DATA AUXILIARY SET 824A-TYPE 50 KILOBIT DATA RECOGNIZER INSTALLATION AND CONNECTION

1. GENERAL

1.01 This section contains installation and connection information for Data Auxiliary Sets (DAS) 824A1 and 824A2. Refer to Fig. 1 for an illustration of DAS 824A1. Option identification and strapping information are also contained in this section.

1.02 For general information concerning the installation and connection of data auxiliary sets, refer to the section entitled Data Sets, General Installation and Connection Information (590-010-200).

1.03 Information pertaining to associated customer-owned equipment or other external equipment is not included.

2. OPTIONS

GENERAL

2.01 DAS 824A-type may be used in any one of five possible applications dependent on the option installed.

2.02 An option is installed by strapping together certain designated terminals on the option card (CP AR282). Each option is assigned a letter designation (V, W, X, Y, or Z) for reference purposes.

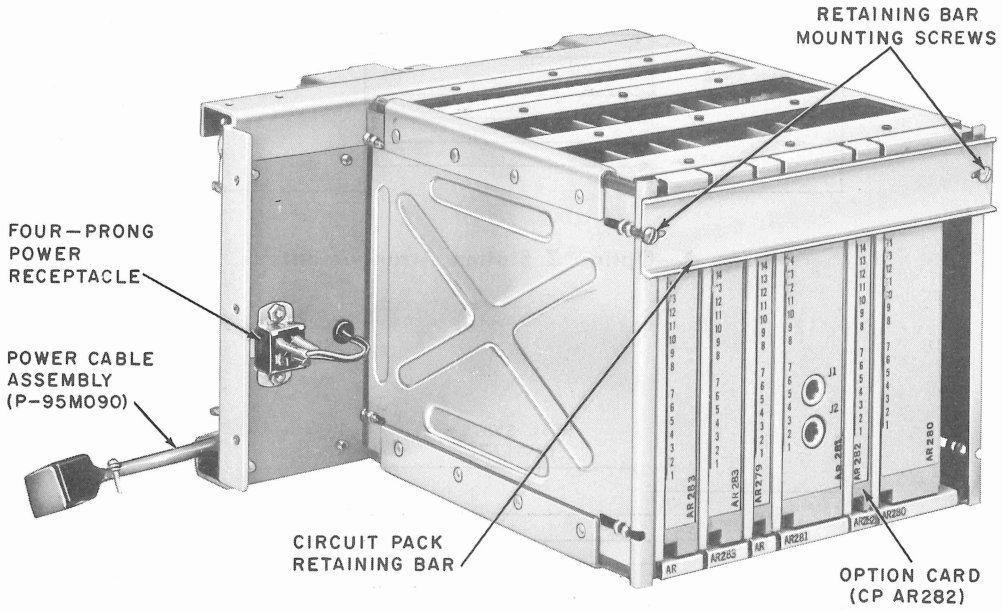


Fig. 1—Data Auxiliary Set 824A1, Front View (Data Auxiliary Set 824A2 is Identical With a 26A Power Unit Attached)

OPTION IDENTIFICATION AND STRAPPING

2.03 ***Option Z*** provides an interface between the customer's four-wire facility and the Bell System eight-wire facility (Fig. 2).

2.04 ***Option Y*** provides an interface between the customer's four-wire facility and the Bell System eight-wire facility while simulating a digital response necessary to keep some customer equipment on the line until the far-end equipment begins transmission (Fig. 3). The circuit that simulates the data response is called a "fooler."

2.05 ***Option X*** is for connection of customer-owned equipment to customer-owned equipment (four-wire to four-wire) either directly or over Bell System facilities (Fig. 4). When voice signals are transmitted, they pass straight through DAS 824A. If a digital signal is detected, it is diverted to a customer-owned translator. A simulated digital response, necessary to keep some customer equipment on the line until the far-end equipment begins transmission, is provided for each direction. The circuit that simulates the digital response is called a "fooler." The "fooler" may be used or it may be omitted, dependent on the requirements of each installation. Option X also includes provisions for inserting optional single-frequency (SF) signaling units in the voice-frequency path when SF signaling is not already provided with the wideband trunk.

2.06 ***Option W*** provides the basic four-wire to eight-wire interface conversion with the addition of a translator in the wideband path. Voice-frequency signals are switched to the Bell System voice channel, and digital signals are diverted to the customer-owned translator. A simulated digital response is usually provided (Fig. 5). The circuit that simulates the digital response is called a "fooler." The "fooler" may be used or it may be omitted, dependent on the requirements of each installation.

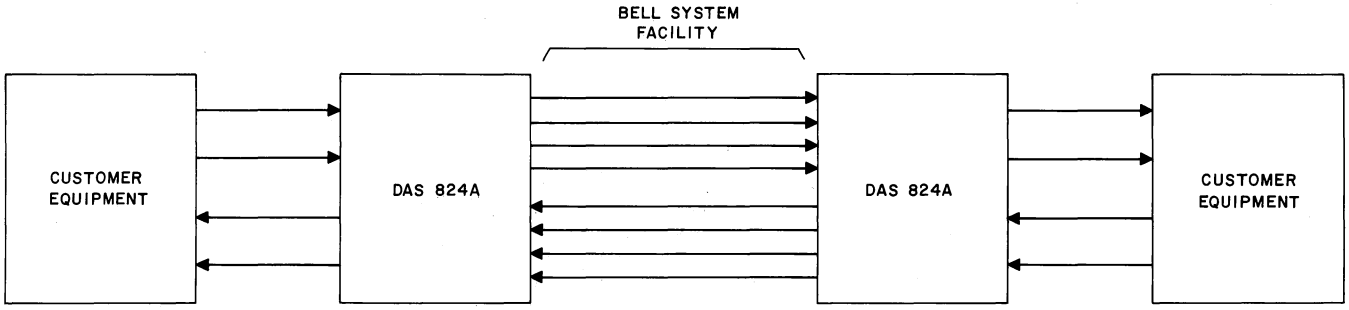


Fig. 2—Option Z Station Arrangement

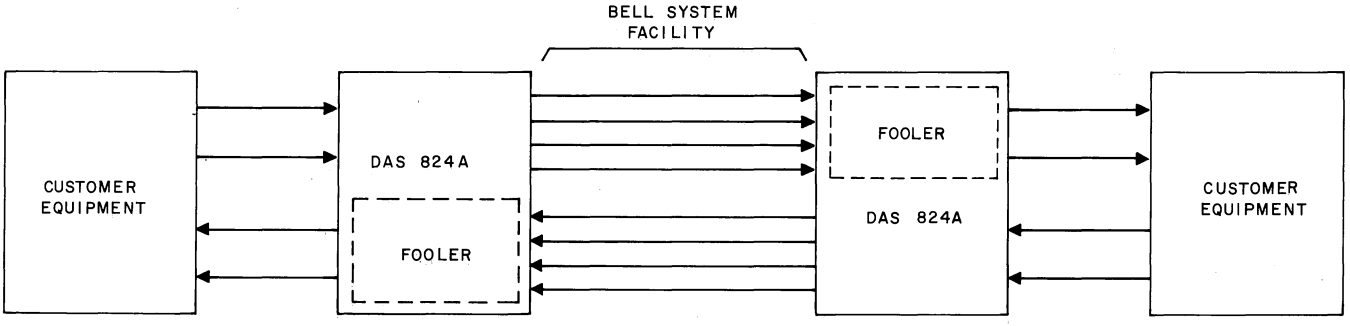


Fig. 3—Option Y Station Arrangement

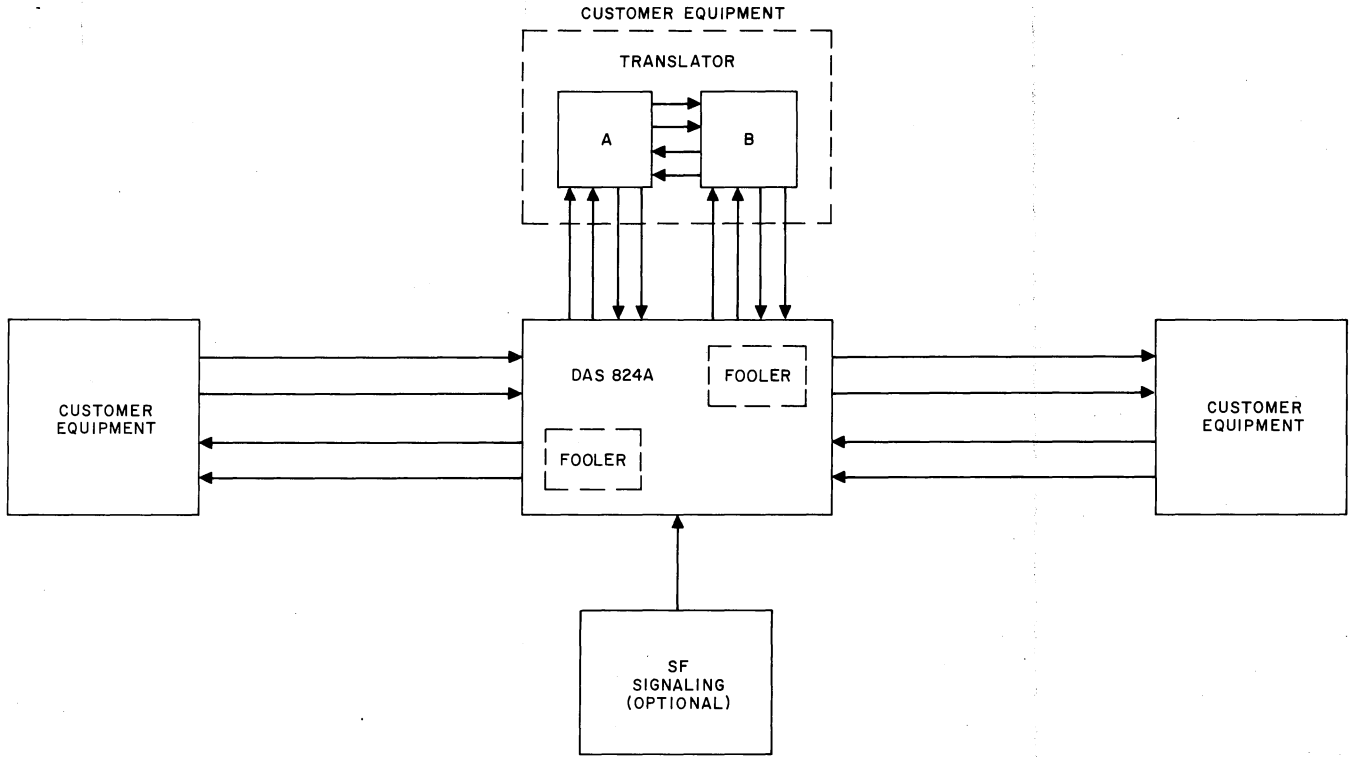


Fig. 4—Option X Station Arrangement

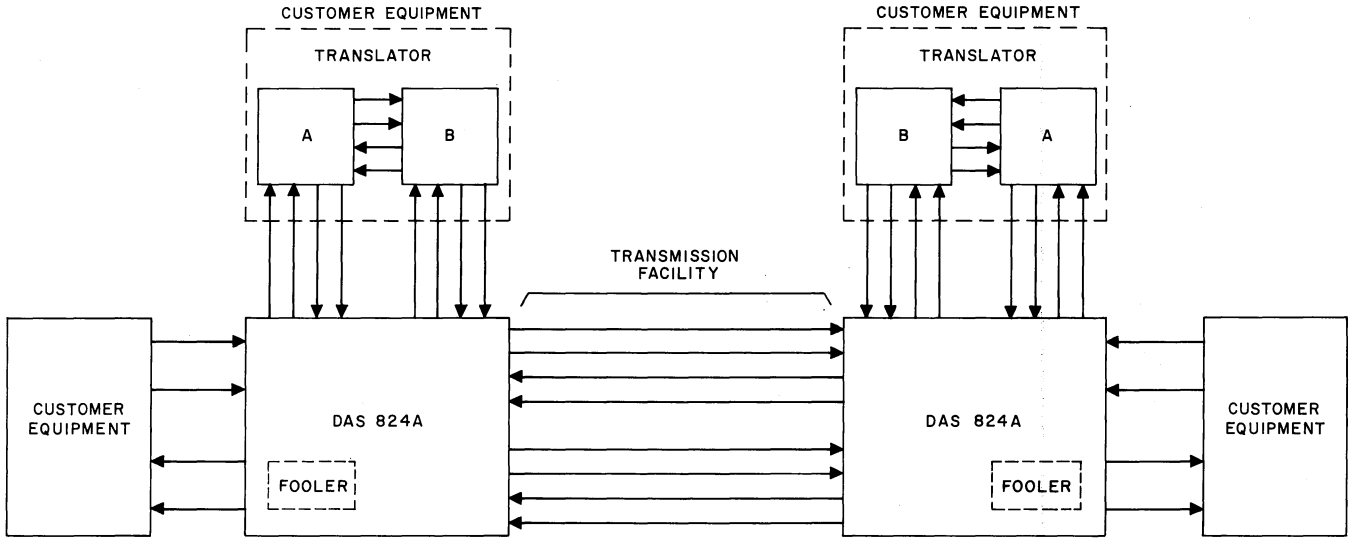


Fig. 5—Option W Station Arrangement

2.07 ***Option V*** provides the customer with a contact closure when digital signals are being received and with another contact closure when digital signals are being transmitted. This contact closure is necessary to activate switching on the customer's side of the interface when signal format conversion is used (Fig. 6).

STRAPPING PROCEDURE

2.08 ***To remove the option card:***

(a) Remove the circuit pack retaining bar by unscrewing the two retaining bar mounting screws which fasten it to the front of the unit (Fig. 1.)

(b) Pull out the option card (CP AR282).

2.09 "Set" all strapping clips necessary for the desired option. (Refer to the appropriate option strapping table.)

2.10 ***To install a strap:***

(a) Loosen each screw on the two terminals that are to be strapped together.

(b) Slide the slotted end of the clip under one screwhead and the other end of the clip under the remaining screwhead.

(c) Tighten both screws (Fig. 7).

2.11 When all straps necessary for the desired option have been installed, carefully slide the option card back into the set and fasten the circuit pack retaining bar to the unit with the retaining bar mounting screws.

Note: Be very careful when sliding the option card back into the set. Make certain that the circuit pack makes proper connections within the unit.

3. INSTALLATION

GENERAL

3.01 The 824A1 Data Recognizer must obtain its operating power from some external source. When installed in a 303-type Data Station, the 824A1 obtains operating power from the associated DAS 806.

3.02 When an 824A-type Data Recognizer is to be used as an independent unit, DAS 824A2

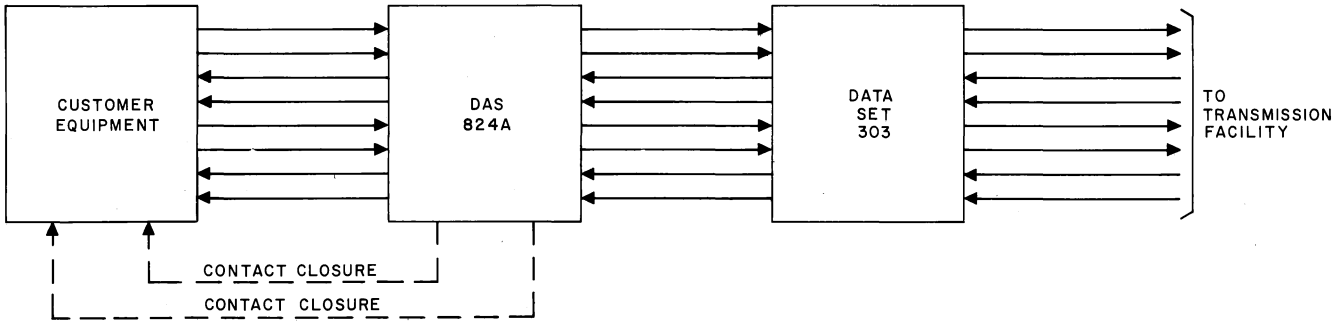


Fig. 6—Option V Station Arrangement

TABLE A

OPTION Z STRAPPING*

STRAP TERMINAL	TO TERMINAL
A1	A2
B1	B2
D1	D2
E2	E3
F1	F2
G1	G2
L1	L2
M1	M2
N1	N2
P1	P2
R1	R2
S1	S2

* Before strapping option, "open" ***all*** previously installed clips.

is used. A power supply (26A Power Unit) is included in DAS 824A2. When two DAS's 824A-type are used independently but are installed together, one must be an 824A1 and the other an 824A2. The 824A2 supplies operating power to both data recognizers.

3.03 The DAS 824A-type may be either cabinet- or rack-mounted. Refer to Table H for mounting bracket information.

MECHANICAL ASSEMBLY

3.04 DAS 824A1 is mounted adjacent to DAS 806 or DAS 824A2 in the same horizontal mounting space. Two mounting bars (P46M668) and eight screws, supplied as part of the 87-type mounting brackets, are used to fasten the two sets together (Fig. 8). After the two sets have been connected together, the appropriate mounting brackets (refer to Table H) are attached and the sets are mounted on the relay rack or in the cabinet.

3.05 DAS 824A2 can be mounted as an independent unit. Refer to Table H for the mounting brackets required.

TABLE B

OPTION Y STRAPPING*

STRAP TERMINAL	TO TERMINAL
A1	A2
B1	B2
D1	D2
E2	E3
F1	F2
G1	G2
H1	H2
J1	J2
L1	L2
M1	M2
N1	N2
P1	P2
R1	R2
S1	S2

* Before strapping option, "open" ***all*** previously installed clips.

3.06 Additional mounting information is contained in the sections entitled Wideband Data Station Using Data Set 303-Type, Description and Operation (593-800-100), and Wideband Data Station Using Data Set 303-Type, Installation and Connections (593-800-200).

> ***Note:*** In these sections, the 824A1 Data Recognizer is mounted adjacent to DAS 806 in place of Data Set 404B1.

CONNECTIONS

3.07 Remove both rear covers by unscrewing the four corner screws on each cover.

3.08 All connections to DAS 824A-type are made at the rear of the unit (Fig. 9 and 10).

3.09 The cable assembly (P95M090) that connects the data recognizer to its power source is factory-installed.

TABLE C

OPTION X STRAPPING*†

STRAP TERMINAL	TO TERMINAL
C1‡	C2‡
D2	D3
E1	E2
F2	F3
G2	G3
H1‡	H2‡
J1‡	J2‡
K1‡	K2‡
L2	L3
M2	M3
N2	N3
P2	P3
R2	R3
S2	S3

* Before strapping option, "open" ***all*** previously installed clips.

† If SF signaling is not used, the terminals (on TB2) shown in Table D must be wired together in addition to the option X strapping shown in Table C.

‡ To disable the "fooler," these clips must remain "open."

TABLE D

ADDITIONAL OPTION X WIRING WHEN SF SIGNALING IS NOT USED

CONNECT TB2 TERMINAL*	TO TB2 TERMINAL
14	15
16	17
18	19
20	21

* Use insulated strapping wire.

TABLE E

OPTION W STRAPPING*

STRAP TERMINAL	TO TERMINAL
A1	A2
B1	B2
D2	D3
E2	E3
F1	F2
G1	G2
H1†	H2†
J1†	J2†
L1	L2
M2	M3
N1	N2
P1	P2
R1	R2
S1	S2

* Before strapping option, "open" ***all*** previously installed clips.

† To disable the "fooler," these clips must remain "open."

3.10 Power is supplied to DAS 824A1 by the 26A Power Unit which is part of the adjacent-mounted DAS 806 or DAS 824A2. The factory-installed power cable assembly (P95M090) provides the connection between DAS 824A1 and the 26A Power Unit.

Note: The power cable assembly is a three-conductor cable with a four-prong plug. Two plug prongs share a conductor.

3.11 A four-prong power receptacle (J7) is located on the right rear apron of DAS 824A1 and provides access to the output of the 26A Power Unit. Power is supplied to the attached DAS 806 or DAS 824A2 by means of this receptacle. The factory-installed power cable assembly on DAS 806 or DAS 824A2 provides the connection to the power receptacle. Refer to Fig. 11.

TABLE F

OPTION V STRAPPING*†

STRAP TERMINAL	TO TERMINAL
A1	A2
B1	B2
D1	D2
E2	E3
F1	F2
G1	G2
M1	M2
N1	N2
P2	P4
R2	R4

* Before strapping option, "open" ***all*** previously installed clips.

† To complete the relay contact paths, the terminals (on TB1) shown in Table G must be wired together in addition to the option board strapping shown in Table F.

TABLE G

ADDITIONAL OPTION V WIRING

CONNECT TB1 TERMINAL	TO TB1 TERMINAL
30	31
32	33
35	36
37	38

3.12 DAS 824A2 has its own power supply (26A Power Unit). A four-prong receptacle, accessible at the rear of the unit, provides the necessary operating power (+18 vdc, -18 vdc, and ground) for the data recognizer. The factory-installed power cable assembly (P95M090) provides the connection to the power unit output jack.

Note: The power cable assembly is a three-conductor cable with a four-prong plug. Two prongs of the plug share a conductor.

3.13 All interconnecting transmission cables connect to terminal boards TB1 and TB2. Specific terminal connections depend on the option installed. All interconnecting cables and connections are shown in the appropriate connection diagram. Depending on the option installed, refer to Fig. 12, 13, 14, or 15.

3.14 After all terminal board and power cable (P95M090) connections have been made, replace the rear covers and secure with the screws supplied.

3.15 Power must be supplied to the 26A Power Unit of the 824A2 Data Recognizer from the customer-provided, three-wire, 117-vac power outlet. Connection is made with the power cord (P95M028) supplied.

4. REFERENCES

SECTION	TITLE
590-010-200	Data Sets, General Installation and Connection Information
593-800-100	Wideband Data Station Using Data Set 303-Type, Description and Operation
593-800-200	Wideband Data Station Using Data Set 303-Type, Installation and Connections
598-060-100	Data Auxiliary Set 824A-Type, 50 Kilobit Data Recognizer, Description
598-060-300	Data Auxiliary Set 824A-Type, 50 Kilobit Data Recognizer, Maintenance
598-060-500	Data Auxiliary Set 824A-Type, 50 Kilobit Data Recognizer, Test Procedures

SD- and CD-1D134-01

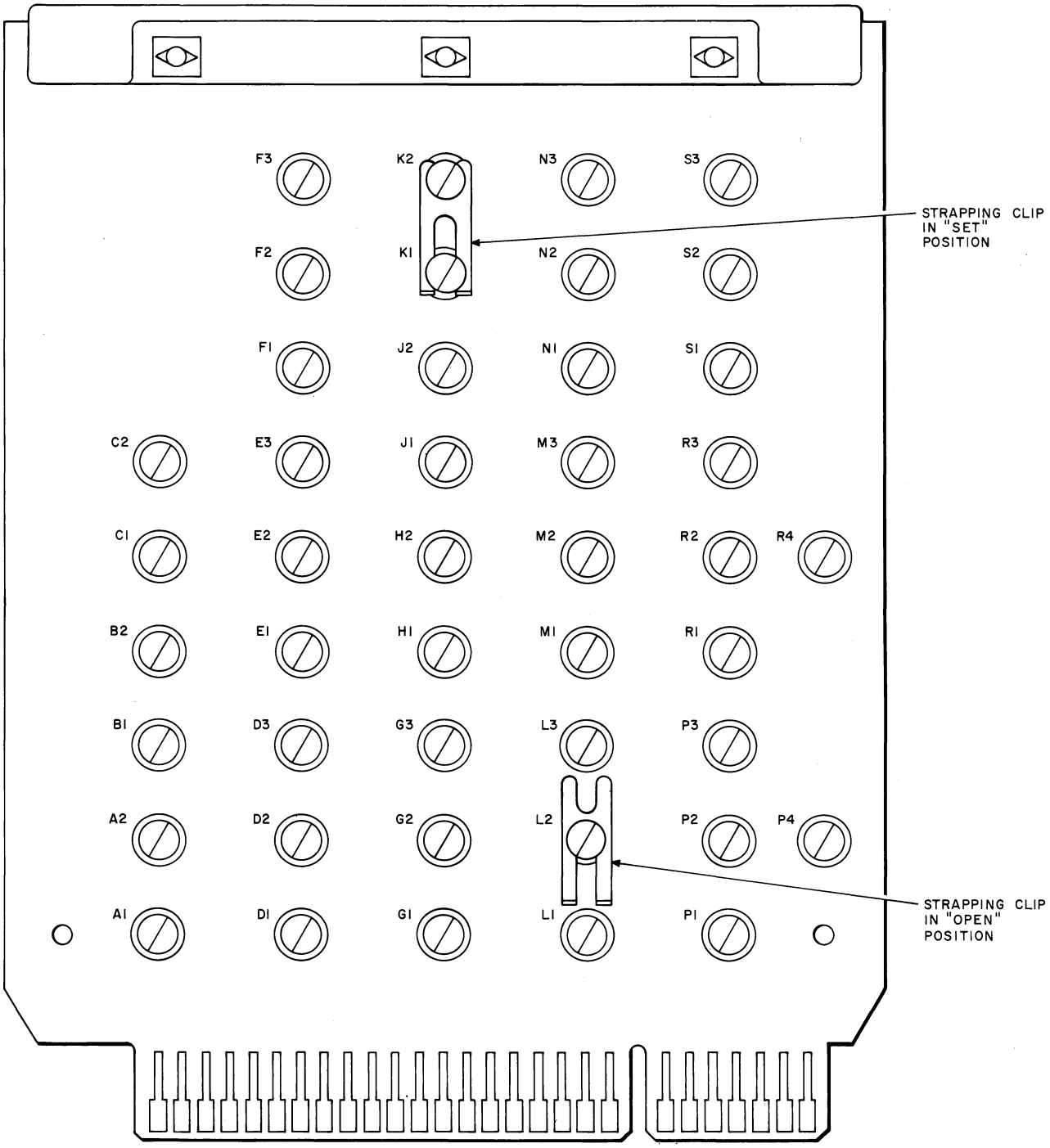


Fig. 7—Option Card (CP AR282) With Strapping Clip Positions Shown

TABLE H

DAS 824A-TYPE MOUNTING

TYPE OF MOUNTING	MOUNTING BRACKETS REQUIRED			
	SINGLE 824		TWO 824 SETS OR ONE 824 AND ONE 806*	
	CODE	NUMBER REQUIRED	CODE	NUMBER REQUIRED
No. 5 Crossbar Type Frame (23-Inch Mounting Plates)	87B	1	87D	1
KS-20018 Type Cabinet (23-Inch Mounting Plates)	87B	1	87D	1
KS-20018 Type Cabinet (11-3/4 Inch Mounting Plates)	87S	1	–	–
Bulb Angle Type Frame (23-Inch Mounting Plates)	87F	1	87H	1
Bulb Angle Type Frame (19-Inch Mounting Plates)	87K	1	–	–
KS-20093 Type Cabinet (25-Inch Mounting Plates)	87N	1	87R	1

* Units mounted adjacent to each other in the same horizontal mounting space

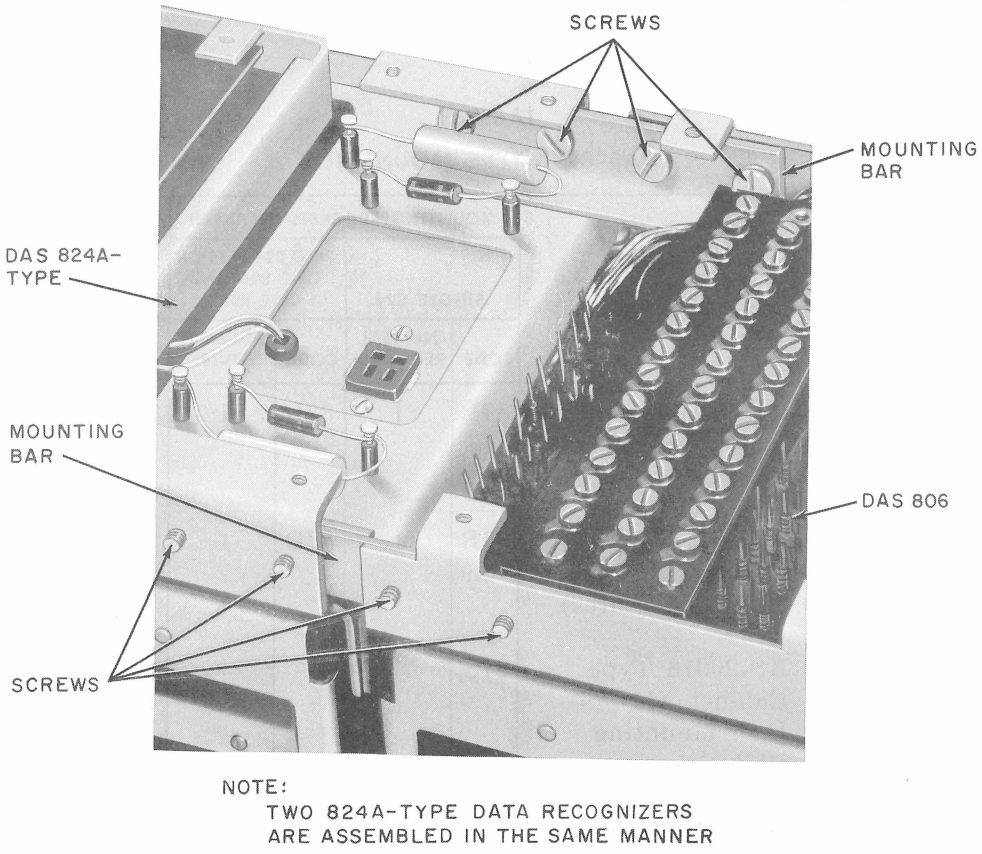


Fig. 8—Assembly of Data Auxiliary Set 824A-Type and Data Auxiliary Set 806B (Data Auxiliary Set 824A1 is Shown)

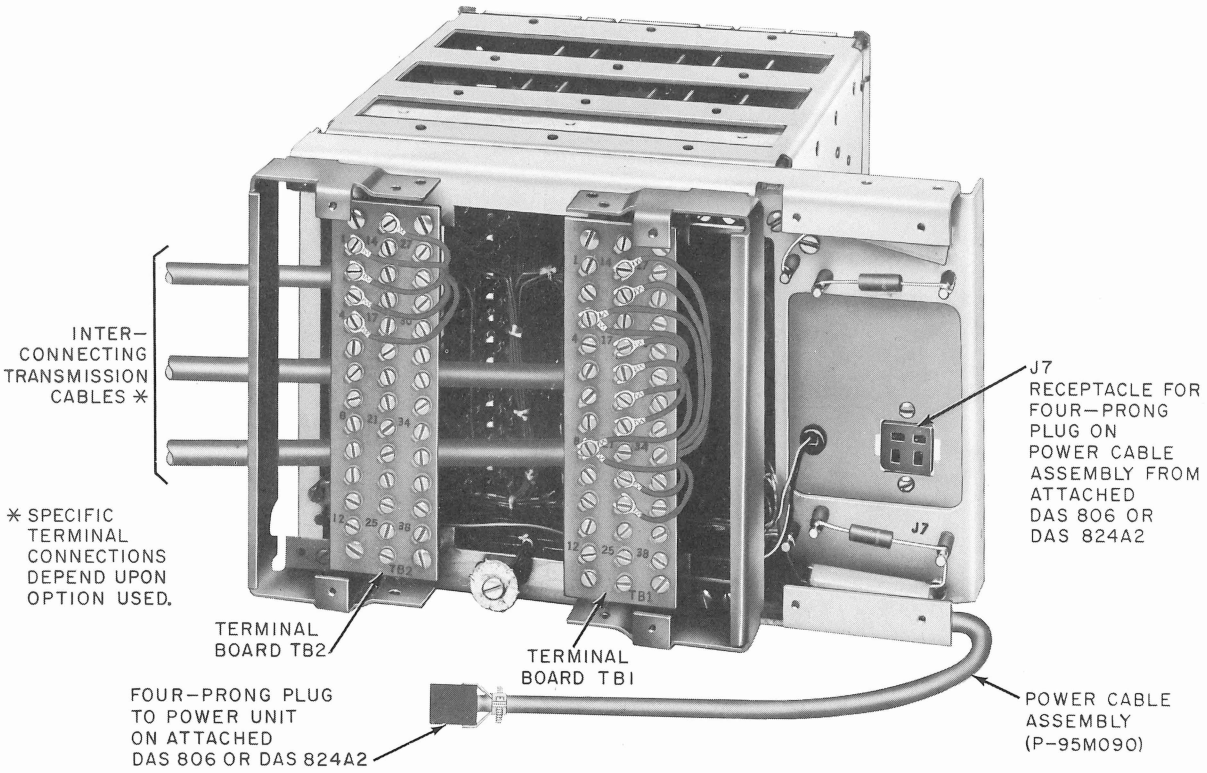


Fig. 9—Data Auxiliary Set 824A1, Rear View (Covers Removed)

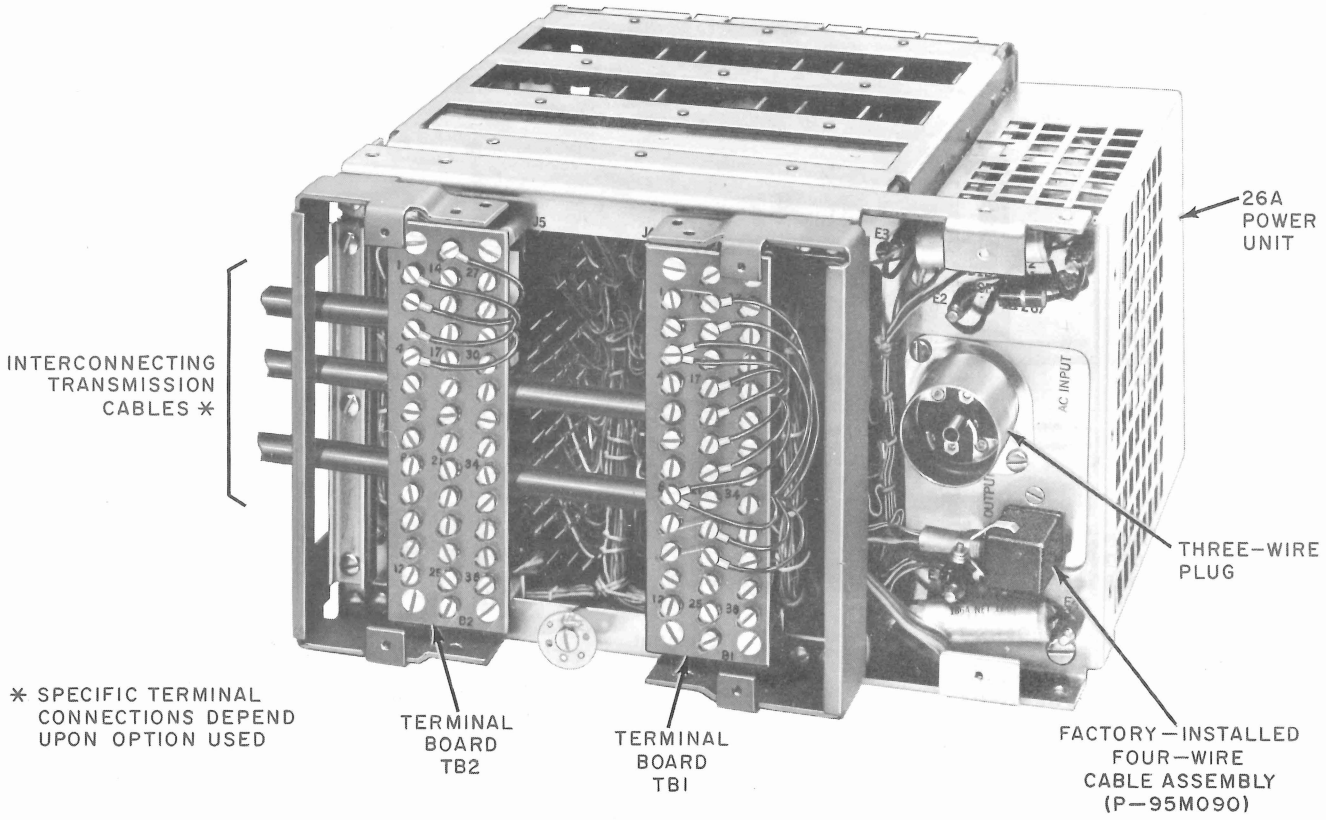


Fig. 10—Data Auxiliary Set 824A2, Rear View (Covers Removed)

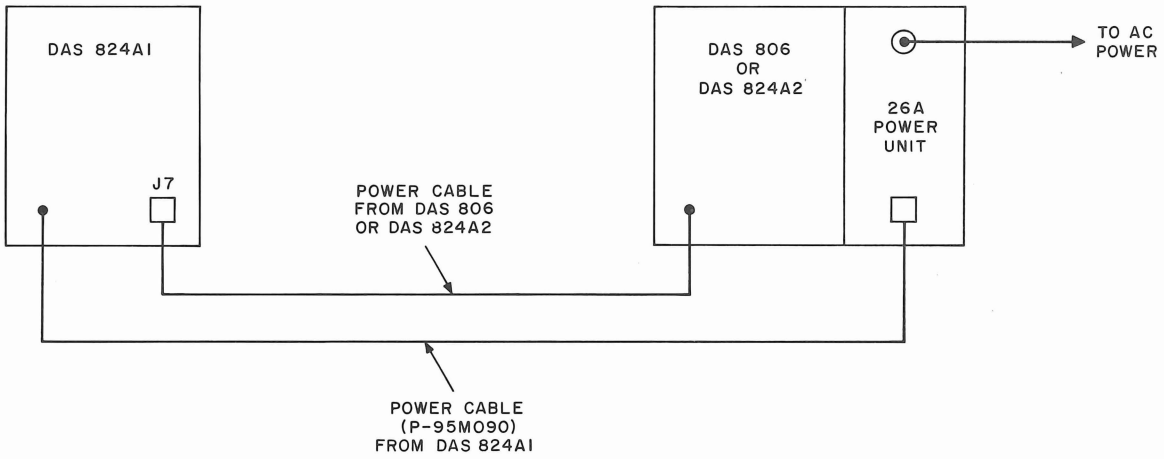
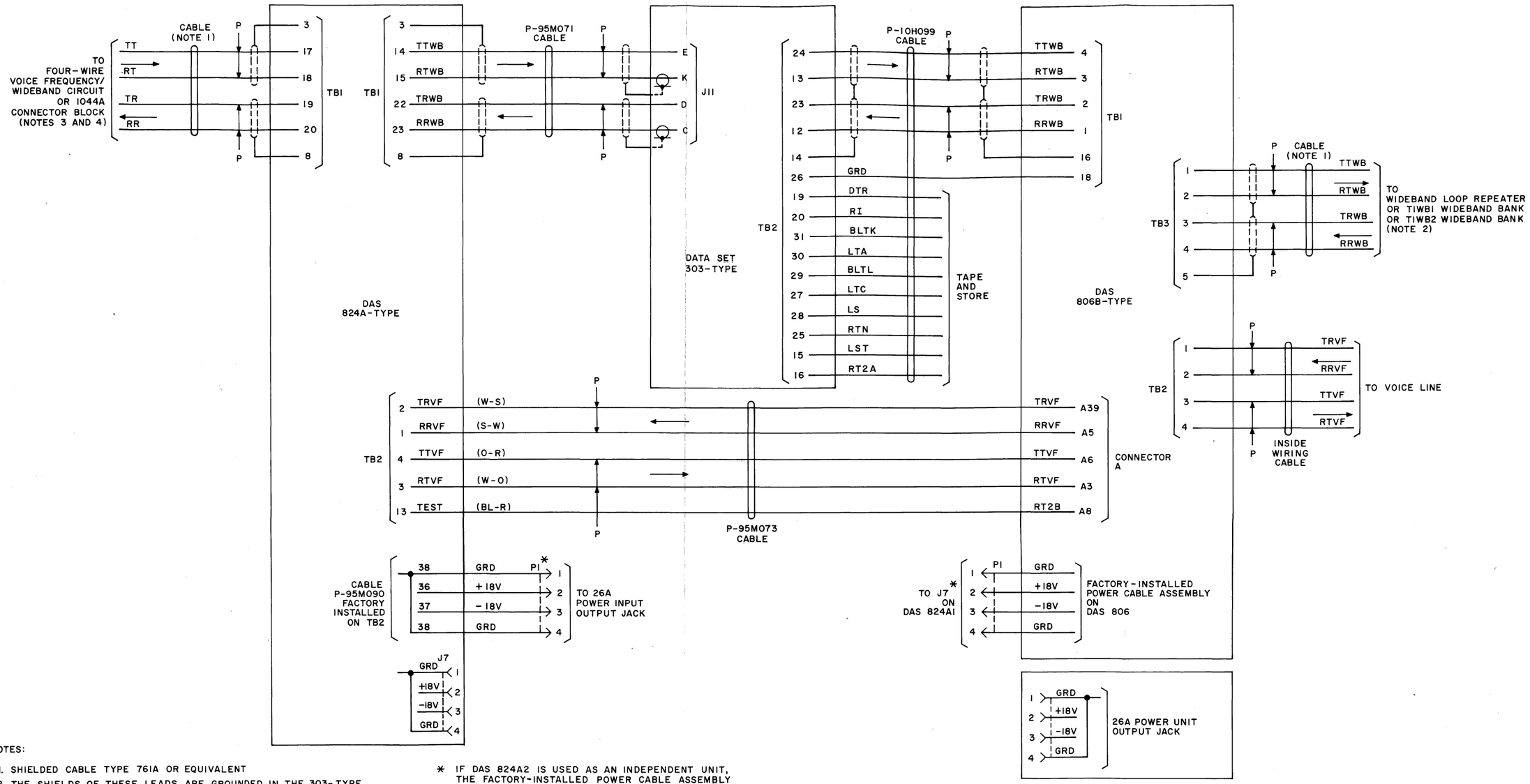


Fig. 11—Power Cable Connections Between Data Auxiliary Set 824A1 and Data Auxiliary Set 806 or Data Auxiliary Set 824A2

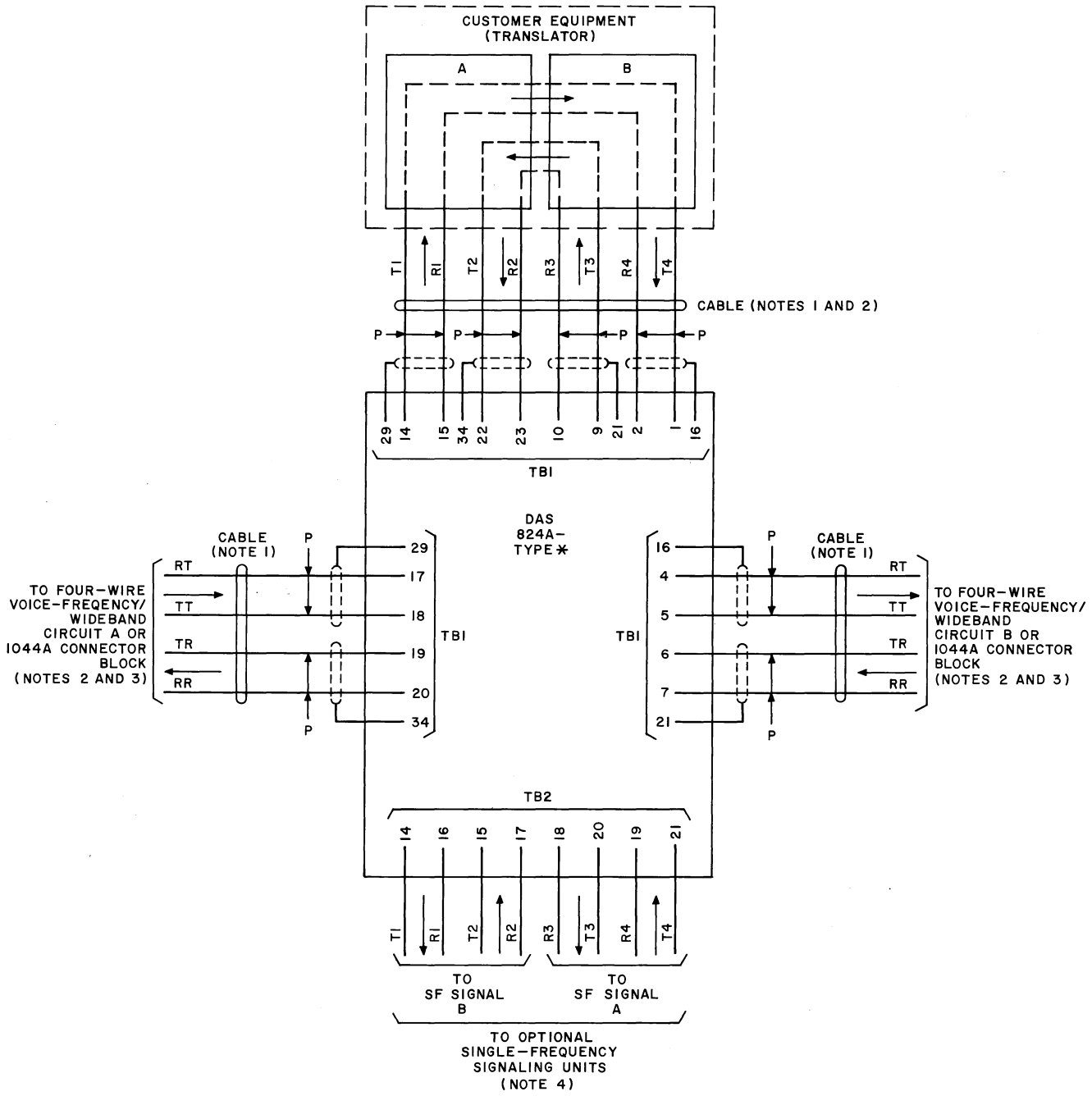


NOTES:

1. SHIELDED CABLE TYPE 761A OR EQUIVALENT
2. THE SHIELDS OF THESE LEADS ARE GROUNDED IN THE 303-TYPE DATA SET AND SHALL BE LEFT UNGROUNDED AT FAR END. DO NOT CONNECT GROUND TO TERMINAL 5 OF TB3.
3. SHIELDS AT FAR END OF THESE CABLES SHOULD NOT BE GROUNDED.
4. CONNECTION MAY BE MADE DIRECTLY TO CUSTOMER EQUIPMENT, OR TO A 1044A CONNECTOR BLOCK THEN TO CUSTOMER EQUIPMENT (AS REQUIRED). USE CABLE P-95M072 FOR CONNECTING 824A TO CONNECTOR BLOCK.

* IF DAS 824A2 IS USED AS AN INDEPENDENT UNIT, THE FACTORY-INSTALLED POWER CABLE ASSEMBLY (P-95M090) ON DAS 824A2 CONNECTS TO THE POWER OUTPUT JACK ON THE ATTACHED 26A POWER UNIT.

Fig. 12—Connection Diagram For Use With Option Z or Option Y

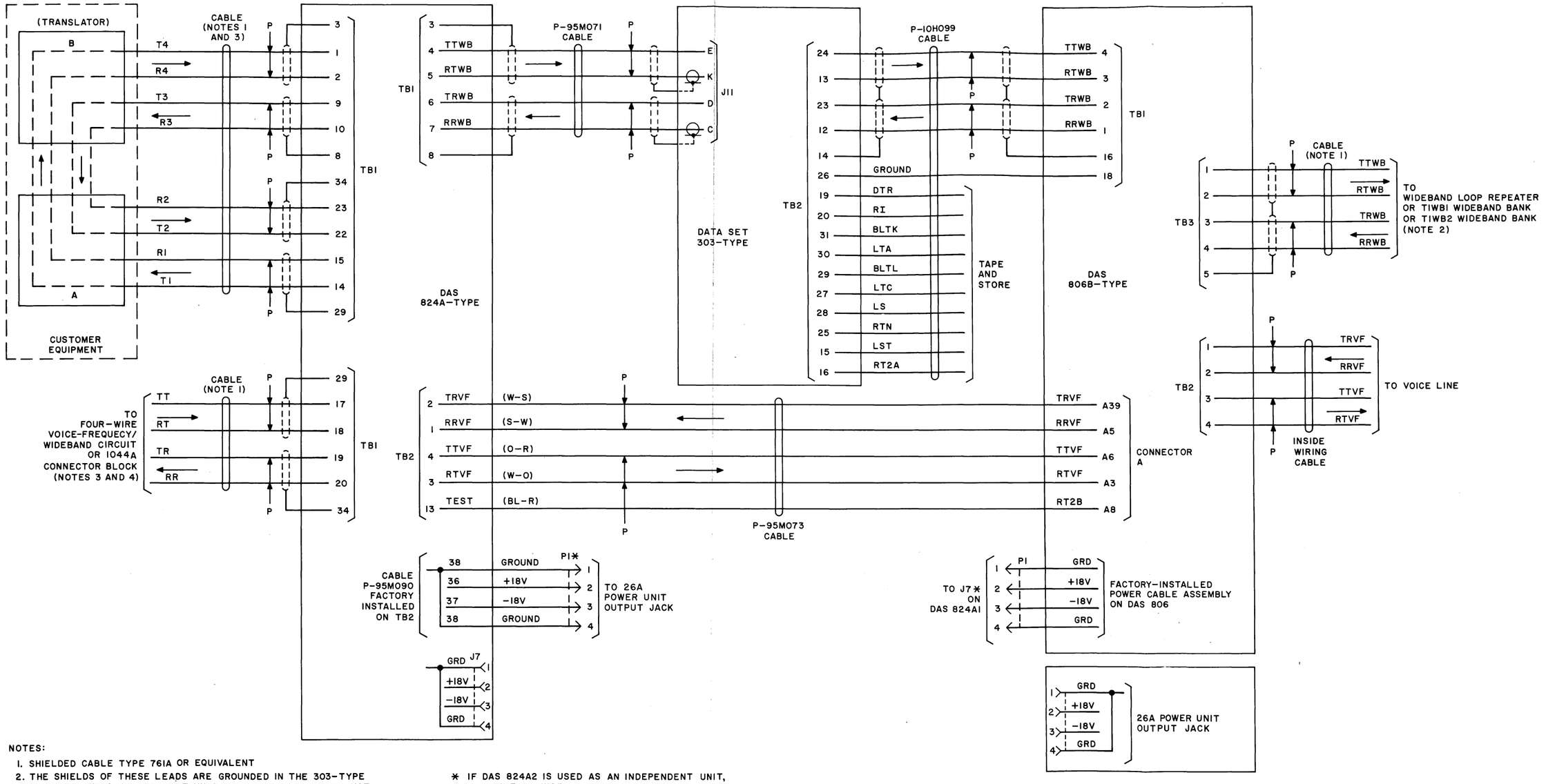


NOTES:

1. SHIELDED CABLE TYPE 761A OR EQUIVALENT
2. SHIELDS AT FAR END OF THESE CABLES SHOULD NOT BE GROUNDED.
3. CONNECTION MAY BE MADE DIRECTLY TO CUSTOMER EQUIPMENT OR TO A 1044A CONNECTOR BLOCK THEN TO CUSTOMER EQUIPMENT (AS REQUIRED). USE CABLE P-95M072 FOR CONNECTING 824A TO CONNECTOR BLOCK.
4. IF SINGLE-FREQUENCY SIGNALING IS NOT USED, THE APPROPRIATE TERMINALS ON TB2 MUST BE WIRED TOGETHER. (SEE TEXT.)

* POWER SUPPLY CONNECTIONS ARE AS DESCRIBED IN THE TEXT AND AS SHOWN IN THE CONNECTION DIAGRAMS FOR THE OTHER OPTIONS.

Fig. 13—Connection Diagram For Use With Option X

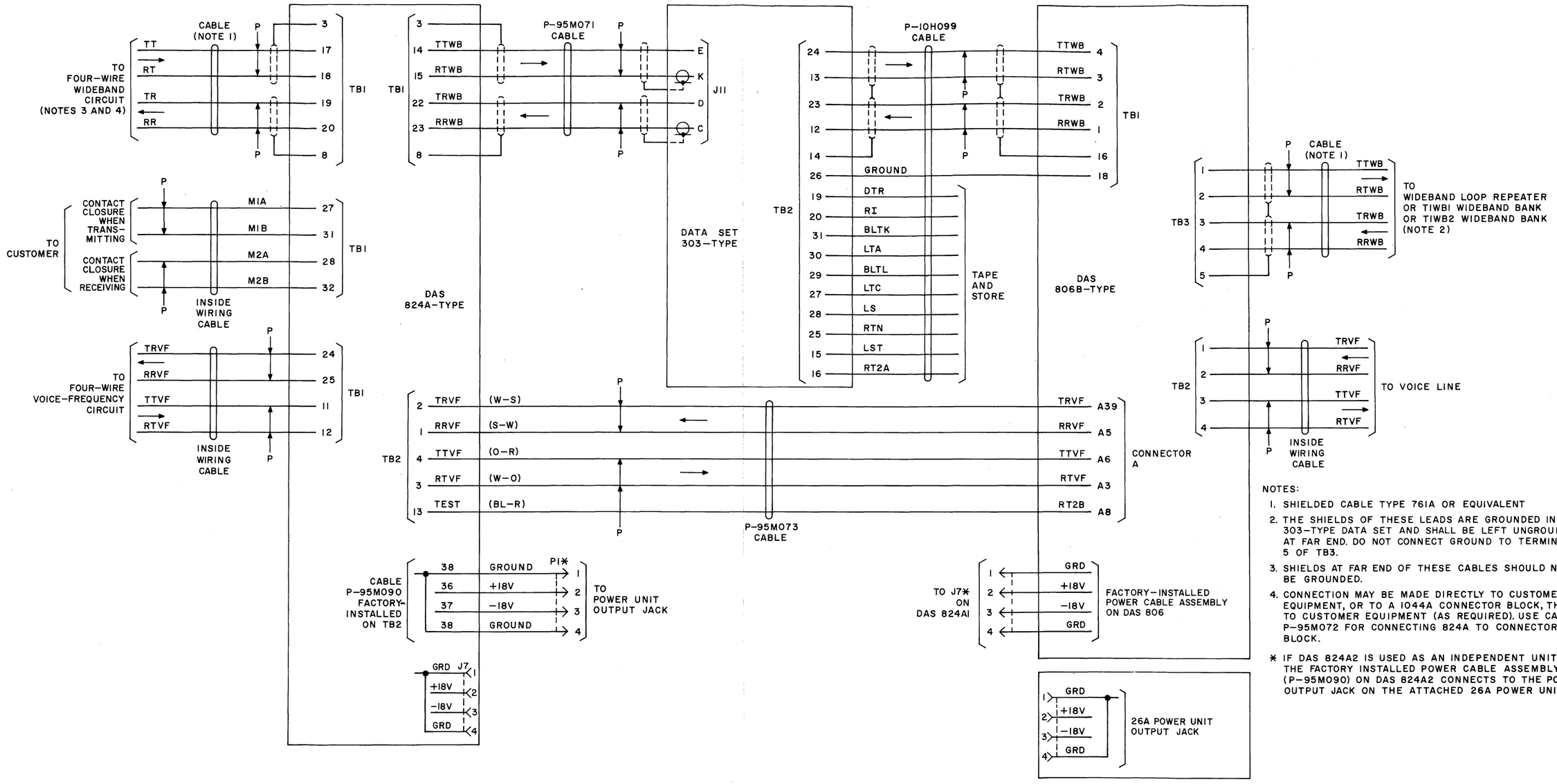


NOTES:

1. SHIELDED CABLE TYPE 761A OR EQUIVALENT
2. THE SHIELDS OF THESE LEADS ARE GROUNDED IN THE 303-TYPE DATA SET AND SHALL BE LEFT UNGROUNDED AT FAR END. DO NOT CONNECT GROUND TO TERMINAL 5 OF TB3.
3. SHIELDS AT FAR END OF THESE CABLES SHOULD NOT BE GROUNDED.
4. CONNECTION MAY BE MADE DIRECTLY TO CUSTOMER EQUIPMENT, OR TO A 1044A CONNECTOR BLOCK THEN TO CUSTOMER EQUIPMENT (AS REQUIRED). USE CABLE P-95M072 FOR CONNECTING 824A TO CONNECTOR BLOCK.

* IF DAS 824A2 IS USED AS AN INDEPENDENT UNIT, THE FACTORY-INSTALLED POWER CABLE ASSEMBLY (P95M090) ON DAS 824A2 CONNECTS TO THE POWER OUTPUT JACK ON THE ATTACHED 26A POWER UNIT.

Fig. 14—Connection Diagram For Use With Option W



NOTES:

1. SHIELDED CABLE TYPE 761A OR EQUIVALENT
2. THE SHIELDS OF THESE LEADS ARE GROUNDED IN THE 303-TYPE DATA SET AND SHALL BE LEFT UNGROUNDED AT FAR END. DO NOT CONNECT GROUND TO TERMINAL 5 OF TB3.
3. SHIELDS AT FAR END OF THESE CABLES SHOULD NOT BE GROUNDED.
4. CONNECTION MAY BE MADE DIRECTLY TO CUSTOMER EQUIPMENT, OR TO A 1044A CONNECTOR BLOCK, THEN TO CUSTOMER EQUIPMENT (AS REQUIRED). USE CABLE P-95M072 FOR CONNECTING 824A TO CONNECTOR BLOCK.

* IF DAS 824A2 IS USED AS AN INDEPENDENT UNIT, THE FACTORY INSTALLED POWER CABLE ASSEMBLY (P-95M090) ON DAS 824A2 CONNECTS TO THE POWER OUTPUT JACK ON THE ATTACHED 26A POWER UNIT.

Fig. 15—Connection Diagram For Use With Option V