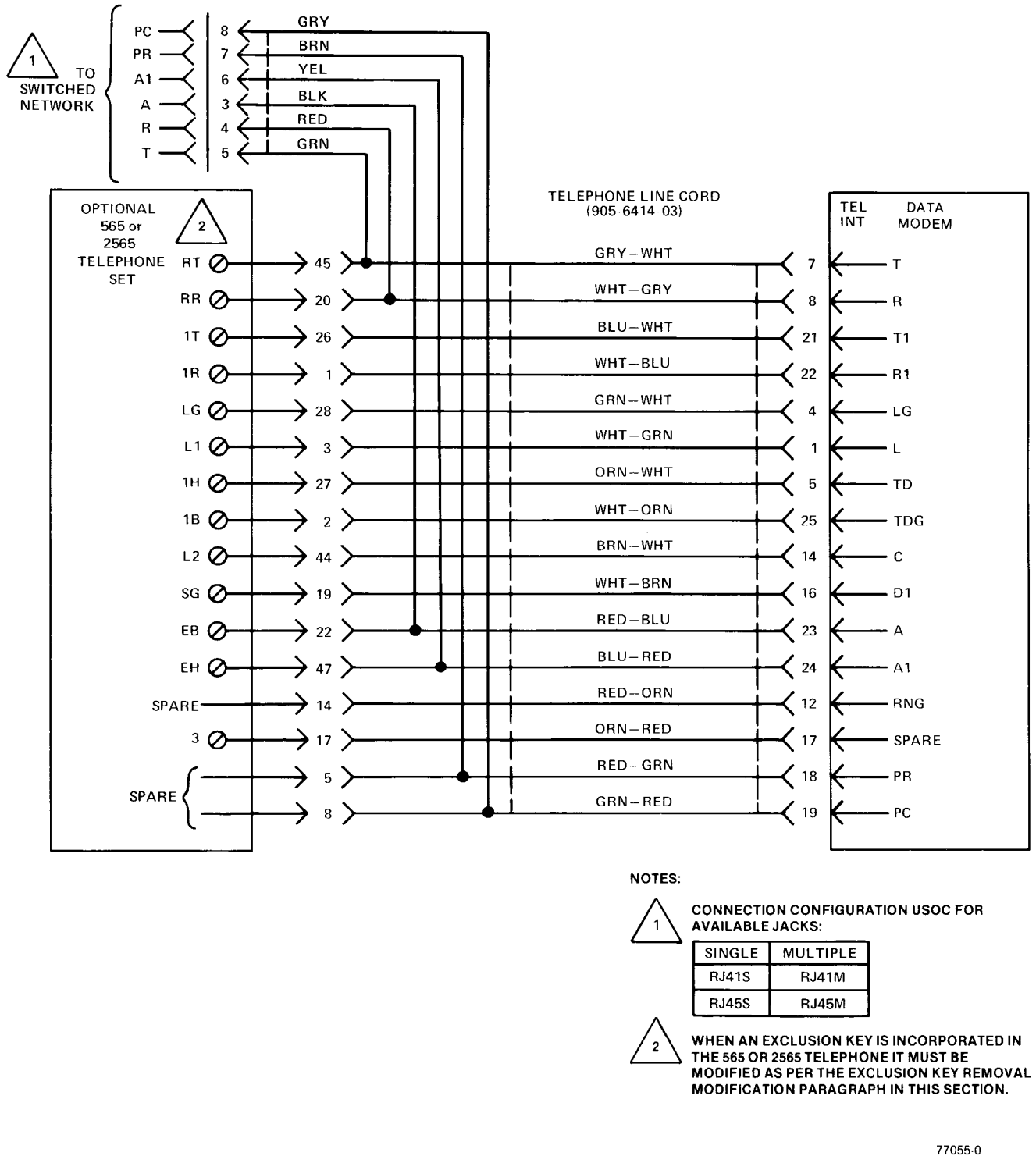
1. CONNECTION CONFIGURATIONS FOR AVAILABLE JACKS:

SINGLE	MULTIPLE	OTHER
RJ41S	RJ41M	RJ11C
RJ45S	RJ45M	

2. WHEN AN EXCLUSION KEY IS INCORPORATED IN THE 565 OR 2565 TELEPHONE IT MUST BE MODIFIED AS PER THE EXCLUSION KEY REMOVAL MODIFICATION PARAGRAPH IN THIS SECTION.

78041-1

Fig. 2-23. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6414-05 Telephone Cord for Permissive Applications



NOTES:

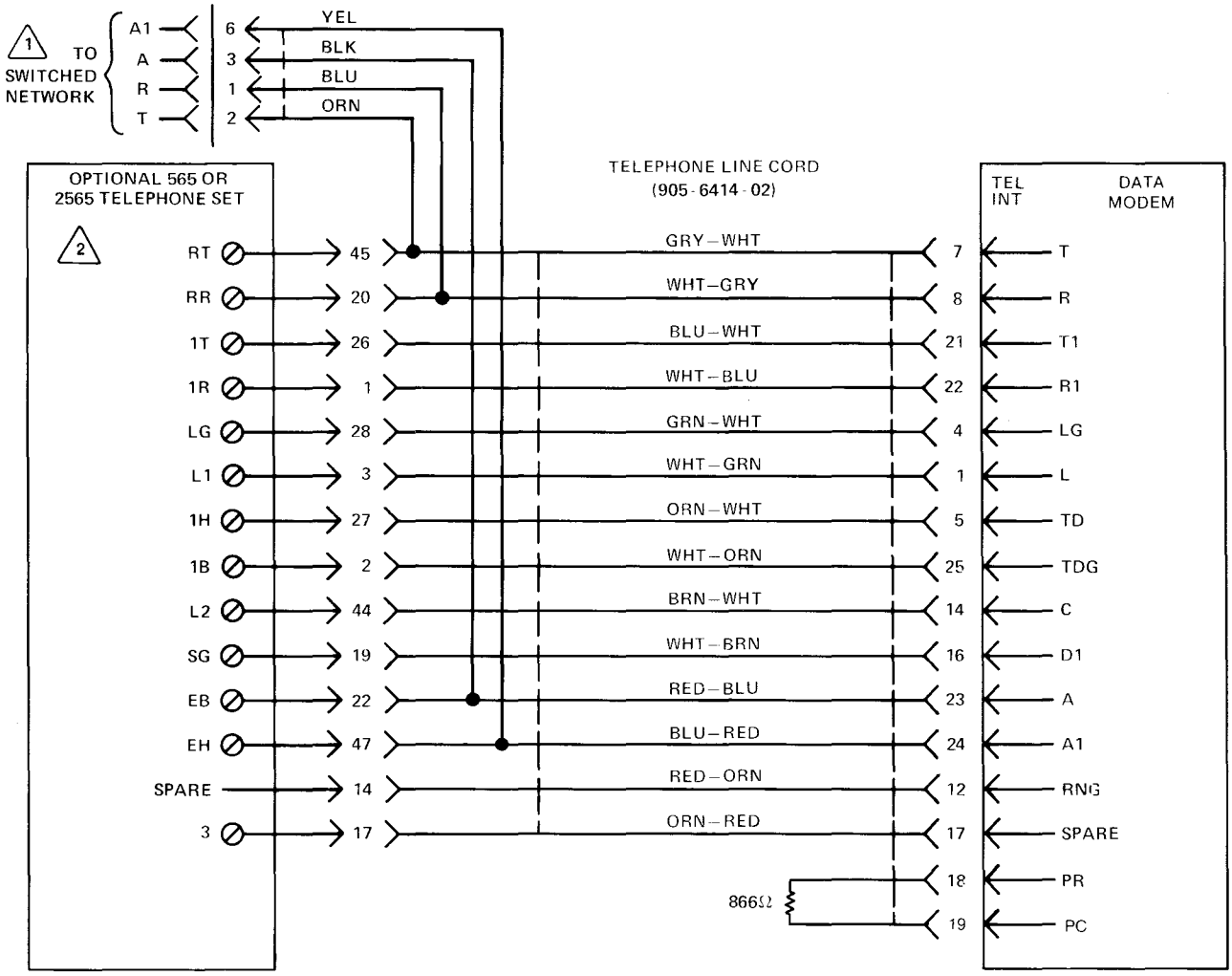
1. CONNECTION CONFIGURATION USOC FOR AVAILABLE JACKS:

SINGLE	MULTIPLE
RJ41S	RJ41M
RJ45S	RJ45M

2. WHEN AN EXCLUSION KEY IS INCORPORATED IN THE 565 OR 2565 TELEPHONE IT MUST BE MODIFIED AS PER THE EXCLUSION KEY REMOVAL MODIFICATION PARAGRAPH IN THIS SECTION.

77055-0

Fig. 2-24. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6414-03 Telephone Cord for Programmable Applications



NOTES:

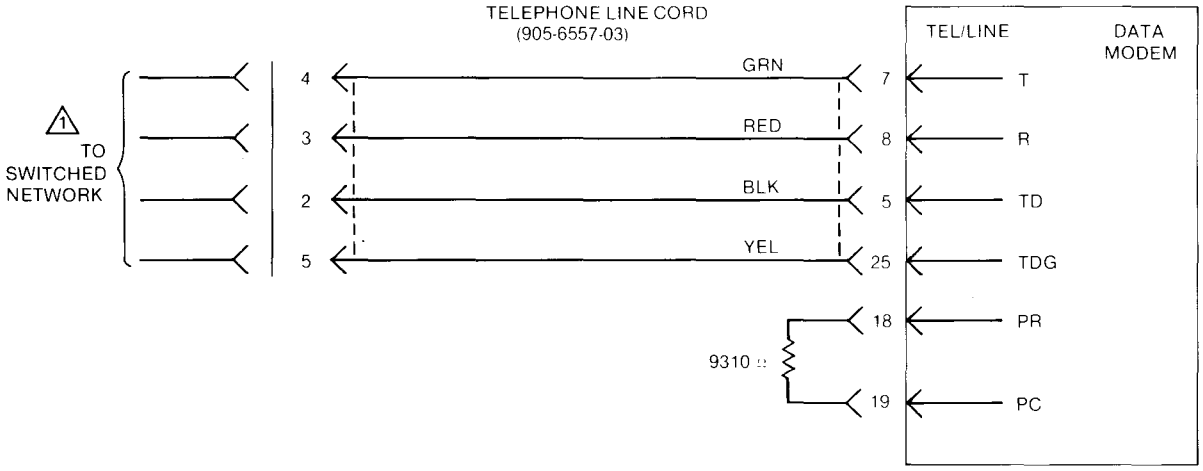
1. CONNECTION CONFIGURATION USOC FOR AVAILABLE JACKS.

SINGLE	MULTIPLE
RJ41S	RJ41M

2. WHEN AN EXCLUSION KEY IS INCORPORATED IN THE 565 OR 2565 TELEPHONE IT MUST BE MODIFIED AS PER THE EXCLUSION KEY REMOVAL MODIFICATION PARAGRAPH IN THIS SECTION.

77054-0

Fig. 2-25. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6414-02 Telephone Cord for Fixed Loss Loop Applications



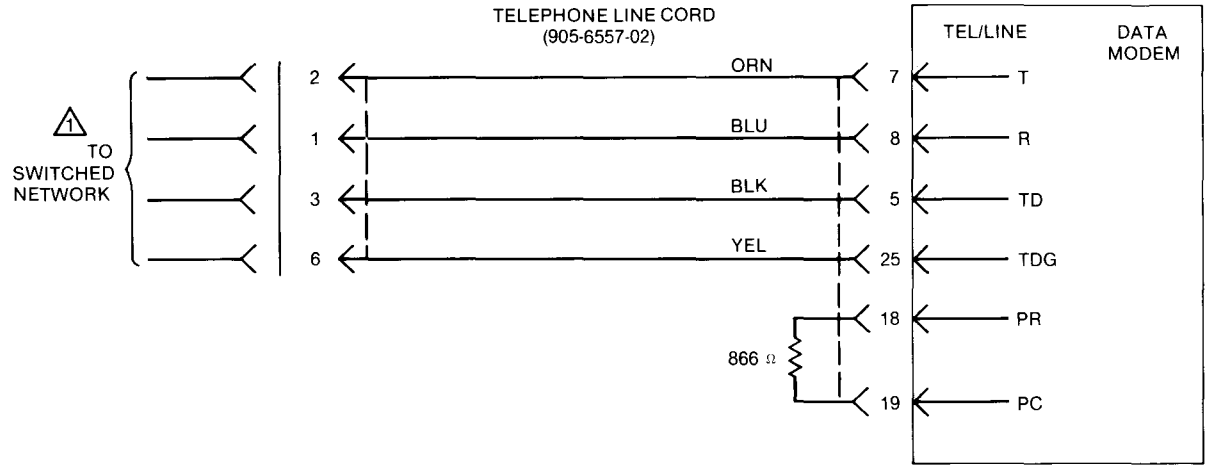
NOTE:

1 CONNECTION CONFIGURATION USOC FOR AVAILABLE JACKS.

SINGLE	MULTIPLE	OTHER
RJ41S	RJ41M	RJ11C
RJ45S	RJ45M	

79218-1

Fig. 2-26. TA201C Installation With 905-6557-03 Telephone Cord For Permissive Applications in Automatic Answer Only Operation



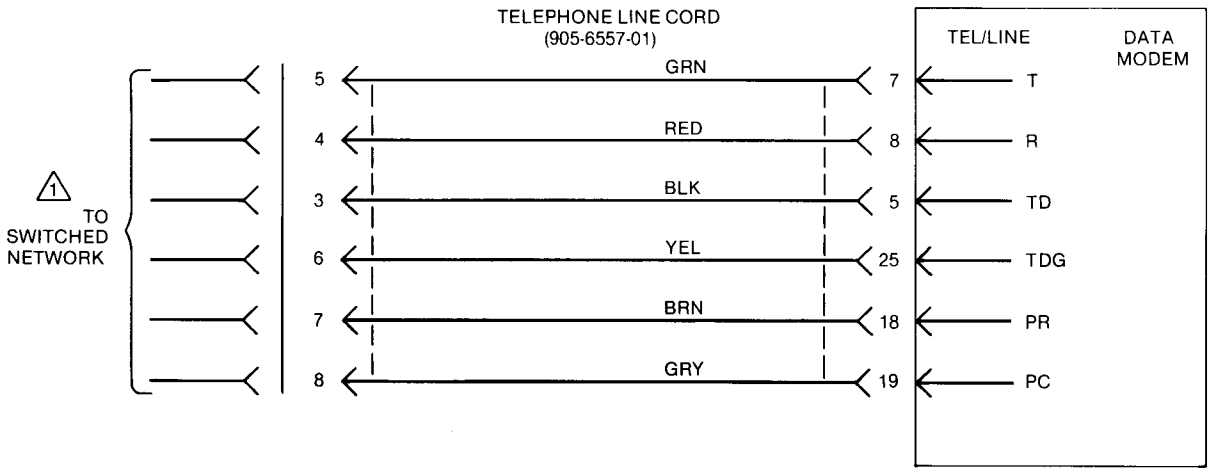
NOTE:

1 CONNECTION CONFIGURATION USOC FOR AVAILABLE JACKS.

SINGLE	MULTIPLE
RJ41S	RJ41M

79217-0

Fig. 2-27. TA201C Installation With 905-6557-02 Telephone Cord For Fixed Loss Loop Applications in Automatic Answer Only Operation



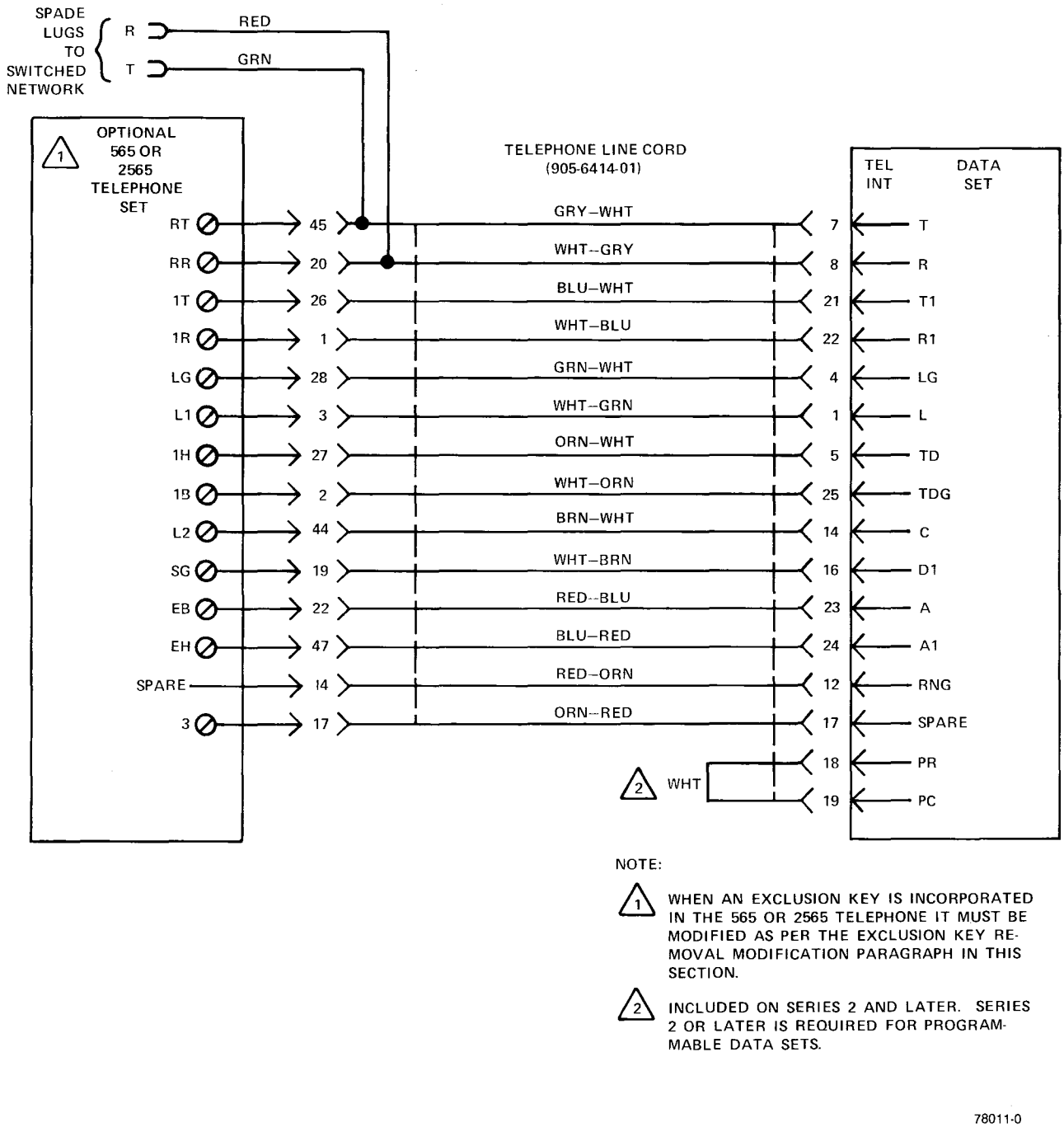
NOTE:

1 CONNECTION CONFIGURATION USOC FOR AVAILABLE JACKS.

SINGLE	MULTIPLE
RJ41S	RJ41M
RJ45S	RJ45M

79216-0

Fig. 2-28. TA201C Installation With 905-6557-01 Telephone Cord For Programmable Applications in Automatic Answer Only Operation



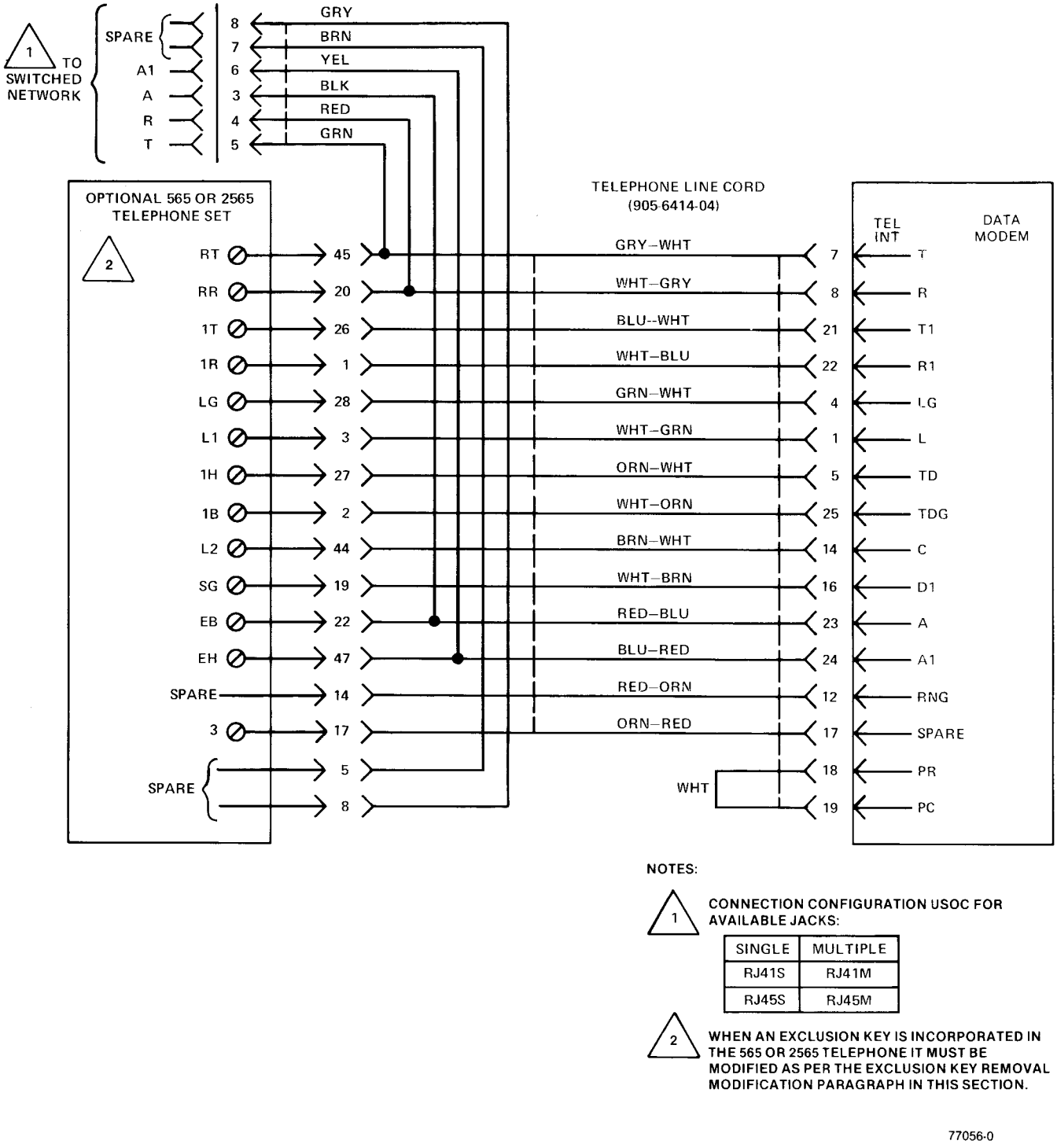
NOTE:

1. WHEN AN EXCLUSION KEY IS INCORPORATED IN THE 565 OR 2565 TELEPHONE IT MUST BE MODIFIED AS PER THE EXCLUSION KEY REMOVAL MODIFICATION PARAGRAPH IN THIS SECTION.

2. INCLUDED ON SERIES 2 AND LATER. SERIES 2 OR LATER IS REQUIRED FOR PROGRAMMABLE DATA SETS.

78011-0

Fig. 2-29. TA201C and Telephone Interconnection to DDD Network Via Spade Lugs Using 905-6414-01 Telephone Cord for Adjustable Applications



NOTES:

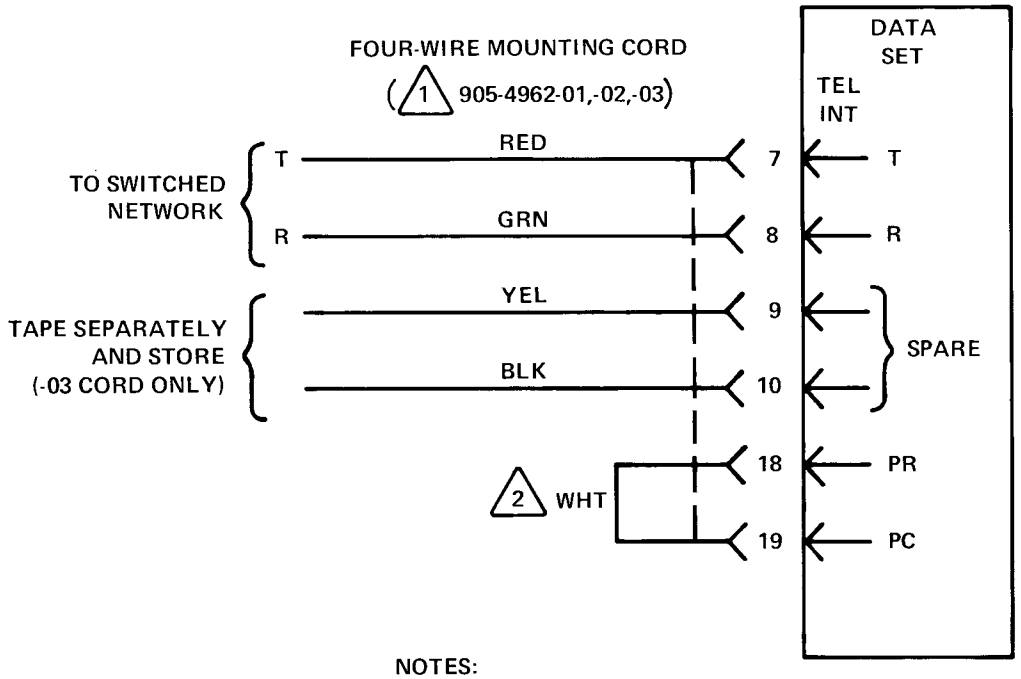
1. CONNECTION CONFIGURATION USOC FOR AVAILABLE JACKS:

SINGLE	MULTIPLE
RJ41S	RJ41M
RJ45S	RJ45M

2. WHEN AN EXCLUSION KEY IS INCORPORATED IN THE 565 OR 2565 TELEPHONE IT MUST BE MODIFIED AS PER THE EXCLUSION KEY REMOVAL MODIFICATION PARAGRAPH IN THIS SECTION.

77056-0

Fig. 2-30. TA201C and Telephone Interconnection to DDD Network Via Telco Jack Using 905-6414-04 Telephone Cord for Adjustable Applications



NOTES:

UNUSED DATA SET PINS NOT SHOWN.

1. –01 AND –02 ARE EQUIPPED WITH 283B4 PLUG. –03 IS EQUIPPED WITH SPADE LUGS.

2. INCLUDED IN CONNECTOR SHELL OF SERIES 2 AND LATER. SERIES 2 OR LATER IS REQUIRED FOR PROGRAMMABLE DATA SETS.

78010-0

Fig. 2-31. TA201C and Telephone Interconnection Using 905-4962-01 and -03 Telephone Cord For Adjustable Applications in Automatic Answer Only Operation

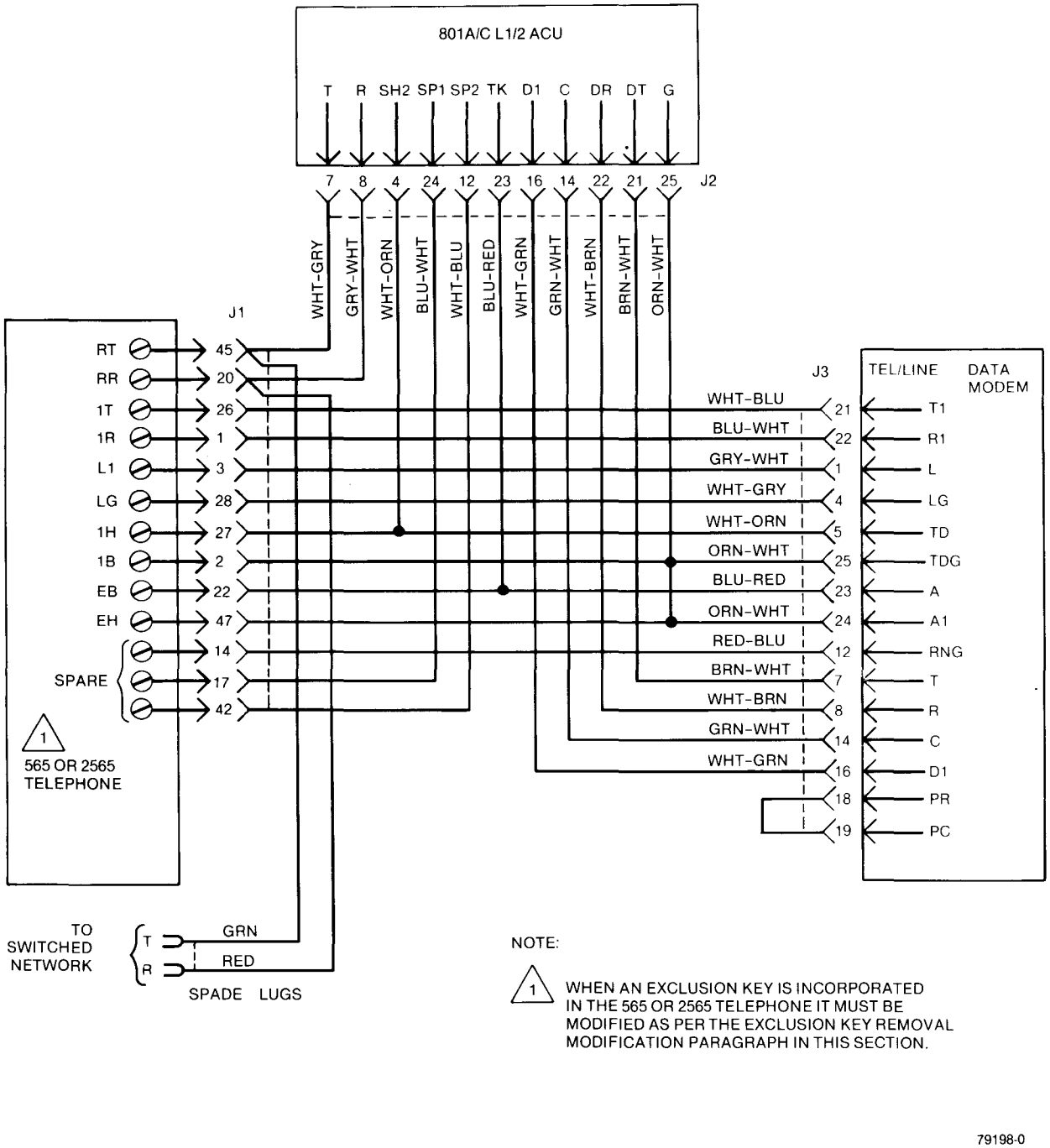


Fig. 2-32. TA201C, Telephone, and 801C L1/2 ACU Interconnection to DDD Network Using 905-6630-01 Telephone Cord for Adjustable Applications

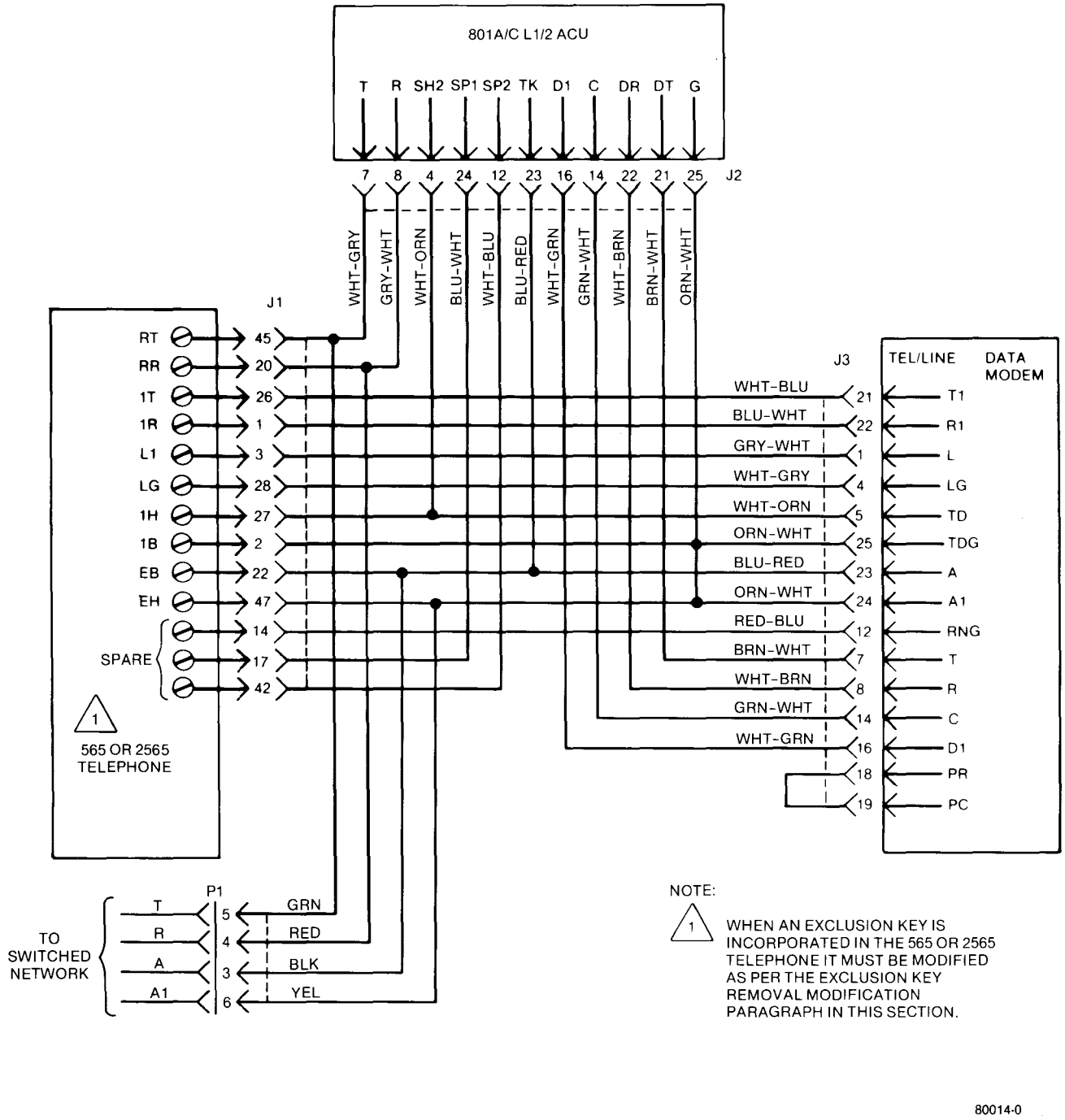


Fig. 2-33. TA201C, Telephone, and 801C L1/2 ACU Interconnection to DDD Network Using 905-6630-04 Telephone Cord for Adjustable Applications

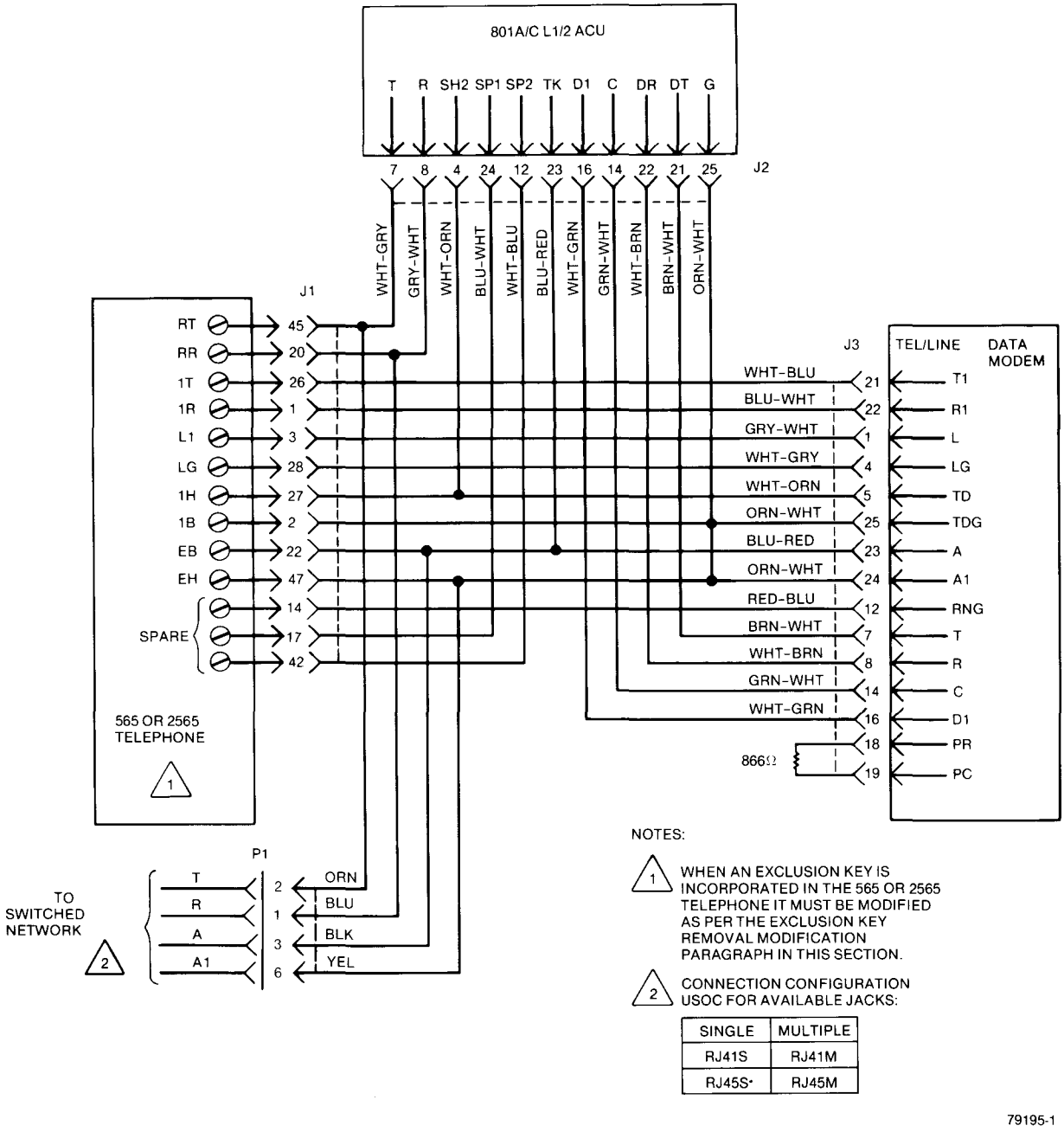


Fig. 2-34. TA201C, Telephone, and 801C L1/2 ACU Interconnection to DDD Network Using 905-6630-02 Telephone Cord for Fixed Loss Loop Applications

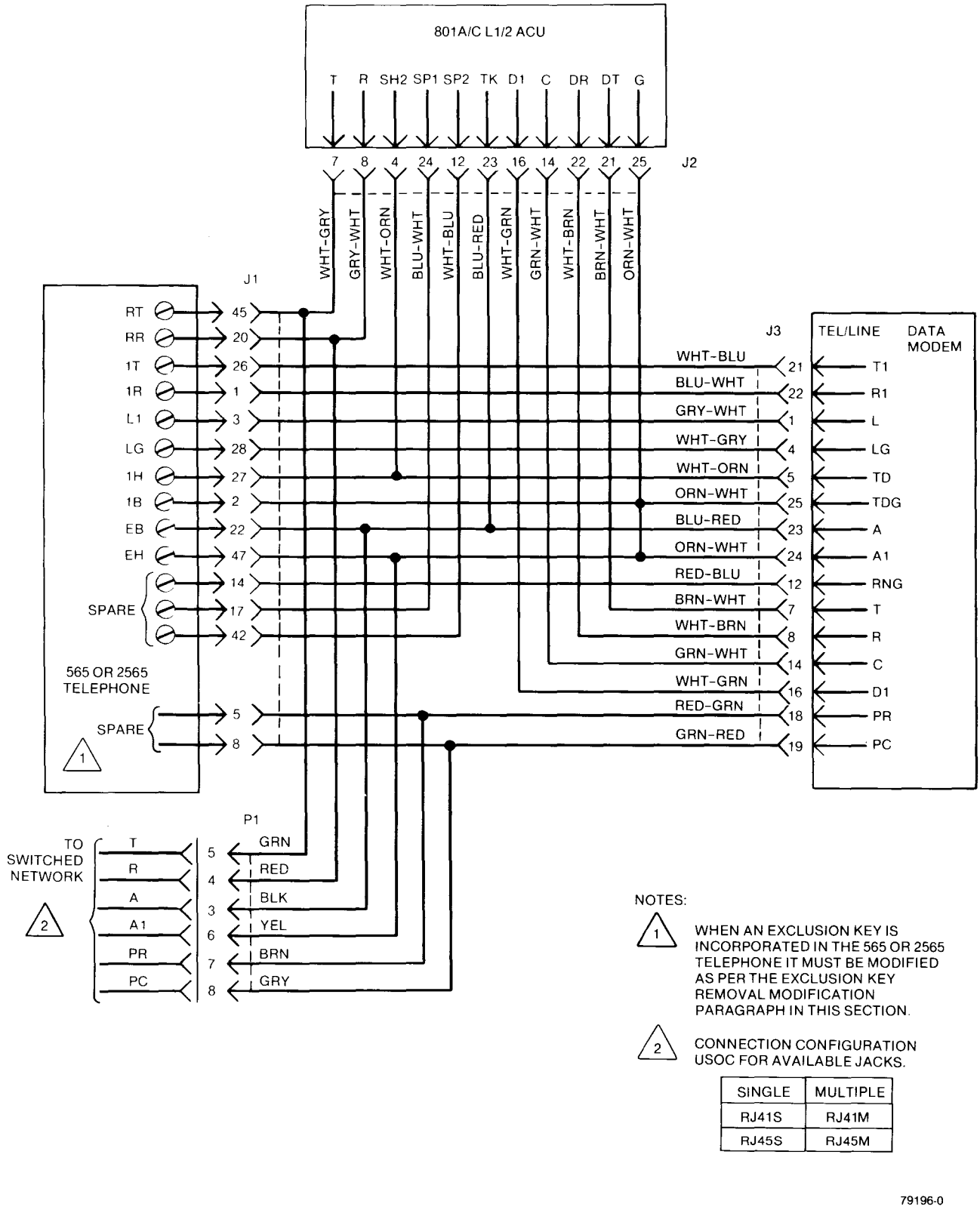


Fig. 2-35. TA201C, Telephone, and 801C L1/2 ACU Interconnection to DDD Network Using 905-6630-03 Telephone Cord for Programmable Applications

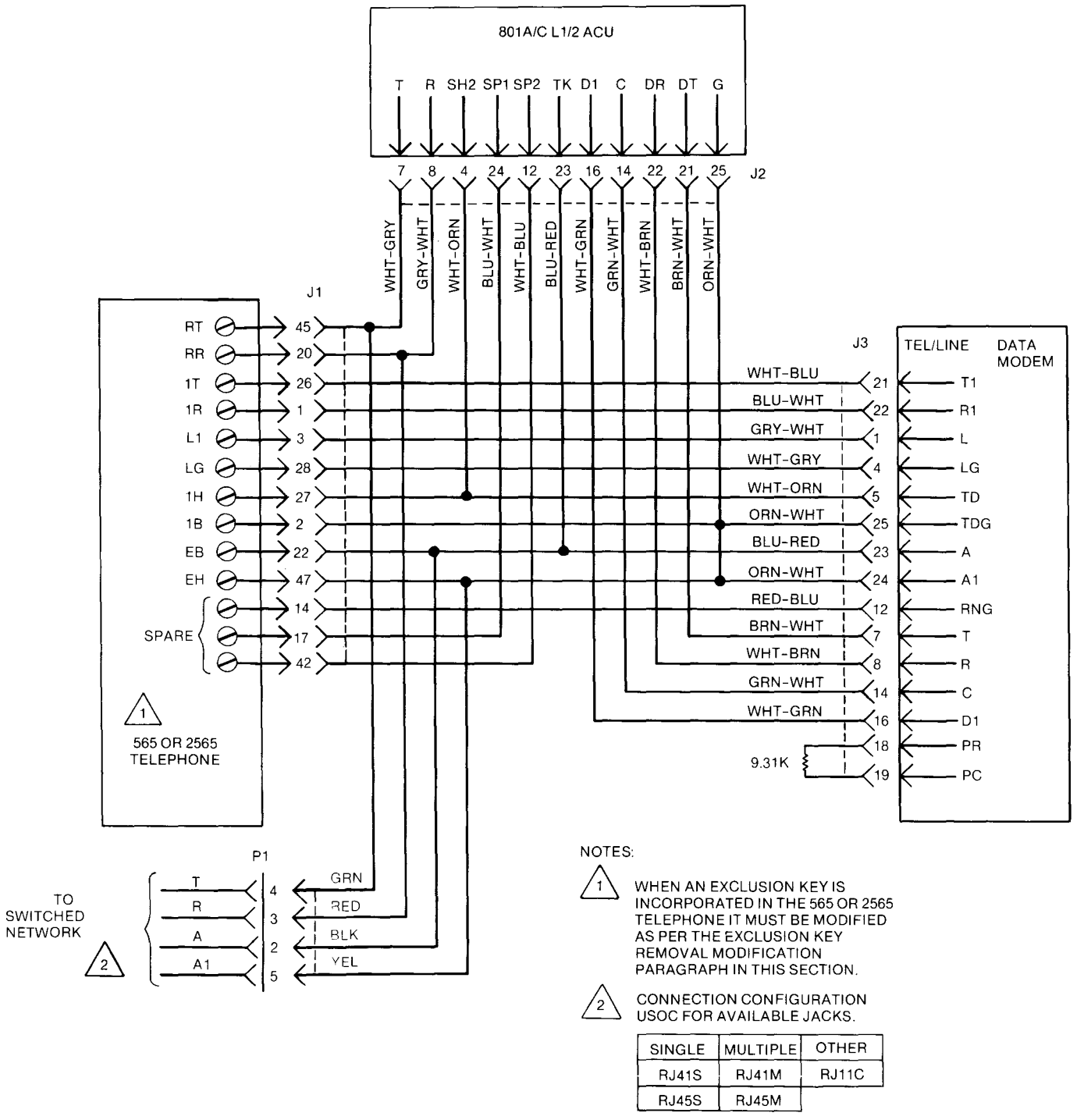
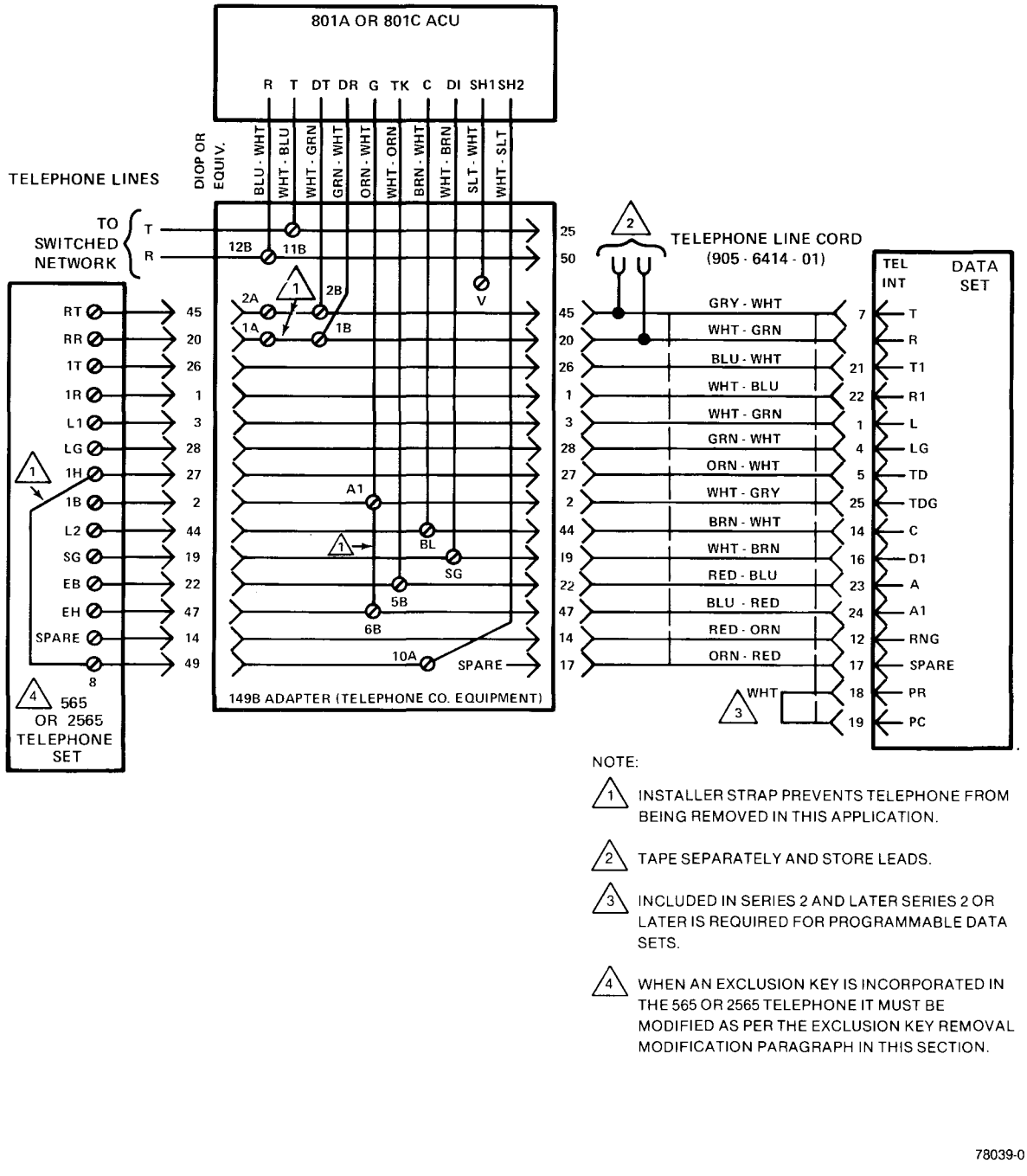


Fig. 2-36. TA201C, Telephone, and 801C L1/2 ACU Interconnection to DDD Network Using 905-6630-05 Telephone Cord for Permissive Applications



NOTE:

1. INSTALLER STRAP PREVENTS TELEPHONE FROM BEING REMOVED IN THIS APPLICATION.
2. TAPE SEPARATELY AND STORE LEADS.
3. INCLUDED IN SERIES 2 AND LATER SERIES 2 OR LATER IS REQUIRED FOR PROGRAMMABLE DATA SETS.
4. WHEN AN EXCLUSION KEY IS INCORPORATED IN THE 565 OR 2565 TELEPHONE IT MUST BE MODIFIED AS PER THE EXCLUSION KEY REMOVAL MODIFICATION PARAGRAPH IN THIS SECTION.

78039-0

Fig. 2-37. TA201C, Telephone, and ACU Interconnection to DDD Network

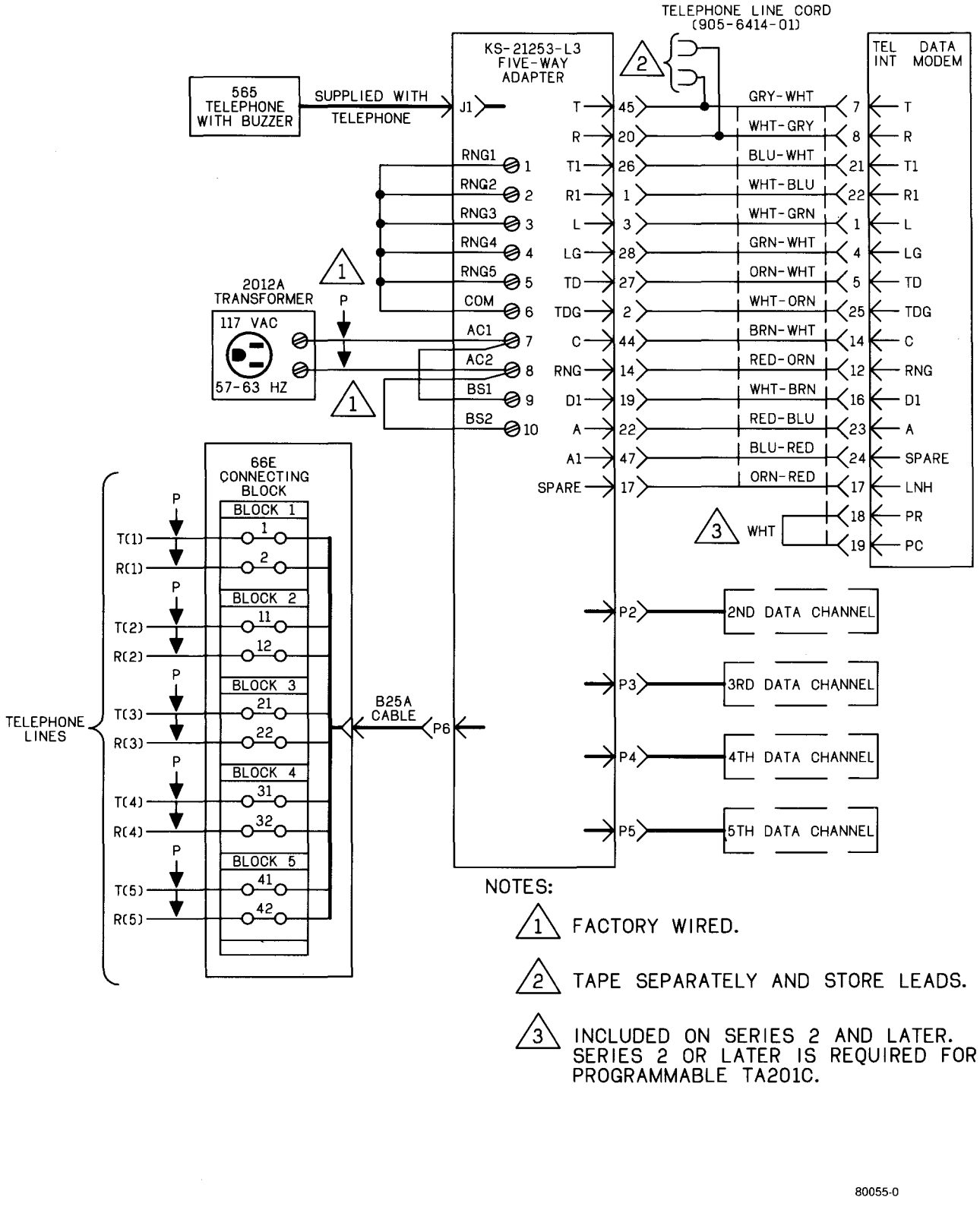
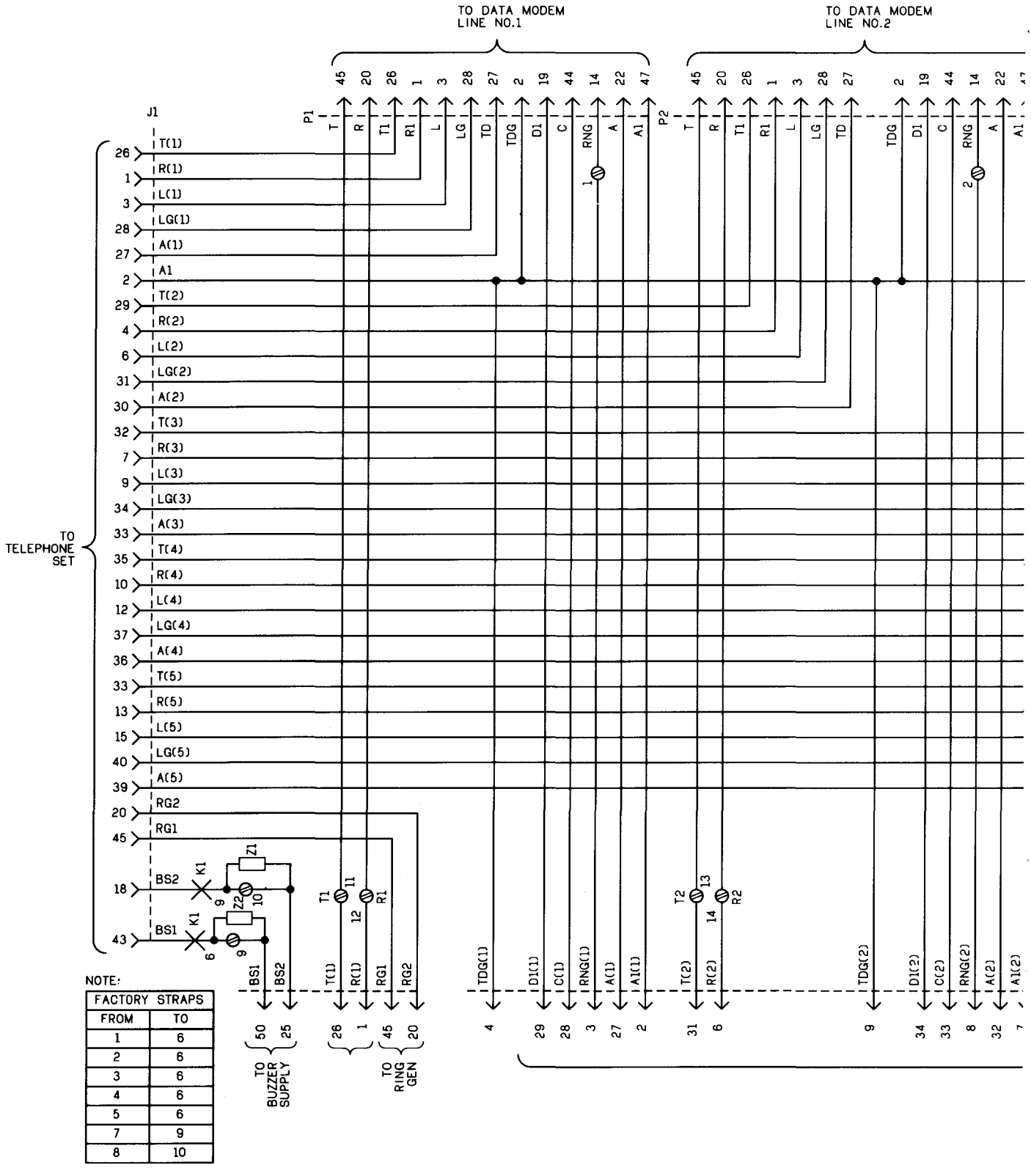
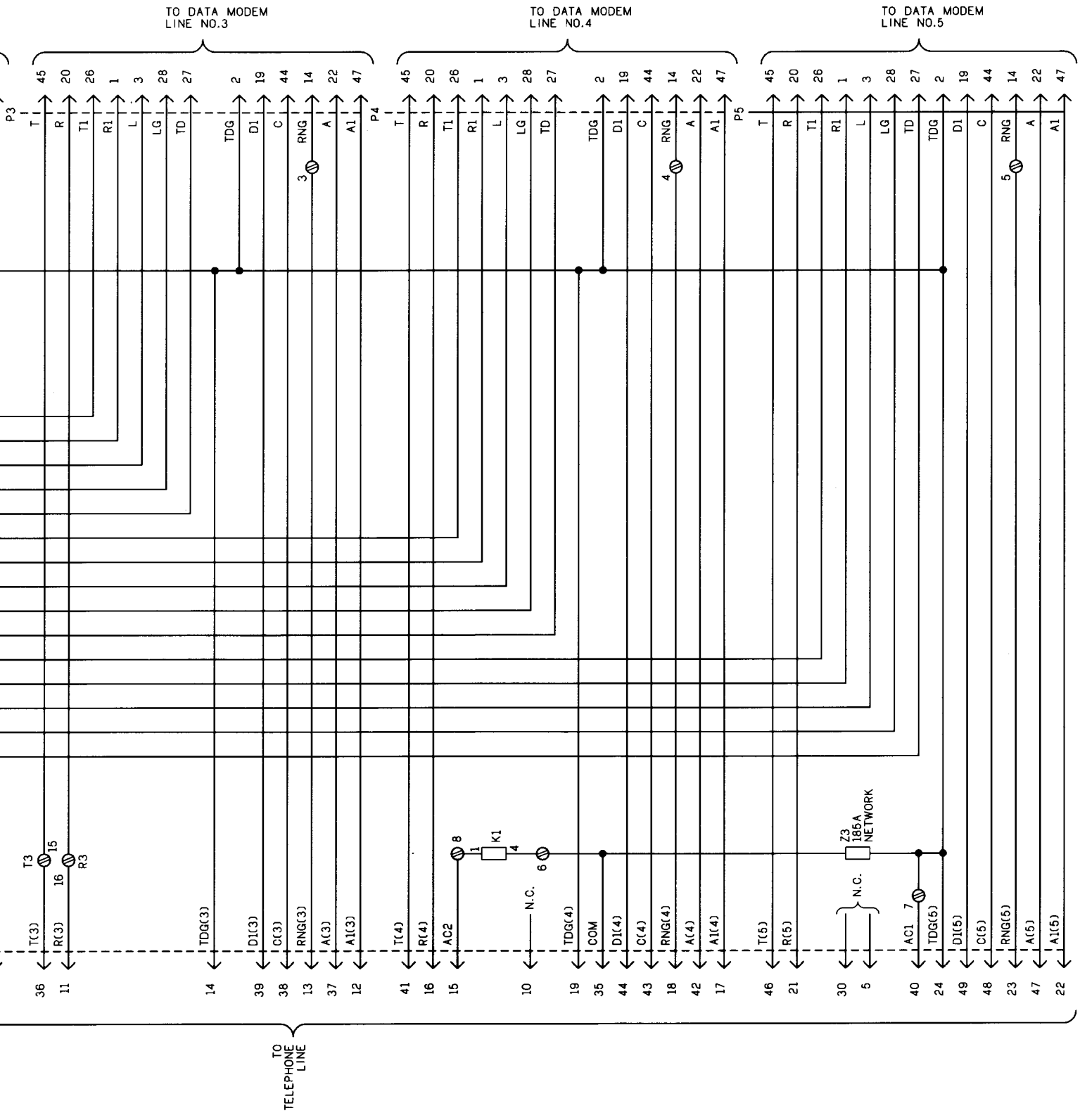


Fig. 2-38. Multiple Individually Housed TA201C, Telephone, and Five-Way Adapter Interconnection to DDD Network



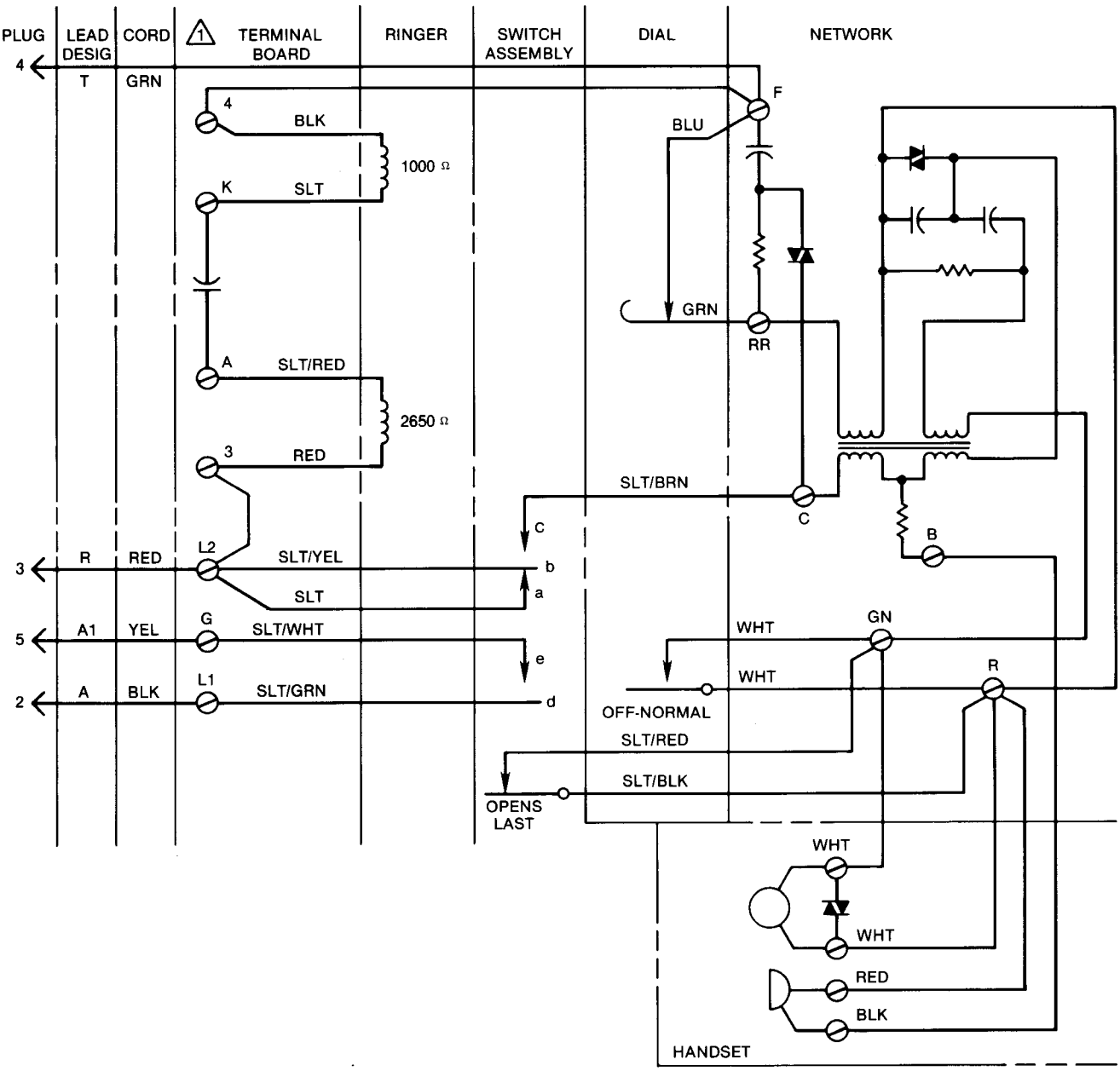
NOTE:

FACTORY STRAPS	
FROM	TO
1	6
2	6
3	6
4	6
5	6
7	9
8	10



75029-1

Fig. 2-39. Five-Way Adapter (KS-21253-L3) Schematic Diagram

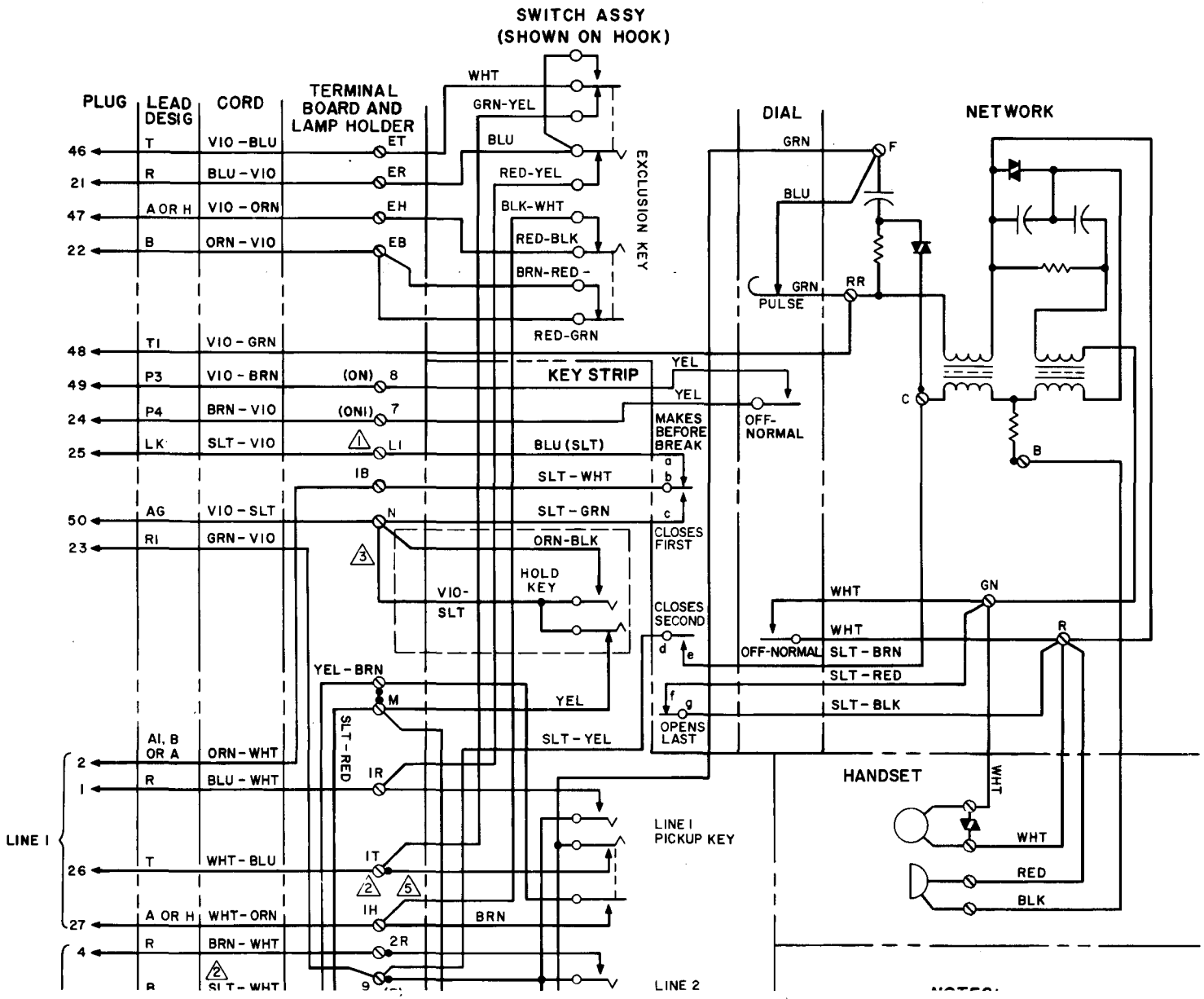


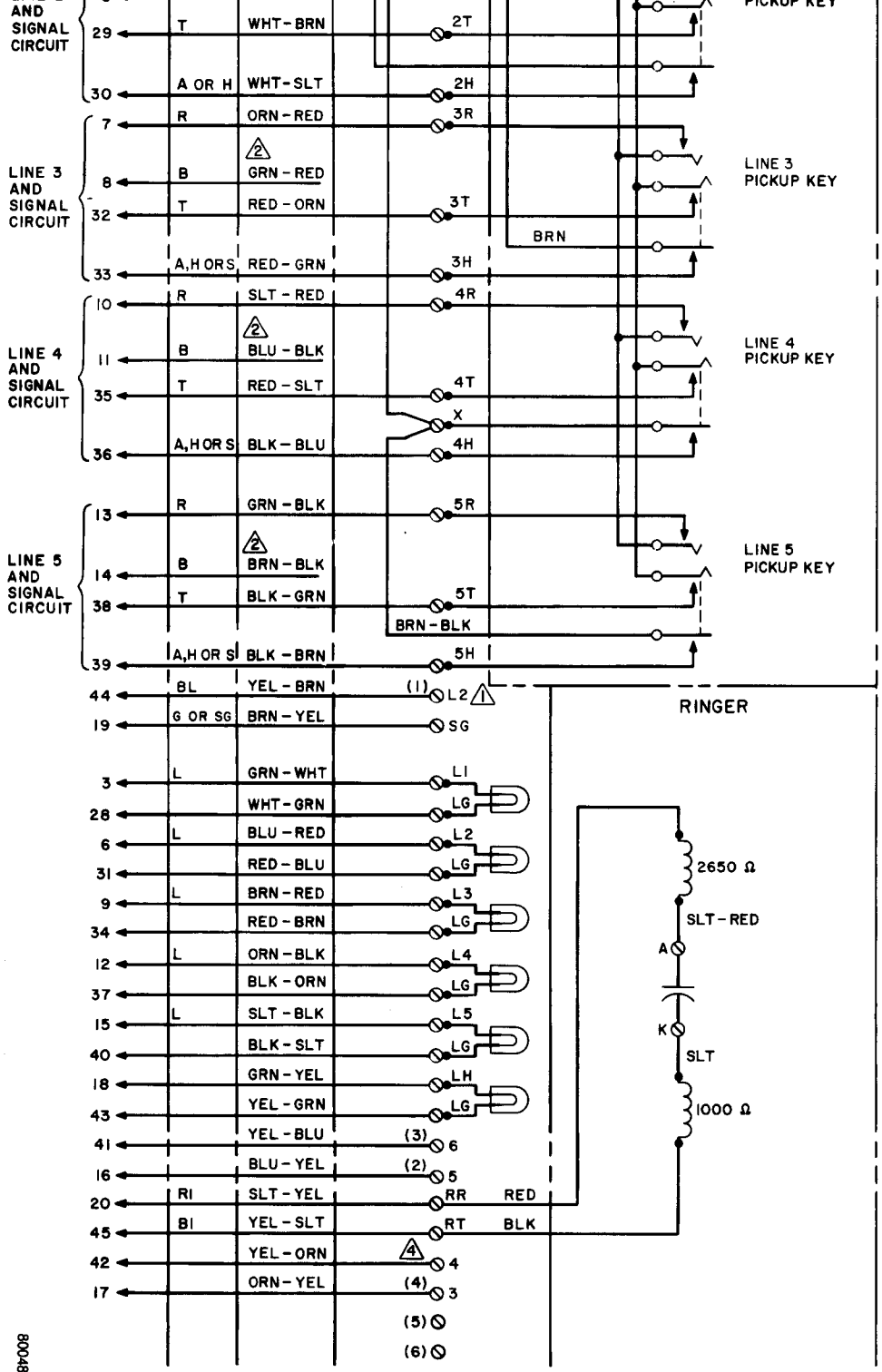
NOTES:

1 TERMINAL STRIP CONNECTIONS 3 AND 4 NOT SUPPLIED ON SOME MODELS.

79212-0

Fig. 2-40. 500 Telephone Schematic Diagram

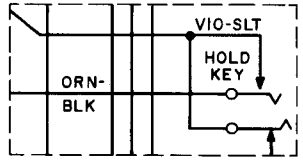

SWITCH ASSY
(SHOWN ON HOOK)
PLUG
LEAD DESIG
CORD
TERMINAL BOARD AND LAMP HOLDER
DIAL
NETWORK
WHT
GRN-YEL
BLU
RED-YEL
BLK-WHT
RED-BLK
BRN-RED -
RED-GRN
EXCLUSION KEY
46 T VIO-BLU ET
21 R BLU-VIO ER
47 A OR H VIO-ORN EH
22 B ORN-VIO EB
48 TI VIO-GRN
49 P3 VIO-BRN (ON) 8
24 P4 BRN-VIO (ONI) 7
25 LK SLT-VIO LI
50 AG VIO-SLT N
23 RI GRN-VIO
KEY STRIP
YEL
YEL
MAKES BEFORE BREAK
OFF-NORMAL
BLU (SLT)
IB
SLT-WHT
SLT-GRN
CLOSES FIRST
ORN-BLK
HOLD KEY
VIO-SLT
CLOSES SECOND
OFF-NORMAL
OPENS LAST
GRN
BLU
GRN
PULSE
RR
F
C
B
WHT
GN
WHT
R
SLT-BRN
SLT-RED
SLT-BLK
YEL-BRN
M
YEL
SLT-YEL
SLT-RED
AI, B OR A ORN-WHT
R BLU-WHT
IR
LINE 1
T WHT-BLU
IT
A OR H WHT-ORN
IH
R BRN-WHT
2R
SLT-WHT
BRN
LINE 1 PICKUP KEY
LINE 2
HANDSET
WHT
WHT
RED
BLK



1 TERMINAL ON NETWORK.

2 LEADS ARE INDIVIDUALLY INSULATED AND STORED.

3 N.E. WIRING SHOWN. I.T.T. WIRING SHOWN BELOW.



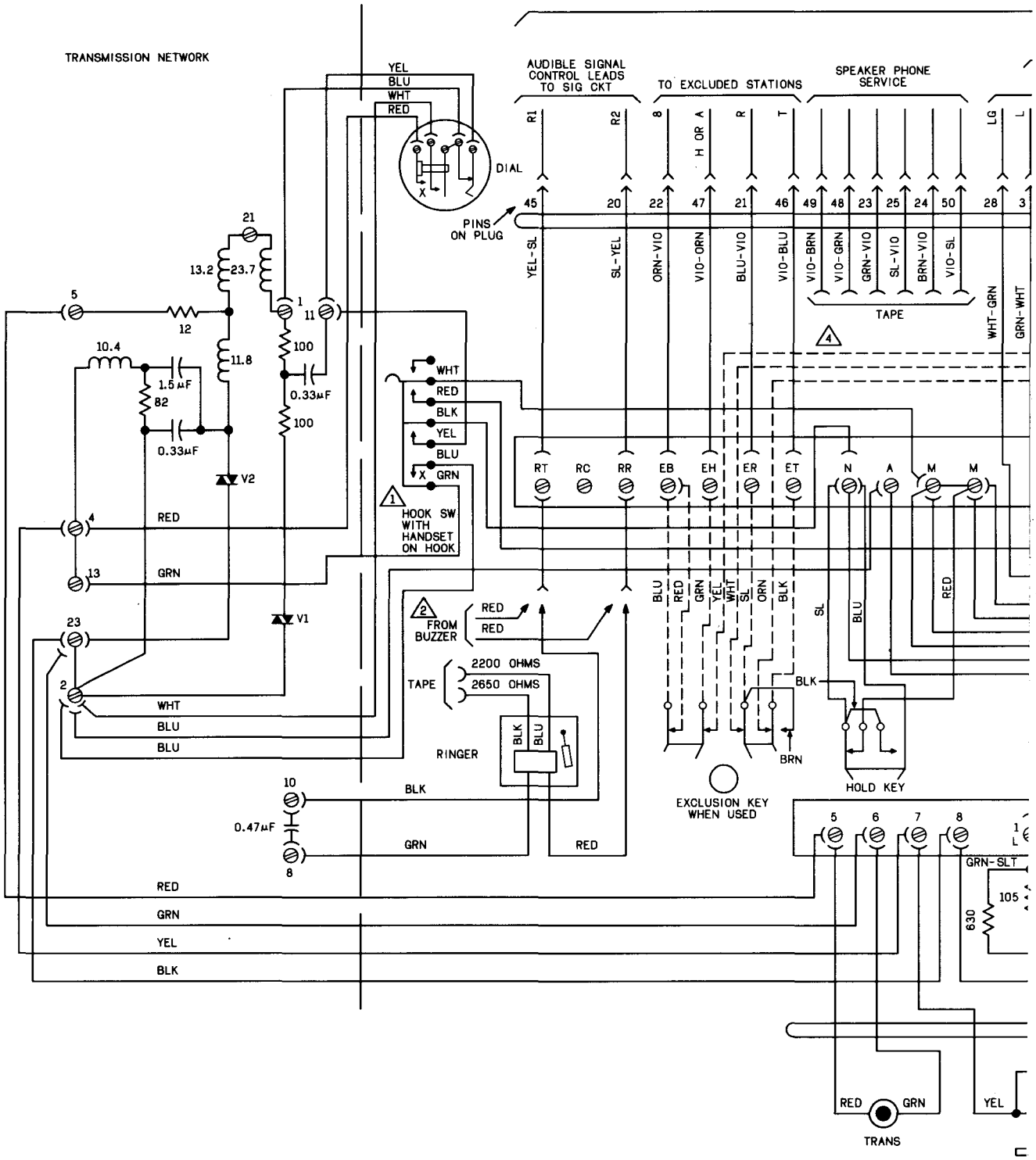
4 LEAD INDIVIDUALLY STORED IN N.E. WIRING.

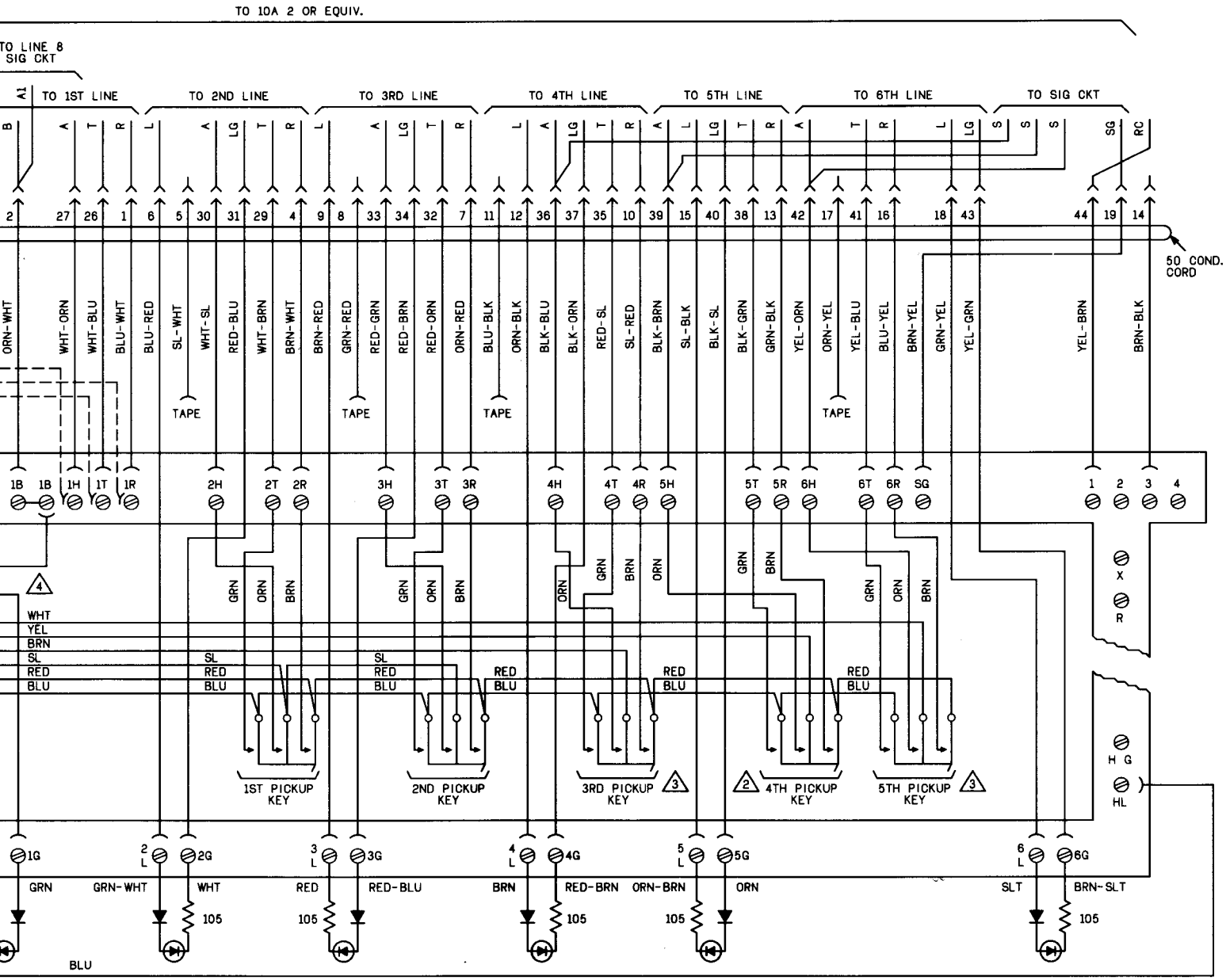
WHERE N.E. AND I.T.T. TERMINAL DESIGNATIONS OR WIRE COLORS DIFFER, N.E. IS SHOWN IN ( ).

5 WHEN AN EXCLUSION KEY IS INCORPORATED IN THE 565 OR 2565 TELEPHONE IT MUST BE MODIFIED AS PER THE EXCLUSION KEY DISCONNECT MODIFICATION PARAGRAPH IN THIS SECTION.

6 —● DENOTES SOLDERED CONNECTIONS.
—⊘ DENOTES SPADE LUG CONNECTIONS.

Fig. 2-41. 565 Telephone Schematic Diagram


TRANSMISSION NETWORK
YEL
BLU
WHT
RED
DIAL
X
PINS ON PLUG
AUDIBLE SIGNAL CONTROL LEADS TO SIG CKT
TO EXCLUDED STATIONS
SPEAKER PHONE SERVICE
R1
R2
8
H OR A
R
T
LG
L
45
20
22
47
21
46
49
48
23
25
24
50
28
3
YEL-SL
SL-YEL
ORN-VIO
VIO-ORN
BLU-VIO
VIO-BLU
VIO-BRN
VIO-GRN
GRN-VIO
SL-VIO
BRN-VIO
VIO-SL
WHT-GRN
GRN-WHT
TAPE
4
21
13.2
23.7
1
11
5
12
100
0.33μF
10.4
11.8
1.5μF
82
0.33μF
100
V2
V1
WHT
RED
BLK
YEL
BLU
X
GRN
1
HOOK SW WITH HANDSET ON HOOK
RT
RC
RR
EB
EH
ER
ET
N
A
M
M
4
RED
13
GRN
23
2
WHT
BLU
BLU
2
FROM BUZZER
RED
RED
2200 OHMS
TAPE
2650 OHMS
RINGER
BLK
BLU
BLU
RED
SL
BLU
RED
BLK
BRN
HOLD KEY
EXCLUSION KEY WHEN USED
10
0.47μF
8
BLK
GRN
RED
5
6
7
8
GRN-SLT
105
630
RED
GRN
YEL
BLK
RED
GRN
TRANS
YEL



NOTES:

1. "X" CONTACTS ON THE HOOKSWITCH BREAK LAST

2. USE OF SIGNAL IS LIMITED TO EITHER RINGER OR BUZZER. NO PROVISION IS MADE FOR WIRING BOTH RINGER AND BUZZER.

3. PICK UP TO SIGNALLING CONVERSION-CONVERT KEYS FROM LOCKING TO INTERLOCKING AND MODIFY WIRING AS FOLLOWS:

	NO OF P U KEYS	NO OF SIG. KEYS	KEY LEADS		
			BRN	YEL	WHT
$PPPP_S P_S P_S$	5	1	M	M	SG
	4	2	M	SG	SG
	3	3	SG	SG	SG

4. WIRED TO OPERATE WITH AE.CO. TYPE 10A1 AND 10A2 OR WE.CO. TYPE 1A1 AND 1A2 SYSTEM. FOR CONVERSION TO OPERATE WITH AE.CO. TYPE 10A OR WE.CO. TYPE 1A SYSTEM, MODIFY AS FOLLOWS:

	LEADS AT TEL. TERM STRIP (INTERNAL WRG)			
CHANGE	WHT			YEL
FROM TERM	M			1H
TO TERM	1B			EH

80246-0

Fig. 2-42. AE186 (HC8666000ASL) Telephone Schematic Diagram