TECHNICAL MANUAL

DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL AIR TRAFFIC CONTROL CENTRAL AN/TSW-7A (NSN 5820-01-018-1246)

This copy is a reprint which includes current pages from Change 1.

HEADQUARTERS, DEPARTMENT OF THE ARMY

JUNE 1979

WARNING

High voltage is used in the operation of this equipment. Death on contact may result if personnel fail to observe safety precautions. Learn the areas containing high voltage in each piece of equipment. Be careful not to contact high-voltage connections when installing, testing, troubleshooting or operating this equipment.

CHANGE
NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC 22 August 1983

Direct Support and General Support
Maintenance Manual
A1R TRAFFIC CONTROL CENTRAL
AN/TSW-7A
(NSN 5820-01-018-1246

TM 11-5895-801-34, June 1979 is changed as follows:
1. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin.
2. Added or revised illustrations are indicated by a vertical bar next to the figure number.

REMOVE	*INSERT*
None	A and B
i through iv	through iv
1-1	1-1/1-2(Blank)
2-1 through 2-8	2-1 through 2-9
3-1 through 3-6	3-1 through 3-6
3-19 through 3-22	3-19 through 3-22
None	3-22.1
3-23 through 3-29	3-23 through 3-29
4-3 through 4-10	4-3 through 4-10
5-1 through 5-4	5-1 through 5-4
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A-1 through A-3	A-1
FO-2 through FO-5	FO-2 through FO-5
FO-7 and FO-8	FO-7 and FO-8
FO-13	FO-13
FO-16	FO-16
FO-18 through FO-20	FO-18 through FO-20
FO-20.1	FO-20.1
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FO-37 through FO-48	FO-37 through FO-48
FO-53 through FO-57	FO-53 through FO-57
FO-60 through FO-69	FO-60 through FO-69

3. File this change sheet in front of the manual for reference purposes.

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:
ROBERT M. JOYCE
Major General, United States Army
The Adjutant General

Distribution:

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5 SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTR1CAL SHOCK

1 DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL

2 IF POSSIBLE, TURN OFF THE ELECTR1CAL POWER

3 IF YOU CANNOT TURN OFF THE ELECTR1CAL POWER, PULL, PUSH, OR LIFT THE PERSON TO SAFETY USING A DRY WOODEN POLE OR A DRY ROPE OR SOME OTHER INSULATING MATER1AL

4 SEND FOR HELP AS SOON AS POSSIBLE

5 AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTR1CAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION

WARNING

During the battery charge cycle, HYDROGEN GAS is emitted and could cause an explosion if not properly vented. Be sure that the battery compartment ventilation blower is operating properly any time that the battery is being charged. Also be sure that no spark or flame is allowed in the vicinity of the battery compartment.

The following components of the AN/TSW-7A Air Traffic Control Central are either too heavy and/or too bulky for handling by a single person; two or more people working together are required for their handling.

1. Shelter jacks
2. Power cables
3. Shelter platform and stairway assembly
4. Environmental Control Unit (ECU)
5. ECU plenum
6. HF Antenna case
7. Multifuel heater

Technical Manual

No. 11-5895-801-34

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 19 June 1979

DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL A1R TRAFFIC CONTROL CENTRAL AN/TSW-7A (NSN 5820-01-018-1246)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703.

In either case, a reply will be furnished directly to you.

LIST OF ILLUSTRATIONS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

This manual contains description and data, functioning of equipment, direct support (DS) maintenance instructions, and general support (GS) maintenance instructions for the Air Traffic Control Central AN/TSW-7A facility. These instructions consist of bench tests, troubleshooting, adjustment, alinement, removal, replacement, repair, disassembly, and assembly. Detailed functional descriptions of the facility operation are contained in Chapter 2.

1-2. Consolidated Index of Army Publications and Blank Forms

Refer to the latest issue of DA Pam 310-1 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

1-3. Maintenance Forms, Records, and Reports

a. Reports of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System (TAMMS).

b. Report of Packaging and Handling Deficiencies. Fill out and forward SF 364 (Report of Discrepancies (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73/AFR 400-54/MCO 4430.3E.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33B/AFR 75-18/MCO P4610.19C/DLAR 4500.15.

1-4. Destruction of Army Electronics Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

1-5. Administrative Storage

Instructions for administrative storage of equipment are in TM 740-90-1.

1-6. Reporting Equipment Improvement Recommendations (EIR)

If your Air Traffic Control Central AN/TSW-7A needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Tell us why a procedure is hard to per- form. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications- Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. We'll send you a reply.

Section II. DESCR1PTION AND DATA

1-7. Description

Refer to TM 11-5895-801-10, operator's manual, and TM 11-5895-801-20, organizational maintenance manual for general descriptions and illustrations of the facility.

1-8. Tabulated Data

Refer to TM 11-5895-801-10, operator's manual, for the performance data for the facility.

CHAPTER 2
FUNCTIONING OF A1R TRAFFIC CONTROL CENTRAL AN/TSW-7A

2-1. General

The tower is used to control aircraft under visual flight rules (VFR), on the ground, in the air, and enroute or in over-flight within a designated airport traffic area or airfield. It provides the same functions that a permanent air traffic control tower provides. It also provides the additional functions of two-way radio communications service to aircraft generally within radio line-of-sight, weather reporting pilot-to-forecaster service and relaying flight data and military operations messages.

a. The tower contains three console positions (local, data, and ground controller) and supervisory monitoring facilities for each of these positions. In addition, a separate supervisor's control unit provides a capability for the supervisor to selectively override any or all of the three controller positions. Each of the controller positions has ready access to the following operational systems:

(1) Three VHF/FM, VHF/AM, and UHF/AM multi-frequency communications channels.

(2) VHF/FM, VHF/AM, and UHF/AM guard channel monitor receivers.

(3) HF multi-channel communications system.

(4) Voice security equipment used with VHF/FM-2, UHF/AM-1 and VHF/AM-3.

(5) Seven telephone dial ring down landline circuits and three direct line circuits.

(6) Two wind velocity and direction indicators.

(7) One 24 hour clock.

(8) Two aneroid altimeters.

(9) Flight progress data strips.

(10) Navaid monitor.

(11) Two signal light guns.

(12) Portable aneroid barometer (altimeter calibration reference)

(13) Recording thermometer.

b. Equipment not required at each controller position but which should be readily available is as follows:

(1) Flight progress data strip holders located on the data controller console.

(2) Navaid monitor located on the ground controller console.

(3) Voice security and tactical emergency radio set and controls located at each controller console position.

(4) Filter bypass controls located at the local controller console. This allows a filter to be bypassed when rapid changes in operating frequency are necessary.

2-2. Functional Operation

a. General. A block diagram, shown in figure FO-2, shows the operational relationship of the equipment of AN/TSW-7A. The functions of the equipment are given in the following paragraphs.

b. UHF/AM Transceiver Channels (fig. FO-3).

(1) The UHF/AM capability consists of three RT-1167/ARC-164 transceivers which can provide three different frequencies simultaneously. Each transceiver is mounted in a slide tray which contains mounting hardware and test jacks. The transceivers contain a fixed tuned guard receiver, a tunable main receiver, and a tunable transmitter that operate in the UHF frequency range of 225.00 to 399.95 MHz. Each transceiver has a highly selective, low insertion loss bandpass filter located at the output of the transmitter and the input to the receiver. The bandpass filter is tuned to the transmitting and receiving frequency of the associated transceiver to minimize the voltage standing wave ratio (vswr). All signals are transmitted and received by the associated UHF element of the UHF/VHF collinear antenna.

(2) A signal picked up by a UHF element of the antenna is coupled through the signal entry panel to the bandpass filter. The action of the bandpass filter improves the front end selectivity of the receiver and provides up to 60 dB isolation at frequency separations of :1.D%. The output of the bandpass filter is applied to the input of the receiver where it is demodulated and routed to the communications distribution box. The communications distribution box couples the audio to its associated speaker amplifier and the communications selector panels. Upon receipt of an audio signal, the communications distribution box also generates a signal that causes the associated CALL lamps on the communications selector panels to light. The communications selector panel contains switches with which the controller can select any one or combination of the 10 installed transceivers. He may transmit by microphone and receive over a

speaker, or he may transmit and receive by microphone/headset.

(3) To transmit over a UHF/AM transceiver channel, the controller selects the particular radio to be used. When the selection is made, the associated IN-USE lamps on the communications selector panels light (all three). When the microphone/headset or microphone push-to-talk (PPT) switch is pressed and held, the KEY lamp on the communications selector panel lights and the controller is now able to transmit over a UHF/AM transceiver. The voice communication (audio signal) is amplified in the communications selector panel, transmitted to the communication distribution box and routed to the selected transceiver. The modulated voice communication output of the transmitter is coupled through the bandpass filter which restricts the bandwidth of the modulated voice signal to prevent interference to nearby UHF channels. The output from the bandpass filter is coupled through the signal entry panel to its associated UHF element of the UHF/VHF collinear antenna and transmitted.

(4) The UHF/AM-1, UHF/AM-2, and UHF/AM-3 transceivers are identical except that UHF/AM-1 may be used in secure voice mode through the crypto assembly.

(5) The UHF/AM-2 transceiver is identical to the UHF/AM-1 and UHF/AM-3 transceivers with the exception of the addition of the bandpass filter bypass relay K1. When energized by the controller, K1 bypasses the UHF/AM-2 transceiver bandpass filter to permit voice communications over the tunable channel.

c. VHF/AM Transceivers (fig. FO-3). The VHF/AM transceiver operation is identical to the UHF/AM transceivers with the exception that they are tuned to the VHF frequency range of 116.000 to 149.975 MHz, and VHF/AM-3 can be used in the secure voice mode.

d. VHF/FM Transceivers (fig. FO-3). The VHF/FM transceiver operation is similar to that of the UHF/AM transceivers with the following exceptions:

(1) *VHF/FM frequency ravage*. The VHF/FM transceivers are tuned to the VHF frequency range of 30.00 to 75.95 MHz.

(2) *VHF/FM antenna couplers*. The VHF/FM transceivers transmit and receive through three whip antenna/couplers which are manually tuned to match the frequency of the tuned transceivers.

(3) *FM antenna tuning control.* The FM antenna tuning controls provide the controllers with a remote (inside the tower) tuning control for the three antenna/couplers (one mounted on the roof of the tower and two in the field). VHF/FM-2 can be used in the secure voice mode.

e. HF Transceiver (Fig. FO-3).

(1) The HF transceiver consists of one AN/ARC-102 radio set that transmits and receives in the frequency range of 2.000 to 29.999 MHz, Antenna Coupler CU-1658/A in a submersion-proof sealed case, a 32-foot (maximum) whip antenna mounted on the case, and an HF control head mounted in the local controller's console. A signal picked up by the HFJ whip antenna is coupled through the antenna coupler and case which match the impedance of the whip antenna to the receiver. The output of the antenna coupler is coupled to the transceiver located on the skid platform. The demodulated audio signal is then routed through an impedance matching network in the HF storage cabinet. The signal enters the shelter at the signal entry panel and is routed to the communications distribution box. The communications distribution box couples the audio signal to its associated speaker amplifier and the communications selector panels. Upon receipt of an audio signal, the communications distribution box also generates a signal that lights the associated CALL lamps on the communications selector panels. The communications selector panels enable the controller to transmit by microphone and receive over speaker amplifier or transmit and receive over the microphone/headset, and monitor over the speaker amplifier.

(2) To transmit over the HF transceiver channel, a controller may elect either to transmit by microphone and receive by speaker amplifier or to transmit and receive over the microphone/headset at the communications selector panel. With one of these means selected, the associated IN-USE lamps on all three communications selector panels light. When the microphone/headset or microphone push-to-talk (PTT) switch is pressed and held, the KEY lamp on the communications selector panel lights and the controller can now transmit over the HF transceiver. The voice communication (audio signal) is amplified in the communications selector panel and patched to the appropriate lines in the communication distribution box and then through the signal entry panel to the HF transceiver. The am output of the transmitter is coupled from the HF cabinet to the antenna coupler. The transmitter also generates a sidetone which is applied to either the headset or the speaker amplifier to provide the controller with audible proof that the transmission was made. The antenna coupler automatically tunes to match the impedance of the whip antenna to the output impedance of the transmitter.

f. Wind Measuring Set. The wind measuring set provides wind direction and speed signals to two sets of wind direction and speed indicators located at the local and ground controllers positions of the console.

g. Navaid Monitor. The navaid monitor receives a navaid status signal over a telephone landline pair to actuate an audible alarm to indicate a navaid status failure. It also provides an emergency warning switch that; when manually activated, causes an audible alarm to sound at a remote facility to signify an emergency.

h. Telephone Equipment Group. The telephone equipment group consists of an interconnecting box, telephone circuit line relay, two control telephone lines, two handsets, seven landlines, three direct lines, a navaid monitor pair, and two emergency warning pairs (CB and LB). The telephone equipment group provides ground communications between the tower and external facilities. In addition, the 6 spare telephone lines are accessible on a panel located inside the shelter near the local controller's position. The telephone equipment group provides ground communications between the tower and external facilities. Communications are made by either landline or direct line circuits. Use of landlines permits communication by ringing or dialing circuits. Use of the direct lines permits direct emergency communication. These equipments provide telephone terminal facilities that can be coupled with two-wire local battery, common battery (manual or dial), and fourwire 20 Hz signaling field lines.

(1) *Direct line mode*. The local and ground controller positions each have a telephone control panel which contains three direct line switches and their respective indicator lamps. Before receiving a call, these switches are usually in the MON position (monitor by speaker/amplifier) and their respective indicator lamps are dimly lit. When a call is received by a direct line, through the interconnecting box and telephone circuit line relay, the respective indicator lamp is brightly lighted and the voice of the caller is heard over the D/L speaker/amplifier. If the controller chooses the HANDSET position of the switch, the speaker/amplifier becomes disabled and the handset is used for incoming and outgoing voice communications. If the controller chooses the PTT position of the switch, incoming voice communications will be heard over the speaker/amplifier, and the desk microphone or headset can be used for outgoing voice communications.

(2) Landline, local battery mode. The local and ground controllers normally have all seven landline switches on their respective telephone control panels in the OFF position. When no calls are being received, their respective indicator lamps are dimly lighted. When a call is received, the indicator lamp (on both control telephone line panels) located beside the respective landline switch flashes at a one second rate. If the BUZZER switch is in the ON position when a call is received, the buzzer will sound. A controller answers the call by setting his landline switch to the TALK position and using his handset to transmit and receive. If a controller does not answer the call within a minute, the call is cancelled, the indicator lamp stops flashing, and the buzzer stops. To initiate an outgoing call, a controller sets the landline switch briefly to the R1NG position and then to the TALK position. When the ring is answered, conversation may proceed as in the case of an incoming call.

(3) *Landline, common battery mode.* When the telephone equipment group is connected in this mode, a landline can be connected in one of the following types of operation: another landline installation similar to AN/TSW-7A, a control switchboard type office, or a central dial office. Incoming calls are handled the same way as in local battery mode. To initiate an outgoing call on a landline connected to an installation similar to AN/TSW-7A, set the landline switch to the TALK position and, when answered, proceed with the conversation as in the case of an incoming call. To initiate an outgoing call on a landline connected to a central switchboard type office, set the landline switch to the TALK position. When a switchboard operator answers, ask for the number you want, wait for your party to answer, and proceed with the conversation as in the case of an incoming call. To initiate an outgoing call on a landline connected to a central dial office, set the landline switch to the TALK position, dial the desired number, and when the party answers, proceed with conversation as in the case of an incoming call.

2-3. Typical Audio Distribution and Control (fig. FO-4)

a. General Control Concept. The AN/TSW-7A employs a digital system for the control and distribution of all audio signals to and from the ten radio transceivers and the telephone direct lines. The heart of the system is the two controller logic boards; one in each of the Communication Selector Panels (CSP) and one in the Communication Distribution Box (CDB). Each of the controller logic boards contains a microprocessor along with necessary memory components (RAM's and ROM's) and input/output devices (IO's) and communication processors (UART's). All operator initiated demands for a selected channel, as well as all alerting information for received radio traffic, are processed and communicated by and between the controller logic boards. For all practical purposes assume that the controller logic boards in the CDB and the associated controller logic boards in the three CSP's are in continuous real-time communication, via the data transmission busses. Synchronism for the system is maintained at all times by the timing logic board (A1) in the CDB which serves as the master clock.

b. Typical radio channel interface. The UHF/AM-1 transceiver (channel 1) was chosen as a typical transceiver interface with the CDB. The audio signal from this transceiver arrives at the CDB on J11, pins A and B, via the comsec chassis (A8) and cables W64 and

W61. This audio signal is then applied to T1 on the Audio Patching No. 1 board (A6). From the secondary of T1 the received audio is amplified by U1 and U2 and sent to U22 on the Audio Patching No. 2 board (A9). The U22 Flip Flop generates the DET AUDIO 1 level which is recognized in the Controller Logic No. 1 board (A2). The Controller Logic board then generates a digital word which is transmitted to the Timing Logic board (A1) at P1, A01, and A02 where the message is processed by U15 for transmission via W54 to the CSP.

(1) This signal, when received at the CSP on the SDI(+) and SDI(-) lines, is processed by U5 on the Lamp Driver board (A3). This SDI signal is recognized and processed by the Controller Logic board (A2) which generates a UHF 1 CALL signal. This signal is received by U22 on the Lamp Driver board causing the transistor output to conduct, thus applying ground to the call lamp. Since the other side of the lamp is connected to a power source (output of the dimmer), the lamp will light.

(2) When the call lamp lights, indicating traffic on the UHF-1 radio channel, the operator may choose either to respond or merely to monitor the received call. To monitor, he places his CSP selector switch for UHF--1 in the MON position. This will apply a ground on pin B13 of the Controller Logic board (A2). This is the UHF 1 MON line. A ground on this line is recognized by the controller which, in turn, formulates a demand word to be sent to the CDB. It also produces an output on the UHF--1 IN USE line which is sent to U21 on the Lamp Driver board to cause the CSP IN-USE lamp for UHF-1 channel to light. The demand word from the controller is sent via the SDO line to the line driver circuits, U2 and U5, on the Lamp Driver board. The UHF-1 monitor demand word is sent via the SDO(+) and SDO(-) over cable W54 to the CDB. This demand word is initially processed on the Timing Logic board (A1), upon receipt at the CDB, before being sent to the CDB's Controller (A2). This word is decoded by the Controller and a XCVR SEL (POS 1) signal is sent from pin B23 to the solid state switch, U12, on the Audio Patching No. 1 board (A6). When the switch closes, received audio from the UHF-1 transceiver is amplified by U3 on the A6 board, coupled to mixer amplifier, U6, on the Audio Patching No. 2 board (A9) and then to the primary of A9 T3. One secondary winding of A9 T3 (5, 7) is sent via J8 and W58 to the Local Speaker amplifier. The other winding (6, 8) provides the audio signal to the Local CSP via cable W54.

(3) The audio signal received at the CSP is applied to the primary of A1 T4. The audio from the secondary of A1T4 is applied to the primary of A1T3 through the HEADSET VOL CONT knob and amplifier U3 to the primary of A1T3. The audio output from the secondary of A1T3 is applied in parallel to both the operator's and the supervisor's headset microphone connectors. Thus, the UHF-1 received audio monitor function has been completed.

(4) If the operator chooses to respond to received traffic on the UHF-1 channel, or for any other reason wishes to transmit on this channel, he places the CSP TALK-OFF-MONITOR switch in the TALK position. This places a ground on the UHF-1 TALK line sent to the controller (A2). The controller responds to this signal by formulating a specific demand word which, once again, is transmitted from the controller on the SDO line, conditioned by A3U5 and transmitted on the SDO(+) and SDO(-) pair to the CDB via W54. The demand word is again processed in the A1 board and sent to the CDB controller (A2). The CDB controller decodes the demand word and provides outputs to the XCVR SEL 1 (POS 1) line to patch up received audio as before. In addition the controller provides an output on the XMT 1 AUDIO ENBL (POS 1) line. This output level closes solid state switch A6U21, thus patching transmitted audio into A6U25, the primary of A6T5, and ultimately to the UHF-1 transceiver.

(5) We must return to the CSP to trace the origin of transmitted audio. Assume first that a headset/ microphone or microphone is connected to the Operator's HDST/MIC connector (A6J3). Microphone audio then is applied to the primary of A1T1 through the deenergized contacts of A1K1. The audio from the secondary of A1T1 is amplified by A1U2 and applied to the secondary of A1T2, line driver transformer. The audio from A1T2's secondary is transmitted, via W54, to the CDB. This audio is received on the primary of A9T1. The secondary is coupled through the relaxed contacts of solid state switch, A9U2, amplified by A9U3 and then transmitted to A6U17 which is the origin of transmitted audio for A6U25 described above. (6) Now let us examine the keying function. Again assume microphone operation from the operator's connector A6J3. When the key switch is closed, a ground is applied through the upper left diode on A6A7 to energize relay A1K2. The key lamp is also lighted at this time through the upper right diode on A6A7. When A1K2 is energized, a ground is applied to the center tap on the secondary of A1T2. This ground potential will also be present on the center tap of the primary of A9T1 in the CDB. This ground potential is processed by A9U4 and A9UI to produce the KEY LINE 1 level sent to the controller (A2). The controller correlates this key demand with the previously generated UHF-1 selection demand to produce at B13 the KEY XCVR 1 (POS 1) j output to A6U20. The output of A6U23 causes the transistor to conduct, thus applying a ground potential to the secondary of A6T5. This ground potential (KEY 1) is sent to the UHF-1 transceiver through cable W58 to effect keying of the transmitter.

(7) It should be noted that at the time that the keying function is present at OR gate A9U1, it is also applied to NAND gate A9U4 and A9U1. The output of A9U1 causes the transistor to conduct, thereby applying ground to the MUTE 1 line. This is sent to the Local speaker amplifier, via J8 and W58, to cause speaker muting during the key-down condition.

(8) Now we must return to the CSP to see how the supervisor's connector at the CSP can override the operator's keying function. When a microphone or headset/microphone is connected to A6J2 on the CSP and the key switch is closed, relay A1K1 will be energized directly. Relay A1K2 will be energized through the lower left diode of A6A7, and the key lamp will light through the lower right diode. When relay A1K1 is energized, the microphone audio input from the operator's connector, A6J3, is removed from the primary of A1T1, and the input from A6J2 (supervisor's microphone) is connected. The energizing of A1K2 provides the key function (ground) to the secondary center tap of T2 as described previously.

(9) During the time that the selector switch is either in the TALK or MONITOR position on the CSP, the associated channel IN-USE lamp will be lighted. This function originates in the CDB as follows. Remember that the XCVR SEL (POS 1) signal, generated in the CDB controller, was applied to A6UI2 to effect received audio switching. At the same time, this signal (level) is applied to A6U15 which generates the XCVR 1 IN USE level back to the controller (A2). This level is processed and formulated into a data word transmitted on the CDB SDOI line. The data signal is split into its + and - complements by A1UI5 and then transmitted to the CSP (via W54) on the SDO CDB/SDICSP (+) and (-) line pair. This data word, upon receipt at the CSP, is processed by A3U5 and sent to the controller board (A2) on the SDI line. Upon recognition of the discrete data word, the controller will provide an output level on the UHF 1 IN-USE line (B23). This causes a ground to be applied to one side of DSI2, the UHF-1 in use lamp, by conduction of the transistor A3U22.

(10) Timing synchronization for the total system is maintained by tying both controller logic boards, A2 in the CSP and A2 in the CDB, to one master clock. The master clock reference is located on the Timing Logic board (A1) in the CDB. Timing originates with a 2.5 MHz oscillator U8. The oscillator's output is supplied, via two sections of U9, directly to the CPU's (U1) in both controller logic boards, thus locking them both to the same time reference. The basic 2.5 MHz reference is divided by 2 in U11, by 6250 in U12, and by 2 once again in U11. This results in the basic 100 millisecond sampling rate which is used by both controller boards to sample all the PIO ports in both boards. The state of each input port on a PIO, of course, determines what command has been initiated or that traffic is being received on a transceiver.

(11) There are 12 LED fault lamps located in the CDB, four for each of the three operating positions. They are intended as an aid to the Technician in troubleshooting and fault isolation. For any one position (see fig. FO-4), two lamps will indicate faults in the data transmission and reception between the two controller logic boards. The fault state for either line is generated in the CSP controller logic board. It is then processed into a logic low level on either or both of two lines, labeled XMT DATA FAULT LAMP and RCV DATA FAULT LAMP, in the Lamp Driver board (A3). These logic low (ground) levels are then transmitted over W54 to the CDB where they light the lamps CR3 and CR4. The other two lamps are lighted in the same manner. They are labeled CSP FAULT and CDB FAULT and when lighted are intended to isolate the fault to the most likely location: either the CSP or the CDB. However, the drive for these lamps is processed by the CSP Lamp Driver board (A3). Therefore, these lamps are not necessarily infallible fault indicators.

c. Supervisor's Panel. The Supervisor's Panel, in effect, is a fourth operating position. However, the control exercised from this panel is only position oriented: Local, Data, or Ground. No direct channel or individual transceiver control is possible from this position. The Supervisor can elect to either monitor or control the traffic taking place at one or all three of the operating positions.

(1) With a headset/microphone connected to J2, the Supervisor can monitor transmission and reception from the selected position (Local in the example of fig. FO-4). When the LOCAL TALK-OFF-MON switch (S1) is placed in MON, a ground is placed on the SUPV MON POS 1 line sent to the CDB via cable W57. This will cause solid state switch A9UI9 to close, thereby patching all position 1 incoming audio to the primary of A9T10 after amplification by A9U20. The secondary of A9T10 transmits this audio back to A1T4 in the Supervisor's Panel via W57. This received audio is then provided to the Supervisor's headset/microphone via the volume control, A9U3, and transformer A9T3.

(2) When the local TALK-OFF-MON switch is placed in the TALK position, a ground is placed on the SUPV CONT POS I line sent to the CDB via W57. This will again close A9U19, via A9U16, in the CDB, making received audio available to the Supervisor's Panel as before. In addition, this ground will be applied as one input to A9U4 (12). Now let us return to the Supervisor's Panel to examine the key function. When the Supervisor presses his key switch, A1K2 closes, applying a ground to the center tap of the secondary of A1T2. This ground potential is delivered by the secondary line pair to the primary of A9T9 in the CDB. The

ground potential received at the primary center tap of A9T9 is applied as the second input to AND gate A9U4 (11). The output of this section of A9U4 will cause the right-hand section of solid state switch (U2) to pull down. Audio is now applied from the Supervisor's Panel (from the secondary of A9T9 and A9U18) to the CONT XMT AUDIO POS 1 line. At the same time, audio originating at the LOCAL CSP is eliminated. The Supervisor's key function is completed to the controller board (A2) via A9U4 (3 to 1), A9U1 (1 to 3), A9U1 (4 to 6) and onto the KEY LINE 1.

(3) The selected position lamp (DSI) on the super- visor's panel is lighted either in the TALK or MON position because a ground is placed on one side of the lamp by the lower portion of S1. Power for the lamps is supplied by the DIMMER/REG, A2. The SUPERVISOR KEY lamp (DS4) is lighted directly by the ground potential originating at the microphone key switch.

d. Direct Line Operation. The air traffic controller (operator) may have a need to communicate over the telephone direct lines at any time. During periods of high work load, it would not be convenient to remove his headset/microphone to use the telephone handset. Therefore, he may communicate directly over the direct lines using his headset/microphone. This action is as follows:

(1) The operator places the selected direct line select switch, on his telephone control panel, in the PTT position. This will result in a ground potential being received at the CDB at A9, P1-35, from the telephone relay frame on the D/L ENBL POS 1 line. This ground will cause the left-hand section of A9U2 to switch the output of A9TI to the primary of A9T2, via A9U7. This places the transmitted audio from position 1 (LOCAL) onto the primary of A9T2. The audio from the secondary of A9T2 is then applied directly to the selected telephone line pair via the Telephone Relay Frame, via W53.

(2) Received audio from the direct lines is received at the CDB on J10. All three direct line pairs go directly to A5, the Direct Line Summing Amplifier board. Here they are summed by the action of U1, U2, and U14 and transmitted directly to the D/L speaker/amplifier via J8. In addition, received audio is used to light the call lamps in a similar manner described above for the radio call lamps.

(3) The above discussion has been confined to position 1 (Local) UHF/AM--1 (No. I transceiver) and Supervisor control of POSN 1. However, the operation of the data and ground positions and for all transceivers is identical.

e. Navaid Monitor Interface. The navaid monitor has no direct interfaces with the communication distribution box. It interfaces directly with the telephone entry panel through W47. Navaid status is controlled by a ground provided by a remote facility. This ground energizes a relay which causes the OPER lamp to light, the FA1LURE lamp to light, and the alarm to sound. EMERGENCY WARNING is a switch actuated alarm which alerts a selected remote facility of an impending emergency.

2-4. Circuit Analysis of Shelter Units

a. Speaker Amplifier (A46, A51, A52, A57) (fig. 5-9).

(1) The speaker/amplifier amplifies audio signals in the frequency range of 300 Hz to 7 kHz at input signal levels of -6 to +10 dBm. At these input signal levels, it provides a minimum of 3 watts output to its 4 ohm permanent magnet speaker. It also has a remote muting circuit.

(2) An input audio signal is coupled by transformer TI to the input of operational amplifier A1UI. Audio volume from the speaker/amplifier is controlled by the remote volume control potentiometers; one for each of the four speaker/amplifiers. These are located on the console front face at each of the three operating positions. The regulated 18 vdc power source for the operational amplifier is provided by U2. Muting of the speaker/amplifier will occur when a ground appears on pin 4 of relay K1. This, in turn, will place a ground across the secondary of TI, eliminating the audio signal input to the operational amplifier.

b. Tunable Bandpass Filters (UHF/AM, VHF/AM and VHF/FM). All three types of tunable bandpass filters used in the AN/TSW-7A system are basically the same. The UHF/AM filter tunes continuously from 225 to 400 MHz, the VHF/AM from 116 to 150 MHz, and VHF/FM from 30.0 to 75.95 MHz. The VHF/AM filter incorporates a special low pass filter to eliminate spurious UHF responses at certain frequencies.

(1) When used in conjunction with their respective transceivers they improve front end selectivity and provide up to 60 dB isolation at frequency separations of ± 1.0 percent. They are designed to handle up to 50 watts of RF input power. Maximum vswr is 1.5 when the filters are terminated with a 50 ohm load. Insertion loss is 2.6 dB or better.

(2) Each filter incorporates a calibrated dial and a relative power meter to aid in tuning to exact resonance. When the calibrated dial is adjusted to resonance, a small portion of the rf is rectified and applied to a 0 to 1.0 mA dc meter. The meter sensitivity is adjusted by a front panel control to provide maximum meter deflection when the filter is adjusted to resonance with the transmitted frequency of the associated transceiver.

c. Communications Distribution Box, A 12. The communication distribution box (Switching Unit, Communications SA-2173/TSW-7A) is the control and distribution center for all radio transmitted and received audio. It contains nine printed wiring circuit boards, four modular power supplies and power distribution

terminal blocks. The heart of the system consists of three identical controller logic boards (A2, A3, A4); one for each of the three operating positions. All data communication between the controller logic boards in each of the three communication selector panels takes place with these controller boards. Recognition of operator initiated commands or receipt of incoming traffic is interpreted on these boards and results in specific switching command outputs. Three identical Audio Patching No. 1 boards (A6, A7, A8) are also contained in the CDB. These contain the logic and audio components for selection and interconnection to specific transceivers upon receipt of command signals from the controller logic boards. One Audio Patching No. 2 board (A9) provides the interface between the Supervisor's control panel and the telephone direct lines. In addition, it combines the transmit and receive audio for each of the three operating positions. A Timing Logic board (A1) provides the master clock timing reference for digital data transmission throughout the switching system. Finally, a direct line summing amplifier (A5) is included to provide one source for the direct line speaker/amplifier from all three telephone direct lines.

d. HF Antenna Coupler Group (figs. FO-58 and FO-60).

(1) General. The HF antenna coupler case consists of a submersion-proof sealed case, an integral heat exchanger, a load coil, a vacuum relay, and control circuits. It is transportable and its heat exchanger operates on an air-to-air basis using a cooling blower to circulate the air through the case and internal heat exchanger passages. The antenna coupler group consists of the antenna coupler case and Antenna Coupler CU--1658/A. Refer to TM 11-5985-326-35 for the functional operation of Antenna Coupler CU--1658/A. The antenna coupler group automatically matches a 500-watt average power transmitter to the 32-foot whip antenna in the HF frequency range with a maximum vswr of 1.3:1.

(2) Receive. Reception is allowed when the coupler is in the HOME or OPERATE mode. When in the HOME mode, relay A2K1 is deenergized and the received signal bypasses load coil LI and passes directly through the antenna coupler (essentially shorted) to the receiver. In the OPERATE mode, the received signal bypasses LI when operating above 4 MHz, or passes through LI when operating below 4 MHz, and continues through the antenna coupler as the HOME mode.

(3) *Transmit.*

(a) The antenna coupler goes into the HOME mode when a recycle pulse is received from associated equipment when the equipment is initially turned on or the frequency is changed. It tunes when a transmitter rf signal and a key line ground are applied. When the antenna impedance is matched to the transmitter impedance within a vswr of 1.3:1, tuning stops, the key line ground is released, and transmit tune power is discontinued. The operator can then transmit at the frequency selected.

(b) When transmission is required below 4 MHz and a whip antenna 18 feet long or less is used, the COIL switch A2Si/S2 must be closed (set to IN) and the antenna coupler case automatic coil switching circuits will control the load coil operation. When the antenna coupler case is operating with an antenna longer than 18 feet, the load coil is not required and A2S1/S2 must be open (set to OUT).

(c) Load coil L1 will be switched in and out of the circuit, as follows, with A2S1/S2 set to IN. The key-line ground from the transmitter energizes the antenna coupler transmit circuits, and + 28 vdc (key interlock) is applied to the antenna coupler case. If the antenna coupler case is operating above 4 MHz, a ground will be present at either P1-N or P1-P (band information from the antenna coupler) and the + 28 vdc at A1R3 will be dropped across either A1CR4 and A1R3, or A CR5 and A1R3. The A1R3 and one of these diodes is then a voltage divider, and only a low potential (below 5 vdc) will be applied to A1VR2. Zener diode A1VR2 will not break down and, in turn, will keep A1Q2 cut off. This prevents A2K1 from energizing, and load coil L1 will not be in the circuit.

(d) If the antenna coupler case is operating in the 2 to 4 MHz range, no band information grounds will be present at P1--N or P1--P. The + 28 vdc at A1R3 will then break down Zener diode A1VR2, and transistor A1Q2 will switch on, applying a ground to A2K1-L1. Relay A2K1 energizes and inserts load coil LI into the antenna circuit for tuning.

(e) Relay A1K1 is energized every time the system is recycled to allow the antenna coupler band sense circuits to reset on the newly selected frequency.

(f) A1Q1 and associated circuits keep A2L1 out of the circuit during homing, no matter what frequency is selected. During home positioning, the output of the antenna coupler tune and operate pins is open so A1VR1 breaks down and A1Q1 is biased on. This grounds A1Q2 base and ensures that A2K1 does not energize. During either tune or operate, one output at PI-J or P1-C will be at ground. Zener diode A1VR1 will not break down. A1Q1 will remain cut off, and the operation of A1Q2 will not be affected.

(4) 50-ohm output jack over-voltage protection.

(a) The antenna coupler case has an over-voltage protection circuit connected to the 50-ohm output jack. The circuit places a ground on the fault line and opens the key interlock +28 vdc line when an over-voltage condition is detected.

(b) The rf output voltage is sampled in assembly A2 by C6 and rectified by CR2. The detected dc voltage is applied through R1 and C5 to assembly A1. In assembly A1, the voltage is applied through R6 to VR3.

When the detected voltage exceeds the breakdown voltage of VR3, Q3 is turned on by closing relay K2.

(c) The contacts of K2 ground the fault line, open the key interlock +28 vdc line, and bias Q3 on. The fault indication remains until a recycle pulse (GND) applied through CR7, turning Q3 off.

e. Communications Selector Panel (figs. FO-4 an FO-55).

(1) The three communications selector panel (Local, Data, and Ground) provide the audio frequency signal switching and control of functions for the ten radio sets. They provide control of the distribution of audio signals to or from the transceivers, microphone/ headset, desk microphone, and speaker/amplifiers. They also provide circuits that permit the local and ground controllers to use either the desk microphone or the microphone/headset for outgoing voice messages on the three direct lines to airfield telephones. The controls for these circuits are located on the telephone units, Each panel contains ten three-position switches and their associated IN-USE and CALL lamps. Each panel has a KEY lamp which lights when either the headset/ microphone or desk microphone push-to-talk switch is pressed. The function of the CSP in a typical operational situation has been covered in paragraph 2-3 above.

f. Navaid Monitor (fig. 5-11). The navaid monitor provides the NAVAID STATUS FA1LURE visual (S5) and audible alarm (LS I) when the connection, provided by a remote facility, between JI C and D is broken. It also provides the EMERGENCY WARNING switch (S4) which when closed actuates an alarm to alert a selected remote facility of an emergency. The audible alarm is energized whenever relay K1 changes state. When the POWER switch SI and ALARM switch S3 are set to ON, the audible alarm is energized. This is caused by the +28 vdc spike applied to the gate of thyristor CR2 for a few milliseconds when armature A2 is switched from A2 to Al contact. The RESET switch S2 must be pressed momentarily to open the anode circuit of CR2 and deenergize K2. As long as the external navaid applies a short across J1C and J1D, the FA1LURE lamp S5 is off the OPER lamp S6 is on, and the alarm is deenergized When the external navaid fails, the connection between J IC and D is broken. This deenergizes K1 which generates a +28-volt spike (a few milliseconds in duration at the gate of CR2, OPER lamp S6 goes off, and FA1LURE lamp S5 comes on. The +28-volt spike drives CR2 into the conductive state. Thyristor CR2 remains in the conductive state even though its gate returns to ground. This provides the path to the ground for the coil of K2. With K2 energized, +28 vdc is applied from armature A2 to contact A1 of K2 and through contacts and 5 of OPER switch S6 to alarm LS1. Both the FA1LURE and OPER lamps have a push-to-test circuit When OPER switch/lamp S6 is pressed, +28 vdc is applied to both the alarm A I and OPER lamp S6. When FA1LURE switch lamp S5 is pressed, +28 vdc is applied to the FA1LURE lamp S5.

g. VHF FM Antenna Tuning Control (fig. 5-10). The three fm antenna tuning controls each contain a ten position selector switch (an indicator light) and a pushbutton switch. They provide a remote (inside the tower) control over the manually operated switch located on the bottom of each antenna coupler. Each switch is positioned according to the assigned frequency of the associated transceiver. When the PUSH TO SET switch is pressed, + 28 vdc is applied to the appropriate frequency range line connected to the antenna coupler unit. Through a stepping relay action (open seeking) the antenna coupler is remotely positioned to tune the antenna to the selected frequency range. The light will go out, indicating that the remote coupler has completed tuning.

h. Power Distribution Box (fig. FO-53). The power distribution box is used to perform power control and distribution functions in the tower. It provides on/off control of ac and dc power and automatic switching of power sources from primary to backup and back, depending on the operational status of the primary sources.

NOTE

Refer to TM 11-5895-801-10 for the names and functions of the lamps, switches, and circuit breakers discussed in this paragraph.

(1) Primary power sources. Three phase, 115 vac, 50/60 Hz power is normally used in the tower. Twenty- eight vdc is also available, supplied by a 1.5 kw gasoline engine-driven auxiliary generator. In addition, a self-contained 28 volt battery will supply emergency power for a relatively short time during loss of the primary power source.

(2) AC power control and distribution (fig. FO-5).

(a) The three phase, 50/60 Hz power is connected to power entry panel connector J1. From connector J1, the power is routed to circuit breaker CB2, AVAILABLE lamp DS4, and phase sensing relay K1. Relay K1 is used to check for correct phase rotation of the primary three phase power. If the phasing is correct, K1 will energize and the PHASE INCORRECT lamp DS6 will not light. If the phase is incorrect, not only will DS6 light, indicating this condition (through contacts 7 and 8 of K1), but also ac neutral will be applied to the trip coils of the ECU circuit breakers, CB3 and CB4, preventing power from being applied to the ECUs. Because the only phase-sensitive devices in the AN/TSW-7A system are the ECUs, they are the only

items affected by the action of K1. The reset of the system can be operated normally even if the PHASE INCORRECT lamp is lit.

(b) Three phase ac power is distributed from CB2 to the rest of the system through TB1. The TB1 supplies primary 3 phase ac power to the two 55 amp 28 vdc power supplies through TB2, TB3, and J16. Also, single phase loads (ac lighting), the wind set, and ac convenience outlets are divided among the three phases available at TB1. Three phase power for the heated glass circuits is also obtained from TB1. A meter, M4, and switch, S3, are provided so that the voltage of each phase can be checked.

(3) DC power control and distribution. Normally, 28 vdc power is obtained from one of two 55 amp dc power supplies, referred to on the power distribution panel as SUPPLIES A and B. The output of supplies A and B is routed to terminal boards TB2 and TB3, respectively.

NOTE

All indicator lamps in the Power Distribution Box (PDB) are lit indirectly through the action of the lamp control assembly (A4). This allows simultaneous dimming of all lamps with a single control.

(a) From TB2, supply A output is routed to switch S11, the contacts of relay K3, and the contacts of A/B select relay KS, and through the action of the Dimmer Control circuits, DS13 will be lit.

(b) When 28 vdc is first applied to terminal boards TB1 and TB2, lamps DS11 and DS13 light. Also, K5 energizes by the application of supply A power through the normally closed contacts of deenergized K3 to the coil of KS. With K5 energized, supply A power is routed through the deenergized contacts of K2. This line is labeled MAIN DC. This MAIN DC power from contacts 4 and 6 of K2 energizes K6 and applies power from supply A to the dc bus and TB6 through meter shunt R8. The A supply ON-LINE lamp, DS12, also lights at this time through the deenergized contacts of K3 and contacts 11 and 12 of K5, the 28 vdc return.

(c) To switch from A to B power supply, press S10 on the power distribution panel. This will energize K3, opening contacts 4 and 5, thus deenergizing KS. Lamp DS12 will go out and DS10 will light as power is routed through contacts 6 and 7 of K3 and 11 and 12 of K6. Relay K3 will be held energized through deenergized contacts 9 and 10 of K5 as long as the B supply is operational. The main dc line now is being supplied by the B supply from contacts 4 and 5 cf K5 through contacts 3 and 4 of K2 and 7 and 8 of K6 and finally to the main bus, TB6, as previously described for the A supply. Relay K6 is held energized through contacts 7 and 8 regardless of which supply (A or B) is on line.

(d) If neither A nor B supply is operational, then operation from the external 28 vdc 1.5 kw gasoline generator will be required. As soon as 28 vdc is being supplied through CB1, K2 will energize. This now applies the generator output to the MAIN DC line through energized contacts 5 and 6 of K2 to 7 and 8 of K6 (also keeping K6 energized), supplying power to the main bus TB6.

(e) Emergency power is available from the 28 vdc battery. If failure of both power supplies A and B occurs (and before the 28 vdc generator is started), K6 will deenergize. The battery then supplies the main bus through CB7 and contacts 3 and 4 of K6. The EMERGENCY ON-LINE lamp, DS9, will light as power is routed through contacts 9 and 10 of K6. The battery is kept in a charged state during normal operation from the MAIN DC line through CB8 to the charge regulator assembly A1. The charge rate is indicated on M1.

(f) The transfer alarm, A2, will sound any time there is a momentary interruption in dc power. The interruption energizes K4 from the main bus through its own holding contacts Al and A2. Therefore, a loss of power on the main bus will allow K4 to deenergize, and upon return of power, alarm A2 will be powered through contacts B2 and B3 of K4. The alarm is silenced by pressing the TRANSFER ALARM RESET switch S9, reenergizing K4.

(g) Note that the HF radio is normally powered from the standby power supply (when A is on line, B is the standby supply and vice versa). Power is routed through contacts 13 and 14 of K2 and back to either 13 and 14 of K5 (B on line, A standby) or 7 and 8 of K5 (A on line, B standby). The HF radio is then connected to the standby line through CB12. However, if HF operation is required when operating from the generator or the emergency battery, CB6 must be closed, allowing the HF radio to draw power directly from TB6. Note also that the 28 vdc convenience outlet J10 is only supplied from the standby line through CB33 and the energized contacts, 5 and 6 of K6. Thus, the convenience outlet is only available if both power supplies are operational.

CHAPTER 3
DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

Section I. GENERAL

3-1. Scope

This chapter provides instructions for isolating and replacing a faulty printed wiring assembly, module, or component in the shelter equipment. All necessary tests, disassembly, reassembly, and adjustment procedures are included. These procedures are accompanied by illustrations required by direct support maintenance personnel. Direct support maintenance personnel will perform the following repair procedures.

a. Substitute printed wiring assemblies in the equipment to isolate a faulty printed wiring assembly.

b. Replace the faulty printed wiring assembly.

c. Make voltage and resistance measurements to isolate a faulty panel or chassis mounted component.

d. Replace the faulty component.

3-2. Voltage and Resistance Measurements

Table 3-5 provides resistance measurement data as an aid in troubleshooting the Antenna Coupler Case CY-7658/GRC.

Section II. TOOLS AND TEST EQUIPMENT

3-3. Painting

Painting is limited to touching up small areas where the external finish is damaged, to prevent rust and corrosion. All paints and finishes are listed in SB 11-573, Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment, and AR 746-5, Color and Marking of Army Materiel. Refer to TB 43-0118, Field Instructions for Painting and Preserving Electronic Equipment.

a. Material Required. Table 3-1 contains a list of paints and finishes for the items of AN/TSW-7A.

b. Painting Procedure.

(1) Clean the damaged area with fine sandpaper to remove all the loose paint.

(2) Feather the existing paint into the damaged area with fine sandpaper by sanding in toward the center of the damaged area.

(3) Brush on a uniform coat of primer (as specified in table 3-1) covering the edge of the sanded area.

(4) Allow sufficient drying time.

(5) Brush on a thin uniform coat of paint (color as specified in table 3-1) covering the primed area.

(6) Allow drying time as specified.

(7) Apply a second coat of paint as in (5) above and allow drying time as specified.

3-4. Test Equipment, Tools and Materials

a. Test Equipment. Table 3-2 contains a list of test equipment required for maintenance of the shelter equipment.

b. Tools and Materials. All tools required for maintenance are contained in the Electronics Tool Kit, Electronic Equipment TK-100/G.

Table 3-1. Equipment Paints and Finishes

Equipment	Finish required
Shelter interior ceiling, walls, equipment racks and panels including air ducts.	Lusterless black paint No. 37038 per FED- STD-595.
Shelter interior walls below air ducts.	Semigloss green enamel No. 24533 per FED- STD-595.

Table 3-1. Equipment Paints and Finishes.-Continued

Equipment	Finish required
Shelter floor.	Nonslip matting per MIL-W-5044, type IV.
Shelter exterior, ladder, platform, jacks and all exterior equipment	Forest green per MIL-E-52798.

Section III. TROUBLESHOOTING

3-5. General

a. Fault Isolation. Isolate the fault to a component by performing the test procedures provided in the troubleshooting charts for each assembly. After a fault has been isolated, replace the faulty component.

b. Visual Inspection. Visually inspect the subassembly as follows to see if a fault can be isolated without testing or measuring the circuit characteristics:

Component	*Inspect for*
Selector switches	Security of mounting, ease of operation
Cables (internal)	Proper connections
Wiring	Broken connections, charred insulation (evidence) of overheating), poor solder connections
Front panel	Evidence of physical damage, obliterated markings, and lighting of front panel lamps
Printed wiring assembly	Correct assembly location, security of mounting, freedom from corrosion or dirt on connectors, evidence of burning or physical damage, poor solder connections.

Table 3-2. Tools and Test Equipment

Item	Technical manual	Common name	National/NATO stock number
Tool Kit, Electronic Equipment TK-100/G	SC 5180-91-CL-S21	Tool kit	5180-00-605-0079
Multimeter AN/USM-223	TM 11-6625-654-16	Multimeter	6625-00-999-7465
Wattmeter, AN/URM-120	TM 11-6625-446-15	Wattmeter	6625-00-813-8430
Oscilloscope AN/USM-281C	TM 11-6625-1703-15	Oscilloscope	6625-00-106-9622
UHF Signal Generator AN/ITRM- 127	TM 11-6625-683-15	Signal generator	6625-00-783-5965
Dummy Load, Electrical DA-75/U		Dummy load	6625-00-177-1639

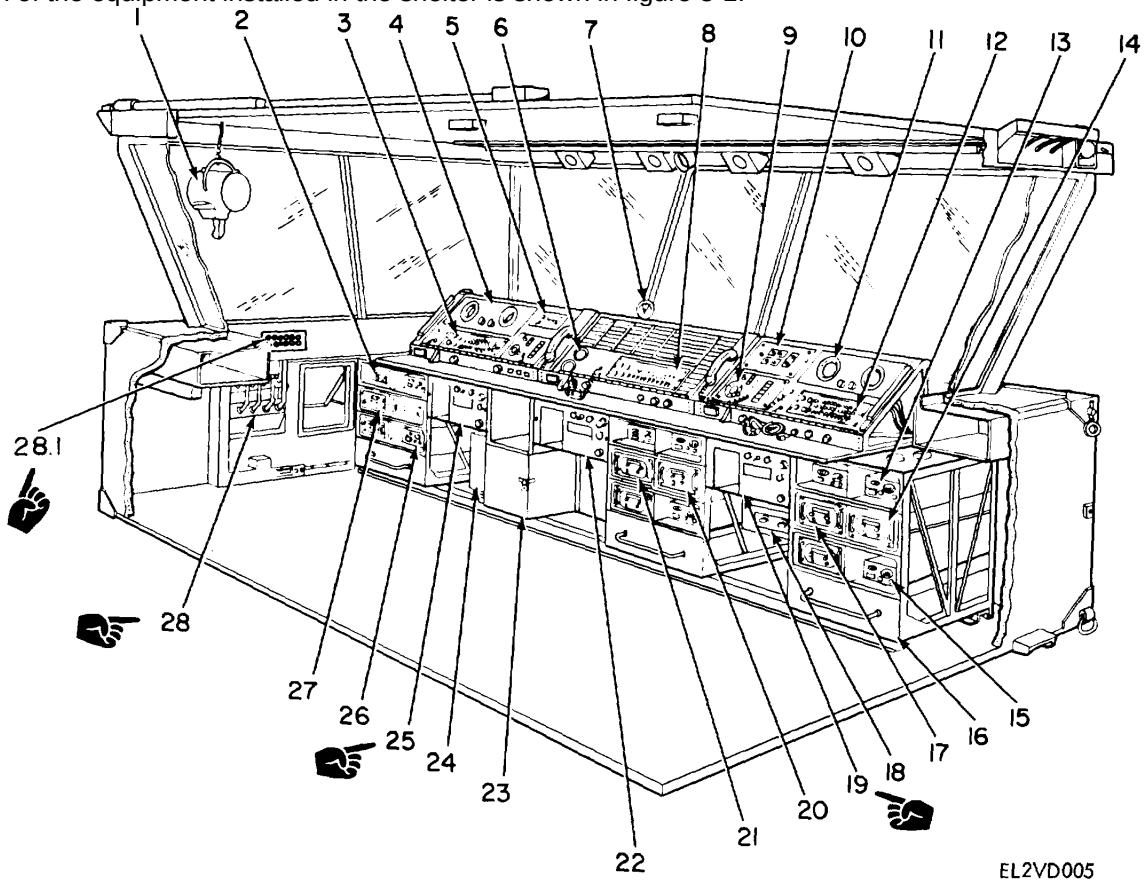
c. Troubleshooting Precautions. Use care while troubleshooting, testing, or repairing the shelter to avoid possible equipment damage. When soldering, refer to TB SIG 222 for proper soldering techniques. Before an interconnecting wire is unsoldered, locate and note the wire run number marked on the wire. If the wire run number cannot be located, tag the wire with an identifying number, letter, or symbol. The shelter contains transistor circuits. If any ac test equipment item does not have an isolation transformer in its power supply circuit (such as NSN 5950-00-356-1779) connect one in the power input circuit. Before using a multimeter for resistance checks of transistorized circuits, check that the open- circuit voltage does not exceed 1.5 volts. Because the R x 1 range normally connects the multimeter internal battery directly across the ohmmeter test leads, the comparatively high current (50 ma or more) may damage the transistor circuits under test. As a general rule, it is not recommended that the R x 1 range of any multimeter be used when testing low power transistor circuits. Never connect test equipment (other than multimeters, oscilloscopes, and VTVMs) outputs directly to a transistor circuit; use a coupling capacitor. Make test connections with care so that shorts will not be caused by exposed test equipment probes or clips. Tape or sleeve (spaghetti) test probes or clips as necessary to leave only enough metal exposed to make contact with the circuit under test. Before removing or inserting a printed circuit board in any of the electronic equipment in the shelter, turn off the equipment. Reapply power only after the printed circuit board is secured in its proper position.

Section IV. DIRECT SUPPORT MAINTENANCE

WARNING

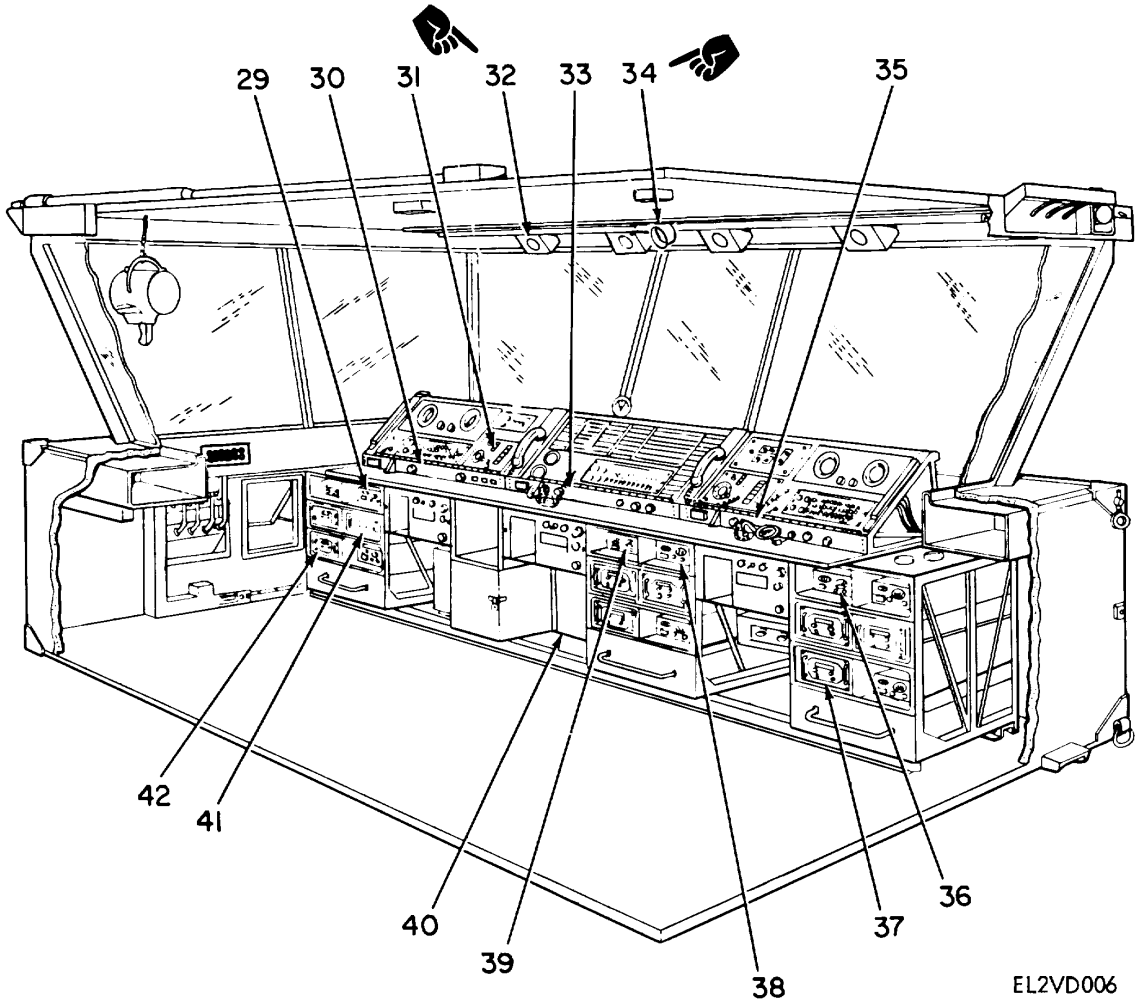
Turn off the equipment before performing maintenance procedures. Refer to TM 11-5895-801-10 for shelter shutdown instructions.

The location of the equipment installed in the shelter is shown in figure 3-1.



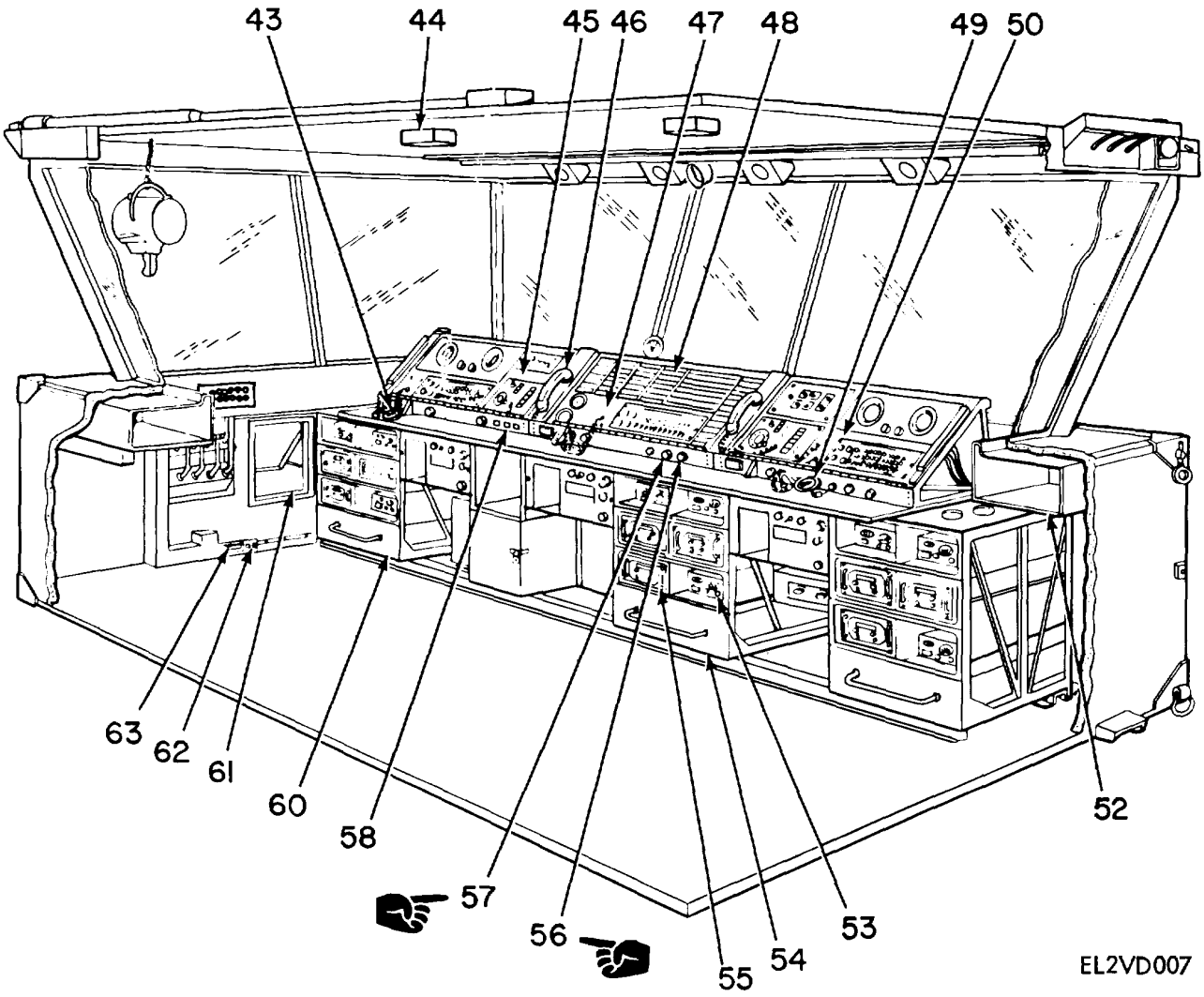
1 Light guns (2 each)
2 VHF FM No. 1 filter bandpass
3 Local communication selector panel
4 Wind set display panel
5 HF control assembly
6 Altimeter (2 each)
7 Outside air thermometer
8 Data communication selector panel
9 Telephone Line Control Unit C-7938/TSW-7
10 Navaid monitor assembly
11 Wind set display panel
12 Ground communication selector panel
13 VHF AM No. 3 filter bandpass
14 VHF AM No. 3 radio set
15 UHF AM No. 3 radio set
16 Storage drawer
17 VHF PM No. 3 radio set
18 ECU control (2 each)
19 Crypto assembly (Ground) - used with VHF AM No. 3)
20 VHF AM No. 2 radio set
21 VHF FM No. 2 radio set
22 Crypto assembly (Data - used with VHF FM No. 2)
23 Storage cabinet secure)
24 Land line relay frame
25 Crypto assembly (Local - used with UHF AM No. 1)
26 UHF AM No. 1 radio set
27 VHF FM No. 1 radio set
28 Signal entry panel
28.1 Landline Access Panel

Figure 3-1. Location of equipment inside the shelter (Sheet 1 of 4).



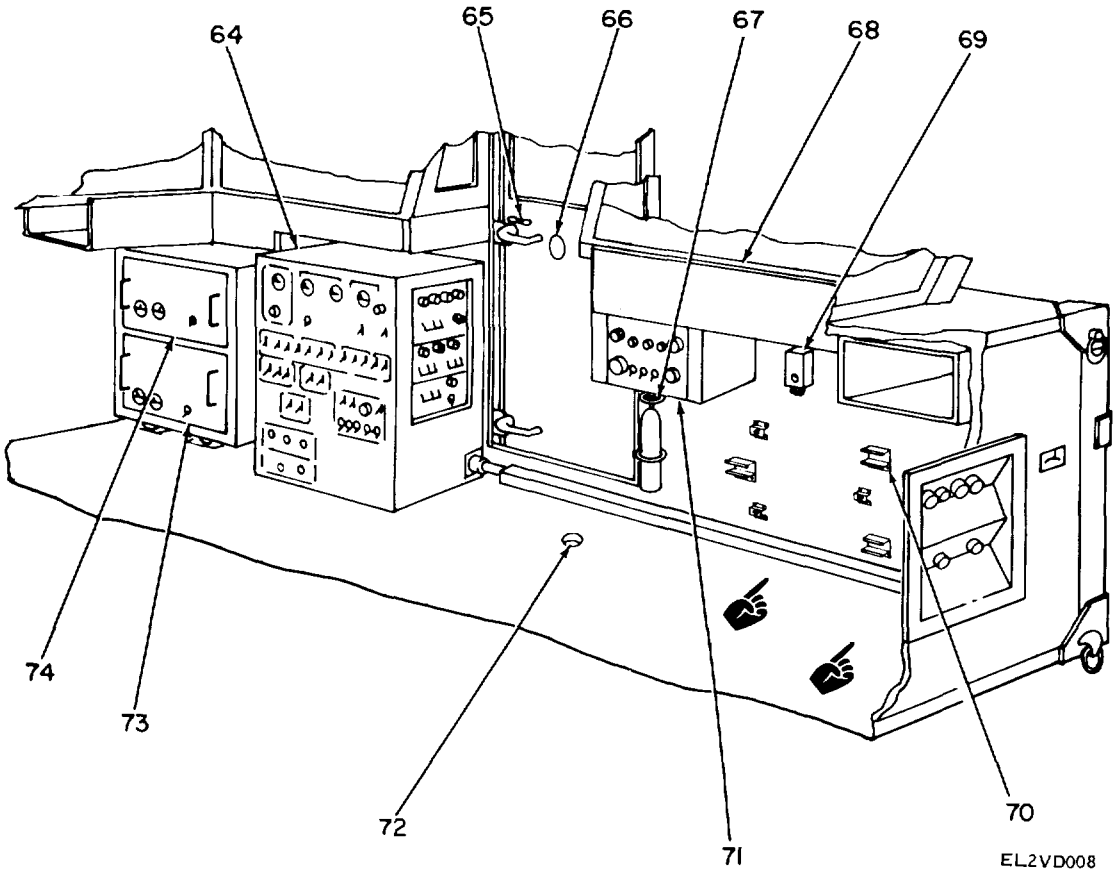
29 VHF AM No. 1 filter bandpass
30 Local panel plate assembly
31 Telephone Line Control Unit, C-7938/TSW-7
32 Speaker amplifier assembly (typical)
33 Data panel plate assembly
34 24 hour clock
35 Ground panel plate assembly
36 VHF FM No. 3 filter bandpass
37 UHF AM No. 3 filter
38 VHF AM No. 2 filter bandpass
39 VHF FM No. 2 filter bandpass
40 Communications distribution box
41 VHF AM No. 1 radio set
42 UHF AM No. 1 filter

Figure 3-1. Location of equipment inside the shelter (Sheet 2 of 4)



43 Microphone, M-154/TSW-7 (3 each)
44 Maintenance light (2 each)
45 Local controller panel
46 Telephone handset (2 each)
47 Data controller panel
48 Flight data strip holder dowels
49 Headset-microphone, H295/TSW-7
50 Ground controller panel
51 Deleted
52 Duct
53 UHF AM No. 2 radio set
54 Storage drawer
55 UHF AM No. 2 filter
56 D/L VOL control
57 CONSOLE ILLUMINATION DIM knob (3 each)
58 Filter bypass control lamp switches (3 each)
59 Deleted
60 Storage drawer
61 Air filter
62 Utility outlet (2 each)
63 Theater light (2 each)

Figure 3-1. Location of equipment inside the shelter (Sheet 3 of 4)



64 Power distribution box
65 Padlock release wing nut
66 Pressure relief valve
67 Fire extinguisher
68 Window air damper
69 Heater thermostat
70 Rifle rack
71 Supervisor panel
72 Shelter floor drain plug
73 DC power supply B
74 DC power supply A

3-6. Power Distribution Box (A3) Repair Procedure

Repair of the power distribution box assembly consists of the removal and replacement of panel and chassis mounted components. Figure 3-1 shows the location of the power distribution box in the shelter. Figure 3-2 is a parts location diagram and figure 3-3 shows the disassembly of the power distribution box. The schematic diagram of the power distribution box is shown in figure FO-53.

Table 3-3. Materials

Item	NSN or Specification
Adhesive (Gasket)	MIL-A-14042
Insulation Sleeving	MIL-I- 7444, Type 2, class 2, yellow Sizes: 0.027" I.D (22AWG) 0 034" I.D. (20AWG) 0.085"I.D (12AWG)
Trichlorotrifluoroethane	NSN 6850-00 - 984- 5843
Cloth, textile, lint-free	NSN 8305-00-170-5062

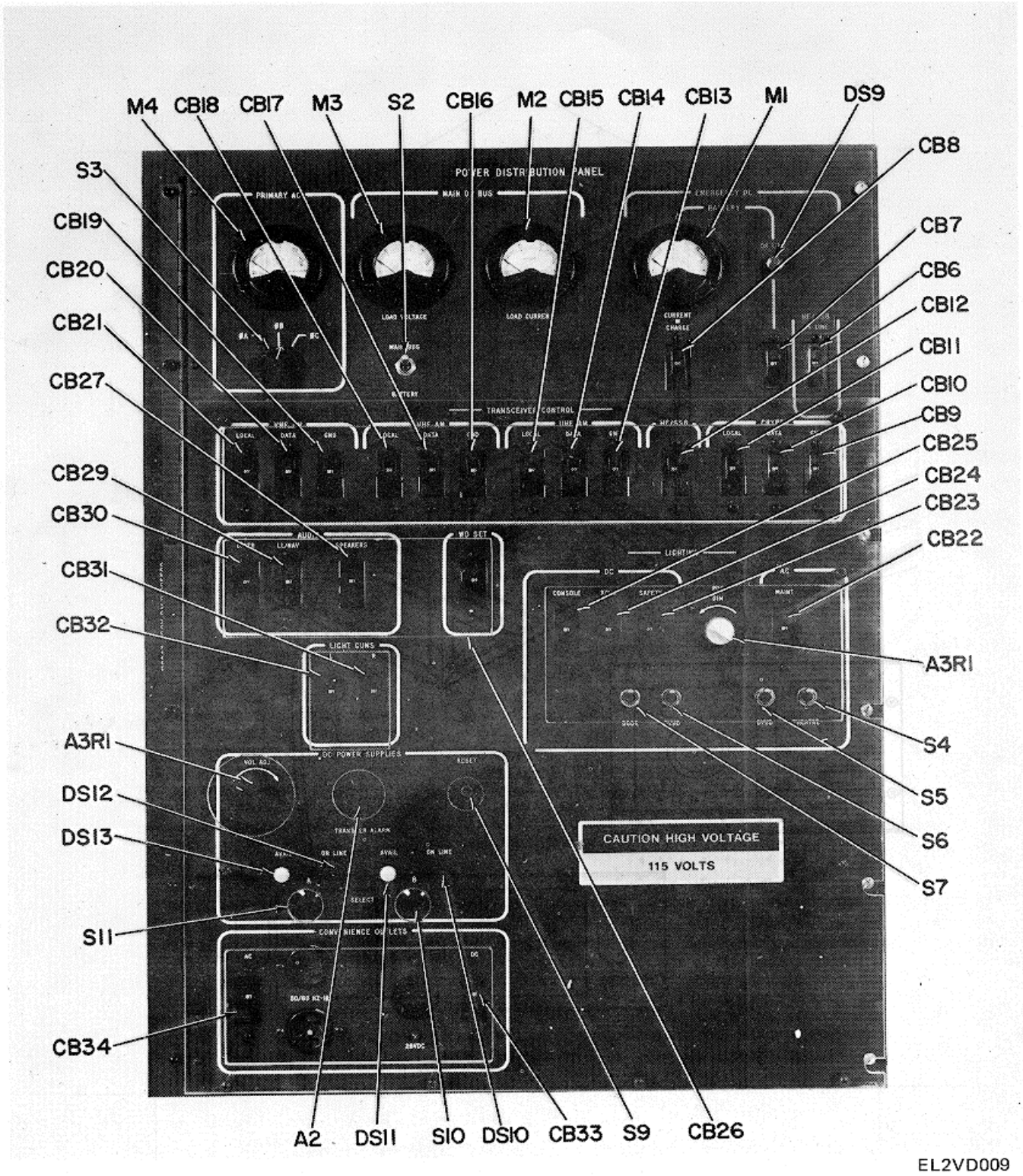


Figure 3-2. Power distribution box (A3) parts location diagram (Sheet 1 of 2)

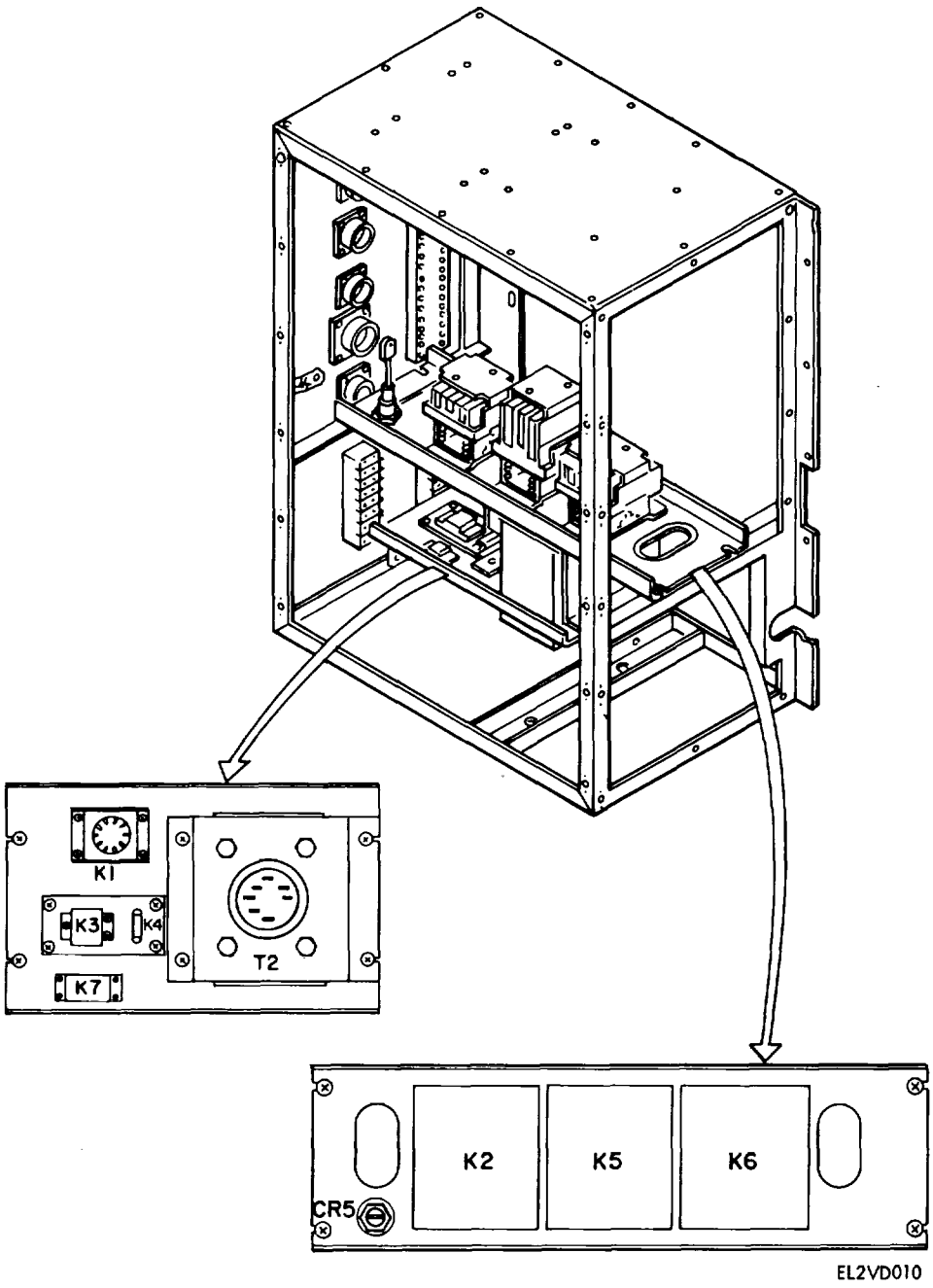


Figure 3-2. Power distribution box (A3) parts location diagram (sheet 2 of 2).

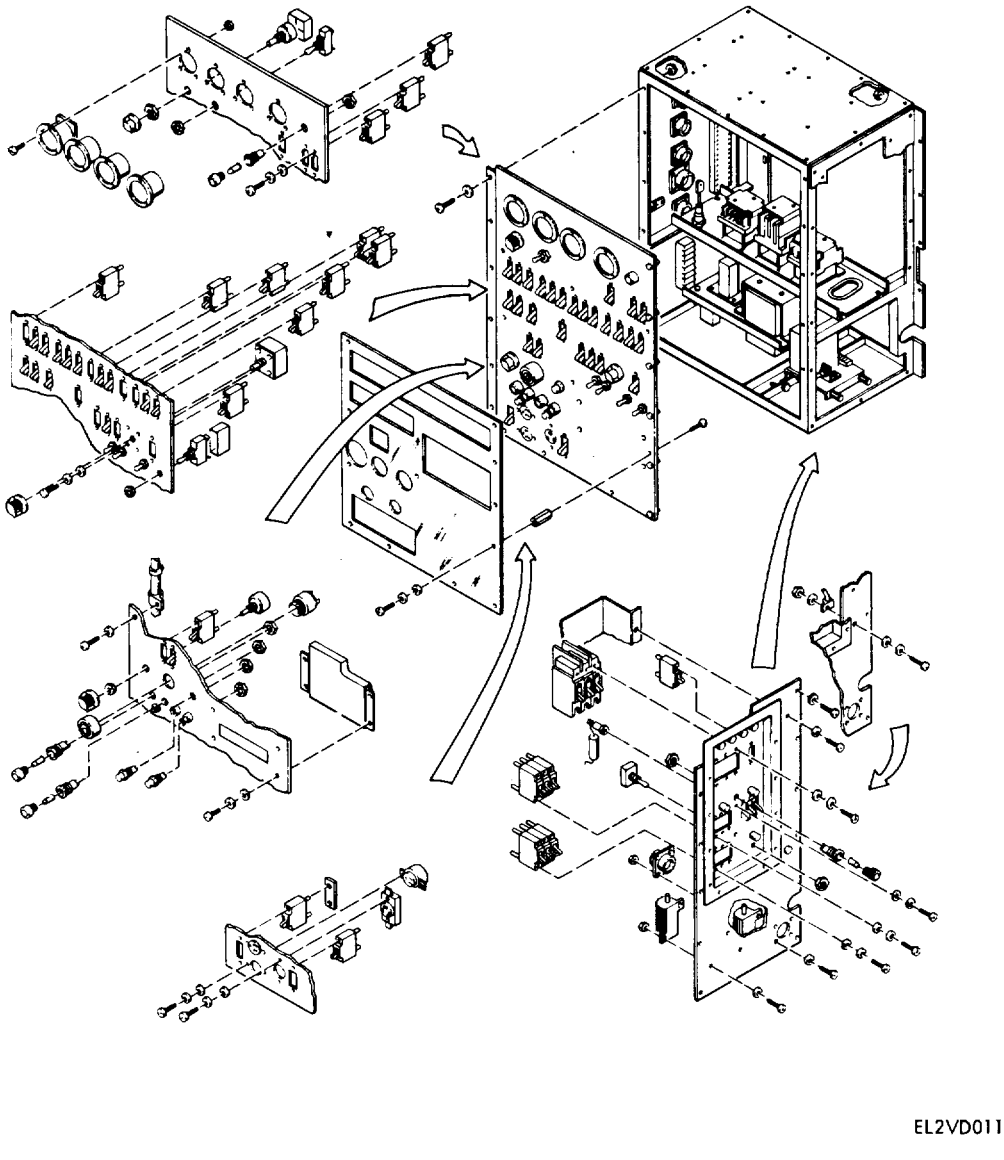


Figure 3-3. Power distribution box (A3) disassembly (sheet 1 of 2).

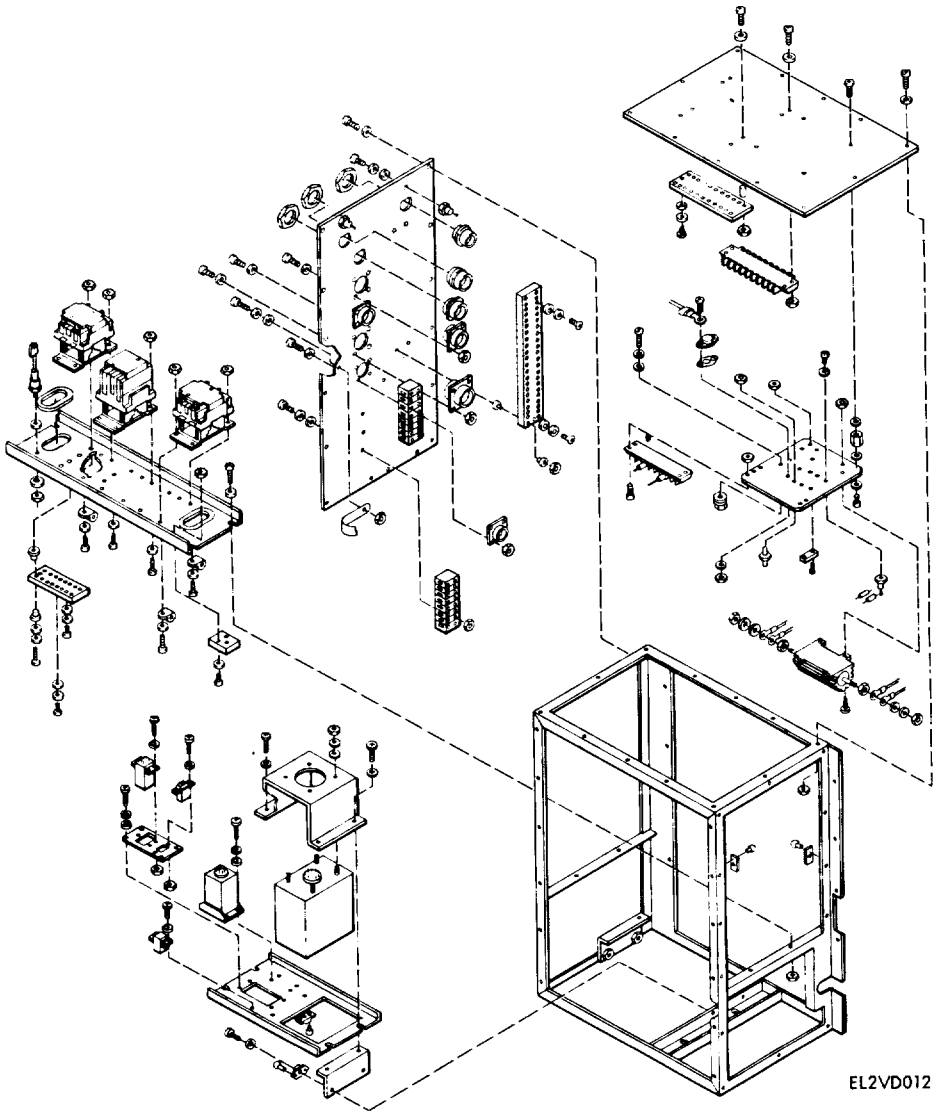


Figure 3-3. Power distribution box (A3) disassembly (sheet 2 of 2)

3-7. HF Antenna Coupler Case Repair Procedure

Repair of the HF antenna coupler case consists of isolating and replacing a faulty component in accordance with the troubleshooting procedures listed in table 3-4. The schematic diagram of the coupler case is shown in figure FO-58.

Table 3-4. HF Antenna Coupler Case CY-7658/GRC Troubleshooting Chart

Item	Malfunction	Probable cause	Corrective action
1	Blower inoperative - never comes on.	a. Thermal switch S1 open above 113°F.	Replace S1
		b. Capacitor A1C13 open.	Replace AlC13
		c. Windings of blower motor B1. open or shorted.	Replace B1
2	Blower runs continuously.	Thermal switch S1 is shorted.	Replace S1
3	High vswr operating below 4 MHz with antenna 18 feet or less.	a. Load COIL switch S2 open.	Replace S2
		b. Transistor A1Q2 open.	Replace A1Q2
		c. Zener diode A1VR2 open.	Replace A1VR2
		d. Transistor A1Q1 collector to emitter shorted.	Replace A1Q1
		e. Diode AlCR1 open.	Replace A1CR1
		f. Diode A1CR2 open.	Replace A1CR2
		g. Diode A2CR1 shorted.	Replace A2CR1
		h. Relay A2K1 coil open.	Replace A2K1
4	High vswr operating above 4 MHz with an antenna 18 feet or less and switch S2 in the IN position. position.	a. Transistor A1Q2 collector to emitter shorted.	Replace A1Q2
		b. Diode AlCR5 open (operating in 4-8 MHz range only).	Replace A1CR5
		c. Diode A1CR4 open (operating in 8-30 MHz range only).	Replace A1CR4
5	Fault indicator on the AN/ARC-102 control unit is on continuously and key interlock (+28) line remains open.	Transistor A1Q3 collector to emitter shorted.	Replace A1Q3
6	No transmitted power out operating below 4 MHz with an antenna 18 feet or less.	Load coil LI open.	Replace L1
7	No transmitted power out regardless of frequency or antenna length.	*a* Relay A2K1 contacts open.	Replace A2K1
		b. Switch S3 open.	Replace S3

a. Disassembly and Assembly Procedure. Refer to TM 11-5895-801-20 for disassembly and assembly procedures for Antenna Coupler CU--1658/A. Refer to TM 11-5985-326-35 for maintenance and testing for Antenna Coupler CU-1658/A.

b. Repair. Repair of the coupler case consists of using standard troubleshooting procedures to isolate and replace a faulty component. Components requir- ing special test procedures are covered in sub- paragraphs (1), (2), and (3) below.

CAUTION

Before making a test using the multimeter, set the resistance to the highest scale to prevent damage to a transistor.

(1*) Test of transistors Q1, Q2, and Q3*. Disconnect and tag the base and collector leads of Q1, Q2, and Q3 figure 3-4. Using Multimeter AN/USM-223, test Q1, Q2, and Q3 in accordance with table 3-5. When a transistor requires replacement, use standard repair procedures to replace the faulty transistor.

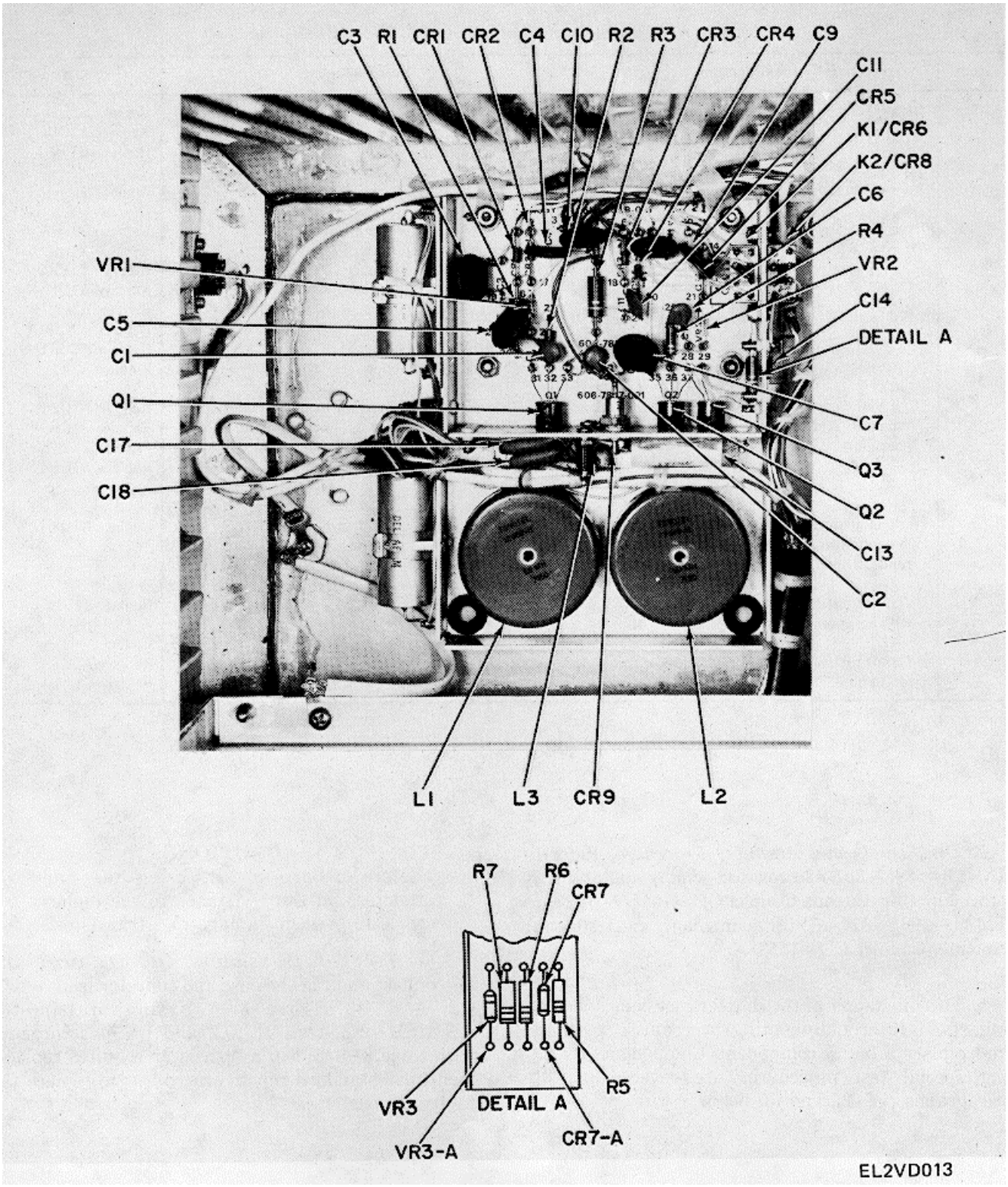


Figure 3-4. HF antenna coupler case, interior view.

(2) *Test of diodes VR1, VR2, and VR3.* Refer to figure 3-4. Disconnect one lead of VR1, VR2, and VR3. Using the multimeter, test VR1, VR2, and VR3 in accordance with table 3-6. When a diode requires replacement, use standard repair procedures to replace the faulty diode.

Table 3-5. Transistor Tests

Step	Positive lead	Negative lead	Meter reading	Action
1	Base	Emitter	Less than 100 K	Proceed to step 2
			Greater than 100 K	Replace transistor
2	Emitter	Base	Greater than 1000 K	Proceed to step 3
			Less than 1000 K	Replace transistor
3	Base	Collector	Less than 100 K	Proceed to step 4
			Greater than 100 K	Replace transistor
4	Collector	Base	Greater than 1000 K	Proceed to step 5
			Less than 1000 K	Replace transistor
5	Collector	Emitter	Greater than 1000 K	Proceed to step 6
			Less than 1000 K	Replace transistor
6	Emitter	Collector	Greater than 1000 K	Reconnect all loads
			Less than 1000 K	Replace transistor

Table 3-6. Diode Tests

Step	Positive lead	Negative lead	Meter reading	Action
1	Anode	Cathode	Less than 100 K	Proceed to step
			Greater than 100 K	Replace diode
2	Cathode	Anode	Greater than 1000 K	Connect leads
			Less than 1000K	Replace diode

3-8. Communication Distribution Box (A12) Repair Procedure

Repair of the communication distribution box consists of the substitution of printed wiring assemblies to isolate a faulty printed wiring assembly as listed in table 3-7. Figure 3-1 shows the location of the com- munication distribution box in the shelter. Figure 3-5 is a parts location diagram of the unit. The schematic diagram of the communication distribution box is shown in figure FO-54.

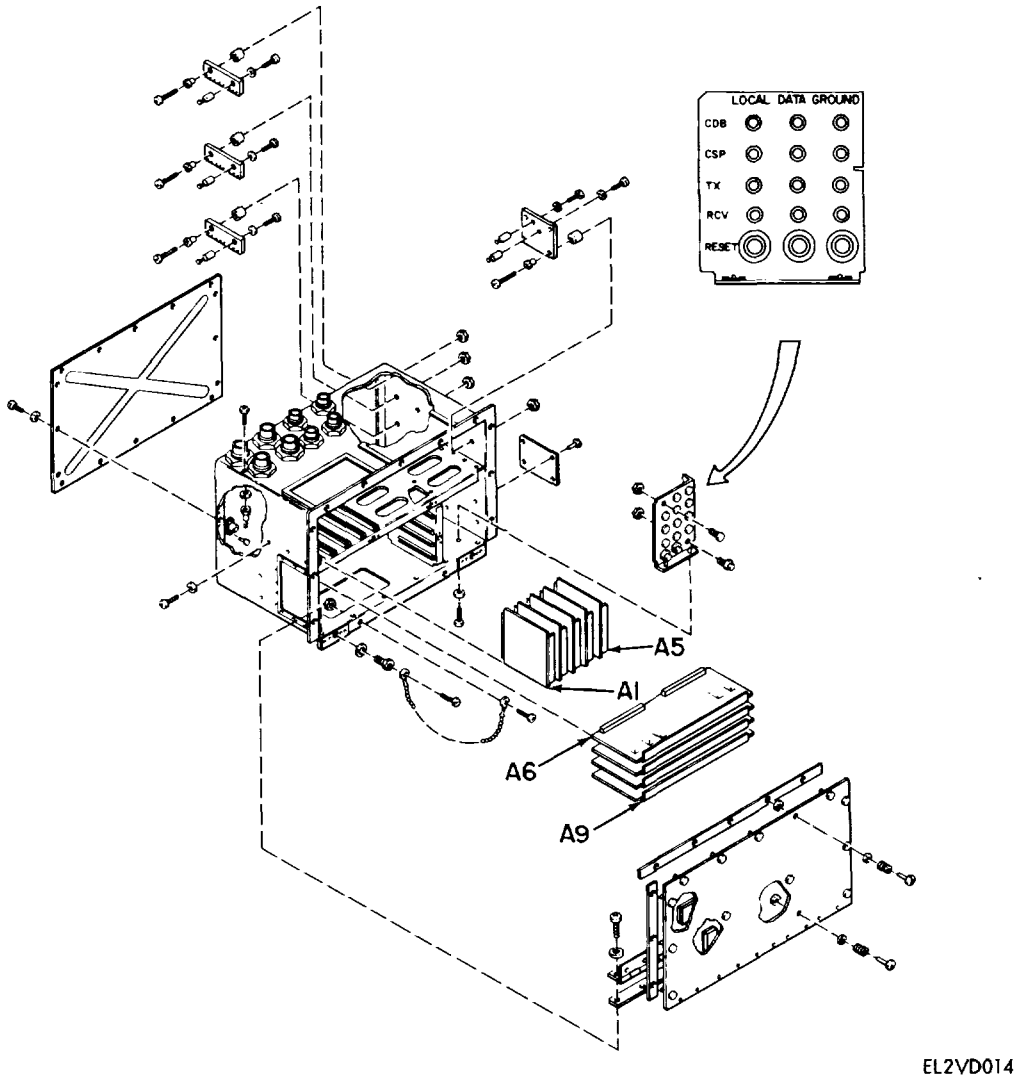


Figure 3-5. Communications distribution box (A12) - parts location diagram.

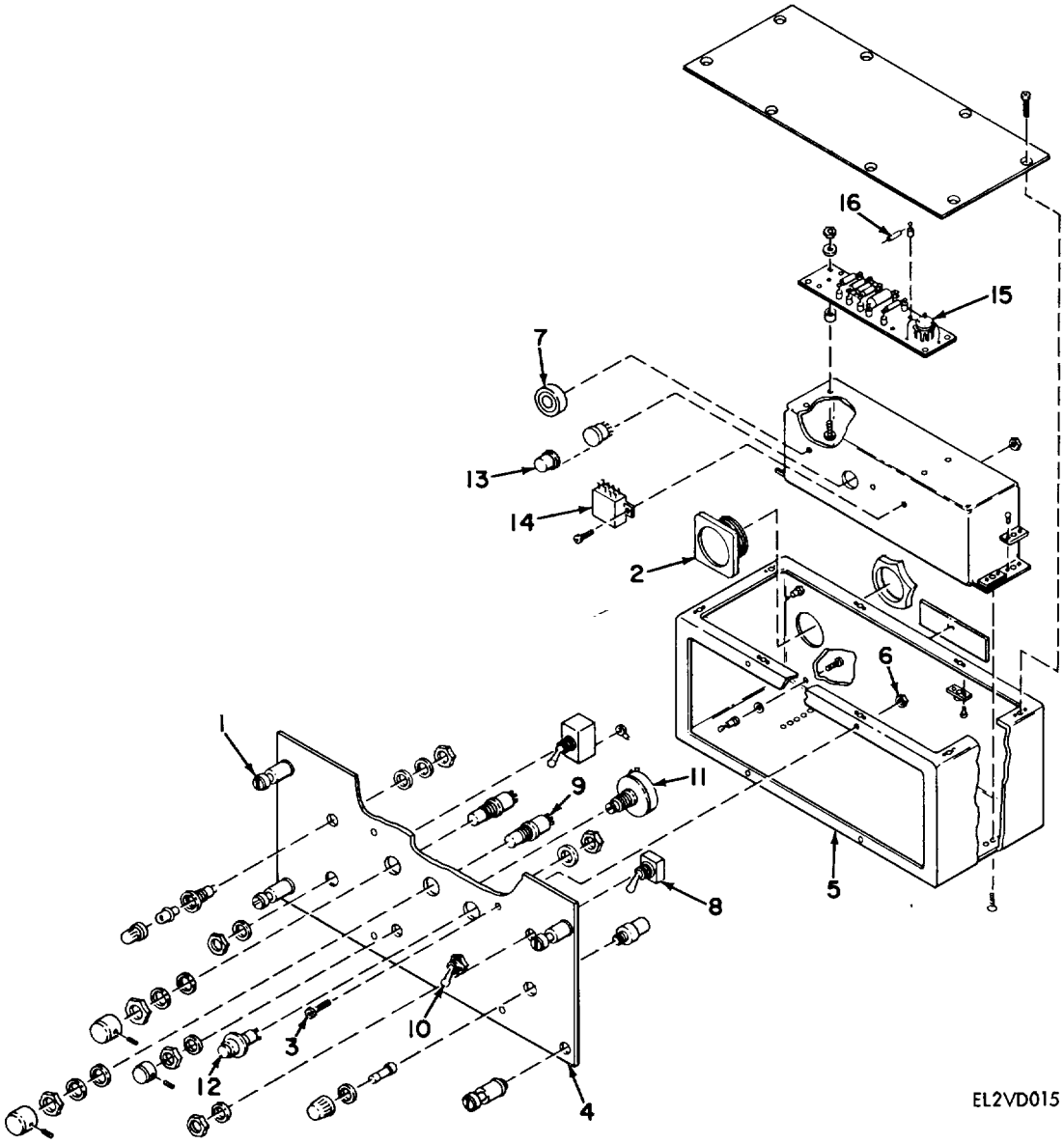
Table 3-7. Communication Distribution Box Troubleshooting Chart

Item	Malfunction	Probable cause	Corrective action
1	Unable to select XCVR from local position.	Defective controller logic board	Replace controller logic board (A2)
2	Unable to select XCVR from data position.	Defective controller logic board	Replace controller logic board (A3)
3	Unable to select XCVR from ground position.	Defective controller logic board	Replace controller logic board (A4)
4	Unable to receive on UHF1, UHF2, UHF3 or VHF1 (any position); remaining channels OK.	Defective audio #1 board	Replace audio #1 board (A9)
5	Unable to receive on VHF2, VHF3, FM1 or FM2 (any position); remaining channels OK.	Defective audio #1 board	Replace audio #1 board (A10)
6	Unable to receive on FM3, HF/SSB (any position); remaining channels OK.	Defective audio #1 board	Replace audio #1 board (A11)
7	Unable to transmit on UHF1, UHF2, UHF3 or VHF1 (any position); remaining channels OK.	Defective audio #1 board	Replace audio #1 board (A9)
8	Unable to transmit on VHF2, VHF3, FM1 or FM2 (any position); remaining channels OK.	Defective audio #1 board	Replace audio #1 board (A10)
9	Unable to transmit on FM3 or HF/SSB (any position); remaining channels OK.	Defective audio #1 board	Replace audio #1 board (A11)
10	Unable to receive any channel (XCVR) at LOCAL position, other positions OK.	Defective connector J4 Defective audio #2 board	Repair or replace J4 Replace audio #2 board (A12)
11	Unable to receive any channel (XCVR) at DATA position, other positions OK.	Defective connector J5 Defective audio #2 board	Repair or replace J5 Replace audio #2 board (A12)
12	Unable to receive any channel (XCVR) at GROUND position, other positions OK.	Defective audio #2 board	Replace audio #2 board (A12)
13	Unable to transmit on any channel (XCVR) at LOCAL position, other positions OK.	Defective audio #2 board	Replace audio #2 board (A12)
14	Unable to transmit on any channel (XC-TR) at DATA position, other positions OK.	Defective audio #2 board	Replace audio #2 board (A12)
15	Unable to transmit on any channel (XC.R) at GROUND position, other positions OK.	Defective audio #2 board	Replace audio #2 board (A12)
16	IN-USE lamps do not light, any position, when an (XCVR) is selected, any position, reception and transmission OK.	Defective tone distribution amplifier Defective tone generator	Replace tone distribution amplifier (A2) Replace tone generator (A4)
17	Call lamps do not light when traffic is received, reception otherwise OK.	Defective controller logic board Defective audio #1 board Defective audio **#2** board	Replace controller logic board (A2, A3, or A4) Replace audio #1 board (A6, A7, or A8) Replace audio #2 board (A9)
18	Unable to monitor from supervisor's position.	Defective audio #2 board	Replace audio #2 board (A9)
19	Unable to control from supervisor's position.	Defective audio #2 board	Replace audio #2 board (A9)
20	Supervisor unable to receive and/or transmit.	Defective audio #2 board	Replace audio #2 board (A9)
21	Unable to communicate via direct lines, any position.	Defective audio #2 board Defective direct line summing amp.	Replace audio #2 board (A9) Replace direct line summing amp.

3-9. Navaid Monitor (A37) Repair Procedure

Repair of the navaid monitor consists of isolating and replacing a faulty component in accordance with the troubleshooting procedures listed in table 3-8.

Figure 3-1 shows the location of the navaid monitor in the shelter. Figure 3-6 shows the disassembly of the navaid monitor. The schematic diagram of the navaid monitor is shown in figure 5-11.



1 Captive screw	9 S6
2 J1	10 S3
3 Screw	11 R3
4 Panel	12 S2
5 Chassis	13 K1
6 Nut	14 K2
7 LS1	15 CR2
8 S1	16 R1

Figure 3-6. Navaid monitor (A37) - disassembly

Table 3-8. Navaid Monitor (A37) Troubleshooting Chart

Item	Malfunction	Probable cause	Corrective action
1	NAVAID STATUS OPER lighted pushbutton switch not lit.	Defective K1, K2, CR2, R1 or S1.	Press the NAVAID STATUS OPER lighted pushbutton switch. If the switch lights green, remove the navaid monitor and use the multimeter to isolate the faulty equipment.
2	NAVAID STATUS FA1LURE lighted pushbutton switch does not light red when pressed.	Defective S6 switch/lamp.	Replace S6 switch/lamp
3	Alarm sounds weak or not at all when NAVAID STATUS OPER lighted pushbutton switch is pressed.	*a.* ALARMADJ not adjusted correctly. *b.* Defective alarm, S3, R3 or S6 switch/lamp.	*a.* Adjust ALARM ADJ for audible tone and press RESET switch to stop the alarm. *b.* Use the multimeter to make resistance readings. Replace the faulty component.
4	RESET switch does not stop buzzer after NAVAID STATUS OPER lighted pushbutton switch was pressed.	Defective K2 or S2.	Use the multimeter to make resistance readings Replace the faulty component.

a. Navaid Monitor Removal Procedure.

(1) Loosen the four captive screws (1, fig.3-6) securing the navaid monitor to the console and carefully move it away from the console.

(2) Disconnect the cable from connector J1 (2) on the back of the navaid monitor.

b. Alarm (LS1) Replacement Procedure.

(1) Remove the screws (3) securing the panel (4) to the chassis (5) and fold down the cover and nuts (6).

(2) Disconnect and tag the leads from alarm LS1 (7).Remove LS1.

(3) Clean the old sealant from the LS1 mounting area.

(4) Apply sealant, MIL-M-22473, to the LS1 mounting area and install the new LS1 (7).

(5) Connect the leads to LS1 and remove the tags.

(6) Install the panel (4) on the chassis (5) and secure with screws (3) and nuts (6).

c. Navaid Monitor Installation Procedure.

(1) Connect the cable to connector J1 (2) on the back of the navaid monitor.

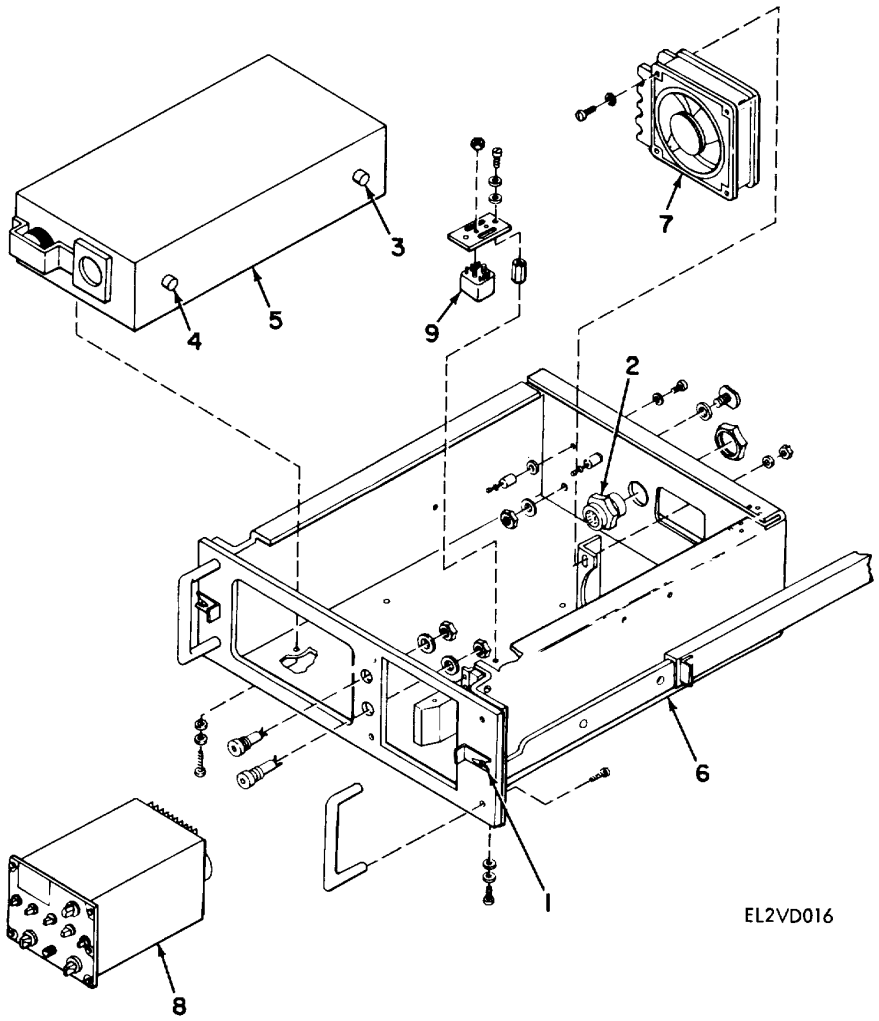
(2) Install the navaid monitor in the console and secure with the four captive screws (1).

3-10. UHF AM Radio and Filter (A6, Al 5, and A23) Chassis Assembly Repair Procedure

Repair of the UHF AM radio and filter chassis assemblies consists of isolating and replacing a faulty component in accordance with the troubleshooting procedures listed in table 3-9.Figure 3-1 shows the location of the UHF AM radio and filter assemblies in the shelter. Figure 3-7 shows the disassembly of the chassis assemblies. The schematic diagram of the chassis assembly is given in figure 5-7.

Table 3-9. UHF Transceiver Troubleshooting Chart

Item	Malfunction	Probable cause	Corrective action
1	Blower does not operate, transceiver is operational.	Defective blower B1	Replace blower B1
2	Transceiver is inoperative, but blower is operating.	Defective transceiver	Replace defective transceiver
3	Reception OK, cannot transmit.	*a.* Defective transformer T1 *b.* Loose or broken wiring	*a.* Replace transformer T1 *b.* Repair wiring



1 Latch
2 J1
3 Filter J1
4 Filter J2
5 Filter assembly
6 Chassis assembly
7 Blower B1
8 UHF AM radio
9 Transformer T1

Figure 3-7. UHF AM radio and filter (A6, A15 and A23) - chassis disassembly.

a. Removal

(1) Release the two latches (1, fig.3-7) on the panel. Pull the chassis assembly out of the rack far enough to gain access to the rear of the chassis

(2) Disconnect the cable from J1 (2) on the chassis assembly and from J1 (3) and J2 (4) on the filter assembly (5).

(3) Remove the chassis assembly (6) from the rack.

b. Repair .Use the multimeter to check T1 or B1 for shorts or open circuits. Replace a faulty transformer or blower.

c. Installation.

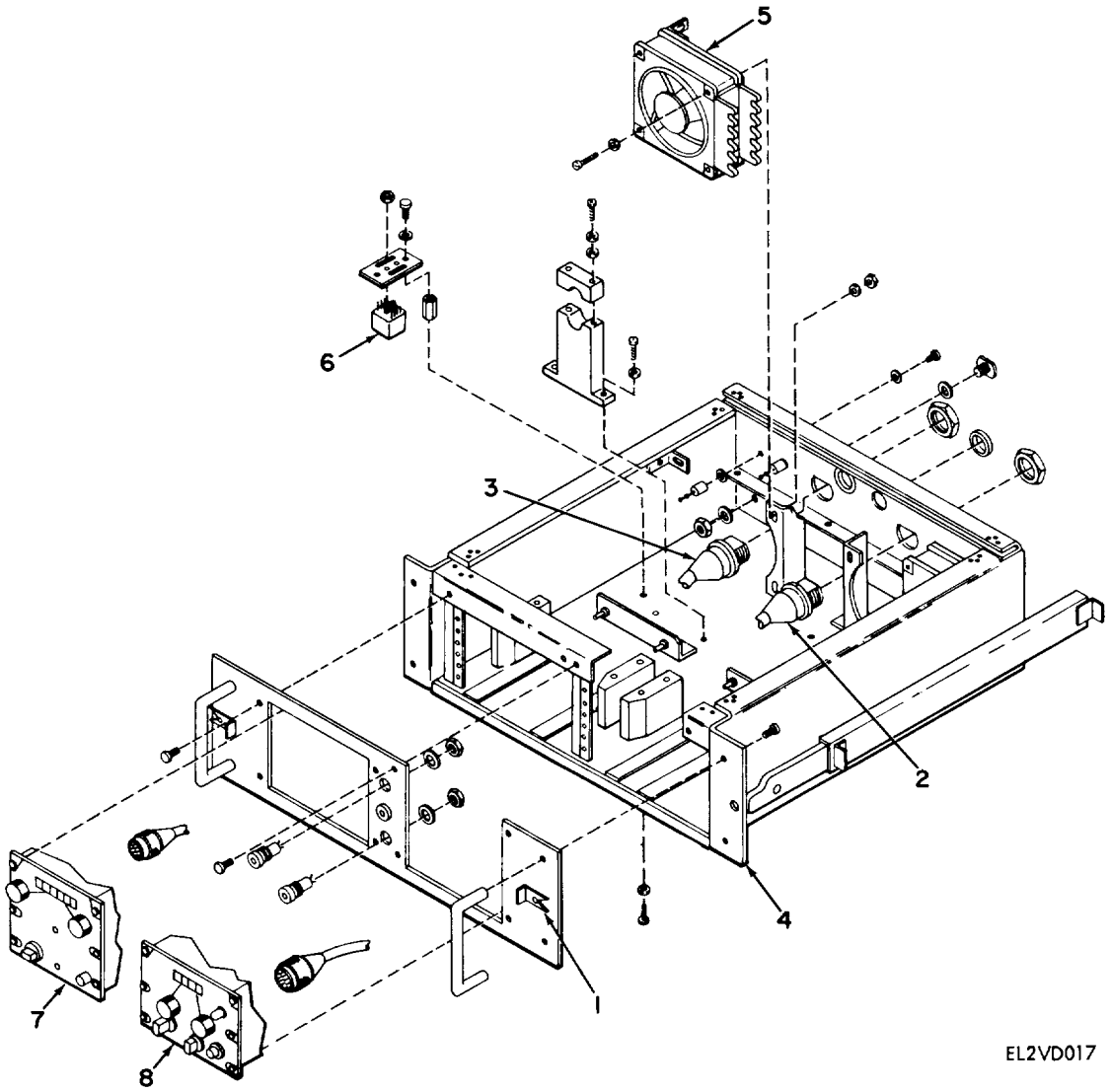
(1) Position the UHF AM radio and filter assembly (6) on the rack slides.

(2) Connect the cables to J1 (3) and J2 (4) on the filter assembly and to J1 (2) on the chassis assembly.

(3) Slide the chassis assembly the rest of the way into the rack and secure with the two latches (1).

3-11. VHF AM Radio and VHF FM Radio (A5, A14, and A22) Chassis Assembly Repair Procedure

Repair of the VHF AM radio and VHF FM radio chassis assembly consists of isolating and replacing a faulty component in accordance with the troubleshooting procedures listed in table 3-10. Figure 3-1 shows the location of the VHF AM radio and VHF FM radio assemblies in the shelter. Figure 3-8 shows the disassembly of the chassis assemblies. Figure FO-56 is the schematic diagram of the chassis assembly.



1 Latch
2 J1
3 J2
4 Chassis
5 Blower B1
6 Transformer T1
7 VHF AM radio
8 VHF FM radio

Figure 3-8. VHF AM radio and VHF FM radio (A5, A14 and A22 - chassis disassembly.

Table 3-10. VHF AM and FM Troubleshooting Chart

Item	Malfunction	Probable cause	Corrective action
1	Blower, B1, inoperative; transceiver is operational.	Defective blower	Replace blower
2	The transceiver is inoperative, but blower is operating.	Defective transceiver	Replace the transceiver
3	Reception OK, but cannot transmit.	*a.* Defective transformer T1 *b.* Loose, broken or shorted wiring	a. Replace transformer T1 *b.* Repair or replace wiring
4	Blower, B2, inoperative; transceiver blower is operational	Defective blower	Replace blower
5	The transceiver is inoperative, but blower is operating.	Defective transceiver	Replace transceiver
6	Reception OK, but cannot transmit.	*a.* Defective transformer T2 *b.* Loose, broken or shorted wiring	*a.* Replace transformer T2 *b.* Repair wiring

a. Removal.

(1) Release the two latches (1, fig.3-8) on the panel. Pull the chassis assembly out of the rack far enough to gain access to the rear of the chassis assembly.

(2) Disconnect the cables from J1 (2) and J2 (3).

(3) Remove the chassis assembly (4) from the rack.

b. Repair. Use a multimeter to check T1, T2, B1 or B2 for shorts or open circuits. Replace the faulty transformer or blower.

c. Installation.

(1) Position the VHF AM radio and VHF FM radio chassis assembly (4) on the rack slides.

(2) Connect the cables to J1 (2) and J2 (3) on the rear of the chassis assembly.

(3) Slide the chassis assembly the rest of the way into the rack and secure with the two latches (1).

3-12. 24 Hour Clock (M1) Repair

No repair action can be performed on the 24 hour clock. Upon failure, the clock module must be replaced with a serviceable unit.

Table 3-11. Deleted

Figure 3-9. Deleted.

3-13. Console Assembly (A25) Filter Bypass Control Switch Replacement Procedure

Repair of the local data and ground control panels consists of replacing SI, S2, or S3 on the local panel. Figure 3-1 shows the location of the panels in the shelter. Figure 3-10 shows the disassembly of the panels.

a. Removal

(1) Open the local controller's panel and fold it down to gain access to the switch.

(2) Tag and disconnect the leads from the terminals on the switch.

(3) Remove the light module.

(4) Rotate the two screws ccw approximately two turns to release the mounting flanges and remove the switch housing.

b. Installation.

(1) Refer to view A in figure 3-10.Connect jumper leads to the switch terminals as shown using standard wire, MIL-W--16878, Type E (600 U), white #20.

(2) Install the switch housing in the panel and secure by rotating the two screws cw approximately two turns to tighten the mounting flanges.

(3) Connect the leads to the switch terminals and remove the tags.

(4) Install the light module.

(5) Close the local controller's panel and tighten the captive screws.

3- 14. Console Overhead Light Replacement Procedure

a. Removal.

(1) Unscrew the light shade from its mounting ring.

(2) Remove the four screws securing the ring and light fixture to the overhead mounting channel. Pull fixture down.

(3) Remove the rubber cover from the rear of the light fixture.

(4) Disconnect the two leads connected to the light fixture terminals.

b. Installation.

(1) Connect the two leads to the light fixture terminals.

(2) Snap the rubber cover in place over the terminals.

(3) Fit the light fixture up into the overhead mounting channel and align the four mounting screw holes.

(4) Align the light shade mounting ring with the four mounting holes and screw into place with the four screws previously removed.

(5) Screw the light shade into the mounting ring. Take care not to cross-thread the lightshade when replacing.

3-14.1 Console Controls (D/L VOL, CLOCK ILLUMINATION DIM, SPK VOL, CONSOLE LLUMINATION ON-OFF) Removal and Replacement Procedure.

Repair of these controls consists of replacement of the defective component. The procedure for gaining access and replacement is basically the same for all and consists of the following steps: (Refer to fig. 3-1 for component location.)

a. Removal.

(1) Loosen the five captive screws securing the sloping front of the console at the affected position (i.e. local, data, or ground).

(2) Swing the console front outward, thus allowing access to the rear of the console front plate.

(3) Tag and unsolder the leads to the component to be replaced (switch, volume control, etc.).

(4) Remove the control knob from the potentiometers.

(5) Unscrew the collar nut securing the item to the panel and remove the item.

b. Replacement.

(1) Mount the replacement component into the panel hole and secure with the collar nut.

(2) Resolder the leads to the component in accordance with the tags attached in b.(3) above.

(3) Reinstall the knob on the potentiometer.

(4) Fold the sloping console front back into place and secure with the five captive screws.

3-14.2 Repair of Dimmer/Regulator Modules

Repair of these units consists of removal and replacement of the defective module and replacement of defective components on the module.

a. Module Removal.

(1) Remove the 4 screws, washers, and shakeproof nuts securing the dimmer assembly to the back of the Ground Controller's console. Save for reinstallation.

(2) Tag and unsolder the 7 leads from the dimmer assembly.

(3) Remove the 4 screws, washers, and nuts securing the defective heat sink modules to the assembly mounting plate. Save for installations.

(4) Tag and unsolder the 2 wires from the defective module, thus freeing it from the assembly.

(5) The defective component, IC, capacitor, or resistor can now be replaced.

b. Replacement.

(1) Resolder the 2 wires, removed in a (4) above.

(2) Remount the heat sink module to the assembly mounting plate using the hardware removed in a (3) above.

(3) Resolder the 7 leads, removed in a (2) above, to the dimmer assembly.

(4) Remount the assembly to the back of the Ground Controller's console using the hardware removed in a.(l) above.

3-15. VHF FM Antenna Tuning Control (A41, A42, or A43) Repair Procedure

Repair of the VHF FM antenna tuning control consists of isolating and replacing a faulty component in accordance with the troubleshooting procedures listed in table 3-12.Figure 3-1 shows the location of the VHF FM antenna tuning controls in the shelter. Figure 3-11 shows the disassembly of the tuning control. The schematic diagram of the unit is shown in figure 5-10.

a. Removal.

(1) Loosen the four captive screws (1, fig. 3-11) on the tuning control panel and carefully move the tuning control away from the console.

(2) Disconnect the cables from J1 (2) and J2 (3) on the tuning control.

b. Repair.

(1) Refer to figure 3-11 for the disassembly of the tuning control and replace the faulty component.

(2) If J1 or J2 is being replaced, install a length of insulation sleeving, MIL-I-7444, type 2, class 2, yellow, 0.034" ID (20 AWG), over each lead. Connect the lead to J1 or J2 and slide the insulation sleeving over the soldered joint.

c. Installation.

(1) Connect the cables to J1 (2) and J2 (3).

(2) Secure the tuning control in place by tightening the four screws (1) on the panel.

3-15.1 VHF FM Antennas and Mounts Repair Procedures

Repair of the VHF FM antennas and mounts consists of replacement of the damaged or defective item such as the antenna whip, AS-1730/URC; the matching unit, MX-6707/URC; or the roof or tripod mounting. For replacement procedures, refer to TM 11-5895-801-20.For repair of the AS--1729/URC components, refer to TM 11-5895-262-15.

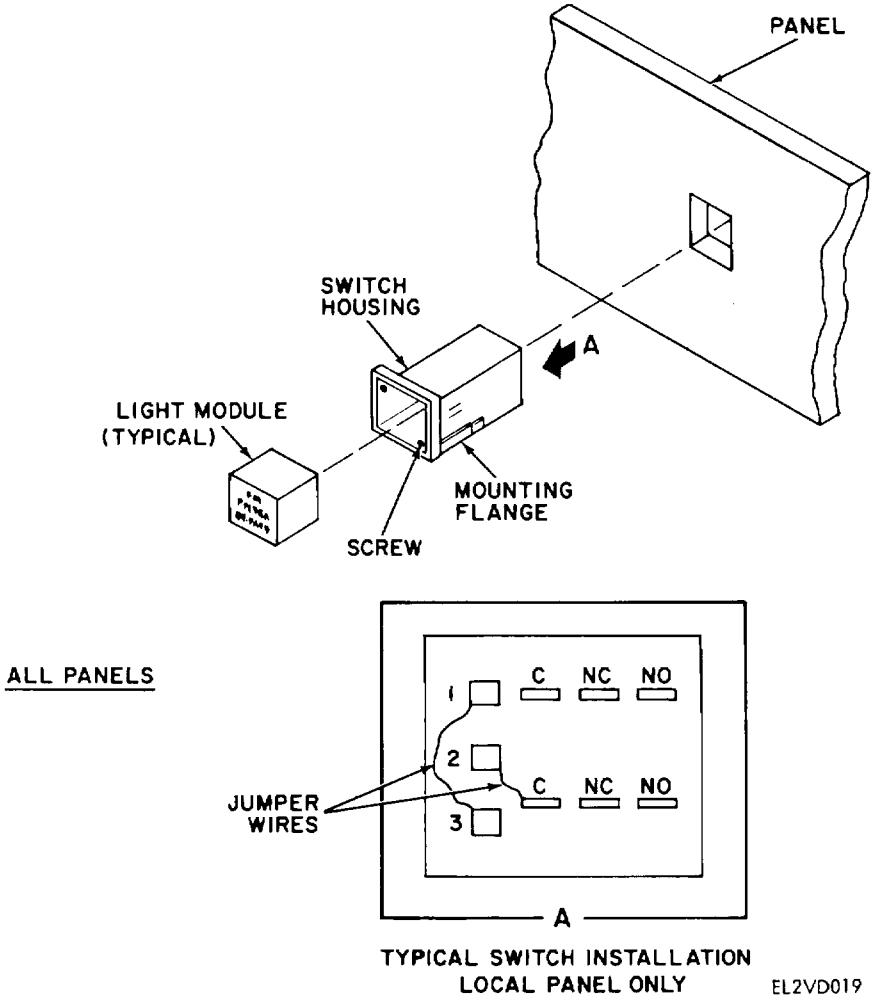


Figure 3-10. Local, data and ground control panel - disassembly.

1 Captive screw
2 J1
3 J3

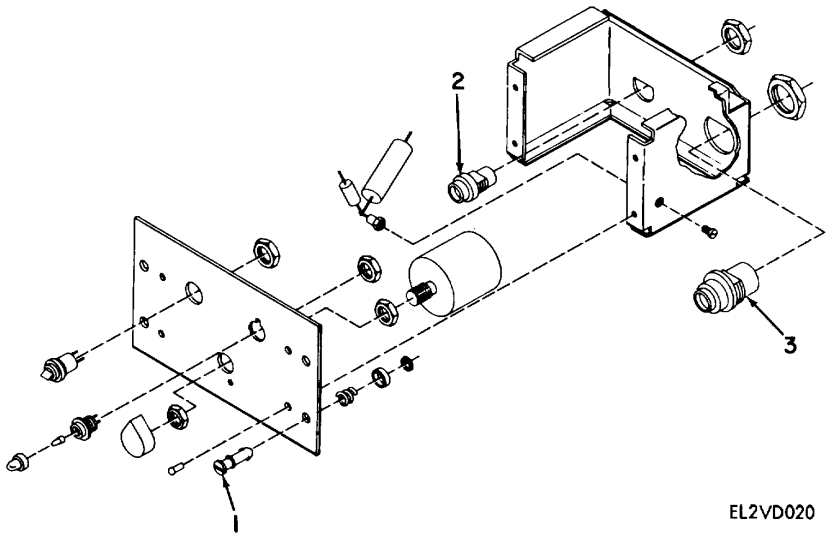


Figure 3-11. VHF FM antenna tuning control (A41, A42 and A43) - disassembly

Table 3-12. VHF FM Antenna Tuning Control Troubleshooting Chart

Item	Malfunction	Probable cause	Corrective action
1	Lamp, DS1, does not go out indicating completion of tuning (S2 is depressed).	*a.* Defective cable (W68, W69 or W70 as appropriate)	a. Replace cable
		b. Defective switch, S1	*b.* Replace S1
		c. Defective cable (W25, W27, W29 as appropriate)	*c.* Replace cable.
2	Lamp, DS1, does not light initially when S2 is depressed, but examination of appropriate antenna coupler indicates tuning has taken place.	*a.* Defectivelamp,DS1	*a.* ReplaceDS1
		b. Broken or burned out resistor, R2	*b.* Replace R2
3	Coupler will tune only in last 5 steps (i.e., 53 to 76 MHz) regardless of position of S1	Defective switch S1	Replace S1

3-16. Communication Selector Panel (A34, A35, or A40) Repair Procedure.

Repair of the communication selector panel consists of the substitution of printed wiring assemblies to isolate a faulty printed wiring assembly as listed in table 3-13.Figure 3-1 shows the location of the communication selector panels in the shelter. Figure 3-12 shows the disassembly of the communication selector panel and the location of the printed wiring assemblies. The schematic diagram of the unit is shown in figure FO-55.

a. Removal (fig. 3-12)

(1) Loosen the six captive screws (1, fig. 3-12) securing the communications select panel to the console.

(2) Carefully pull the communications select panel out of the console far enough to gain access to the cable connected to the rear of the communications select panel.

(3) Disconnect the cable from J1 (2) and remove the communications select panel.

b. Disassembly.

(1) Remove the 16 screws (3) securing the panel (4) to the chassis (5).

CAUTION

Leads are connected between the panel and the chassis. Do not put a strain on the leads when removing the panel.

(2) Carefully remove the panel.

c. Assembly. Place the panel (4) on the chassis (5) and secure with the 16 screws (3).

d. Installation.

(1) Position the communications select panel on the console and connect the cable to J1 (2).

(2) Install the communications select panel on the console and tighten the six captive screws (1).

1 J1
2 Panel
3 Chassis
4 A1-CSP Audio
5 A2-Controller Logic
6 A3-Lamp Driver

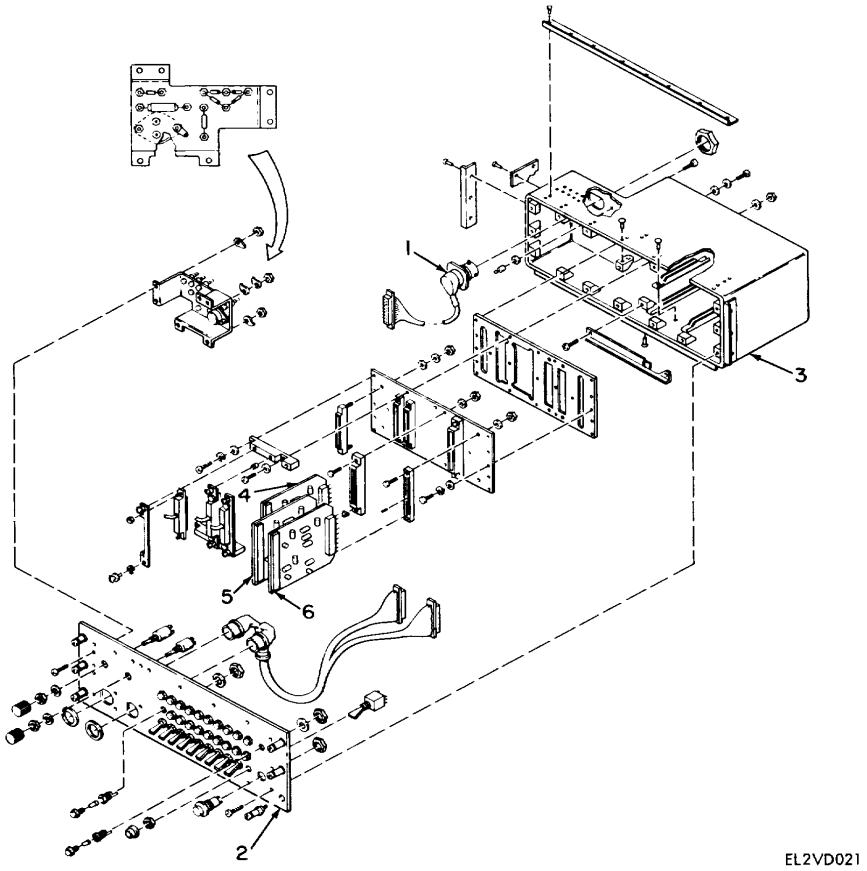


Figure 3-12.
Communications select
panel (A34, A36 and A40) - disassembly and component location diagram.

Table 3-13. Communication Selector Panels Troubleshooting Chart

Item	Malfunction	Probable cause	Corrective action
1	Operator cannot key from MIC/MDST jack, but SUPERVISOR keys OK.	Defective CSP audio board	Replace CSP audio board (A1)
2	Supervisor is unable to override keying by operator.	Defective CSP audio board	Replace CSP audio board (A1)
3	Unable to select XCVR (any one or all).	Defective controller logic board	Replace controller logic board (A2)
4	IN-USE lamp(s) do not light when XCVR is selected (transmission and reception OK).	Defective lamp driver board Defective controller logic board	Replace lamp driver board (A3) Replace controller logic board (A2)
5	Call lamp(s) do not light when traffic is received.	Defective lamp driver Defective controller logic board	Replace lamp driver board (A3) Replace controller logic board (A2)

3-17. Supervisor Panel (A29) Repair Procedure

Repair of the supervisor panel consists of the substitution of the printed wiring assembly. Figure 3-1 shows the location of the supervisor panel in the shelter. Figure 3-13 shows the disassembly of the supervisor panel and the location of the printed wiring assembly. The schematic diagram of the unit is shown in figure 5-15.

a. Removal (fig. 3-13).

(1) Loosen the six captive screws (1, fig. 3-13) securing the supervisor panel to the console.

(2) Carefully pull the supervisor panel out of the console far enough to gain access to the cable connected to the rear of the supervisor panel.

(3) Disconnect the cable from J1 (2) and remove
the supervisor panel.

b. Disassembly.

(1) Remove the 10 screws (3) securing the panel (4) to the chassis assembly (5).

CAUTION

Leads are connected between the panel and the chassis. Do not put a strain on the leads when removing the panel.

(2) Carefully remove the panel.

c. Assembly. Place the panel (4) on the chassis (5) and secure with the 10 screws (3).

d. Installation.

(1) Position the supervisor panel on the console and connect the cable to J1 (2).

(2) Install the supervisor panel on the console and tighten the six captive screws (1).

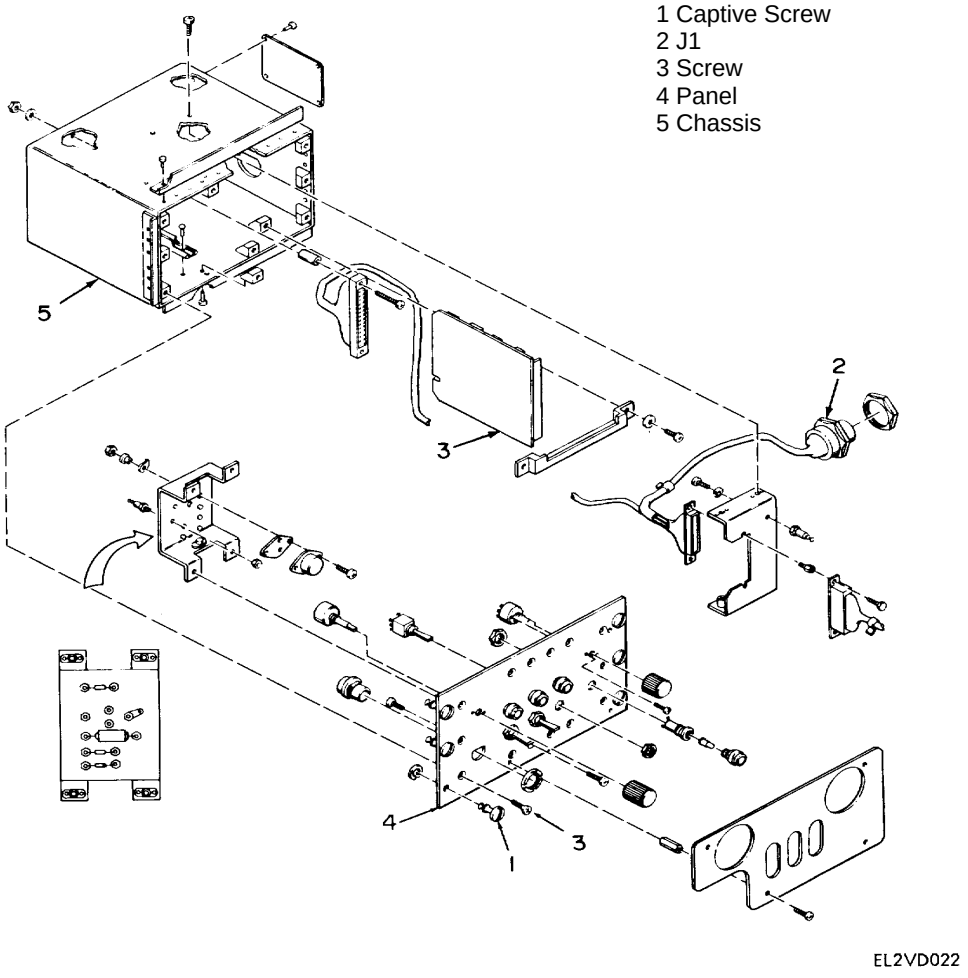


Figure 3-13. Supervisor pane(Al (A9)-disassembly and component location diagram.

Table 3-14. Deleted

3-18. Crypto Chassis Assembly (A8, All, and A17) Repair Procedure

Repair of the crypto chassis consists of isolating and replacing a faulty component in accordance with the troubleshooting procedures listed in table 3-15.Figure 3-1 shows the location of the crypto assemblies in the shelter. Figure 3-14 shows the disassembly of the crypto assemblies. The schematic diagrams of the crypto assemblies are shown in figure FO-57.

NOTE

The three crypto assemblies are identical except that A8 has diode CR2 installed in it. Crypto assemblies All and A17 do not include diode CR2.

a. Removal.

(1) Release the two latches (1, fig.3-14) on the panel. Pull the crypto assembly out of the rack far enough to gain access to the rear of the assembly.

(2) Disconnect the cables from connectors J1(2), J3(3), and J4(4).Remove the crypto assembly from the rack.

b. Relays K1 through K5 Replacement Procedure.

(1) Tag and unsolder the wires from the defective relay.

(2) Remove the mounting hardware securing the relay bracket to the chassis and fold the bracket back.

(3) Remove the mounting hardware securing the defective relay to the bracket and remove the relay.

(4) Install a new relay and secure with the mounting hardware.

(5) Replace the relay bracket in the chassis and secure with the hardware previously removed.

(6) Install a length of insulation sleeving, MIL-I-7444, Type 2, Class 2, yellow, 0.034 inch ID (20 AWG) over each lead. Solder the leads to the new relay and slide the insulation sleeving onto the soldered joint. Remove the tags.

c. Installation.

(1) Position the crypto assembly on the rack slides and connect the cables to J1(2), J3(3), and J4(4).

(2) Slide the crypto assembly the rest of the way into the rack and secure with the two latches (1).

3-19. HF Storage Cabinet Repair Procedure

NOTE

The HF storage cabinet is mounted on the skid platform and houses the AN/ARC-102 receiver-transmitter and an impedance matching network (T1, R1, and R2).Figure 3-15 shows the disassembly of the HF storage cabinet. The schematic diagram of the HF storage cabinet is shown in figure FO-60.

a. Troubleshooting Procedure. Use the multimeter to make resistance checks to isolate a faulty component in the HF storage cabinet. Replace the faulty component.

b. Gasket Replacement.

(1) Remove gasket (fig.3-15) and clean the adhesive from the gasket mounting area.

(2) Cut new gasket to length.

(3) Apply adhesive, MIL-A-14042, to the mounting area and install the new gasket.

Table 3-15. Crypto Chassis Assembly Troubleshooting Chart

Item	Malfunction	Probable cause	Corrective action
1	Unable to transfer transceiver to SECURE mode	*a.* Defective switch S1 *b.* Defective relay K1	*a.* Replace switch S1 *b.* Replace relay K1
2	Unable to transmit with secure headset	a. Defective KY-28 *b.* Defective transformer T1 c. Defective relay K1	*a.* Replace KY-28 *b.* Replace transformer T1 *c.* Replace relay K1
3	Intermittent and/or erratic operation	Defective wire and/or cabling	Repair wiring and/or connectors (J1 or J4)
4	No radio or crypto panel lamps	Defective Dimmer	Replace Dimmer Assy A3

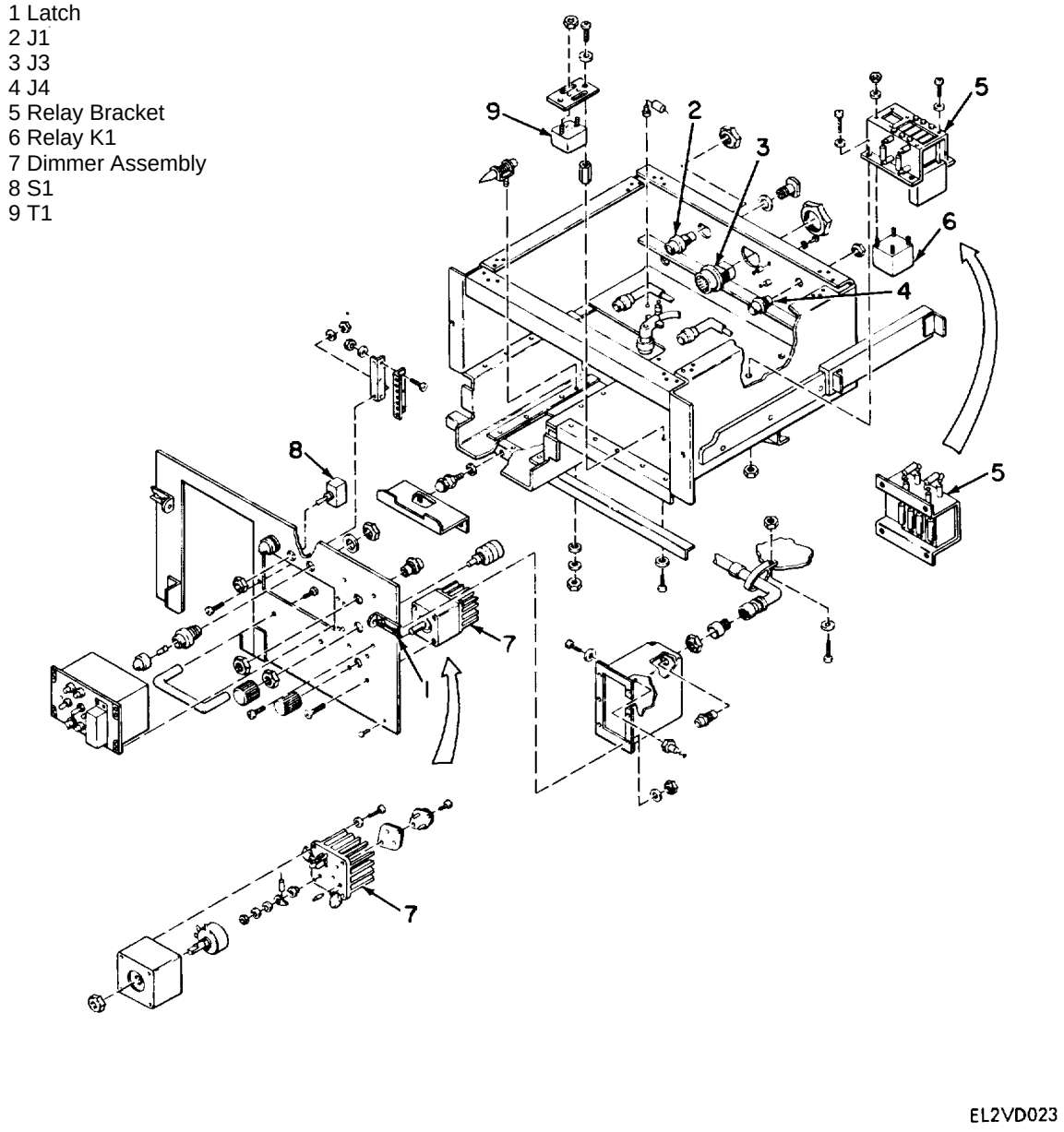


Figure 3-14. Crypto chassis (A8, A 11 and A17)-disassembly

3-20. Flexible Air Duct Repair Procedure

If the duct fabric becomes torn or punctured, it may be repaired by stitching or by cementing patches (if available).When repairs are accomplished by stitching, use a nylon or waxed lacing cord. Close the tear or hole using a lock type stitch to prevent the repair job from unravelling if one of the stitches breaks.

3-21. Air Traffic Light Guns Repair

NOTE

Light gun repair at the DS level consists of replacement of the lens, bulb, and switch.

a. Lens Removal. Proceed as follows to replace the light gun lens.

(1) Loosen three knurled screws from the front end of the light gun.

(2) Remove the bezel.

(3) Remove the lens cushion ring and the lens.

b. Lens Installation.

(1) Place the lens cushion and the lens in the bezel.

(2) Slide the bezel over the end of the light gun.

(3) Secure the bezel in position with the three knurled screws.

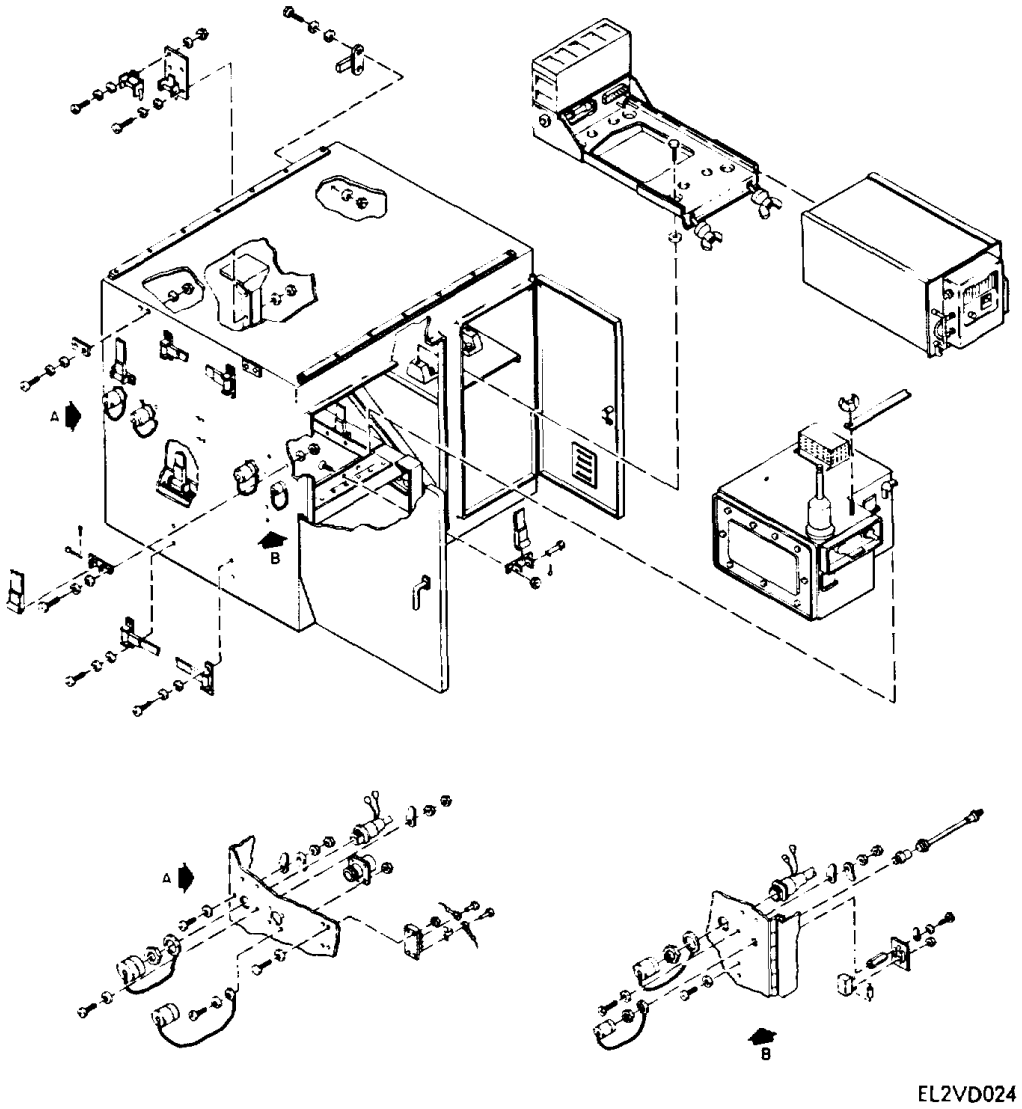


Figure 3-15. HF storage cabinet - disassembly

c. Lamp Removal.

(1) Remove the lens in accordance with step a.

(2) Press and turn the bulb counter clockwise (ccw) on quarter turn and remove the bulb.

d. Lamp Installation.

(1) Place the new bulb in position.

(2) Press down and turn the bulb clockwise (cw) one quarter turn.

(3) Replace the lens in accordance with step b.

e. Switch Removal.

(1) Remove two screws from the light gun handle.

(2) Separate the two sections of the light gun handle.

(3) Remove the two wires from the switch.

(4) Remove two retaining screws from the switch and remove the switch.

f. Switch Installation.

(1) Place the new switch in position and secure it with the two retaining screws.

(2) Connect the two wires, removed in step e(3), to the new switch.

(3) Place the two halves of the light gun handle together and secure them with the two screws, removed in step e(1).

3-22. Wind Measuring System Support Repair Procedures

Repair of the wind mast consists of replacement of the cable clips or the captive ball-lock pins if these become damaged or lost. Replacement consists of removing the screws and replacing the damaged item using the same screws. If the wind mast itself is bent or dented, it must be replaced.

3-23. Fabricated Items

a. The items listed below are fabricated and installed at the DS level in accordance with the listed drawings.

Items	*Drawing No.*
Synthetic rubber	SM-B-885677-7
Copper tape	SM-B-885872-2
Transition	SM-D-885873-13
Rubber	SM-B-885677-11
Synthetic rubber	SM-B-885677-9
Plastic window	SM-C-886195
Gasket	SM-C-886194
Gasket	SM-C-886279
Rubber gasket	SM-D-885751-1
Rubber gasket	SM-D-885751-2
Synthetic rubber	SM-B-885677-5
Lockstrip	SM-D-885065

b. The items listed below are installed at the DS level.

Items	Drawing No.
Gasket	SM-A-885493-1
Gasket	SM-A-885493-2
Gasket	SM-A-885493-3
Cable	SM-A-885494
Cushion	SM-D-886078
Spacer	SM- B-885810
Writing plate	SM-D-885403-1
Writing plate	SM-D-885403-2
Writing plate	SM-D-885403-3
Bracket	SM-D-886089
Panel strip	SM-C-885920-1
Panel strip	SM-C-885920-2
Spacer	SM-B-885649
Antenna pivot	SM-D-886111

c. When installing gasket, SM-C-886194, gasket, SM-C-886279, saddlepad, SM-A-885493-1, -2, -3 or bumper pad, SM-A-885494, use adhesive, MIL-A-5092, Type II.

d. When installing cushion, SM-D-886078, use adhesive, MMM-A-1617, Type II.

CHAPTER 4

GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

Section I. GENERAL

4-1. Scope.

This chapter provides instructions for the disassembly, repair, reassembly and test of components in the shelter equipment which are performed by general support maintenance personnel. The repair of the electrical cables in the system is included.

4-2. Voltage and Resistance Measurements.

Voltage and resistance measurements are made only on the speaker/amplifier. For other resistance and continuity measurements, refer to the schematic drawings and electrical diagrams.

Section II. TOOLS AND TEST EQUIPMENT

4-3. Test Equipment, Tools and Materials.

Table 4-1 contains a list of test equipment required for general support maintenance of the shelter equipment. Table 4-2 contains a list of materials used.

4-4. Shelter Window Replacement Procedure.

a. Removal.

(1) Refer to figure 4-1.Tag and disconnect the leads from the connector (1).

(2) By hand, remove locking strip (5) from the retainer (3).This loosens the grip of the retainer on the glass (2).

NOTE

Attach suction cups to window. Use rubber gloves to handle the window by the edges

(3) Using a nylon spatula, pry the glass free of the retainer. Start at the top and work down both sides. The glass can then be lifted free of the retainer.

(4) If the retainer also requires replacement, slip it off the metal window frame.

b. Installation.

(1) With the groove in the retainer for the locking strip facing outward, slip the retainer (3) onto the metal window frame. Set the retainer firmly against the frame, especially at the four corners of the retainer.

CAUTION

Do not use a screwdriver, or other metal tools to set the glass into the retainer, or the glass and the retainer will be damaged. Use only the nylon spatulas.

NOTE

Use suction cups and/or rubber gloves as appropriate to handle the window. Use two persons to install the window.

(2) Set the glass into the bottom retainer. Keep the glass and the retainer dry. Use the nylon spatulas to slide the edge of the glass into the retainer. Work up the sides and along the top, seating the glass fully into the four retainers. Then remove the suction cup from the window.

CAUTION

Do not use a petroleum lubricant on the locking strip. A soap and water solution is recommended if the silicone lubricant, MIL-S-8660, is not available. Do not allow the water solution to seep into the groove that retains the glass or the metal.

(3) Using the lock strip tool, insert the locking strip into the retainer. Guide the locking strip through the center of the tool while moving the tool forward in the retainer groove. The tool will open the groove and deposit the strip in the groove.

(4) Connect the leads to the connector located at the top of the glass. Remove the tags.

Table 4-1. Tools and Test Equipment

Item	Technical manual	Common name	National/NATO stock number
Tool Kit, Electronic Equipment TK-100/G	SC 5180-91-CL-S21	Tool kit	5180-00-605-0079
Multimeter AN/USM-223	TM 11-6625-654-15	Multimeter	6625-00-999-7465
Oscilloscope AN/USM-281C	TM 11-6625-1703-15	Oscilloscope	6625-00-106-9622
Repair Kit, Shelter MK-681/G			5410-00-771-3354
Maintenance Kit, Electronic Equipment MK-679/G			5410-00-973-2936
Insertion/Removal Tool M15570-12		Insertion tool	5120-00-012-3425
Insertion/Removal Tool M15570-16		Insertion tool	5120-00-499-1905
Insertion/Removal Tool MI15570-20		Insertion tool	5120-00-937-5389
Kit, Printed Circuit Board			
PCB Test Fixture			

Table 4-2. Materials

Item	NSN or Specification
Silicon Lubricant	MIL-S-8660
Insulation Sleeving	MIL-I-7444, type 2, class 2, yellow, Sizes: 0.027" I.D.(22AWG) 0.034" I.D.(20AWG) 0.085" I.D.(12AWG)
Trichlorotrifluoroethane	NSN 6850-00-984-5843
Cloth, textile, lint-free	NSN 8305-00-170-5062

4-5. Radio Filters (A4-FL1, FL2), (A6-FL1), (A13-FL1, FL2), (Al5-FL1), (A21-FL1, FL2), and (A23-FL1) Repair Procedure.

a. General. The following is a typical removal, repair, and installation procedure. Figure 3-1 shows the location of the radio filters in the shelter. Figure 4-2 shows typical radio filter installations and figure 4-3 shows the disassembly of the radio filters.. Repair of the radio filters is limited to the replacement of the panel meter and the knobs.

b. Removal.

(1) Refer to figure 4-2.Release the two latches on the equipment tray panel. Pull the equipment tray out of the rack far enough to gain access to the cables connected to the equipment on the tray.

(2) Disconnect the cables from the equipment on the tray and remove the filter tray from the rack slides.

(3) Remove the mounting hardware securing the radio filter to the filter tray.

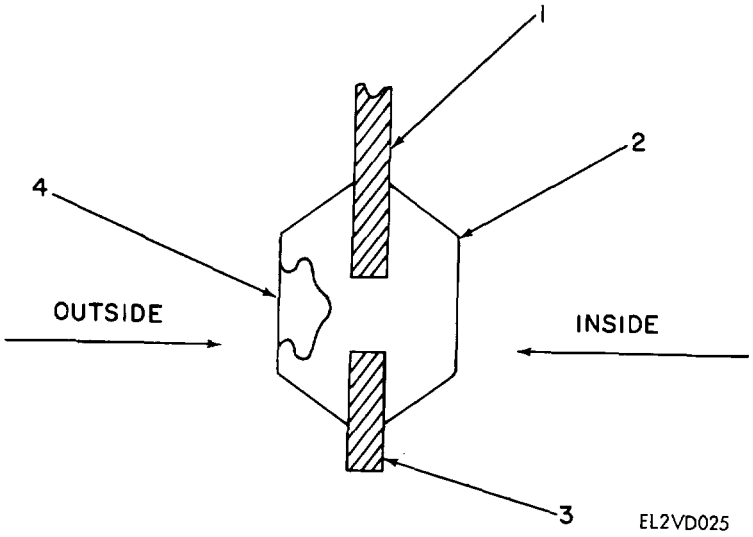
c. Repair.

(1) Refer to figure 4-3.Remove screws (1) securing dial plate (2) to the radio filter chassis (3).

CAUTION

Leads are connected between the panel and the filter chassis. Do not put a strain on the leads when removing the panel.

(2) Loosen set screw (4) on knob (5) and remove the knob, then pull dial plate away from the chassis. Unsolder wires (red and white) running from the



1 Glass (typical section)
2 Retainer (typical section)
3 Metal window frame
4 Locking strip

Figure 4 -1. Window glass replacement.

chassis to the dial plate. The dial plate is floated on a seal of RTV sealant which should be removed from the chassis and dial plate at this time with a razor blade.

(3) Refloat dial plate (2) on the front of the chassis (3).Apply an even amount of RTV sealant to both the edge of the dial plate and the groove in the chassis. Place the dial plate into place and tighten all screws (1) loosely. Then torque all screws to 20 in. oz.

(4) Place the knob (5) over the shaft and tighten the set screw (4).

d. Installation.

(1) Refer to figure 4-2.Install the radio filter on the tray and secure with the mounting hardware.

(2) Position the equipment tray on the rack slides and connect the cables to the equipment on the tray.

(3) Slide the tray the rest of the way into the rack and secure with the two latches.

4-6. Communication Distribution Box (A12) Repair Procedure

Repair procedures for the communication distribution box are limited to the replacement of connector J3.Figure 3-5 is a parts location diagram of the unit. The schematic diagram of the communication distribution box is shown in figure FO-54.

a. Removal.

(1) Disconnect the cables from connectors J1 through J13 on the top of the communication distribution box.

(2) Remove the two bolts securing the communication distribution box to its mount.

(3) Remove the communication distribution box.

b. Repair.

(1) Remove the 16 screws and washers securing the rear cover in place.

(2) Using contact insertion/removal tools M15570-12 and M15570-20 as necessary, remove the contacts from J3.

(3) Install a length of insulation sleeving, MIL-I-7444, type 2, class 2, yellow, size 0.027" I.D. (22 AWG), size 0.034" I.D.(20 AWG), or size 0.085" I.D.(12 AWG) as necessary over the leads. Connect the lead to the contact and slide the insulation sleeving over the joint.

(4) Using the contact insertion/removal tools, install the contacts in J3.

(5) Install the rear cover and secure in place with the 16 washers and screws.

c. Installation.

(1) Secure the communication distribution box in place with the two mounting bolts.

(2) Connect the cables to connectors J1 through J13 on the top of the communication distribution box.

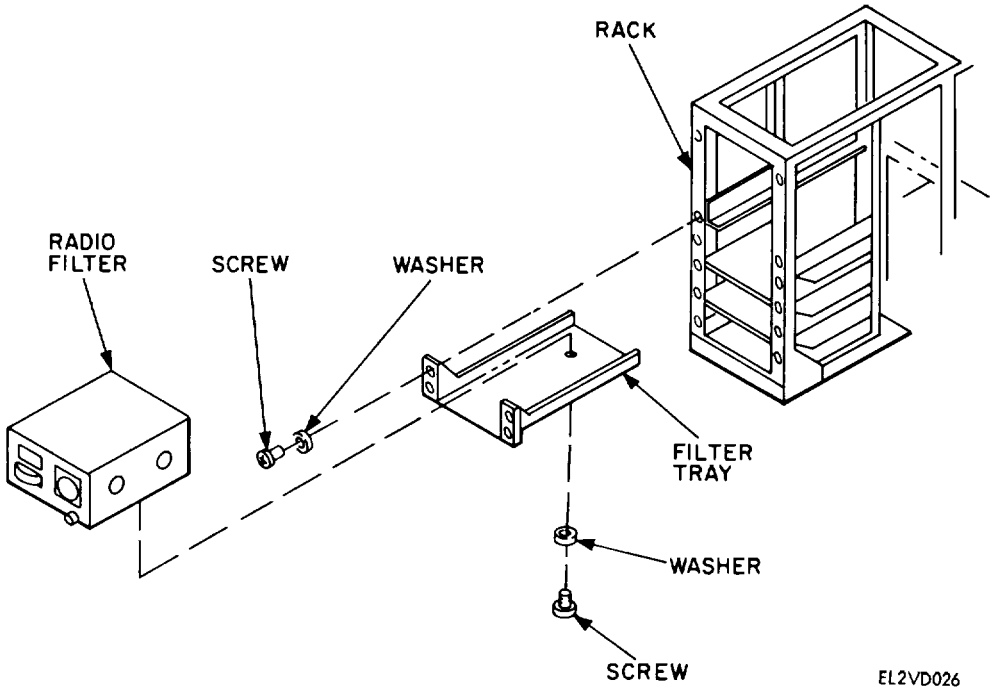


Figure 4-2. Typical radio filter installations.

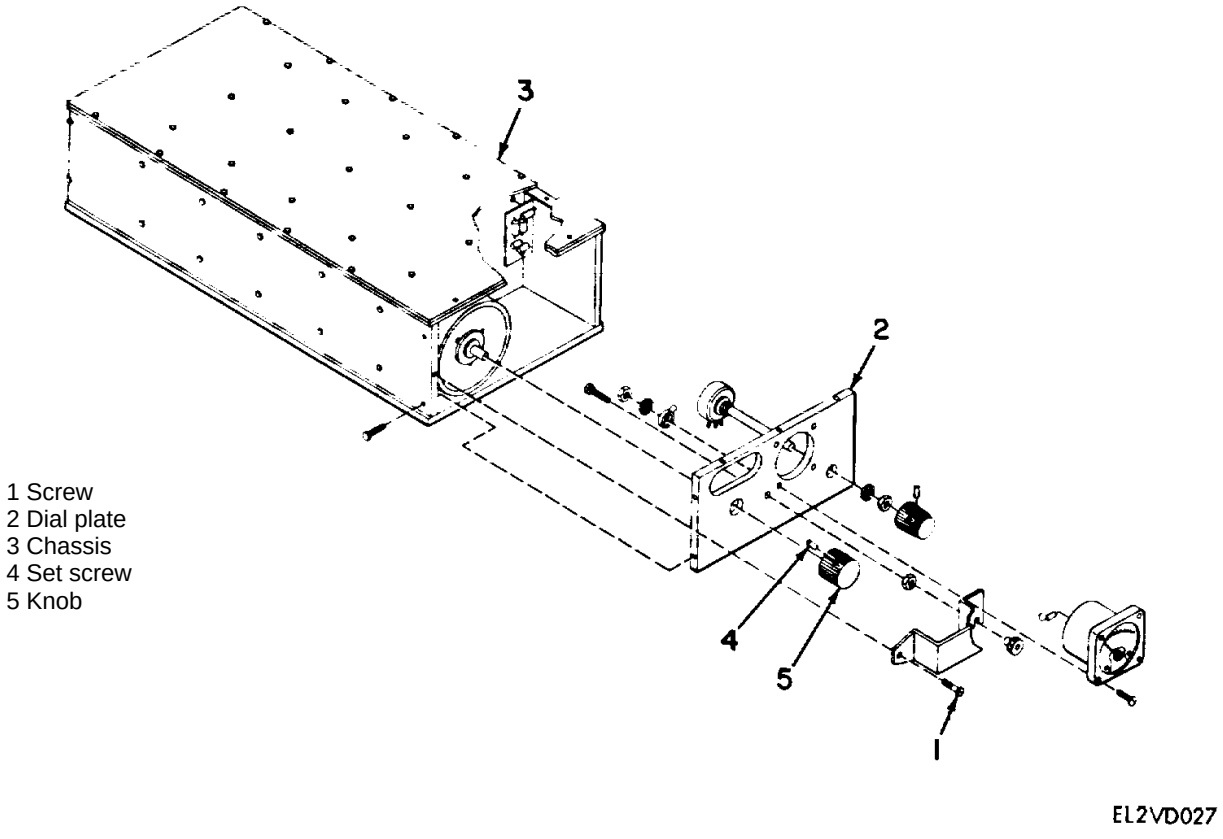


Figure 4-3. Disassembly view of typical radio filter.

4-7. Power Distribution Box (A3) Repair Procedure

Repair procedures for the power distribution box are limited to the replacement of connectors J13 and J15. Figure 3-3 is a parts location diagram. The schematic diagram of the power distribution box is shown in figure FO-53.

a. Repair.

(1) Disconnect the cables from J13 and J15.

(2) Loosen the fasteners on the front panel and swing the panel back.

(3) Using contact insertion/removal tools M15570-12 and M15570-20 as necessary, remove the contacts from J13 or J15.

(4) Install a length of insulation sleeving, MIL-I-7447, Type 2, Class 2, yellow, selected as follows:

Wire size (AWG)	Insulation sleeving size
	200.034" I.D.
	160.053" I.D.
	120.085" I.D.
	80.133" I.D.
	60.166" I.D.
	40.208" I.D.

b. Installation. Connect the lead to the contact and slide the insulation sleeving over the joint.

(1) Close the front panel and secure in place with the panel fasteners.

(2) Connect the cables to J13 and J15.

4-7.1 Power Distribution Box (A3) Removal/ Replacement

a. Removal.

(1) Shut down all power to the system and disconnect all cables from the Power Entry Panel.

(2) Disconnect W34 from J9 on the lower right side of the Power Distribution Box (PDB).

(3) Disconnect all cables from J12 through J18 on the left side of the PDB.

(4) Open the front panel door of the PDB and, by reaching through the interior to the back side of the Power Entry Panel (PEP), remove the hardware and dismount connectors J1 through J5 and the ground from El on the PEP. Save the hardware for reinstallation.

(5) Remove the 4 bolts on the interior left vertical flange of the PDB which secure it to the shelter wall. Save for reinstallation.

(6) Remove 2 bolts from the bottom of the PDB which secure it to the shelter floor. Save for reinstallation.

(7) Remove the 4 bolts on the exterior right flange of the PDB which secure it to the shelter wall. Save for reinstallation. The PDB is now free and can be removed from the shelter.

b. Replacement.

(1) Place the PDB into position against the rear wall of the shelter. Take care to see that the loose connectors which mount on the PEP are not pinched or tangled.

(2) Replace the 4 bolts on the exterior right flange securing the PDB to the rear shelter wall. These were removed in a.(7) above.

(3) Replace the 4 bolts, removed in a.(5) above, thus securing the inside flange to the shelter wall.

(4) Replace the 2 bolts into the bottom of the PDB which secure the PDB to the shelter floor.

(5) Remount connectors J1 through J5 on the PEP. Also the ground connector E1. These were removed in a.(4) above.

(6) Reconnect all cables to the left side of the PDB in accordance with the band markers.

(7) Reconnect W34 to J9 on the lower right side of the PDB.

(8) Close the front panel and secure with the quarter-turn fasteners provided.

4-8. Communication Selector Panel (A34, A36, A40) Repair Procedures

Repair of the communication selector panel consists of replacing J2 or J3 and using the multimeter to isolate and replace a faulty component. Refer to paragraph 3-16 for the removal, disassembly, and installation of the communication selector panel. The schematic diagram of the communication selector panel is shown in figure FO-55.

a. Using the multimeter, check the communication selector panel for short circuits, open circuits, or faulty components. Replace faulty component.

b. If J2 or J3 is being replaced, remove the front panel as described in paragraph 3-16.Tag and unsolder the leads from the connector. Unscrew the connector ring and remove the connector.

c. Install a new connector and tighten the ring.

d. Install a length of insulation sleeving, MIL-I-7447, Type 2, Class 2, yellow, size 0.027 inch I.D.(22 AWG) over the leads. Solder the leads to the contacts and slide the insulation sleeving over the connection. Remove the tags.

e. Reassemble the communication selector panel and reinstall it in accordance with paragraph 3-16.

4-9. Speaker/Amplifier (A46, A51, A52, and A57) Repair Procedures

Repair of the speaker/amplifier consists of isolating and replacing a faulty component. Figure 3-1 shows the location of the speaker/amplifiers in the shelter. Figure 4-5 shows the printed circuit board for the speaker/amplifier. The schematic diagram of the speaker/amplifier is shown in figure 5-9.A test setup is shown in figure 4-6, and troubleshooting procedures are given.

a. Removal.

(1) Loosen the four captive screws (1, fig.4-4) on the speaker/amplifier panel (2).Carefully move the speaker/amplifier away from the shelter wall.

(2) Disconnect the cable from J1 (3) on the rear of the speaker/amplifier.

b. Troubleshooting.

(1) Refer to figure 4-4.Remove the mounting hardware (4 through 6) securing the panel to the chassis.

CAUTION

Do not strain the leads connected between the panel and the chassis during the next step.

(2) Carefully separate the panel from the chassis.

(3) Refer to figure 4-5.Using the multimeter, check for open leads, open windings on T1, open K1 coil, or other open or shorted components. Replace faulty components. If no fault is found, proceed to step (4).

(4) Make the test setup connections as shown in figure 4-6.

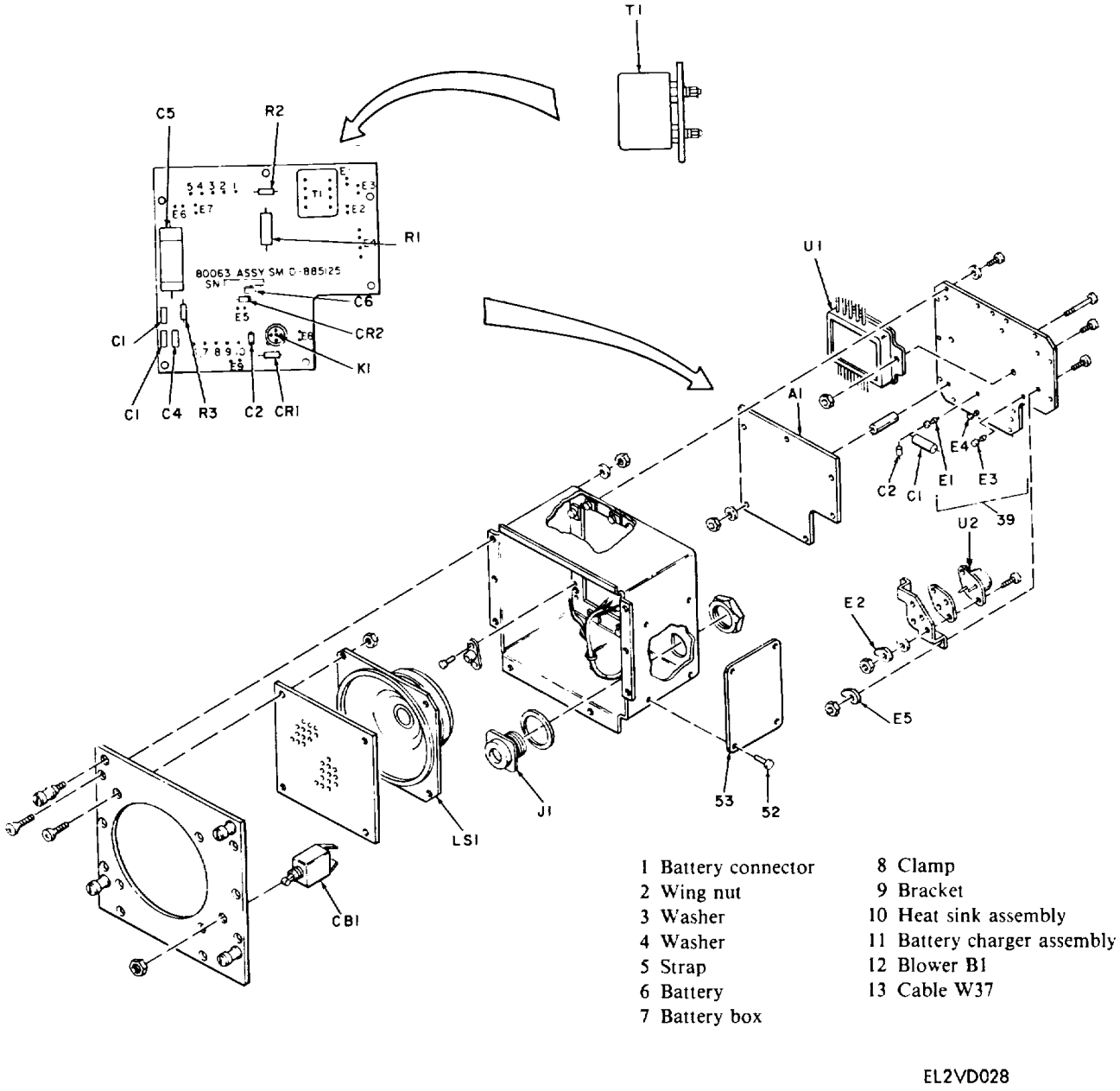
(5) Adjust the signal generator output for a reading of 0 dB (0.387 vrms) on the voltmeter. A 1 kHz tone should be heard in the speaker/amplifier loudspeaker and can be adjusted in loudness by means of the VOLUME control.

(6) Check the mute circuit by connecting terminal E8 to terminal E4 with a test lead. The 1 kHz tone should not be heard when the test lead is in place. Remove the test lead.

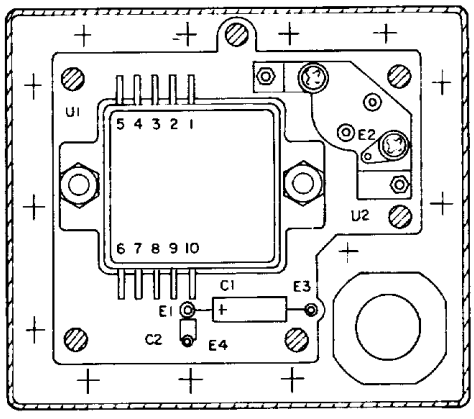
c. J1 Replacement.

(1) If J1 is being replaced, tag and unsolder the leads from the connector. Unscrew the connector nut and remove the connector.

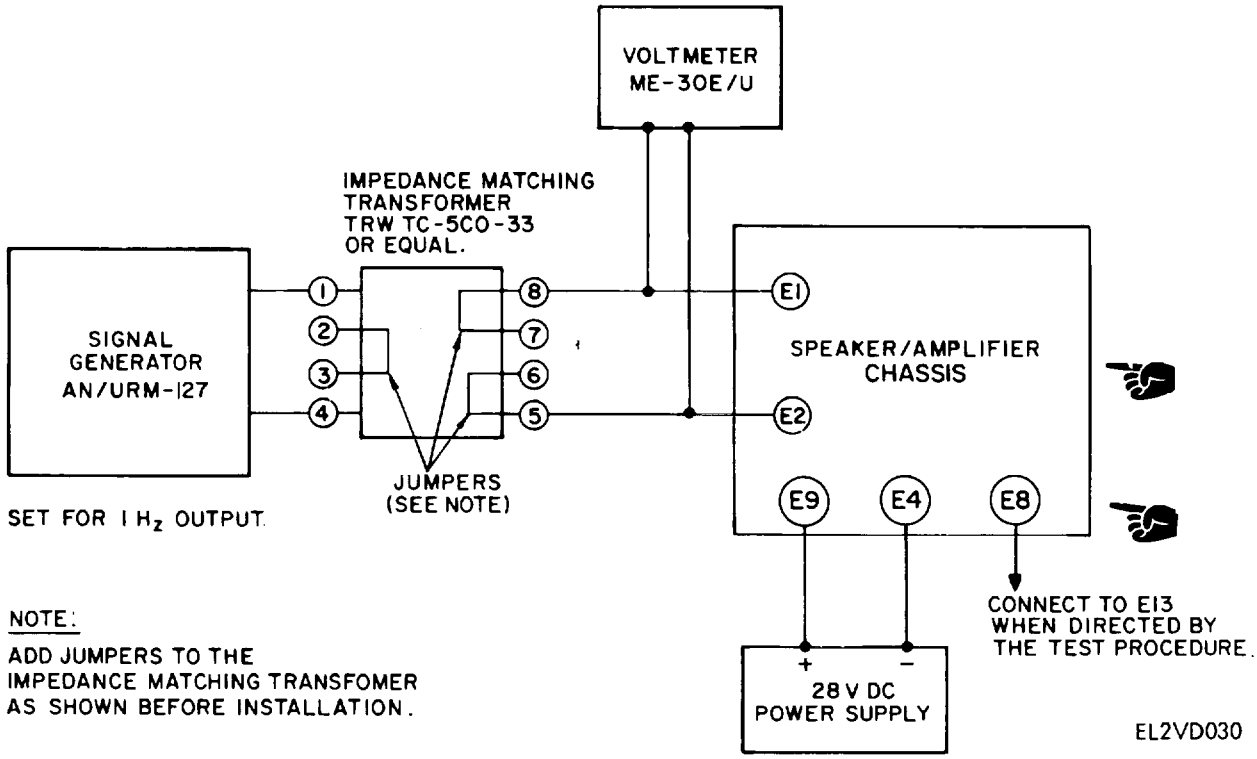
(2) Install a new connector and tighten the nut.



■ *Figure 4-4. Speaker/amplifier disassembly*



■ *Figure 4-5. Speaker/amplifier printed circuit board, parts location diagram.*



■ *Figure 4-6. Speaker/amplifier test setup.*

(3) Install a length of insulation sleeving, MIL-I-7447, type 2, class 2, yellow, size 0.027" I.D. (22 AWG), over the leads. Solder the leads to the contacts and slide the sleeving over the connection. Remove the tags.

d. Assembly.

(1) Carefully position the front panel (2, fig. 4-4) in place on the chassis.

(2) Install the mounting hardware (4 through 6) securing the panel to the chassis.

e. Installation.

(1) Connect the cable to J1 (3) on the rear of the speaker/amplifier.

(2) Secure the speaker/amplifier in place by tightening the four captive screws (1) on the panel.

4-10. Battery Box Assembly, Heat Sink (A73) Assembly, and Blower (A72) Assembly Repair Procedure.

Repair of the battery box assembly consists of isolating and replacing a faulty component in accordance with the troubleshooting procedure listed in table 4-3. Figure 4-7 shows the disassembly of the battery box assembly. The schematic diagram of the heat sink is shown in figure 5-8.

WARNING

Hydrogen gas may accumulate in the battery box if the blower fails to operate.

Be sure that the blower is ventilating the battery box after any maintenance is performed on this assembly.

NOTE

Perform only the steps necessary to replace the faulty assembly.

a. Heat Sink (A73) and Blower (A72) Removal Procedure.

(1) Unscrew the battery connector (1, fig. 4-7).

(2) Loosen the mounting hardware (2 through 4) and strap (5) securing the battery (6) in the battery box (7).

(3) Loosen the clamps (8) and disconnect the vent tubes from the battery.

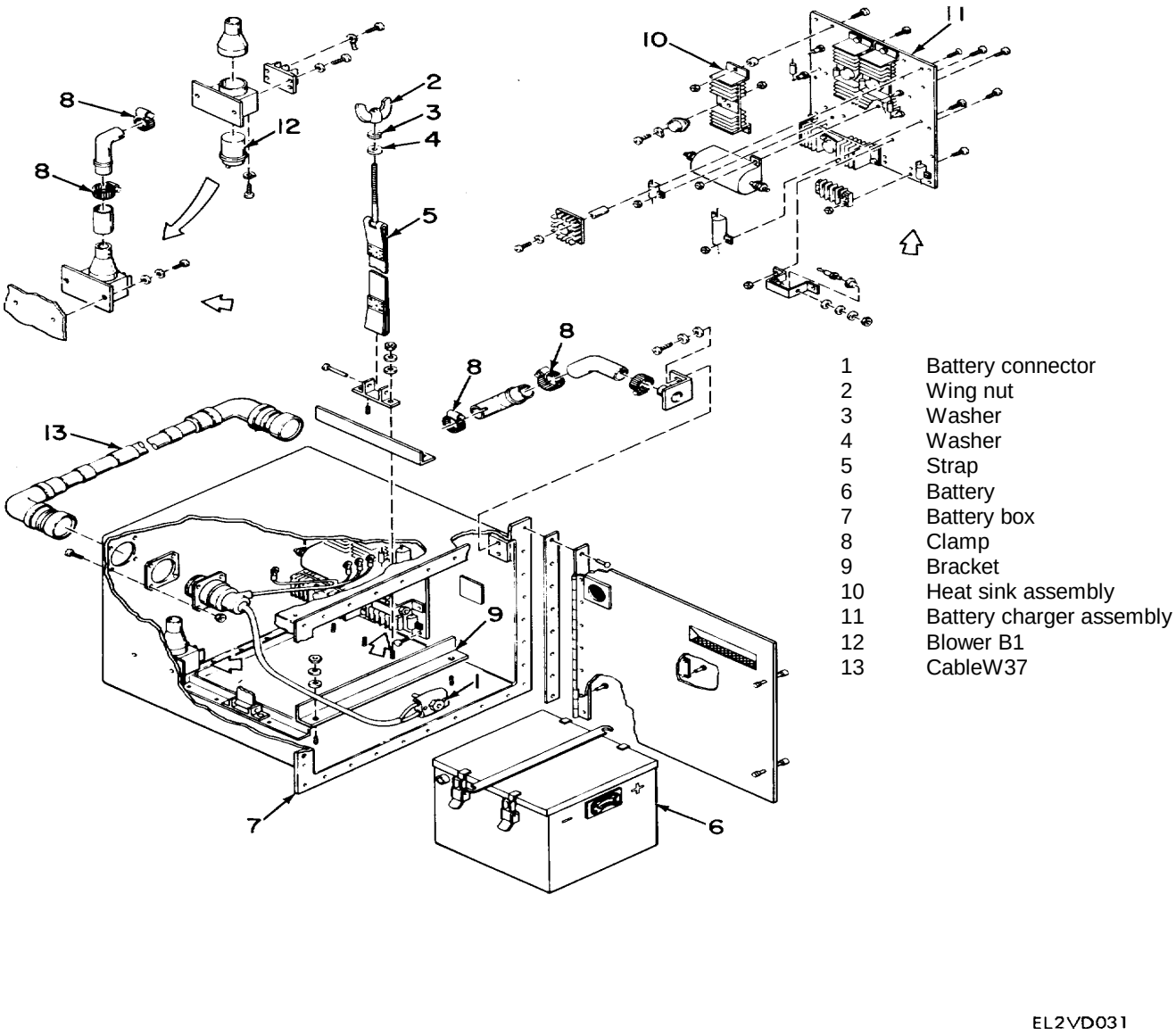
(4) Remove the mounting hardware (9 through 11) and the bracket (12) from the front of the battery.

NOTE

Use two people to remove the battery from the battery box.

(5) Slide the battery out of the battery box.

(6) Tag and disconnect the leads to the heat sink assembly (13). Remove the mounting hardware (14 through 16) securing the heat sink in place and remove the heat sink.



■ *Figure 4-7. Battery box assembly, heat sink (A73) assembly and blower (A72) removal.*

Table 4-3. Battery Charge Circuit Troubleshooting Chart

Item	Malfunction	Probable Cause	Corrective Action
1	Blower in battery box inoperative but current meter is indicating charge.	*a*. Defective blower B1. *b*. Loose or broken wiring.	*a*. Replace B1. *b*. Repair wiring.
2	Current meter does not indicate charge when CHARGE circuit breaker is closed.	*a*. Defective U1. *b*. Defective transistor(s) Q2, Q3, or Q4 on charger assembly. *c*. Battery cable connector loose or defective. *d*. Defective 38 volt power supply in PDB. *e*. Defective cable W37.	*a*. Replace U1. *b*. Replace transistor(s). *c*. Reconnect battery cable connector and/or repair. *d*. Replace 38 volt power supply. *e*. Repair W37.

(7) Loosen the clamp (8) and disconnect the vent tube from the blower (17).

(8) Tag and disconnect the leads to the blower. Remove the mounting hardware (18 through 20) securing the blower in place and remove the blower. If Q1, Q2 or Q4 on the heat sink is to be replaced, install a length of heat shrink insulation sleeving, M23053/5-104 clear, over the leads to be connected to the transistor. Connect the lead and slide the insulation sleeving over the connection. Heat shrink the insulation sleeving with the heat gun.

(9) Apply a thin coating of silicone grease (heat sink compound), SM-A-886268, between the mounting surface of Q1, Q2, or Q3 and the heat sink.

(10) Install a length of insulation sleeving, M23053/5-105-clear over the Q1, Q2, or Q3 mounting screws. The insulation sleeving should be long enough to insulate the screws from the heat sink.

b. Heat Sink (A73) and Blower (A72) Installation Procedure.

(1) Mount the blower (17) in place and secure with the mounting hardware (18 through 20). Connect the leads to the blower and remove the tags.

(2) Connect the vent tube to the blower and secure with the clamp (8).

(3) Mount the heat sink (13) in place and secure with the mounting hardware (14 through 16). Connect the leads to the heat sink and remove the tags.

NOTE

Use two people to lift the battery into the battery box.

(4) Lift the battery (6) into the battery box (7) and slide it into place.

(5) Connect the vent tubes to the battery and tighten the securing clamps (8).

(6) Install the battery strap (5) and tighten the mounting hardware (2 through 4).

(7) Connect the battery connector (1) and tighten the screw.

4-11. Electrical Cables

a. Refer to table 4-4 for the tools and equipment to repair a particular cable.

b. Repair of electrical cables consists of replacing a faulty connector or a faulty contact in the connector. Proceed as follows.

(1) Using the proper insertion/removal tool (M15570-12, or M15570-16, or M15570-20), remove the faulty contact or remove the contacts from the faulty connector.

(2) Connect a new contact to the lead.

(3) Insert the new contact into the connector using the proper insertion/removal tool.

c. Repair the connector for a cable containing shield (braid) wiring as follows.

(1) Prepare the braid as shown in figure 4-8 for connectors using the iris (Kern Corporation backshell) concept (3 steps) or figure 4-9 for cabling using the ferrule concept (lacking the iris adapter) (5 steps).

(2) Make the overall braid preparation as shown in figure 4-10 (4 steps).

(3) The iris adapter concept is used on many of the cables in the AN/TSW-7A. An explanation of the improved EMI/RFI environmental connector backshell is given to aid the technician in the dis- assembly and assembly of the cables. In some cabling the conventional configuration using solder ferrules is used, and in those cases standard repair procedures are to be used.

(4) Figure 4-11 shows the iris concept EMI connector backshell in the ready to use condition. Figure 4-12 shows a sectional view of the adapter before and after cable termination. The iris adapter is composed of five functional parts and a main body. The main body size determines the locking diameter range for the size of the iris adapter. Terminating this hardware provides a positive environmental seal as well as an rf seal. Item 3 (iris) provides the rf sealing, bonding, or grounding. Item 5 (seal) provides en-

Table 4-4. Electrical Cable Maintenance Tools

Tool or test equipment reference code from the maintenance allocation chart:
6 - contains the Tool Kit, Electronic Equipment TK-100/G for the DS and GS maintenance categories.
10 - contains the Insertion/Removal Tool M15570-12 for the GS maintenance category.
11 - contains the Insertion/Removal Tool M15570-16 for the GS maintenance category.
12 - contains the Insertion/Removal Tool M15570-20 for the GS maintenance category.

Cable	Tool	Cable	Tool	Cable	Tool	Cable	Tool	Cable	Tool
W1	6	W2	6	W3	6	W4	6	W5	6
W6	6	W7	6	W8	6	W9	6	W10	6
W16	6 &11	W12	6	W13	6	W14	6	W15	6,11&12
W26	6	W17	6	W18	6	W19	6	W20	6
W36	6,10&12	W22	6	W23	6	W24	6	W25	6
W41	6	W27	6	W28	6	W29	6	W30	6
W51	6	W32	6	W33	6	W34	6,10& 12	W35	6,10& 12
W56	6	W37	6	W38	6	W39	6	W40	6
W61	6	W42	6	W43	6	W44	6	W45	6
W66	6&12	W47	6	W48	6	W49	6	W50	6
W76	6	W52	6	W53	6	W54	6	W55	6
W81	6	W57	6	W58	6	W64	6&12	W60	6
W86	6	W62	6	W63	6	W69	6&12	W65	6&12
W91	6	W67	6	W68	6 & 12	W74	6	W70	6&12
W96	6	W77	6	W73	6&11	W79	6	W75	6
W106	6	W82	6	W78	6	W84	6	W80	6
		W87	6	W83	6	W89	6	W85	6
		W92	6	W88	6	W94	6	W90	6
		W97	6	W93	6	W95			
		W102	6	W98	6				
				W103	6				

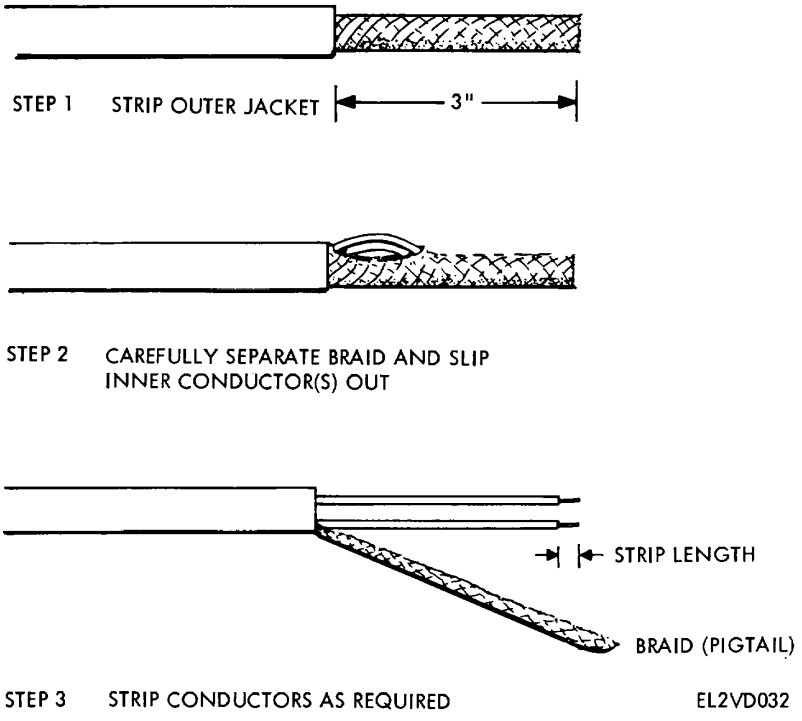
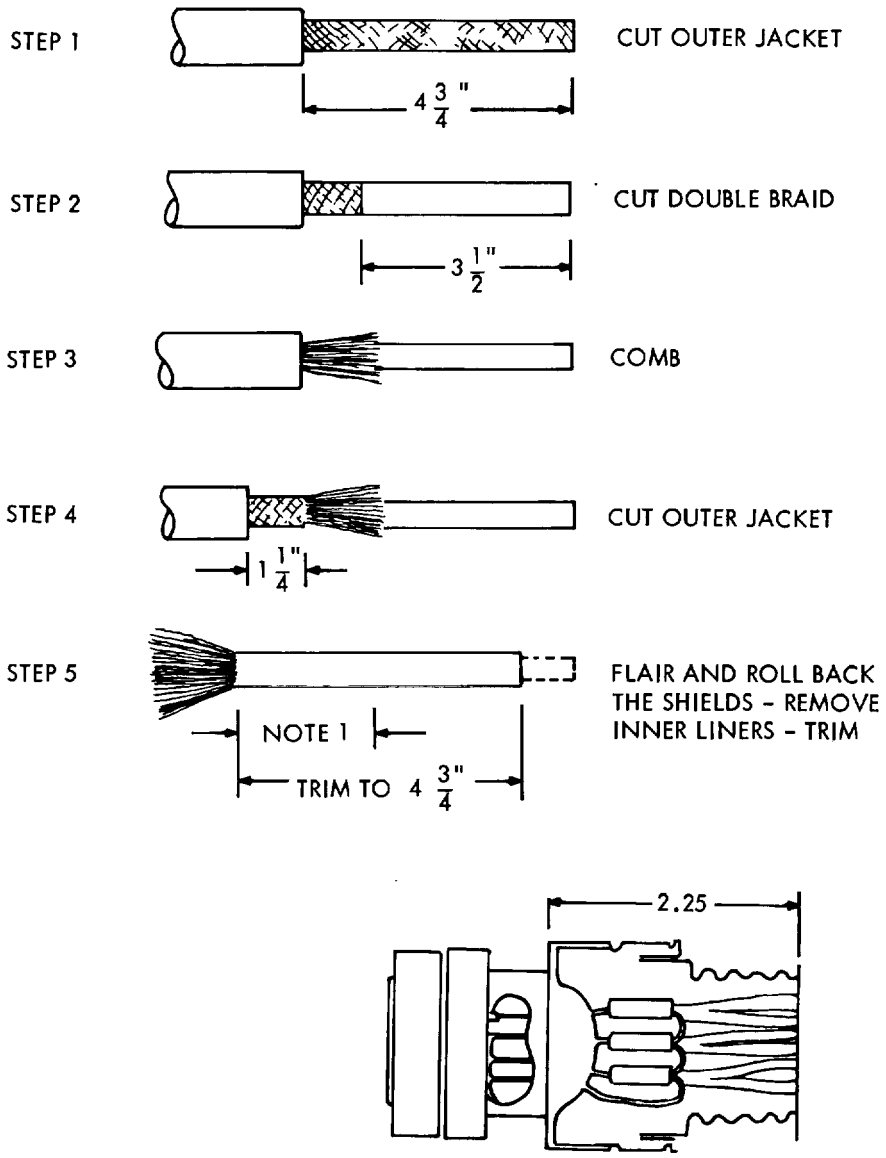


Figure 4-8. Shielded cable preparation



NOTES

1. STAGGER FERRULES 1 1/2", 2", AND 2 1/2".
2. CRIMP AND INSERT.
3. ASSEMBLE INNER SHELL.
4. BR1NG DOWN BRA1D AND TIE.
5. TRIM EXCESS 1/4" TO 1/2" FROM TIE AND FOLD BACK.
6. CONTACT M39039/15-23-22
7. STR1P BACK OF INSULATION OF SHIELDED TWISTED PA1R.
8. SOLDER 5 SHIELDS TOGETHER CONNECT EACH GROUP OF 5 TOGETHER USING WIRE M22759/11-26-9, MAXIMUM LENGTH 2.0 INCHES. ALSO, CONNECT EACH GROUP OF 5 TO ONE OF THE DESIGNATED SHIELD PINS; ON THE CONNECTOR USING WIRE M22759/11-26-9, MAXIMUM LENGTH 2.5 INCHES AND A CONTACT. PLACE SHRINK SLEEVING OVER THE SOLDER CONNECTIONS OF 5 SHIELDS AND INTERCONNECTIONS. EL2VD033

EL2VD033

Figure 4-9. Wire and connector preparation

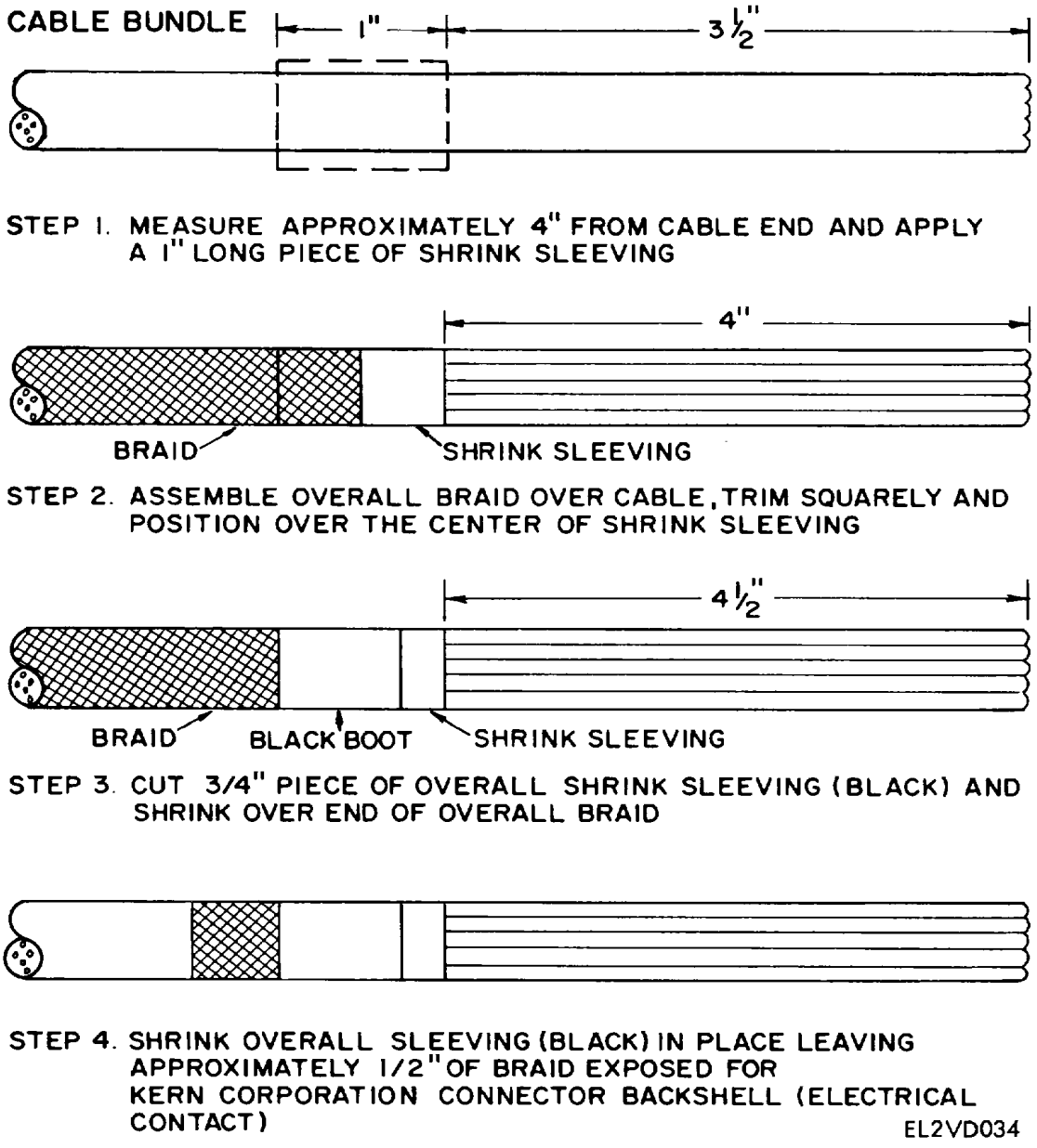


Figure 4-10. Overall braid preparation.

vironmental or pressure sealing. The iris and the seal can be interchanged depending upon the make-up or function of the cable jackets. A single iris may be hand-tightened to provide from 90 to 105 dB shielding, dual iris hand-tightened from 110 to 120 dB shielding and dual iris torqued to 92 pound/inch provides from 120 to 140 dB shielding.

(5) Refer to figure 4-13 for the disassembled view of the iris shield termination adapter. Refer to figure 4-14 for the iris individual shield adapter on the cable ready for termination. The RFI/EMI adapter body, the iris, the anti-friction seal retainer ring, and nut/clamp are slid up the cable away from the connector. The intact shielding braid, previously prepared in accordance with figure 4-8, is pigtailed by extracting the insulated conductor(s) through the braid next to the jacket strip point. The adapter body only is then slid into place and screwed on the connector. After the adapter body is in place, the shield pigtails are then pulled out right angle to the cable still maintaining uniformly radial spacing. The iris is pushed up in place immediately behind the adapter body. The shield pigtails are now dropped through the various slots of the iris and again folded back along the cable. See figure 4-15. The iris is pushed up in place immediately behind the adapter body. The shield pigtails are now dropped through the various slots of the iris and again folded back along the cable.

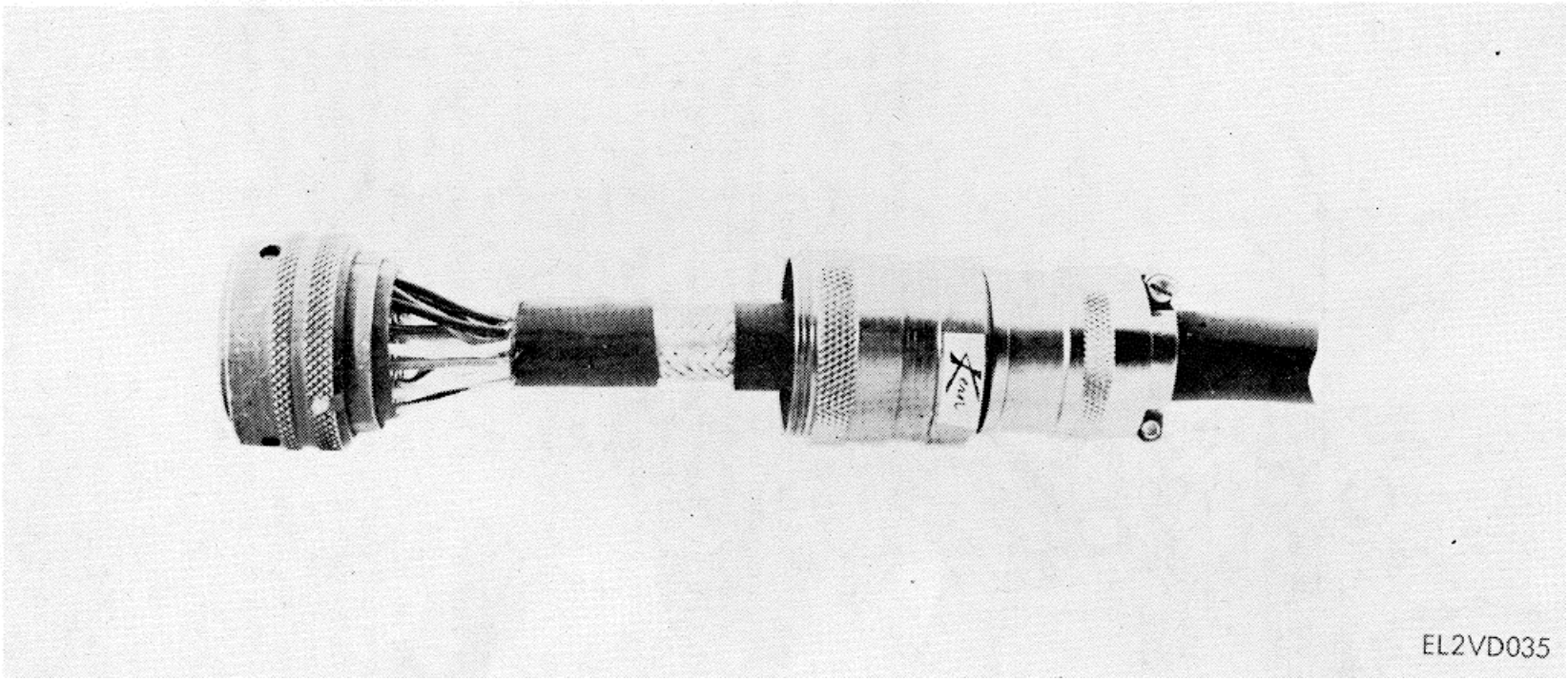


Figure 4-11. Iris concept EMI connector backshell ready for use.

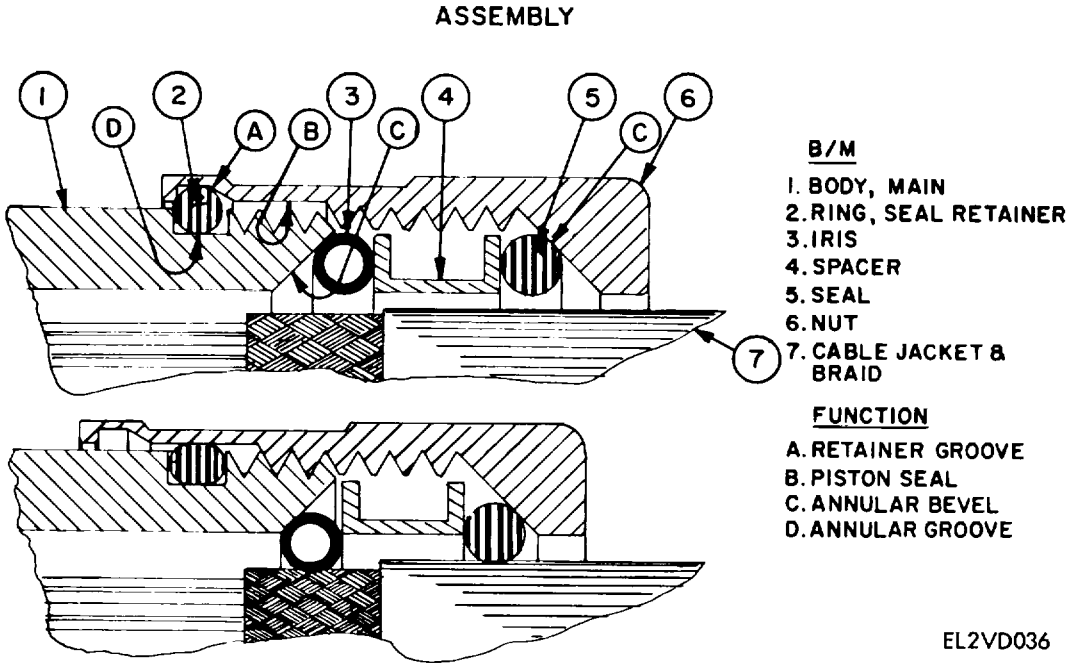


Figure 4-12. Sectional view of the iris adapter before and after cable termination.

See figures 4-16 and 4-17. The anti-friction ring and connector nut/back clamp are placed in position over the shield pigtails and tightened. The pigtailed shields are grouped in the iris which is mechanically squeezed tight to give a solid ground contact. Because the wire forming the iris is round, it does not damage the pigtailed braid.

(6) Refer to figures 4-18 through 4-19 for the shield termination technique for individually shielded conductors isolated from connector shell and connected to pin contact. Interconnecting cables and harnesses quite often must have an overall braid shield to reduce EMI/RFI susceptibility to the system. Sometimes such cable and harnesses have in- dividually shielded conductors that must have their shields isolated from the overall cable and harness shield to prevent circulating currents. The individual conductor shields quite often are pigtailed together and connected to a common pin of the connector. The iris collector ring is normally used with a connector adapter that terminates the overall shield of a cable or harness. The individual conductor shields are pigtailed by picking the conductor(s) through an opening of the conductor shield. Both the adapter and the iris collector ring and the shrink tubing are placed on the cable before the wires are terminated to the connector. The individual parts of the iris collector ring are placed over the wire bundle in the sequence shown in figure 4-18. During individual shield termination the overall shield connector adapter is slid back up the cable away from the work area. Refer to figure 4-20. The individual pigtailed shields are uniformly spaced radially as much as possible around the wire bundle and folded back away from the connector. The coupling nut, and the anti-friction ring are moved into position between the connector and the point where the pigtailing occurs. Refer to figure 4-21. The pigtails are now lifted approximately 90 degrees from the wire bundle. The iris is slid up tight to this point and the pigtails are then dressed through individual slots of the iris with the pigtail ends facing away from the connector and tight against the wire bundle. An insulated bonding wire from the connector is also dressed through one of the iris slots. The remaining coupling body is now tightened in place. Tightening of this coupling body compresses the iris thereby clamping all the shields in place. Refer to figure 4-22. The extended lengths of the pigtails are then dressed to the desired length taking care that none of them can accidentally come in contact with the braid of the outer shield of the metal body of the connector adapter. The shrink tubing is placed in position over the iris collector ring and the dressed pigtail ends and shrunk in place. Refer to figure 4-23. The connector adapter for the overall shield and environmental jacket is then installed in accordance with its normal termination procedure.

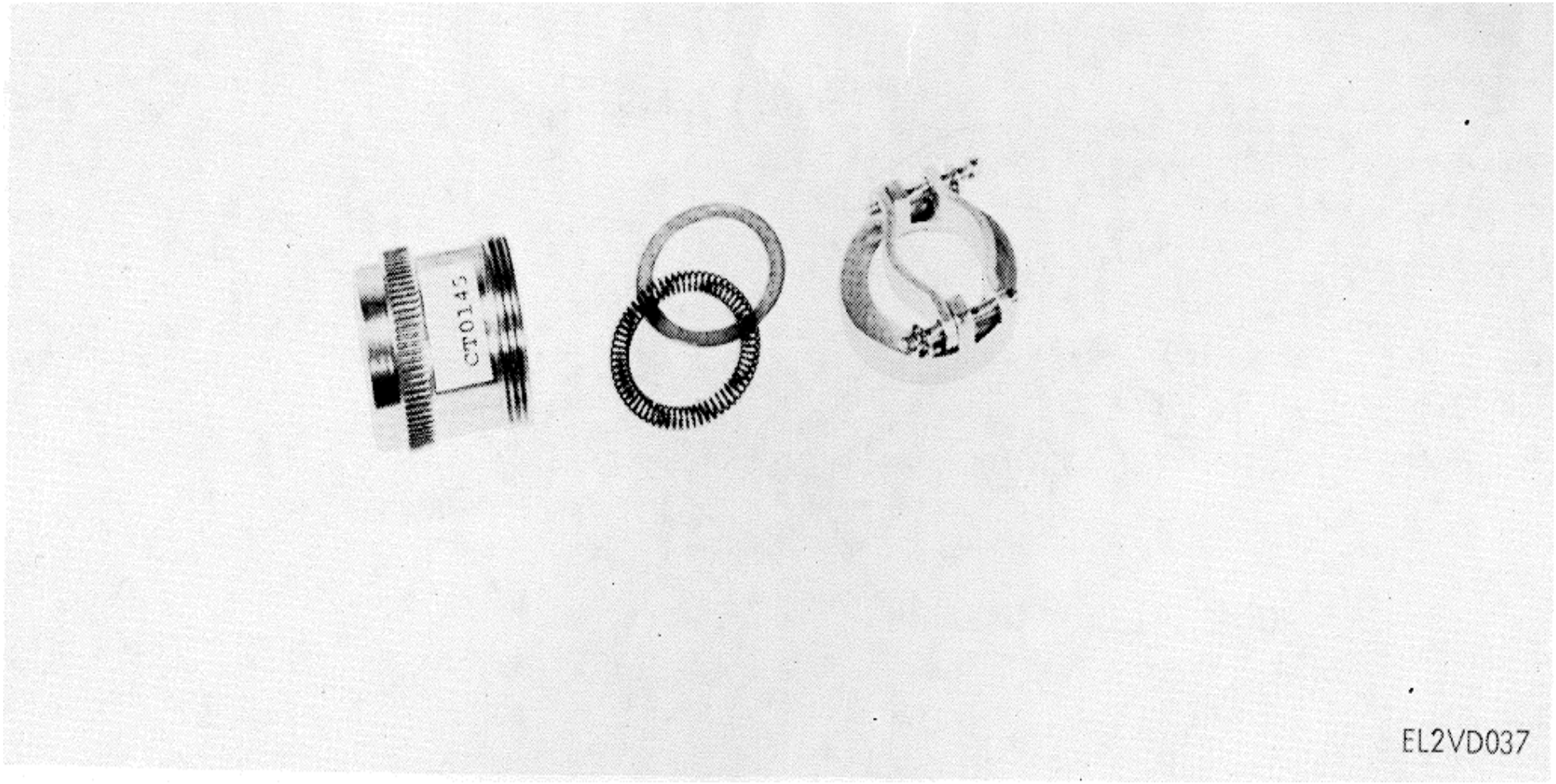


Figure 4-13. View of the disassembled iris individual shield termination adapter.

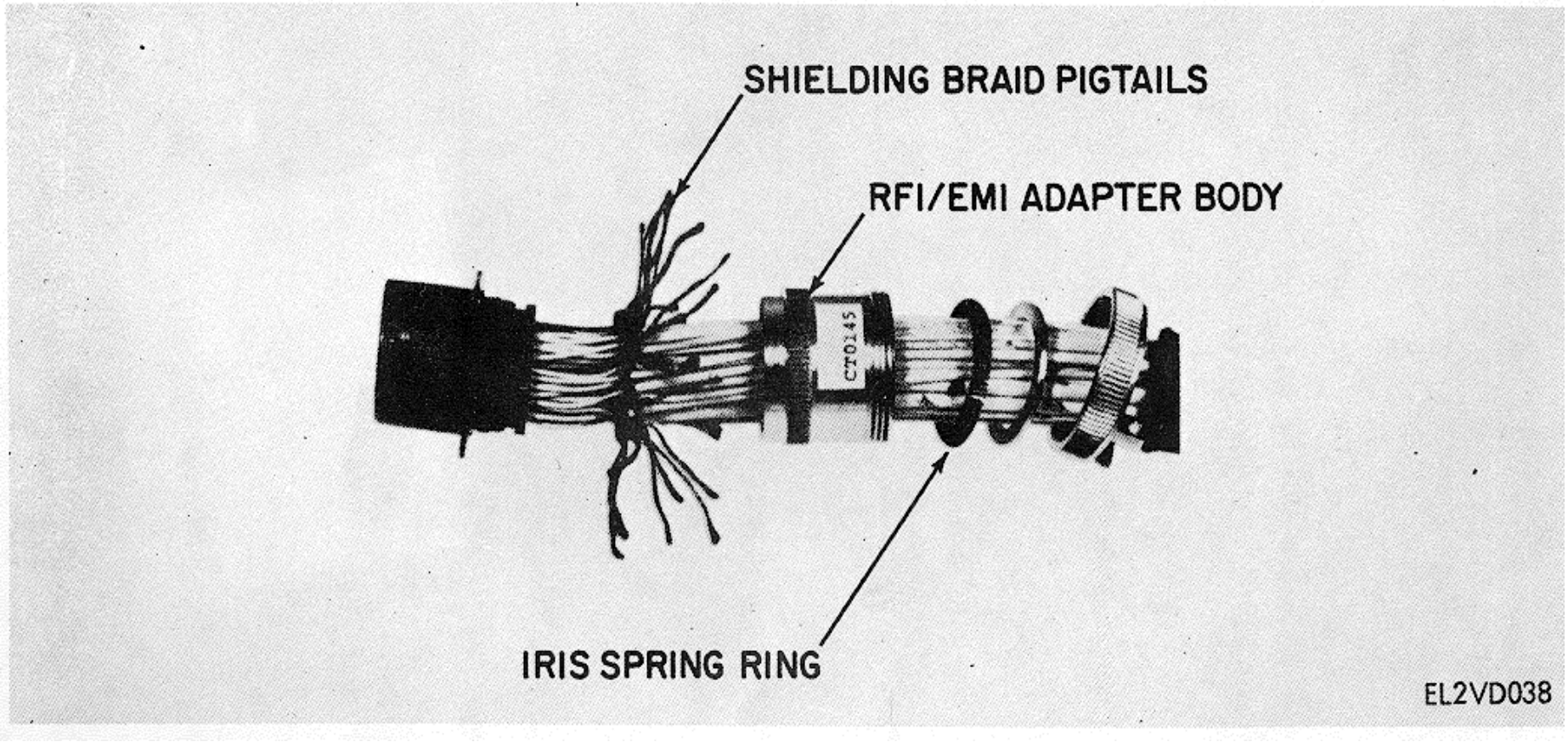


Figure 4-14. Iris individual shield adapter on the cable ready for termination.

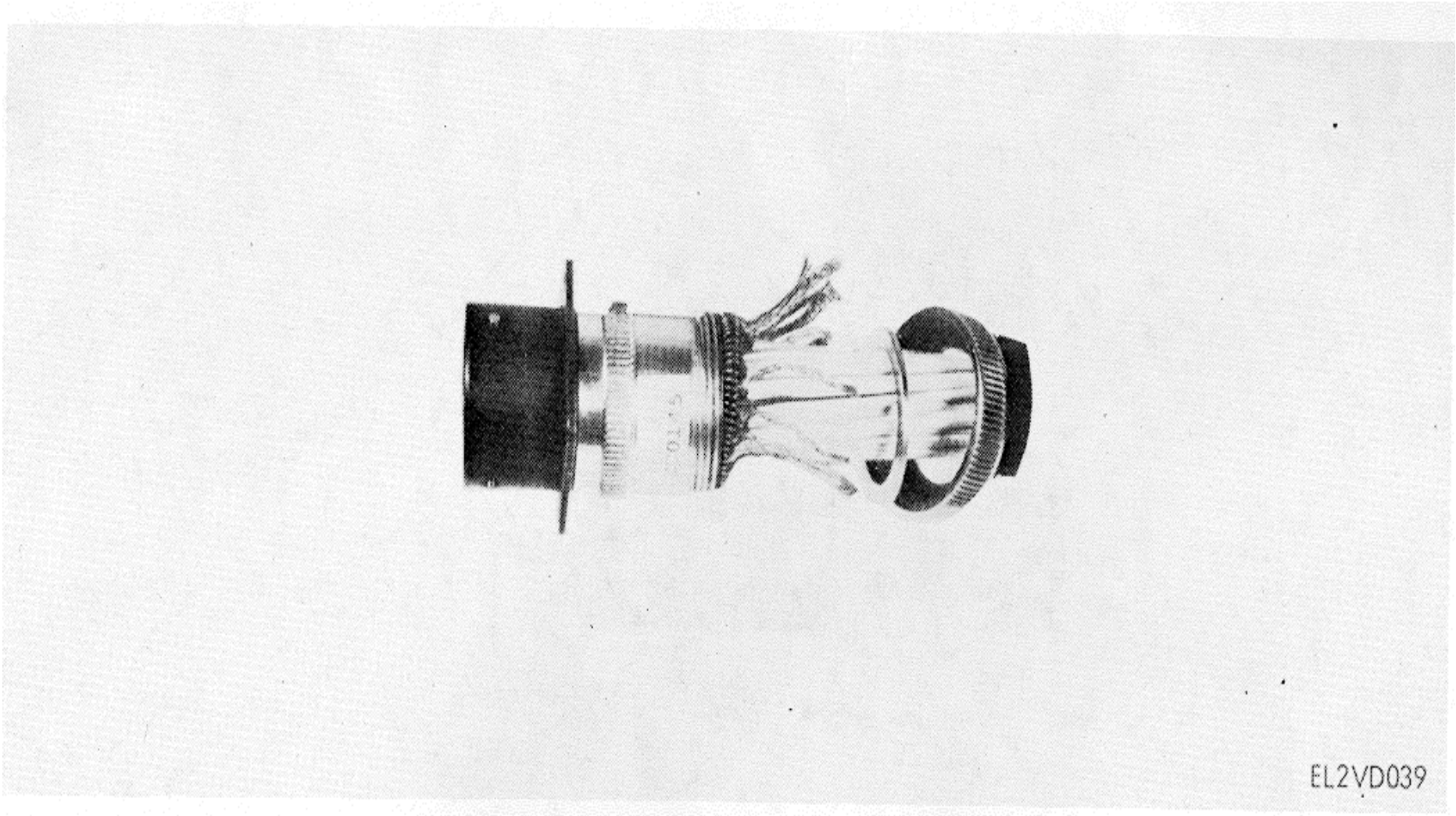


Figure 4-15. Individual shield adapter body assembled to connector, shields dressed through the iris.

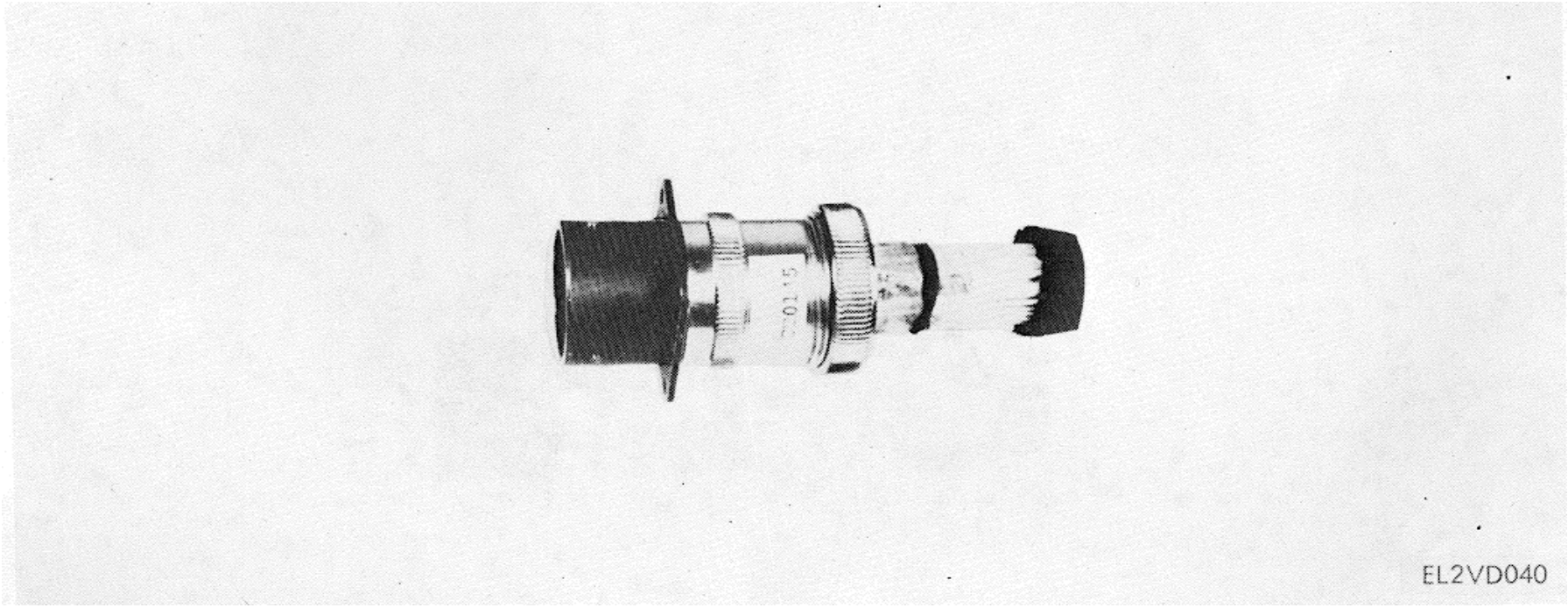


Figure 4-16. Individual shield adapter body assembled to connector with shield pigtails dressed behind the adapter.

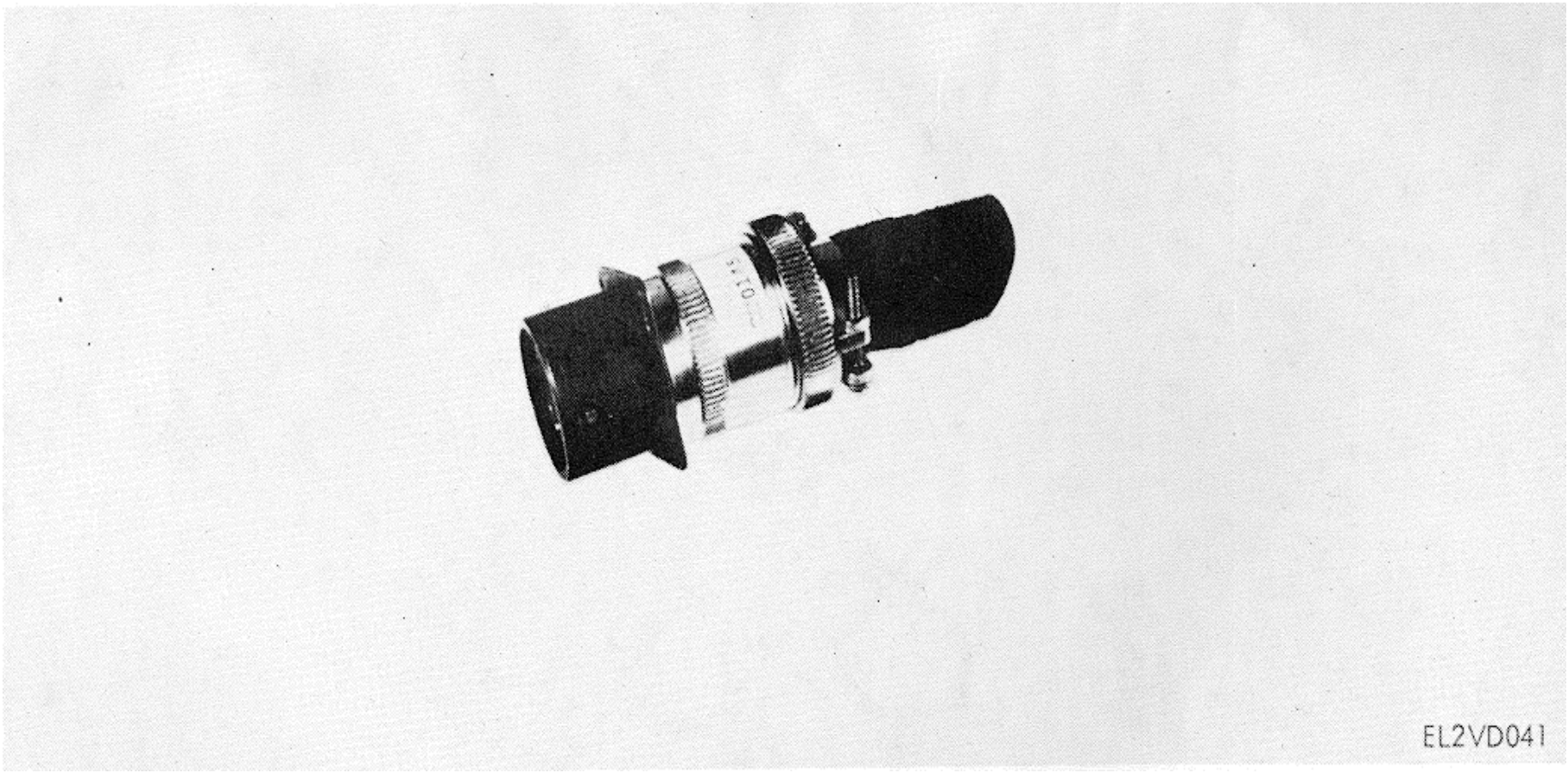


Figure 4-17. Completed assembly of individual shields terminated with iris adapter.

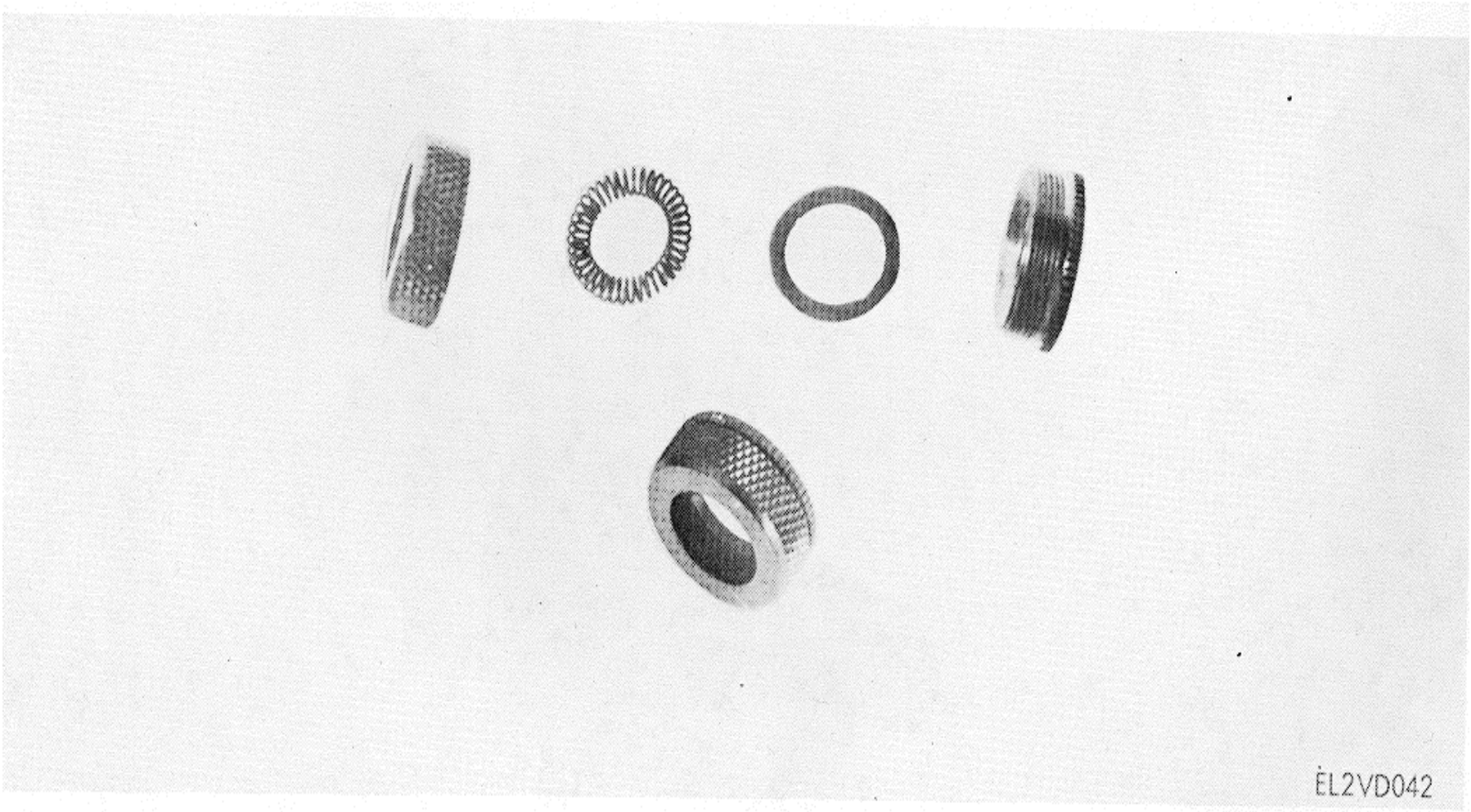


Figure 4-18. Iris collector ring assembly.

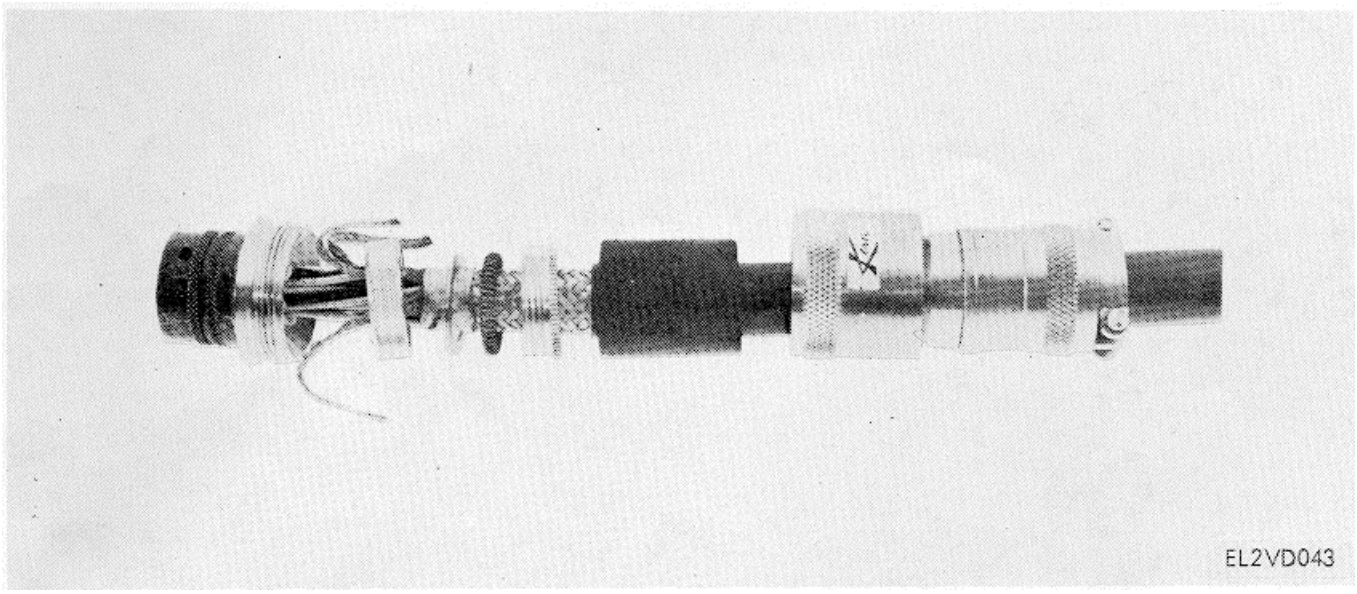


Figure 4-19. Component parts assembled on cable for terminating both individual and overall shields and environmental jacket of a cable.

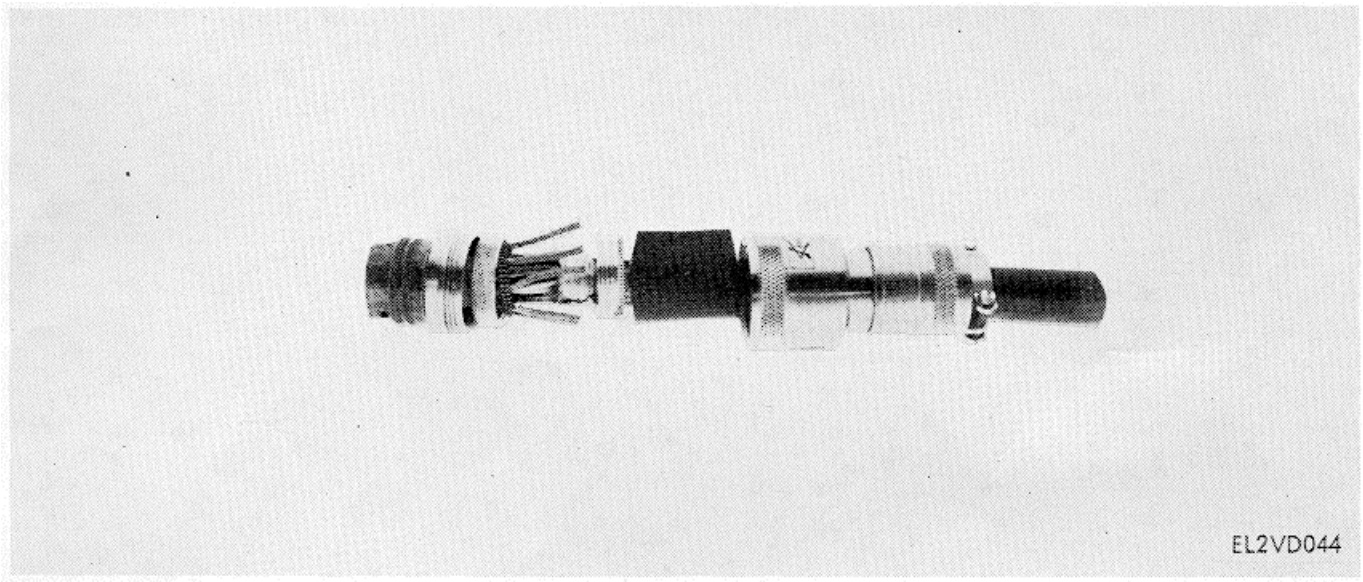


Figure 4-20. Individual shield pigtails laced through iris.

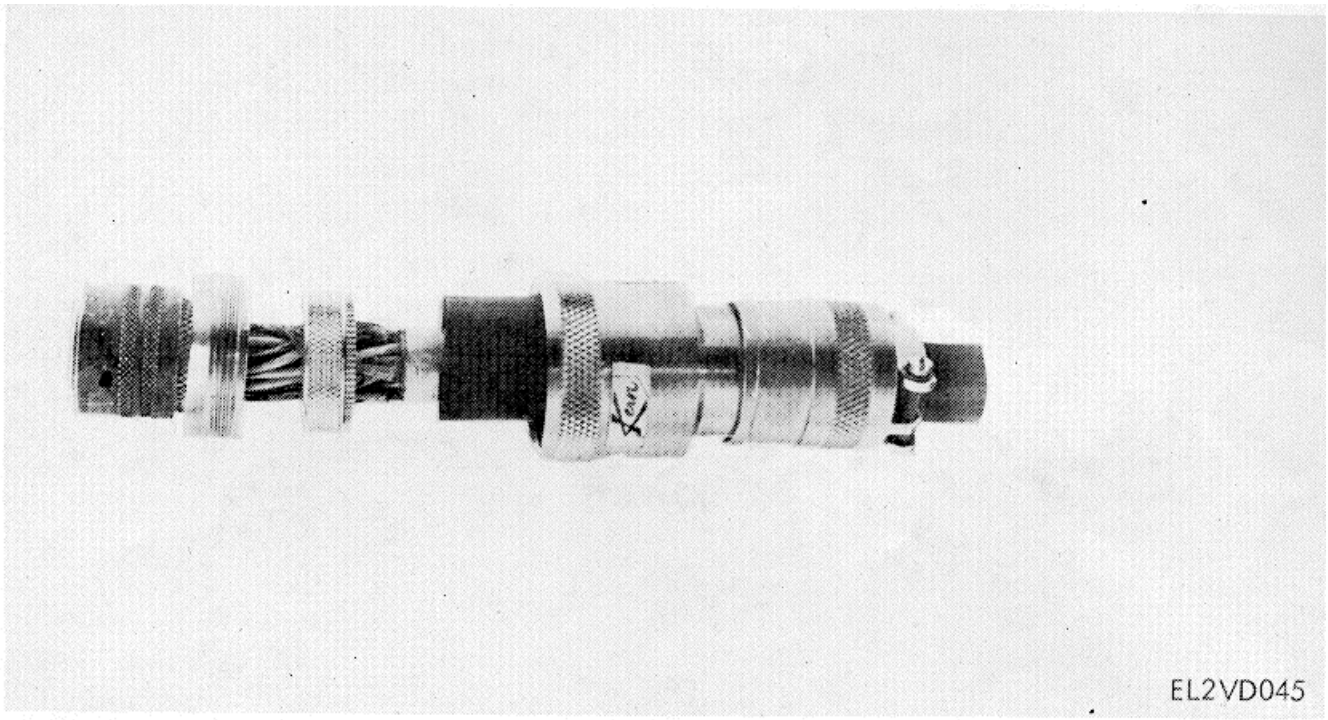


Figure 4-21. Individual shield pigtails bonded together.

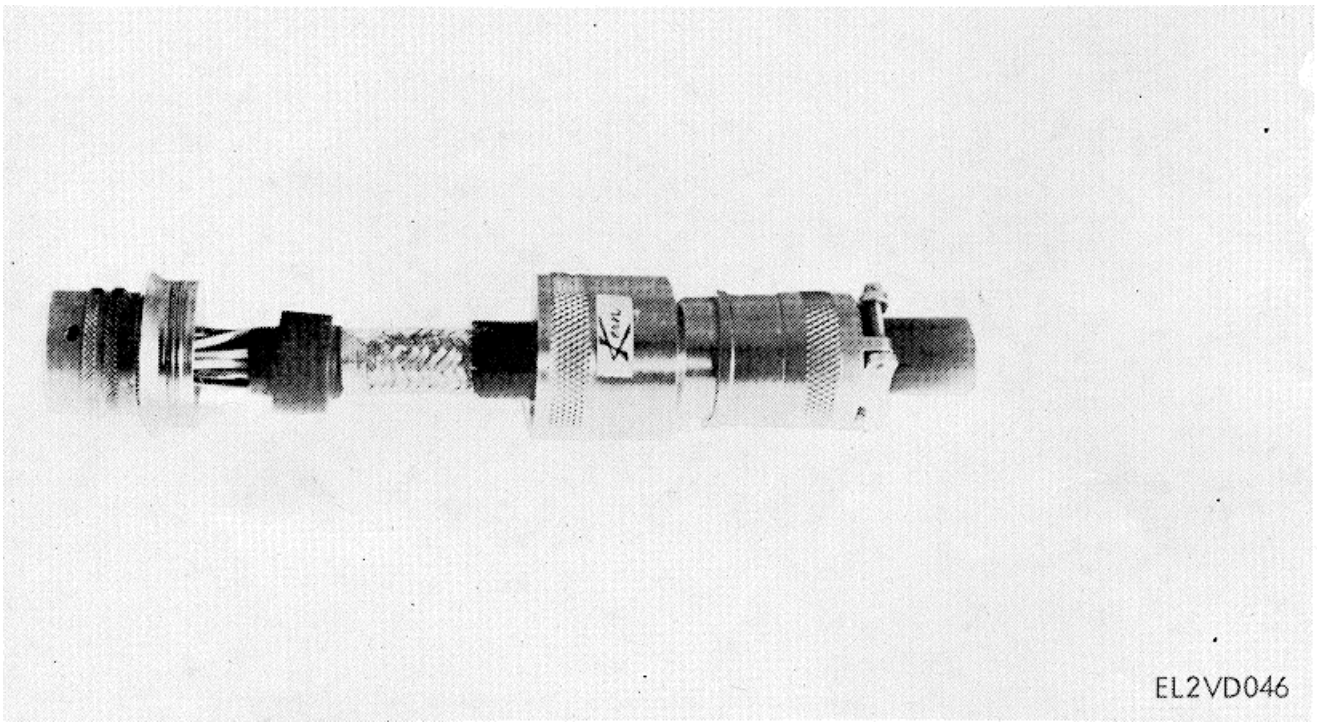


Figure 4-22. Non-conductive shrink tubing in place over assembled iris collector ring.

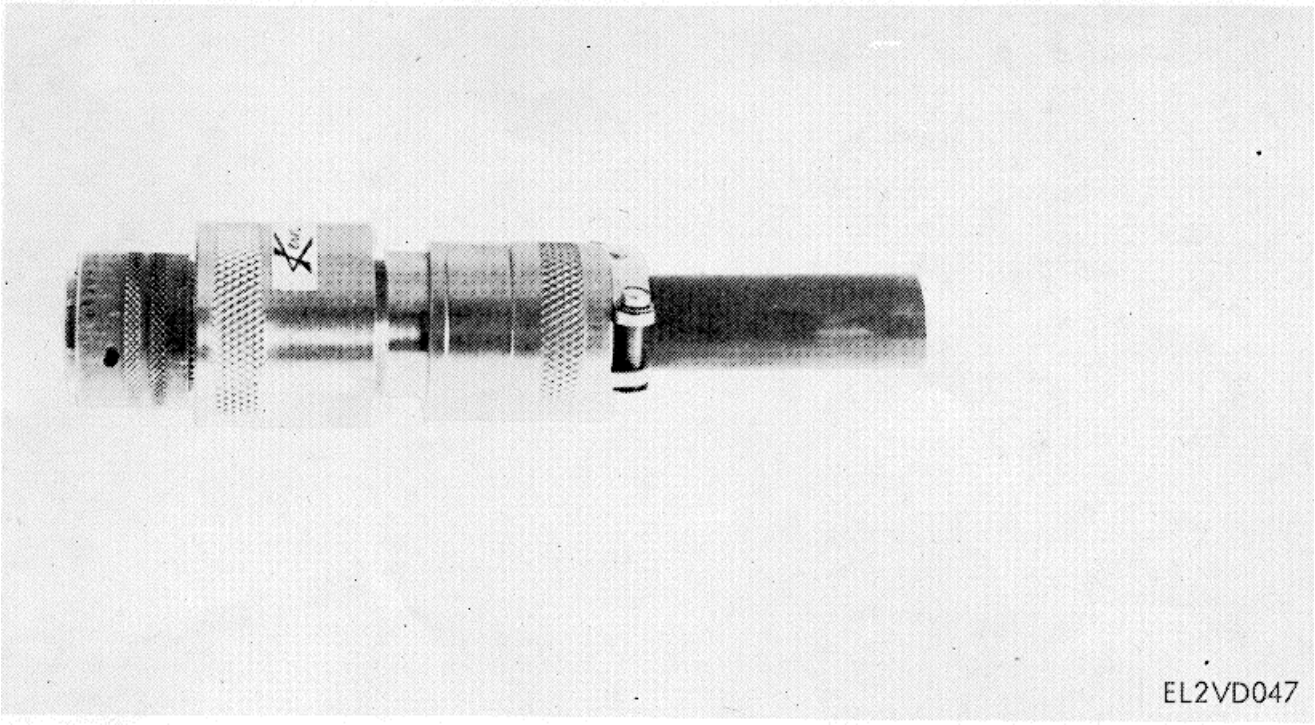


Figure 4-23. Completed terminated assembly of individual shields, overall shield and environmental jacket.

4-12. Fabricated Items

a. The following items listed are fabricated and installed at the GS category in accordance with the listed drawings.

Item	*Drawing No.*
Speaker screen	SM-C-885590
Mounting strip	SM-A-884783
Gasket	SM-A-885492-1
Neoprene rubber	SM-A-885491
Gasket	SM- A-885492-2
Insulator	M38527-8-01P
Bushing	SM-C-886386
Mounting cleat	SM-C-886290

b. When installing gasket, SM-A-885492-1 or -2, use adhesive, MIL-A-5092, Type II.

c. The items listed below are fabricated at the GS category in accordance with the listed drawings.

Item	*Drawing No.*
Saddlepad	SM- A-885493-1
Saddlepad	SM- A-885493-2
Saddlepad	SM-A-885493-3
Bumperpad	SM-A-885494
Cushion	SM-D-886078
Spacer	SM-B-885810
Writing plate	SM-D-885403-1
Writing plate	SM-D-885403-2
Writing plate	SM-D-885403-3
Bracket	SM-D-886089
Panel Strip	SM-C-885920-1
Panel Strip	SM-C-885920-2
Spacer	SM-B-885649
Antenna pivot	SM-D-886111

CHAPTER 5

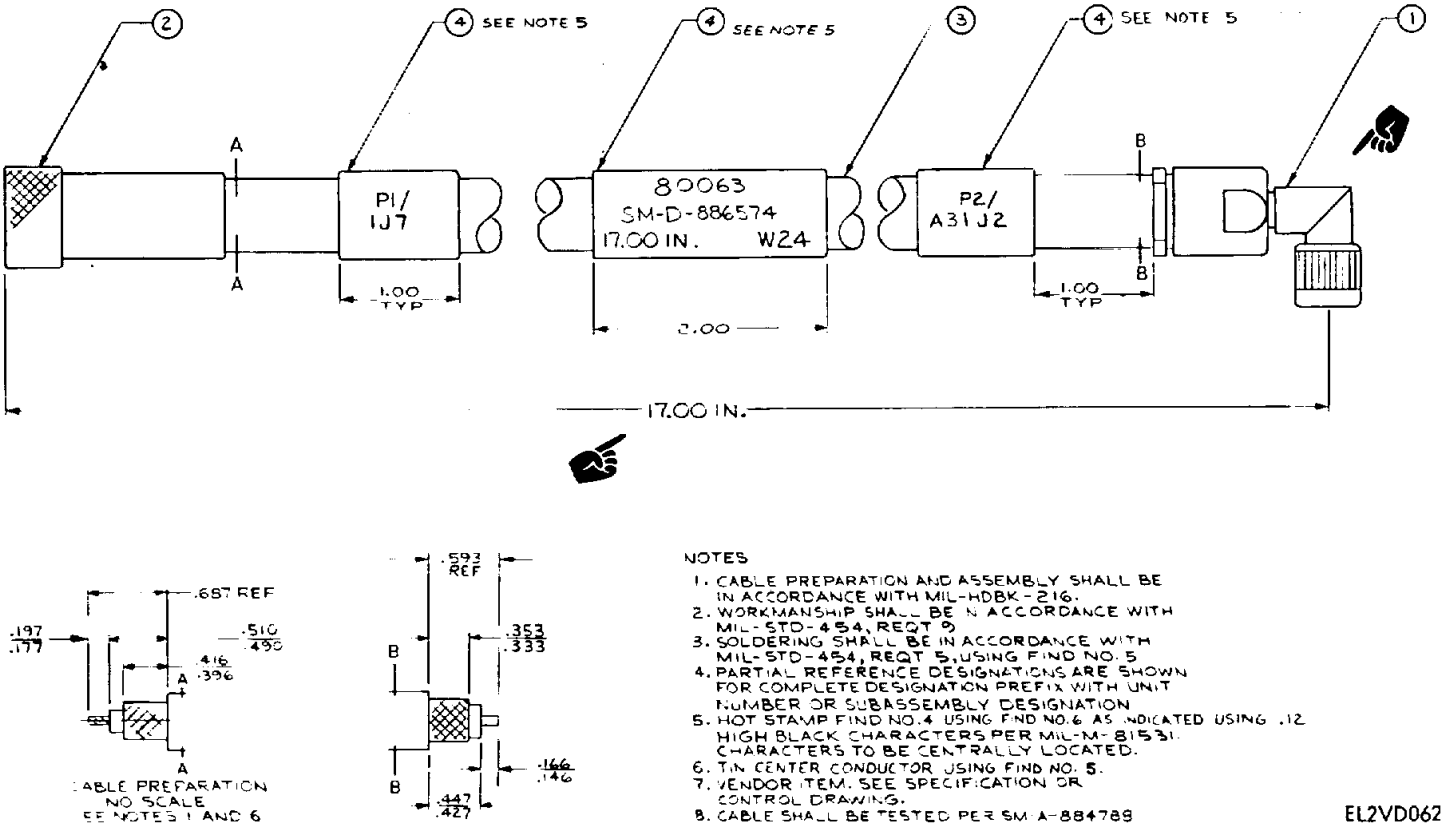
TROUBLESHOOTING ILLUSTRATIONS

Figures 5-1 through 5-15 and FO-1 through FO-60 are provided for the use of direct and general support maintenance personnel for troubleshooting and repairing the AN/TSW—7A. Table 5-1 lists the drawings contained in this chapter.

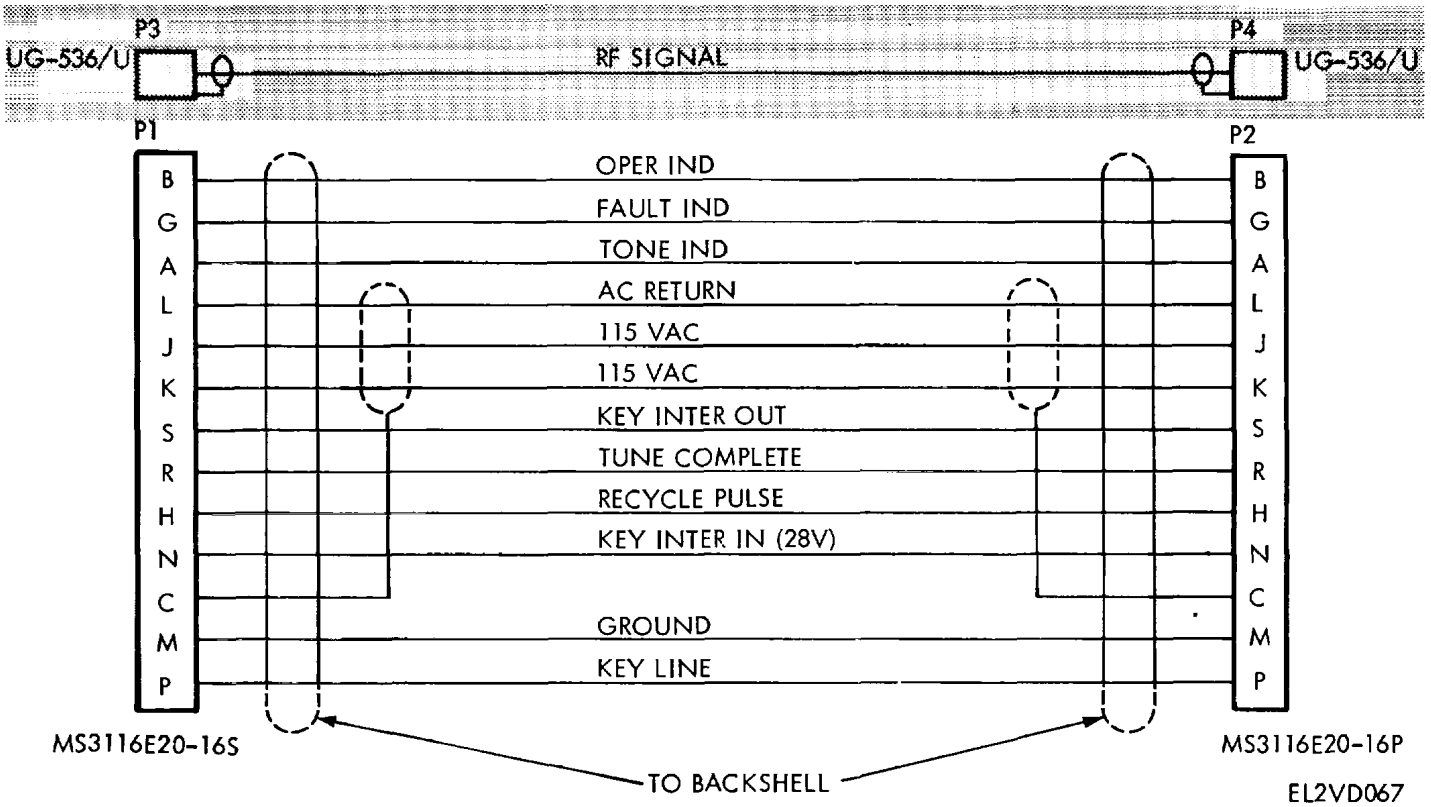
Table 5-1. Troubleshooting Illustrations

Table 5-1 Troubleshooting Illustrations-Continued

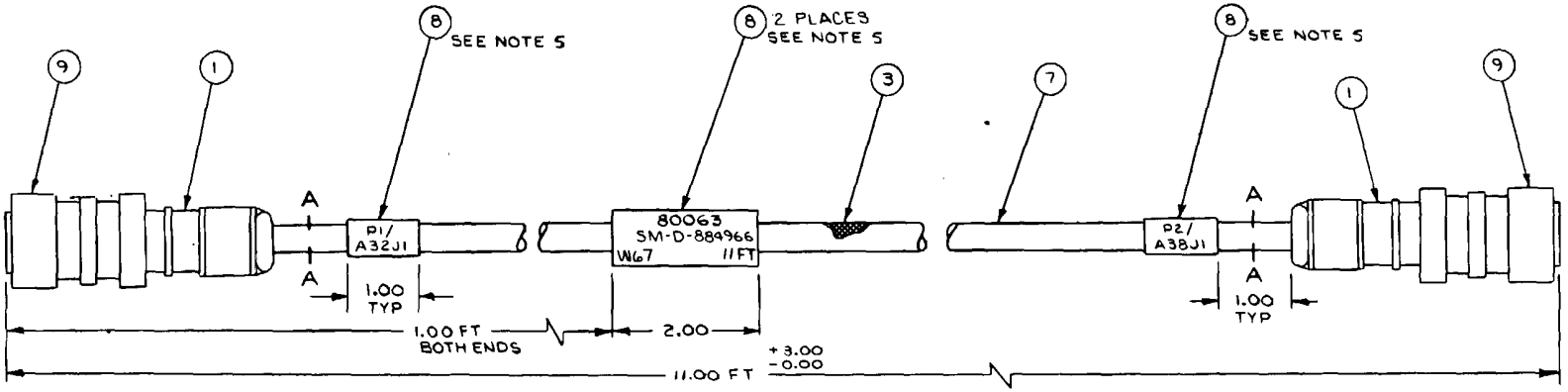
Fig. No.	Title	Page
FO-31	Cable assembly, W48	
FO-32	Cable assembly, W49	
FO-33	Cable assembly, W50	
FO-34	Cable assembly, W51	
FO-35	Cable assembly, W52	
FO-36	Cable assembly, W53	
FO-37	Cable assembly, W54	
FO-38	Cable assembly, W55	
FO-39	Cable assembly, W56	
FO-40	Cable assembly, W57	
FO-41	Cable assembly, W58 (Sheets 1 and 2)	
FO-42	Cable assembly, W59	
FO-43	Cable assembly, W61	
FO-44	Cable assembly, W62	
FO-45	Cable assembly, W63	
FO-46	Cable assembly, W64	
FO-47	Cable assembly, W65	
FO-48	Cable assembly, W66	
FO-49	Cable assembly, W68	
FO-50	Cable assembly, W769	
FO-51	Cable assembly, W70	
FO-52	Cable assembly, W73	
FO-53	Power distribution assembly, schematic diagram (Sheets 1 through 3)	
FO-54	Communications distribution box, schematic diagram (Sheets 1 through 3)	
FO-55	Communications select panel, schematic diagram	
FO-56	Transceiver chassis assembly, schematic diagram	
FO-57	Voice security chassis, schematic diagram	
FO-58	HF antenna coupler, schematic diagram	
FO-59	Voice security headset, schematic diagram	
FO-60	HF storage cabinet, schematic diagram	
FO-61	Console, schematic diagram	
FO-62	Cable assembly, W43	
FO-63	Cable assembly, W10	
FO-64	Cable assembly, W44	
FO-65	Cable assembly, W104	
FO-66	Cable assembly, W47	
FO-67	Cable assembly, W60	
FO-68	Cable assembly, W68	
FO-69	Cable assembly, W33	



■ *Figure 5-1. Typical Rf cable.*

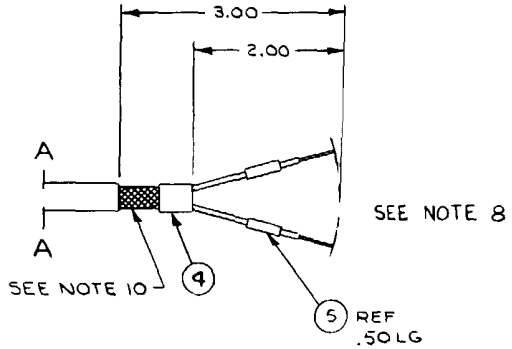


■ *Figure 5-2. Cable assembly, W32.*



WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM			NOTE	TO			NOTE
				REF DES	STRIP LENGTH	ATTACH FIND NO		REF DES	STRIP LENGTH	ATTACH FIND NO	
1	2	WHT	8 FT	P1-A	1/4	5	7,8	P2-A	1/4	5	7,8
2	↑	↑	↑	-B	↑	↑	↑	-B	↑	↑	↑
3				-C				-C			
4				-D				-D			
5				-E				-E			
6	↓	↓	↓	-F	↓	↓	↓	-F	↓	↓	↓
7	2	WHT	8 FT	P1-G	1/4	5	7,8	P2-G	1/4	5	7,8
SHIELD	3	BRAID		P1-SHELL				P2-SHELL			10

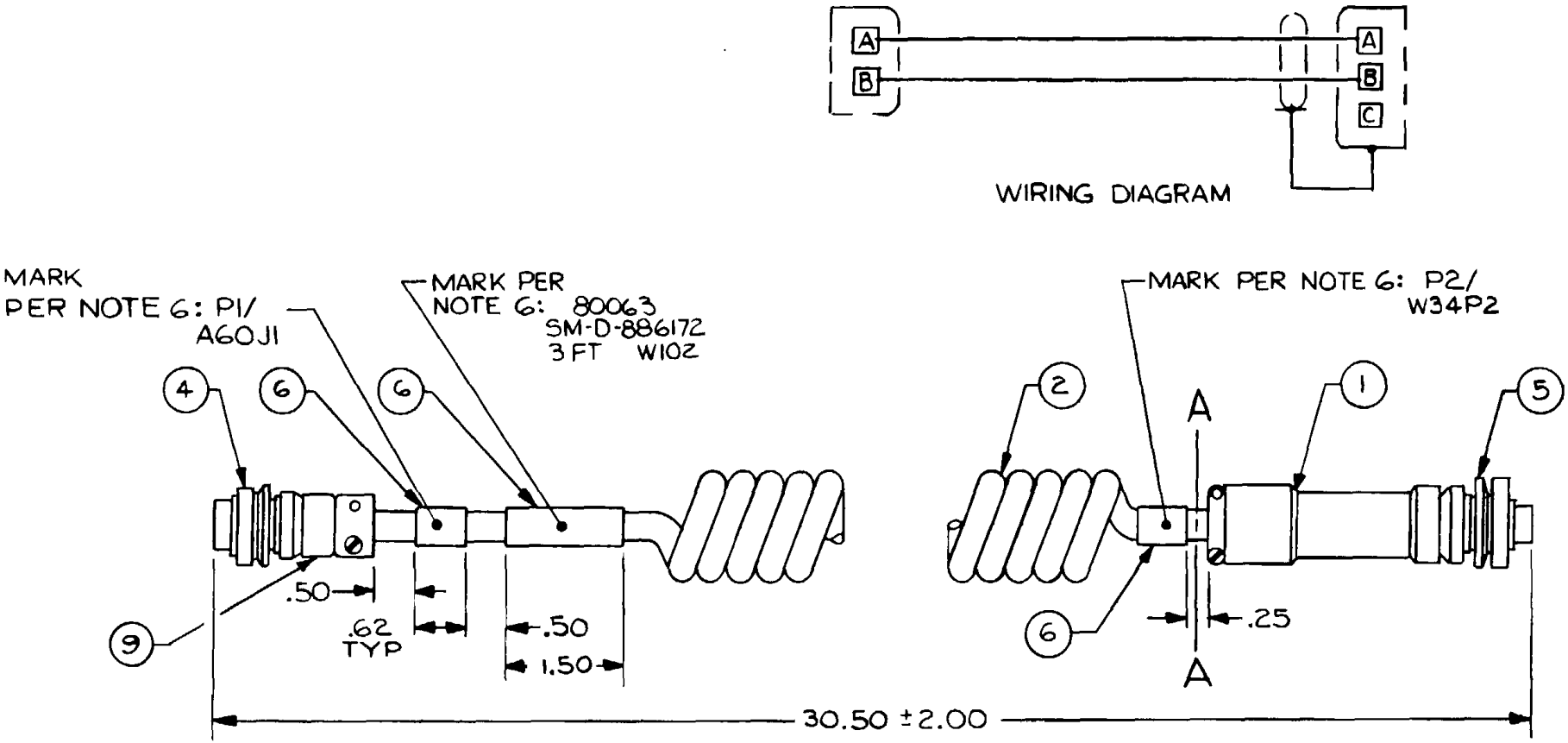


CABLE PREPARATION
BOTH ENDS

NOTES:
1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION.
3. SOLDER1NG SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5 USING FIND NO. 6.
4. VENDOR ITEM, SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
5. HOT STAMPFIND NO. 8AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
6. HOT STAMP SLEEV ING WITH REFERENCE DESIGNATION AS SHOWN USING .06 HIGH, BLACK CHARACTERS PER MIL-M-81531
7. TIN LEADS USING FIND NO. 6.
8. WRAPAS REQUIRED USING FIND NO. 4.
9. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
10. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE
    10.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3985.
    10.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTR1CAL INTEGR1TY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.
11. HOT STAMPING TEMP TO BE 4500F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL OF 2 SECONDS.

EL2VD099

Figure 5-3. Cable assembly, W67.



NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS PREFIX WITH SUBASSEMBLY DESIGNATION.
3. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5, USING FIND NO. 7.
4. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
5. TIN ALL LEADS USING FIND NO 7.
6. HOT STAMP FIND NO. 6 AS SHOWN WITH .12 HIGH BLUE-BLACK CHARACTERS PER MIL-M-81531 USING FIND NO. 3. CHARACTERS TO BE CENTRALLY LOCATED.
7. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.

EL2VD104

Figure 5-4. Cable assembly, W102.

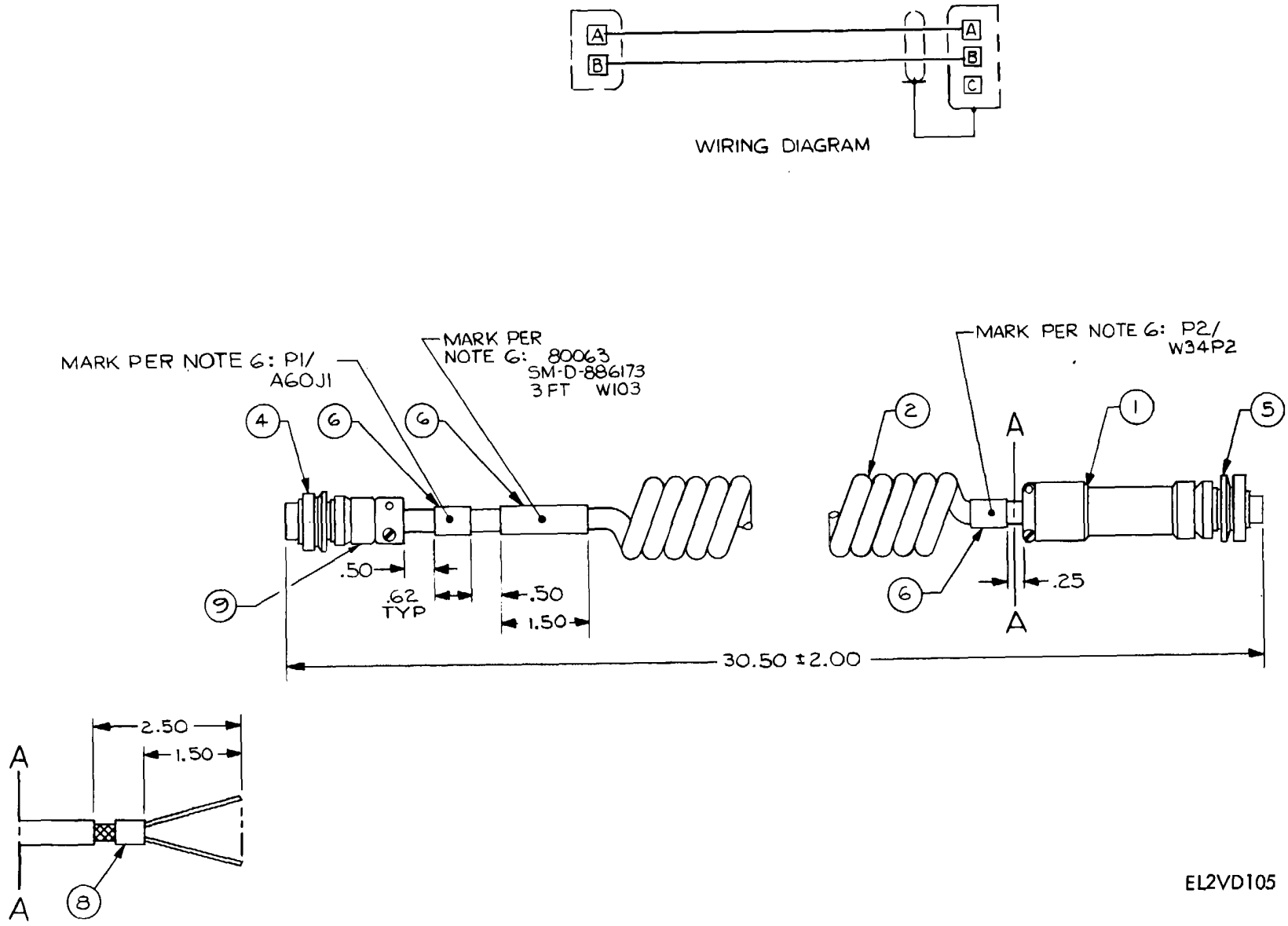
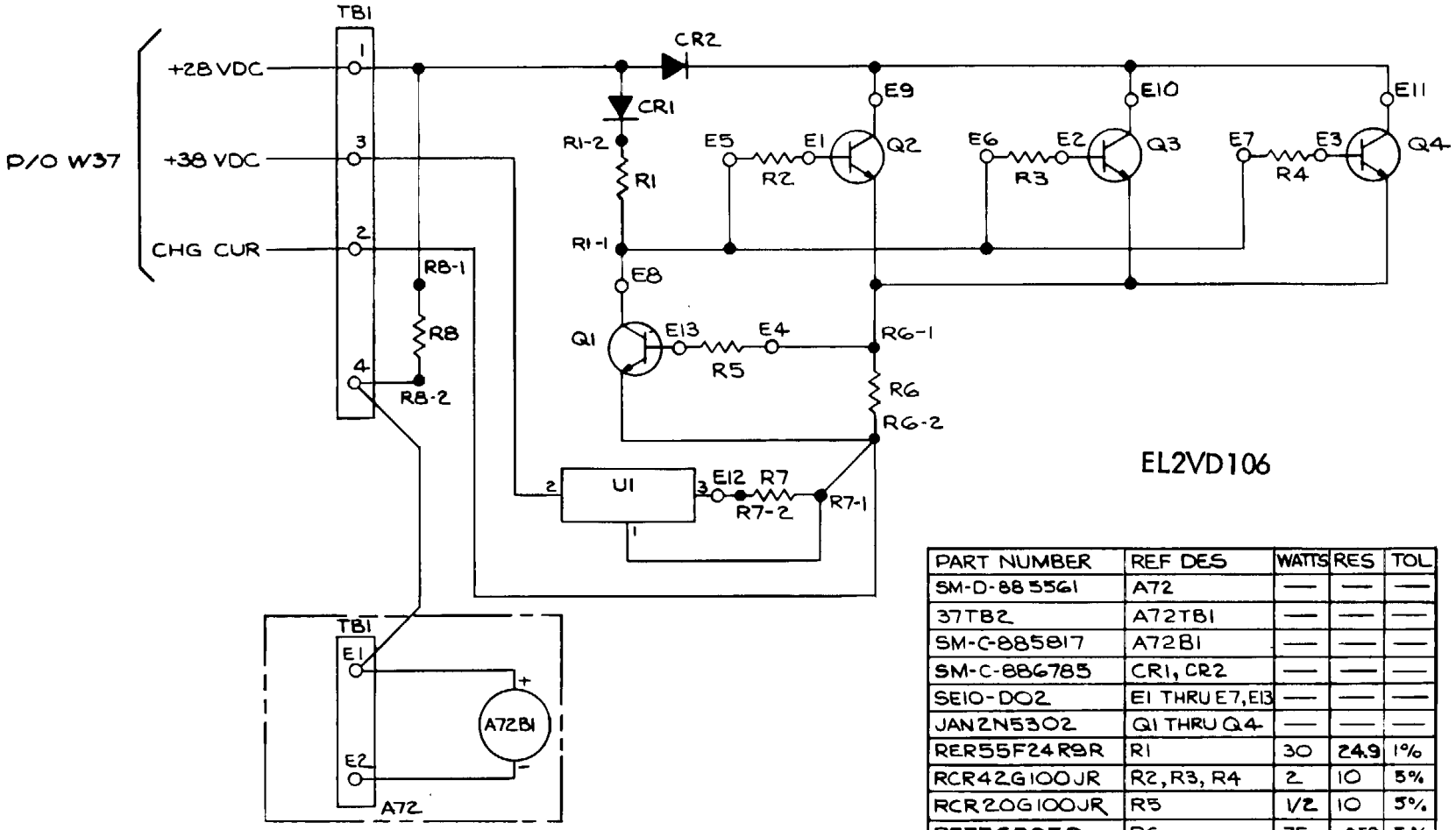


Figure 5-5. Cable assembly. W103.

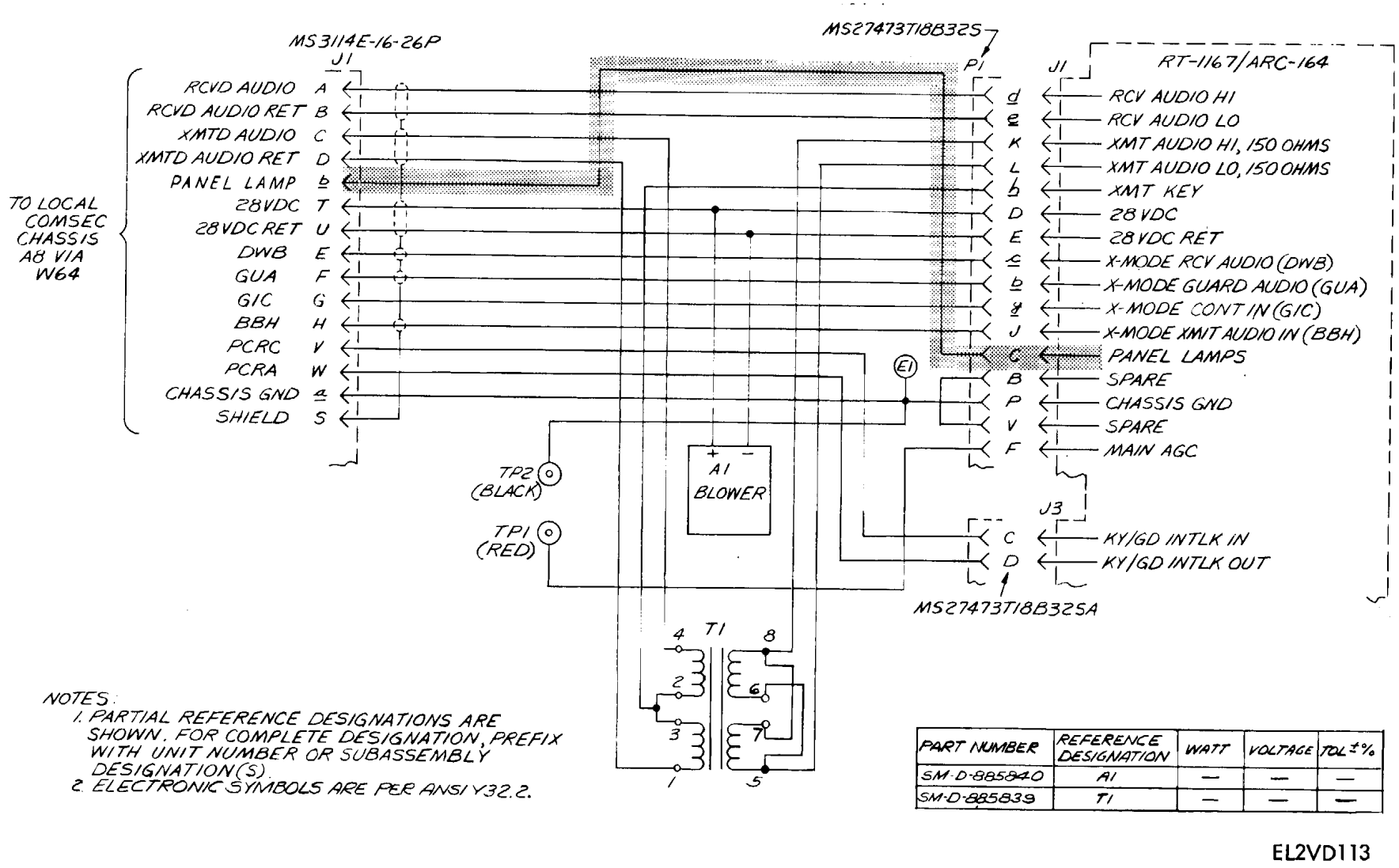


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATIONS, PREFIX WITH UNIT NUMBER AND SUBASSEMBLY DESIGNATIONS.
2. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS
3. ELECTRONIC SYMBOLS ARE PER ANSI Y32.2

PART NUMBER	REF DES	WATTS	RES	TOL
SM-D-885561	A72	—	—	—
37TB2	A72TB1	—	—	—
SM-C-885817	A72B1	—	—	—
SM-C-886785	CR1, CR2	—	—	—
SE10-D02	E1 THRU E7, E13	—	—	—
JAN2N5302	Q1 THRU Q4	—	—	—
RER55F24R9R	R1	30	24.9	1%
RCR42G100JR	R2, R3, R4	2	10	5%
RCR20G100JR	R5	1/2	10	5%
RE77GR059	RG	75	.059	5%
RER60FR523R	R7	5	.523	1%
RER65F1210M	RB	10	121	1%
37TB4	TB1	—	—	—
SM-C-886776	U1	—	—	—
MS77068-2	E8-E12	—	—	—

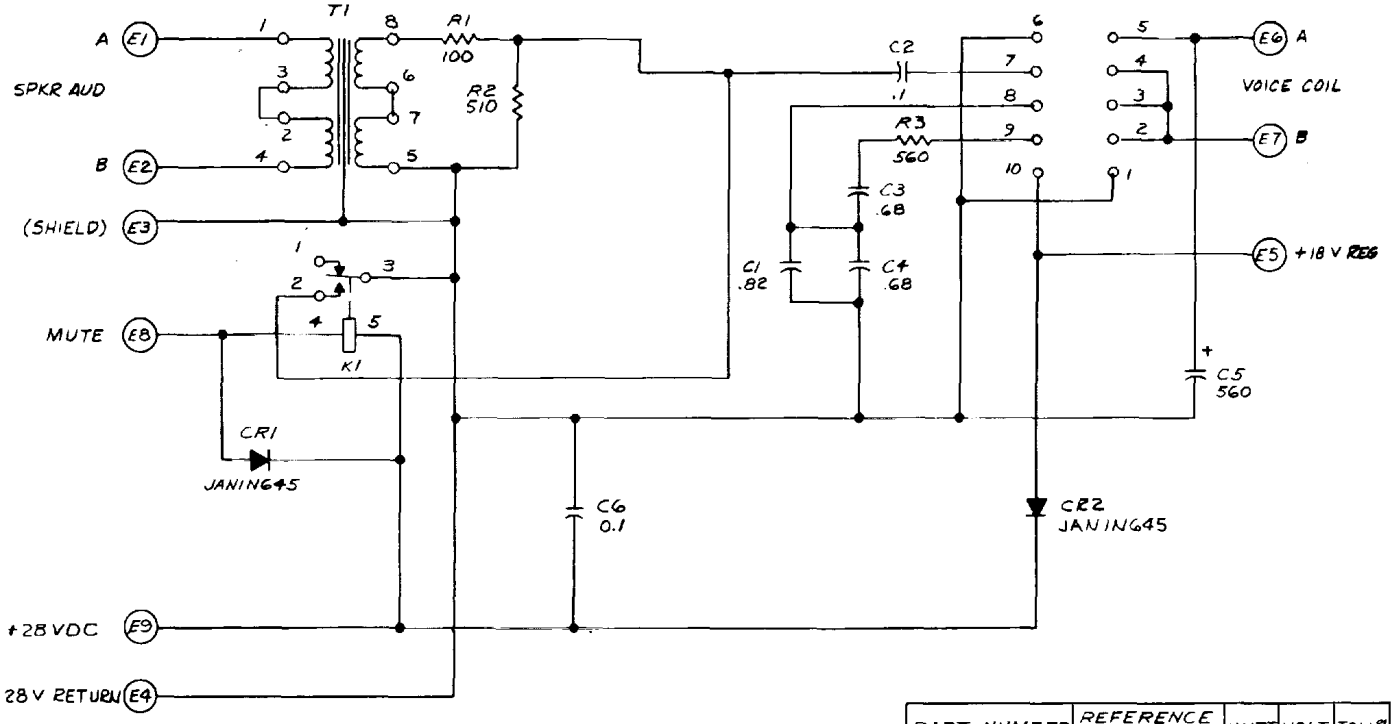
Figure 5-6. Battery charger, schematic diagram.



PART NUMBER	REFERENCE DESIGNATION	WATT	VOLTAGE	TOL ±%
SM-D-885840	A1	—	—	—
SM-D-885839	T1	—	—	—

Figure 5-7. UHF AM filter chassis assembly, schematic diagram.

Figure 5-8. Deleted.

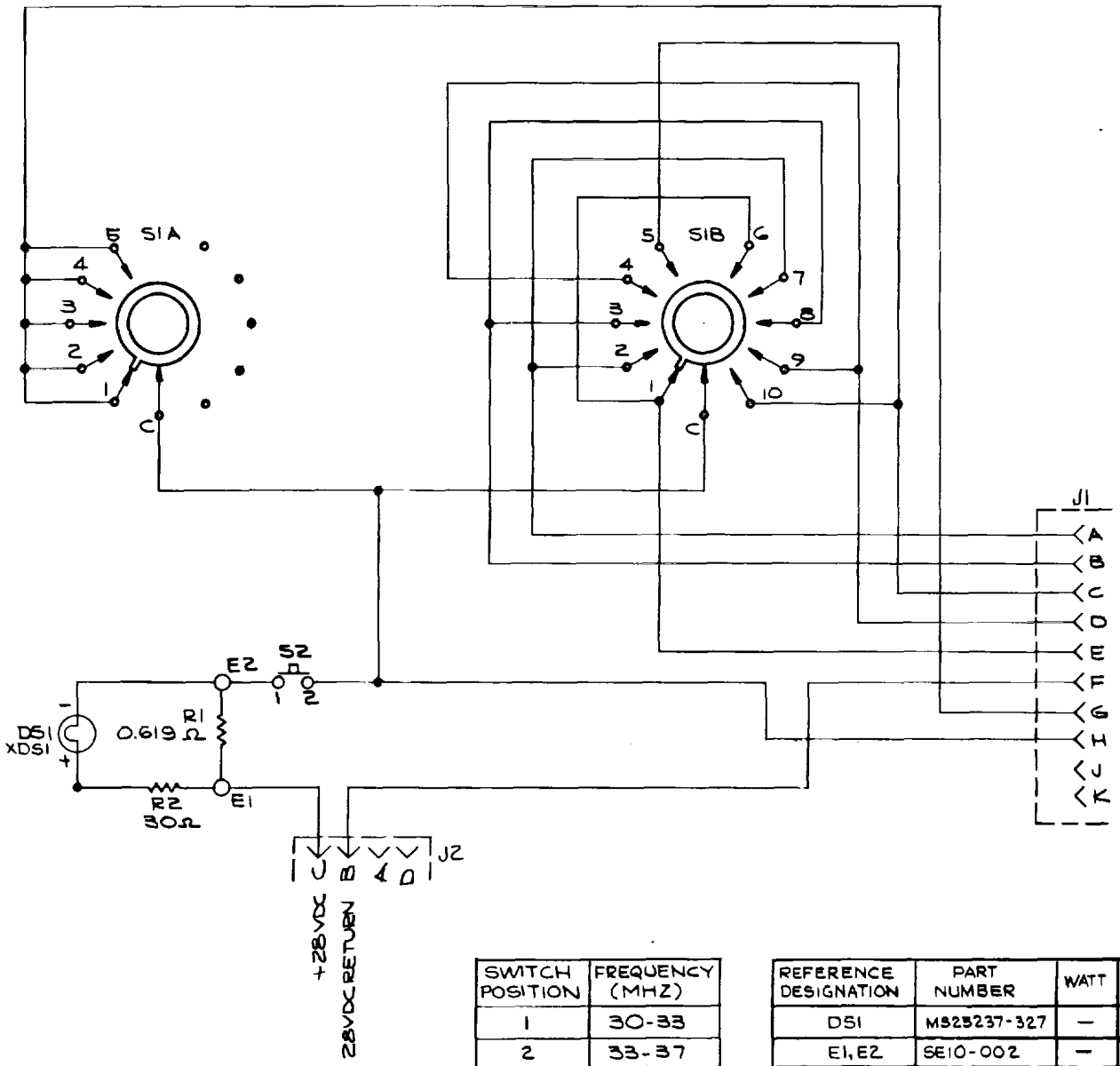


PART NUMBER	REFERENCE DESIGNATION	WATT	VOLT	TOL ± %
M39014/02-1410	C1	—	50	10
M39014/01-1513	C2	—	50	10
M39014/02-1409	C3, C4	—	50	10
M39006/21-0136	C5	—	30	10
M39014/01-1554	C6	—	50	10
		—	50	20
JAN1N645	CR1, CR2	—	—	—
M39016/17-011L	K1	—	—	—
RCR32G101JR	R1	1	—	5
RCR07G511JR	R2	1/4	—	5
RCR07G561JR	R3	1/4	—	5
SM-D-885839	T1	—	—	

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   RESISTANCE VALUES ARE IN OHMS.
   CAPACITANCE VALUES ARE IN MICROFARADS.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER AND SUBASSEMBLY DESIGNATION(S).
3. ELECTRONIC SYMBOLS ARE PER ANSI Y32.2.

EL2VD116

Figure 5-9. Speaker/amplifier, schematic diagram.



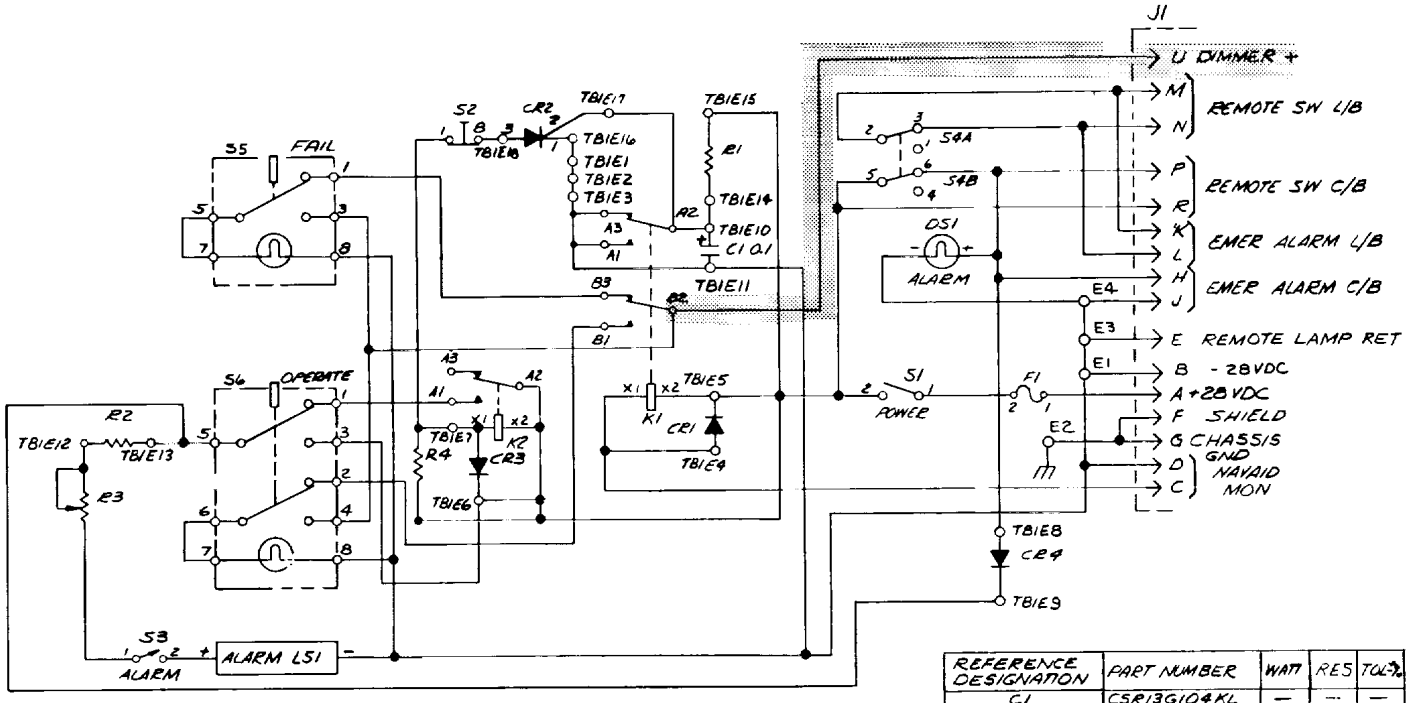
SWITCH POSITION	FREQUENCY (MHZ)
1	30-33
2	33-37
3	37-42
4	42-47.5
5	47.5-53
6	53-56
7	56-60
8	60-65
9	65-70.5
10	70.5-76

REFERENCE DESIGNATION	PART NUMBER	WATT	RES	TOL±%
DS1	MS25237-327	—	—	—
E1, E2	SE10-002	—	—	—
J1	M8723/05R121ON	—	—	—
J2	MS3114E8-4P	—	—	—
R1	RBR527RG190AP	—	0.619Ω	—
R2	RCR20G300JP	—	30Ω	—
S1	M3786/4-035	—	—	—
S2	MS25089-1G-1	—	—	—
XDS1	LH73/2	—	—	—

NOTES:
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATIONS, PREFIX WITH UNIT NUMBER AND SUBASSEMBLY DESIGNATIONS.
2. ELECTRONIC SYMBOLS ARE PER ANSIY32.2.

EL2VD118

Figure 5-10. VHF FM antenna tuning control, schematic diagram.



REFERENCE DESIGNATION	PART NUMBER	WATT	RES	TOL-%
C1	CSR13G104KL	—	—	—
CR1, CR3, CR4	JAN1N645	—	—	—
CR2	2N2324	—	—	—
DS1	T-1-3/4	—	—	—
E1, E3, E4	SE20-D01S	—	—	—
F1	F02A250V1/2A	—	—	—
J1	MS3114E14-18P	—	—	—
K1	M39016/11-0071	—	—	—
K2	M5757/10-035	—	—	—
LS1	SM-D-886001-2	—	—	—
R1	RCR07G273KM	1/4	27K	10
R2	RCR32G330JM	1	33	5
R3	RV4SAYSB502A	1	5K	10
R4	RCR20G102JM	1/2	1K	5
S1, S3	MS75028-22	—	—	—
S2	MS27903-1	—	—	—
S4	MS24659-22G	—	—	—
TB1	SM-C-885171	—	—	—
XDS1	LH7912	—	—	—
XF1	FHN26G1	—	—	—
S5	M22885/18-16	—	—	—
S6	M22851/18-17	—	—	—
E2	SM-C-886002	—	—	—

NOTES:
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION, PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
2. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS.
3. ELECTRONIC SYMBOLS ARE PER ANSI Y32.2.

EL2VD119

Figure 5-11. Navaid monitor, schematic diagram.

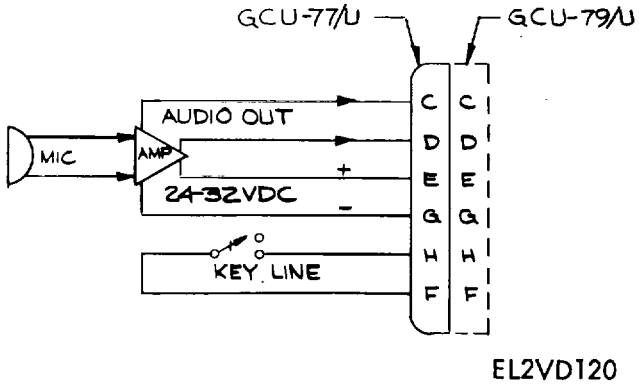


Figure 5-12. Desk microphone, schematic diagram.

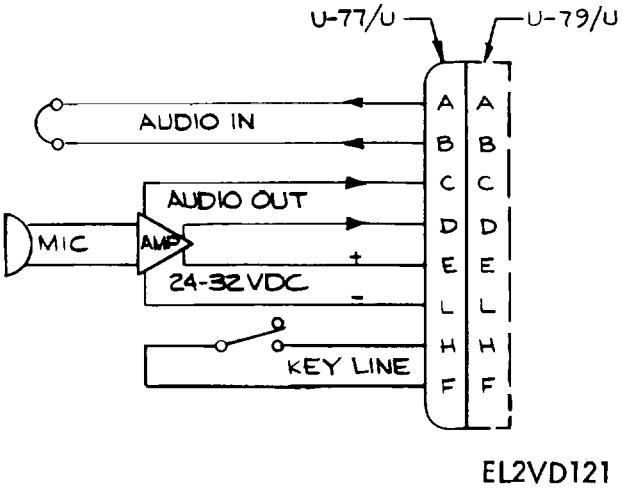
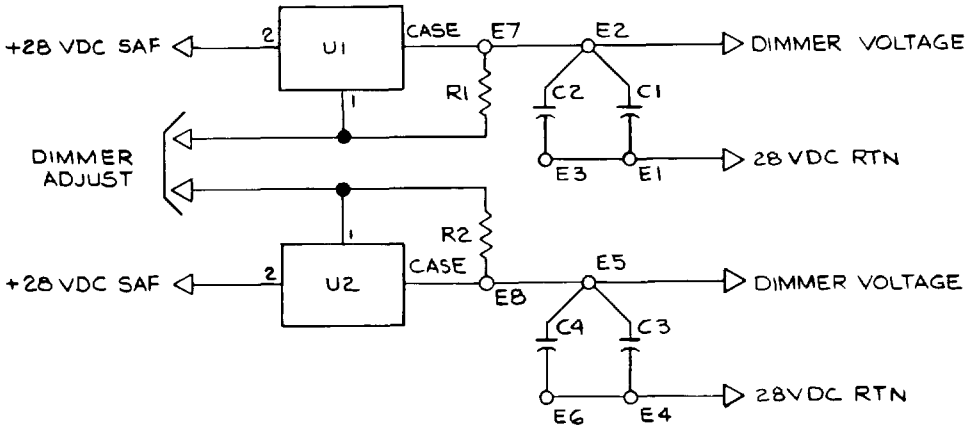


Figure 5-13. Microphone/headset, schematic diagram

Figure 5-14. Deleted



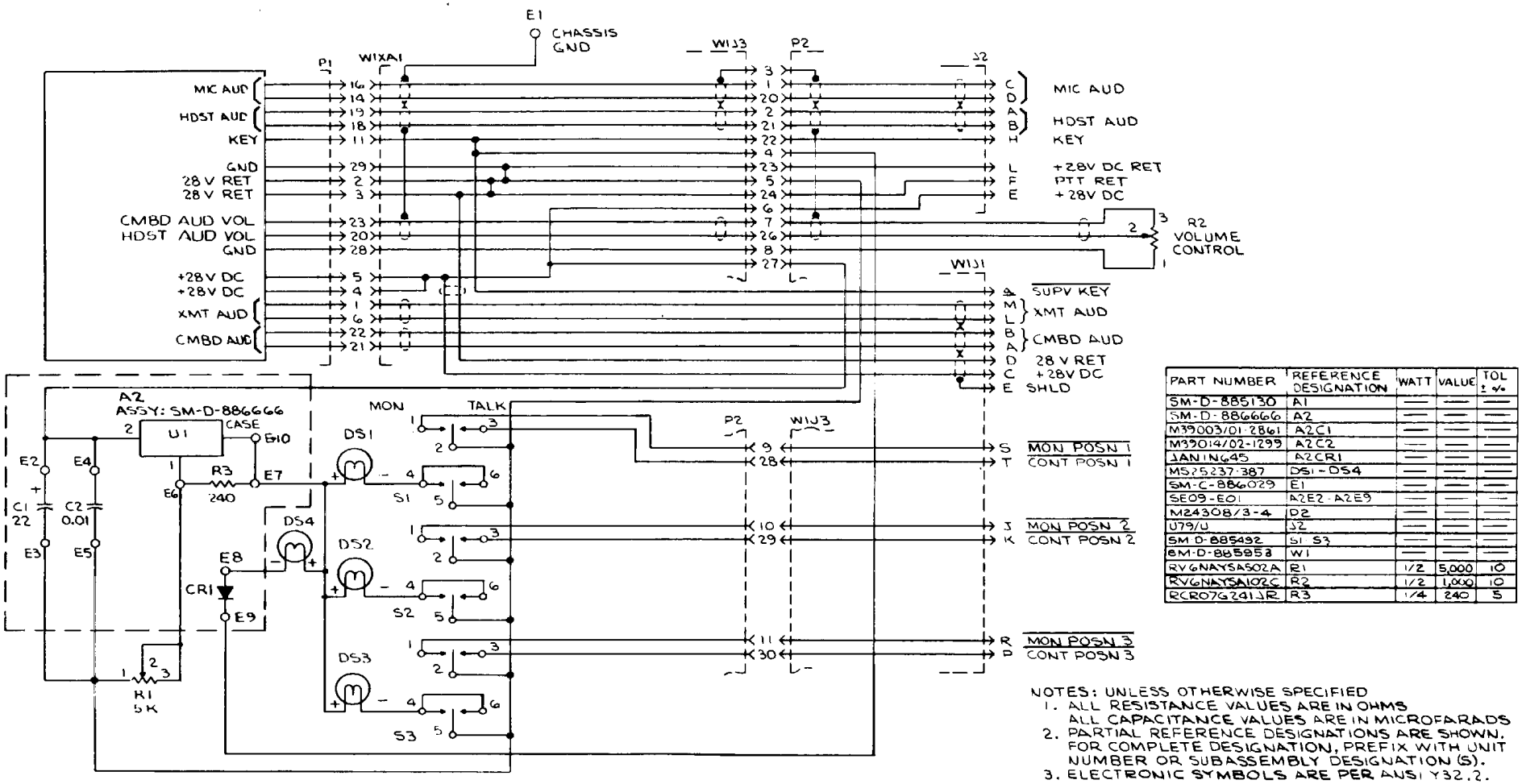
NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLET DESIGNATIONS, PREFIX WITH UNIT NUMBER AND SUBASSEMBLY DESIGNATIONS.
2. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS.
3. ELECTRONIC SYSMBOLS ARE PER ANSIY32.2

PART NO.	REF DES	WATTS	RES	TOL	CAP
SE10-001	E1 THRU E6	-	-	-	-
SM-C-886776	U1, U2	-	-	-	-
RCR97G241JM	RIM, R2	¼	240	5%	-
M39014/02-1299	C1, C3	-	-	20	.01
M39003/01-5445	C2, C4	-	-	5	22
M577068-2	E7, E8	-	-	-	-

EL2VD 135

Figure 5-14.1. Overhead light dimmer/regulator.



PART NUMBER	REFERENCE DESIGNATION	WATT	VALUE	TOL ± %
SM-D-885130	A1	—	—	—
SM-D-886666	A2	—	—	—
M39003/01-2861	A2C1	—	—	—
M39014/02-1299	A2C2	—	—	—
JAN1N645	A2CR1	—	—	—
MS75237-387	DS1-DS4	—	—	—
SM-C-886029	E1	—	—	—
SE09-E01	A2E2-A2E9	—	—	—
M24308/3-4	D2	—	—	—
U79/U	J2	—	—	—
SM-D-885492	S1 S3	—	—	—
SM-D-885858	W1	—	—	—
RVG NAYSA502A	R1	1/2	5,000	10
RVG NAYSA102C	R2	1/2	1,000	10
RCR07G241JR	R3	1/4	240	5

NOTES: UNLESS OTHERWISE SPECIFIED
1. ALL RESISTANCE VALUES ARE IN OHMS
   ALL CAPACITANCE VALUES ARE IN MICROFARADS
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION, PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. ELECTRONIC SYMBOLS ARE PER ANSI Y32.2.

EL2VD139

Figure 5-15. Supervisor's panel, schematic diagram.

APPENDIX A

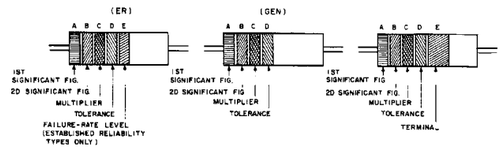
REFERENCES

Following is a list of reference applicable to the Air Traffic Control Center AN/TSW-7A.

AR 746-5	Color and Marking of Army Materiel
DA Pam 310-1	Consolidated Index of Army Publications and Blank Forms
SB 11-573	Painting and Preservation Supplies Available for Field Use for Electronic Command Equipment
TB SIG 291	Solder and Soldering
TB 43-0118	Field Instructions for: Painting and Preserving Electronics Command Equipments Including Camouflage Pattern Painting of Electrical Equipment Shelters
TM 11-5895-801-10	Operator's Manual: Air Traffic Control Central, AN/TSW-7A (NSN 5820-01-018- 1246)
TM 11-5895-801-20	Organizational Maintenance Manual: Air Traffic Control Central, AN/TSW-7A (NSN 5820-01-018-1246)
TM 11-5985-326-35	Direct Support, General Support and Depot Maintenance Manual: Coupler, Antenna CU-1658/A and CU-1669/GRC
TM 11-6625-446-15	Operator's, Organizational, Direct Support, General Support, and Depot Maintenance Manual: Wattmeter AN/URM-120 (NSN 6625-00-813-8430)
TM 11-6625-683-15	Operator's, Organizational, Direct Support, and Depot Maintenance Manual: Signal Generator AN/URM-127 (NSN 6625-00-783-5965)
TM 11-6625-1703-15	Operator's, Organizational, Direct Support, General Support, and Depot Maintenance Manual: Oscilloscope AN/USM-281A (NSN 6625-00-228-2201)
TM 38-750	The Army Maintenance Management System (TAMMS)
TM 740-90-1	Administrative Storage of Equipment
TM 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command)

TM 11-6660-200-35	DS, GS, and Depot Maintenance Manual Including Repair Parts and Special Tools List for Wind Measuring Set AN/GMQ-11
TM 11-6685-202-40P	General Support Maintenance Repair Parts and Special Tools List for Barometers ML-102-B, D, E, F and G
TM 38-750	The Army Maintenance Management System (TAMMS)
TM 750-244-2	Procedures for Destruction of Electronics Material to Prevent Enemy Use (Electronics Command)

* U.S. GOVERNMENT PR1NTING OFFICE: 19900 - 261-872 (21366)



COLOR CODE MARKING FOR COMPOSITION TYPE RESISTORS.

COLOR-CODE MARKING FOR FILM-TYPE RESISTORS.

TABLE I

COLOR CODE FOR COMPOSITION TYPE AND FILM TYPE RESISTORS.

BAND A		BAND B		BAND C		BAND D		BAND E		
COLOR	FIRST SIGNIFICANT FIGURE	COLOR	SECOND SIGNIFICANT FIGURE	COLOR	MULTIPLIER	COLOR	RESISTANCE TOLERANCE (PERCENT)	COLOR	FAILURE RATE LEVEL	TERM.
BLACK	0	BLACK	0	BLACK	1			BROWN	M=1.0	
BROWN	1	BROWN	1	BROWN	10			RED	P=0.1	
RED	2	RED	2	RED	100			ORANGE	R=0.01	
ORANGE	3	ORANGE	3	ORANGE	1,000			YELLOW	S=0.001	
YELLOW	4	YELLOW	4	YELLOW	10,000	SILVER	±10 (COMP TYPE ONLY)	WHITE	.....	SOLDERABLE
GREEN	5	GREEN	5	GREEN	100,000	GOLD	±5			
BLUE	6	BLUE	6	BLUE	1,000,000	RED	±2 (NOT APPLICABLE TO ESTABLISHED RELIABILITY).			
PURPLE (VIOLET)	7	PURPLE (VIOLET)	7							
GRAY	8	GRAY	8	SILVER	0.01					
WHITE	9	WHITE	9	GOLD	0.1					

BAND A — THE FIRST SIGNIFICANT FIGURE OF THE RESISTANCE VALUE (BANDS A THRU D SHALL BE OF EQUAL WIDTH.)

BAND B — THE SECOND SIGNIFICANT FIGURE OF THE RESISTANCE VALUE.

BAND C — THE MULTIPLIER ; THE MULTIPLIER IS THE FACTOR BY WHICH THE TWO SIGNIFICANT FIGURES ARE MULTIPLIED TO YIELD THE NOMINAL RESISTANCE VALUE.)

BAND D — THE RESISTANCE TOLERANCE.

BAND E — WHEN USED ON COMPOSITION RESISTORS, BAND E INDICATES ESTABLISHED RELIABILITY FAILURE - RATE LEVEL (PERCENT FAILURE PER 1,000 HOURS). ON FILM RESISTORS, THIS BAND SHALL BE APPROXIMATELY 1-1/2 TIMES THE WIDTH OF OTHER BANDS, AND INDICATES TYPE OF TERMINAL.

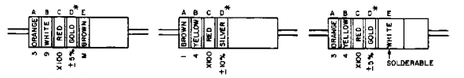
RESISTANCES IDENTIFIED BY NUMBERS AND LETTERS (THESE ARE NOT COLOR CODED)

SOME RESISTORS ARE IDENTIFIED BY THREE OR FOUR DIGIT ALPHA NUMERIC DESIGNATORS. THE LETTER R IS USED IN PLACE OF A DECIMAL POINT WHEN FRACTIONAL VALUES OF AN OHM ARE EXPRESSED. FOR EXAMPLE:

2R7 = 2.7 OHMS 10R0 = 10.0 OHMS

FOR WIRE-WOUND-TYPE RESISTORS COLOR CODING IS NOT USED. IDENTIFICATION MARKING IS SPECIFIED IN EACH OF THE APPLICABLE SPECIFICATIONS.

EXAMPLES OF COLOR CODING



NOMINAL RESISTANCE 3,900 OHMS
RESISTANCE TOLERANCE ±5%
FAILURE RATE LEVEL M

NOMINAL RESISTANCE 1,400 OHMS
RESISTANCE TOLERANCE ±10%

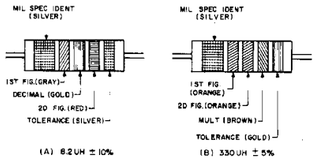
NOMINAL RESISTANCE 3,400 OHMS
RESISTANCE TOLERANCE ±5%
TERMINAL SOLDERABLE

COMPOSITION-TYPE RESISTORS

FILM-TYPE RESISTORS

* IF BAND D IS OMITTED, THE RESISTOR TOLERANCE IS ±20% AND THE RESISTOR IS NOT MIL-STD.

A. COLOR CODE MARKING FOR MILITARY STANDARD RESISTORS.



(A) 8.2UH ± 10%

(B) 330UH ± 5%

COLOR CODING FOR TUBULAR ENCAPSULATED R.F. CHOKES. AT A, AN EXAMPLE OF THE CODING FOR AN 8.2UH CHOKE IS GIVEN. AT B, THE COLOR BANDS FOR A 330 UH INDUCTOR ARE ILLUSTRATED.

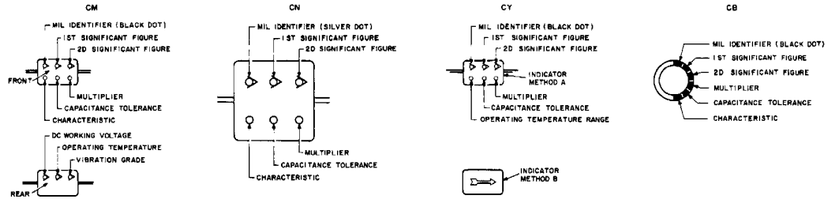
TABLE 2

COLOR CODING FOR TUBULAR ENCAPSULATED R.F. CHOKES.

COLOR	SIGNIFICANT FIGURE	MULTIPLIER	INDUCTANCE TOLERANCE (PERCENT)
BLACK	0	1	
BROWN	1	10	1
RED	2	100	2
ORANGE	3	1,000	3
YELLOW	4		
GREEN	5		
BLUE	6		
VIOLET	7		
GRAY	8		
WHITE	9		
NONE			20
SILVER			10
GOLD	DECIMAL POINT		5

MULTIPLIER IS THE FACTOR BY WHICH THE TWO COLOR FIGURES ARE MULTIPLIED TO OBTAIN THE INDUCTANCE VALUE OF THE CHOKE COIL.

CAPACITORS, FIXED, VARIOUS-DIELECTRICS, STYLES CM, CN, CY, AND CB.



MICA-DIELECTRIC

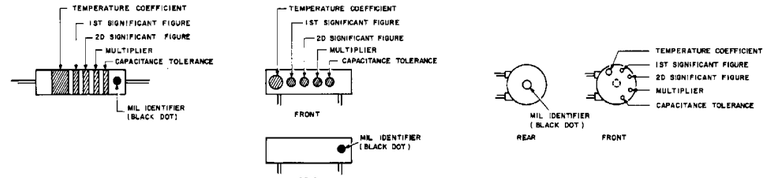
PAPER-DIELECTRIC

GLASS-DIELECTRIC, GLASS CASE

MICA, BUTTON TYPE

TABLE 3 — FOR USE WITH STYLES CM, CN, CY AND CB.

COLOR	MIL ID	1ST SIG FIG.	2D SIG FIG.	MULTIPLIER	CAPACITANCE TOLERANCE				CHARACTERISTIC				DC WORKING VOLTAGE	OPERATING TEMP RANGE	VIBRATION GRADE
					CM	CN	CY	CB	CM	CN	CY	CB	CM	CY CM	CM
BLACK	CM,CY CB	0	0	1			±20%	±20%			A			-55°TO+70°C	10-55HZ
BROWN		1	1	10					B	E	B				
RED		2	2	100	±2%		±2%	±2%	C					-55°TO+85°C	
ORANGE		3	3	1,000		±30%					D	D	300		
YELLOW		4	4	10,000					E					-55°TO+125°C	10-2,000HZ
GREEN		5	5		±5%				F				500		
BLUE		6	6											-55°TO+150°C	
PURPLE (VIOLET)		7	7												
GRAY		8	8												
WHITE		9	9												
GOLD				0.1			±5%	±5%							
SILVER	CN			0.01	±10%	±10%	±10%	±10%							



AXIAL LEAD

RADIAL LEAD

DISK-TYPE

TABLE 4 — TEMPERATURE COMPENSATING, STYLE CC.

COLOR	TEMPERATURE COEFFICIENT[4]	1ST SIG FIG.	2D SIG FIG.	MULTIPLIER[1]	CAPACITANCE TOLERANCE		MIL ID
					CAPACITANCES OVER 10 UUF	CAPACITANCES 10 UUF OR LESS	
BLACK	0	0	0	1		±2.0 UUF	CC
BROWN	−30	1	1	10	±1%		
RED	−80	2	2	100	±2%	±0.25 UUF	
ORANGE	−150	3	3	1,000			
YELLOW	−220	4	4				
GREEN	−330	5	5		±5%	±0.5 UUF	
BLUE	−470	6	6				
PURPLE (VIOLET)	−750	7	7				
GRAY		8	8	0.01*			
WHITE		9	9	0.1*	±10%		
GOLD	+100			0.1		±1.0 UUF	
SILVER				0.01			

1. THE MULTIPLIER IS THE NUMBER BY WHICH THE TWO SIGNIFICANT (SIG) FIGURES ARE MULTIPLIED TO OBTAIN THE CAPACITANCE IN UUF.
2. LETTERS INDICATE THE CHARACTERISTICS DESIGNATED IN APPLICABLE SPECIFICATIONS: MIL-C-5, MIL-C-25D, MIL-C-11272B, AND MIL-C-10950C RESPECTIVELY.
3. LETTERS INDICATE THE TEMPERATURE RANGE AND VOLTAGE-TEMPERATURE LIMITS DESIGNATED IN MIL-C-11015D.
4. TEMPERATURE COEFFICIENT IN PARTS PER MILLION PER DEGREE CENTIGRADE.

* OPTIONAL CODING WHERE METALLIC PIGMENTS ARE UNDESIRABLE.

C. COLOR CODE MARKING FOR MILITARY STANDARD CAPACITORS.

ESC-FM 913-73

Figure FO-1. Color code markings for MIL-STD resistors, capacitors and inductors.

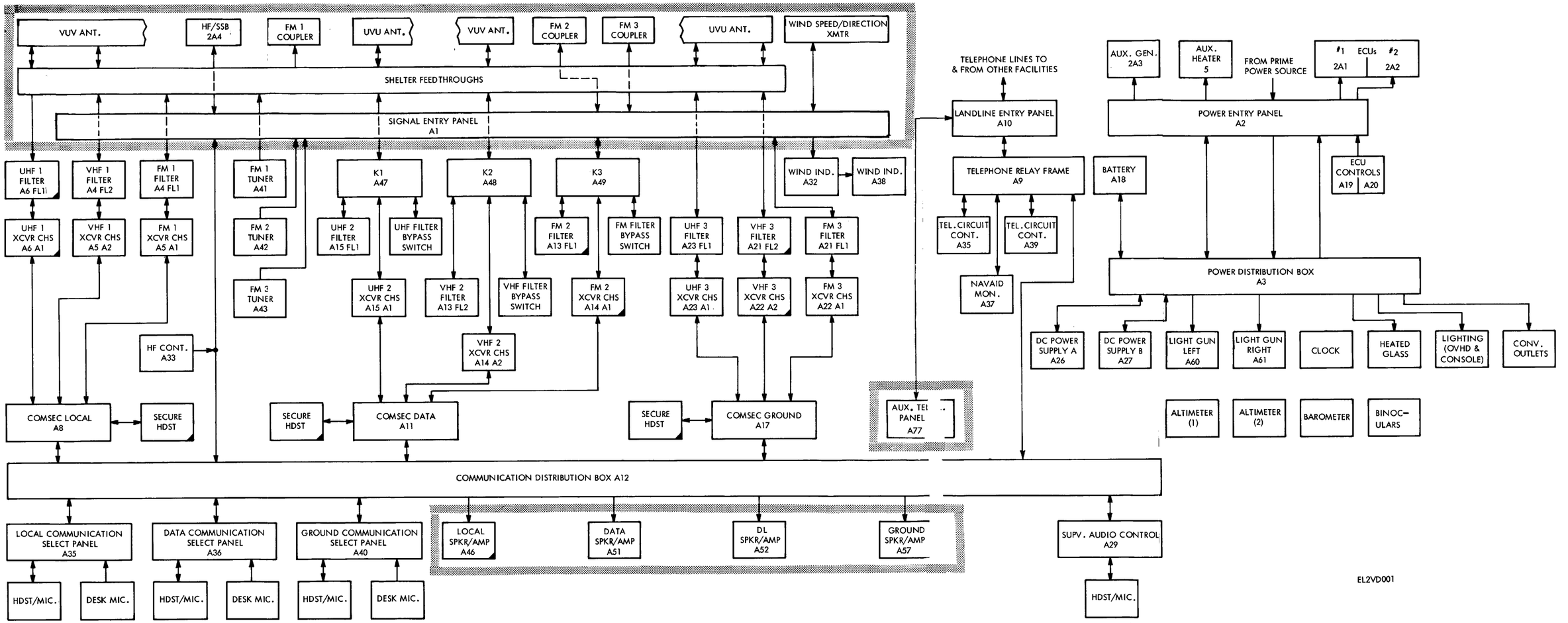


Figure FO-2. Air Traffic Control Central AN/TSW-7A, simplified block diagram.

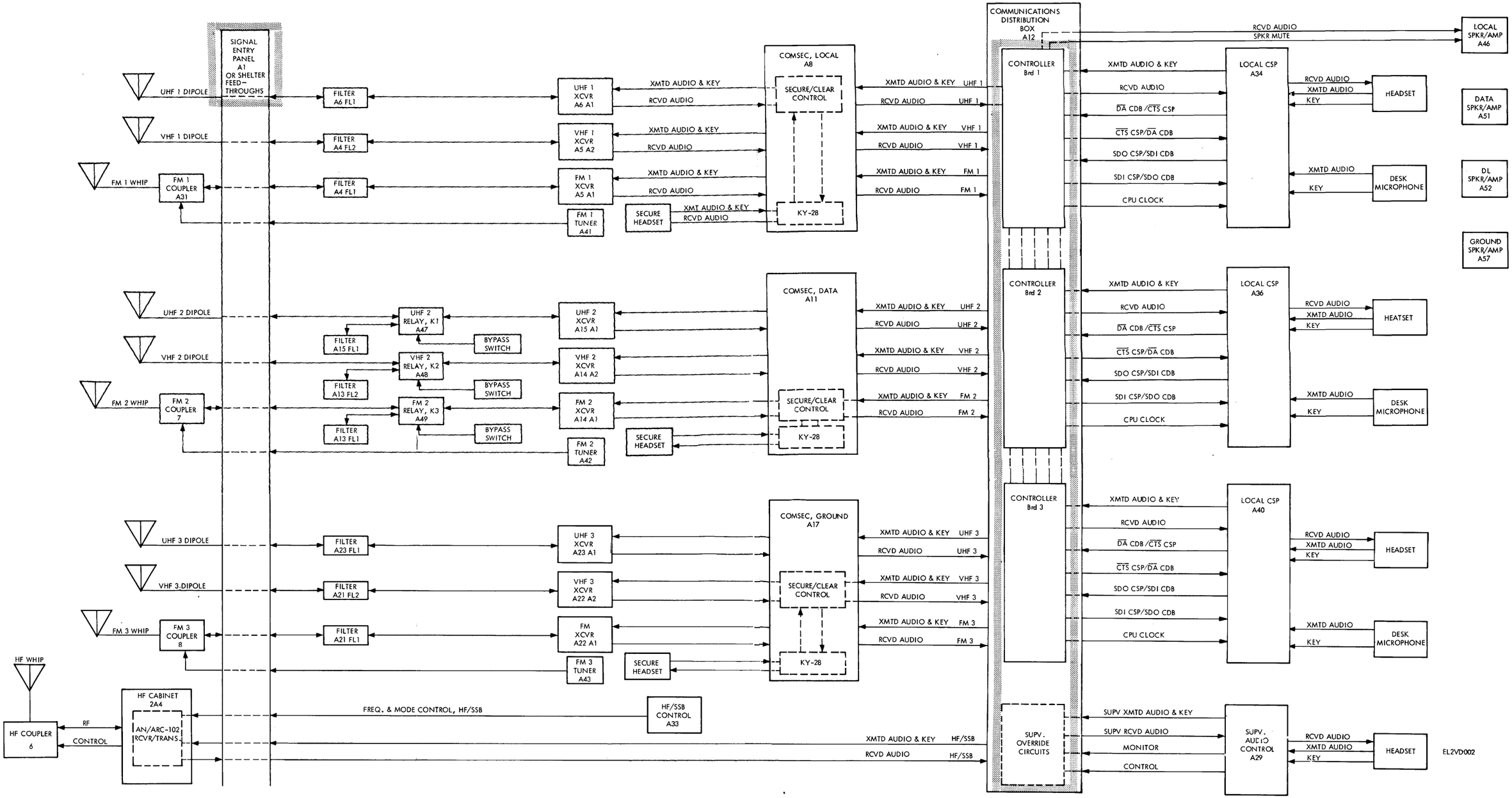


Figure FO-3. Radio communications circuits, block diagram.

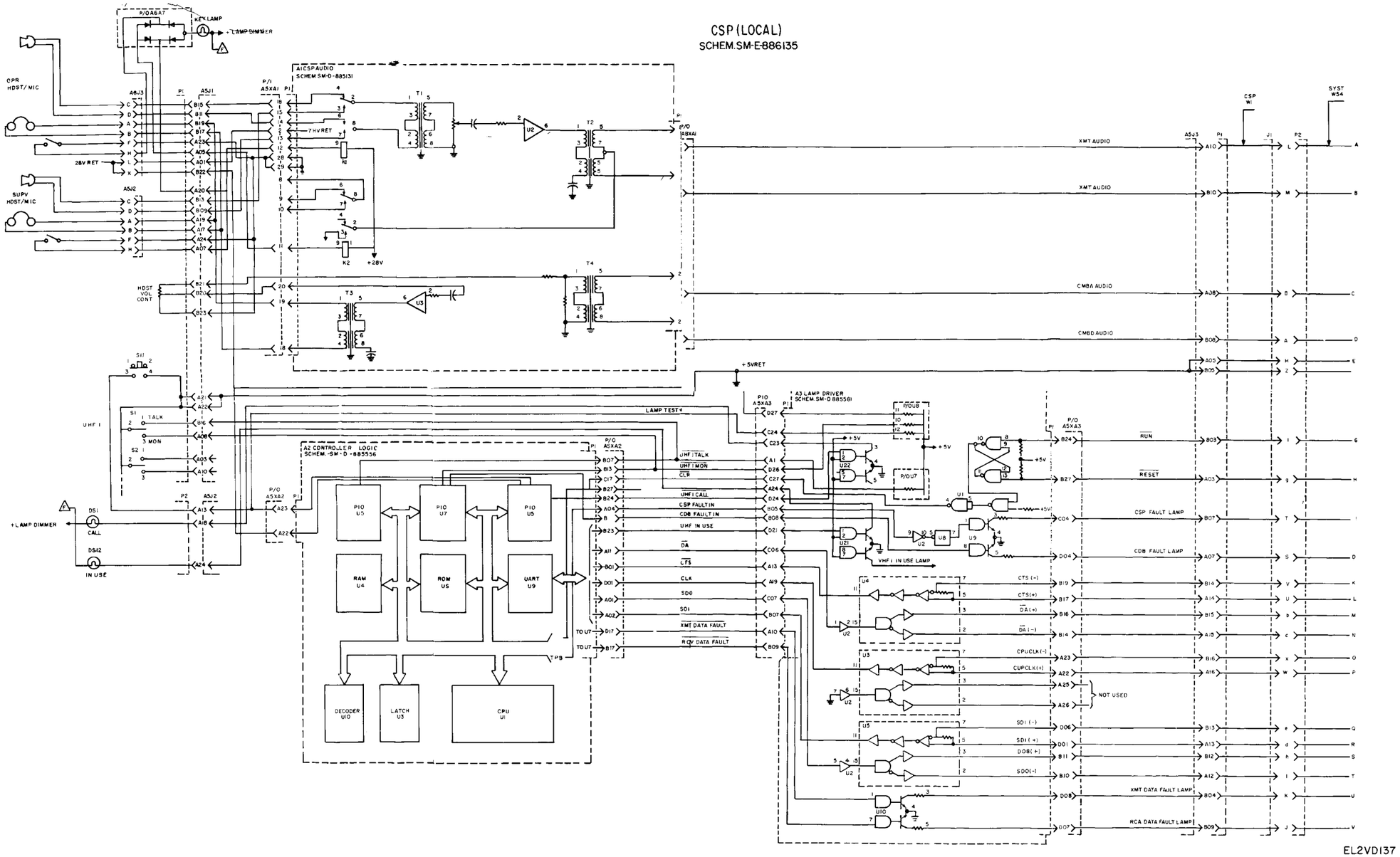


Figure FO-4. Typical audio distribution and control circuits (Sheet 1 of 2)

SUPERVISION CONTROL
SELECTOR-MONITOR MX9963/TSW-7A
SCHEM SM-D-885846

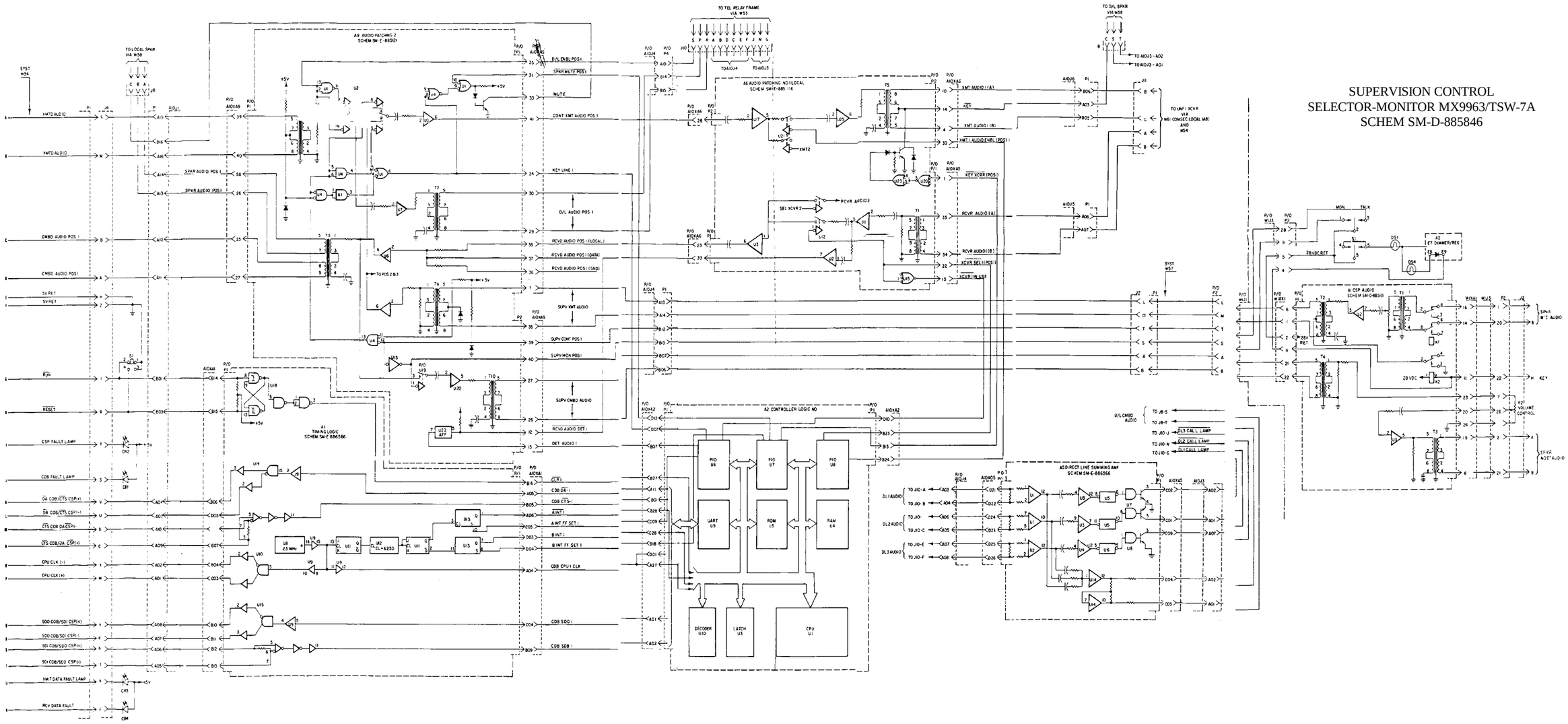


Figure FO-4. Typical audio distribution and control circuits (Sheet 2 of 2)

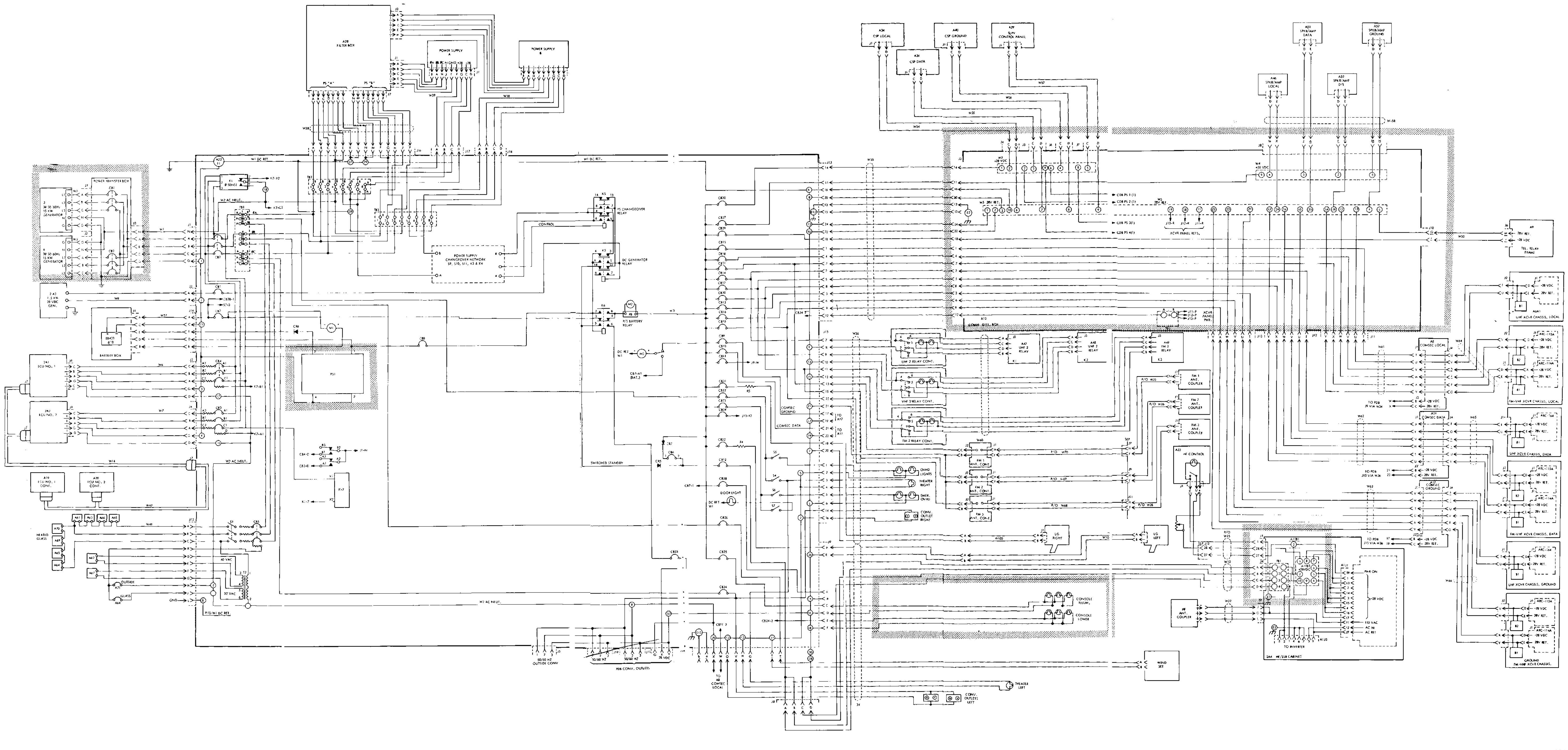


Figure FO-5. Power control and distribution

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS PREFIX WITH SUBASSEMBLY DESIGNATION.
3. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5, USING FIND NO. 14.
4. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
5. CONTACTS, COVERS, STRAIN RELIEFS AND SEALING GLANDS ARE SUPPLIED WITH CONNECTORS.
6. TIN ALL LEADS USING FIND NO. 14.
7. HOT STAMP FIND NO. 13 AS INDICATED ON SHEET 2 WITH .12 HIGH, BLACK CHARACTERS USING FIND NO. 17 PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
8. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
9. ASSEMBLY PROCEDURE OF FIND NO. 3 AND 8 SHALL BE IN ACCORDANCE WITH SM-A-884789.
10. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:

    11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.

    11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM				TO			
				REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	2	BLK	100 FT	P1-A	13/16	10	6	P2-A	13/16	5	6
2		RED		P1-B				P2-B		5	
3		BLU		P1-C				P2-C		5	
4		WHT		P1-N		10		P2-N		6	
5		GRN		P1-G		11		P2-G		1	
6		GRN		P1-G				P2-G			
7		GRN		P1-G				P2-G			
8		GRN	100 FT	P1-G	13/16		6	P2-G	13/16		6
SHIELD	—	—	—	P1-SHELL	—	—	8	P2-SHELL	—	—	8

WIRING DIAGRAM

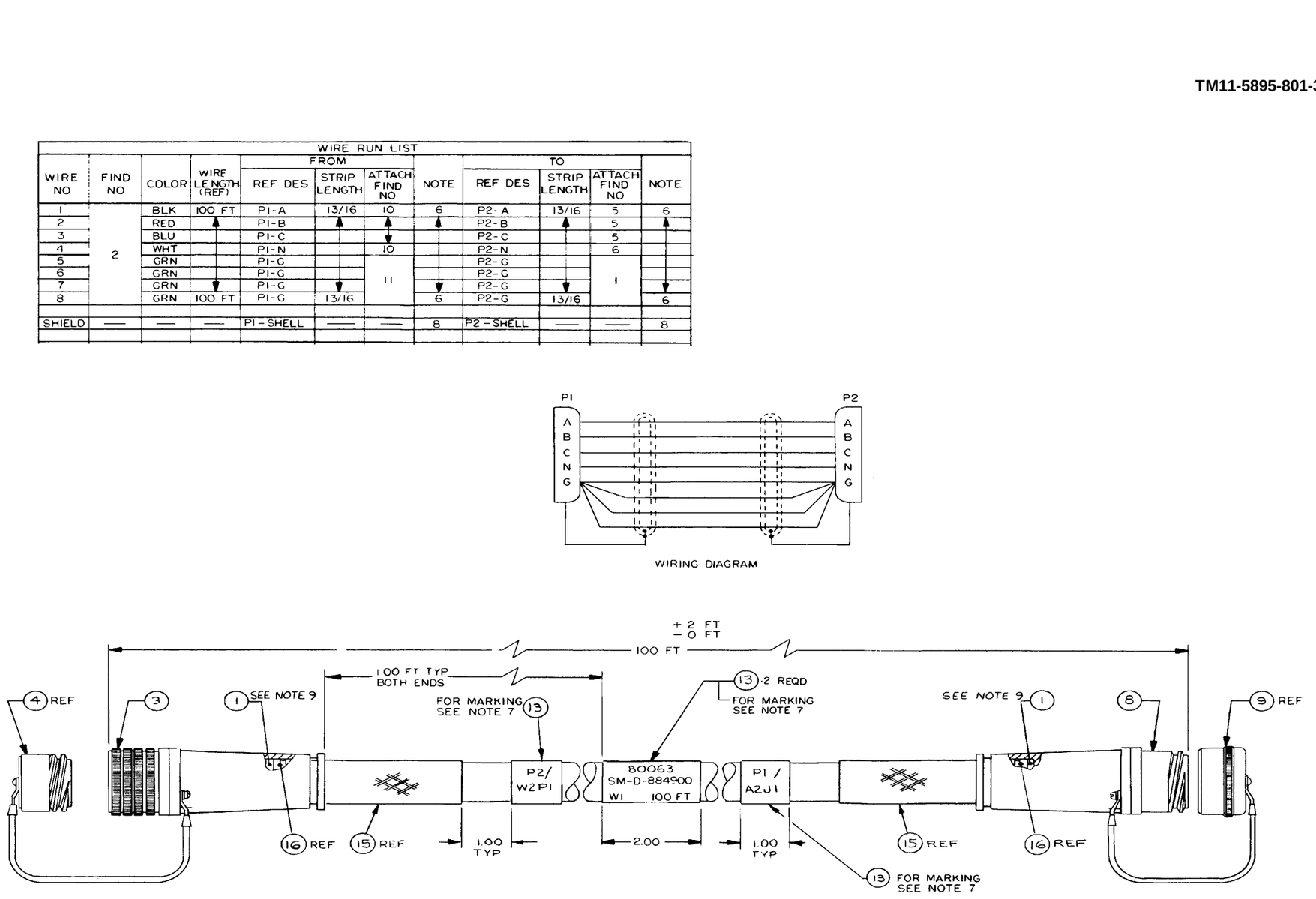


Figure FO-6. Cable assembly, W1.

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION.
3. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5, USING FIND NO. 11.
4. CONTACTS, COVER, STRAIN RELIEF AND SEALING GLANDS ARE SUPPLIED WITH CONNECTOR.
5. TIN LEADS USING FIND NO. 14.
6. HOT STAMP FIND NO. 10 AS INDICATED ON SHEET 2 WITH .12 HIGH BLACK CHARACTERS USING FIND NO. 17 PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
7. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
8. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
9. ASSEMBLY PROCEDURE OF FIND NO. 5 SHALL BE IN ACCORDANCE WITH SM-A-884789.
10. HOT STAMP FIND NO. 10 AND 12 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 17. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
11. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
12. CABLE DESIGN AND TESTING SHALL BE ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH REF	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	2	BLK	10 FT	P1-A	13/16	7	5	L1	1.00	11	5
2		RED		-B				L2			
3				-C				L3			
4		WHT		-N		7		LO		11	
5		GRN		-G		8		GND		12	
6				-G							
7				-G							
8		GRN	10 FT	P1-G	13/16		5		1.00		
9	3	BRAID	7.00	3 GEN SHLD	—	—	—	GND	—	12	5
SHIELD	—	—	—	P1-SHELL	—	—	8	4 GEN	—	—	—

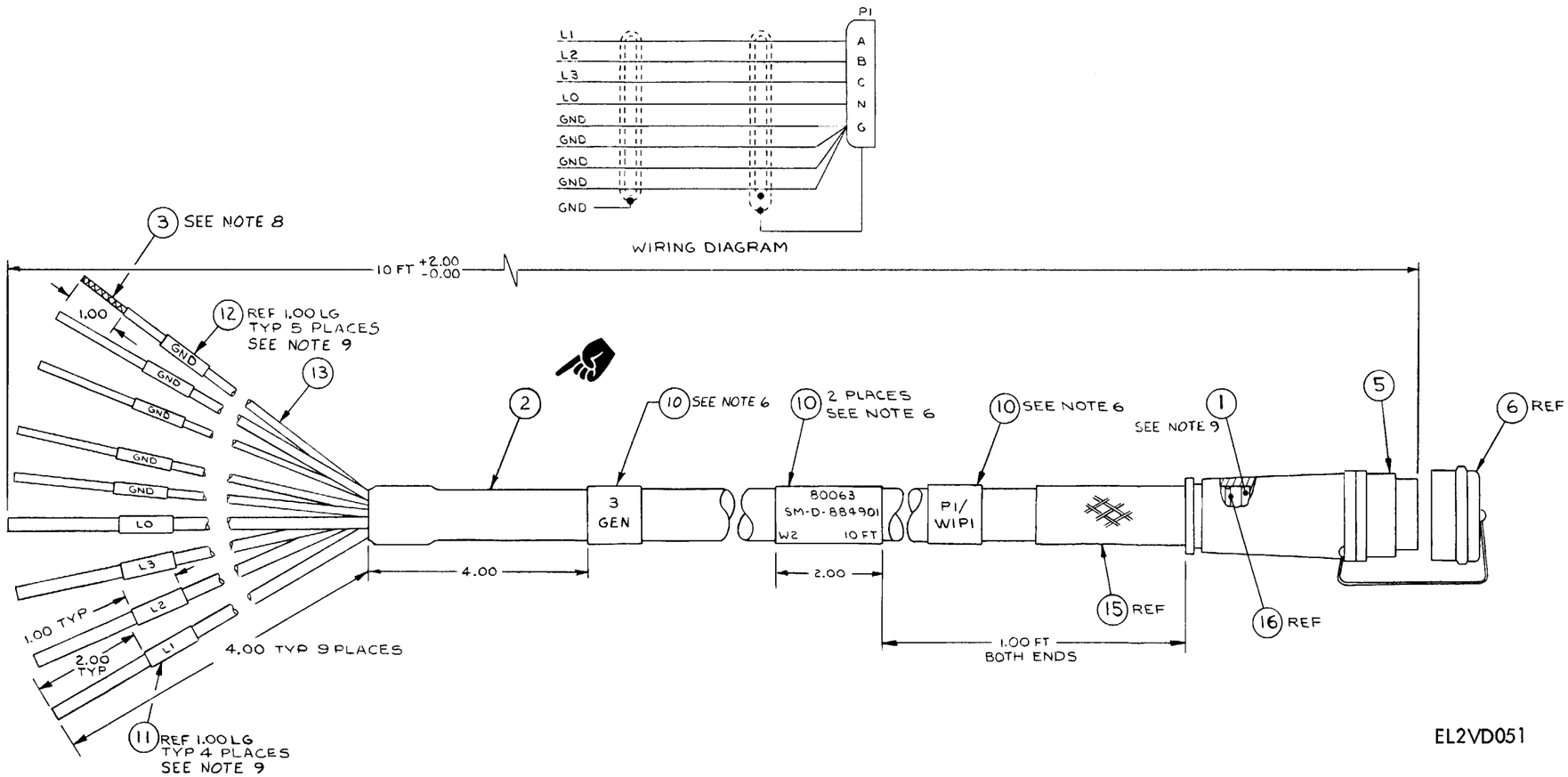


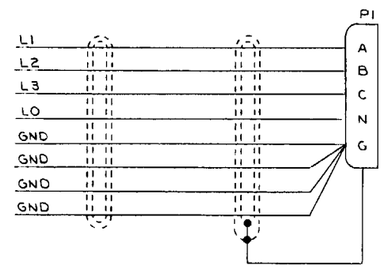
Figure FO-7. Cable assembly, W2.

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION.
3. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5, USING FIND NO. 14.
4. CONTACTS, COVER, STRAIN RELIEF AND SEALING GLAND ARE SUPPLIED WITH CONNECTOR.
5. TIN LEADS USING FIND NO. 14.
6. HOT STAMP FIND NO. 10 AS INDICATED ON SHEET 2 WITH .12 HIGH BLACK CHARACTERS USING FIND NO. 17 PER MIL-M-81531, CHARACTERS TO BE CENTRALLY LOCATED.
7. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
8. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-884789.
9. HOT STAMP FIND NO. 11 AND 12 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 17. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
10. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
11. ASSEMBLY PROCEDURE OF FIND NO. 5 SHALL BE IN ACCORDANCE WITH SM-A-884789.
12. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH REF	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	2	BLK	10 FT	P1-A	13/16	7	5	L1	1.00	11	5
2		RED		-B		7		L2		11	
3		ORN		-C		7		L3		11	
4		WHT		-N		7		LO		11	
5		GRN		-G		8		GND		12	
6				-G						12	
7				-G						12	
8		GRN	10 FT	P1-G	13/16		5	GND	1.00	12	
9	3	BRAID	7.00	4 GEN SHLD	—	—	—	GND	—	12	5
SHIELD	—	—	—	P1-SHELL	—	—	8	4 GEN	—	—	—



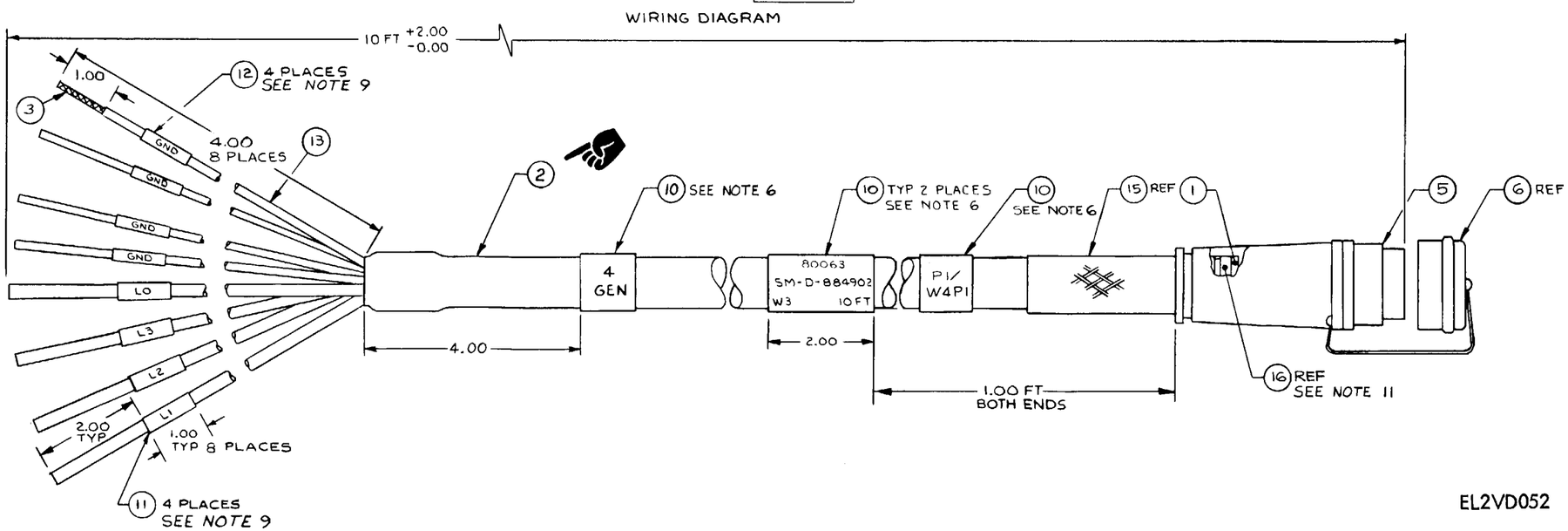
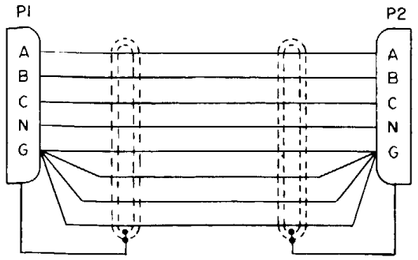
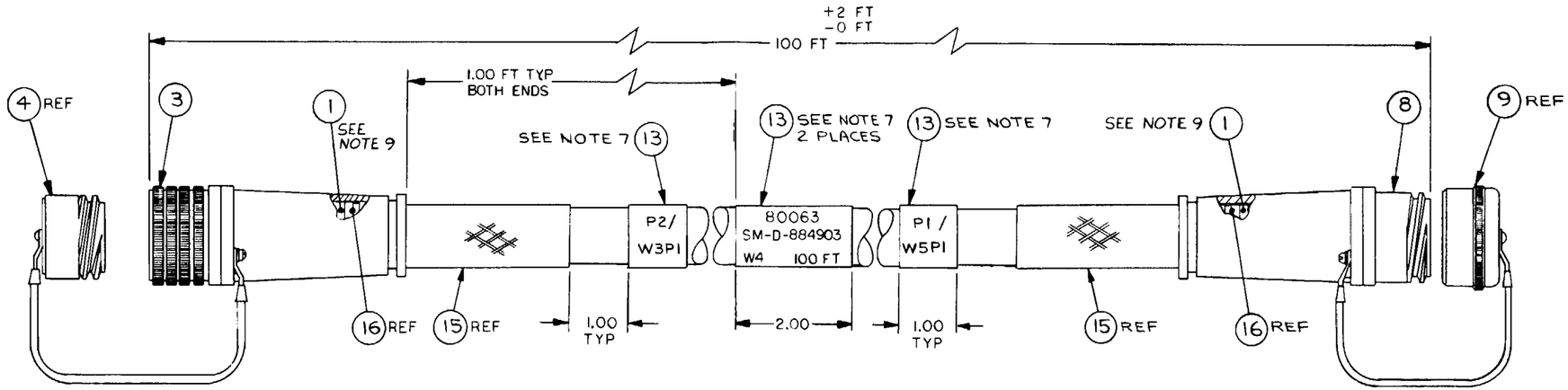


Figure FO-8. Cable assembly, W3.

NOTE
DATA MARKED WITH AN ASTERISK (*) IS PECULIAR TO A PRIOR MANUFACTURER. IT DOES NOT TAKE PRECEDENCE OVER ANY OTHER DATA ON THIS DRAWING, AND IS NOT CONTRACTUALLY BINDING ON EITHER THE CONTRACTOR OR THE GOVERNMENT.



WIRING DIAGRAM



NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS PREFIX WITH ASSEMBLY DESIGNATION.
3. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5, USING FIND NO. 14.
4. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
5. CONTACTS, COVERS, STRAIN RELIEFS AND SEALING GLANDS ARE SUPPLIED WITH CONNECTORS.
6. TIN ALL LEADS USING FIND NO. 14.
7. HOT STAMP FIND NO. 13 AS INDICATED ON SHEET 2 WITH .12 HIGH, BLACK CHARACTERS USING FIND NO. 17 PER MIL-C-81531. CHARACTERS TO BE CENTRALLY LOCATED.
8. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
9. ASSEMBLY PROCEDURE OF FIND NO. 3 AND 8 SHALL BE IN ACCORDANCE WITH SM-A-884789.
10. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1		BLK	100 FT	P1-A	13/16	10	6	P2-A	13/16	5	6
2		RED	↑	P1-B	↑	10	↑	P2-B	↑	5	↑
3		ORN	↑	P1-C	↑	10	↑	P2-C	↑	5	↑
4	2	WHT	↑	P1-N	↑	10	↑	P2-N	↑	6	↑
5		GRN	↑	P1-G	↑	↑	↑	P2-G	↑	↑	↑
6		GRN	↑	P1-G	↑	11	↑	P2-G	↑	1	↑
7		GRN	↓	P1-G	↓	↓	↓	P2-G	↓	↓	↓
8		GRN	100 FT	P1-G	13/16		6	P2-G	13/16		6
SHIELD	—	—	—	P1 - SHELL	—	—	8	P2 - SHELL	—	—	8

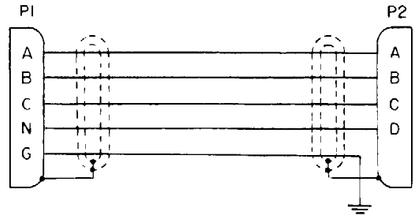
EL2VD053

Figure FO-9. Cable assembly, W4

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 15 AND 21 AS INDICATED ON SHEET 2 USING .12 HIGH BLUE-BLACK CHARACTERS PER MIL-M-81531 USING FIND NO. 4. CHARACTERS TO BE CENTRALLY LOCATED AS SHOWN.
5. CONTACTS, COVERS, STRAIN RELIEFS AND SEALING GLANDS ARE SUPPLIED WITH CONNECTORS.
6. WRAP AS REQUIRED USING FIND NO. 20.
7. CABLE BRAID COVERAGE TO BE A MINIMUM OF 90% USING FIND NO'S 17, 18 AND 25.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 14.
9. TIN LEADS USING FIND NO. 14.
10. TERMINATION AND ASSEMBLY OF FIND NO. 6 SHALL BE IN ACCORDANCE WITH SM-A-884789.

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	23	BLK	5 FT	P1-A	3/4	3,27	4,9	P2-A	5/8	16	4,9
2	28	RED	↑	-B	↑	↑	↑	-B	↑	↑	↑
3	29	BLU	↓	-C	↓	↓	↓	-C	↓	↓	↓
4	9	WHT	↓	-N	↓	3,27	↓	P2-D	5/8	16	4,9
5	22	GRN	5 FT	P1-G	3/4	27	4,9	GND	1/4	21,26	4
SHIELD	17,18	BRAID	5 FT	P1-SHELL	—	—	10	P2-SHELL	—	—	10



WIRING DIAGRAM

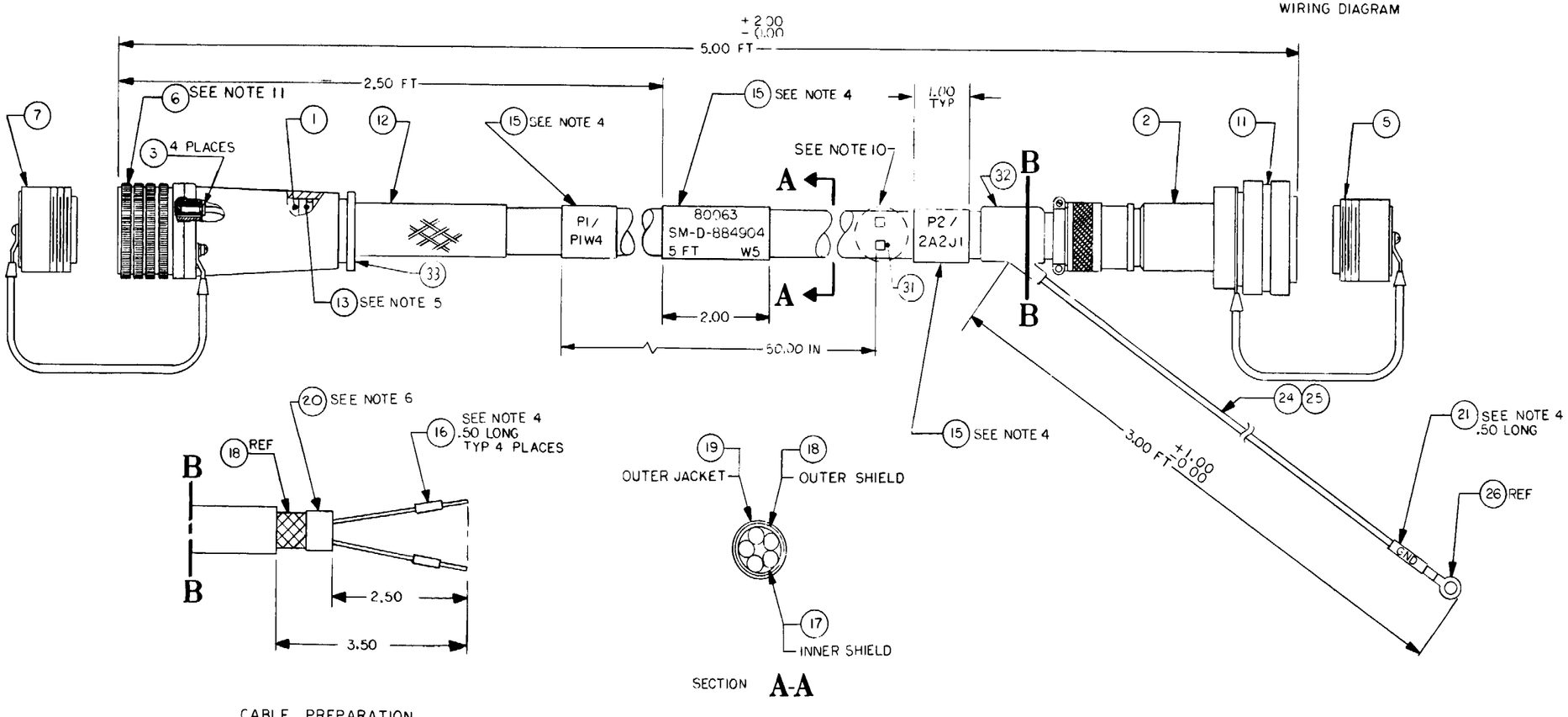
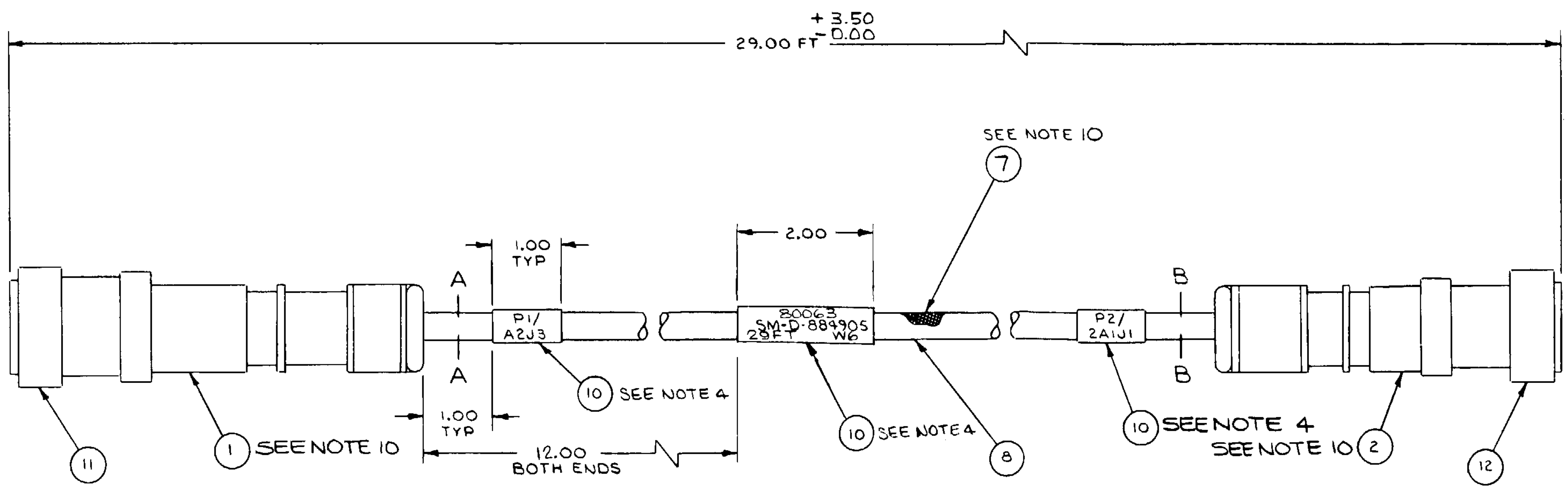
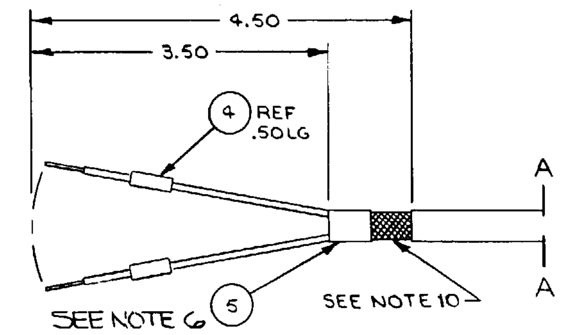


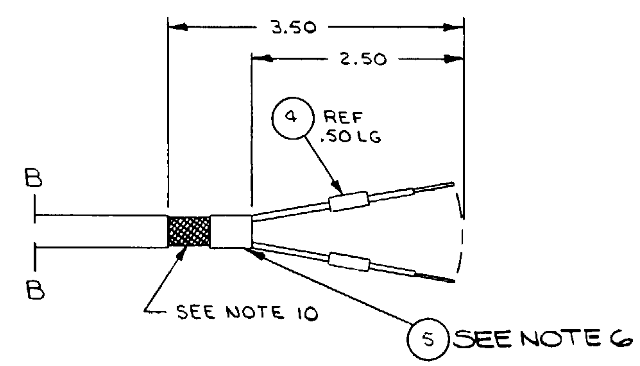
Figure FO-10. Cable assembly, W5.





CABLE PREPARATION
P1 END

WIRE RUN LIST											
				FROM				TO			
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	3	WHT	29 FT	P1-A	9/16	4	5,9	P2-A	9/16	4	5,9
2	↕	↕	↕	-B	↕	↕	↕	-B	↕	↕	↕
3	↕	↕	↕	-C	↕	↕	↕	-C	↕	↕	↕
4	3	WHT	29 FT	P1-D	9/16	4	5,9	P2-D	9/16	4	5,9



CABLE PREPARATION
P2 END

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
4. HOT STAMP FIND NO. 10 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED
5. HOT STAMP FIND NO. 4 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 13. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 5.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 9.
9. TIN LEADS USING FIND NO. 9.
10. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

EL2VD055

Figure FO-11. Cable assembly, W6

WIRE NO	FIND NO	COLOR	LENGTH (REF)	REF DES	STRIP LENGTH	FINISH FIND NO	NOTE	REF DES	STRIP LENGTH	FINISH FIND NO	NOTE
1	3	WHT	29 FT	P1-A	9/16	4	5,9	P2-A	9/16	4	5,9
2	↑	↑	↑	↑ -B	↑	↑	↑	↑ -B	↑	↑	↑
3	↓	↓	↓	↓ -C	↓	↓	↓	↓ -C	↓	↓	↓
4	3	WHT	29 FT	P1-D	9/16	4	5,9	P2-D	9/16	4	5,9

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 10 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED
5. HOT STAMP FIND NO. 4 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 13 CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 5.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 9.
9. TIN LEADS USING FIND NO. 9.
10. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-[illegible]5736.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

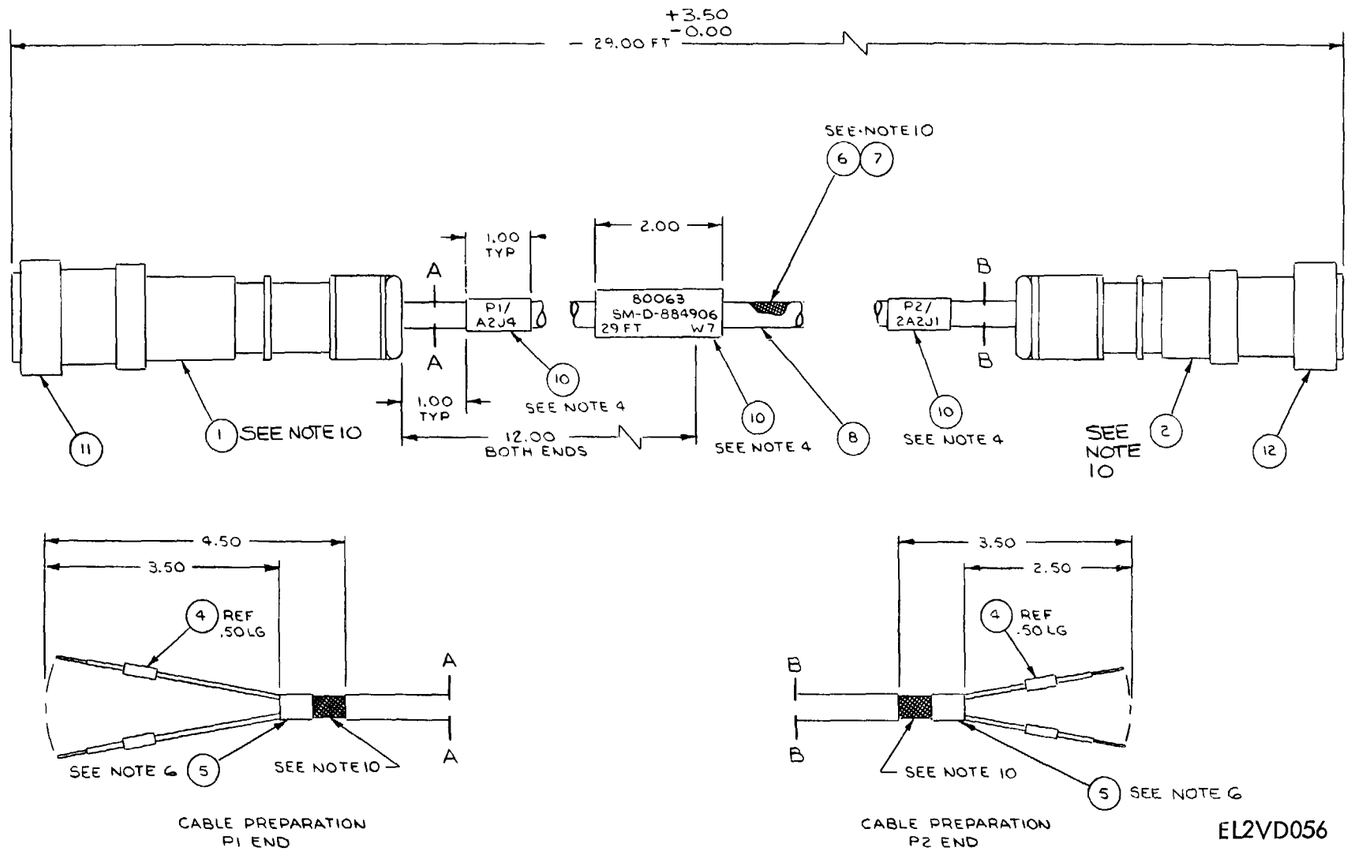
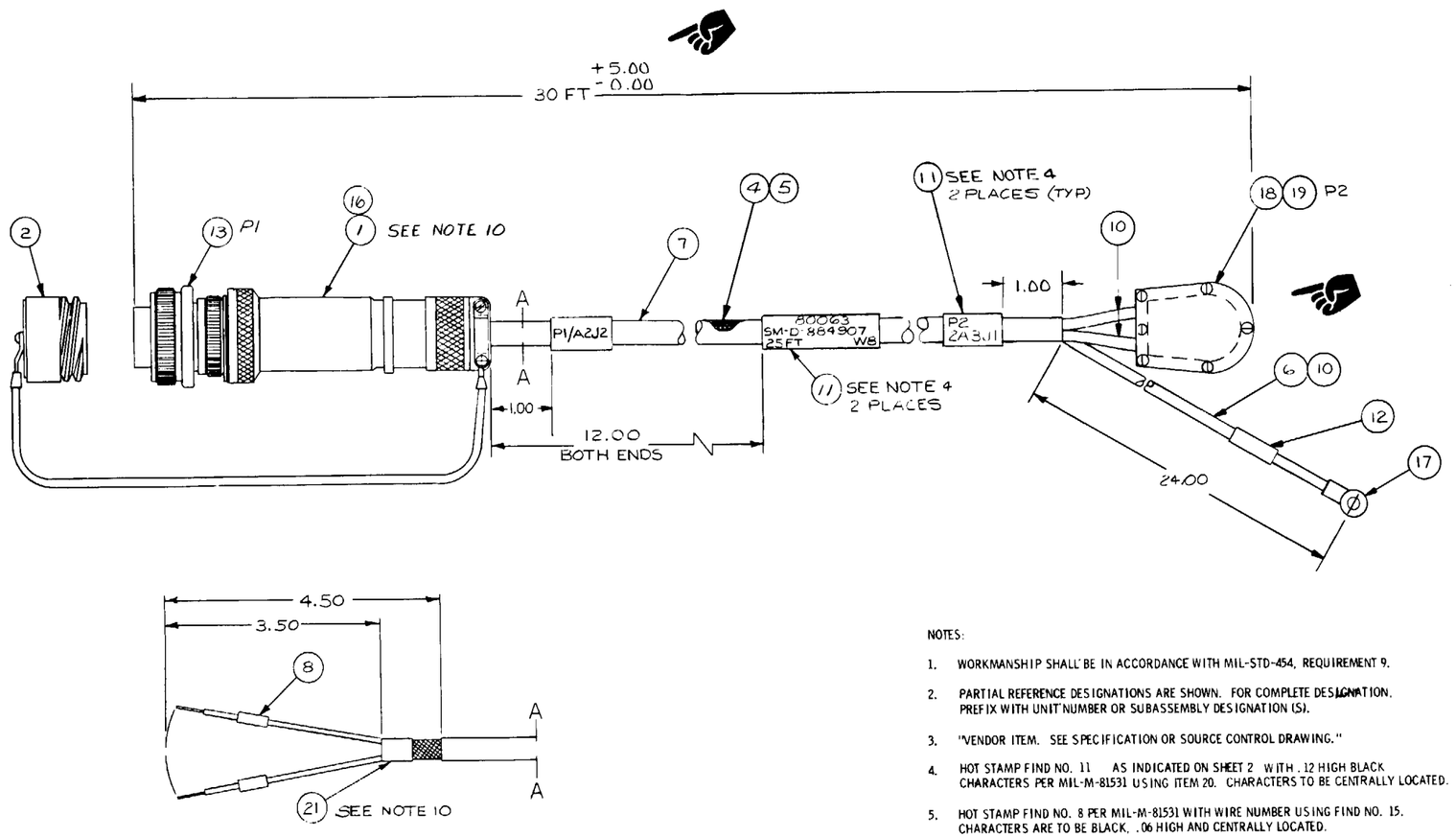


Figure FO-12. Cable assembly, W7.



WIRE RUN LIST											
				FROM				TO			
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	3	WHT	30FT	P1-A	11/16	8	5,9	P2 POS	1/4	8	5
2	3	WHT	30FT	P1-B	11/16	8	5,9	P2 NEG	1/4	8	5
3	6	BRAID	12IN	JUNCTION	—	—	10	2A3GND	—	10,12,17	11
SHIELD	4,5	BRAID	30FT	P1-SHELL	—	—	10	JUNCTION	—	—	10

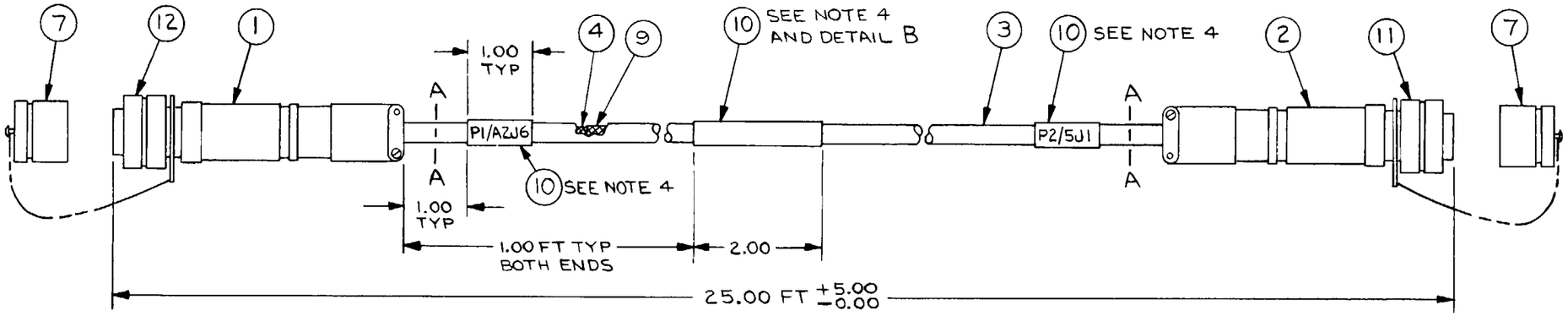
NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION, PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 11 AS INDICATED ON SHEET 2 WITH .12 HIGH BLACK CHARACTERS PER MIL-M-81531 USING ITEM 20. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 8 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 15. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 9.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 14.
9. TIN LEADS USING FIND NO. 14.
10. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885711.
11. HOT STAMP FIND NO. 12 PER MIL-M-81531 WITH REF DES USING FIND NO. 15. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
12. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

EL2VD057

Figure FO-13. Cable assembly, W8.

WIRE RUN LIST											
				FROM				TO			
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	8	WHT	25FT	P1-A	5/16	6	5,9	P2-A	5/16	6	5,9
2	8	WHT	25FT	P1-B	5/16	6	5,9	P2-B	5/16	6	5,9
SHIELD	4,9	BRAID	25FT	P1-SHELL	—	—	10	P2-SHELL	—	—	10

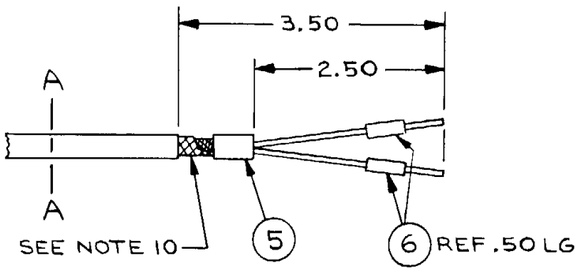


NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO.10 AS INDICATED USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 6 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 14 CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 5.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO.13.
9. TIN LEADS USING FIND NO. 13.
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

80063
SM-D-884908
25FT W9

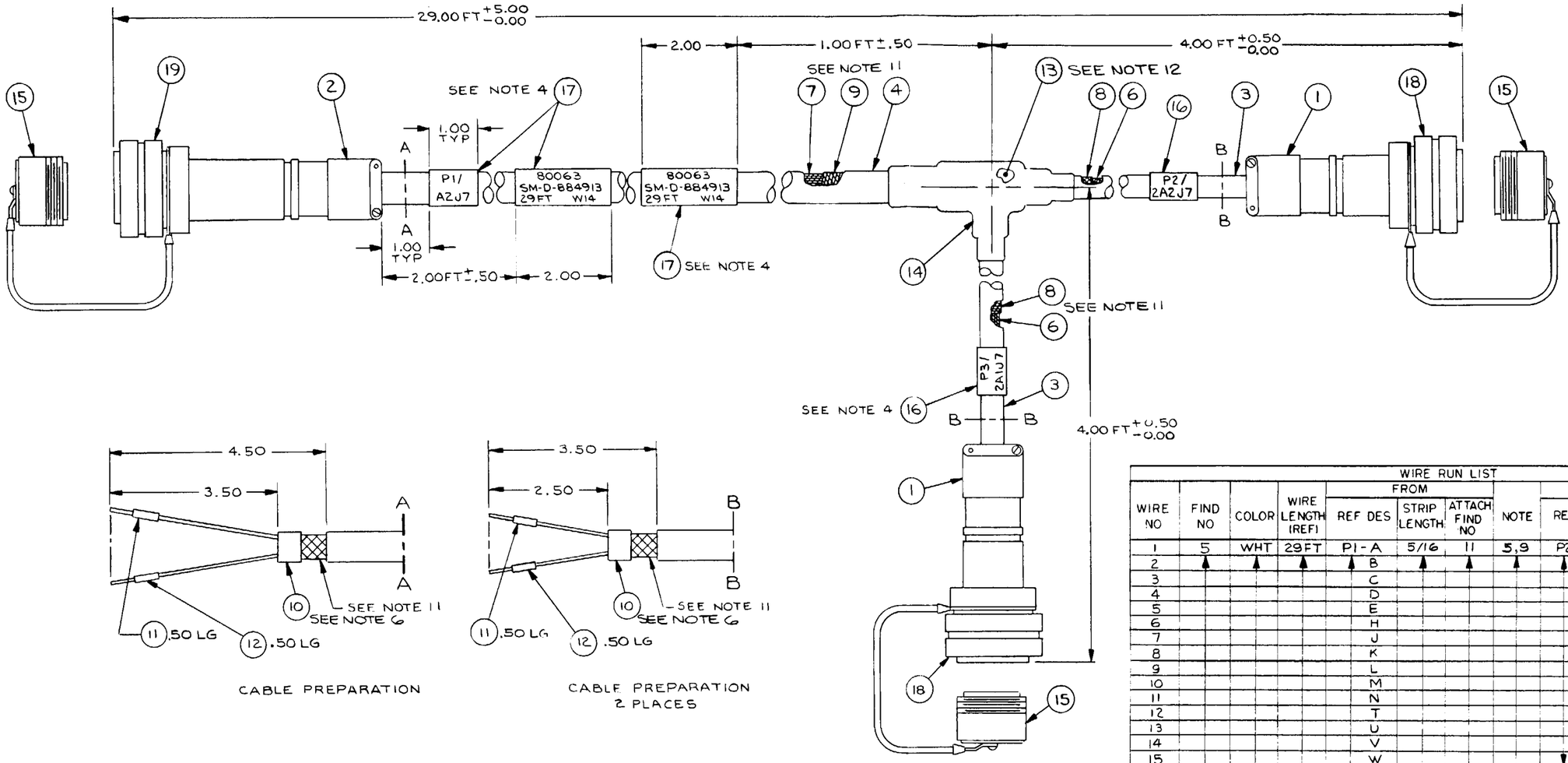
DETAIL B
2 PLACES



CABLE PREPARATION
BOTH ENDS

EL2VD058

Figure FO-14. Cable assembly, W9.



CABLE PREPARATION

CABLE PREPARATION
2 PLACES

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	NOTE
1	5	WHT	29FT	P1-A	5/16	11	5,9	P2-A	5/16	11	5,9
2				B				B			
3				C				C			
4				D				D			
5				E				E			
6				H				H	5/16	11	
7				J				J	7/16	12	
8				K				K	7/16	12	
9				L				L	5/16	11	
10				M				M	7/16	12	
11				N				N	5/16	11	
12				T				T			
13				U				U			
14				V				V			
15				W				W			
16				X				P2-X	5/16	11	
17				Z				P3-J	7/16	12	
18				A				A	5/16	11	
19				B				B			
20				C				D			
21				D				E			
22				E				U			
23				F				V			
24				G				C			
25				H				L			
26				J				T			
27				K				N			
28				M				W			
29				N				X			
30				P				H	5/16	11	
31				R				K	7/16	12	
32	5	WHT	29FT	P1-S	5/16	11	5,9	P3-M	7/16	12	5,9

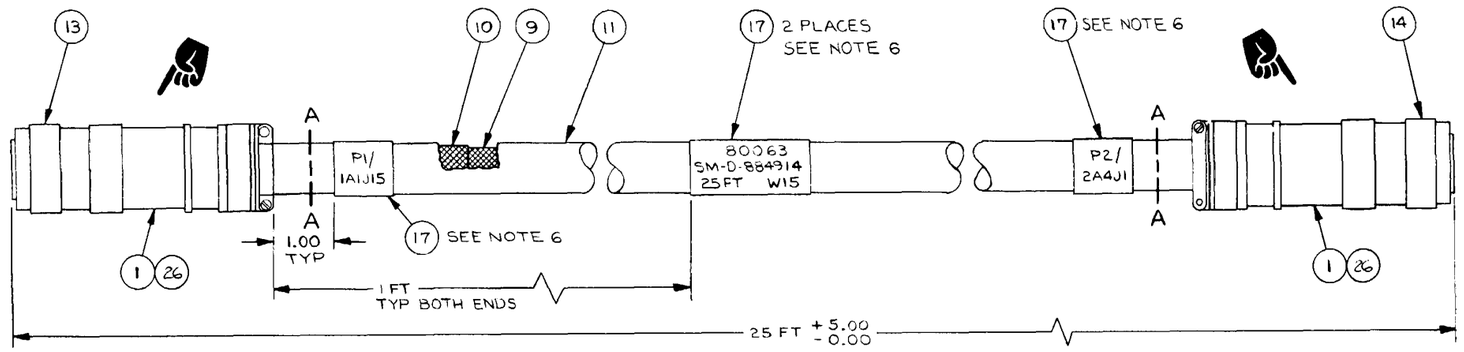
NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 16, 17 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 11 AND 12 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 21. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 10.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 20.
9. TIN LEADS USING FIND NO. 20.
10. UNDERLINED CHARACTERS DENOTE LOWER CASE.
11. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
12. ASSEMBLY PROCEDURE OF BRAID AT TRANSITION(S) SHALL BE IN ACCORDANCE WITH SM-A-886077.
13. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 13.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 13.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

EL2VD059

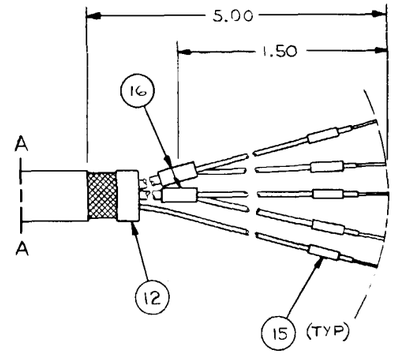
Figure FO-15. Cable assembly, W14.

WIRE RUN LIST												
				FROM				TO				
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	5	WHT	25 FT	P1-B	3/16	5	7,11,14	P2-B	3/16	15	7,11,14
2				A				A			
3				B				B			
4				C				C			
5				D				D			
6				E				E			
7				F				F			
8				G				G			
9				H				H			
10				J				J			
11				K				K			
12				L				L			
13				M				M			
14				N				N			
15				P				P			
16				U				U			
17				R				R			
18				S				S			
19				T				T			
20				V				V			
21				Z				Z			
22				1				1			
23				13				13			
24	5	WHT		12				12			
25	3	WHT	25 FT	C		15		C		15	7,11,14
26		BLK		P1-D				P2-D			
25A	6	BLK	3 1/2	P1-S-SHLD		16		P1-T-SHLD		—	11
25B	6	BLK	3 1/2	P1-T-SHLD		16		P1-V		15	7,11
27	5	WHT	25FT	P1-C		15		P2-C		15	7,11,14
28				E				E			
29				10				10			
30				G				G			
31				H				H			
32				A				A			
33	5	WHT		AA				AA			
34	3	WHT	25 FT	I		15		I		15	7,11,14
35		BLK		P1-U				P2-U			
35A	6	BLK	3 1/2	P2-S-SHLD		16		P2-T-SHLD		—	11
35B	6	BLK	3 1/2	P2-T-SHLD		16		P2-V		15	11
36	5	WHT	25 FT	P1-BB		15		P2-BB		15	7,11,14
37	5	WHT	25 FT	P1-CC		15		P2-CC		15	7,11,14
38	5	WHT	25 FT	P1-DD	3/16	15	7,11,14	P2-DD	3/16	15	7,11,14
SHLD	9,10	BRAID	25 FT	P1-SHELL	—	—	11	P2-SHELL	—	—	11



NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATION ARE SHOWN FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
4. ~~CONTACTS ARE SUPPLIED WITH CONNECTOR.~~
5. WRAP AS REQUIRED USING FIND NO. 12.
6. HOT STAMP FIND NO. 17 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTER TO BE CENTRALLY LOCATED.
7. HOT STAMP FIND NO. 15 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 23. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
8. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
9. FOR P1 AND P2 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/REMOVAL TOOL: M83723/31-20 AND M83723/31-16.
10. A SINGLE LETTER SUFFIX IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE.
11. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
12. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.
13. ~~TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.~~
14. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 25.

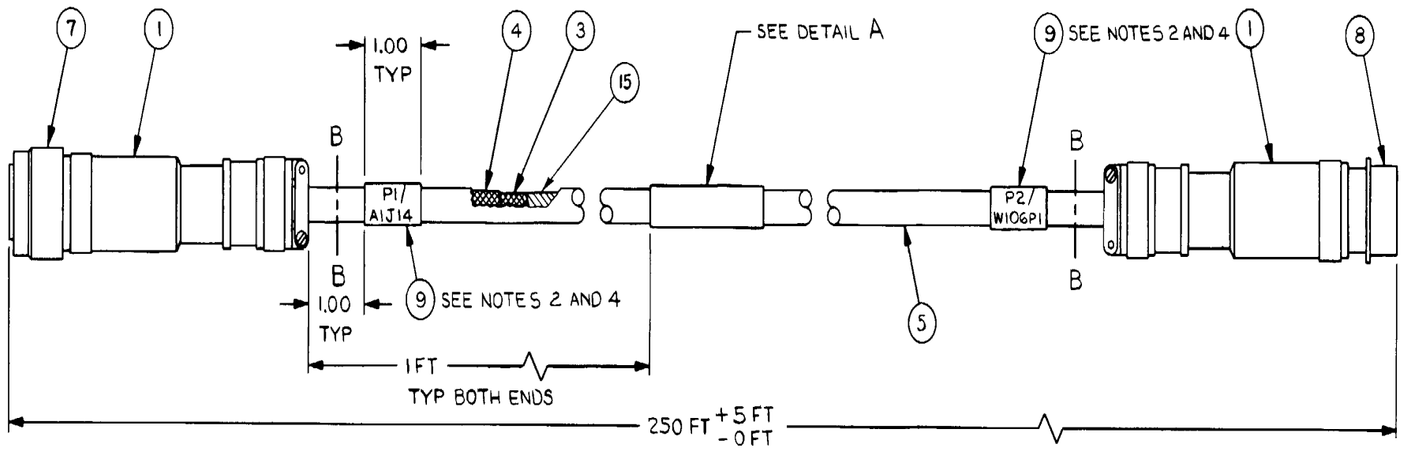


CABLE PREPARATION BOTH ENDS

EL2VD060

Figure FO-16. Cable assembly, W15 ■.

WIRE RUN LIST												
				FROM				TO				
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	2	WHT	250 FT	P1 - A	9/32	10,11	5,9	P2 - A	9/32	10,12	5,9
2	↑	↑	↑	B	↑	↑	↑	B	↑	↑	↑
3				C				C			
4				D				D			
5				E				E			
6	↓	↓	↓	F	↓	↓	↓	F	↓	↓	↓
7	2	WHT	250 FT	P1 - G	9/32	10,11	5,9	P2 - G	9/32	10,12	5,9
SHIELD	3,4	BRAID	250 FT	P1 - SHELL	—	—	—	P2 - SHELL	—	—	10

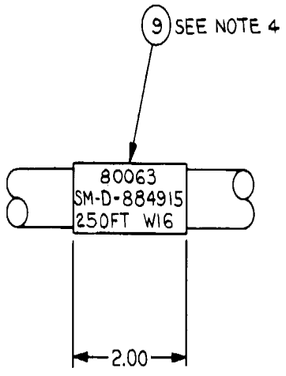


NOTES:

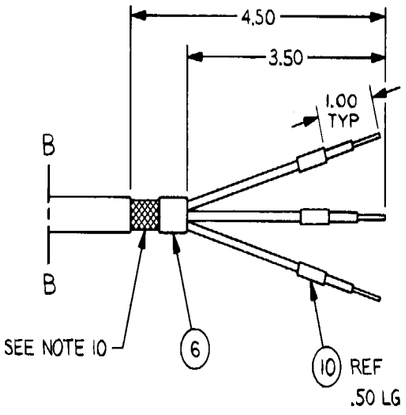
1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
4. HOT STAMP FIND NO. 9 AS INDICATED ON SHEET 2 WITH .12 HIGH BLUE-BLACK CHARACTERS PER MIL-M-81531 USING FIND NO. 15. CHARACTERS SHALL BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 10 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 14. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 6.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. CONTACTS ARE SUPPLIED WITH CONNECTOR.
9. FOR P1 AND P2 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/ REMOVAL TOOL: M83723/31-16; AND SEALING PLUG: MS83723-28-16.
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:

    11.1 CABLE DESIGN TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.

    11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.



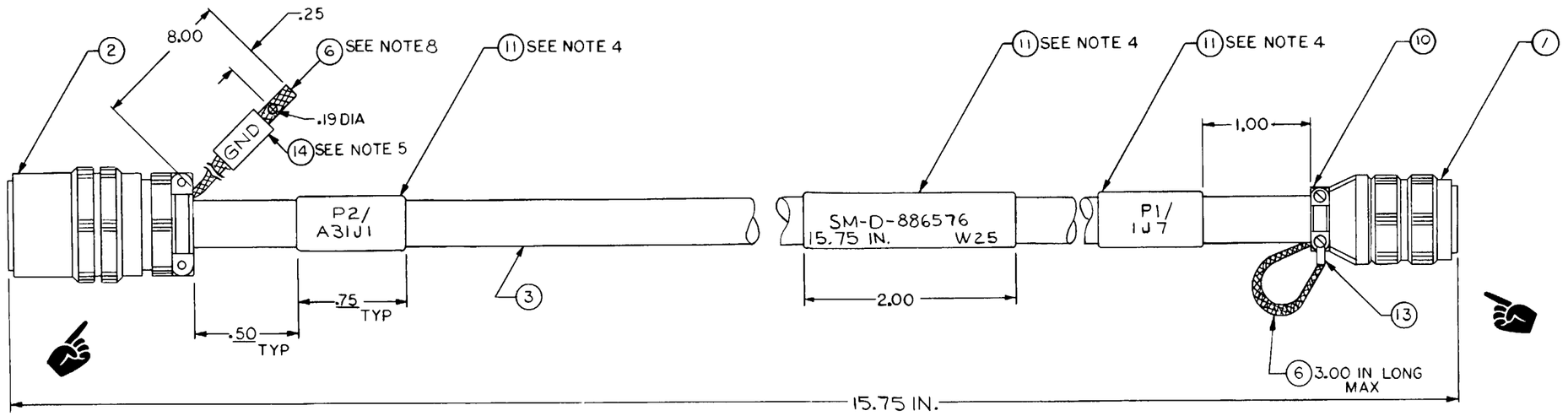
DETAIL A
2 PLACES
SCALE NONE

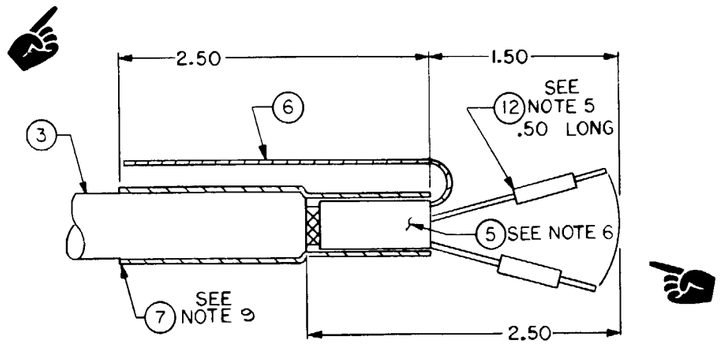


CABLE PREPARATION
BOTH ENDS

EL2VD061

Figure FO-17. Cable assembly, W16.





CABLE PREPARATION P1 & P2

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 11 USING FIND NO. 4 AS INDICATED USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NOS 12 & 14 PER WIRE NO COLUMN USING FIND NO. 4 WITH .06 HIGH BLACK CHARACTERS PER MIL-M-81531
6. WRAP AS REQUIRED USING FIND NO. 5
7. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 9
8. TIN LEAD USING FIND NO. 9
9. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711, PART II.
10. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENT AS APPLICABLE.
    - 10.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENT OF MIL-C-3885.
    - 10.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

WIRE RUN LIST

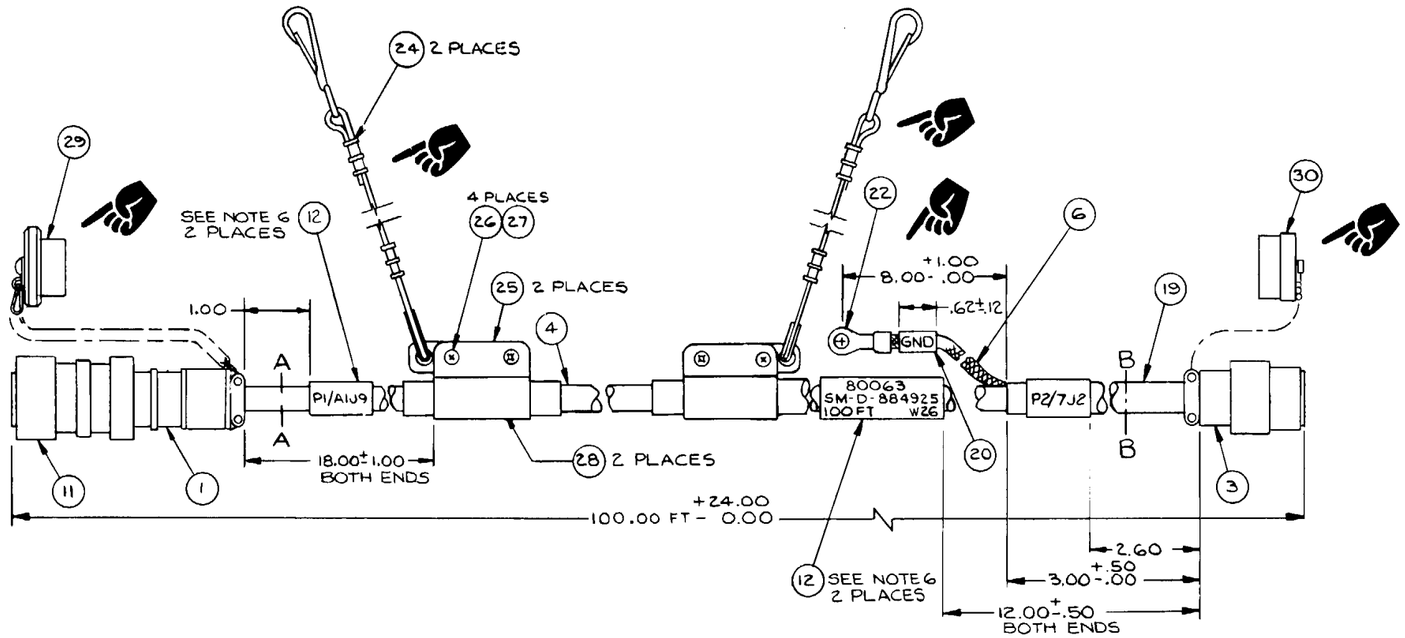
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	NOTE
1	3	WHT	2 FT	P1-A	3/16	12, 8	5	P2-E	1/4	12	5
2	↑	↑	↑	-B	↑	↑	↑	-F	↑	↑	↑
3	↑	↑	↑	-C	↑	↑	↑	-J	↑	↑	↑
4	↑	↑	↑	-D	↑	↑	↑	-H	↑	↑	↑
5	↑	↑	↑	-E	↑	↑	↑	-D	↑	↑	↑
6	↑	↑	↑	-F	↑	↑	↑	-C	↑	↑	↑
7	↓	↓	↓	-G	↓	↓	↓	-A	↓	↓	↓
8	3	WHT	2 FT	P1-H	3/16	12, 8	5	P2-N	1/4	12	5
			1 FT								
SHLD	P/O 3	BRAID	1 FT	P1-SHELL	—	13		GND			
GND	P/O 3	—						GND	—	14	5

EL2VD063

Figure FO-18. Cable assembly, W25.

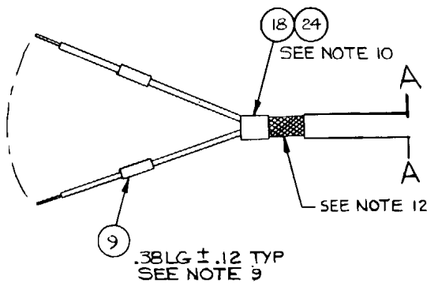
NOTES:

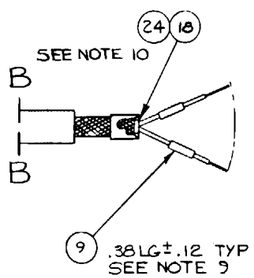
1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION.
3. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5 USING FIND NO. 10.
4. CONTACTS ARE FURNISHED WITH CONNECTOR.
5. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
6. HOT STAMP FIND NO. 12 AS INDICATED ON SHEET 2 WITH .12 HIGH BLACK CHARACTERS USING FIND NO. 21 PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. FOR P1 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/ REMOVAL TOOL: M83723/31-30; AND SEALING PLUG FIND NO. 14.
9. HOT STAMP FIND NO. 9 AND 20 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 16. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
10. WRAP AS REQUIRED USING FIND NO. 18 AND 24.
11. TIN LEADS USING FIND NO. 10.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
13. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 13.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 13.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.
14. ~~HOT STAMP FIND NO. 20 USING FIND NO. 16 WITH REF DES. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.~~
15. BAND MARKING LEGENDS ARE SHOWN ROTATED 90° FOR MAXIMUM READABILITY.



WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	4	WHT	100 FT	P1-A	3/16	9,15	8,9	P2-E	3/16	9,23	9,11
2	↑	↑	↑	-B	↑	↑	↑	-F	↑	↑	↑
3				-C				-J			
4				-D				-H			
5				-E				-D			
6				-F				-C			
7	↓	↓	↓	-G	↓	↓	↓	-A	↓	↓	↓
8	4	WHT	100 FT	P1-H	3/16	9,15	8,9	P2-N	3/16	9,23	9,11
BRAID	—	—	—	P1-SHELL	—	—	12	JUNCTION	—	—	—
BRAID	6	BRAID	8 IN	JUNCTION	—	—	12	GND	—	20,22	14



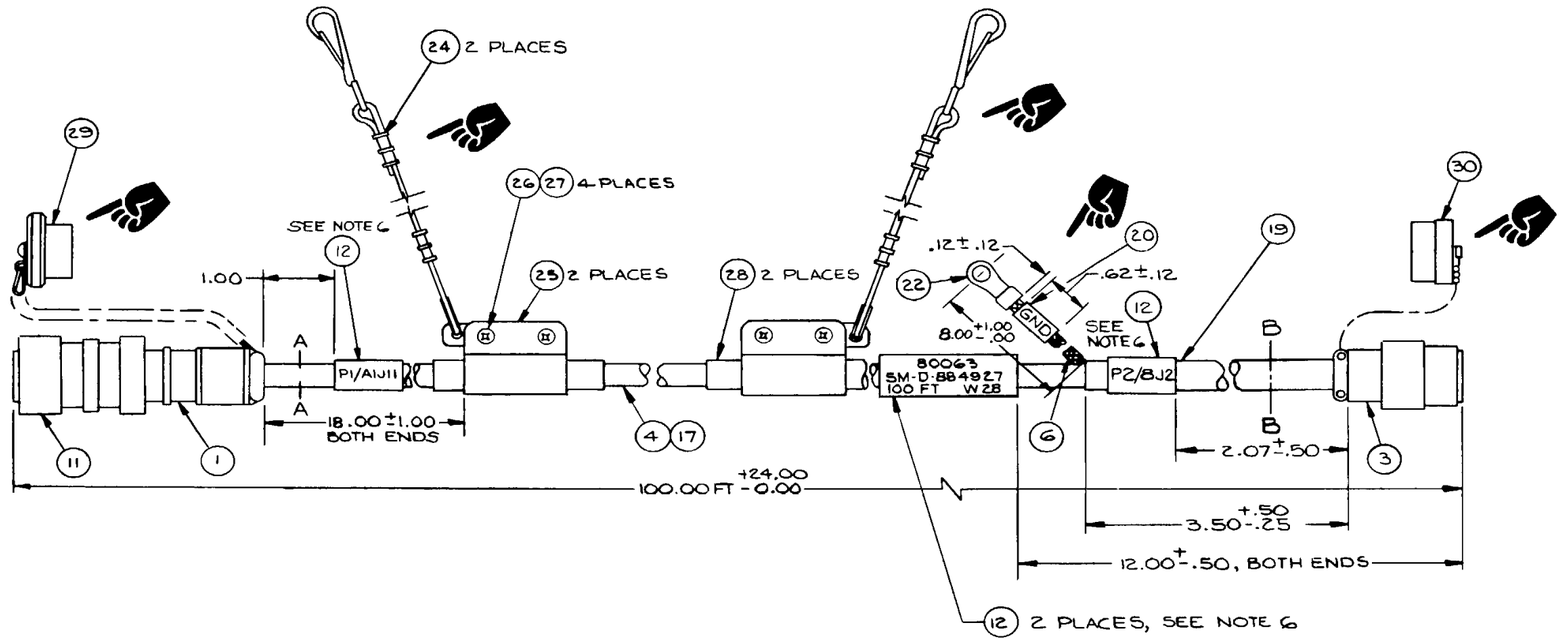


EL2VD064

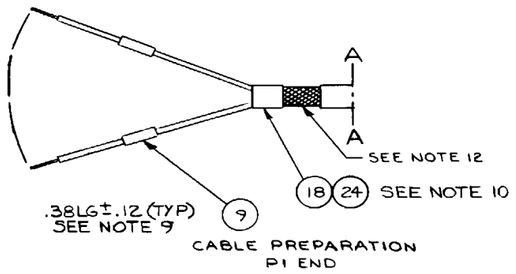
Figure FO-19. Cable assembly, W26.

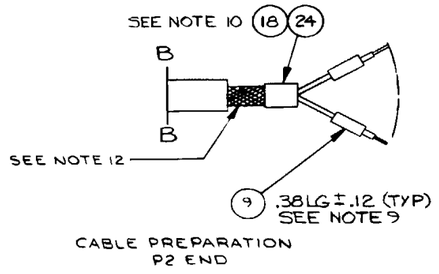
NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION.
3. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5 USING FIND NO. 10.
4. CONTACTS ARE FURNISHED WITH CONNECTOR.
5. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
6. HOT STAMP FIND NO. 12 AS INDICATED ON SHEET 2 WITH .12 HIGH BLACK CHARACTERS PER MIL-M-81531 USING FIND NO. 21. CHARACTERS TO BE CENTRALLY LOCATED.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. FOR P1 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/REMOVAL TOOL: M83723/31-30; AND SEALING PLUGS, FIND NO. 14.
9. HOT STAMP FIND NO. 9 AND 20 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 16. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
10. WRAP AS REQUIRED USING FIND NO. 7.
11. TIN LEADS USING FIND NO. 10.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
13. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 13.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 13.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.
14. ~~HOT STAMP FIND NO. 30 USING FIND NO. 16 WITH REF DES, CHARACTERS .06 HIGH BLACK AND CENTRALLY LOCATED.~~
15. BAND MARKING LEGENDS ARE SHOWN ROTATED 90° FOR MAXIMUM READABILITY.



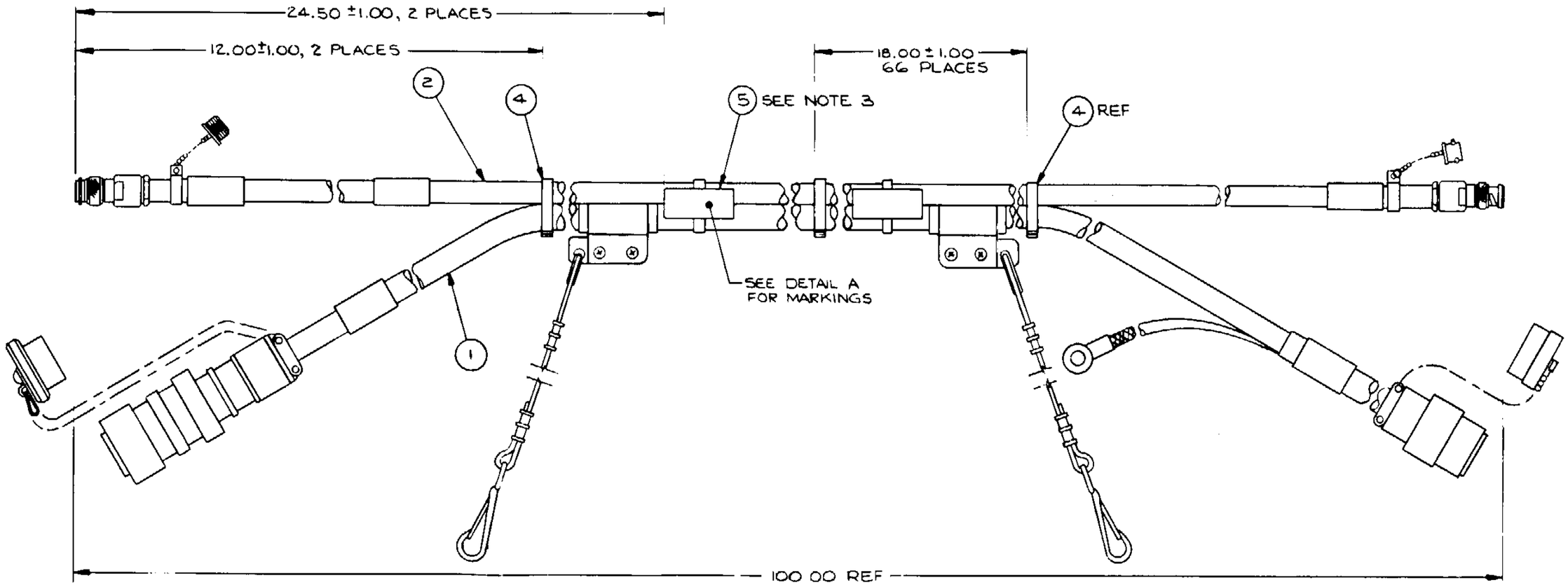
WIRE RUN LIST											
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	NOTE
1	4	WHT	100FT	P1-A	3/16	9,15	8,9	P2-E	3/16	9,23	9,11
2	↕	↕	↕	-B	↕	↕	↕	-F	↕	↕	↕
3				-C				-J			
4				-D				-H			
5				-E				-D			
6				-F				-C			
7				-G				-A			
8	4	WHT	100FT	P1-H	3/16	9,15	8,9	P2-N	3/16	9,23	9,11
BRAID	—	BRAID	—	P1-SHELL	—	—	12	JUNCTION	—	—	12
BRAID	6	BRAID	8 IN	JUNCTION	—	—	13	GND	—	20,22	14





EL2VD065

Figure FO-20. Cable assembly, W28.



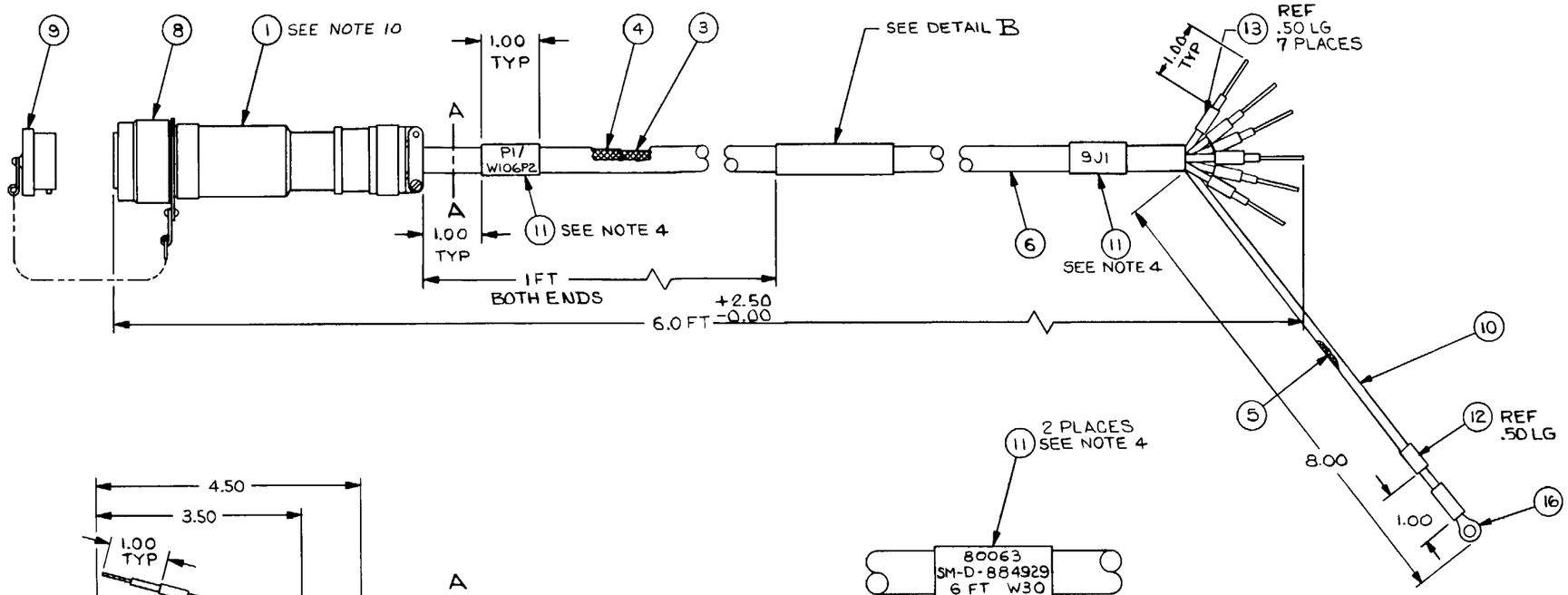
NOTES:
1. WORKMANSHIP SHALL BE IAW MIL-STD-454 REQUIREMENT 9.
2. HOT STAMP FIND NO. 5 WITH .12 HIGH BLACK CHARACTERS USING FIND NO. 3 PER MIL-M-81531. CHARACTERS ARE TO BE CENTRALLY LOCATED.
3. BAND MARKING LEGENDS ARE SHOWN ROTATED 90° FOR MAXIMUM READABILITY.

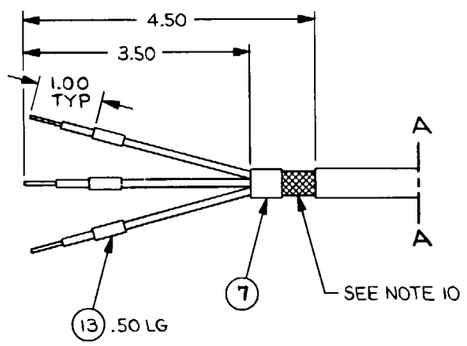
80063ASSY
SM-D-886883 100FT

DETAIL A
SCALE 2/1
TYP 2 PLACES

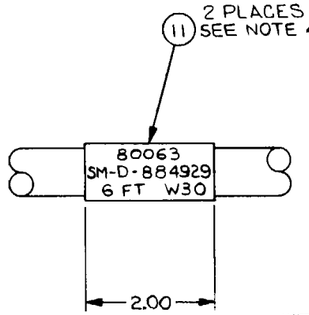
EL2VD141

Figure FO-20.1. Typical FM cable assembly .





CABLE PREPARATION



DETAIL B
SCALE NONE

WIRE RUN LIST											
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM			NOTE	TO			NOTE
				REF DES	STRIP LENGTH	ATTACH FIND NO		REF DES	STRIP LENGTH	ATTACH FIND NO	
1	2	WHT	6 FT	P1 - A	9/32	13,14	5,9	A9J1 - 1	3/4	13	5
2	↑	↑	↑	- B	↑	↑	↑	- 2	↑	↑	↑
3				- C				- 3			
4				- D				- 4			
5				- E				- 5			
6	↓	↓	↓	- F	↓	↓	↓	- 6	↓	↓	↓
7	2	WHT	6 FT	P1 - G	9/32	13,14	5,9	A9J1 - 7	3/4	13	↓
8	5	BRAID	9 IN	A9SHIELD	—	—	10	E1	—	12,16	5
SHIELD	3,4	BRAID	6 FT	P1 SHELL	—	—	10	—	—	—	10

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 11 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED
5. HOT STAMP FIND NO. 12 AND 13 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NUMBER 17. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 7.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS and a MAX DWELL TIME OF 2 SECONDS.
8. CONTACTS ARE SUPPLIED WITH CONNECTOR.
9. FOR P1 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/REMOVAL TOOL: M83723/31-16; AND SEALING PLUG: M83723-28-16.
10. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

EL2VD066

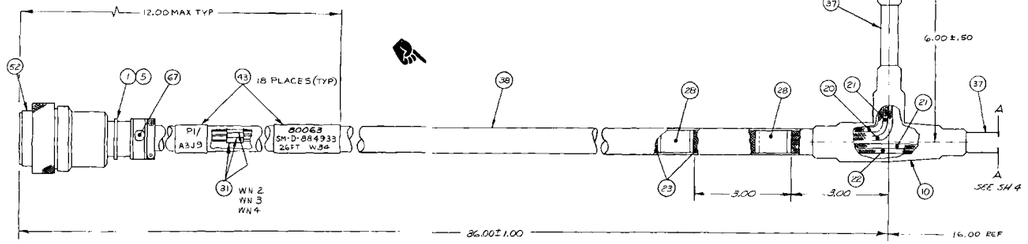
Figure FO-21. Cable assembly, W30 .

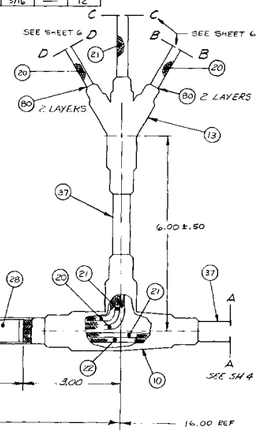
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	17	WHT	21 FT	P1 - A	5/16	58	5	A2ST81-9A	5/16	39	19
2				- B				A2ST81-10A		—	12
3				- C				A2ST81-11A		39	19
4				- D				A2ST81-12A		39	19
5				- E				A2ST81-11A		58	5
6			21 FT	- F				A2ST81-12A		58	5
7			10.5 FT	- G			12	XDS1-2		58	5
8	17		10.5 FT	- H		58	5	XDS1-1		—	12
9	16		12.5 FT	WN2		31	12	J1-1		39	19
10	16		12.5 FT	WN3		31	12	J1-2		39	19
11	17		22 FT	P1 - W		58	5	P5-B		58,75	19
12	17	WHT	22 FT	P1 - X		58	5	P5-C		58,75	5
17	17	WHT	21 FT	P1 - E		58	5	P6-A		58,75	5
18			21 FT	P1 - F				P6-B		58,75	
19			12.5 FT	P1 - P				P3-A		58	
20	17	WHT	12.5 FT	P1 - R		58	5	P3-B		58	5
25	19	WHT	11 FT	P1 - B		58	12	WN1		31	12
26	17		12.5 FT	P1 - U		58		A30-1		39	19
27	17		12.5 FT	P1 - K		58		A30-2		39	19
28	16		11 FT	WN3		31	12	J2-2		58	5
29	16		11 FT	WN2		31	12	J2-1		58	5
30	19		7 IN	WN1			12	J15-B		58	5
31	19		15 FT	P2 - A		58	5	J15 - A		58	5
32				- B				- B			
33				- C				- C			
34				- D				- D			
35				- E				- E			
36				- F				- F			
37				- G				- G			
38				- H				- H			
39				- J				- J			
40				- K				- K			
41				- L				- L			
42				- M				- M			
43				- N				- N			
44				- P				- P			
45				- R				- R			
46				- S				- S			
47				- T				- T			
48	19	WHT	15 FT	P2 - V	5/16	58	5	J15-V	5/16	58	5

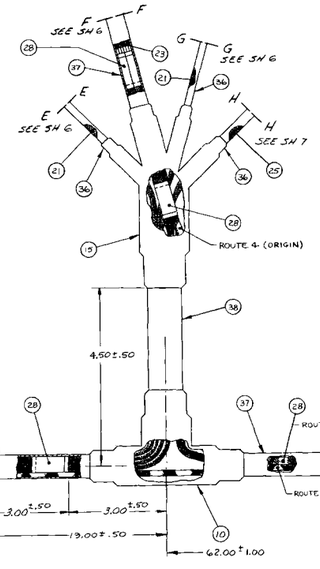
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
50	19	WHT	15 FT	P2 - Z	5/16	58	5	J15 - Z	5/16	58	5
51	19		8 IN	- U				WN5		—	12
52	68		15 FT	- E				A2ST81DS2-1		39	19
53	19			- T				J15 - L		58	5
54	19			- P				J15 - M		58	5
55	19			- S				J15 - P		58	5
56	19		15 FT	P2 - S				J15 - R		58	5
57	19		14 FT	P4 - B				WN1		—	12
58	19		14 FT	P4 - A				J15 - A		58	5
59	19	WHT	8 IN	P2 - R				WN5		—	12
60	34	WHT	14 FT	P4 - C				J15 - S		58	5
61		BLK		P4 - D		58	5	J15 - R		58	5
60A	19	WHT	3 IN	P4-C SHLD			13,15	P4-T SHLD		30	15
62	34	WHT	14 FT	P4 - T		58	5	J15 - X		58	5
63		BLK		P4 - U		58	5	J15 - Y		58	5
62A	19	WHT	3 IN	J15-D SHLD		30	3,15	J15-T SHLD		30	15
64	19	WHT	3 IN	P4-T SHLD		30	13,15	P4 - B		58	5
65	19		3 IN	J15-T SHLD		30	13,15	J15 - V			
66	19		15 FT	A2SAIA11-1		39	19	- E			
67	19			A2SAIXDS2-1				- T			
68	19			A2SAIXDS4-2				- G			
69	19	WHT	15 FT	A2SAIXDS5-2	5/16	39	19	J15 - H	5/16	58	5
70	26	BRAID	9 IN	OVER SHLD	—	—	5	E11	—	42	19
71	26	BRAID	9 IN	OVER SHLD	—	—	5	E12	—	42	
72	26	BRAID	9 IN	OVER SHLD	—	—	15	E13	—	42	
74	26	BRAID	9 IN	OVER SHLD	—	—	15	A2SAIE1	—	42	19
76	26	BRAID	9 IN	OVER SHLD	—	—		A2ST81-7A	—	42	19
77	17	WHT	7 IN	WN4	5/16	31	12	P1 - S	5/16	58	5
78	16		7 IN	WN3				P1 - Q		59	5
79	17		12.5 FT	WN4				J1-3		33	19
80	17		11 FT	WN4				J2-3		33	19
81	16		7 IN	WN2				P1-V		59	5
82	19	WHT	15 FT	WN5	5/16	31	12	WN1	5/16	—	12

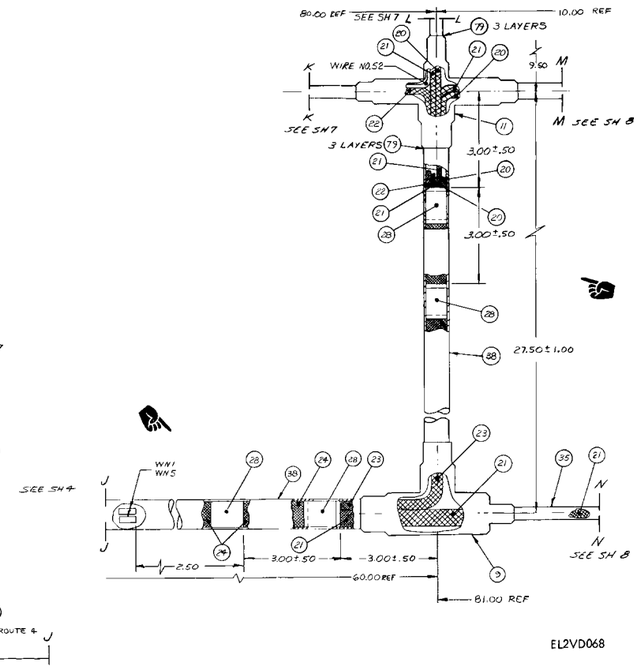
NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM". SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 43 AS INDICATED ON SHEETS 3 & 4, WITH .12 HIGH BLACK CHARACTERS #5 # NIL-M-81531 USING FIND NO. 73. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 58 & 59 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 32. CHARACTERS ARE TO BE BLACK, .12 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 27.
7. HOT STAMPING TEMP TO BE 430°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 53.
9. CONTACTS ARE SUPPLIED WITH CONNECTOR.
10. ~~FOR J1= AND J15 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/REMOVAL TOOL'S: M81969/14-09 AND M81969/14-10, AND SEALING PLUGS: FIND NOS: 56 & 57.~~
11. UNDERLINED CHARACTERS DENOTE LOWER CASE.
12. TWO OR MORE WIRE END ARE COMMON TO ONE PIECE OF TERMINATING HARDWARE, FABRICATE WIRE ENDS WHEN HARDWARE IS CALLED OUT.
13. A SINGLE LETTER SUFFIX IN THE WIRE NO. COLUMN WILL BE THE SHIELD OF A SHIELDED WIRE.
14. TIN LEADS USING FIND NO. 53.
15. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
16. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
17. ASSEMBLY PROCEDURE OF BRAID AT TRANSITION SHALL BE IN ACCORDANCE WITH SM-A-886077.
18. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE
    - 18.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 18.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.
19. HOT STAMP FIND NO. 39 & 42 PER MIL-M-81531 WITH REF DES USING FIND NO. 32. CHARACTERS ARE TO BE BLACK, .12 HIGH AND CENTRALLY LOCATED.









EL2VD068

Figure FO-22. Cable assembly, W34 (Sheet 1 of 2).

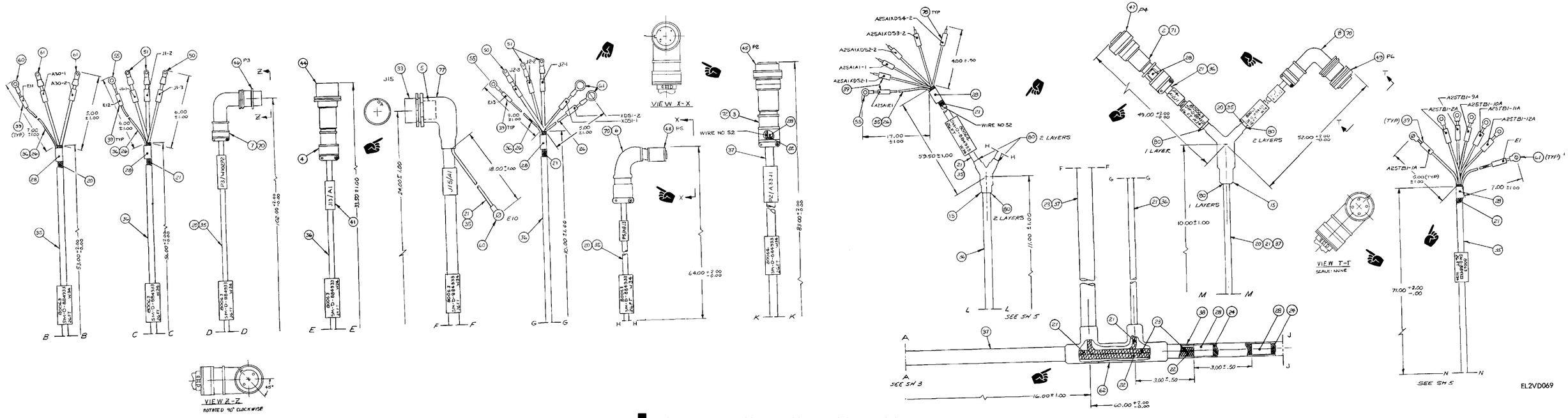
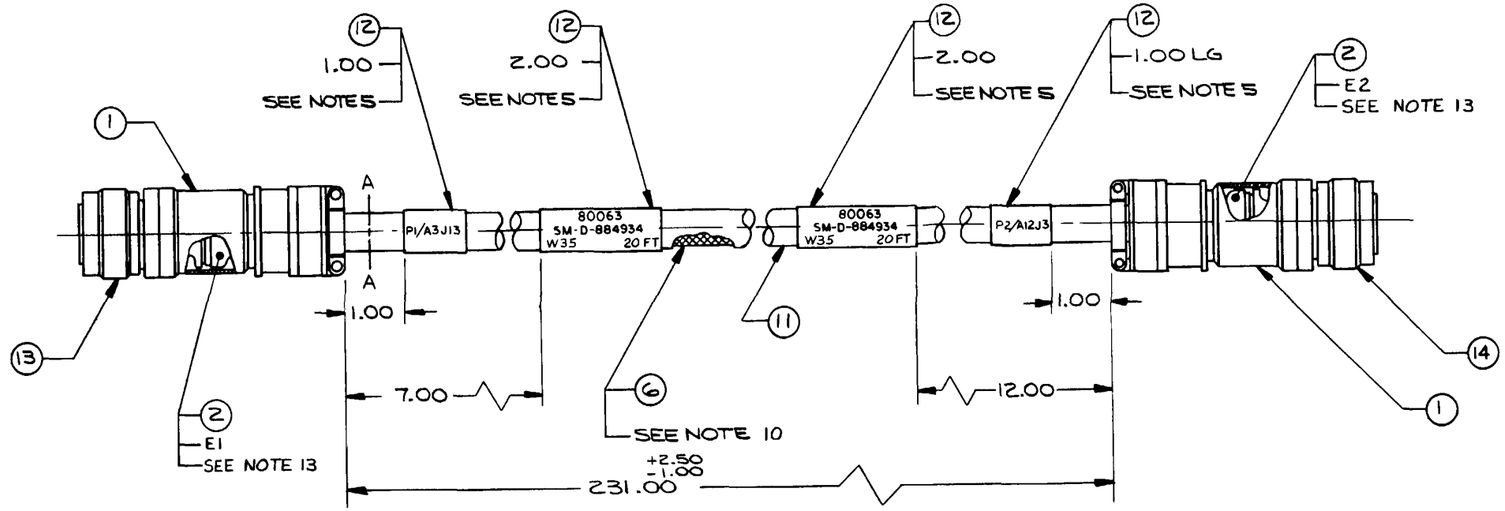


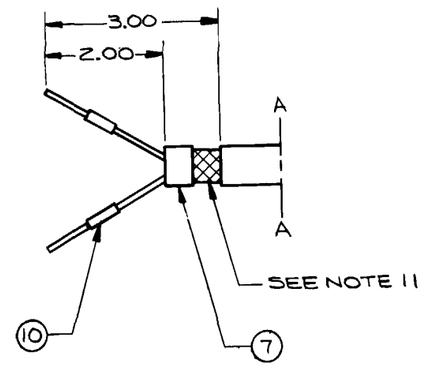
Figure FO-22. Cable assembly, W34 (Sheet 2 of 2).

Change 1 FO-22 Sheet 2

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	NOTE
10B	—	—	—	P2-10SHLD	—	—	8	E2	—	—	13
11	8	WHT	24 FT	P1-11	3/16	10,15	9	P2-11	3/16	10,17	9
11A	—	—	—	P1-11SHLD	—	—	8	E1	—	—	13
11B	—	—	—	P2-11SHLD	—	—	8	E2	—	—	13
12	8	WHT	24 FT	P1-12	3/16	10,15	9	P2-12	3/16	10,17	9
12A	—	—	—	P1-12SHLD	—	—	8	E1	—	—	13
12B	—	—	—	P2-12SHLD	—	—	8	E2	—	—	13
13	9	WHT	24 FT	P1-14	5/16	10,16	9	P2-14	5/16	10,18	9
14		BLK		P1-16	5/16	10,16	9	P2-16	5/16	10,18	9
13A	—	—	—	P1-14SHLD	—	—	8	E1	—	—	13
13B	—	—	—	P2-14SHLD	—	—	8	E2	—	—	13
15	5	WHT	24 FT	P1-15	3/16	10,15	9	P2-15	3/16	10,17	9
16	8	WHT	24 FT	P1-17	3/16	10,15	9	P2-17	3/16	10,17	9
15A	—	—	—	P1-17SHLD	—	—	8	E1	—	—	13
15B	—	—	—	P2-17SHLD	—	—	8	E2	—	—	13
17	3	WHT	24 FT	P1-18	5/16	10,16	9	P2-18	5/16	10,18	9
18	8	WHT	24 FT	P1-19	3/16	10,15	9	P2-19	3/16	10,17	9
18A	—	—	—	P1-19SHLD	—	—	8	E1	—	—	13
18B	—	—	—	P2-19SHLD	—	—	8	E2	—	—	13
19	3	WHT	24 FT	P1-20	5/16	10,16	9	P2-20	5/16	10,18	9
20	3	WHT	24 FT	P1-22	5/16	10,16	9	P2-22	5/16	10.18	9
21	3	WHT	24 FT	P1-24	5/16	10,16	9	P2-24	5/16	10.18	9
22	4	BLK	3	E2	1/4		8	P2-13	3/16	10,17	9
SHIELD	6	BRAID	23 FT	P1-SHELL	—	—	10	P2-SHELL	—	—	10
1	8	WHT	24 FT	P1-1	3/16	10,15	9	P2-1	3/16	10,17	9
1A	—	—	—	P1-1SHLD	—	—	8	E1	—	—	13
1B	—	—	—	P2-1SHLD	—	—	8	E2	—	—	13
2	8	WHT	24 FT	P1-2	3/16	10,15	9	P2-2	3/16	10,17	9
2A	—	—	—	P1-2SHLD	—	—	8	E1	—	—	13
2B	—	—	—	P2-2SHLD	—	—	8	E2	—	—	13
3	8	WHT	24 FT	P1-3	3/16	10,15	9	P2-3	3/16	10,17	9
3A	—	—	—	P1-3SHLD	—	—	8	E1	—	—	13
3B	—	—	—	P2-3SHLD	—	—	8	E2	—	—	13
4	8	WHT	24 FT	P1-4	3/16	10,15	9	P2-4	3/16	10,17	9
4A	—	—	—	P1-4SHLD	—	—	8	E1	—	—	13
4B	—	—	—	P2-4SHLD	—	—	8	E2	—	—	13
5	8	WHT	24 FT	P1-5	3/16	10,15	9	P2-5	3/16	10,17	9
5A	—	—	—	P1-5SHLD	—	—	8	E1	—	—	13
5B	—	—	—	P2-5SHLD	—	—	8	E2	—	—	13
6	8	WHT	24 FT	P1-6	3/16	10,15	9	P2-6	3/16	10,17	9
6A	—	—	—	P1-6SHLD	—	—	8	E1	—	—	13
6B	—	—	—	P2-6SHLD	—	—	8	E2	—	—	13
7	8	WHT	24 FT	P1-7	3/16	10,15	9	P2-7	3/16	10,17	9
7A	—	—	—	P1-7SHLD	—	—	8	E1	—	—	13
7B	—	—	—	P2-7SHLD	—	—	8	E2	—	—	13
8	8	WHT	24 FT	P1-8	3/16	10,15	9	P2-8	3/16	10,17	9
8A	—	—	—	P1-8SHLD	—	—	8	E1	—	—	13
8B	—	—	—	P2-8SHLD	—	—	8	E2	—	—	13
9	8	WHT	24 FT	P1-9	3/16	10,15	9	P2-9	3/16	10,17	9
9A	—	—	—	P1-9SHLD	—	—	8	E1	—	—	13
9B	—	—	—	P2-9SHLD	—	—	8	E2	—	—	13
10	8	WHT	24 FT	P1-10	3/16	10,15	9	P2-10	3/16	10,17	9
10A	—	—	—	P1-10SHLD	—	—	8	E1	—	—	13





NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATION PREFEX WITH SUBASSEMBLY DESIGNATION.
3. FOR P1 & P2 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/ REMOVAL TOOLS: M83723/31-20, M83723/31-12; AND SEALING PLUGS: M83723/28-20.
4. VENDOR ITEM SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
5. HOT STAMP FIND NO. 12 AS INDICATED USING .12 HIGH BLACK CHARACTERS PER MIL-M-81521 USING FIND NO. 19. CHARACTERS TO BE CENTRALLY LOCATED.
6. CONTACTS ARE FURNISHED WITH CONNECTOR.
7. HOT STAMPING TEMP TO BE 450oF AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. A SINGLE LETTER SUFFIX EX: (1A, 1B, 2A, 2B, ETC.); IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE AND/OR COAXIAL WIRE.
9. HOT STAMP FIND NO. 10 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 19. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
10. ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. WRAP AS REQUIRED USING FIND NO. 7.
12. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.
13. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.

EL2VD070

Figure FO-23. Cable assembly, W35.

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	7	WHT	15.5 FT	P1-1	5/16	38	10	XD55-1	5/16	24	—
2			15.5	-2				XD55-2			—
3			8.5	-3				XD52-1			—
4			8.5	-4				XD52-2			—
5			15.5	-5				XD56-1			—
6	7		15.5	-6		38		XD56-2		24	—
7	5		8.5	-14		39		J3-1		25	—
8	5		8.5	-16		39		J3-2		25	—
9	6		10.5	-18		38		P2-A		38	—
10	6		10.5	-20				P2-B		38	—
11	7		24	-7				A2551-4		24	—
12			24	-8				A2551-7			—
13			24	-9				A2552-4			—
14			24	-10				A2552-7			—
15			24	-11				A2553-4			—
16			24	-12				A2553-7		24	—
17			25	-13				P7-C		38	—
18			21.5 FT	-15				P6-C			—
19			19 FT	-17				P3-B			—
20			19 FT	-19				P3-C			—
21			21.5 FT	-21				P4-B			—
22	7		21.5	-23		38		P4-C		38	—
23	5		8.5	P1-22		39	10	J3-3		25	—
24	7		18 FT	WN1		—	11	P5-B		19,38	11
25			19 FT	P1-25		38	10	P5-C		38	—
26			20.5 FT	WN1		38	11	P6-B		19,38	11
27			24	WN1		38	11	P7-B		19,38	11
28			8	XD53-1		24	—	XD55-1		24	—
29			8	XD53-2			—	XD55-2			—
30			8	XD54-1			—	XD56-1			—
31	7	WHT	8 FT	XD54-2	5/16	24	—	XD56-2	5/16		—
32	13	BRAID	7 IN	OVER SHLD	—	—	—	E17	—		—
33		BRAID	7 IN	OVER SHLD	—	—	—	E18	—		—
34		BRAID	7 IN	OVER SHLD	—	—	—	E19	—		—
35	13	BRAID	7 IN	OVER SHLD	—	—	—	E20	—	24	—
36	7	WHT	8 IN	P1-24	5/16	—	—	WN1	5/16	19	11

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 24 AS INDICATED ON SHEETS 2, 3 & 4 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 38 AND 39 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 20. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 15.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 55.
9. CONTACTS ARE SUPPLIED WITH CONNECTOR.
10. FOR P1 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/REMOVAL TOOLS: M83723/31-20 AND M83723/3112.
11. TWO OR MORE WIRE ENDS ARE COMMON TO ONE PIECE OF TERMINATING HARDWARE. FABRICATE WIRE ENDS WHEN HARDWARE IS CALLED OUT.
12. TIN LEADS USING FIND NO. 55.
13. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
14. ASSEMBLY PROCEDURE OF BRAID AT TRANSITION SHALL BE IN ACCORDANCE WITH SM-A-886077.
15. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 15.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 15.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

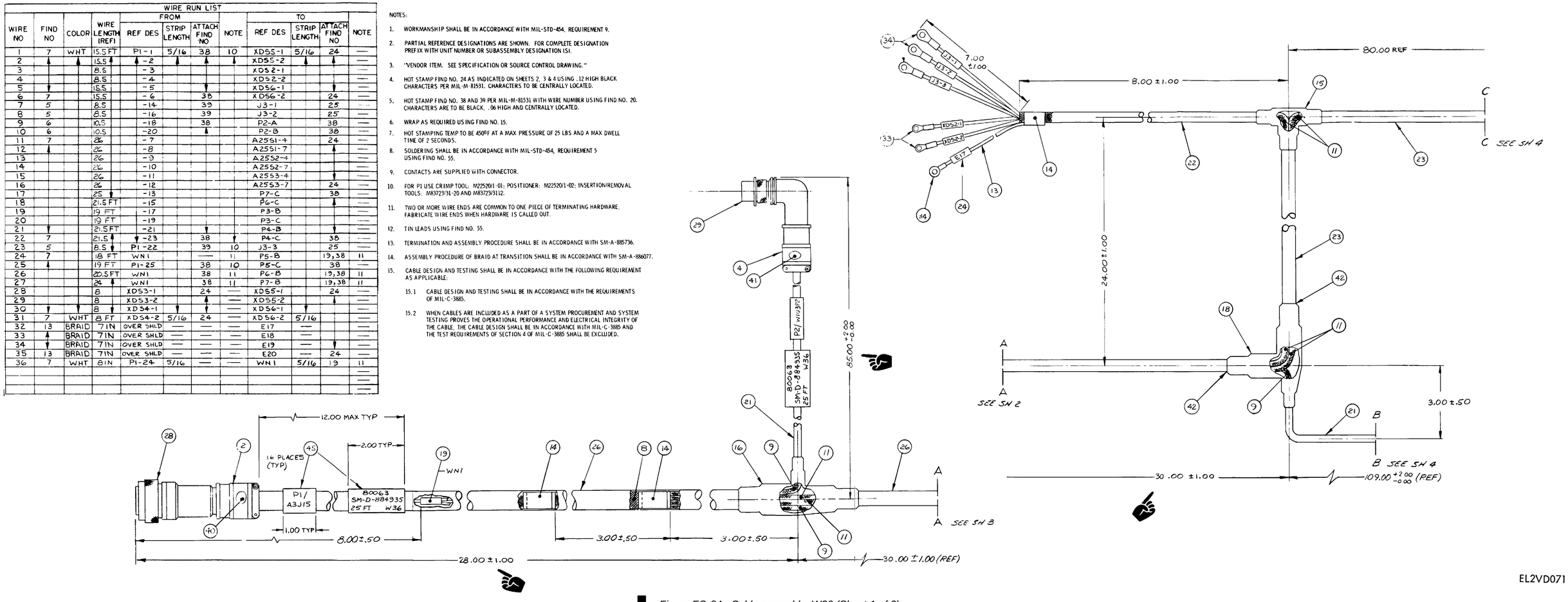


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Figure FO-24. Cable assembly, W36 (Sheet 1 of 2).

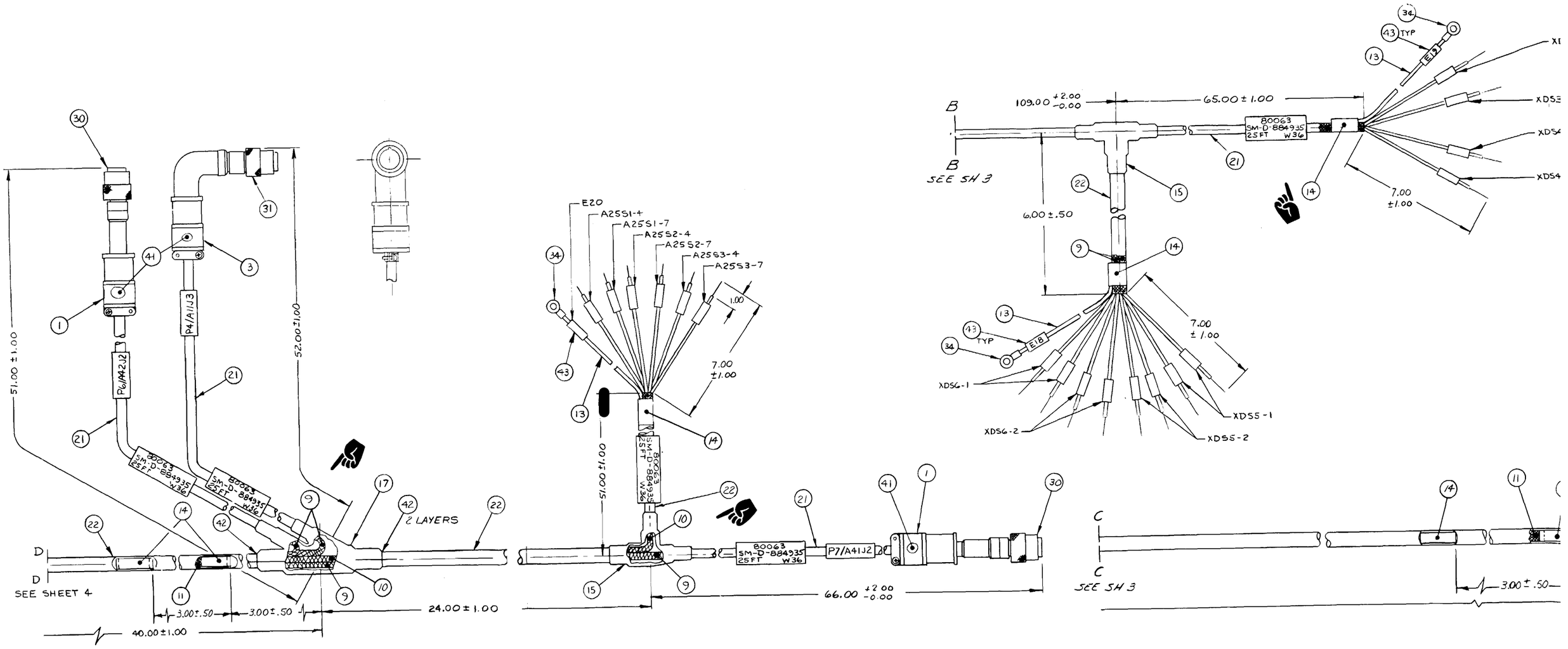


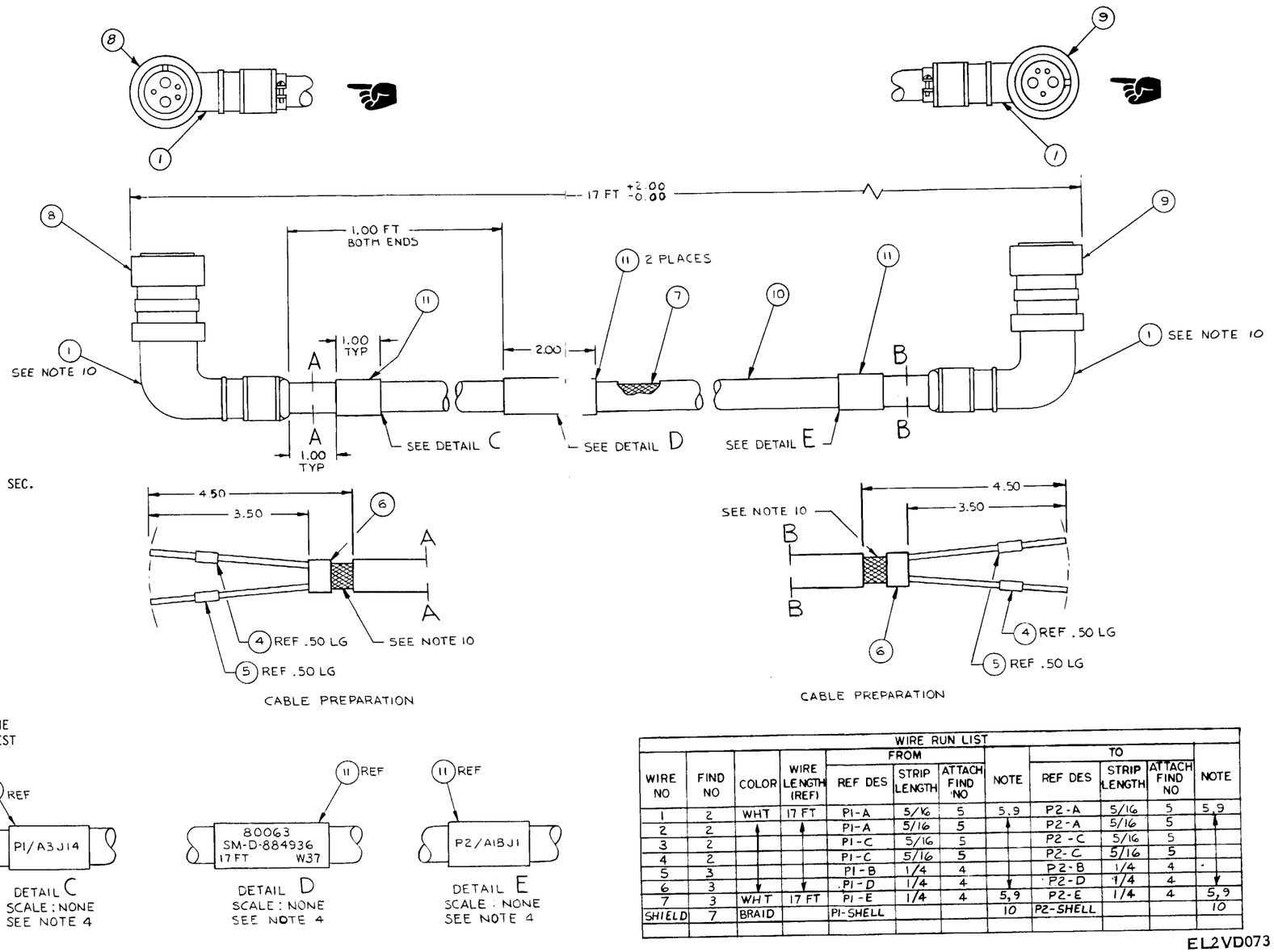
Figure FO-24. Cable assembly, W36 (Sheet 2 of 2).

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFEX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. "VENDOR ITEM SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 11 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 4 AND 5 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NUMBER 13. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 6.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SEC.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 12.
9. TIN LEADS USING FIND NO. 12.
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:

    11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.

    11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

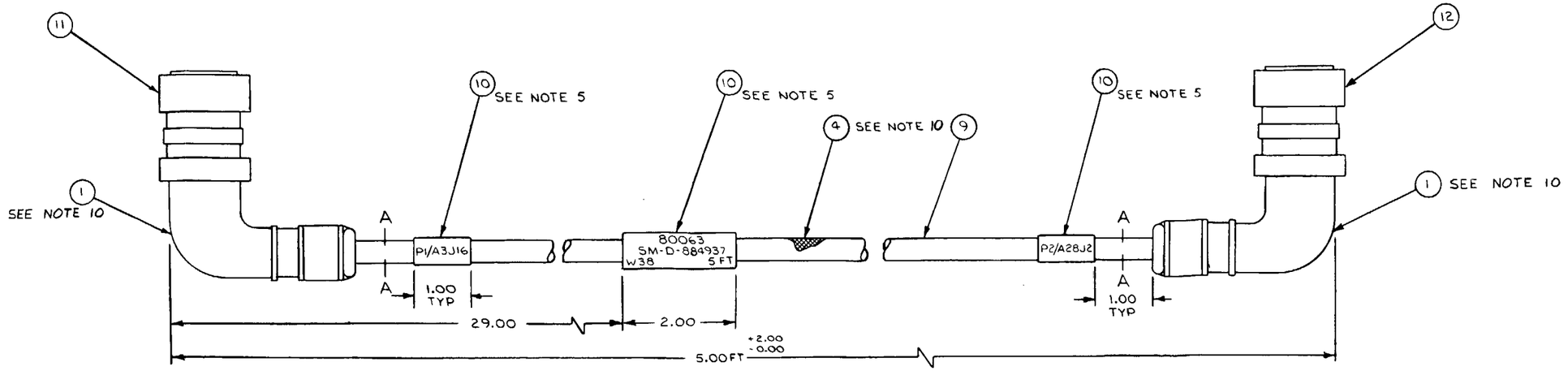


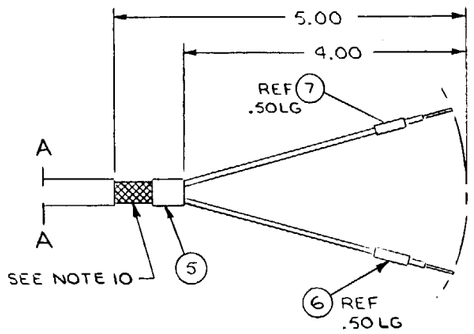
WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	2	WHT	17 FT	P1-A	5/16	5	5,9	P2-A	5/16	5	5,9
2	2			P1-A	5/16	5		P2-A	5/16	5	
3	2			P1-C	5/16	5		P2-C	5/16	5	
4	2			P1-C	5/16	5		P2-C	5/16	5	
5	3			P1-B	1/4	4		P2-B	1/4	4	
6	3			P1-D	1/4	4		P2-D	1/4	4	
7	3	WHT	17 FT	P1-E	1/4	4	5,9	P2-E	1/4	4	5,9
SHIELD	7	BRAID		P1-SHELL			10	P2-SHELL			10

EL2VD073

Figure FO-25. Cable assembly, W37.





CABLE PREPARATION
BOTH ENDS

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION.
3. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5 USING FIND NO. 8.
4. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
5. HOT STAMP FIND NO. 10 AS INDICATED ON SHEET 2 WITH .12 HIGH BLACK CHARACTERS PER MIL-M-81531 USING FIND NO. 13. CHARACTERS TO BE CENTRALLY LOCATED.
6. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
7. HOT STAMP FIND NO. 6 AND 7 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 13. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
8. TIN LEADS USING FIND NO. 8.
9. WRAP AS REQUIRED USING FIND NO. 5.
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH REF	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO.	NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	NOTE
1	2	WHT	6 FT	P1-A	3/8	6	7,8	P2-A	3/8	6	7,8
2	↑	↑	↑	-B	↑	↑	↑	-B	↑	↑	↑
3				-C				-C			
4				-D				-D			
5				-E				-E			
6				-F				-F			
7				-G				-G			
8	↓			-H	↓	↓		-H	↓	↓	
9	2			-J	3/8	6		-J	3/8	6	
10	3			-K	1/4	7		-K	1/4	7	
11	↑			-L	↑	↑		-L	↑	↑	
12	↓			-M	↓	↓		-M	↓	↓	
13	3	↓	↓	-N	1/4	7	↓	-N	1/4	7	↓
14	2	WHT	6 FT	P1-P	3/8	6	7,8	P2-P	3/8	6	7,8
SHIELD	4	BRAID	—	P1-SHELL	—	—	10	P2-SHELL	—	—	10

EL2VD074

Figure FO-26. Cable assembly, W38.

WIRE RUN LIST												
				FROM				TO				
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	7	WHT	6 FT	P1-A	1 1/8	9	5,9	P2-F	7/16	9	5,9
2	6	↑	↑	P1-B	9/16	10	↑	G	9/16	10	↑
3	6		↓	P1-C	9/16	10		C	9/16	10	
4	7		6 FT	P1-D	1 1/8	9		D	7/16	9	
5	7		5 FT	P3-A	7/16	9		B	7/16	9	
6	7		↑	P3-B	7/16	9		A	7/16	9	
7	7			P3-C	7/16	9		H	7/16	9	
8	6	↓	↓	P3-E	9/16	10	↓	J	9/16	10	↓
9	7	WHT	5 FT	P3-H	7/16	9	5,9	P2-E	7/16	9	5,9
SHIELD	4	BRAID	—	P1-SHELL	—	—	10	JUNCTION	—	—	11
SHIELD	5	BRAID	—	P2-SHELL	—	—	10	JUNCTION	—	—	11
SHIELD	4	BRAID	—	P3-SHELL	—	—	10	JUNCTION	—	—	11

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFEX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. "VENDOR ITEM SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 18 AS INDICATED USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 9 AND 10 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NUMBER 20. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 19.
9. TIN LEADS USING FIND NO. 19
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. ASSEMBLY PROCEDURE OF BRAID AT TRANSITION SHALL BE IN ACCORDANCE WITH SM-A-886077.
12. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:

    12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.

    12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

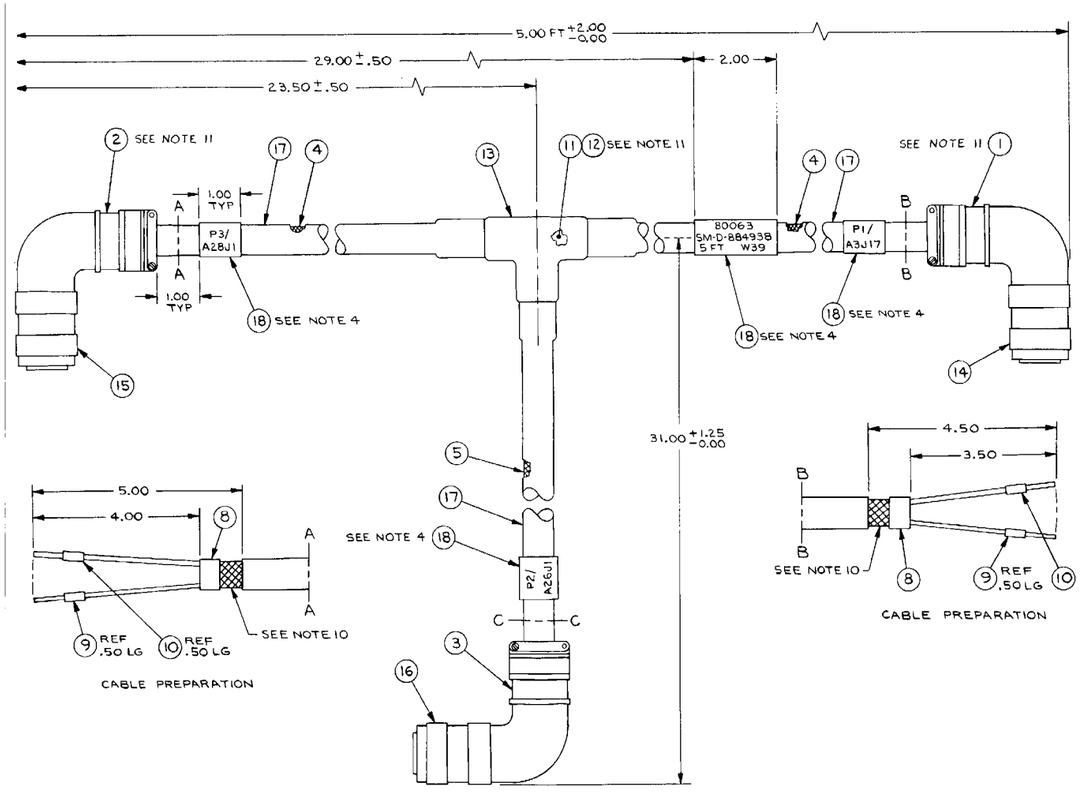


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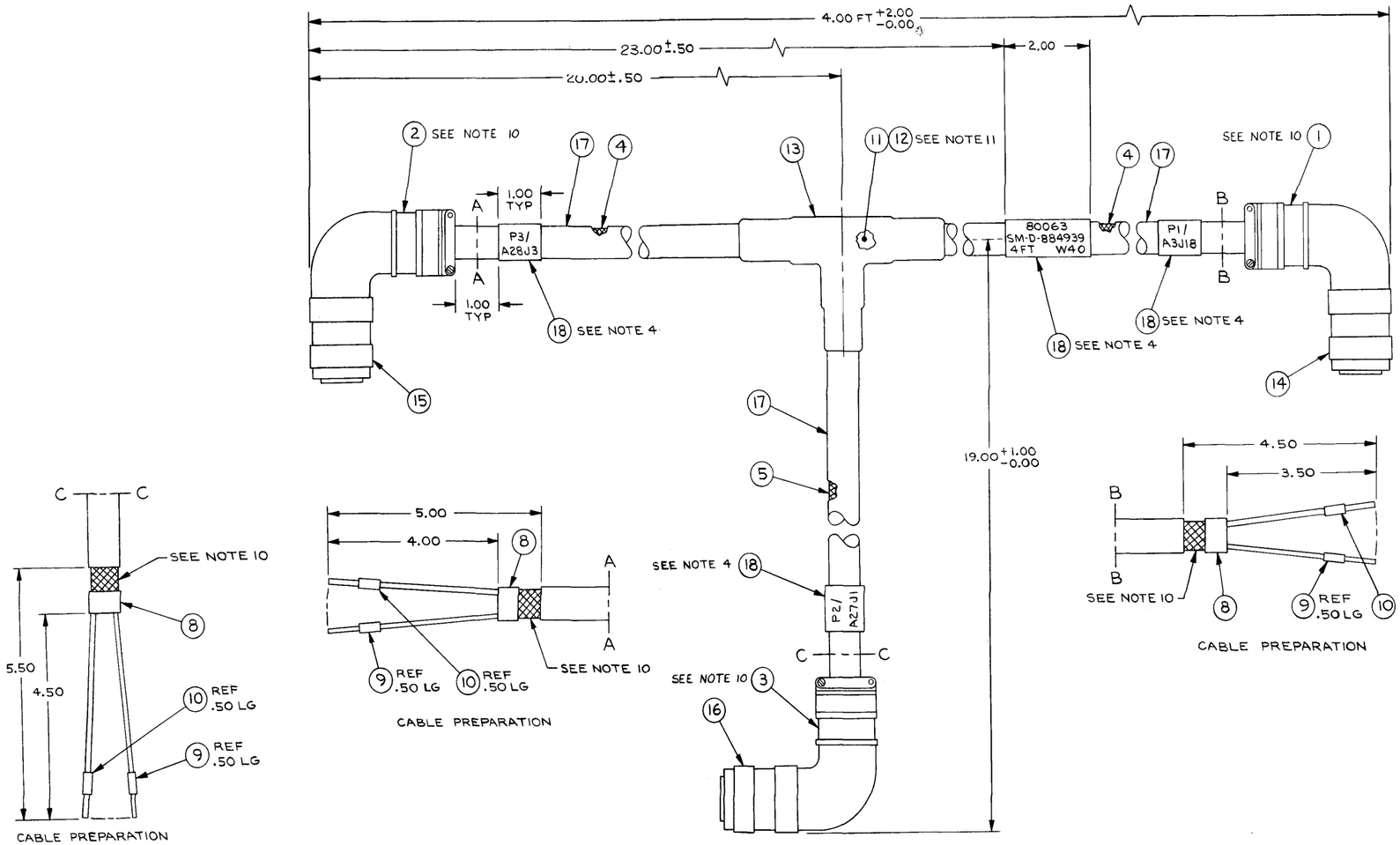
Figure FO-27. Cable assembly, W39.



WIRE RUN LIST											
				FROM				TO			
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	7	WHT	5 FT	P1-A	1 1/8	9	5,9	P2-F	7/16	9	5,9
2	6	↑	↑	P1-B	9/16	10	↑	G	9/16	10	↑
3	6		↓	P1-C	9/16	10		C	9/16	10	
4	7		5 FT	P1-D	1 1/8	9		D	7/16	9	
5	7		4 FT	P3-A	7/16	9		B	7/16	9	
6	7		↑	P3-B	7/16	9		A	7/16	9	
7	7			P3-C	7/16	9		H	7/16	9	
8	6	↓	↓	P3-E	9/16	10		J	9/16	10	↓
9	7	WHT	4 FT	P3-H	7/16	9	5,9	P2-E	7/16	9	5,9
SHIELD	4	BRAID	—	P1-SHELL	—	—	10	JUNCTION	—	—	11
SHIELD	5	BRAID	—	P2-SHELL	—	—	10	JUNCTION	—	—	11
SHIELD	4	BRAID	—	P3-SHELL	—	—	10	JUNCTION	—	—	11

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 18 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 9 AND 10 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NUMBER 20. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 8.
7. HOT STAMPING TEMP TO BE 450oF AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 19.
9. TIN LEADS USING FIND NO. 19.
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. ASSEMBLY PROCEDURE OF BRAID AT TRANSITION SHALL BE IN ACCORDANCE WITH SM-A-886077.
12. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:

    12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.

    12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

EL2VD076

Figure FO-28. Cable assembly, W40.

WIRE RUN LIST											
				FROM				TO			
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	5	WHT	438.00	P1-A	1/4	6	7,9	AG9-2	5/32	12,13	5
1A	—	BRAID	—	P1-A SHLD	—	—	10	P1E1	—	—	—
2	5	WHT	136.00	P1-B	1/4	6	7,9	WN1-A	3/16	7	—
2A	—	BRAID	—	P1-B SHLD	—	—	10	P1E1	—	—	—
3	5	WHT	10.00	WN1-B	3/16	—	—	AG2-1	5/32	12,13	5
4	5	WHT	339.00	WN1-C	3/16	—	—	A71-2	5/32	12,13	5
4A	4	BLK	6.00	WN1-A SHLD	3/16	7	—	WN1-B SHLD	3/16	7	—
4B	4	BLK	6.00	WN1-B SHLD	3/16	—	—	WN1-C SHLD	3/16	7	—
5	5	WHT	133.00	P1-K	1/4	6	7,9	WN2-A	3/16	7	—
5A	—	BRAID	—	P1-K SHLD	—	—	10	P1E1	—	—	—
6	5	WHT	126.00	WN2-B	3/16	—	—	S2-1	1/4	12	5,7
7	5	WHT	30.00	WN2-C	↓	—	—	S3-1	1/4	12	5,7
7A	4	BLK	6.00	WN2-A SHLD	↓	7	—	WN2-B SHLD	3/16	7	—
7B	4	BLK	6.00	WN2-B SHLD	↓	—	—	WN2-C SHLD	3/16	7	—
7C	4	BLK	6.00	WN2-C SHLD	3/16	—	—	WN1-C SHLD	3/16	—	—
8	5	WHT	276.00	P1-C	1/4	6	7,9	AG5-1	5/32	12,13	5
8A	—	BRAID	—	P1-C SHLD	—	—	10	P1E1	—	—	—
9	5	WHT	241.00	P1-D	1/4	6	7,9	AG3-1	5/32	12,13	5
9A	—	BRAID	—	P1-D SHLD	—	—	10	P1E1	—	—	—
10	5	WHT	241.00	P1-E	1/4	6	7,9	AG3-2	5/32	12,13	5
10A	—	BRAID	—	P1-E SHLD	—	—	10	P1E1	—	—	—
11	5	WHT	398.00	P1-F	1/4	6	7,9	AG8-1	5/32	12,13	5
11A	—	BRAID	—	P1-F SHLD	—	—	10	P1E1	—	—	—
12	5	WHT	398.00	P1-G	1/4	6	7,9	AG8-2	5/32	12,13	5
12A	—	BRAID	—	P1-G SHLD	—	—	10	P1E1	—	—	—
13	5	WHT	163.00	P1-H	1/4	6	7,9	S3-2	1/4	12	5,7
13A	—	BRAID	—	P1-H SHLD	—	—	10	P1E1	—	—	—
14	5	WHT	254.00	P1-J	1/4	6	7,9	S2-2	1/4	12	5,7
14A	—	BRAID	—	P1-J SHLD	—	—	10	P1E1	1/4	—	—
15	5	WHT	105.00	AG9-1	5/32	12	5	AG7-2	5/32	12,13	5
16	↑	↑	143.00	AG7-1	↑	↑	↑	AG4-2	↑	↑	↑
17	↑	↑	103.00	AG4-1	↑	↑	↑	AG2-2	↑	↑	↑
18	↑	↑	63.00	A71-1	↑	↑	↑	A70-2	↑	↑	↑
19	↑	↑	188.00	A70-1	↑	↑	↑	AG6-2	↑	↑	↑
20	5	WHT	58.00	AG6-1	5/32	12	5	AG5-2	5/32	12,13	5
21	4	BLK	6.00	AG9-2 SHLD	3/16	7	—	EB	5/32	12,16	5
21A	↑	↑	3.00	AG9-2 SHLD	↑	—	—	AG9-1 SHLD	3/16	7	—
22	↑	↑	6.00	AG7-2 SHLD	↑	7	—	E6	5/32	12,16	5
22A	↑	↑	3.00	AG7-2 SHLD	↑	—	—	AG7-1 SHLD	3/16	7	—
23	↑	↑	6.00	AG4-2 SHLD	↑	7	↑	E3	5/32	12,16	5
23A	↑	↑	3.00	AG4-2 SHLD	↑	—	—	AG4-1 SHLD	3/16	7	—
24	↑	↑	6.00	AG2-2 SHLD	↑	7	↑	E1	5/32	12,16	5
24A	↑	↑	3.00	AG2-2 SHLD	↑	—	—	AG2-1 SHLD	3/16	7	—
25	↑	↑	6.00	A71-2 SHLD	↑	7	↑	E10	5/32	12,16	5
25A	↑	↑	3.00	A71-2 SHLD	↑	—	—	A71-1 SHLD	3/16	7	—
26	↑	↑	6.00	A70-2 SHLD	↑	7	↑	E9	5/32	12,16	5
26A	↑	↑	3.00	A70-2 SHLD	↑	—	—	A70-1 SHLD	3/16	7	—
27	↑	↑	6.00	AG6-2 SHLD	↑	7	↑	E5	5/32	12,16	5
27A	4	BLK	3.00	AG6-2 SHLD	3/16	—	—	AG6-1 SHLD	3/16	7	—
28	4	BLK	6.00	AG5-2 SHLD	3/16	7	—	E4	5/32	12,16	5
28A	↑	↑	3.00	AG5-2 SHLD	↑	—	—	AG5-1 SHLD	3/16	7	—
29	↑	↑	6.00	AG3-2 SHLD	↑	7	↑	E2	5/32	12,16	5
29A	↑	↑	3.00	AG3-2 SHLD	↑	—	—	AG3-1 SHLD	3/16	7	—
30	↑	↑	6.00	AG8-2 SHLD	↑	7	↑	E7	5/32	12,16	5
30A	↑	↑	3.00	AG8-2 SHLD	3/16	—	—	AG8-1 SHLD	3/16	7	—
31	4	BLK	4.00	P1E1-SHLD	1.00	—	10	P1-L	1/4	6	7,9

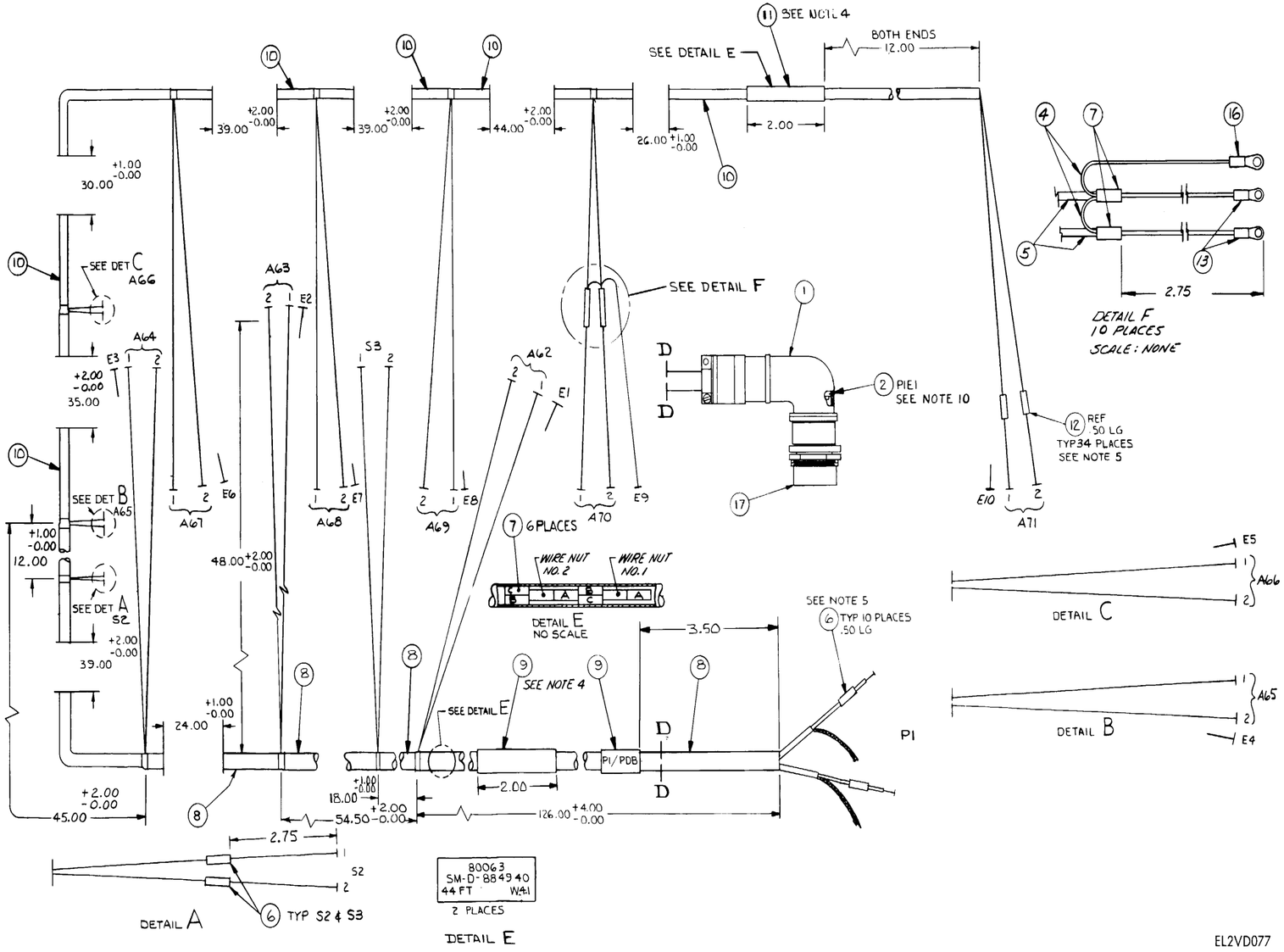
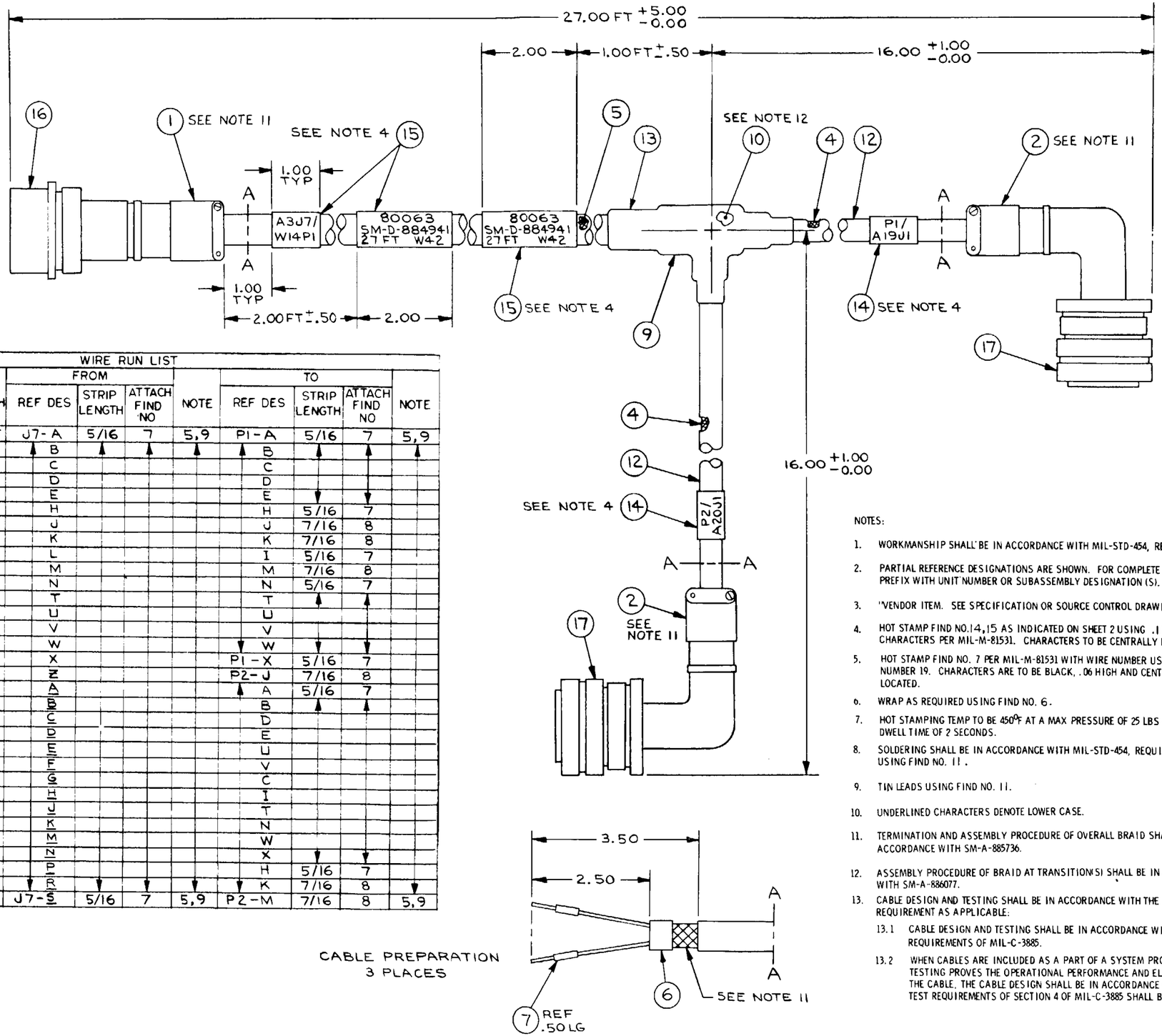


Figure FO-29. Cable assembly, W41.



CABLE PREPARATION
3 PLACES

WIRE RUN LIST

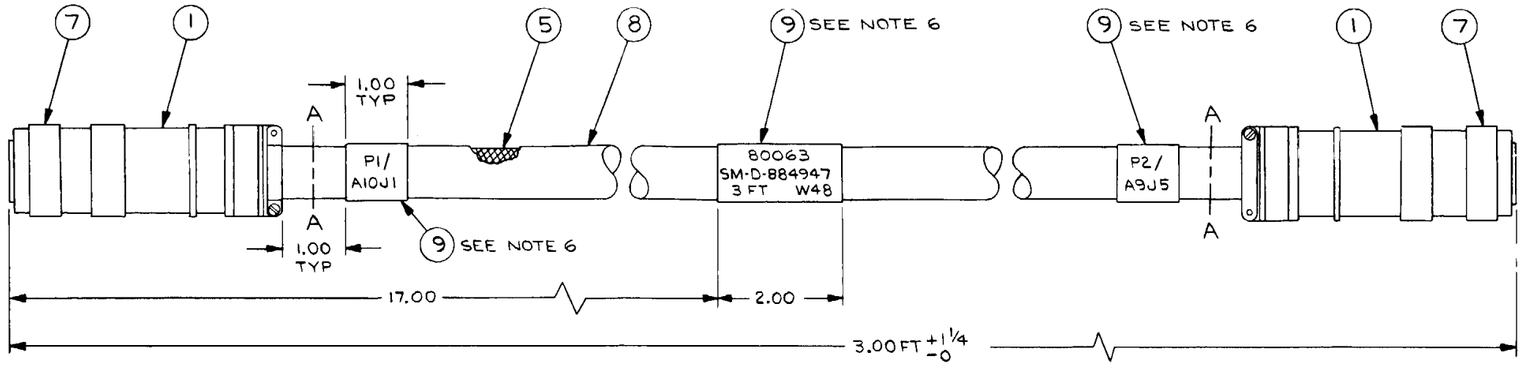
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	3	WHT	27 FT	J7-A	5/16	7	5,9	P1-A	5/16	7	5,9
2				B				B			
3				C				C			
4				D				D			
5				E				E			
6				H				H	5/16	7	
7				J				J	7/16	8	
8				K				K	7/16	8	
9				L				I	5/16	7	
10				M				M	7/16	8	
11				N				N	5/16	7	
12				T				T			
13				U				U			
14				V				V			
15				W				W			
16				X				P1-X	5/16	7	
17				Z				P2-J	7/16	8	
18				A				A	5/16	7	
19				B				B			
20				C				D			
21				D				E			
22				E				U			
23				F				V			
24				G				C			
25				H				I			
26				J				T			
27				K				N			
28				M				W			
29				N				X			
30				P				H	5/16	7	
31				R				K	7/16	8	
32	3	WHT	27 FT	J7-S	5/16	7	5,9	P2-M	7/16	8	5,9

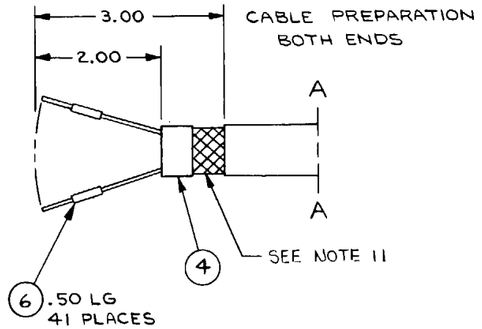
NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO.14,15 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED
5. HOT STAMP FIND NO. 7 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NUMBER 19. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 6.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 11.
9. TIN LEADS USING FIND NO. 11.
10. UNDERLINED CHARACTERS DENOTE LOWER CASE.
11. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
12. ASSEMBLY PROCEDURE OF BRAID AT TRANSITION SI SHALL BE IN ACCORDANCE WITH SM-A-886077.
13. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 13.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 13.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

EL2VD078

Figure FO-30. Cable assembly, W42.





NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5 USING FIND NO. 11.
4. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
5. UNDERLINED CHARACTERS DENOTE LOWER CASE.
6. HOT STAMP FIND NO. 10 AS INDICATED ON SHEET 2 WITH .12 HIGH BLACK CHARACTERS PER MIL-M-81531 USING FIND NO. 30. CHARACTERS TO BE CENTRALLY LOCATED.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. WRAP AS REQUIRED USING FIND NO. 7.
9. TIN ALL LEADS USING FIND NO. 11.
10. HOT STAMP FIND NO. 6 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 11. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
11. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
12. CABLE DESIGN AND TESTING SHALL BE ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	3	WHT	3 FT	P1-A	3/16	6	9,10	P2-A	3/16	6	9,10
2		BLK		B				B			
3	3	WHT		C				C			
4		BLK		D				D			
5	2	WHT		E				E			
6				F				F			
7				G				G			
8				H				H			
9				J				J			
10				K				K			
11				L				L			
12				M				M			
13	2	WHT		N				N			
14	3	WHT		P				P			
15		BLK		R				R			
16	2	WHT		S				S			
17				T				T			
18				U				U			
19				V				V			
20				W				W			
21	2	WHT		X				X			
22	3	WHT		Y				Y			
23		BLK		Z				Z			
24		WHT		A				A			
25		BLK		B				B			
26		WHT		C				C			
27		BLK		D				D			
28		WHT		E				E			
29		BLK		F				F			
30		WHT		G				G			
31		BLK		H				H			
32		WHT		I				I			
33		BLK		J				J			
34	3	WHT		K				K			
35		BLK		M				M			
36	2	WHT		N				N			
37	2	WHT		P				P			
38	2	WHT		Q				Q			
39	3	BLK		R				R			
40		WHT		S				S			
41	2	WHT	3 FT	P1-T	3/16	6	9,10	P2-T	3/16	6	9,10
SHIELD	5	BRAID	—	P1-SHELL	—	—	11	P2-SHELL	—	—	11

EL2VD079

Figure FO-31. Cable assembly, W48.

WIRE RUN LIST

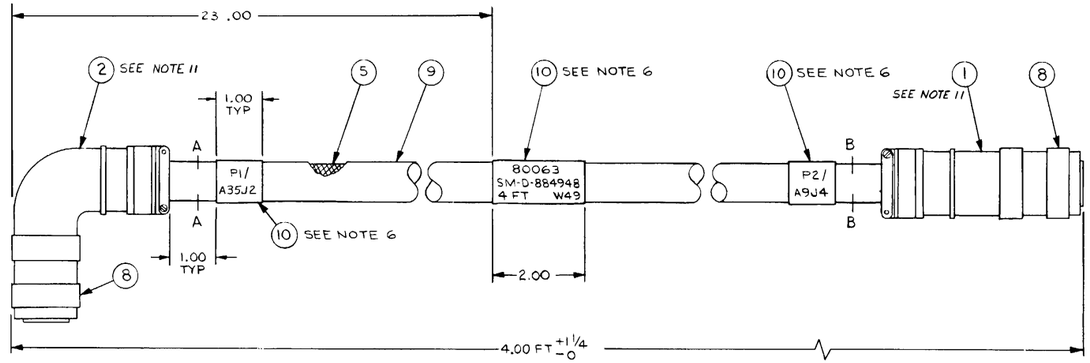
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	3	WHT	4 FT	P1-A	3/16	6	9,10	P2-A	3/16	6	9,10
2		BLK		B				B			
3	3	WHT		C				C			
4		BLK		D				D			
5	4	WHT		E				E			
6				F				F			
7				G				G			
8				H				H			
9				J				J			
10				K				K			
11				L				L			
12				M				M			
13	4	WHT		N				N			
14	3	WHT		P				P			
15		BLK		R				R			
16	4	WHT		S				S			
17				T				T			
18				U				U			
19				V				V			
20				W				W			
21	4	WHT		X				X			
22	3	WHT		Y				Y			
23		BLK		Z				Z			
24		WHT		AA				AA			
25		BLK		BB				BB			
26		WHT		CC				CC			
27		BLK		DD				DD			
28		WHT		EE				EE			
29		BLK		FF				FF			
30		WHT		GG				GG			
31		BLK		HH				HH			
32		WHT		JJ				JJ			
33		BLK		KK				KK			
34	3	WHT		LL				LL			
35		BLK		MM				MM			
36	4	WHT		NN				NN			
37	4	WHT		PP				PP			
38	4	WHT		QQ				QQ			
39	3	BLK		RR				RR			
40		WHT		SS				SS			
41	4	WHT	4 FT	P1-T	3/16	6	9,10	P2-T	3/16	6	9,10
SHIELD	5	BRAID	4 FT	P1-SHELL	—	—	11	P2-SHELL	—	—	11

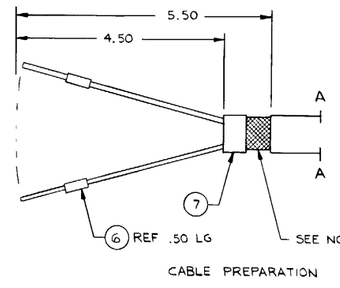
NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5 USING FIND NO. 10.
4. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
5. UNDERLINED CHARACTERS DENOTE LOWER CASE.
6. HOT STAMP FIND NO. 9 AS INDICATED WITH .12 HIGH BLACK CHARACTERS PER MIL-M-81531 USING FIND NO. 12. CHARACTERS TO BE CENTRALLY LOCATED.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. WRAP AS REQUIRED USING FIND NO. 4.
9. TIN ALL LEADS USING FIND NO. 10.
10. HOT STAMP FIND NO. 6 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 12. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
11. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
12. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:

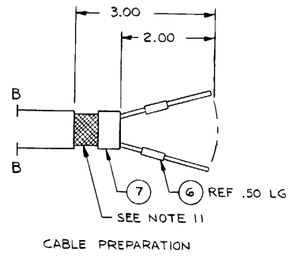
    12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.

    12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.





CABLE PREPARATION



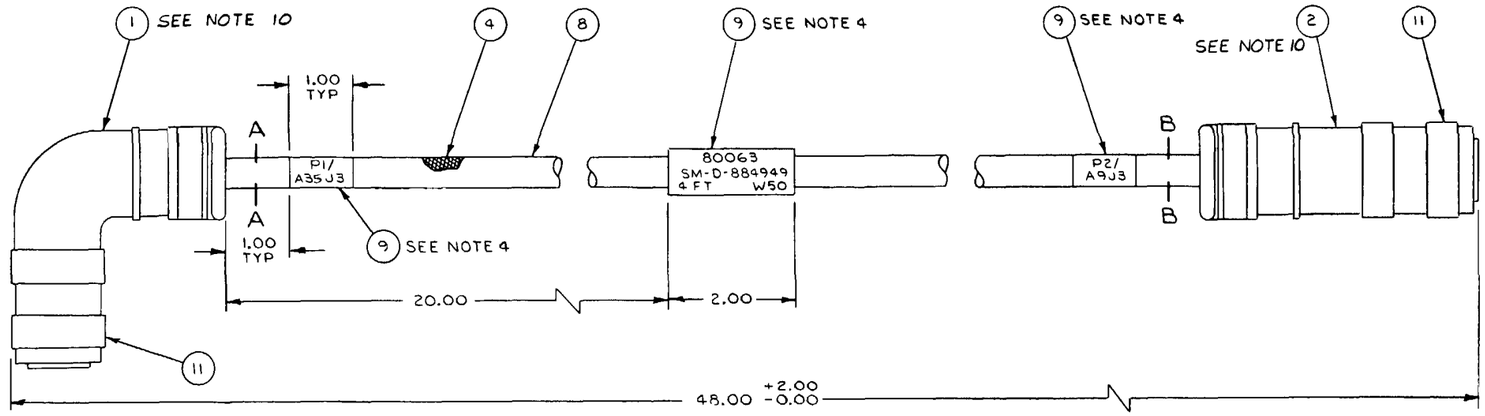
CABLE PREPARATION

EL2VD080

Figure FO-32. Cable assembly, W49.

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	10	WHT	4 FT	P1-A	3/16	5	5,9	P2-A	3/16	5	5,9
2		BLK		B				B			
3		WHT		C				C			
4		BLK		D				D			
5		WHT		E				E			
6		BLK		F				F			
7		WHT		G				G			
8		BLK		H				H			
9	10	WHT		J				J			
10		BLK		K				K			
11	3	WHT		L				L			
12				M				M			
13				N				N			
14				P				P			
15				R				R			
16				S				S			
17				T				T			
18				U				U			
19				V				V			
20				W				W			
21				X				X			
22				Y				Y			
23				Z				Z			
24				A				A			
25				B				B			
26				C				C			
27				D				D			
28				E				E			
29				F				F			
30	3			G				G			
31	10	WHT		H				H			
32		BLK		K				K			
33	3	WHT	4 FT	P1-T	3/16	5	5,9	P2-T	3/16	5	5,9
SHIELD	4	BRAID	4 FT	P1-SHELL	—	—	10	P2-SHELL	—	—	10

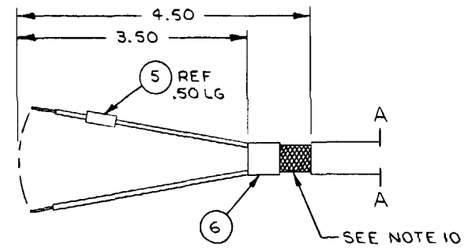


NOTES:

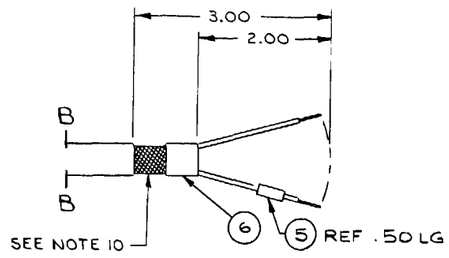
1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 9 AS INDICATED USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 5 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 12 CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 6.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 7.
9. TIN LEADS USING FIND NO. 7.
10. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:

    11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.

    11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 MIL-C-3885 SHALL BE EXCLUDED.



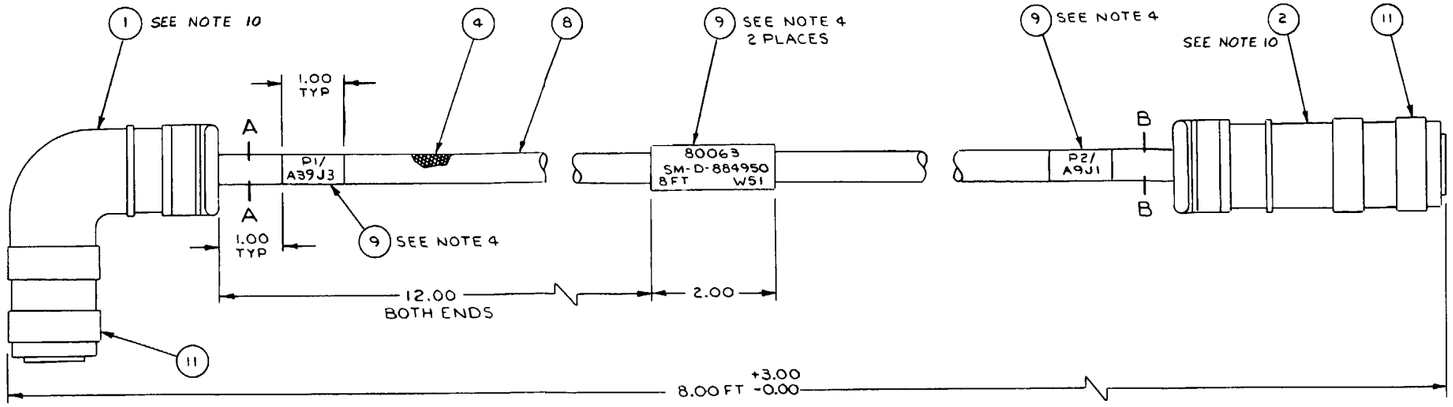
CABLE PREPARATION
P1 END

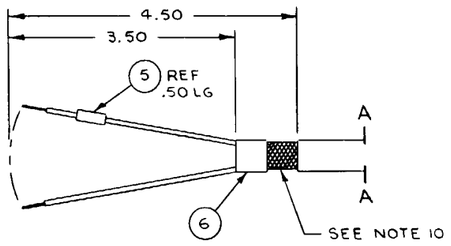


CABLE PREPARATION
P2 END

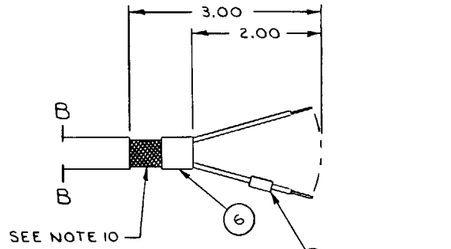
EL2VD081

Figure FO-33. Cable assembly, W50.





CABLE PREPARATION
P1 END



CABLE PREPARATION
P2 END

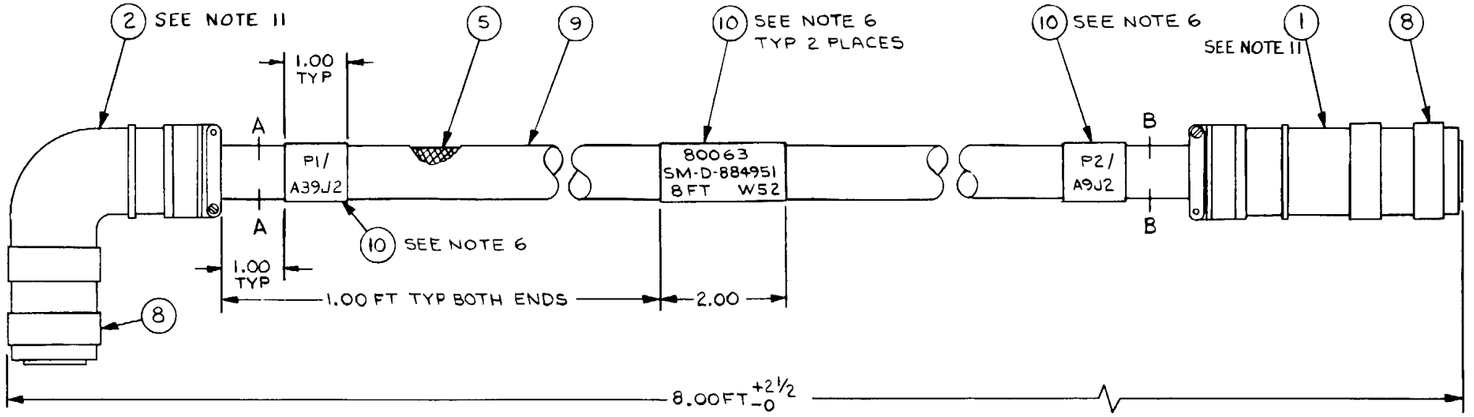
1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 9 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED
5. HOT STAMP FIND NO. 5 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 12. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 6.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 7.
9. TIN LEADS USING FIND NO. 7.
10. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

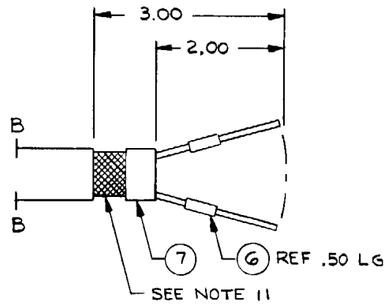
WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM: REF DES	FROM: STRIP LENGTH	FROM: ATTACH FIND NO	NOTE	TO: REF DES	TO: STRIP LENGTH	TO: ATTACH FIND NO	NOTE
1	10	WHT	8 FT	P1-A	3/16	5	5,9	P2-A	3/16	5	5,9
2		BLK		B				B			
3		WHT		C				C			
4		BLK		D				D			
5		WHT		E				E			
6		BLK		F				F			
7		WHT		G				G			
8		BLK		H				H			
9	10	WHT		J				J			
10		BLK		K				K			
11	3	WHT		L				L			
12				M				M			
13				N				N			
14				P				P			
15				R				R			
16				S				S			
17				T				T			
18				U				U			
19				V				V			
20				W				W			
21				X				X			
22				Y				Y			
23				Z				Z			
24				A				A			
25				B				B			
26				C				C			
27				D				D			
28				E				E			
29				F				F			
30	3			G				G			
31	10	WHT		H				H			
32		BLK		K				K			
33	3	WHT	8 FT	P1-T	3/16	5	5,9	P2-T	3/16	5	5,9
SHIELD	4	BRAID	8 FT	P1-SHELL	—	—	10	P2-SHELL	—	—	10

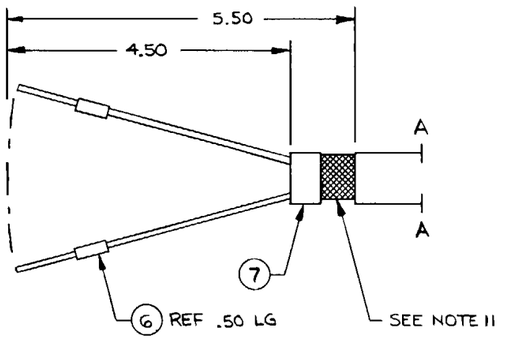
EL2VD082

Figure FO-34. Cable assembly, W51.





CABLE PREPARATION



CABLE PREPARATION

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5 USING FIND NO. 11.
4. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
5. UNDERLINED CHARACTERS DENOTE LOWER CASE.
6. HOT STAMP FIND NO. 10 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. WRAP AS REQUIRED USING FIND NO. 7.
9. TIN ALL LEADS USING FIND NO. 11.
10. HOT STAMP FIND NO. 6 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 12. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
11. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
12. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	3	WHT	8FT	P1-A	3/16	6	9,10	P2-A	3/16	6	9,10
2		BLK		B				B			
3	3	WHT		C				C			
4		BLK		D				D			
5	4	WHT		E				E			
6				F				F			
7				G				G			
8				H				H			
9				J				J			
10				K				K			
11				L				L			
12				M				M			
13	4	WHT		N				N			
14	3	WHT		P				P			
15		BLK		R				R			
16	4	WHT		S				S			
17				T				T			
18				U				U			
19				V				V			
20				W				W			
21	4	WHT		X				X			
22	3	WHT		Y				Y			
23		BLK		Z				Z			
24		WHT		A				A			
25		BLK		B				B			
26		WHT		C				C			
27		BLK		D				D			
28		WHT		E				E			
29		BLK		F				F			
30		WHT		G				G			
31		BLK		H				H			
32		WHT		J				J			
33		BLK		K				K			
34	3	WHT		M				M			
35		BLK		N				N			
36	4	WHT		P				P			
37	4	WHT		Q				Q			
38	4	WHT		R				R			
39	3	BLK		S				S			
40		WHT		T				T			
41	4	WHT	8FT	P1-T	3/16	6	9,10	P2-T	3/16	6	9,10
SHIELD	5	BRAID	8FT	P1-SHELL	—	—	11	P2-SHELL	—	—	11

EL2VD083

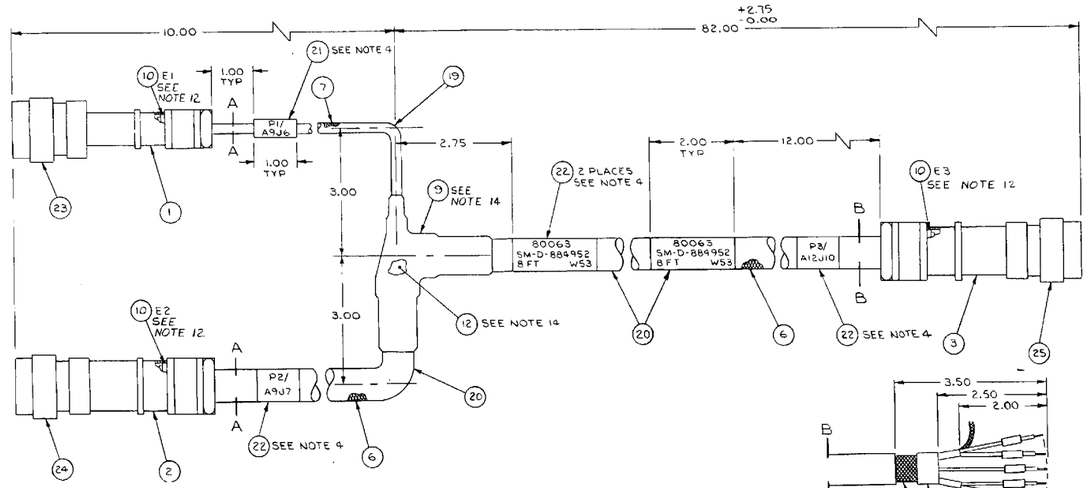
Figure FO-35. Cable assembly W52.

WIRE RUN LIST												
				FROM				TO				
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	18	WHT BLK	8FT	P1-M	3/16	8	5,9	P3-Q	3/16	8	5,9
2				P1-B	3/16	8	5,9	P3-B	3/16	8	5,9
1A				P1-M SHLD			12	E1			
1B				P3-Q SHLD			12	E3			
3	18	WHT BLK	8FT	P2-A	3/16	8	5,9	P3-A	3/16	8	5,9
4				P2-B	3/16	8	5,9	P3-B	3/16	8	5,9
3A				P2-A SHLD			12	E2			
3B				P3-A SHLD			12	E3			
5	18	WHT BLK	8FT	P2-C	3/16	8	5,9	P3-C	3/16	8	5,9
6				P2-D	3/16	8	5,9	P3-D	3/16	8	5,9
5A				P2-C SHLD			12	E2			
5B				P3-C SHLD			12	E3			
7	18	WHT BLK	8FT	P2-E	3/16	8	5,9	P3-E	3/16	8	5,9
8				P2-F	3/16	8	5,9	P3-F	3/16	8	5,9
7A				P2-E SHLD			12	E2			
7B				P3-E SHLD			12	E3			
9	5	WHT	8FT	P2-G	3/16	8	5,9	P3-G	3/16	8	5,9
10	5	↓	↑	H	↑	↑	↓	H	↓	↓	↑
11	5	↓	↑	J	↑	↑	↓	J	↓	↓	↑
12	18	WHT BLK	8FT	K	↑	↑	↓	K	↓	↓	↑
13				P2-L	3/16	8	5,9	P3-L	3/16	8	5,9
12A				P2-K SHLD			12	E2			
12B				P3-K SHLD			12	E3			
14	18	WHT BLK	8FT	P2-M	3/16	8	5,9	P3-M	3/16	8	5,9
15				P2-N	3/16	8	5,9	P3-N	3/16	8	5,9
14A				P2-M SHLD			12	E2			
14B				P3-M SHLD			12	E3			
16	18	WHT BLK	8FT	P2-P	3/16	8	5,9	P3-P	3/16	8	5,9
17				P2-R	3/16	8	5,9	P3-R	3/16	8	5,9
16A				P2-P SHLD			12	E2			
16B				P3-P SHLD			12	E3			
18	18	WHT BLK	8FT	P2-S	3/16	8	5,9	P3-S	3/16	8	5,9
19				P2-V	3/16	8	5,9	P3-V	3/16	8	5,9
18A				P2-S SHLD			12	E2			
18B				P3-S SHLD			12	E3			
20	18	WHT BLK	8FT	P2-T	3/16	8	5,9	P3-T	3/16	8	5,9
21				P2-U	3/16	8	5,9	P3-U	3/16	8	5,9
20A				P2-T SHLD			12	E2			
20B				P3-T SHLD			12	E3			
22	18	WHT BLK	8FT	P2-W	3/16	8	5,9	P3-W	3/16	8	5,9
23				P2-X	3/16	8	5,9	P3-X	3/16	8	5,9
22A				P2-W SHLD			12	E2			
22B				P3-W SHLD			12	E3			
24	18	WHT BLK	8FT	P2-Y	3/16	8	5,9	P3-Y	3/16	8	5,9
25				P2-Z	3/16	8	5,9	P3-Z	3/16	8	5,9
24A				P2-Y SHLD			12	E2			
24B				P3-Y SHLD			12	E3			
26	9	BLK	4.00	P3-N	3/16	8	5,9	E3	1/2		12
27	9	BLK	4.00	P3-V	3/16	8	5,9	E3	1/2		12

WIRE RUN LIST												
				FROM				TO				
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
28	18	WHT BLK	8FT	P2-A	3/16	8	5,9	P3-A	3/16	8	5,9
29				P2-B	3/16	8	5,9	P3-B	3/16	8	5,9
28A				P2-A SHLD			12	E2			
28B				P3-A SHLD			12	E3			
30	18	WHT BLK	8FT	P2-C	3/16	8	5,9	P3-C	3/16	8	5,9
31				P2-D	3/16	8	5,9	P3-D	3/16	8	5,9
30A				P2-C SHLD			12	E2			
30B				P3-C SHLD			12	E3			
32	9	BLK	4.00	P3-L	3/16	8	5,9	E3	1/2		12
33	18	WHT BLK	8FT	P2-E	3/16	8	5,9	P3-E	3/16	8	5,9
34				P2-F	3/16	8	5,9	P3-F	3/16	8	5,9
33A				P2-E SHLD			12	E2			
33B				P3-E SHLD			12	E3			
35	18	WHT BLK	8FT	P2-G	3/16	8	5,9	P3-G	3/16	8	5,9
36				P2-H	3/16	8	5,9	P3-H	3/16	8	5,9
35A				P2-G SHLD			12	E2			
35B				P3-G SHLD			12	E3			
37	18	WHT BLK	8FT	P2-K	3/16	8	5,9	P3-K	3/16	8	5,9
38				P2-M	3/16	8	5,9	P3-M	3/16	8	5,9
37A				P2-K SHLD			12	E2			
37B				P3-K SHLD			12	E3			
39	9	BLK	4.00	P3-P	3/16	8	5,9	E3	1/2		12
40	4	BLK	4.00	P1-M (2)	3/16	8	5,9	P1-A	3/16		12
SHIELD	7	BRAID	1FT	P1-SHELL			13	JUNCTION			14
SHIELD	6	BRAID	1FT	P2-SHELL			13	JUNCTION			14
SHIELD	6	BRAID	7FT	P3-SHELL			13	JUNCTION			14

NOTES:

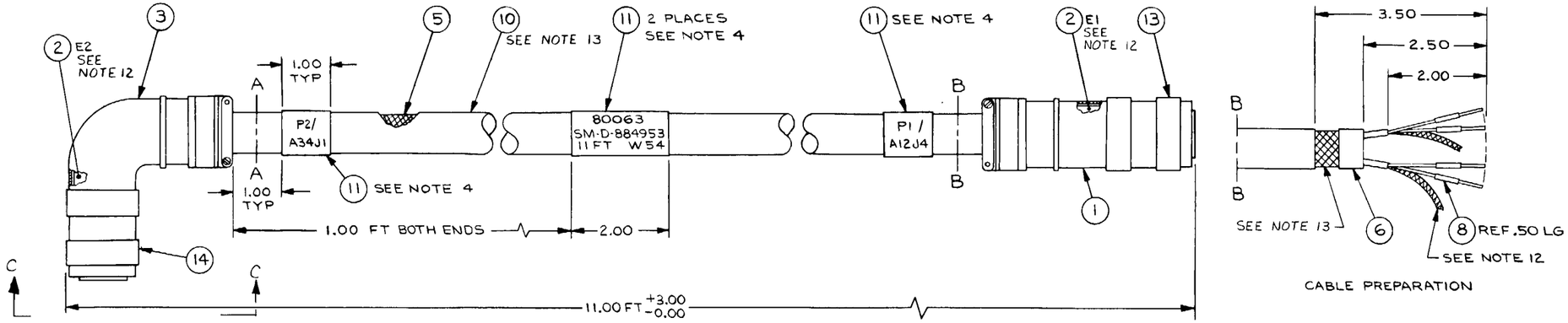
1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
4. HOT STAMP FIND NO. 21, 22 AS INDICATED USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 8 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NUMBER 26. CHARACTERS ARE TO BE BLACK .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 11.
7. HOT STAMPING TEMP TO BE 450o AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SEC.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 17.
9. TIN LEADS USING FIND NO. 17.



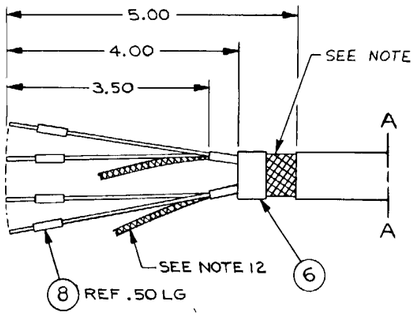
10. UNDERLINED CHARACTERS DENOTE LOWER CASE.
11. A SINGLE LETTER SUFFIX EX (1A, 1B, 2A, 2B ETC.) IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
13. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
14. ASSEMBLY PROCEDURE BRAID AT TRANSITION SHALL BE IN ACCORDANCE WITH SM-A-886077.
15. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 15.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 15.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

EL2VD084

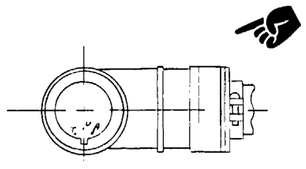
Figure FO-36. Cable assembly, W53



CABLE PREPARATION



CABLE PREPARATION



VIEW C–C

NOTES:

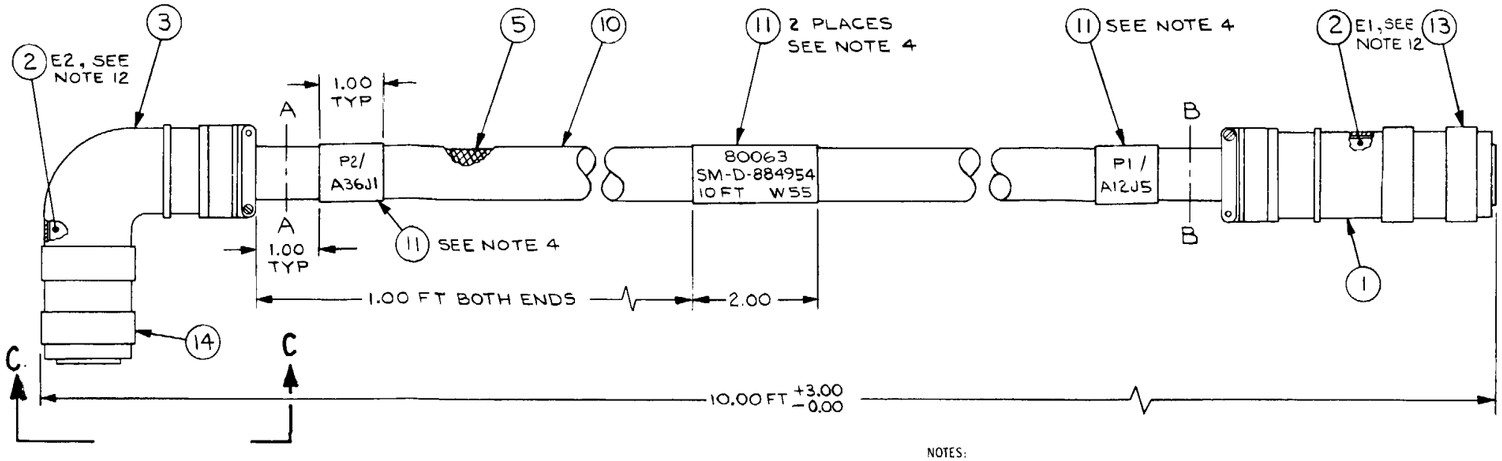
1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 11 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 8 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NUMBER 16. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 6.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SEC.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 15.
9. TIN LEADS USING FIND NO. 15.
10. A SINGLE LETTER SUFFIX EX. (1A. 1B. 2A. 2B. ETC...ETC,...) IN THE WIRE NO COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE AND/OR COAXIAL CABLE.
11. UNDERLINED CHARACTERS DENOTE LOWER CASE.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
13. OVERALL BRAID AND SLEEVING SHALL BE IN ACCORDANCE WITH SM-A-885736.
14. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 14.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 14.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

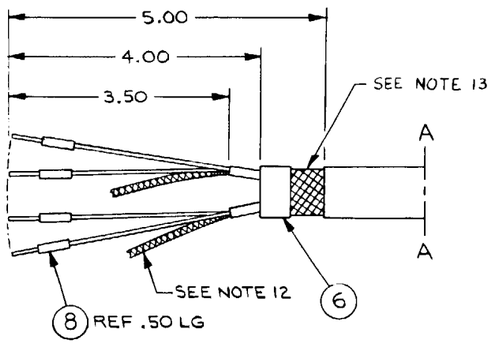
WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	NOTE
1	9	WHT	11FT	P2-F	3/16	8	5,9	P1-F	3/16	8	5,9
2	9	WHT	11FT	P2-G	3/16	8	5,9	P1-G	3/16	8	5,9
1A	—	—	—	P2-F SHLD	—	—	10,12	E2	—	—	—
1B	—	—	—	E1	—	—	10	P1-F SHLD	—	—	12
2A	—	—	—	P2-G SHLD	—	—	10,12	E2	—	—	—
2B	—	—	—	E1	—	—	—	P1-G SHLD	—	—	12
3	7	WHT	11FT	P2-H	3/16	8	5,9	P1-H	3/16	8	5,9
4		BLK		P2-J	3/16	8	5,9	P1-J	3/16	8	5,9
3A	—	—	—	P2-H SHLD	—	—		E2	—	—	—
3B	—	—	—	E1	—	—	10	P1-H SHLD	—	—	12
5	7	WHT	11FT	P2-E	3/16	8	5,9	P1-E	3/16	8	5,9
6		BLK		P2-D	3/16	8	5,9	P1-D	3/16	8	5,9
5A	—	—	—	P2-E SHLD	—	—	10,12	E2	—	—	—
5B	—	—	—	E1	—	—	10	P1-E SHLD	—	—	12
7	7	WHT	11FT	P2-C	3/16	8	5,9	P1-C	3/16	8	5,9
8		BLK		D2-B	3/16	8	5,9	P1-B	3/16	8	5,9
7A	—	—	—	P2-C SHLD	—	—	10,12	E2	—	—	—
7B	—	—	—	E1	—	—	10	P1-C SHLD	—	—	12
9	7	WHT	11FT	P2-U	3/16	8	5,9	P1-U	3/16	8	5,9
10		BLK		P2-V	3/16	8	5,9	P1-V	3/16	8	5,9
9A	—	—	—	P2-U SHLD	—	—	10,12	E2	—	—	—
9B	—	—	—	E1	—	—	10	P1-U SHLD	—	—	12
11	7	WHT	11FT	P2-W	3/16	8	5,9	P1-W	3/16	8	5,9
12		BLK		P2-X	3/16	8	5,9	P1-X	3/16	8	5,9
11A	—	—	—	P2-W SHLD	—	—	10,12	E2	—	—	—
11B	—	—	—	E1	—	—	10	P1-W SHLD	—	—	12
13	7	WHT	11FT	P2-A	3/16	8	5,9	P1-A	3/16	8	5,9
14		BLK		P2-B	3/16	8	5,9	P1-B	3/16	8	5,9
13A	—	—	—	P2-A SHLD	—	—	10,12	E2	—	—	—
13B	—	—	—	E1	—	—	10	P1-A SHLD	—	—	12
15	7	WHT	11FT	P2-M	3/16	8	5,9	P1-M	3/16	8	5,9
16		BLK		P2-L	3/16	8	5,9	P1-L	3/16	8	5,9
15A	—	—	—	P2-M SHLD	—	—	10,12	E2	—	—	—
15B	—	—	—	E1	—	—	10	P1-M SHLD	—	—	12
17	9	WHT	11FT	P2-A	3/16	8	5,9	P1-A	3/16	8	5,9
17A	—	—	—	P2-A SHLD	—	—	10,12	E2	—	—	—
17B	—	—	—	E1	—	—	10	P1-A SHLD	—	—	12
18	7	WHT	11FT	P2-C	3/16	8	5,9	P1-C	3/16	8	5,9
19		BLK		P2-D	3/16	8	5,9	P1-D	3/16	8	5,9
18A	—	—	—	P2-C SHLD	—	—	10,12	E2	—	—	—
18B	—	—	—	E1	—	—	10	P1-C SHLD	—	—	12
20	4	BLK	4.00	P2-E	3/16	8	5,9	E2	1/2	—	—
21	4	BLK	2.50	E1	1/2	—	—	P1-E	3/16	8	5,9
SHIELD	5	BRAID	—	P2-SHELL	—	—	12,13	P1-SHELL	—	—	12,13
22	7	WHT	11FT	P2-Y	3/16	8	5,9	P1-Y	3/16	8	5,9
23		BLK		P2-G	3/16	8	5,9	P1-G	3/16	8	5,9
22A	—	—	—	P2 Y SHLD	—	—	10,12	E2	—	—	—
22B	—	—	—	E1	—	—	10	P1-Y SHLD	—	—	12
24	7	WHT	11FT	P2-Z	3/16	8	5,9	P1-Z	3/16	8	
25		BLK		P2-H	3/16	8	5,9	P1-H	3/16	8	
24A	-	-	-	P2-Z SHLD	—	—	10,12	E2	—	—	—
24B	—	—	—	E1	—	—	10	P1-Z SHLD	—	—	12
26	17	WHT	11FT	P2-J	3/16	8	5,9	P1-J	3/16	8	5,9
27	17	WHT	11FT	P2-K	3/16	8	5,9	P1-K	3/16	8	5,9
28	17	WHT	11FT	P2-S	3/16	8	5,9	P1-S	3/16	8	5,9
29	17	WHT	11FT	P2-T	3/16	8	5,9	P1-T	3/16	8	5,9
30	17	WHT	11FT	P2-P	3/16	8	5,9	P1-P	3/16	8	5,9
31	17	WHT	11FT	P2-R	3/16	8	5,9	P1-R	3/16	8	5,9

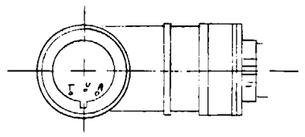
EL2VD085

Figure FO-37. Cable assembly, W54

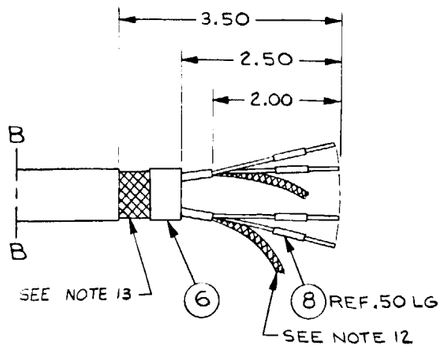




CABLE PREPARATION



VIEW C–C



CABLE PREPARATION

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 11 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 8 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 16. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 6.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 15.
9. TIN LEADS USING FIND NO. 15.
10. A SINGLE LETTER SUFFIX EX. (1A, 1B, 2A, 2B, ETC...) IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE AND/OR COAXIAL CABLE.
11. UNDERLINED CHARACTERS DENOTE LOWER CASE.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
13. OVERALL BRAID AND SLEEVING SHALL BE IN ACCORDANCE WITH SM-A-885736.
14. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 14.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 14.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

WIRE RUN LIST

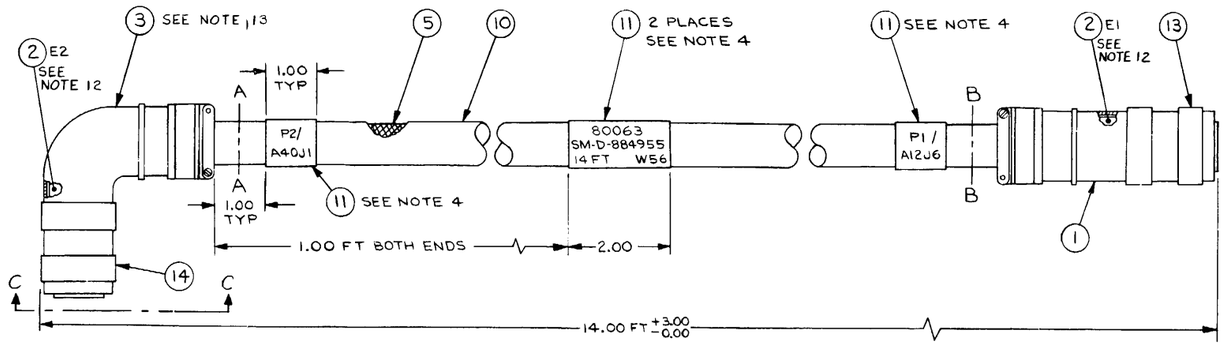
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	NOTE
1	9	WHT	10FT	P2-E	3/16	8	5,9	P1-E	3/16	8	5,9
2	9	WHT	10FT	P2-G	3/16	8	5,9	P1-G	3/16	8	5,9
1A	—	—	—	P2-E SHLD	—	—	10	E2	—	—	—
1B	—	—	—	E1	—	—	10	P1-E SHLD	—	—	—
2A	—	—	—	P2-G SHLD	—	—	10,12	E2	—	—	—
2B	—	—	—	E1	—	—	—	P1-G SHLD	—	—	12
3	7	WHT	10FT	P2-H	3/16	8	5,9	P1-H	3/16	8	5,9
4		BLK		P2-J	3/16	8	5,9	P1-J	3/16	8	5,9
3A	—	—	—	P2-H SHLD	—	—	10	E2	—	—	—
3B	—	—	—	E1	—	—	10	P1-H SHLD	—	—	—
5	7	WHT	10FT	P2-E	3/16	8	5,9	P1-E	3/16	8	5,9
6		BLK		P2-D	3/16	8	5,9	P1-D	3/16	8	5,9
5A	—	—	—	P2-E SHLD	—	—	10	E2	—	—	—
5B	—	—	—	E1	—	—	10	P1-E SHLD	—	—	—
7	7	WHT	10FT	P2-C	3/16	8	5,9	P1-C	3/16	8	5,9
8		BLK		P2-B	3/16	8	5,9	P1-B	3/16	8	5,9
7A	—	—	—	P2-C SHLD	—	—	10	E2	—	—	—
7B	—	—	—	E1	—	—	10	P1-C SHLD	—	—	—
9	7	WHT	10FT	P2-U	3/16	8	5,9	P1-U	3/16	8	5,9
10		BLK		P2-V	3/16	8	5,9	P1-V	3/16	8	5,9
9A	—	—	—	P2-U SHLD	—	—	10	E2	—	—	—
9B	—	—	—	E1	—	—	10	P1-U SHLD	—	—	—
11	7	WHT	10FT	P2-W	3/16	8	5,9	P1-W	3/16	8	5,9
12		BLK		P2-X	3/16	8	5,9	P1-X	3/16	8	5,9
11A	—	—	—	P2-W SHLD	—	—	10	E2	—	—	—
11B	—	—	—	E1	—	—	10	P1-W SHLD	—	—	—
13	7	WHT	10FT	P2-A	3/16	8	5,9	P1-A	3/16	8	5,9
14		BLK		P2-B	3/16	8	5,9	P1-B	3/16	8	5,9
13A	—	—	—	P2-A SHLD	—	—	10	E2	—	—	—
13B	—	—	—	E1	—	—	10	P1-A SHLD	—	—	—
15	7	WHT	10FT	P2-M	3/16	8	5,9	P1-M	3/16	8	5,9
16		BLK		P2-L	3/16	8	5,9	P1-L	3/16	8	5,9
15A	—	—	—	P2-M SHLD	—	—	10	E2	—	—	—
15B	—	—	—	E1	—	—	10	P1-M SHLD	—	—	—
17	9	WHT	10FT	P2-A	3/16	8	5,9	P1-A	3/16	8	5,9
17A	—	—	—	P2-A SHLD	—	—	10	E2	—	—	—
17B	—	—	—	E1	—	—	10	P1-A SHLD	—	—	—
19	7	WHT	10FT	P2-C	3/16	8	5,9	P1-C	3/16	8	5,9
20		BLK		P2-D	3/16	8	5,9	P1-D	3/16	8	5,9
18A	—	—	—	P2-C SHLD	—	—	10	E2	—	—	—
18B	—	—	—	E1	—	—	10	P1-C SHLD	—	—	—
20	4	BLK	4.00	P2-E	3/16	8	5,9	E2	1/2	—	—
21	4	BLK	2.50	E1	1/2	—	—	P1-E	3/16	8	5,9
SHIELD	5	BRAID	—	P2-SHELL	—	—	12	P1-SHELL	—	—	12
22	7	WHT	10FT	P2-Y	3/16	8	5,9	P1-Y	3/16	8	5,9
23		BLK		P2-G	3/16	8	5,9	P1-G	3/16	8	5,9
22A	—	—	—	P2-Y SHLD	—	—	10,12	E2	—	—	—
22B	—	—	—	E1	—	—	10	P1-Y SHLD	—	—	12
24	7	WHT	10FT	P2-Z	3/16	8	5,9	P1-Z	3/16	8	5,9
25		BLK		P2-H	3/16	8	5,9	P1-H	3/16	8	5,9
24A	—	—	—	P2-Z SHLD	—	—	10,12	E2	—	—	—
24B	—	—	—	E1	—	—	10	P1-Z SHLD	—	—	12
26	17	WHT	10FT	P2-J	3/16	8	5,9	P1-J	3/16	8	5,9
27	17	WHT	10FT	P2-K	3/16	8	5,9	P1-K	3/16	8	5,9
28	17	WHT	10FT	P2-S	3/16	8	5,9	P1-S	3/16	8	5,9
29	17	WHT	10FT	P2-T	3/16	8	5,9	P1-T	3/16	8	5,9
30	17	WHT	10FT	P2-P	3/16	8	5,9	P1-P	3/16	8	5,9
31	17	WHT	10FT	P2-R	3/16	8	5,9	P1-R	3/16	8	5,9

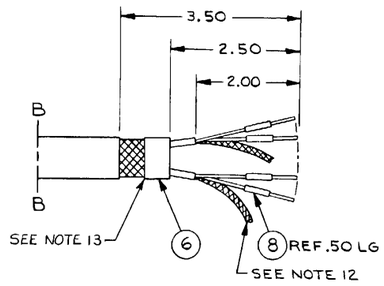
EL2VD086

Figure FO-38. Cable assembly, W55

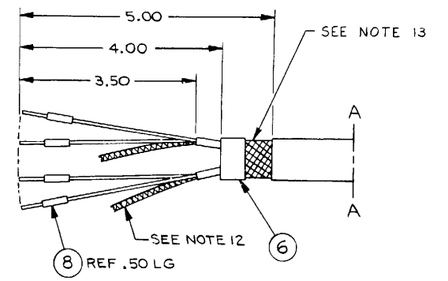
WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	9	WHT	14 FT	P2-E	3/16	8	5,9	P1-E	3/16	8	5,9
2	9	WHT	14 FT	P2-G	3/16	8	5,9	P1-G	3/16	8	5,9
1A	—	—	—	P2-E SHLD	—	—	10	E2	—	—	—
1B	—	—	—	E1	—	—	10	P1-E SHLD	—	—	—
2A	—	—	—	P2-G SHLD	—	—	10,12	E2	—	—	—
2B	—	—	—	E1	—	—	10	P1-G SHLD	—	—	12
3	7	WHT	14 FT	P2-H	3/16	8	5,9	P1-H	3/16	8	5,9
4		BLK		P2-J	3/16	8	5,9	P1-J	3/16	8	5,9
3A	—	—	—	P2-H SHLD	—	—	10	E2	—	—	—
3B	—	—	—	E1	—	—	10	P1-H SHLD	—	—	—
5	7	WHT	14 FT	P2-E	3/16	8	5,9	P1-E	3/16	8	5,9
6		BLK		P2-D	3/16	8	5,9	P1-D	3/16	8	5,9
5A	—	—	—	P2-E SHLD	—	—	10	E2	—	—	—
5B	—	—	—	E1	—	—	10	P1-E SHLD	—	—	—
7	7	WHT	14 FT	P2-C	3/16	8	5,9	P1-C	3/16	8	5,9
8		BLK		P2-B	3/16	8	5,9	P1-B	3/16	8	5,9
7A	—	—	—	P2 C SHLD	—	—	10	E2	—	—	—
7B	—	—	—	E1	—	—	10	P1-C SHLD	—	—	—
9	7	WHT	14 FT	P2-U	3/16	8	5,9	P1-U	3/16	8	5,9
10		BLK		P2-V	3/16	8	5,9	P1-V	3/16	8	5,9
9A	—	—	—	P2-U SHLD	—	—	10	E2	—	—	—
9B	—	—	—	E1	—	—	10	P1-U SHLD	—	—	—
11	7	WHT	14 FT	P2-W	3/16	8	5,9	P1-W	3/16	8	5,9
12		BLK		P2-X	3/16	8	5,9	P1-X	3/16	8	5,9
11A	—	—	—	P2-W SHLD	—	—	10	E2	—	—	—
11B	—	—	—	E1	—	—	10	P1-W SHLD	—	—	—
13	7	WHT	14 FT	P2-A	3/16	8	5,9	P1-A	3/16	8	5,9
14		BLK		P2-B	3/16	8	5,9	P1-B	3/16	8	5,9
13A	—	—	—	P2-A SHLD	—	—	10	E2	—	—	—
13B	—	—	—	E1	—	—	10	P1-A SHLD	—	—	—
15	7	WHT	14 FT	P2-M	3/16	8	5,9	P1-M	3/16	8	5,9
16		BLK		P2-L	3/16	8	5,9	P1-L	3/16	8	5,9
15A	—	—	—	P2-M SHLD	—	—	10	E2	—	—	—
15B	—	—	—	E1	—	—	10	P1-M SHLD	—	—	—
17	9	WHT	14 FT	P2-A	3/16	8	5,9	P1-A	3/16	8	5,9
17A	—	—	—	P2-A SHLD	—	—	10	E2	—	—	—
17B	—	—	—	E1	—	—	10	P1-A SHLD	—	—	—
19	7	WHT	14 FT	P2-C	3/16	8	5,9	P1-C	3/16	8	5,9
19		BLK		P2-D	3/16	8	5,9	P1-D	3/16	8	5,9
18A	—	—	—	P2-C SHLD	—	—	10	E2	—	—	—
18B	—	—	—	E1	—	—	10	P1-C SHLD	—	—	—
20	4	BLK	4.00	P2 E	3/16	8	5,9	E2	1/2	—	—
21	4	BLK	2.50	E1	1/2	—	—	P1-E	3/16	8	5,9
SHIELD	5	BRAID	—	P2-SHELL	—	—	12	P1-SHELL	—	—	12
22	7	WHT	14FT	P2-Y	3/16	8	5,9	P1-Y	3/16	8	5,9
23		BLK		P2-G	3/16	8	5,9	P1-G	3/16	8	5,9
22A	—	—	—	P2-Y SHLD	—	—	10,12	E2	—	—	—
22B	—	—	—	E1	—	—	10	P1-Y SHLD	—	—	12
24	7	WHT	14 FT	P2-Z	3/16	8	5,9	P1-Z	3/16	8	5,9
25		BLK		P2-H	3/16	8	5,9	P1-H	3/16	8	5,9
24A	—	—	—	P2-Z SHLD	—	—	10,12	E2	—	—	—
24B	—	—	—	E1	—	—	10	P1-Z SHLD	—	—	12
26	17	WHT	14 FT	P2-J	3/16	8	5,9	P1-J	3/16	8	5,9
27	17	WHT	14 FT	P2-K	3/16	8	5,9	P1-K	3/16	8	5,9
28	17	WHT	14 FT	P2-S	3/16	8	5,9	P1-S	3/16	8	5,9
29	17	WHT	14 FT	P2-T	3/16	8	5,9	P1-T	3/16	8	5,9
30	17	WHT	14 FT	P2-P	3/16	8	5,9	P1-P	3/16	8	5,9
31	17	WHT	14 FT	P2-R	3/16	8	5,9	P1-R	3/16	8	5,9





CABLE PREPARATION



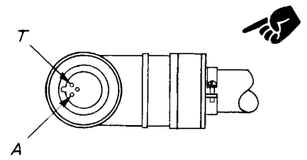
CABLE PREPARATION

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OF SUBASSEMBLY DESIGNATION(S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 11 AS INDICATED USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 8 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NUMBER 16. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 6.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SEC.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 15.
9. TIN LEADS USING FIND NO. 15.
10. A SINGLE LETTER SUFFIX EX. (1A, 1B, 2A, 2B, ETC...) IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE AND/OR COAXIAL CABLE.
11. UNDERLINED CHARACTERS DENOTE LOWER CASE.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
13. OVERALL BRAID AND SLEEVING SHALL BE IN ACCORDANCE WITH SM-A-885736.
14. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE.

    14.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.

    14.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND A SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.



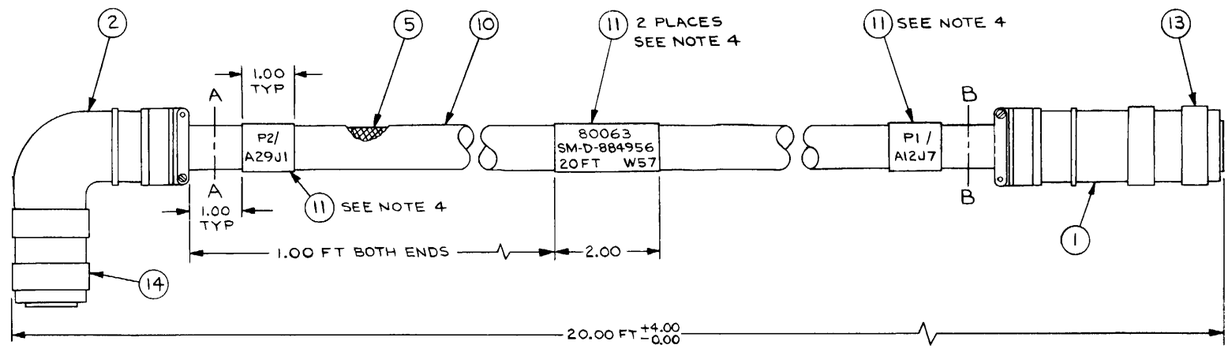
VIEW C-C

EL2VD087

Figure FO-39. Cable assembly, W56

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	9	WHT	20 FT	P2-F	3/16	7	5,9	P1-F	3/16	7	5,9
2		BLK		P2-G	3/16	7	5,9	P1-G	3/16	7	5,9
1A	—	—	—	P2-F SHLD	—	—	10	E2	—	—	—
1B	—	—	—	E1	—	—	10	P1-F SHLD	—	—	—
3	9	WHT	20 FT	P2-H	3/16	7	5,9	P1-H	3/16	7	5,9
4		BLK		P2-J	3/16	7	5,9	P1-J	3/16	7	5,9
3A	—	—	—	P2-H SHLD	—	—	10	E2	—	—	—
3B	—	—	—	E1	—	—	10	P1-H SHLD	—	—	—
5	9	WHT	20 FT	P2-E	3/16	7	5,9	P1-E	3/16	7	5,9
6		BLK		P2-D	3/16	7	5,9	P1-D	3/16	7	5,9
5A	—	—	—	P2-E SHLD	—	—	10	E2	—	—	—
5B	—	—	—	E1	—	—	10	P1-E SHLD	—	—	—
7	9	WHT	20 FT	P2-C	3/16	7	5,9	P1-C	3/16	7	5,9
8		BLK		P2-B	3/16	7	5,9	P1-B	3/16	7	5,9
7A	—	—	—	P2-C SHLD	—	—	10	E2	—	—	—
7B	—	—	—	E1	—	—	10	P1-C SHLD	—	—	—
9	9	WHT	20 FT	P2-U	3/16	7	5,9	P1-U	3/16	7	5,9
10		BLK		P2-V	3/16	7	5,9	P1-V	3/16	7	5,9
9A	—	—	—	P2-U SHLD	—	—	10	E2	—	—	—
9B	—	—	—	E1	—	—	10	P1-U SHLD	—	—	—
11	9	WHT	20 FT	P2-W	3/16	7	5,9	P1-W	3/16	7	5,9
12		BLK		P2-X	3/16	7	5,9	P1-X	3/16	7	5,9
11A	—	—	—	P2-W SHLD	—	—	10	E2	—	—	—
11B	—	—	—	E1	—	—	10	P1-W SHLD	—	—	—
13	9	WHT	20 FT	P2-A	3/16	7	5,9	P1-A	3/16	7	5,9
14		BLK		P2-B	3/16	7	5,9	P1-B	3/16	7	5,9
13A	—	—	—	P2-A SHLD	—	—	10	E2	—	—	—
13B	—	—	—	E1	—	—	10	P1-A SHLD	—	—	—
15	9	WHT	20 FT	P2-M	3/16	7	5,9	P1-M	3/16	7	5,9
16		BLK		P2-L	3/16	7	5,9	P1-L	3/16	7	5,9
15A	—	—	—	P2-M SHLD	—	—	10	E2	—	—	—
15B	—	—	—	E1	—	—	10	P1-M SHLD	—	—	—
17	8	WHT	FT	P2-A	3/16	7	5,9	P1-A	3/16	7	5,9
17A	—	—	—	P2-A SHLD	—	—	10	E2	—	—	—
17B	—	—	—	E1	—	—	10	P1-A SHLD	—	—	—
18	9	WHT	20FT	P2-C	3/16	7	5,9	P1-C	3/16	7	5,9
19		BLK		P2-D	3/16	7	5,9	P1-D	3/16	7	5,9
18A	—	—	—	P2-C SHLD	—	—	10	E2	—	—	—
18B	—	—	—	E1	—	—	10	P1-C SHLD	—	—	—
20	4	BLK	4.00	P2-E	3/16	7	5,9	E2	1/2	—	—
21	4	BLK	2.50	E1	1/2	—	—	P1-E	3/16	7	5,9
SHIELD	5	BRAID	20 FT	P2-SHELL	—	—	12	P1-SHELL	—	—	12

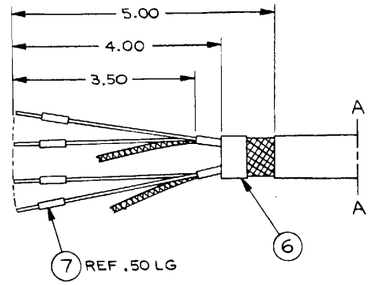


NOTES:

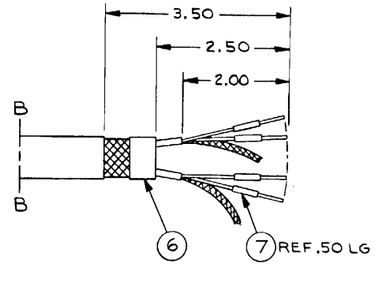
1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 11 AS INDICATED USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 7 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NUMBER 19. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 6.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SEC.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 15.
9. TIN LEADS USING FIND NO. 15.
10. A SINGLE LETTER SUFFIX EX. (1A, 1B, 2A, 2B, ETC...ETC...) IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE AND/OR COAXIAL CABLE.
11. UNDERLINED CHARACTERS DENOTE LOWER CASE.
13. OVERALL BRAID AND SLEEVING SHALL BE IN ACCORDANCE WITH SM-A-885736.
14. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:

    14.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.

    14.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.



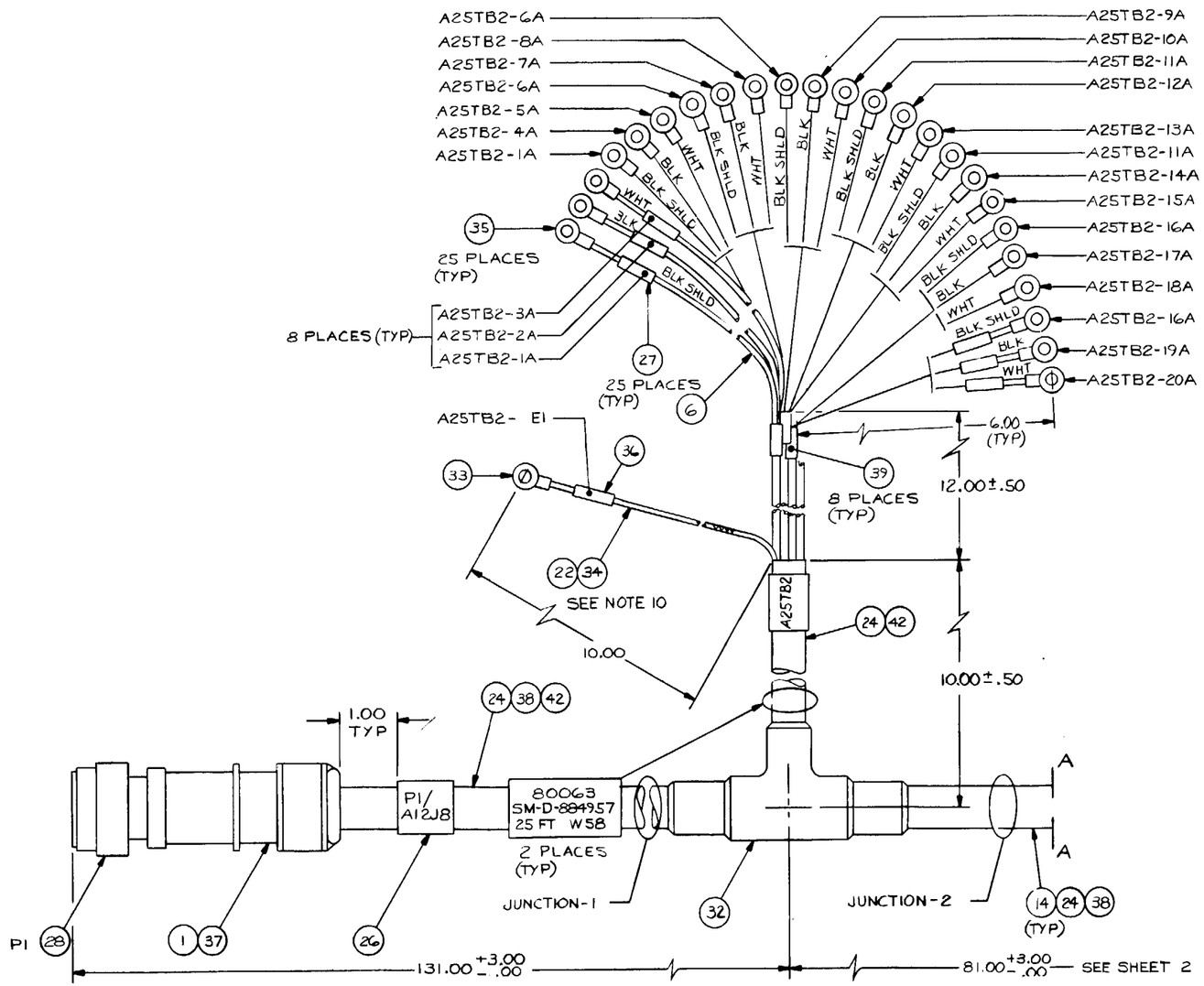
CABLE PREPARATION



CABLE PREPARATION

EL2VD088

Figure FO-40. Cable assembly, W57



WIRE RUN LIST												
				FROM				TO				
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	21	BLK	157.00	P1-A	3/16	8	5,9	A25TB2-2A	3/16	27	16
2		WHT		P1-B	↑	8	5,9	A25TB2-3A	↑	27	16
1A	6	BLK	3.00	P1-A-SHLD		39	10	P1-W-SHLD		39	10
3	6	BLK	3.00	A25TB2-2A-SHLD		39	10	A25TB2-1A		27	10
4	21	BLK	221.00	P1-W		8	5,9	P2-D		8	5,9
5		WHT		P1-X		8	5,9	P2-E		8	5,9
4A	6	BLK	3.00	P1-W-SHLD		39	10	P1-C-SHLD		39	10
6	5	WHT	221.00	P1-C		8	5,9	P2-G		8	5,9
7	6	BLK	3.00	P1-C-SHLD		39	10	P1-G		8	5,9
8	7	WHT	221.00	P1-S		8	5,9	P2-H		8	5,9
9	21	BLK	157.00	P1-D		8	5,9	A25TB2-7A		27	16
10		WHT		P1-E		8	5,9	A25TB2-8A		27	16
11	6	BLK	3.00	P1-J		8	5,9	P1-D-SHLD		39	10
9A	6	BLK	3.00	P1-D-SHLD		39	10	P1-Z-SHLD		39	10
12	6	BLK	3.00	A25TB2-7A-SHLD		39	10	A25TB2-6A		27	16
13	21	BLK	251.00	P1-Z		8	5,9	P3-D		8	5,9
14		WHT		P1-Z		8	5,9	P3-E		8	5,9
13A	6	BLK	3.00	P1-Z-SHLD		39	10	P1-F-SHLD		39	10
15	5	WHT	251.00	P1-F		8	5,9	P3-G		8	5,9
16	7	WHT	251.00	P1-S		8	5,9	P3-H		8	5,9
17	21	BLK	157.00	P1-K		8	5,9	A25TB2-12A		27	16
18		WHT		P1-L		8	5,9	A25TB2-13A		27	16
17A	6	BLK	3.00	P1-K-SHLD		39	10	P1-S-SHLD		39	10
19	6	BLK	3.00	A25TB2-12A-SHLD		39	10	A25TB2-11A		27	16
20	21	BLK	269.00	P1-T		8	5,9	P4-D		8	5,9
21		WHT		P1-S		8	5,9	P4-E		8	5,9
20A	6	BLK	3.00	P1-S-SHLD		39	10	P1-M-SHLD		39	10
22	5	WHT	269.00	P1-M		8	5,9	P4-G		8	5,9
23	7	WHT	269.00	P1-W		8	5,9	P4-H		8	5,9
24	6	BLK	3.00	P1-M-SHLD		39	10	P1-N		8	5,9
25	21	BLK	157.00	P1-S		8	5,9	A25TB2-17A		27	16
26		WHT		P1-T		8	5,9	A25TB2-18A		27	16
27	6	BLK	3.00	P1-S-SHLD		39	10	P1-R		8	5,9
25A	6	BLK	3.00	P1-S-SHLD		39	10	P1-M-SHLD		39	10
28	21	BLK	299.00	P1-M		8	5,9	P5-D		8	5,9
29		WHT		P1-N		8	5,9	P5-E		8	5,9
28A	6	BLK	3.00	P1-M-SHLD		39	10	P1-U-SHLD		39	10
30	5	WHT	299.00	P1-U		8	5,9	P5-G		8	5,9
31	7	WHT	299.00	P1-AA		8	5,9	P5-H		8	5,9
32	21	WHT	118.00	P2-A		8	5,9	A25TB2-5A		27	16
33		BLK		P2-B		8	5,9	A25TB2-4A		27	16
34	6		3.00	A25TB2-4A-SHLD		39	10	A25TB2-1A		27	16
35	6		3.00	P2-A-SHLD		39	10	P2-C		8	5,9
4C	6		3.00	P2-D-SHLD		39	10	P2-A-SHLD		39	10
4D	6	BLK	3.00	P2-D-SHLD		39	10	P2-G-SHLD		39	10
36	21	WHT	148.00	P3-A		8	5,9	A25TB2-10A		27	16
37		BLK		P3-B		8	5,9	A25TB2-9A		27	16
38	6	BLK	3.00	A25TB2-9A-SHLD	↓	39	10	A25TB2-6A	↓	27	16
39	6	BLK	3.00	P3-A-SHLD	3/16	39	10	P3-C	3/16	8	5,9

EL2VD130

Figure FO-41. Cable assembly, W58 (Sheet 1 of 2)

WIRE RUN LIS												
				FROM				TO				
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
13B	6	BLK	3.00	P3-A-SHLD	3/16	39	10	P3-D-SHLD	3/16	39	10
13C	6	BLK	3.00	P3-D-SHLD	↑	39	10	P3-G-SHLD	↑	39	10
40	21	BLK	168.00	P4-A		8	5,9	A25TB2-15A		27	16
41		WHT		P4-B		8	5,9	A25TB2-14A		27	16
42	6	BLK	3.00	A25TB2-14A-SHLD		39	10	A25TB2-11A		27	16
43	6	BLK	3.00	P4-A-SHLD		39	10	P4-C		8	5,9
20B	6	BLK	3.00	P4-A-SHLD		39	10	P4-D-SHLD		39	10
20C	6	BLK	3.00	P4-D-SHLD		39	10	P4-G-SHLD		39	10
44	21	BLK	198.00	P5-A		8	5,9	A25TB2-20A		27	16
45		WHT		P5-B		8	5,9	A25TB2-19A		27	16
46	6	BLK	3.00	A25TB2-19A-SHLD		39	10	A25TB2-16A		27	16
47	6	BLK	3.00	P5-A-SHLD		39	10	P5-C		8	5,9
28B	6	BLK	3.00	P5-A-SHLD	↓	39	10	P5-D-SHLD	↓	39	10
28C	6	BLK	3.00	P5-D-SHLD	3/16	39	10	P5-G-SHLD	3/16	39	10
SHLD	38	BRAID	120.00	P1-SHELL	—	—	10, 13	JUNCTION-1	—	—	13
SHLD	42	BRAID	24.00	JUNCTION-1	—	—	10, ↑	A25TB2	—	—	10
SHLD	42	BRAID	24.00	JUNCTION-1	—	—	10,	JUNCTION-2	—	—	10,13
SHLD	42	BRAID	24.00	JUNCTION-2	—	—	10,	A25TB2	—	—	10
SHLD	38	BRAID	6.00	↓	—	—	10,	——	—	—	—
SHLD	14	BRAID	84.00		—	—	10,	P2-SHELL	—	—	13
SHLD	14	BRAID	120.00		—	—	10,	P3-SHELL	—	—	13
SHLD	14	BRAID	138.00	↓	—	—	10, ↓	P4-SHELL	—	—	13
SHLD	14	BRAID	174.00	JUNCTION-2	—	—	10,13	P5-SHELL	—	—	13
SHLD	34	BRAID	12.00	A25TB2	—	—	10	E1	—	23,36	10,16
48	6	BLK	3.00	A25TB2-17A-SHLD	—	39	10	A25TB2-16A	3/16	27	16

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
4. HOT STAMP FIND NO. 26 AS INDICATED ON SHEET 2 WITH .12 HIGH BLACK CHARACTERS PER MIL-M-81531 USING ITEM 41.
5. HOT STAMP FIND NO. 8 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 30, CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 20.
9. TIN LEADS USING FIND NO. 20.
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
11. A SINGLE LETTER SUFFIX EX (1A, 1B, 2A, 2B, ETC.) IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE AND/OR COAXIAL CABLE.
13. ASSEMBLY PROCEDURE OF BRAID AT TRANSITION SHALL BE IN ACCORDANCE WITH SM-A-886077.
15. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 15.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 15.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.
16. HOT STAMP FIND NO. 27 & 36 PER MIL-M-81531 WITH REF DES USING FIND NO. 30, CHARACTERS ARE TO BE BLACK .06 HIGH AND CENTRALLY LOCATED.

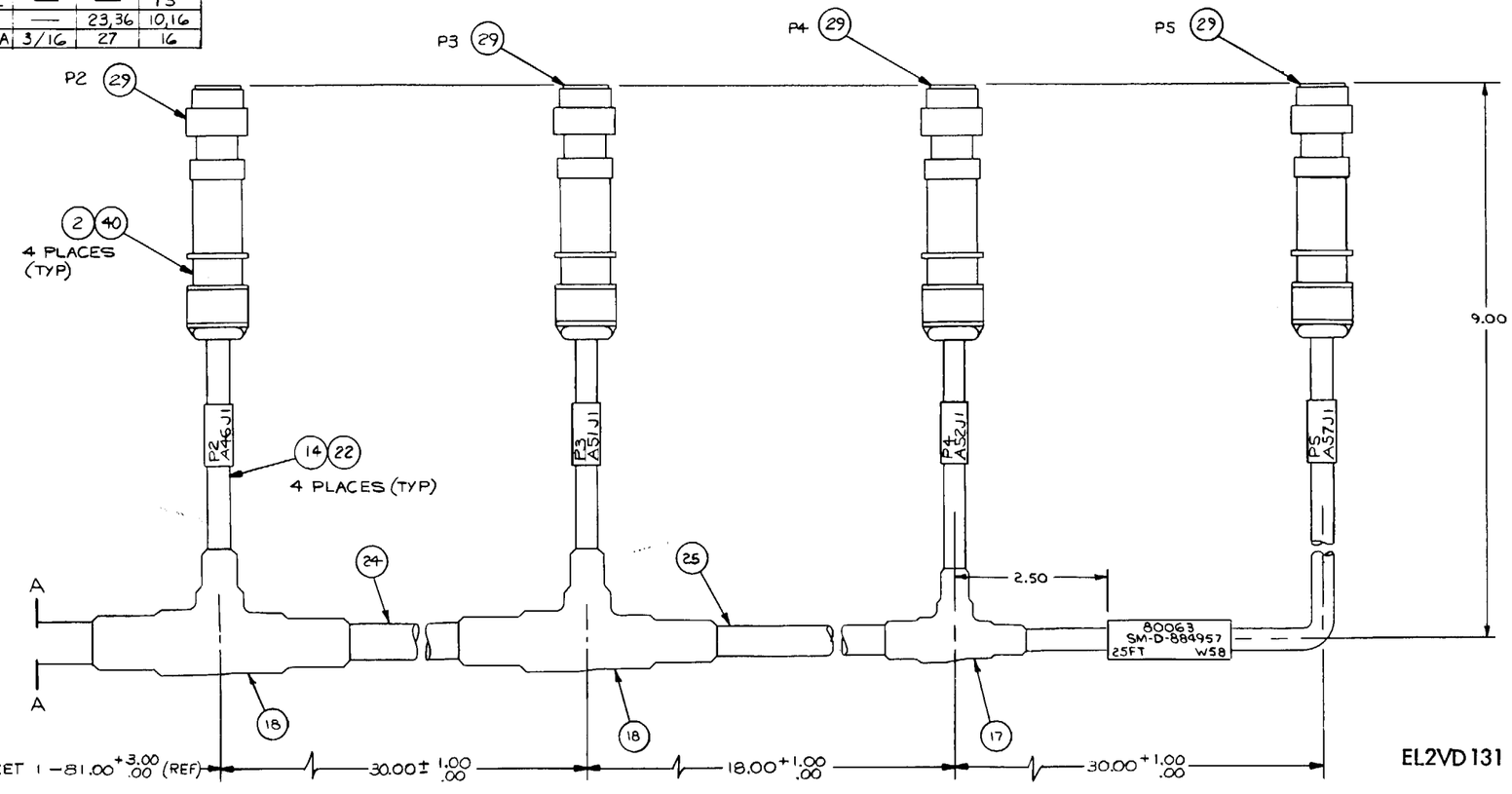


Figure FO-41. Cable assembly, W58 (Sheet 2 of 2).

WIRE RUN LIST												
				FROM				TO				
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	4	WHT	15 FT	A25TB3-2	3/16	8,9	5,7	XDS9-1	3/16	8,9	5,7
2		BLK		A25TB3-3	3/16		5,7	XDS9-2	3/16		5,7
1A	1	BLK	8 IN	A25TB3-2-SHLD	3/16		10	A25TB3-6	—		10
1B	1	BLK	3 IN	A25TB3-2-SHLD	3/16		10	A25TB3-4-SHLD	3/16		10
3	4	WHT	15 FT	A25TB3-4	3/16		5,7	XDS10-1	3/16		5,7
4		BLK		A25TB3-5	3/16		5,7	XDS10-2	3/16		5,7
3A	1	BLK	3 IN	A25TB3-4-SHLD	—	8,9	10	A25TB3-10-SHLD	3/16	8,9	10
5	4	WHT	18 FT	A25TB3-10	3/16	8,9	5,7	XDS11-1	3/16	8,9	5,7
6		BLK		A25TB3-11	3/16		5,7	XDS11-2	3/16		5,7
5A	1	BLK	3 IN	A25TB3-10-SHLD	—		10	A25TB3-12-SHLD	3/16		10
7	4	WHT	18 FT	A25TB3-12	3/16		5,7	XDS12-1	3/16		5,7
8		BLK		A25TB3-13	3/16		5,7	XDS12-2	3/16		5,7
7A	1	BLK	3 IN	A25TB3-12-SHLD	—		10	A25TB3-18-SHLD	3/16		10
9	4	WHT	21 FT	A25TB3-18	3/16		5,7	XDS13-1	3/16		5,7
10		BLK		A25TB3-19	3/16		5,7	XDS13-2	3/16		5,7
9A	1	BLK	3 IN	A25TB3-18-SHLD	—		10	A25TB3-20-SHLD	3/16		10
11	4	WHT	21 FT	A25TB3-20	3/16		5,7	XDS14-1	3/16		5,7
12		BLK		A25TB3-21	3/16	8,9	5,7	XDS14-2	3/16	8,9	5,7

NOTES:

1. WORKMANSHIP SHALL BE I ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 6 AS INDICATED USING FIND NO. 2 WITH .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 8 PER MIL-M-81531 WITH REF DES USING FIND NO. 3. CHARACTERS ARE TO BE BLACK, .12 HIGH AND CENTRALLY LOCATED.
6. A SINGLE LETTER SUFFIX EX. (1A, 1B, 2A, 2B, ETC.) IN WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE.
7. TIN LEADS USING FIND NO. 10.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 10.
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
11. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
12. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

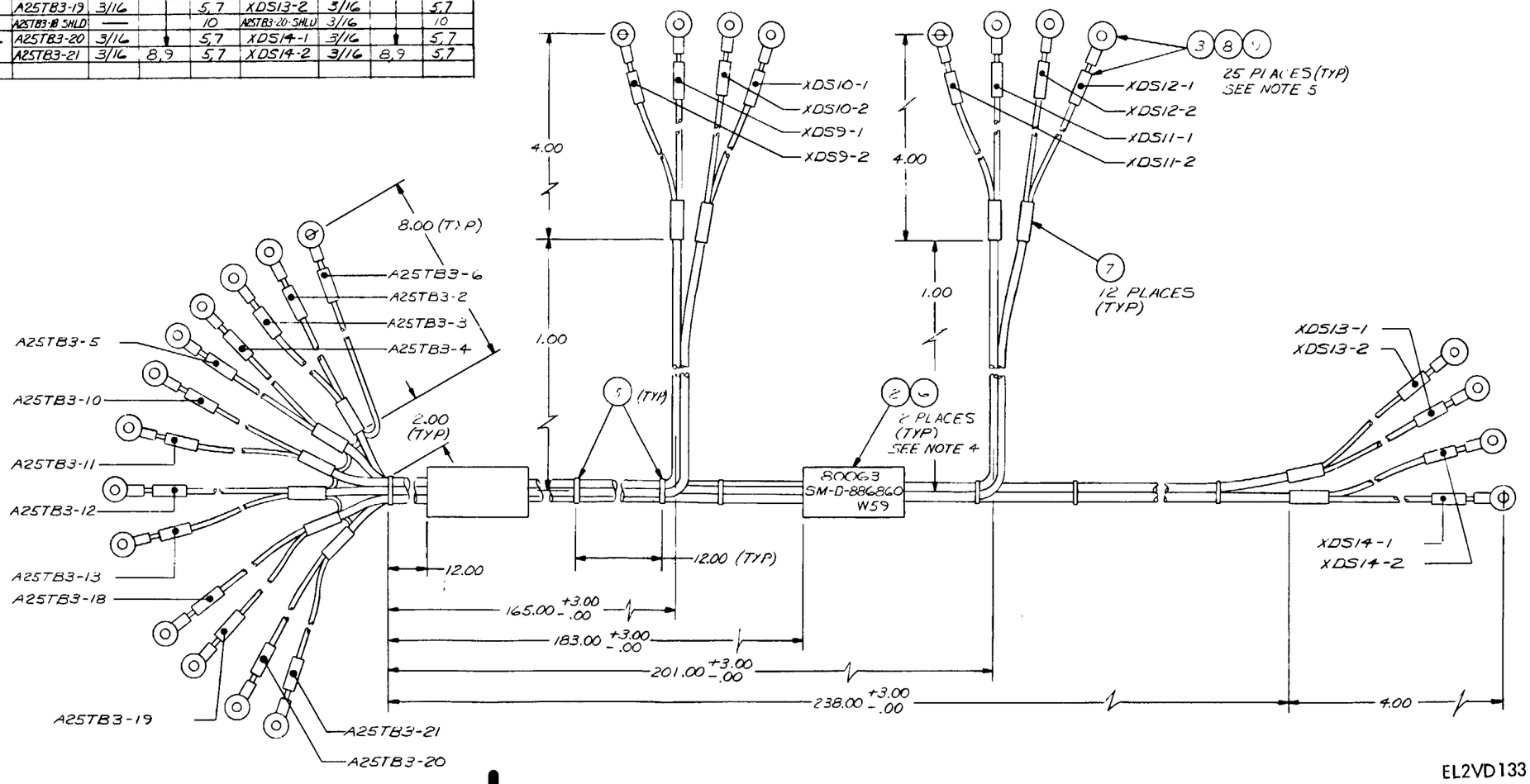


Figure FO-42. Cable assembly, W59.

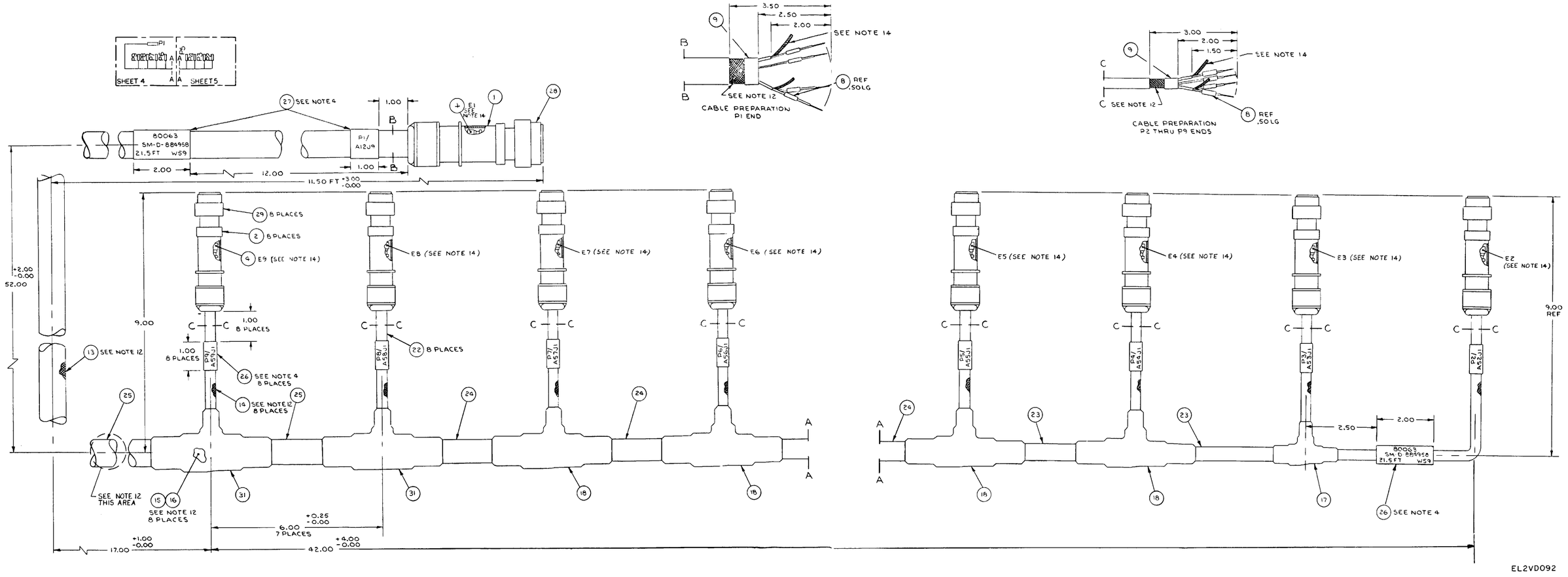
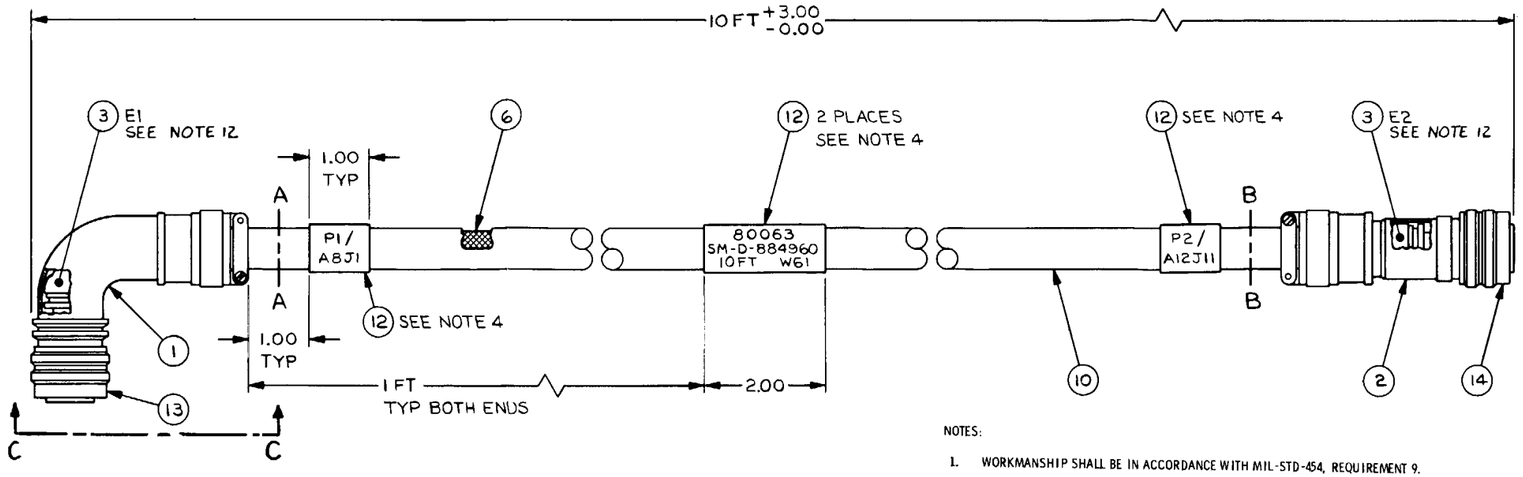
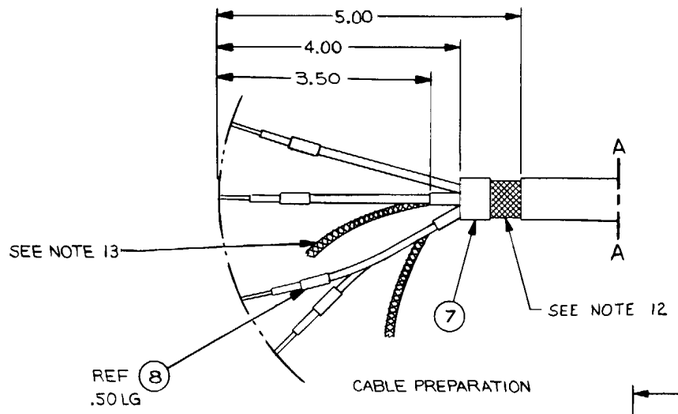
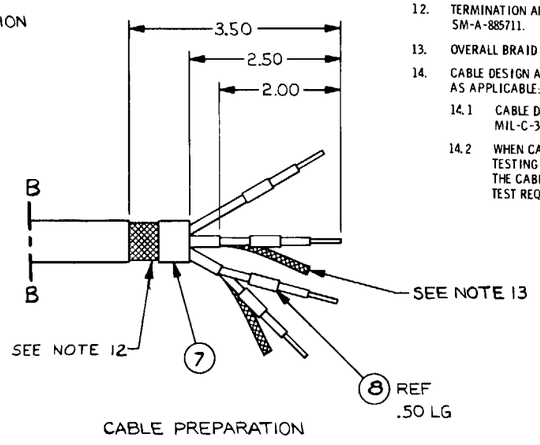


Figure FO-42. Cable assembly, W59 (Sheet 2 of 2)

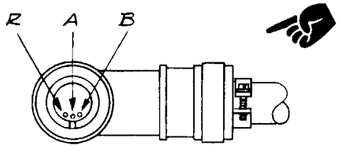




CABLE PREPARATION



CABLE PREPARATION



NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 12 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 8 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NUMBER 16. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 7.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SEC.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 15.
9. TIN LEADS USING FIND NO. 15.
10. A SINGLE LETTER SUFFIX IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE.
11. UNDERLINED CHARACTERS DENOTE LOWER CASE.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
13. OVERALL BRAID AND SLEEVING SHALL BE IN ACCORDANCE WITH SM-A-885736.
14. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 14.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 14.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	9	WHT	10 FT	P1 - A	3/16	8	5,9	P2 - A	3/16	8	5,9
2		BLK		P1 - B	3/16	8	5,9	P2 - B	3/16	8	5,9
1A	—	—	—	P1-A SHLD	—	—	10	E1	—	—	—
1B	—	—	—	E2	—	—	10	P2-A SHLD	—	—	—
3	9	WHT	10 FT	P1 - C	3/16	8	5,9	P2 - C	3/16	8	5,9
4		BLK		P1 - D	3/16	8	5,9	P2 - D	3/16	8	5,9
3A	—	—	—	P1-C SHLD	—	—	10	E1	—	—	—
3B	—	—	—	E2	—	—	10	P2-C SHLD	—	—	—
5	9	WHT	10 FT	P1 - E	3/16	8	5,9	P2 - E	3/16	8	5,9
6		BLK		P1 - F	3/16	8	5,9	P2 - F	3/16	8	5,9
5A	—	—	—	P1-E SHLD	—	—	10	E1	—	—	—
5B	—	—	—	E2	—	—	10	P2-E SHLD	—	—	—
7	9	WHT	10 FT	P1 - G	3/16	8	5,9	P2 - G	3/16	8	5,9
8		BLK		P1 - H	3/16	8	5,9	P2 - H	3/16	8	5,9
7A	—	—	—	P1-G SHLD	—	—	10	E1	—	—	—
7B	—	—	—	E2	—	—	10	P2-G SHLD	—	—	—
9	9	WHT	10 FT	P1 - J	3/16	8	5,9	P2 - J	3/16	8	5,9
10		BLK		P1 - K	3/16	8	5,9	P2 - K	3/16	8	5,9
9A	—	—	—	P1-J SHLD	—	—	10	E1	—	—	—
9B	—	—	—	E2	—	—	10	P2-J SHLD	—	—	—
11	9	WHT	10 FT	P1 - L	3/16	8	5,9	P2 - L	3/16	8	5,9
12		BLK		P1 - M	3/16	8	5,9	P2 - M	3/16	8	5,9
11A	—	—	—	P1-L SHLD	—	—	10	E1	—	—	—
11B	—	—	—	E2	—	—	10	P2-L SHLD	—	—	—
13	9	WHT	10 FT	P1 - T	3/16	8	5,9	P2 - T	3/16	8	5,9
14		BLK		P1 - U	3/16	8	5,9	P2 - U	3/16	8	5,9
13A	—	—	—	P1-T SHLD	—	—	10	E1	—	—	—
13B	—	—	—	E2	—	—	10	P2-T SHLD	—	—	—
15	9	WHT	10 FT	P1 - V	3/16	8	5,9	P2 - V	3/16	8	5,9
16		BLK		P1 - W	3/16	8	5,9	P2 - W	3/16	8	5,9
15A	—	—	—	P1-V SHLD	—	—	10	E1	—	—	—
15B	—	—	—	E2	—	—	10	P2-V SHLD	—	—	—
17	9	WHT	10 FT	P1 - X	3/16	8	5,9	P2 - X	3/16	8	5,9
18		BLK		P1 - Y	3/16	8	5,9	P2 - Y	3/16	8	5,9
17A	—	—	—	P1-X SHLD	—	—	10	E1	—	—	—
17B	—	—	—	E2	—	—	10	P2-X SHLD	—	—	—
19	4	WHT	10 FT	P1 - Z	3/16	8	5,9	P2 - Z	3/16	8	5,9
19A	—	—	—	P1-Z SHLD	—	—	10	E1	—	—	—
19B	—	—	—	E2	—	—	10	P2-Z SHLD	—	—	—
20	5	BLK	10 FT	P1 - A	3/16	8	5,9	P2 - A	3/16	8	5,9
21	4	WHT	10 FT	P1 - B	3/16	8	5,9	P2 - B	3/16	8	5,9
21A	—	—	—	P1-B SHLD	—	—	10	E1	—	—	—
21B	—	—	—	E2	—	—	10	P2-B SHLD	—	—	—
22	4	WHT	10 FT	P1 - C	3/16	8	5,9	P2 - C	3/16	8	5,9
22A	—	—	—	P1-C SHLD	—	—	10	E1	—	—	—
22B	—	—	—	E2	—	—	10	P2-C SHLD	—	—	—
23	5	BLK	4.50	P1 - S	3/16	8	5,9	E1	1/2	—	—
24	5	BLK	2.50	E2	1/2	—	—	P2-S	3/16	8	5,9
SHIELD	6	BRAID	—	P1 - SHELL	—	—	12	P2 - SHELL	—	—	12
25	9	WHT	10FT	P1 - P	3/16	8	5,9	P2 - P	3/16	8	5,9
26		BLK		P1 - R	3/16	8	5,9	P2 - R	3/16	8	5,9
25A	—	—	—	P1 PSHLD	—	—	10	E1	—	—	—

EL2VD093

Figure FO-43. Cable assembly, W61

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	9	WHT	9 FT	P1 - J	3/16	8	5,9	P2 - A	3/16	8	5,9
2		BLK		P1 - K	3/16	8	5,9	P2 - B	3/16	8	5,9
1A	—	—	—	P1 - J SHLD	—	—	10	E1	—	—	—
1B	—	—	—	E2	—	—	10	P2-A SHLD	—	—	—
3	9	WHT	9 FT	P1 - L	3/16	8	5,9	P2 - C	3/16	8	5,9
4		BLK		P1 - M	3/16	8	5,9	P2 - D	3/16	8	5,9
3A	—	—	—	P1 - L SHLD	—	—	10	E1	—	—	—
3B	—	—	—	E2	—	—	10	P2-C SHLD	—	—	—
5	9	WHT	9 FT	P1 - E	3/16	8	5,9	P2 - E	3/16	8	5,9
6		BLK		P1 - F	3/16	8	5,9	P2 - F	3/16	8	5,9
5A	—	—	—	P1 - E SHLD	—	—	10	E1	—	—	—
5B	—	—	—	E2	—	—	10	P2-E SHLD	—	—	—
7	9	WHT	9 FT	P1 - G	3/16	8	5,9	P2 - G	3/16	8	5,9
8		BLK		P1 - H	3/16	8	5,9	P2 - H	3/16	8	5,9
7A	—	—	—	P1 - SHLD	—	—	10	E1	—	—	—
7B	—	—	—	E2	—	—	10	P2-G SHLD	—	—	—
9	9	WHT	9 FT	P1 - A	3/16	8	5,9	P2 - J	3/16	8	5,9
10		BLK		P1 - B	3/16	8	5,9	P2 - K	3/16	8	5,9
9A	—	—	—	P1 - A SHLD	—	—	10	E1	—	—	—
9B	—	—	—	E2	—	—	10	P2-J SHLD	—	—	—
11	9	WHT	9 FT	P1 - C	3/16	8	5,9	P2-L	3/16	8	5,9
12		BLK		P1 - D	3/16	8	5,9	P2-M	3/16	8	5,9
11A	—	—	—	P1-C SHLD	—	—	10	E1	—	—	—
11B	—	—	—	E2	—	—	10	P2-L SHLD	—	—	—
13	9	WHT	9 FT	P1 - X	3/16	8	5,9	P2-T	3/16	8	5,9
14		BLK		P1 - Y	3/16	8	5,9	P2-U	3/16	8	5,9
13A	—	—	—	P1 - SHLD	—	—	10	E1	—	—	—
13B	—	—	—	E2	—	—	10	P2-T SHLD	—	—	—
15	9	WHT	9 FT	P1 - V	3/16	8	5,9	P2-V	3/16	8	5,9
16		BLK		P1 - W	3/16	8	5,9	P2 - W	3/16	8	5,9
15A	—	—	—	P1 - V SHLD	—	—	10	E1	—	—	—
15B	—	—	—	E2	—	—	10	P2-V SHLD	—	—	—
17	9	WHT	9 FT	P1 - T	3/16	8	5,9	P2 - X	3/16	8	5,9
18		BLK		P1 - U	3/16	8	5,9	P2 - Y	3/16	8	5,9
17A	—	—	—	P1 - T SHLD	—	—	10	E1	—	—	—
17B	—	—	—	E2	—	—	10	P2-X SHLD	—	—	—
19	4	WHT	9 FT	P1 - Z	3/16	8	5,9	P2 - Z	3/16	8	5,9
19A	—	—	—	P1 - Z SHLD	—	—	10	E1	—	—	—
19B	—	—	—	E2	—	—	10	P2-Z SHLD	—	—	—
20	5	BLK	9 FT	P1 - A	3/16	8	5,9	P2 - A	3/16	8	5,9
21	4	WHT	9 FT	P1 - Z	3/16	8	5,9	P2 - B	3/16	8	5,9
21A	—	—	—	P1 - Z SHLD	—	—	10	E1	—	—	—
21B	—	—	—	E2	—	—	10	P2-B SHLD	—	—	—
22	4	WHT	9 FT	P1 - S	3/16	8	5,9	P2 - S	3/16	8	5,9
22A	—	—	—	P1 - S SHLD	—	—	10	E1	—	—	—
22B	—	—	—	E2	—	—	10	P2-S SHLD	—	—	—
23	5	BLK	4.50	P1 - S	3/16	8	5,9	E1	1/2	—	—
24	5	BLK	2.50	E2	1/2	—	—	P2 - S	3/16	8	5,9
SHIELD	6	BRAID	—	P1 - SHELL	—	—	12	P2 - SHELL	—	—	12
25	9	WHT	10 FT	P1 - P	3/16	8	5,9	P2 - P	3/16	8	5,9
26		BLK		P1 - R	3/16	8	5,9	P2 - R	3/16	8	5,9
25A	—	—	—	P1 - P SHLD	—	—	10	E1	—	—	—

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
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4. HOT STAMP FIND NO. 12 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 8 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 16, CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 7.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 15.
9. TIN LEADS USING FIND NO. 15.
10. A SINGLE LETTER SUFFIX IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OR A SHIELDED WIRE.
11. UNDERLINED CHARACTERS DENOTE LOWER CASE.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
13. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 13.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 13.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.
14. OVERALL BRAID AND SLEEVING SHALL BE IN ACCORDANCE WITH SM-A-885736.

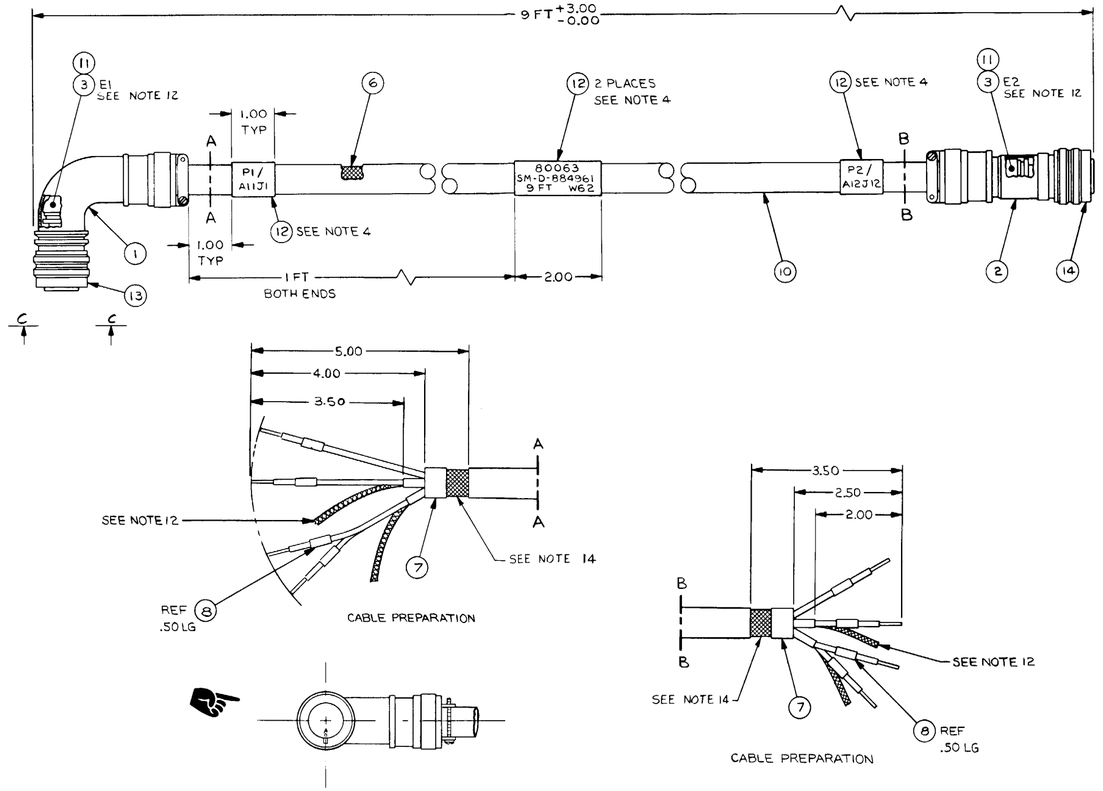
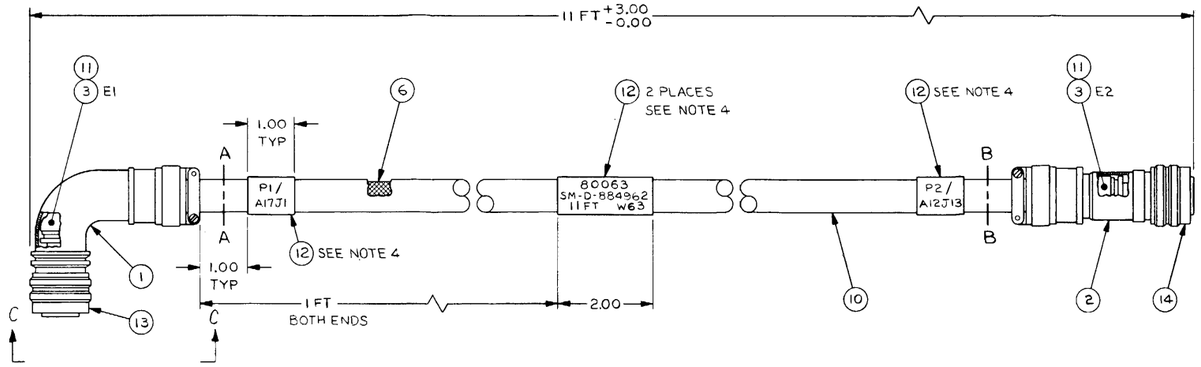
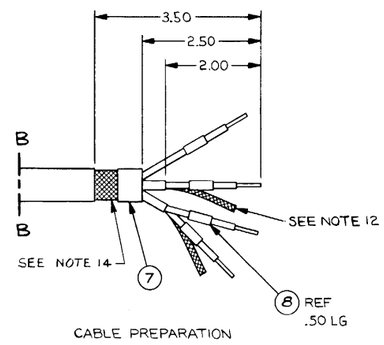


Figure FO-44. Cable assembly, W62.

WIRE RUN LIST												
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	NOTE
1	9	WHT	11 FT	P1 - E	3/16	8	5,9	P2 - A	3/16	8	5,9
2		BLK		P1 - F	3/16	8	5,9	P2 - B	3/16	8	5,9
1A	—	—	—	P1-E SHLD	—	—	10	E1	—	—	—
1B	—	—	—	E2	—	—	10	P2-A SHLD	—	—	—
3	9	WHT	11 FT	P1 - G	3/16	8	5,9	P2 - C	3/16	8	5,9
4		BLK		P1 - H	3/16	8	5,9	P2 - D	3/16	8	5,9
3A	—	—	—	P1-G SHLD	—	—	10	E1	—	—	—
3B	—	—	—	E2	—	—	10	P2-C SHLD	—	—	—
5	9	WHT	11 FT	P1 - A	3/16	8	5,9	P2 - E	3/16	8	5,9
6		BLK		P1 - B	3/16	8	5,9	P2 - F	3/16	8	5,9
5A	—	—	—	P1-A SHLD	—	—	10	E1	—	—	—
5B	—	—	—	E2	—	—	10	P2-E SHLD	—	—	—
7	9	WHT	11 FT	P1 - C	3/16	8	5,9	P2 - G	3/16	8	5,9
8		BLK		P1 - D	3/16	8	5,9	P2 - H	3/16	8	5,9
7A	—	—	—	P1-C SHLD	—	—	10	E1	—	—	—
7B	—	—	—	E2	—	—	10	P2-G SHLD	—	—	—
9	9	WHT	11 FT	P1 - J	3/16	8	5,9	P2-J	3/16	8	5,9
10		BLK		P1 - K	3/16	8	5,9	P2-K	3/16	8	5,9
9A	—	—	—	P1-J SHLD	—	—	10	E1	—	—	—
9B	—	—	—	E2	—	—	10	P2-J SHLD	—	—	—
11	9	WHT	11 FT	P1-L	3/16	8	5,9	P2-L	3/16	8	5,9
12		BLK		P1 - M	3/16	8	5,9	P2-M	3/16	8	5,9
11A	—	—	—	P1-L SHLD	—	—	10	E1	—	—	—
11B	—	—	—	E2	—	—	10	P2-L SHLD	—	—	—
13	9	WHT	11 FT	P1 - V	3/16	8	5,9	P2 - T	3/16	8	5,9
14		BLK		P1 - W	3/16	8	5,9	P2-U	3/16	8	5,9
13A	—	—	—	P1-V SHLD	—	—	10	E1	—	—	—
13B	—	—	—	E2	—	—	10	P2-T SHLD	—	—	—
15	9	WHT	11 FT	P1 - T	3/16	8	5,9	P2 - V	3/16	8	5,9
16		BLK		P1 - U	3/16	8	5,9	P2- W	3/16	8	5,9
15A	—	—	—	P1-T SHLD	—	—	10	E1	—	—	—
15B	—	—	—	E2	—	—	10	P2-V SHLD	—	—	—
17	9	WHT	11 FT	P1 - X	3/16	8	5,9	P2 - X	3/16	8	5,9
18		BLK		P1 - Y	3/16	8	5,9	P2-Y	3/16	8	5,9
17A	—	—	—	P1-X SHLD	—	—	10	E1	—	—	—
17B	—	—	—	E2	—	—	10	P2-X SHLD	—	—	—
19	4	WHT	11 FT	P1 - Z	3/16	8	5,9	P2-Z	3/16	8	5,9
19A	—	—	—	P1-Z SHLD	—	—	10	E1	—	—	—
19B	—	—	—	E2	—	—	10	P2-Z SHLD	—	—	—
20	5	BLK	11 FT	P1 - A	3/16	8	5,9	P2-A	3/16	8	5,9
21	4	WHT	11 FT	P1 - C	3/16	8	5,9	P2 - B	3/16	8	5,9
21A	—	—	—	P1-C SHLD	—	—	10	E1	—	—	—
21B	—	—	—	E2	—	—	10	P2-B SHLD	—	—	—
22	4	WHT	11 FT	P1 - B	3/16	8	5,9	P2 - C	3/16	8	5,9
22A	—	—	—	P1-B SHLD	—	—	10	E1	—	—	—
22B	—	—	—	E2	—	—	10	P2-C SHLD	—	—	—
23	5	BLK	4.50	P1 - S	3/16	8	5,9	E1	1/2	—	—
24	5	BLK	2.50	E2	1/2	—	—	P2-S	3/16	8	5,9
SHIELD	6	BRAID		P1-SHELL	—	—	12	P2-SHELL	—	—	12
25	9	WHT	10 FT	P1 - P	3/16	8	5,9	P2 - P	3/16	8	5,9
26		BLK		P1 - R	3/16	8	5,9	P2 - R	3/16	8	5,9
25A	—	—	—	P1-P SHLD	—	—	10	E1	—	—	—

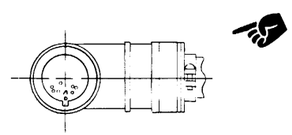




CABLE PREPARATION

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION).
3. "VENDOR ITE SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 12 AS INDICATED USING .12 HIGH BLACK CHARACTERS FOR MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 8 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 16. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 7.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 15.
9. TIN LEADS USING FIND NO. 15.
10. A SINGLE LETTER SUFFIX IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE.
11. UNDERLINED CHARACTERS DENOTE LOWER CASE.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
13. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 13.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 13.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVIDES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.
14. OVERALL BRAID AND SLEEVING SHALL BE IN ACCORDANCE WITH SM-A-885736.



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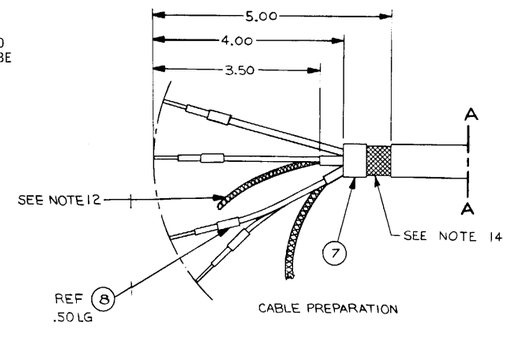


CABLE PREPARATION

EL2VD095

Figure FO-45. Cable assembly, W63

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	17	WHT	11 FT	P4-A	3/16	22,28	5	P3-J	3/16	9	5,10
2		BLK	11 FT	P4-B	3/16	22,28	5	P3-K	3/16	9	5,10
1A		—	—	P4-A SHLD	—	—	—	E4	—	—	—
1B		—	—	P3-J SHLD	—	—	—	E3	—	—	—
3	17	WHT	11 FT	P4-C	3/16	22,28	5	P3-L	3/16	9	5,10
4		BLK	11 FT	P4-D	3/16	22,28	5	P3-M	3/16	9	5,10
3A		—	—	P4-C SHLD	—	—	—	E4	—	—	—
3B		—	—	P3-L SHLD	—	—	—	E3	—	—	—
5	6	WHT	11 FT	P4-E	3/16	22,28	5	P3-Z	3/16	9	5,10
5A		—	—	P4-E SHLD	—	—	—	E4	—	—	—
5B		—	—	P3-Z SHLD	—	—	—	E3	—	—	—
6	17	WHT	11 FT	P4-F	3/16	22,28	5	P3-X	3/16	9	5,10
7		BLK	11 FT	P4-G	3/16	22,28	5	P3-Y	3/16	9	5,10
6A		—	—	P4-F SHLD	—	—	—	E4	—	—	—
6B		—	—	P3-X SHLD	—	—	—	E3	—	—	—
8	6	WHT	11 FT	P4-D	3/16	22,28	5	P3-N	3/16	9	5,10
8A		—	—	P4-D SHLD	—	—	—	E4	—	—	—
8B		—	—	P3-N SHLD	—	—	—	E3	—	—	—
9	6	WHT	11 FT	P4-E	3/16	22,28	5	P3-P	3/16	9	5,10
9A		—	—	P4-E SHLD	—	—	—	E4	—	—	—
9B		—	—	P3-P SHLD	—	—	—	E3	—	—	—
10	6	WHT	11 FT	P4-F	3/16	22,28	5	P3-R	3/16	9	5,10
10A		—	—	P4-F SHLD	—	—	—	E4	—	—	—
10B		—	—	P3-R SHLD	—	—	—	E3	—	—	—
11	6	WHT	11 FT	P4-G	3/16	22,28	5	P3-S	3/16	9	5,10
11A		—	—	P4-G SHLD	—	—	—	E4	—	—	—
11B		—	—	P3-S SHLD	—	—	—	E3	—	—	—
12	17	WHT	11 FT	P4-W	3/16	22,28	5	P3-W	3/16	9	5,10
13		BLK	11 FT	P4-X	3/16	22,28	5	P3-B	3/16	9	5,10
12A		—	—	P4-W SHLD	—	—	—	E4	—	—	—
12B		—	—	P3-W SHLD	—	—	—	E3	—	—	—
14	8	WHT	11 FT	P4-Y	3/16	22,28	5	P3-A	3/16	9	5,10
15	7	BLK	3.00	P4-JJ	3/16	22,28	5	E4	1/2	—	—
16	7	BLK	3.00	P3-S	3/16	9	5,10	E3	1/2	—	—
17	17	WHT	10.5FT	P4-H	3/16	22,28	5	P2-E	3/16	9	5,10
18		BLK	10.5FT	P4-J	3/16	22,28	5	P2-F	3/16	9	5,10
17A	—	—	—	P4-H SHLD	—	—	—	E4	—	—	—
17B	—	—	—	P2-E SHLD	—	—	—	E2	—	—	—
19	17	WHT	10.5FT	P4-K	3/16	22,28	5	P2-G	3/16	9	5,10
20		BLK	10.5FT	P4-L	3/16	22,28	5	P2-H	3/16	9	5,10
19A	—	—	—	P4-K SHLD	—	—	—	E4	—	—	—
19B	—	—	—	P2-G SHLD	—	—	—	E2	—	—	—
21	6	WHT	10.5FT	P4-M	3/16	22,28	5	P2-C	3/16	9	5,10
21A	—	—	—	P4-M SHLD	—	—	—	E4	—	—	—
21B	—	—	—	P2-C SHLD	—	—	—	E2	—	—	—
22	17	WHT	10.5FT	P4-N	3/16	22,28	5	P2-V	3/16	9	5,10
23		BLK	10.5FT	P4-L	3/16	22,28	5	P2-W	3/16	9	5,10
22A	—	—	—	P4-N SHLD	—	—	—	E4	—	—	—
22B	—	—	—	P2-V SHLD	—	—	—	E2	—	—	—
24	6	WHT	10.5FT	P4-J	3/16	22,28	5	P2-X	3/16	9	5,10
24A	—	—	—	P4-J SHLD	—	—	—	E4	—	—	—
24B	—	—	—	P2-X SHLD	—	—	—	E2	—	—	—
25	6	WHT	10.5FT	P4-K	3/16	22,28	5	P2-Y	3/16	9	5,10
25A	—	—	—	P4-K SHLD	—	—	—	E4	—	—	—
25B	—	—	—	P2-Y SHLD	—	—	—	E2	—	—	—
26	6	WHT	10.5FT	P4-Z	3/16	22,28	5	P2-J	3/16	9	5,10
26A	—	—	—	P4-Z SHLD	—	—	—	E4	—	—	—
26B	—	—	—	P2-J SHLD	—	—	—	E2	—	—	—
27	6	WHT	10.5FT	P4-AA	3/16	22,28	5	P2-K	3/16	9	5,10

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	LENGTH	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
27B	—	—	—	P2-K SHLD	—	—	—	E2	—	—	—
28	17	WHT	10.5FT	P4-BB	3/16	22,28	5	P2-Z	3/16	9	5,10
29		BLK	10.5FT	P4-MM	3/16	22,28	5	P2-L	3/16	9	5,10
28A	—	—	—	P4-BB SHLD	—	—	—	E4	—	—	—
28B	—	—	—	P2-Z SHLD	—	—	—	E2	—	—	—
30	7	BLK	3.00	P4-PP	3/16	22,28	5	E4	1/2	—	—
31	7	BLK	3.00	P2-S	3/16	9	5,10	E2	1/2	—	—
32	17	WHT	11.5FT	P4-N	3/16	22,28	5	P1-A	3/16	9	5,10
33		BLK	11.5FT	P4-P	3/16	22,28	5	P1-B	3/16	9	5,10
32A	—	—	—	P4-N SHLD	—	—	—	E4	—	—	—
32B	—	—	—	P1-A SHLD	—	—	—	E1	—	—	—
34	17	WHT	11.5FT	P4-R	3/16	22,28	5	P1-C	3/16	9	5,10
35		BLK	11.5FT	P4-S	3/16	22,28	5	P1-D	3/16	9	5,10
34A	—	—	—	P4-R SHLD	—	—	—	E4	—	—	—
34B	—	—	—	P1-C SHLD	—	—	—	E1	—	—	—
36	6	WHT	11.5FT	P4-T	3/16	22,28	5	P1-B	3/16	9	5,10
36A	—	—	—	P4-T SHLD	—	—	—	E4	—	—	—
36B	—	—	—	P1-B SHLD	—	—	—	E1	—	—	—
37	17	WHT	11.5FT	P4-U	3/16	22,28	5	P1-T	3/16	9	5,10
38		BLK	11.5FT	P4-V	3/16	22,28	5	P1-U	3/16	9	5,10
37A	—	—	—	P4-U SHLD	—	—	—	E4	—	—	—
37B	—	—	—	P1-T SHLD	—	—	—	E1	—	—	—
39	6	WHT	11.5FT	P4-M	3/16	22,28	5	P1-E	3/16	9	5,10
39A	—	—	—	P4-M SHLD	—	—	—	E4	—	—	—
39B	—	—	—	P1-E SHLD	—	—	—	E1	—	—	—
40	6	WHT	11.5FT	P4-N	3/16	22,28	5	P1-F	3/16	9	5,10
40A	—	—	—	P4-N SHLD	—	—	—	E4	—	—	—
40B	—	—	—	P1-F SHLD	—	—	—	E1	—	—	—
41	6	WHT	11.5FT	P4-P	3/16	22,28	5	P1-G	3/16	9	5,10
41A	—	—	—	P4-P SHLD	—	—	—	E4	—	—	—
41B	—	—	—	P1-G SHLD	—	—	—	E1	—	—	—
42	6	WHT	11.5FT	P4-S	3/16	22,28	5	P1-H	3/16	9	5,10
42A	—	—	—	P4-S SHLD	—	—	—	E4	—	—	—
42B	—	—	—	P1-H SHLD	—	—	—	E1	—	—	—
43	17	WHT	11.5FT	P4-CC	3/16	22,28	5	P1-V	3/16	9	5,10
44		BLK	11.5FT	P4-DD	3/16	22,28	5	P1-W	3/16	9	5,10
43A	—	—	—	P4-CC SHLD	—	—	—	E4	—	—	—
43B	—	—	—	P1-V SHLD	—	—	—	E1	—	—	—
45	8	WHT	11.5FT	P4-EE	3/16	22,28	5	P1-A	3/16	9	5,10
46	7	BLK	3.00	P4-MM	3/16	22,28	5	E4	1/2	—	—
47	7	BLK	3.00	P1-S	3/16	9	5,10	E1	1/2	—	—
48	8	WHT	10.5FT	P4-LL	3/16	22,28	5	P2-R	3/16	9	5,10
49	17	WHT	11 FT	P4-W	3/16	22,28	5	P3-T	3/16	9	5,10
50		BLK		P4-X	3/16	22,28	5	P3-U	3/16	9	5,10
49A	—	—	—	P4-W SHLD	—	—	—	E4	—	—	—
49B	—	—	—	P3-T SHLD	—	—	—	E3	—	—	—
51	17	WHT	10.5 FT	P4-A	3/16	22,28	5	P2-P	3/16	9	5,10
52		BLK		P4-B	3/16	22,28	5	P2-R	3/16	9	5,10
51A	—	—	—	P4-A SHLD	—	—	—	E4	—	—	—
51B	—	—	—	P2-R SHLD	—	—	—	E3	—	—	—
53	17	WHT	11.5FT	P4-R	3/16	22,28	5	P1-P	3/16	9	5,10
54		BLK		P4-S	3/16	22,28	5	P1-R	3/16	9	5,10
53A	—	—	—	P4-R SHLD	—	—	—	E4	—	—	—
53B	—	—	—	P4-S SHLD	—	—	—	E3	—	—	—

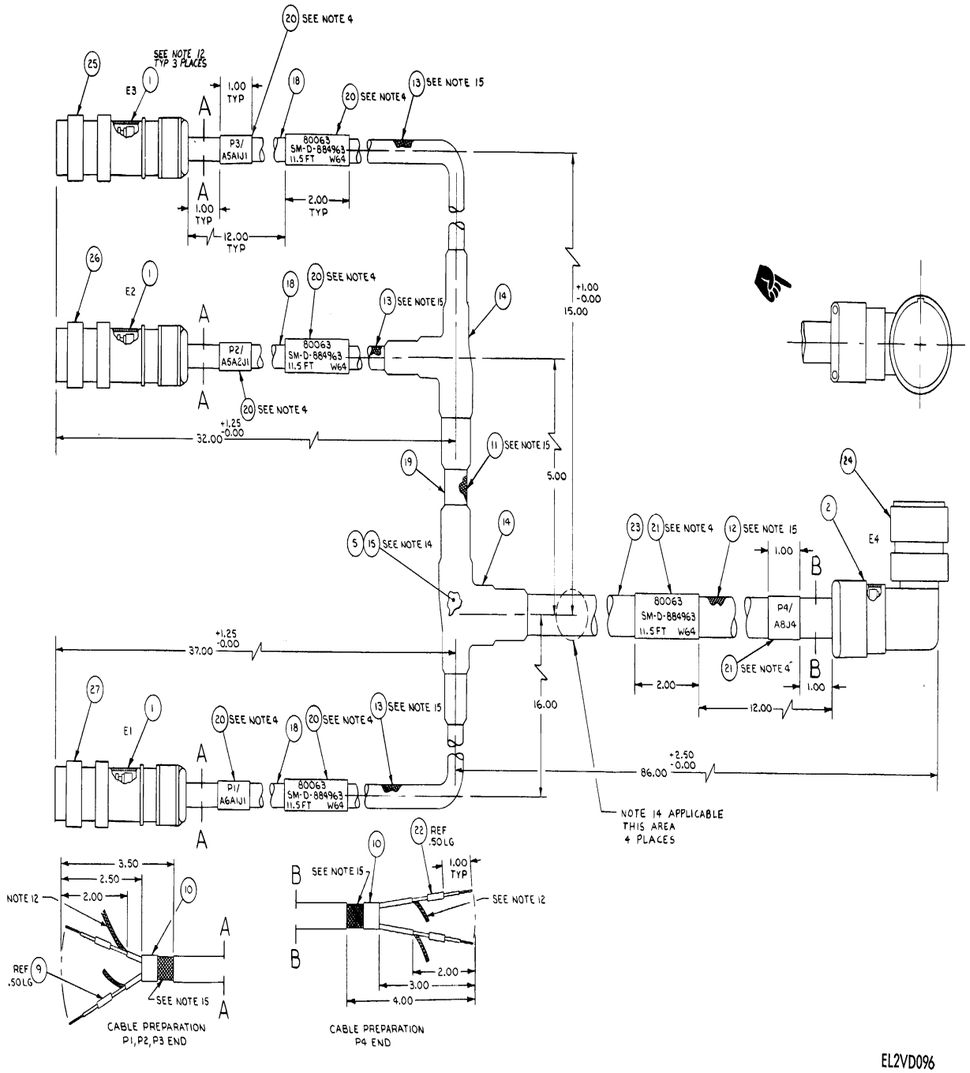
NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
4. HOT STAMP FIND NO. 20 & 21 AS INDICATED USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531 USING FIND NO. 30. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 9 & 22 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 30. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 10.
7. HOT STAMPING TEMP TO BE 450oF AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5 USING FIND NO. 16.
9. CONTACTS ARE FURNISHED WITH CONNECTOR.
10. TIN LEADS USING FIND NO. 16.
11. FOR P4 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/REMOVAL TOOL: M83723/31-20; AND SEALING PLUGS FIND NO. 29.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
13. A SINGLE LETTER SUFFIX EX (1A, 1B, 2A, 2B, ETC.) IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE AND/OR COAXIAL CABLE.
14. ASSEMBLY PROCEDURE OF BRAID AT TRANSITION SHALL BE IN ACCORDANCE WITH SM-A-886077.
15. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
16. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:

    16.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.

    16.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

SEE



EL2VD096

Figure FO-46. Cable assembly, W64.

NOTES:

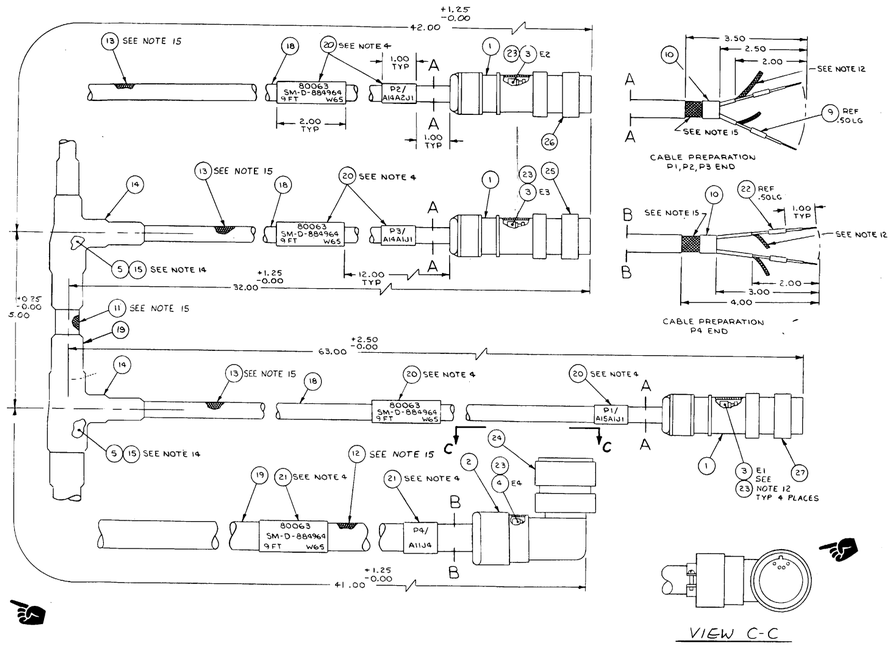
1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
4. HOT STAMP FIND NO. 20 & 21 AS INDICATED USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531 USING FIND NO.30. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 9 & 22 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 30. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP REQUIRED USING FIND NO. 10.
7. MAX MARKING TEMP SHALL BE 450oF AT 25 LBS MAX PRESSURE AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 16.
9. CONTACTS ARE FURNISHED WITH CONNECTOR.
10. TIN LEADS USING FIND NO. 16.
11. FOR P4 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/REMOVAL TOOL: M83723/31-20; AND SEALING PLUGS FIND NO. 29.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
13. A SINGLE LETTER SUFFIX EX (1A, 1B, 2A, 2B, ETC.) IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE AND/OR COAXIAL CABLE.
14. ASSEMBLY PROCEDURE OF BRAID AT TRANSITION SHALL BE IN ACCORDANCE WITH SM-A-886077.
15. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
16. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 16.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 16.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	17	WHT	6.5FT	P4-N	3/16	22,28	5	P3-J	3/16	9	5,10
2		BLK	6.5FT	P4-P	3/16	22,28	5	P3-K	3/16	9	5,10
1A				P4-N SHLD			13	E4			12
1B				P3-J SHLD			13	E3			12
3	17	WHT	6.5FT	P4-R	3/16	22,28	5	P3-L	3/16	9	5,10
4		BLK	6.5FT	P4-S	3/16	22,28	5	P3-M	3/16	9	5,10
3A				P4-R SHLD			13	E4			12
3B				P3-L SHLD			13	E3			12
5	6	WHT	6.5FT	P4-T	3/16	22,28	5	P3-Z	3/16	9	5,10
5A				P4-T SHLD			13	E4			12
5B				P3-Z SHLD			13	E3			12
6	17	WHT	6.5FT	P4-U	3/16	22,28	5	P3-X	3/16	9	5,10
7		BLK	6.5FT	P4-V	3/16	22,28	5	P3-Y	3/16	9	5,10
6A				P4-U SHLD			13	E4			12
6B				P3-X SHLD			13	E3			12
8	6	WHT	6.5FT	P4-M	3/16	22,28	5	P3-N	3/16	9	5,10
8A				P4-M SHLD			13	E4			12
8B				P3-N SHLD			13	E3			12
9	6	WHT	6.5FT	P4-N	3/16	22,28	5	P3-P	3/16	9	5,10
9A				P4-N SHLD			13	E4			12
9B				P3-P SHLD			13	E3			12
10	6	WHT	6.5FT	P4-P	3/16	22,28	5	P3-R	3/16	9	5,10
10A				P4-P SHLD			13	E4			12
10B				P3-R SHLD			13	E3			12
11	6	WHT	6.5FT	P4-S	3/16	22,28	5	P3-S	3/16	9	5,10
11A				P4-S SHLD			13	E4			12
11B				P3-S SHLD			13	E3			12
12	17	WHT	6.5FT	P4-CC	3/16	22,28	5	P3-W	3/16	9	5,10
13		BLK	6.5FT	P4-DD	3/16	22,28	5	P3-B	3/16	9	5,10
12A				P4-DD SHLD			13	E4			12
12B				P3-W SHLD			13	E3			12
14	8	WHT	6.5FT	P4-EE	3/16	22,28	5	P3-A	3/16	9	5,10
15	7	BLK	3.00	P4-MM	3/16	22,28	5	E4	1/2		12
16	7	BLK	3.00	P3-S	3/16	9	5,10	E3	1/2		12
17	17	WHT	7.5FT	P4-H	3/16	22,28	5	P2-E	3/16	9	5,10
18		BLK	7.5FT	P4-J	3/16	22,28	5	P2-F	3/16	9	5,10
17A				P4-H SHLD			13	E4			12
17B				P2-E SHLD			13	E2			12
19	17	WHT	7.5FT	P4-K	3/16	22,28	5	P2-G	3/16	9	5,10
20		BLK	7.5FT	P4-L	3/16	22,28	5	P2-H	3/16	9	5,10
19A				P4-K SHLD			13	E4			12
19B				P2-G SHLD			13	E2			12
21	6	WHT	7.5FT	P4-M	3/16	22,28	5	P2-S	3/16	9	5,10
21A				P4-M SHLD			13	E4			12
21B				P2-S SHLD			13	E2			12
22	17	WHT	7.5FT	P4-H	3/16	22,28	5	P2-V	3/16	9	5,10
23		BLK	7.5FT	P4-I	3/16	22,28	5	P2-W	3/16	9	5,10
22A				P4-H SHLD			13	E4			12
22B				P2-V SHLD			13	E2			12
24	6	WHT	7.5FT	P4-J	3/16	22,28	5	P2-X	3/16	9	5,10
24A				P4-J SHLD			13	E4			12
24B				P2-X SHLD			13	E2			12
25	6	WHT	7.5FT	P4-K	3/16	22,28	5	P2-Y	3/16	9	5,10
25A				P4-K SHLD			13	E4			12
25B				P2-Y SHLD			13	E2			12
26	6	WHT	7.5FT	P4-Z	3/16	22,28	5	P2-J	3/16	9	5,10

WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
26A				P4-Z SHLD				E4			
26B				P2-J SHLD				E2			
27	6	WHT	7.5FT	P4-AA	3/16	22,28	5	P2-K	3/16	9	5,10
27A				P4-AA SHLD				E4			
27B				P2-K SHLD				E2			
28	17	WHT	7.5FT	P4-BB	3/16	22,28	5	P2-Z	3/16	9	5,10
29		BLK	7.5FT	P4-KK	3/16	22,28	5	P2-B	3/16	9	5,10
28A				P4-BB SHLD				E4			
28B				P2-Z SHLD				E2			
30	7	BLK	3.00	P4-PP	3/16	22,28	5	E4	1/2		
31	7	BLK	3.00	P2-S		9	5,10	E2	1/2		
32	17	WHT	9 FT	P4-A	3/16	22,28	5	P1-A	3/16	9	5,10
33		BLK	9 FT	P4-B	3/16	22,28	5	P1-B	3/16	9	5,10
32A				P4-A SHLD				E4			
32B				P1-A SHLD				E1			
34	17	WHT	9 FT	P4-C	3/16	22,28	5	P1-C	3/16	9	5,10
35		BLK	9 FT	P4-D	3/16	22,28	5	P1-D	3/16	9	5,10
34A				P4-C SHLD				E4			
34B				P1-C SHLD				E1			
36	6	WHT	9 FT	P4-E	3/16	22,28	5	P1-B	3/16	9	5,10
36A				P4-E SHLD				E4			
36B				P1-B SHLD				E1			
37	17	WHT	9 FT	P4-F	3/16	22,28	5	P1-T	3/16	9	5,10
38		BLK	9 FT	P4-G	3/16	22,28	5	P1-U	3/16	9	5,10
37A				P4-F SHLD				E4			
37B				P1-T SHLD				E1			
39	6	WHT	9 FT	P4-D	3/16	22,28	5	P1-E	3/16	9	5,10
39A				P4-D SHLD				E4			
39B				P1-E SHLD				E1			
40	6	WHT	9 FT	P4-E	3/16	22,28	5	P1-F	3/16	9	5,10
40A				P4-E SHLD				E4			
40B				P1-F SHLD				E1			
41	6	WHT	9 FT	P4-F	3/16	22,28	5	P1-G	3/16	9	5,10
41A				P4-F SHLD				E4			
41B				P1-G SHLD				E1			
42	6	WHT	9 FT	P4-G	3/16	22,28	5	P1-H	3/16	9	5,10
42A				P4-G SHLD				E4			
42B				P1-H SHLD				E1			
43	17	WHT	9 FT	P4-W	3/16	22,28	5	P1-V	3/16	9	5,10
44		BLK	9 FT	P4-X	3/16	22,28	5	P1-W	3/16	9	5,10
43A				P4-W SHLD				E4			
43B				P1-V SHLD				E1			
45	8	WHT	9 FT	P4-Y	3/16	22,28	5	P1-A	3/16	9	5,10
46	7	BLK	3.00	P4-JJ	3/16	22,28	5	E4	1/2		
47	7	BLK	3.00	P1-S	3/16	9	5,10	E1	1/2		
48	8	WHT	7.5FT	P4-LL	3/16	22,28	5	P2-A	3/16	9	5,10
49	17	WHT	6.5FT	P4-W	3/16	22,28	5	P3-T	3/16	9	5,10
50		BLK		P4-X	3/16	22,28	5	P3-U	3/16	9	5,10
49A				P4-W SHLD			13	E4			12
49B				P3-T SHLD			13	E3			12
51	17	WHT	7.5FT	P4-A	3/16	22,28	5	P2-P	3/16	9	5,10
52		BLK		P4-B	3/16	22,28	5	P2-R	3/16	9	5,10
51A				P4-A SHLD			13	E4			12
51B				P2-P SHLD			13	E3			12
53	17	WHT	9FT	P4-S	3/16	22,28	5	P1-P	3/16	9	5,10
54		BLK		P4-T	3/16	22,28	5	P1-R	3/16	9	5,10
53A				P4-S SHLD			13	E4			12
53B				P1-P SHLD			13	E3			12



EL2VD097

Figure FO-47. Cable assembly, W65.

WIRE RUN LIST												
				FROM				TO				
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	17	WHT	6.5 FT	P4-A	3/16	22,28	5	P3-J	3/16	9	5,10
2		BLK	6.5 FT	P4-B	3/16	22,28	5	P3-K	3/16	9	5,10
1A				P4-A SHLD			13	E4			12
1B				P3-J SHLD			13	E3			12
3	17	WHT	6.5 FT	P4-C	3/16	22,28	5	P3-L	3/16	9	5,10
4		BLK	6.5 FT	P4-D	3/16	22,28	5	P3-M	3/16	9	5,10
3A				P4-C SHLD			13	E4			12
3B				P3-L SHLD			13	E3			12
5	6	WHT	6.5 FT	P4-E	3/16	22,28	5	P3-Z	3/16	9	5,10
5A				P4-E SHLD			13	E4			12
5B				P3-Z SHLD			13	E3			12
6	17	WHT	6.5 FT	P4-F	3/16	22,28	5	P3-X	3/16	9	5,10
7		BLK	6.5 FT	P4-G	3/16	22,28	5	P3-Y	3/16	9	5,10
6A				P4-F SHLD			13	E4			12
6B				P3-X SHLD			13	E3			12
8	6	WHT	6.5 FT	P4-D	3/16	22,28	5	P3-N	3/16	9	5,10
8A				P4-D SHLD			13	E4			12
8B				P3-N SHLD			13	E3			12
9	6	WHT	6.5 FT	P4-E	3/16	22,28	5	P3-P		9	5,10
9A				P4-E SHLD			13	E4			12
9B				P3-P SHLD			13	E3			12
10	6	WHT	6.5 FT	P4-E	3/16	22,28	5	P3-R	3/16	9	5,10
10A				P4-E SHLD			13	E4			12
10B				P3-R SHLD			13	E3			12
11	6	WHT	6.5 FT	P4-G	3/16	22,28	5	P3-S	3/16	9	5,10
11A				P4-G SHLD			13	E4			12
11B				P3-S SHLD			13	E3			12
12	17	WHT	6.5 FT	P4-W	3/16	22,28	5	P3-W	3/16	9	5,10
13		BLK	6.5 FT	P4-X	3/16	22,28	5	P3-B	3/16	9	5,10
12A				P4-W SHLD			13	E4			12
12B				P3-W SHLD			13	E3			12
14	8	WHT	6.5 FT	P4-Y	3/16	22,28	5	P3-A	3/16	9	5,10
15	7	BLK	3.00	P4-JJ	3/16	22,28	5	E4	1/2		12
16	7	BLK	3.00	P3-S	3/16	9	5,10	E3	1/2		12
17	17	WHT	7.5 FT	P4-N	3/16	22,28	5	P2-E	3/16	9	5,10
18		BLK	7.5 FT	P4-P	3/16	22,28	5	P2-F	3/16	9	5,10
17A				P4-N SHLD			13	E4			12
17B				P2-E SHLD			13	E2			12
19	17	WHT	7.5 FT	P4-R	3/16	22,28	5	P2-G	3/16	9	5,10
20		BLK	7.5 FT	P4-S	3/16	22,28	5	P2-H	3/16	9	5,10
19A				P4-R SHLD			13	E4			12
19B				P2-G SHLD			13	E2			12
21	6	WHT	7.5 FT	P4-T	3/16	22,28	5	P2-C	3/16	9	5,10
21A				P4-T SHLD			13	E4			12
21B				P2-C SHLD			13	E2			12
22	17	WHT	7.5 FT	P4-U	3/16	22,28	5	P2-V	3/16	9	5,10
23		BLK	7.5 FT	P4-V	3/16	22,28	5	P2-W	3/16	9	5,10
22A				P4-U SHLD			13	E4			12
22B				P2-V SHLD			13	E2			12
24	6	WHT	7.5 FT	P4-M	3/16	22,28	5	P2-X	3/16	9	5,10
24A				P4-M SHLD			13	E4			12
24B				P2-X SHLD			13	E2			12
25	6	WHT	7.5 FT	P4-N	3/16	22,28	5	P2-Y	3/16	9	5,10
25A				P4-N SHLD			13	E4			12
25B				P2-Y SHLD			13	E2			12

WIRE RUN LIST												
				FROM				TO				
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
26	6	WHT	7.5 FT	P4-P	3/16	22,28	5	P2-J	3/16	9	5,10
26A				P4-P SHLD			13	E4			12
26B				P2-J SHLD			13	E2			12
27	6	WHT	7.5 FT	P4-S	3/16	22,28	5	P2-K	3/16	9	5,10
27A				P4-S SHLD			13	E4			12
27B				P2-K SHLD			13	E2			12
28	17	WHT	7.5 FT	P4-CC	3/16	22,28	5	P2-Z	3/16	9	5,10
29		BLK	7.5 FT	P4-DD	3/16	22,28	5	P2-L	3/16	9	5,10
28A				P4-CC SHLD			13	E4			12
28B				P2-Z SHLD			13	E2			12
30	7	BLK	3.00	P4-MM	3/16	22,28	5	E4	1/2		12
31	7	BLK	3.00	P2-S	3/16	9	5,10	E2	1/2		12
32	17	WHT	9 FT	P4-H	3/16	22,28	5	P1-A	3/16	9	5,10
33		BLK	9 FT	P4-J	3/16	22,28	5	P1-B	3/16	9	5,10
32A				P4-H SHLD			13	E4			12
32B				P1-A SHLD			13	E1			12
34	17	WHT	9 FT	P4-K	3/16	22,28	5	P1-C	3/16	9	5,10
35		BLK	9 FT	P4-L	3/16	22,28	5	P1-D	3/16	9	5,10
34A				P4-K SHLD			13	E4			12
34B				P1-C SHLD			13	E1			12
36	6	WHT	9 FT	P4-M	3/16	22,28	5	P1-B	3/16	9	5,10
36A				P4-M SHLD			13	E4			12
36B				P1-B SHLD			13	E1			12
37	17	WHT	9 FT	P4-H	3/16	22,28	5	P1-T	3/16	9	5,10
38		BLK	9 FT	P4-J	3/16	22,28	5	P1-U	3/16	9	5,10
37A				P4-H SHLD			13	E4			12
37B				P1-T SHLD			13	E1			12
39	6	WHT	9 FT	P4-J	3/16	22,28	5	P1-E	3/16	9	5,10
39A				P4-J SHLD			13	E4			12
39B				P1-E SHLD			13	E1			12
40	6	WHT	9 FT	P4-F	3/16	22,28	5	P1-F	3/16	9	5,10
40A				P4-F SHLD			13	E4			12
40B				P1-F SHLD			13	E1			12
41	6	WHT	9 FT	P4-Z	3/16	22,28	5	P1-G	3/16	9	5,10
41A				P4-Z SHLD			13	E4			12
41B				P1-G SHLD			13	E1			12
42	6	WHT	9 FT	P4-AA	3/16	22,28	5	P1-H	3/16	9	5,10
42A				P4-AA SHLD			13	E4			12
42B				P1-H SHLD			13	E1			12
43	17	WHT	9 FT	P4-BB	3/16	22,28	5	P1-V	3/16	9	5,10
44		BLK	9 FT	P4-KK	3/16	22,28	5	P1-W	3/16	9	5,10
43A				P4-BB SHLD			13	E4			12
43B				P1-V SHLD			13	E1			12
45	8	WHT	9 FT	P4-LL	3/16	22,28	5	P1-A	3/16	9	5,10
46	7	BLK	3.00	P4-PP	3/16	22,28	5	E4	1/2		12
47	7	BLK	3.00	P1-S	3/16	9	5,10	E1	1/2		12
48	8	WHT	7.5	P4-LL	3/16	22,28	5	P2-G	3/16	9	5,10
49	17	WHT	6.5 FT	P4-W	3/16	22,28	5	P3-T	3/16	9	5,10
50		BLK		P4-Y	3/16	22,28	5	P3-U	3/16	9	5,10
49A				P4-W SHLD			13	E4			12
49B				P3-T SHLD			13	E3			12
51	17	WHT	7.5FT	P4-A	3/16	22,28	5	P2-P	3/16	9	5,10
52		BLK		P4-B	3/16	22,28	5	P2-R	3/16	9	5,10
51A				P4-A SHLD			13	E4			12
51B				P2-P SHLD			13	E3			12
53		WHT		P4-R	3/16	22,28	5	P1-P	3/16	9	5,10
54	17	BLK	9FT	P4-S	3/16	22,28	5	P1-R	3/16	9	5,10
53A				P4-R SHLD			13	E4			12
53B				P1-P SHLD			13	E3			12

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
4. HOT STAMP FIND NO. 20 AND 21 AS INDICATED USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531 USING FIND NO. 30. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 9 AND 22 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 30. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 10.
7. MAX HOT STAMP TEMP TO BE 450OF AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 16.
9. CONTACTS ARE FURNISHED WITH CONNECTOR.
10. TIN LEADS USING FIND NO. 16.
11. FOR P4 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/REMOVAL TOOL: M83723/31-20; AND SEALING PLUGS FIND NO. 29.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
13. A SINGLE LETTER SUFFIX EX (1A, 1B, 2A, 2B, ETC.) IN THE WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE AND/OR COAXIAL CABLE.
14. ASSEMBLY PROCEDURE OF BRAID AT TRANSITION SHALL BE IN ACCORDANCE WITH SM-A-886077.
15. TERMINATION AND ASSEMBLY PROCEDURE OF OVERALL BRAID SHALL BE IN ACCORDANCE WITH SM-A-885736.
16. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:

    16.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.

    16.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

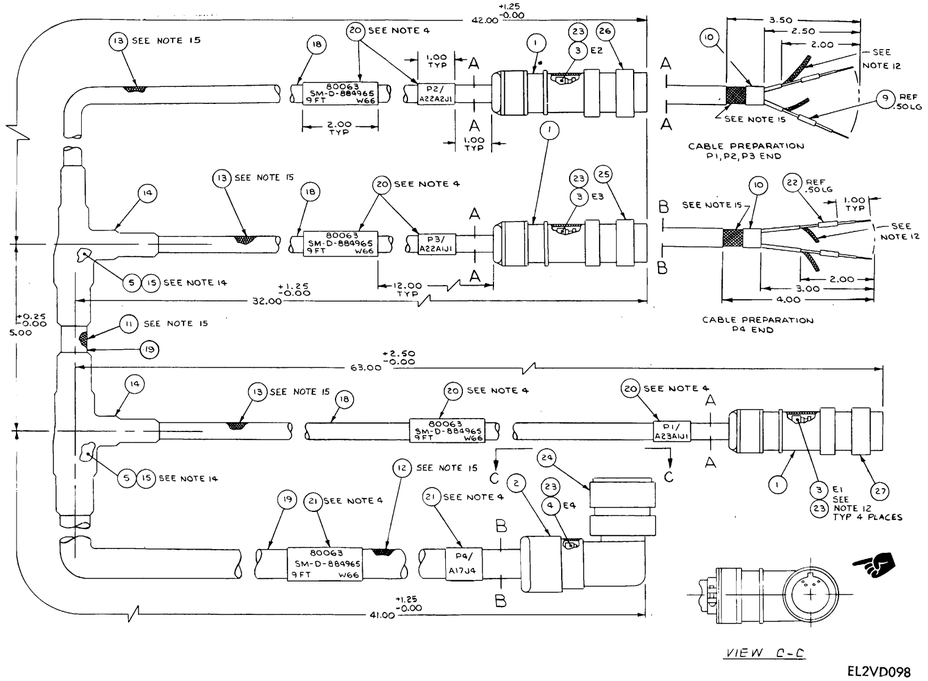
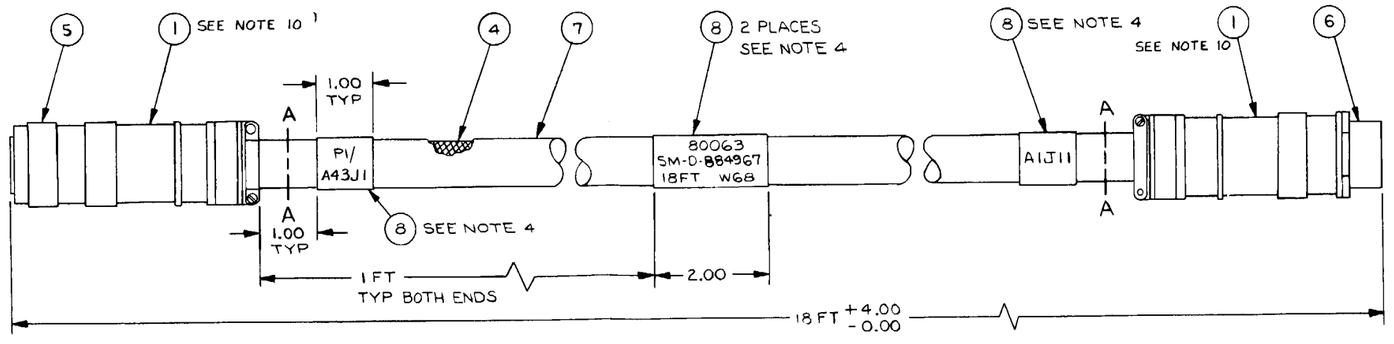
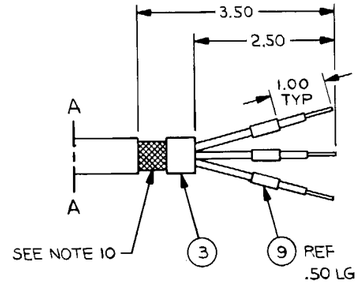


Figure FO-48. Cable assembly, W66.





CABLE PREPARATION
BOTH ENDS

WIRE RUN LIST

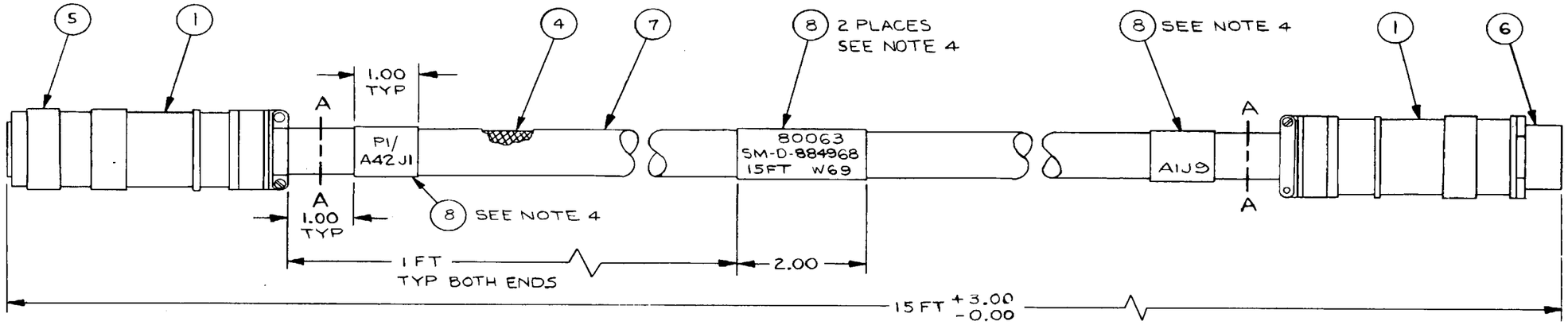
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	2	WHT	18 FT	P1 – A	3/16	9,10	5,9	J11 – A	3/16	9,11	5,9
2				B				B			
3				C				C			
4				D				D			
5				E				E			
6				F				F			
7				G				G			
8	2	WHT	18 FT	P1 – H	3/16	9,10	5,9	J11 – H	3/16	9,11	5,9
SHIELD	4	BRAID	—	P1 SHELL	—	—	—	J11 SHELL	—	—	10

NOTES:

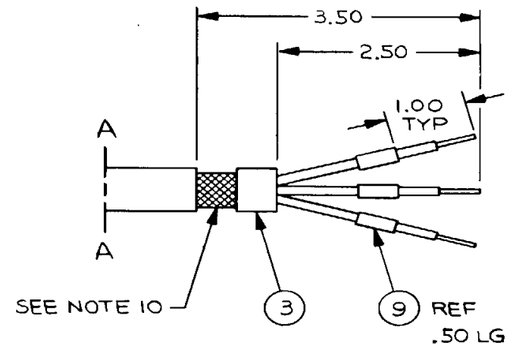
1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
4. HOT STAMP FIND NO. 8 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 9 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 13. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 3.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. CONTACTS ARE SUPPLIED WITH CONNECTOR.
9. FOR P1 AND J11 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/REMOVAL TOOL: M83723/31-20; AND SEALING PLUG: MS83723-28-20.
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

EL2VD100

Figure FO-49. Cable assembly, W68.



WIRE RUN LIST												
				FROM				TO				
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	2	WHT	15 FT	P1 – A	3/16	9,10	5,9	J9 – A	3/16	9,11	5,9
2	↑	↑	↑	B	↑	↑	↑	B	↑	↑	↑
3	↑	↑	↑	C	↑	↑	↑	C	↑	↑	↑
4	↑	↑	↑	D	↑	↑	↑	D	↑	↑	↑
5	↑	↑	↑	E	↑	↑	↑	E	↑	↑	↑
6	↑	↑	↑	F	↑	↑	↑	F	↑	↑	↑
7	↓	↓	↓	G	↓	↓	↓	G	↓	↓	↓
8	2	WHT	15 FT	P1 – H	3/16	9,10	5,9	J9 – H	3/16	9,11	5,9
SHIELD	4	BRAID	—	P1 SHELL	—	—	—	J9 SHELL	—	—	10



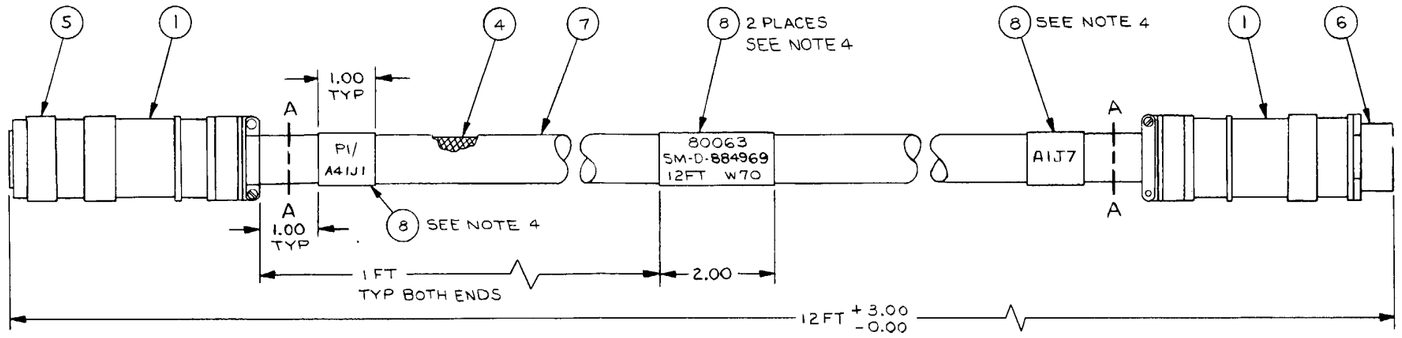
CABLE PREPARATION
BOTH ENDS

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
4. HOT STAMP FIND NO. 8 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 9 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 13. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 3.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. CONTACTS ARE SUPPLIED WITH CONNECTOR.
9. FOR P1 AND J9 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/REMOVAL TOOL: M83723/31-20; AND SEALING PLUG: MS83723-28-20.
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

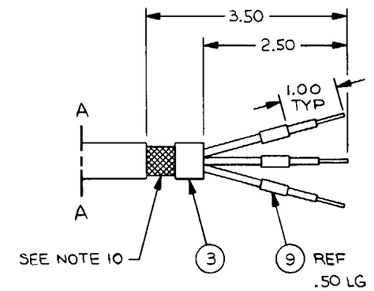
EL2VD101

Figure FO-50. Cable assembly, W69



WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	2	WHT	12 FT	P1 – A	3/16	9,10	5,9	J7 – A	3/16	9,11	5,9
2	↑	↑	↑	B	↑	↑	↑	B	↑	↑	↑
3	↑	↑	↑	C	↑	↑	↑	C	↑	↑	↑
4	↑	↑	↑	D	↑	↑	↑	D	↑	↑	↑
5	↑	↑	↑	E	↑	↑	↑	E	↑	↑	↑
6	↑	↑	↑	F	↑	↑	↑	F	↑	↑	↑
7	↓	↓	↓	G	↓	↓	↓	G	↓	↓	↓
8	2	WHT	12 FT	P1 – H	3/16	9,10	5,9	J7 – H	3/16	9,11	5,9
SHIELD	4	BRAID	—	P1 SHIELD	—	—	—	J7 SHIELD	—	—	10



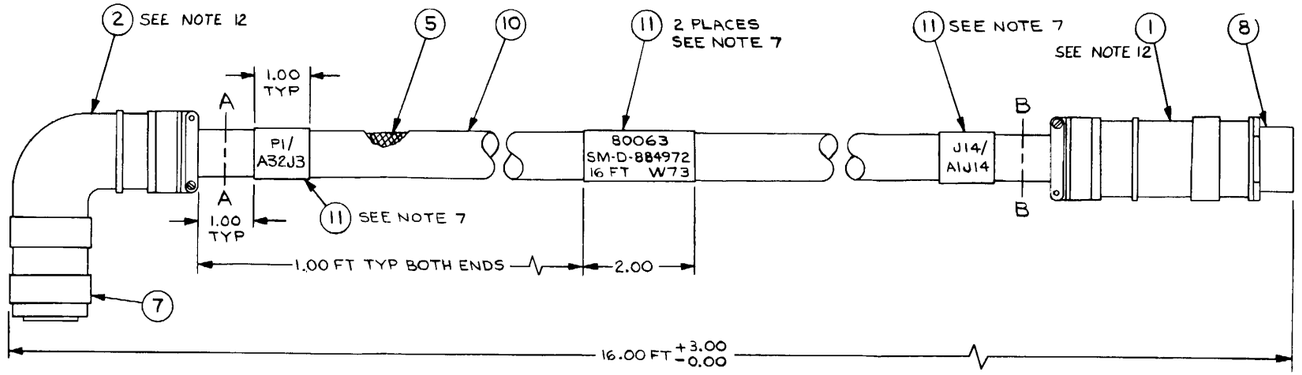
CABLE PREPARATION BOTH ENDS

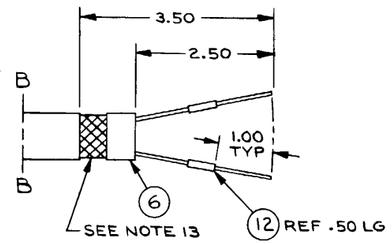
NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
4. HOT STAMP FIND NO. 8 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 9 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 13. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
6. WRAP AS REQUIRED USING FIND NO. 3.
7. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
8. CONTACTS ARE SUPPLIED WITH CONNECTOR.
9. FOR P1 AND J7 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/REMOVAL TOOL: M83723/31-20; AND SEALING PLUG: MS83723-28-20.
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
11. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 11.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 11.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

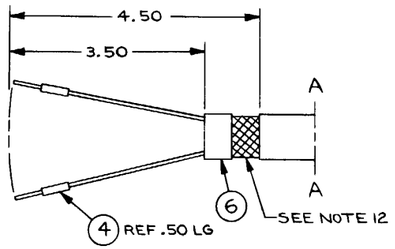
EL2VD102

Figure FO-51. Cable assembly, W70





CABLE PREPARATION
J14 END



CABLE PREPARATION
P1 END

WIRE RUN LIST

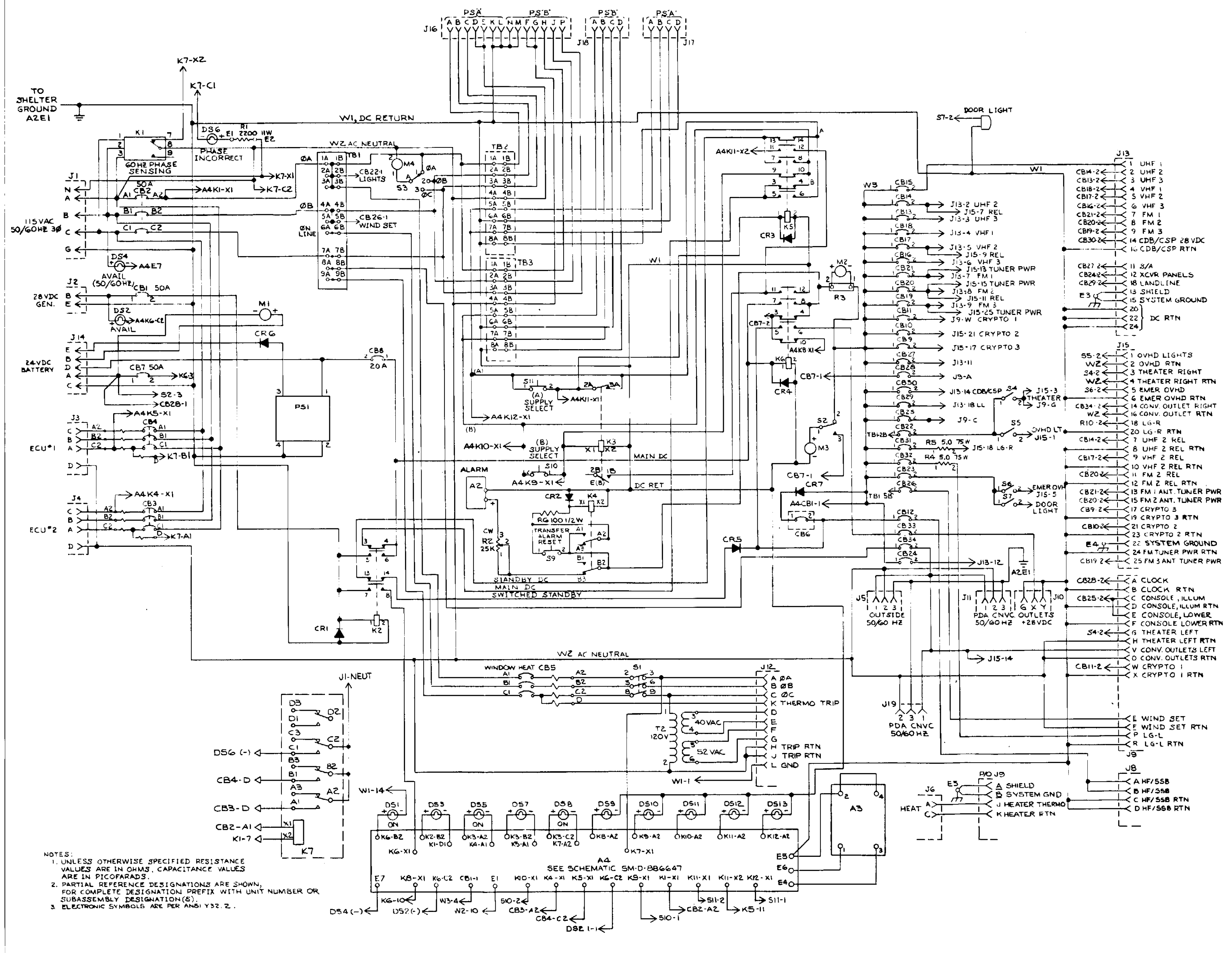
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	FROM NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	TO NOTE
1	3	WHT	16 FT	P1-A	9/32	4	10,11	J14-A	9/32	12,14	11
2	↑	↑	↑	B	↑	↑	↑	B	↑	↑	↑
3				C				C			
4				D				D			
5				E				E			
6	↓	↓	↓	F	↓	↓	↓	F	↓	↓	↓
7	3	WHT	16 FT	P1-G	9/32	4	10,11	J14-G	9/32	12,14	11
SHIELD	5	BRAID		P1-SHELL				J14-SHELL			13

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
3. VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
4. CONTACTS ARE SUPPLIED WITH CONNECTOR.
5. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
6. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQT 5 USING FIND NO. 13.
7. HOT STAMP FIND NO. 11 AS INDICATED ON SHEET 2 USING .12 HIGH BLACK CHARACTERS PER MIL-M-81531 USING FIND NO. 30. CHARACTERS TO BE CENTRALLY LOCATED.
8. WRAP AS REQUIRED USING FIND NO. 6.
9. TIN LEADS USING FIND NO. 13.
10. HOT STAMP FIND NO. 4 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 15. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
11. FOR J14 USE CRIMP TOOL: M22520/1-01; POSITIONER: M22520/1-02; INSERTION/REMOVAL TOOL: M83723/31-16; AND SEALING PLUG: FIND NO. 9.
12. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885736.
13. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 13.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 13.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

EL2VD103

Figure FO-52. Cable assembly, W73.

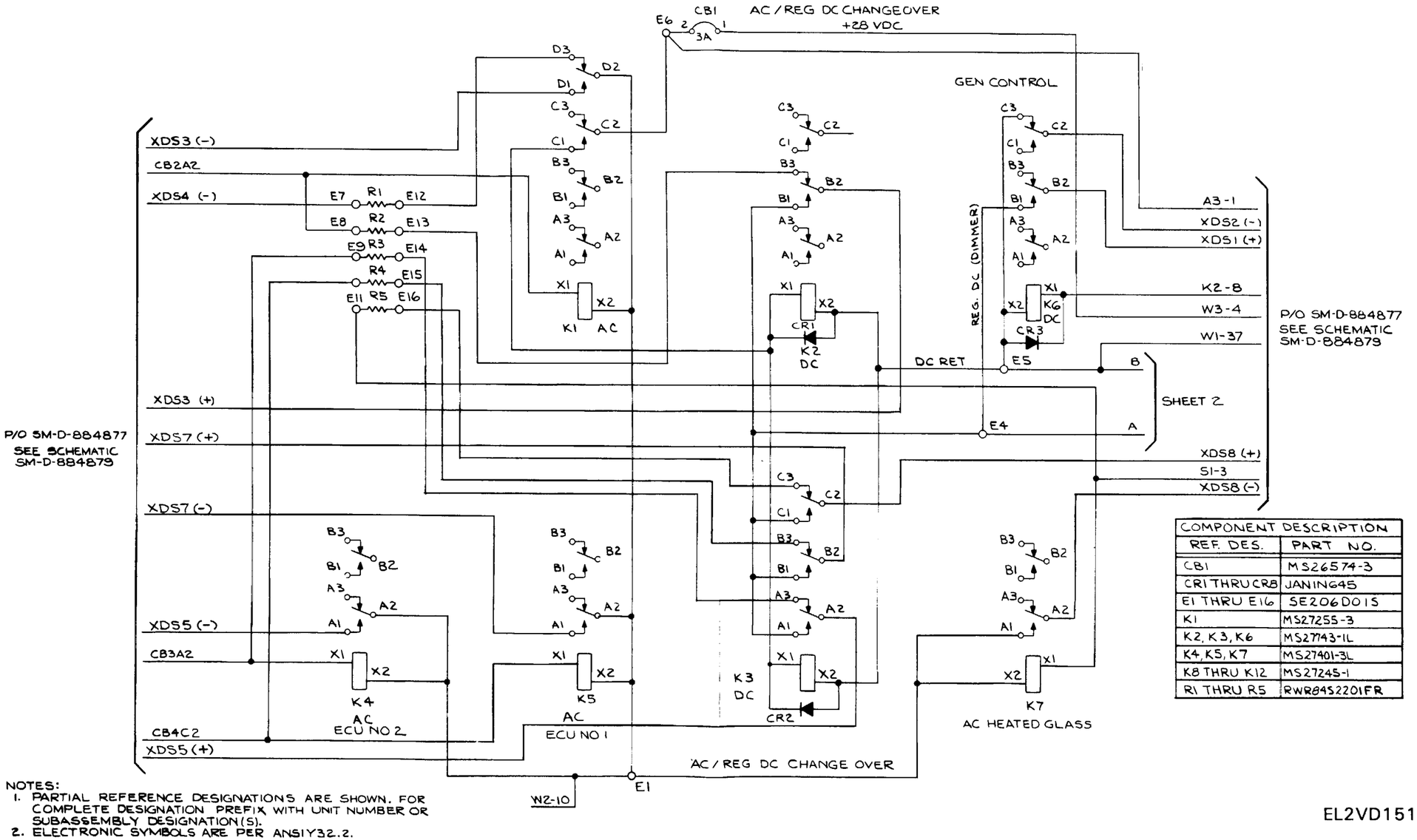


PART NUMBER	REF DES	RES	WATTS	TOL %
SM-D-886449	A3	—	—	—
SM-D-886648	A4	—	—	—
M55629/1-128	CB1, CB7	—	—	—
SM-D-885077	CB2	—	—	—
SM-D-885044-1	CB3, CB4	—	—	—
SM-D-885044-2	CB5,	—	—	—
SM-D-885078	CB6, CB12	—	—	—
M55629/1-093	CB8, CB30	—	—	—
M55629/1-030	CB9, CB10, CB11, CB24, CB29	—	—	—
M55629/1-058	CB13, CB14 CB15, CB27	—	—	—
M55629/1-044	CB16 THRU CB21	—	—	—
M55629/1-024	CB22	—	—	—
M85629/1-043	CB23	—	—	—
M55629/1-058	CB25	—	—	—
M55629/1-018	CB26	—	—	—
MS26574-1 1/2	CB28	—	—	—
M55629/1-101	CB34	—	—	—
M55629/1-078	CB31, CB32	—	—	—
M55629/1-092	CB33	—	—	—
JAN1N645	CR1 THRU CR4	—	—	—
JAN1N3289	CR5, CR7	—	—	—
SM-D-886785	CR6	—	—	—
MS25237-327	DS1 THRU DS13	—	—	—
SE10-002	E1, E2	—	—	—
SM-C-886002	E3, E4, E5	—	—	—
M59055BC32412P	J1	—	—	—
MS17346R28C5P	J2	—	—	—
MS17346R22C22SX	J3,	—	—	—
MS17346R18C4S	J6	—	—	—
MS17346R22C22S	J8	—	—	—
MS3100R32-7S	J9	—	—	—
SM-D-886131	J10	—	—	—
SM-D-886132	J11, J19	—	—	—
MS3114E18-11S	J12	—	—	—
MS3723/73R2025N	J13	—	—	—
MS3100R24-12P	J14	—	—	—
MS3728/73R2023G	J15	—	—	—
MS3100R28-20S	J16	—	—	—

PART NUMBER	REF DES	RES	WATTS	TOL %
MS3100R22-22P	J17, J18	—	—	—
SM-C-886749	PS1	—	—	—
SM-D-885086	K1	—	—	—
SM-D-885079	K2	—	—	—
MS3726/3-002	K3	—	—	—
M5757/10-039	K4	—	—	—
SM-D-885080	K5	—	—	—
SM-D-885081	K6	—	—	—
M5757/15-005	K7	—	—	—
MR26W025DCAAR	M1	—	—	—
MR26W075DCAAR	M2	—	—	—
MR26W050DCVVR	M3	—	—	—
MR26W200ARVVR	M4	—	—	—
RW68V222	R1	2200	11	5
RV4TAYSD253A	R2	25K	2	
MSA750	R3	1/1500	3 3/4	0.6
RE77N5R00	R4, R5	5	75	1
RCR20G101JP	R6	100	1/2	5
MS24525-22	S1	—	—	—
MS35058-26	S2	—	—	—
M3786/4-0002	S3	—	—	—
MS35058-22	S4 THRU S7	—	—	—
MS25089-4GR	S9	—	—	—
MS25089-4C	S10, S11	—	—	—
SM-D-885087	T2	—	—	—
SM-C-886003	TB1	—	—	—
SM-C-885160	TB2, TB3	—	—	—
SM-A-886885	J5	—	—	—
SM-C-885751	W1	—	—	—
SM-C-885789	W2	—	—	—
SM-C-885790	W3	—	—	—
SM-D-886001-2	A2	—	—	—
MS17346R22C22SY	J4	—	—	—

EL2VD107

Figure FO-53. Power Distribution Assembly, Schematic Diagram (Sheet 1 of 3). ■

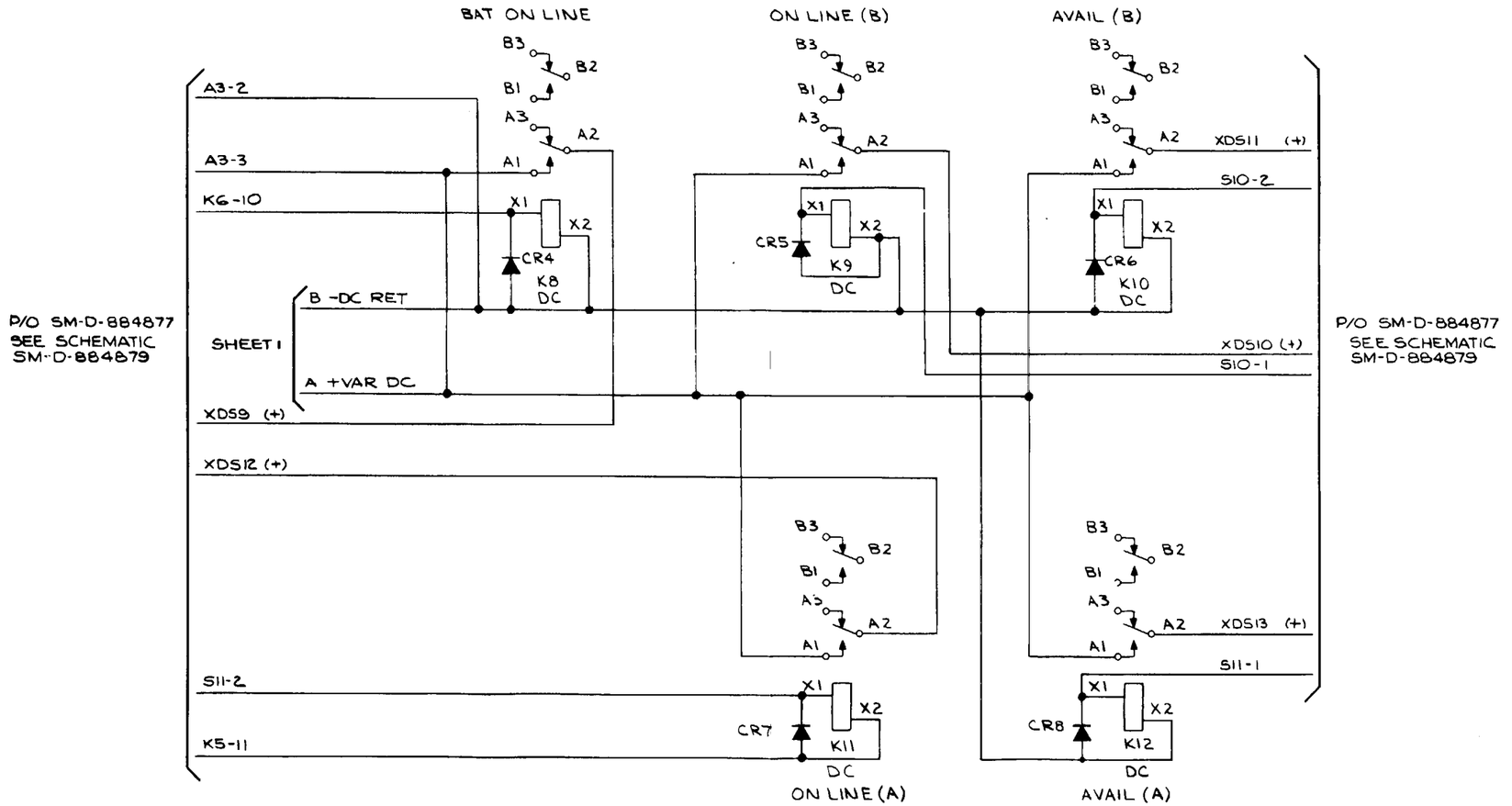


COMPONENT DESCRIPTION	
REF. DES.	PART NO.
CB1	MS26574-3
CR1 THRU CR8	JANING45
E1 THRU E16	SE206D015
K1	MS27255-3
K2, K3, K6	MS27743-1L
K4, K5, K7	MS27401-3L
K8 THRU K12	MS27245-1
R1 THRU R5	RWR8952201FR

NOTES:
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
2. ELECTRONIC SYMBOLS ARE PER ANSIY32.2.

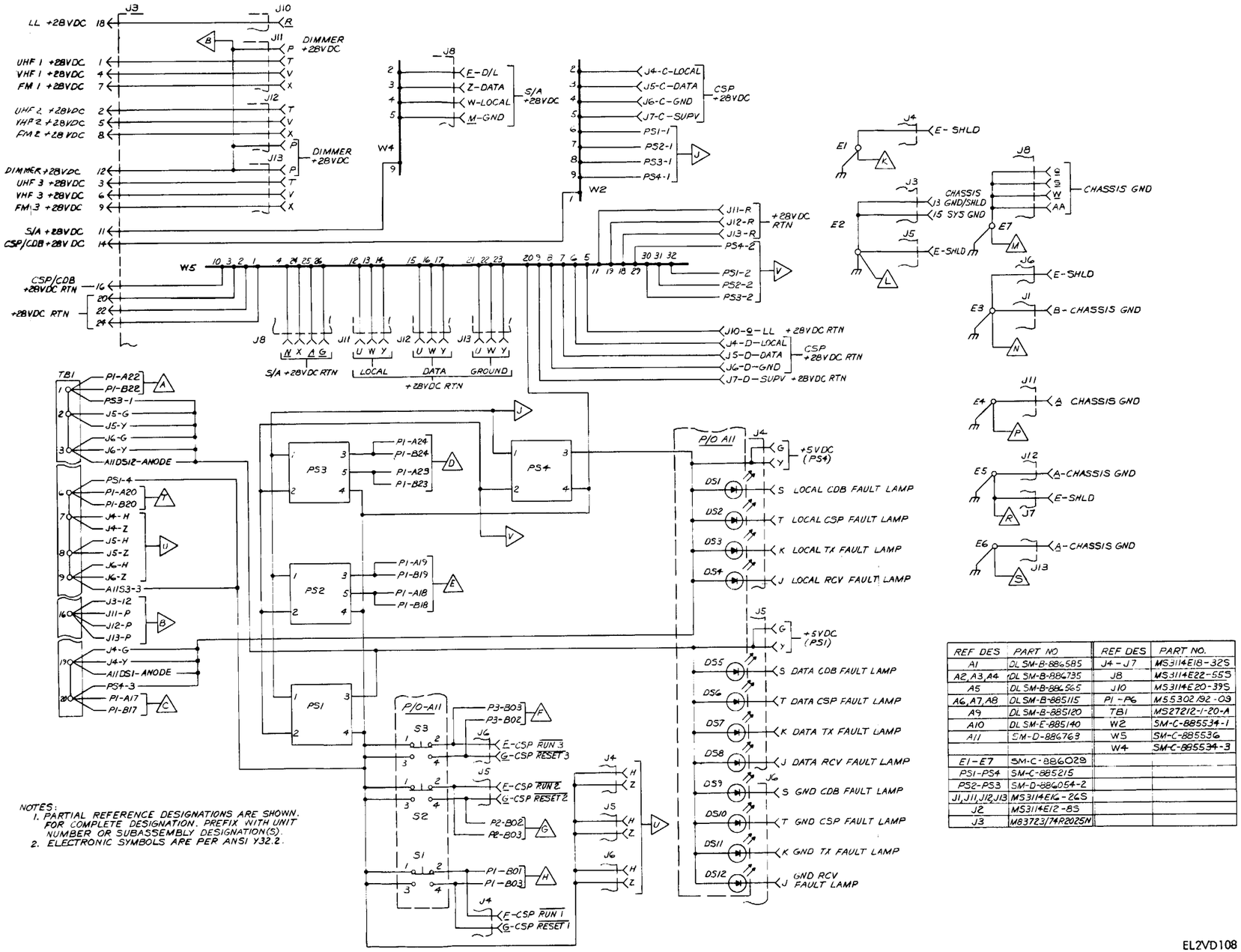
EL2VD151

FO-53. Power Distribution Assembly, Schematic Diagram (Sheet 2 of 3)



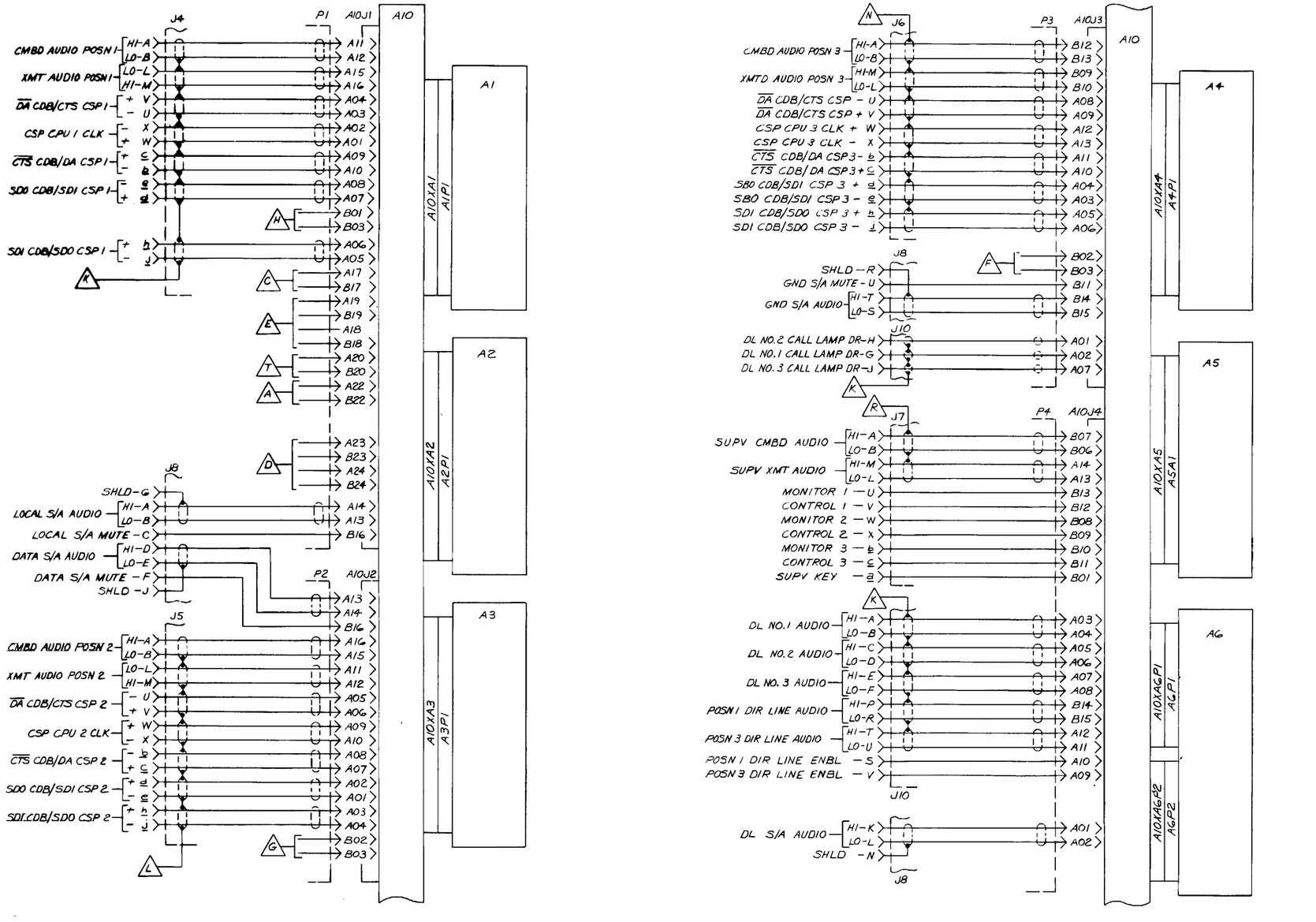
EL2VD152

FO-53. Power Distribution Assembly, Schematic Diagram (Sheet 3 of 3)



REF DES	PART NO	REF DES	PART NO.
A1	DL SM-B-886585	J4 - J7	MS3114E18-32S
A2, A3, A4	DL SM-B-886735	J8	MS3114E22-55S
A5	DL SM-B-886585	J10	MS3114E20-39S
A6, A7, A8	DL SM-B-885115	P1 - P6	M55302/82-08
A9	DL SM-B-885120	TB1	MS27212-1-20-A
A10	DL SM-E-885140	W2	SM-C-885534-1
A11	SM-D-886763	W5	SM-C-885536
		W4	SM-C-885534-3
E1 - E7	SM-C-886029		
PS1-PS4	SM-C-885215		
PS2-PS3	SM-D-886054-2		
J1, J11, J12, J13	MS3114E4-24S		
J2	MS3114E12-8S		
J3	M83723/74R2025N		

Figure FO-54. Communications distribution box, schematic diagram (Sheet 1 of 3). ■



EL2VD109

Figure FO-54. Communications distribution box, schematic diagram (Sheet 2 of 3).

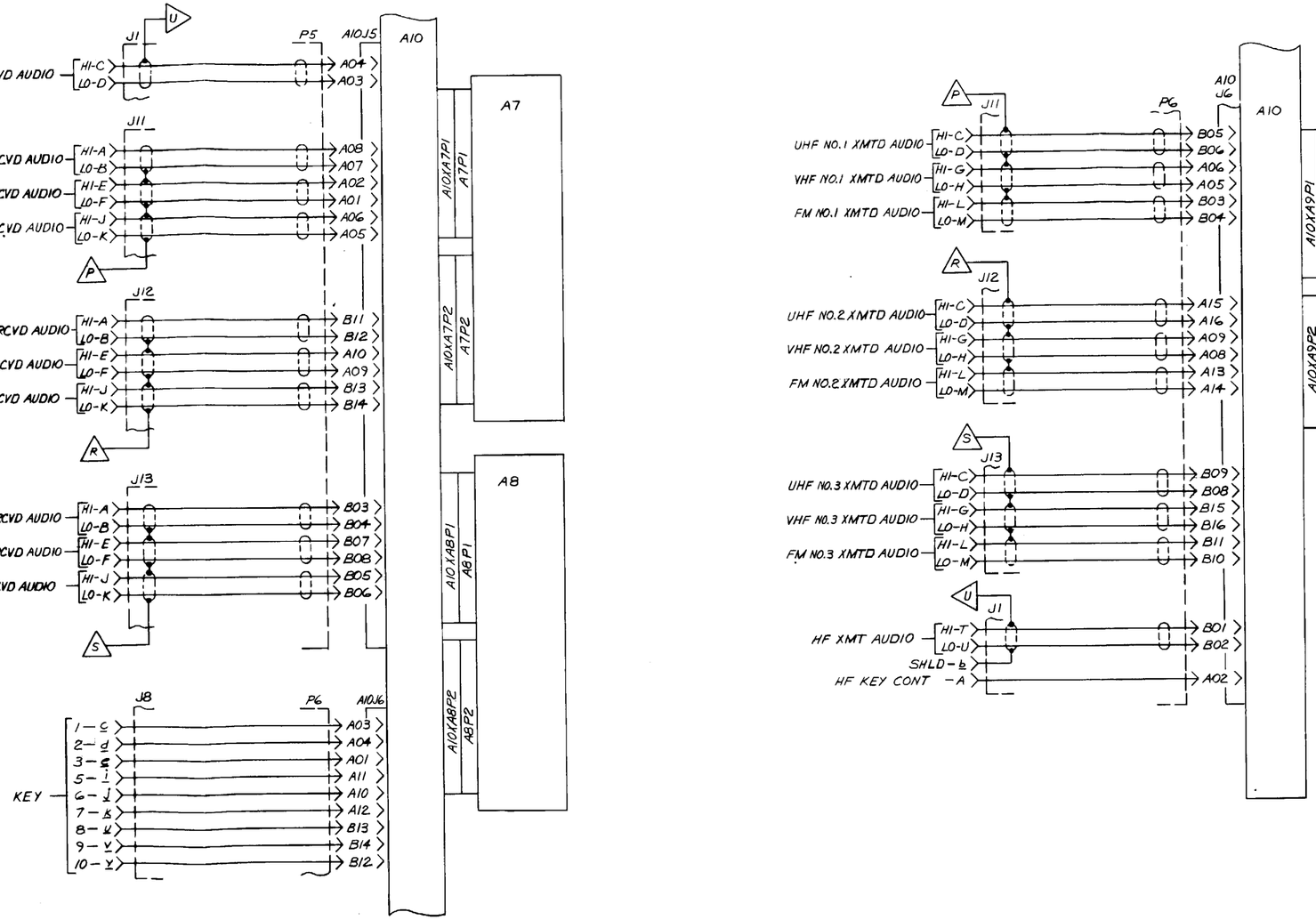


Figure FO-54. Communications distribution box, schematic diagram (Sheet 3 of 3)

REFERENCE DESIGNATION	PART NUMBER	WATT	RES	TOL±%	REFERENCE DESIGNATION	PART NUMBER	WATT	RES	TOL±%
A1	DLSM-B-885130	—	—	—	AGR1	RVGNAY5D102C	1/4	1K	10
A2	DLSM-B-885105	—	—	—	AGR2	RVGNAY5D102A	1/2	1K	10
A3	DLSM-B-885100	—	—	—	S1-S10	SM-D-885492	—	—	—
A5	SM-D-886050	—	—	—	W1	SM-D-885950	—	—	—
AG	SM-D-885192	—	—	—	XDS1-XDS21	LH73/2	—	—	—
					DS1-DS21	MS25237-387	—	—	—
AGA7	SM-D-886038	—	—	—	S11	MS25089-3C	—	—	—
E1-E4	MS35431-3	—	—	—					
E5	SM-C-886029	—	—	—					
J2, J3	U79/J	—	—	—					
P1, P2	MS5302/92-09	—	—	—					

NOTES:
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION, PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
2. UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS.
3. ELECTRONIC SYMBOLS ARE PER ANSI Y32.2.

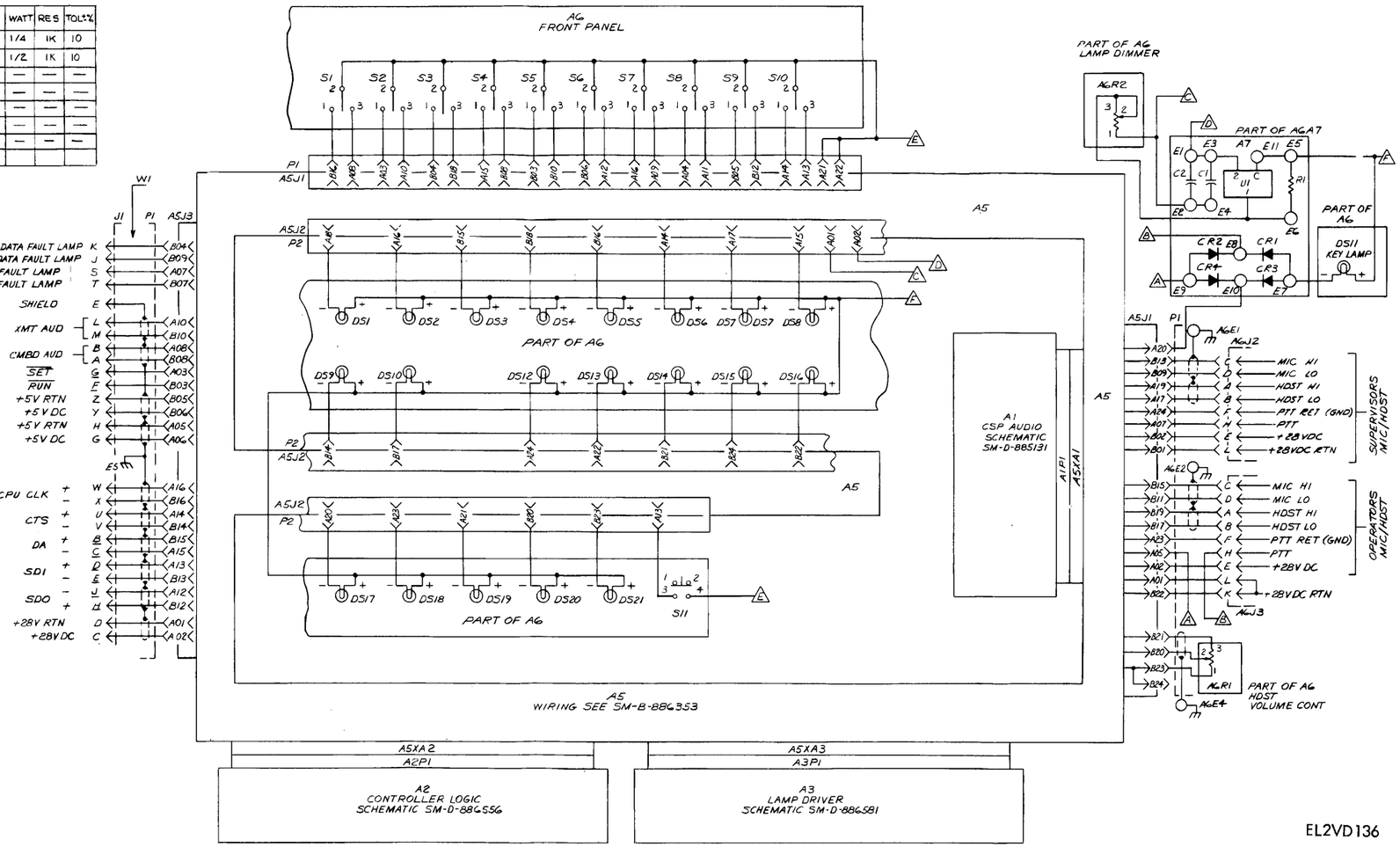
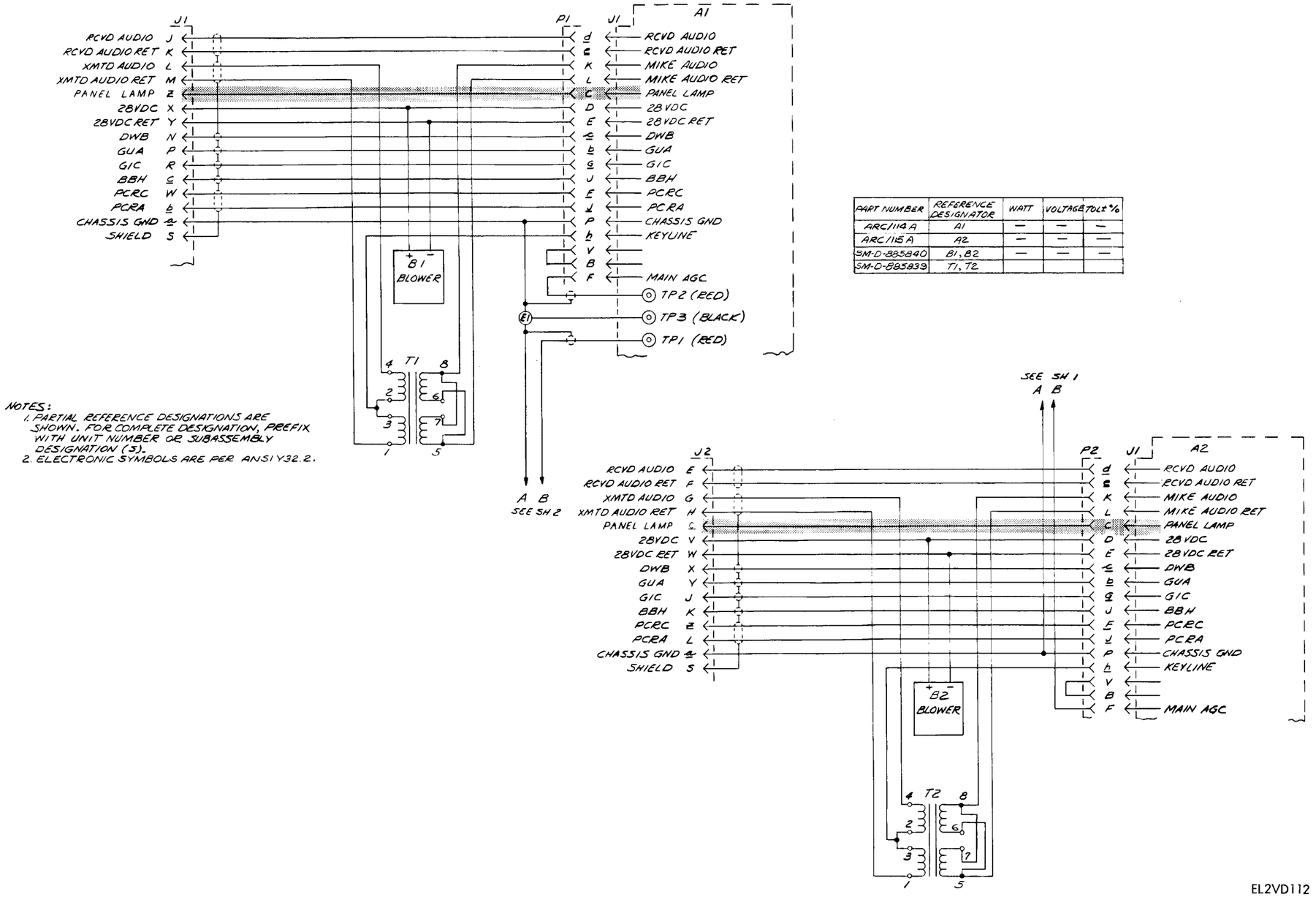
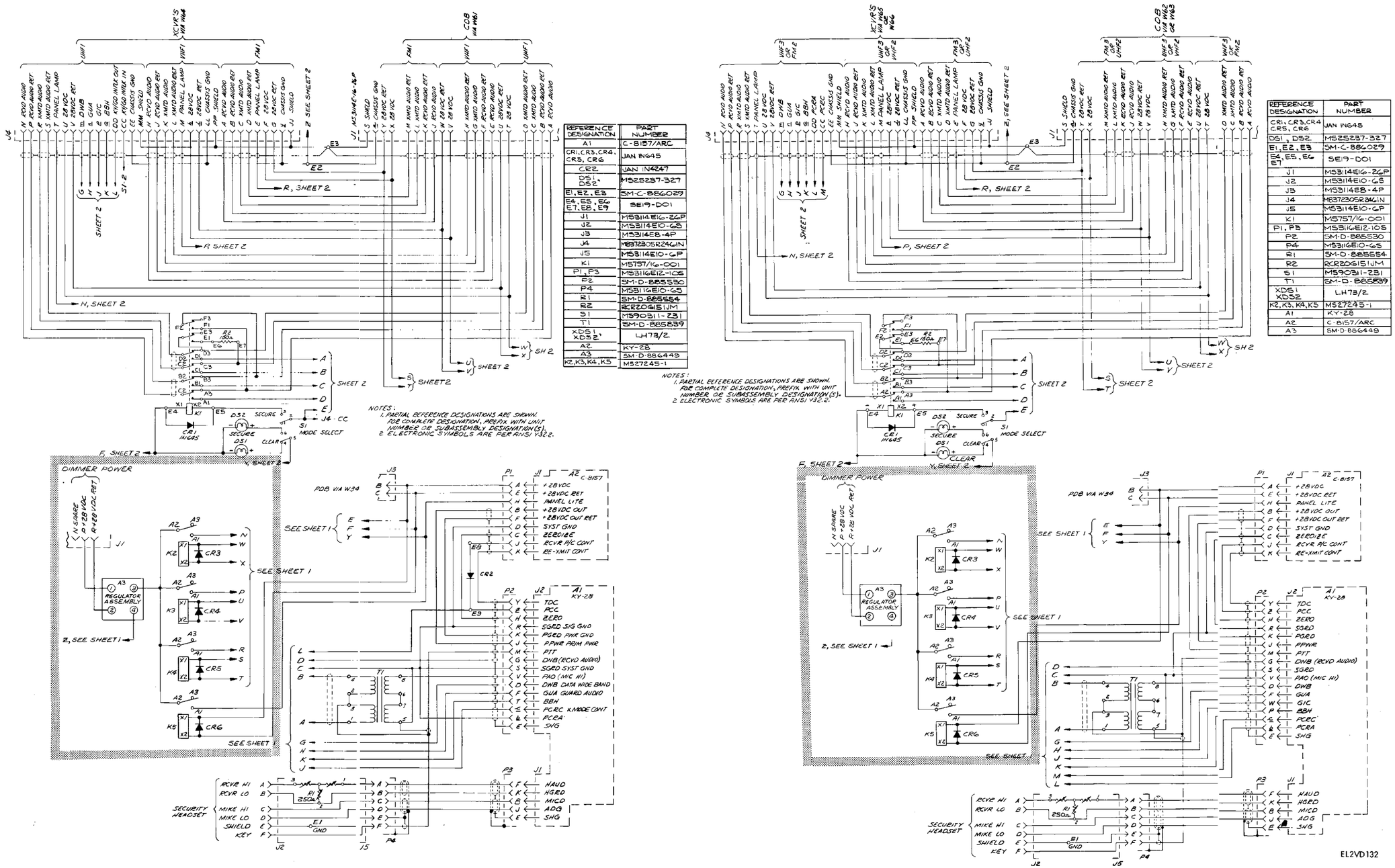


Figure FO-55. Communications select panel, schematic diagram.



PART NUMBER	REFERENCE DESIGNATOR	WATT	VOLTAGE	TOLT %
ARC/114A	A1	—	—	—
ARC/115A	A2	—	—	—
SM-D-885840	B1, B2	—	—	—
SM-D-885839	T1, T2			

Figure FO-56. Transceiver chassis assembly, schematic diagram.



REFERENCE DESIGNATION	PART NUMBER
A1	C-8157/ARC
CR1, CR3, CR4, CR5, CR6	JAN IN645
CR2	JAN IN4247
DS1, DS2	MS25237-327
E1, E2, E3	SM-C-886029
E4, E5, E6, E7, E8, E9	SE19-D01
J1	MS3114E16-26P
J2	MS3114E10-6S
J3	MS3114E8-4P
J4	M83723/05R2416N
J5	MS3114E10-6P
K1	MS757/16-001
P1, P3	MS3116E12-10S
P2	SM-D-885530
P4	MS3116E10-6S
R1	SM-D-885554
R2	RER2061S1JM
S1	MS90311-231
T1	SM-D-885839
XDS1, XDS2	LH78/2
A2	KY-28
A3	SM-D-886449
K2, K3, K4, K5	MS27245-1

REFERENCE DESIGNATION	PART NUMBER
CR1, CR3, CR4, CR5, CR6	JAN IN645
DS1, DS2	MS25237-327
E1, E2, E3	SM-C-886029
E4, E5, E6, E7	SE19-D01
J1	MS3114E16-26P
J2	MS3114E10-6S
J3	MS3114E8-4P
J4	M83723/05R2416N
J5	MS3114E10-6P
K1	MS757/16-001
P1, P3	MS3116E12-10S
P2	SM-D-885530
P4	MS3116E10-6S
R1	SM-D-885554
R2	RER2061S1JM
S1	MS90311-231
T1	SM-D-885839
XDS1, XDS2	LH78/2
K2, K3, K4, K5	MS27245-1
A1	KY-28
A2	C-8157/ARC
A3	SM-D-886449

■ *Figure FO-57. Voice security chassis, schematic diagram.*

NOTES:

1. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS AND ALL RESISTORS ARE 1/2 WATT.
2. LOAD COIL SHOULD BE USED WITH WHIP ANTENNA LESS THAN 18 FT (55 METERS) IN LENGTH FOR OTHER ANTENNA. RELAY COIL SHOULD BE DISABLED.
3. FOR SINE WAVE AC INPUT, EXTERNALLY STRAP PINS J AND G. FOR SQUARE WAVE AC INPUT, STRAP PINS J AND K.

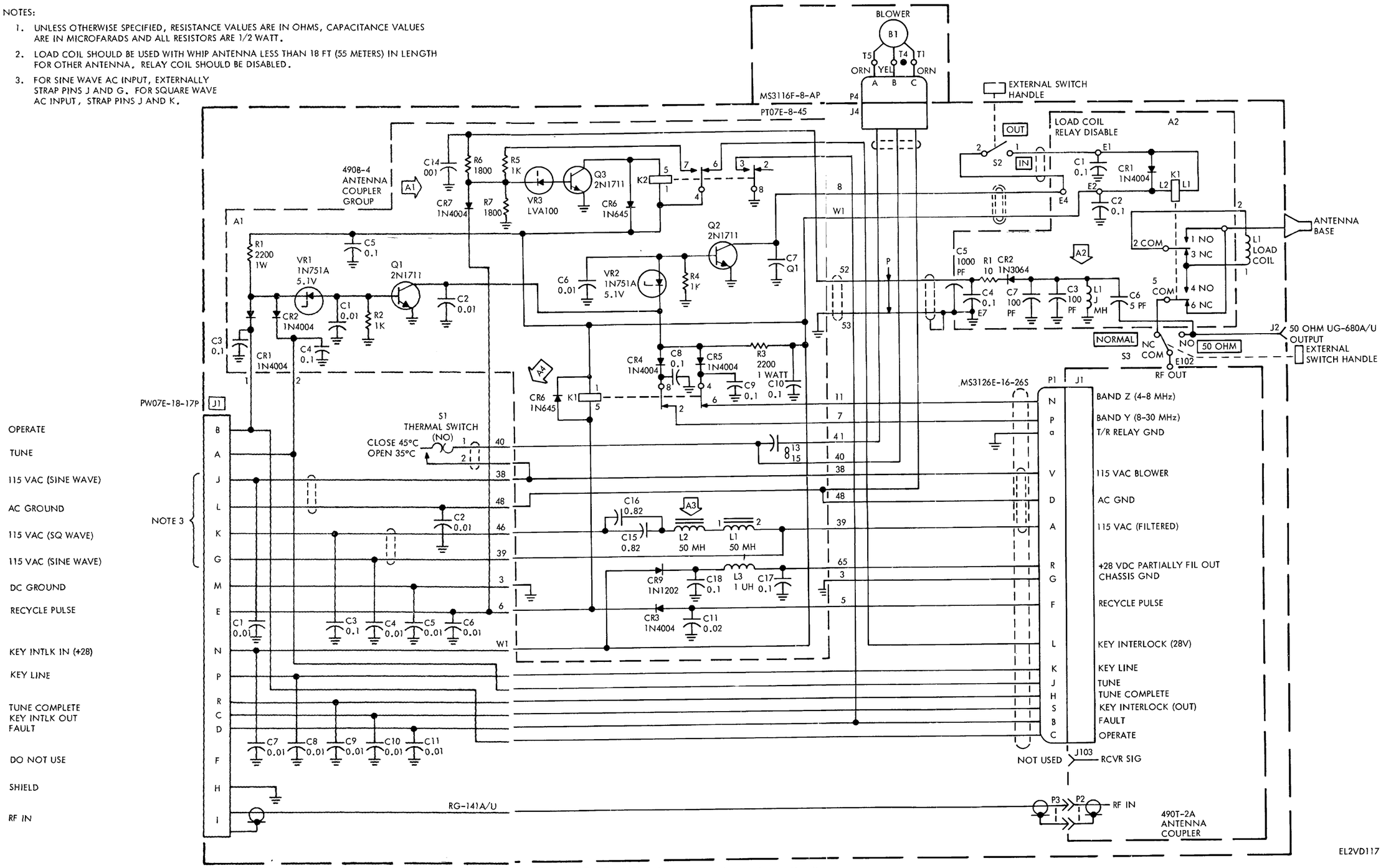
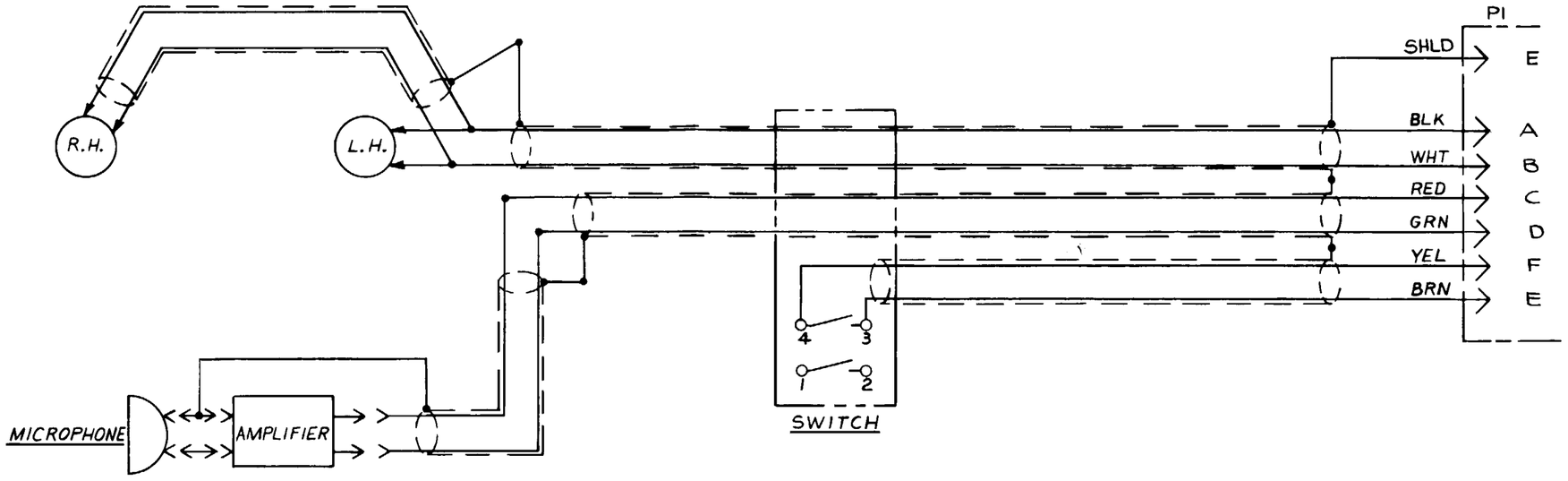


Figure FO-58. HF antenna coupler, schematic diagram.



WIRING DIAGRAM

9. QUALITY ASSURANCE PROVISIONS

9.1 ELECTRICAL PERFORMANCE

9.1.1 MICROPHONE ELEMENT - PER MIL-M-27291

9.1.2 AMPLIFIER - PER MIL-A-23595A (AS)

9.1.3 EARPHONES - PER SGMES-10 PD-159

9.1.4 OVERALL HEADSET ASSEMBLY - PER MMGEP-PD-10; TESTS TO INCLUDE VERIFICATION OF PTT SWITCH OPERATION.

10. ENVIRONMENTAL DESIGN REQUIREMENTS

THE EQUIPMENT SHALL BE DESIGNED TO MEET THE FOLLOWING ENVIRONMENTAL CONDITIONS AS DEFINED BY THE REFERENCED MIL-STD-810 CRITERIA:

10.1 ALTITUDE: METHOD 500.1 PROCEDURE I

MINIMUM OPERATING PRESSURE 523MM	HG(10,000 FT)
NON OPERATING PRESSURE, 87.5MM	HG(50,000 FT)

10.2 HIGH TEMPERATURE: METHOD 501.1 PROCEDURE I

HIGHEST OPERATING TEMPERATURE	+52°C
STORAGE TEMPERATURE	+71°C

10.3 LOW TEMPERATURE: METHOD 502.1 PROCEDURE I

LOWEST OPERATING TEMPERATURE	-40°C
STORAGE TEMPERATURE	-62°C

10.4 HUMIDITY: METHOD 507.1 PROCEDURE I

10.5 FUNGUS: METHOD 508.1 PROCEDURE I
(SELECTED SAMPLES - SUSPECT MATERIAL)

10.6 VIBRATION: METHOD 514.2, PROCEDURE X, CURVE AW FIGURE 514.2-7, THE EQUIPMENT SHALL HAVE NO RESONANCE IN THE FREQUENCY RANGE OF 10 TO 55 CPS THAT EXCEED TWICE THE AMPLITUDE OF THE APPLIED VIBRATION.

10.7 SHOCK: METHOD 516.1 PROCEDURE I

10.8 SALT SPRAY: METHOD 509.1 PROCEDURE I
(SELECTED SAMPLES)

11. VISUAL/MECHANICAL INSPECTIONS

11.1 UNIT SHALL BE VISUALLY AND MECHANICALLY INSPECTED TO ASSURE MATERIAL OF GOOD QUALITY; PROPER ASSEMBLY OF ALL COMPONENT PARTS; NO BURRS, STRIPPING, OR CORROSION OF SCREWS AND MOUNTING STUDS; SMOOTH AND UNIFORM COATINGS AND COLOR; AND PROPER MARKING AND IDENTIFICATION.

11.2 MECHANICAL INSPECTION SHALL INCLUDE DEPRESSING THE KEY SWITCH SEVERAL TIMES; SWITCH ACTION SHALL BE SMOOTH AND UNIFORM WITH NO BINDING OR RUBBING.

EL2VD122

Figure FO-59. Voice security headset, schematic diagram.

NOTES:
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION, PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION(S).
2. ELECTRONIC SYMBOLS ARE PER ANSI Y32.2.
3. A1J2 DESIGNATES THE COMMON GROUND BUS OF A4A1.

COMPONENT VALUE TABLE			
REF DES	WATT	RES	TOL ± %
R1	1/4	10 KΩ	5

COMPONENT IDENTIFICATION	
REF DES	PART NUMBER
R1	RCR07G103JR
A4A1	AN/ARC-102
E1	MS35431-3
J1	MB3723-7A22443N
J2	MS3114E20-16S
J3	MS5339/04-00030
T1	SM-D-885839
A1CB1	P/O A4A1
A1TB1	P/O A4A1
A1TB2	P/O A4A1
J4	ML 1346R22C22P
TB1	39TB-4

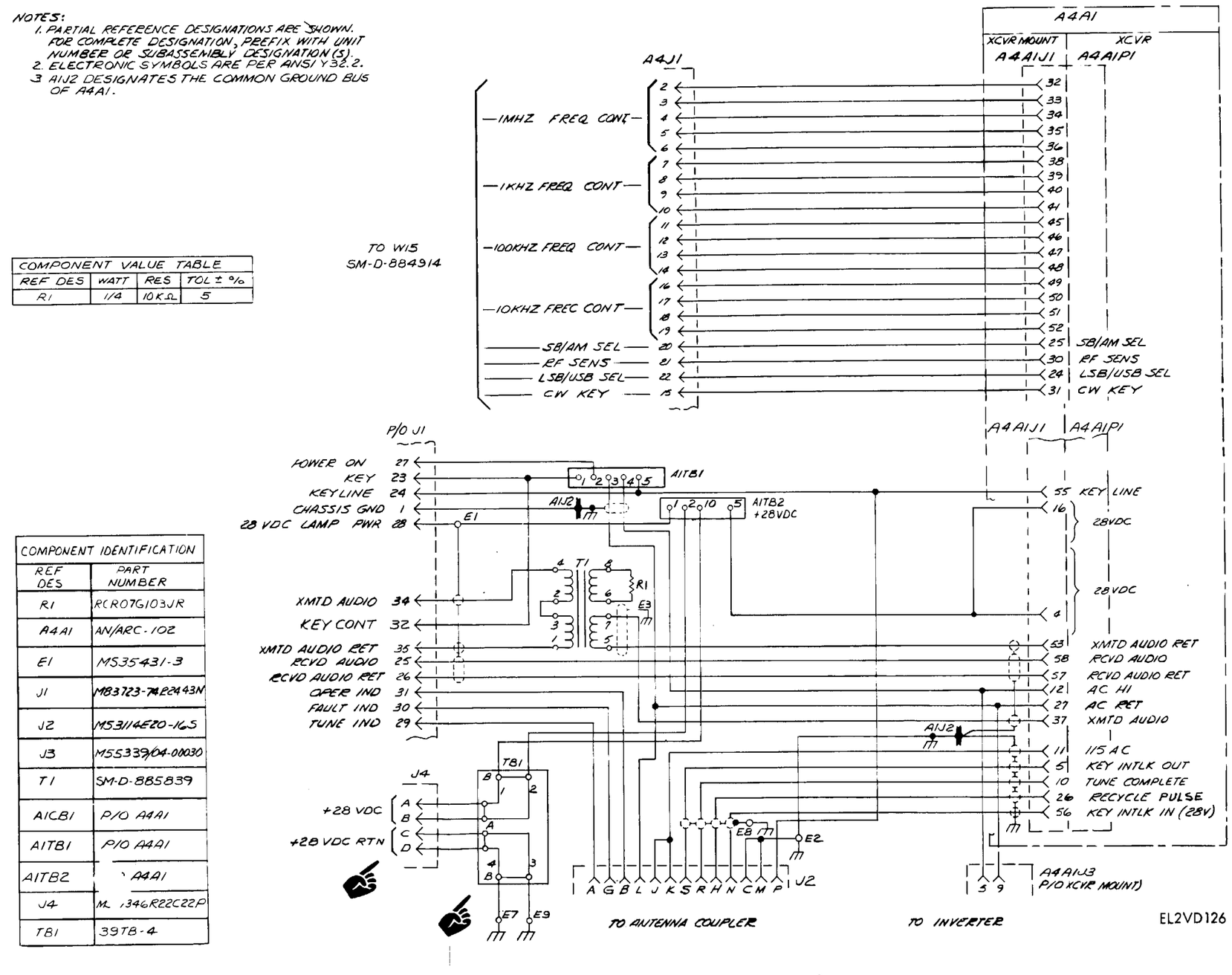
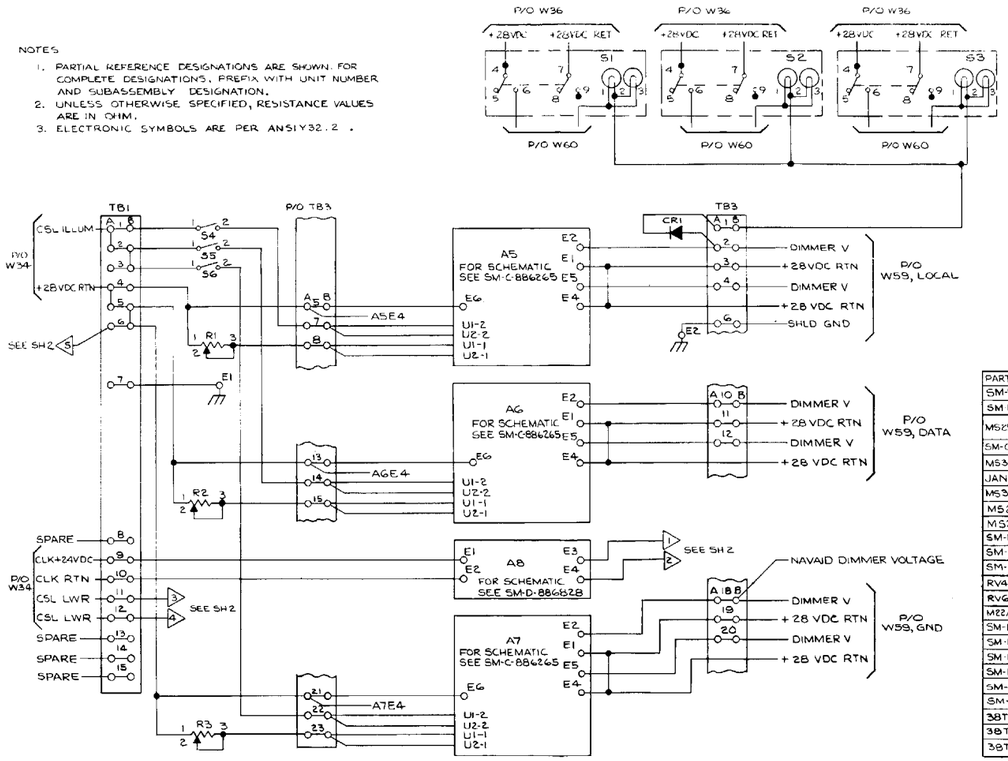


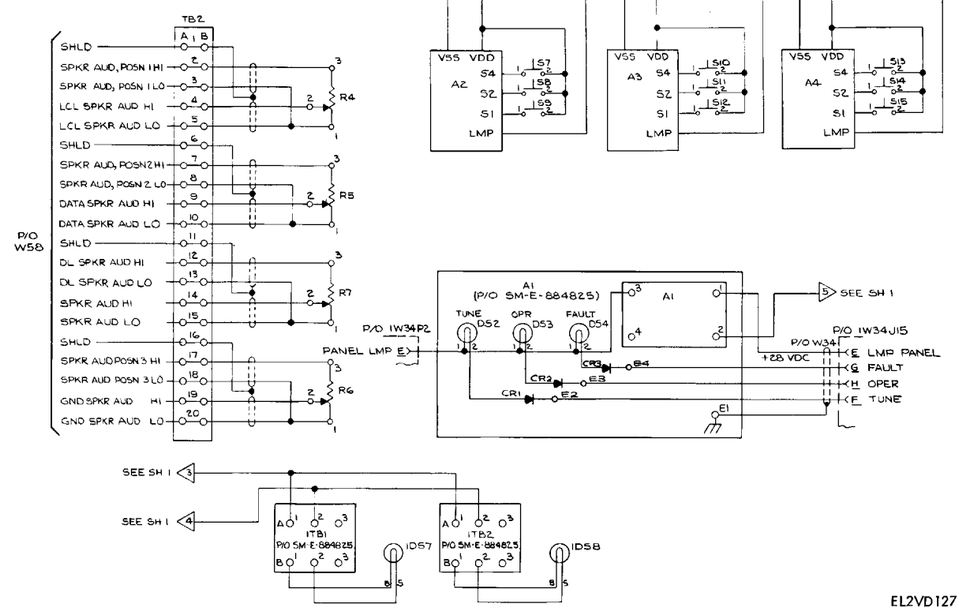
Figure FO-60. HF storage cabinet, schematic diagram.

NOTES

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATIONS, PREFIX WITH UNIT NUMBER AND SUBASSEMBLY DESIGNATION.
2. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHM.
3. ELECTRONIC SYMBOLS ARE PER ANSIY32.2 .

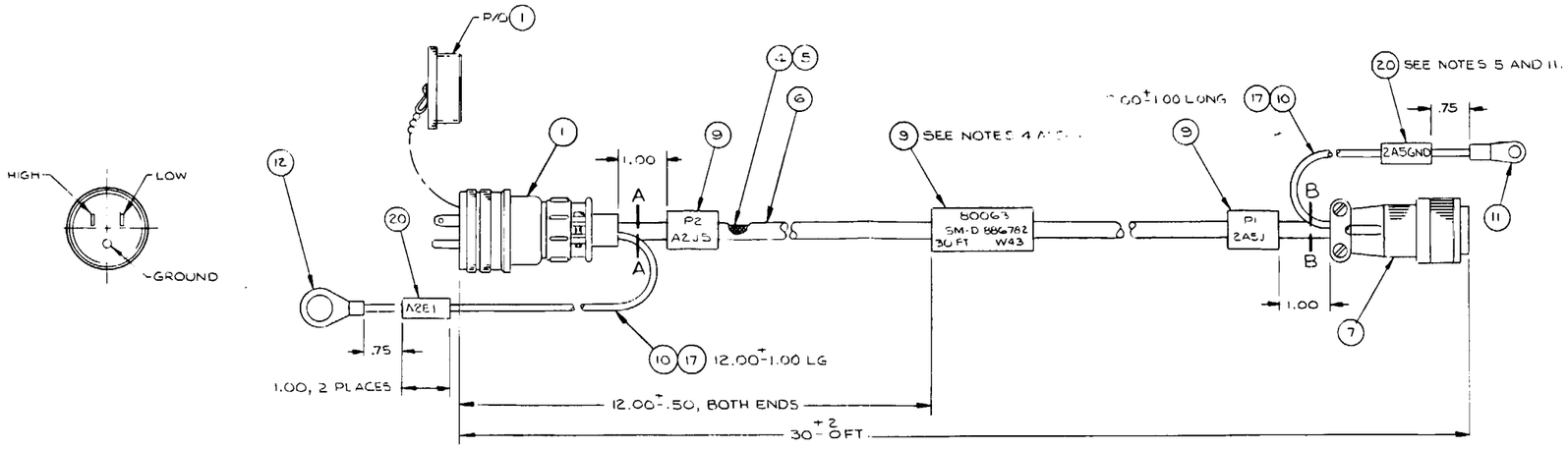


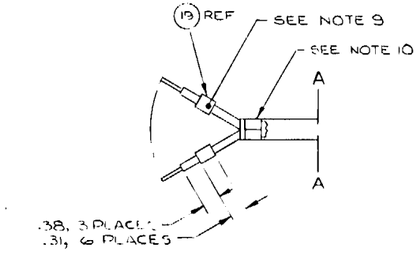
PART NUMBER	REF DES	WATTS	RES	TOL %
SM-D-886046	A1	—	—	—
SM-D-886443	A1A1	—	—	—
MS25237-327	A1DS2, A1DS3 A1DS4	—	—	—
SM-C-886002	A1E1	—	—	—
MS3116E20-39S	1W34P2	—	—	—
JANIN5550	CR1	—	—	—
MS3114E22-55S	1W34J15	—	—	—
MS25036-103	E1	—	—	—
MS25036-102	E2	—	—	—
SM-D-885184	A2, A3, A4	—	—	—
SM-D-886883	A5, A6, A7	—	—	—
SM-D-886828	A8	—	—	—
RV4SAYD502A	R1, R2, R3	2	5000Ω	±10%
RV6SAYSD102A	R4 THRU R7	.5	1000Ω	±10%
M22/15-0004158	RB			
SM-B-886071-1	S1	—	—	—
SM-B-886071-2	S2	—	—	—
SM-B-886071-3	S3	—	—	—
SM-D-885774-1	S4, S5, S6	—	—	—
SM-C-886858	S7 THRU S15	—	—	—
SM-C-886331	1DS7, 1DS8	—	—	—
38TB-16	TB1, TB2	—	—	—
38TB-23	TB3	—	—	—
38TB-3	1TB1, 1TB2	—	—	—

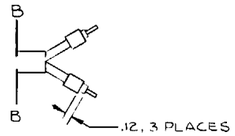


EL2VD127

Figure FO-61. Console, schematic diagram.







WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	NOTE
1	2	BLK	30 FT	P1-A	1/4	18	5,7	P2-H1	1/2	18	5,7
2	18	WHT	30 FT	P1-C	1/4	18	5,7	P2-L0	1/2	18	5,7
3	3	GRN	30 FT	P1-D	1/4	18	5,7	P2-GND	1/2	18	5,7
4	17	BRAID	12 IN	—	—	—	10	A2E1	—	10,20	10
5	17	BRAID	8 IN	—	—	—	10	2A5GND	—	10,20	10
SHIELD	4,5	BRAID	30 FT	P1 SHELL	—	—	10	P2 SHELL	—	—	10

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO. 9 AS INDICATED USING FIND NO. 16 WITH .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
5. HOT STAMP FIND NO. 20 PER MIL-M-81531 WITH REF DES USING FIND NO. 16, CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
7. TIN LEADS USING FIND NO. 14.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 14.
9. HOT STAMP FIND NO. 18 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO. 15. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
11. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
12. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

EL2VD128

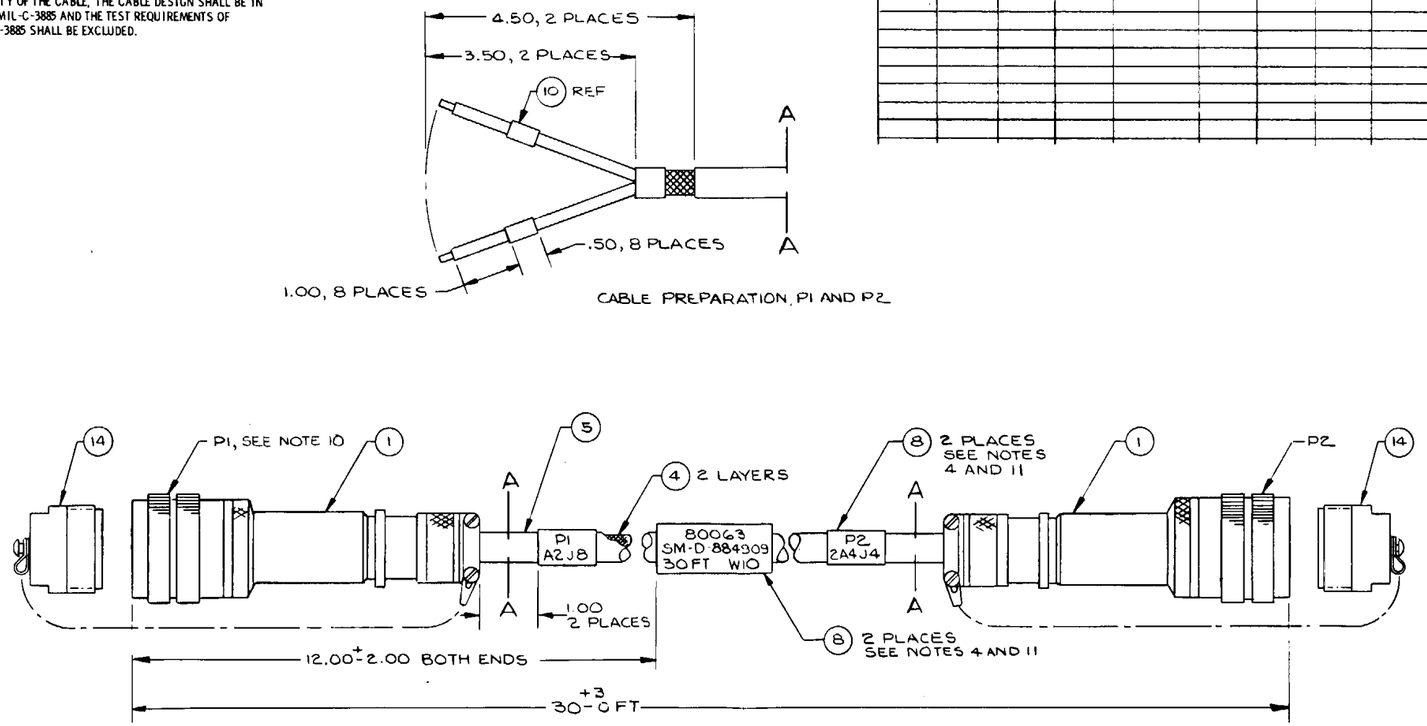
Figure FO-62. Cable assembly, W43.

NOTES:

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 9.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION (S).
3. "VENDOR ITEM. SEE SPECIFICATION OR SOURCE CONTROL DRAWING."
4. HOT STAMP FIND NO.8 AS INDICATED USING FIND NO. 2 WITH .12 HIGH BLACK CHARACTERS PER MIL-M-81531. CHARACTERS TO BE CENTRALLY LOCATED.
6. A SINGLE LETTER SUFFIX. EX. (1A, 1B, 2A, 2B, ETC.) IN WIRE NO. COLUMN FOLLOWING THE INSULATED CONDUCTOR WILL BE THE SHIELD OF A SHIELDED WIRE.
7. TIN LEADS USING FIND NO. 13.
8. SOLDERING SHALL BE IN ACCORDANCE WITH MIL-STD-454, REQUIREMENT 5 USING FIND NO. 13.
9. HOT STAMP FIND NO.10 PER MIL-M-81531 WITH WIRE NUMBER USING FIND NO.9. CHARACTERS ARE TO BE BLACK, .06 HIGH AND CENTRALLY LOCATED.
10. TERMINATION AND ASSEMBLY PROCEDURE SHALL BE IN ACCORDANCE WITH SM-A-885711.
11. HOT STAMPING TEMP TO BE 450°F AT A MAX PRESSURE OF 25 LBS AND A MAX DWELL TIME OF 2 SECONDS.
12. CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENT AS APPLICABLE:
    - 12.1 CABLE DESIGN AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-C-3885.
    - 12.2 WHEN CABLES ARE INCLUDED AS A PART OF A SYSTEM PROCUREMENT AND SYSTEM TESTING PROVES THE OPERATIONAL PERFORMANCE AND ELECTRICAL INTEGRITY OF THE CABLE, THE CABLE DESIGN SHALL BE IN ACCORDANCE WITH MIL-C-3885 AND THE TEST REQUIREMENTS OF SECTION 4 OF MIL-C-3885 SHALL BE EXCLUDED.

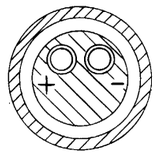
WIRE RUN LIST

WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM			NOTES	TO			NOTES
				REF DES	STRIP LENGTH	ATTACH FIND NO		REF DES	STRIP LENGTH	ATTACH FIND NO	
1	3	WHT	30 FT	P1-A	1/4	10	9,11	P2-A	1/4	10	9,11
2	3	WHT	30 FT	P1-B	1/4	10	9,11	P2-B	1/4	10	9,11
3	3	WHT	30 FT	P1-C	1/4	10	9,11	P2-C	1/4	10	9,11
4	3	WHT	30 FT	P1-D	1/4	10	9,11	P2-D	1/4	10	9,11
5	4	BRAID	30 FT	OVERSHIELD	—	—	10	OVERSHIELD	—	—	10
6	4	BRAID	30 FT	OVERSHIELD	—	—	10	OVERSHIELD	—	—	10

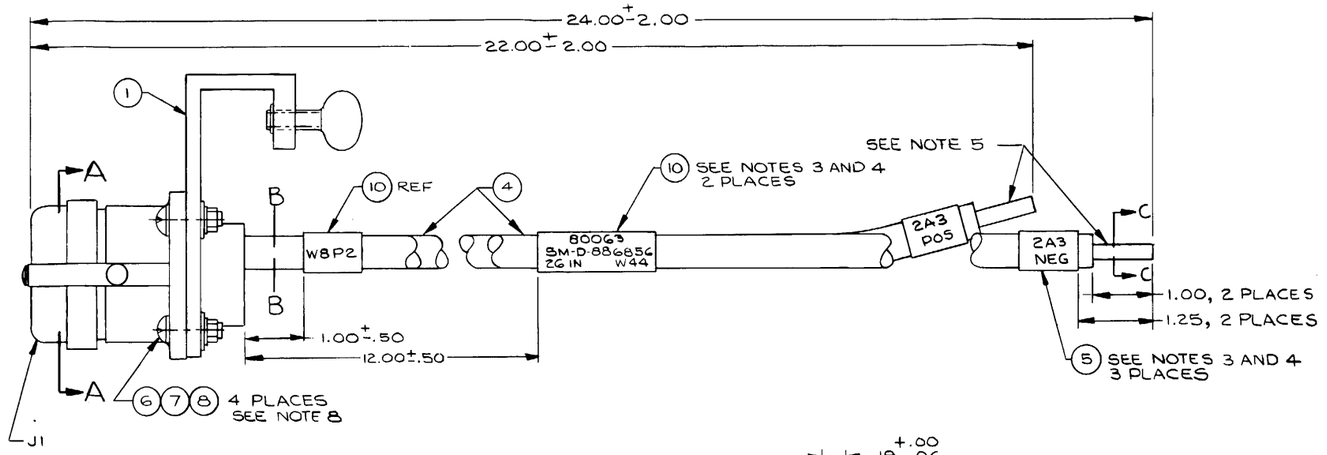


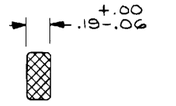
EL2VD129

Figure FO-63. Cable assembly, W10.

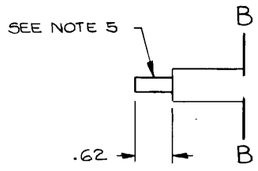


SECTION A-A





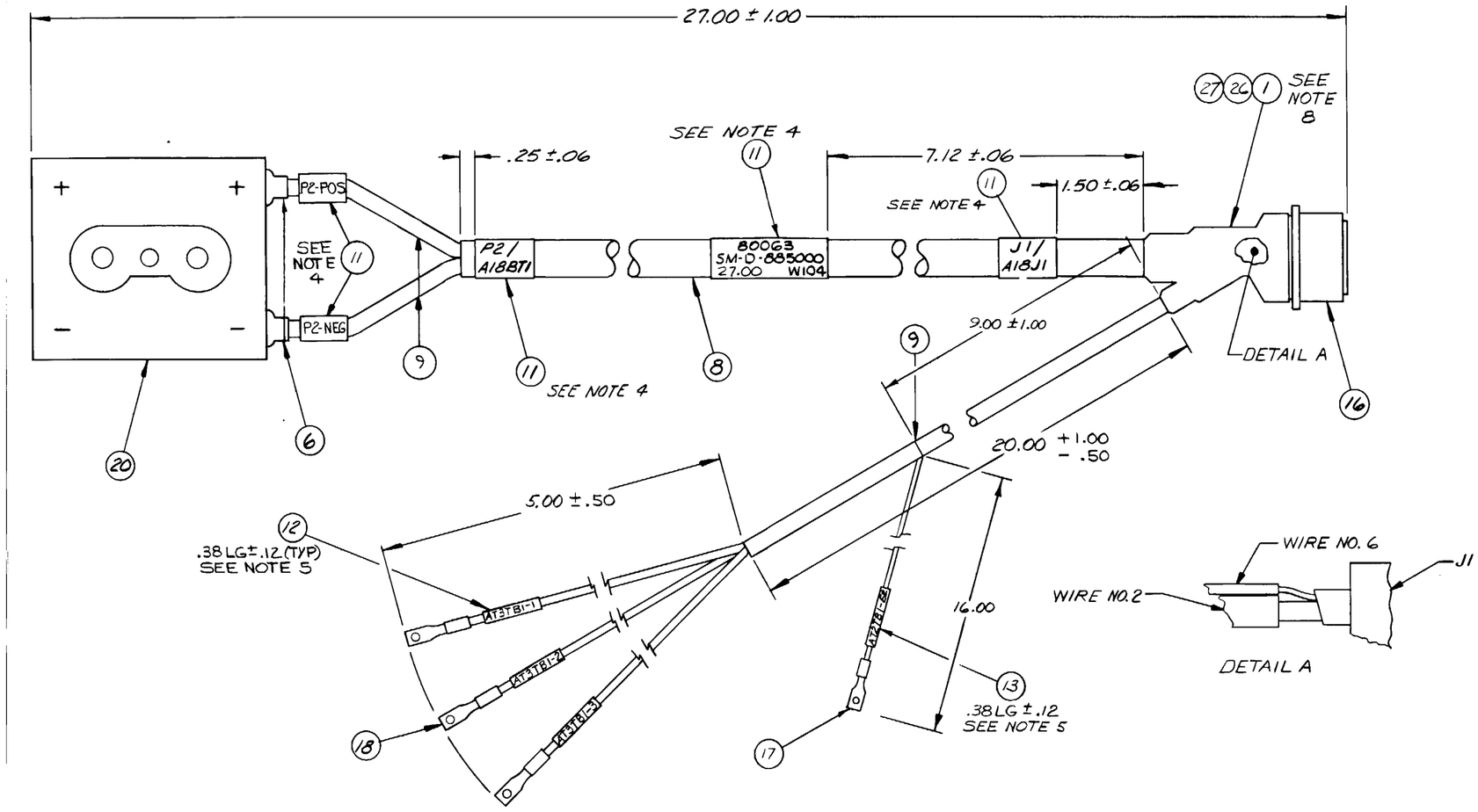
SECTION C-C
OVER 1.00 LENGTH
2 PLACES
SCALE 2/1



CABLE PREPARATION,
POSTIVE AND NEGATIVE LEADS

EL2VD146

Figure FO-64. Cable assembly, W44.



WIRE RUN LIST												
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	NOTE
1	2	WHT	26	J1 - A	3/4	15	7,9	P2 - POS	5/16	6,9,11	5
2	2	WHT		J1 - C	3/4	15		P2 - NEG	5/16	6,9,11	
3	3	WHT		J1 - D	7/16	14		A73TB1 - 1	5/16	12,18	
4	3	WHT		J1 - E	7/16	14		A73TB1 - 3	5/16	12,18	
5	3	WHT		J1 - B	7/16	14		A73TB1 - 2	5/16	12,18	
6	4	WHT	26	J1 - C	3/16	22	7,9	A72TB1 - E2	5/16	13,17	5

EL2VD147

Figure FO-65. Cable assembly, W104.

WIRE RUN LIST											
				FROM				TO			
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	23	WHT	12 FT	P1 - A	3/16	13	5,9	P2 - G	3/16	13	5,9
2		BLK		P1 - B	3/16	13	5,9	P2 - H	3/16	13	5,9
1A	6	BLK	3 IN	P1-A SHLD	3/16	19	14	P1-C SHLD	3/16	19	14
1B	6	BLK	3 IN	P2-N SHLD	3/16	19	14	P2-G SHLD	3/16	19	14
3	23	WHT	12 FT	P1 - C	3/16	13	5,9	P2 - N	3/16	13	5,9
4		BLK		P1 - D	3/16	13	5,9	P2 - P	3/16	13	5,9
3A	6	BLK	3 IN	P1-C SHLD	3/16	19	14	P1-K SHLD	3/16	19	14
3B	6	BLK	3 IN	P2-R SHLD	3/16	19	14	P2-N SHLD	3/16	19	14
5	23	WHT	12 FT	P1 - K	3/16	13	5,9	P2 - R	3/16	13	5,9
6		BLK		P1 - L	3/16	13	5,9	P2 - S	3/16	13	5,9
5A	6	BLK	3 IN	P1-K SHLD	3/16	19	14	P1-H SHLD	3/16	19	14
5B	6	BLK	3 IN	P2-T SHLD	3/16	19	14	P2-R SHLD	3/16	19	14
7	23	WHT	12 FT	P1 - H	3/16	13	5,9	P2 - T	3/16	13	5,9
8		BLK		P1 - J	3/16	13	5,9	P2 - U	3/16	13	5,9
7A	6	BLK	3 IN	P1-H SHLD	3/16	19	14	P1-M SHLD	3/16	19	14
7B	6	BLK	3 IN	P2-L SHLD	3/16	19	14	P2-T SHLD	3/16	19	14
9	7	WHT	12 FT	P1 - G	3/16	13	5,9	P2 - V	3/16	13	5,9
26A	6	BLK	3 IN	P3-C - SHLD	3/16	19	14	P3-A-SHLD	3/16	19	14
11	23	WHT	17 FT	P1 - M	3/16	13	5,9	S1-2	3/16	22,26	18
12		BLK		P1 - N	3/16	13	5,9	S1-3	3/16	22,26	18
11A	6	BLK	3 IN	P1-M SHLD	3/16	19	14	P1-P SHLD	3/16	19	14
13	23	WHT	17 FT	P1 - P	3/16	13	5,9	S1-6	3/16	22,26	18
14		BLK		P1 - R	3/16	13	5,9	S1-5	3/16	22,26	18
10	6	BLK	3 IN	P1-P SHLD	3/16	19	14	P1-F	3/16	13	5,9
15	7	WHT	17 FT	P1 - E	3/16	13	5,9	A25A1XDS1-1	1/2	22	9,18
16	11	BRAID	7 IN	A25A1-SHLD	—	—	14	A25A1E1	—	21	18
SHIELD	8	BRAID	12 FT	P1-SHELL	—	—		JUNCTION	—	—	13
SHIELD	10	BRAID	1 FT	P2-SHELL	—	—		JUNCTION	—	—	13
SHIELD	30	BRAID	6 FT	A25A1	—	—		JUNCTION	—	—	13
SHIELD	8	BRAID	10 FT	P3-SHELL	—	—		JUNCTION	—	—	13
17	6	BLK	7 IN	P3-L-SHLD	3/16	19	14	P3-N	3/16	13	5,9
18	23	WHT	11 FT	P3-L	3/16	13	5,9	P2-L	3/16	13	5,9
19		BLK		P3-M	3/16	13	5,9	P2-M	3/16	13	5,9
18A	6	BLK	3 IN	P3-L - SHLD	3/16	19	14	P3-J-SHLD	3/16	19	14
18B	6	BLK	3 IN	P2-J SHLD	3/16	19	14	P2-L SHLD	3/16	19	14
20	23	WHT	11 FT	P3 - J	3/16	13	5,9	P2-J	3/16	13	5,9
21		BLK		P3-K	3/16	13	5,9	P2-K	3/16	13	5,9
20A	6	BLK	3 IN	P3-J - SHLD	3/16	19	14	P3-G-SHLD	3/16	19	14
20B	6	BLK	3 IN	P2-J SHLD	3/16	19	14	P2-G SHLD	3/16	19	14
22	23	WHT	11 FT	P3-G	3/16	13	5,9	P2-G	3/16	13	5,9
23		BLK		P3-H	3/16	13	5,9	P2-H	3/16	13	5,9
22A	6	BLK	3 IN	P3-G - SHLD	3/16	19	14	P3-E-SHLD	3/16	19	14
22B	6	BLK	3 IN	P2-G SHLD	3/16	19	14	P2-E SHLD	3/16	19	14
24	23	WHT	11 FT	P3-E	3/16	13	5,9	P2-E	3/16	13	5,9
25		BLK		P3-F	3/16	13	5,9	P2-F	3/16	13	5,9
24A	6	BLK	3 IN	P3-E-SHLD	3/16	19	14	P3-C-SHLD	3/16	19	14
24B	6	BLK	3 IN	P2-E SHLD	3/16	19	14	P2-C SHLD	3/16	19	14
26	23	WHT	11 FT	P3-C	3/16	13	5,9	P2-C	3/16	13	5,9
27		BLK		P3-D	3/16	13	5,9	P2-D	3/16	13	5,9
26B	6	BLK	3 IN	P2-C SHLD	3/16	19	14	P2-A SHLD	3/16	19	14
28	23	WHT	11 FT	P3-A	3/16	13	5,9	P2-A	3/16	13	5,9
29		BLK		P3-B	3/16	13	5,9	P2-B	3/16	13	5,9
28B	6	BLK	3 IN	P2-A SHLD	3/16	19	14	P2-U-SHLD	3/16	19	14
30	39	WHT	21 FT	P1-U	3/16	13	5,9	A25TB3-18	3/16	22,26	18
30A	6	BLK	3 IN	P1-U SHLD	3/16	19	14	P1-A SHLD	3/16	—	—

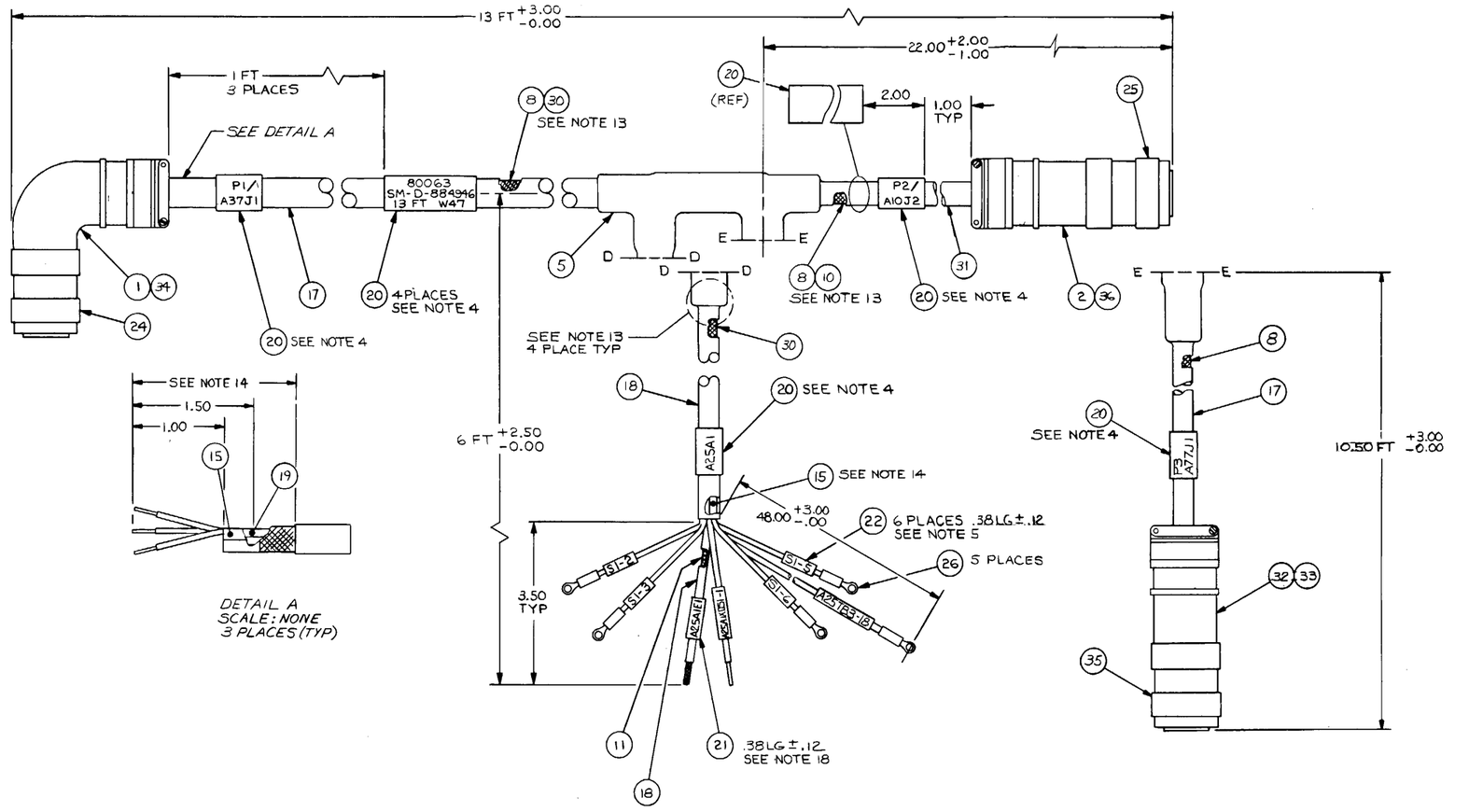


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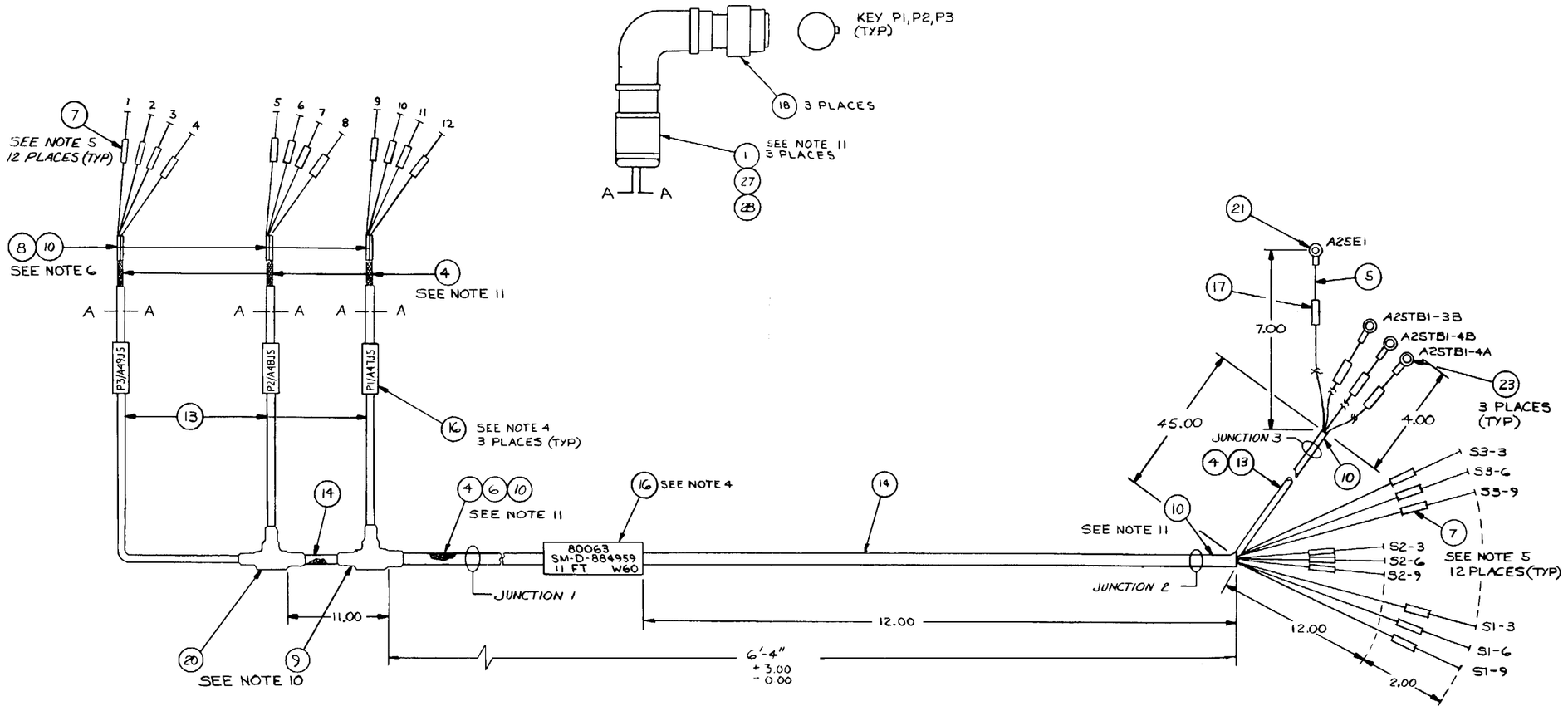
Figure FO-66. Cable assembly, W47.

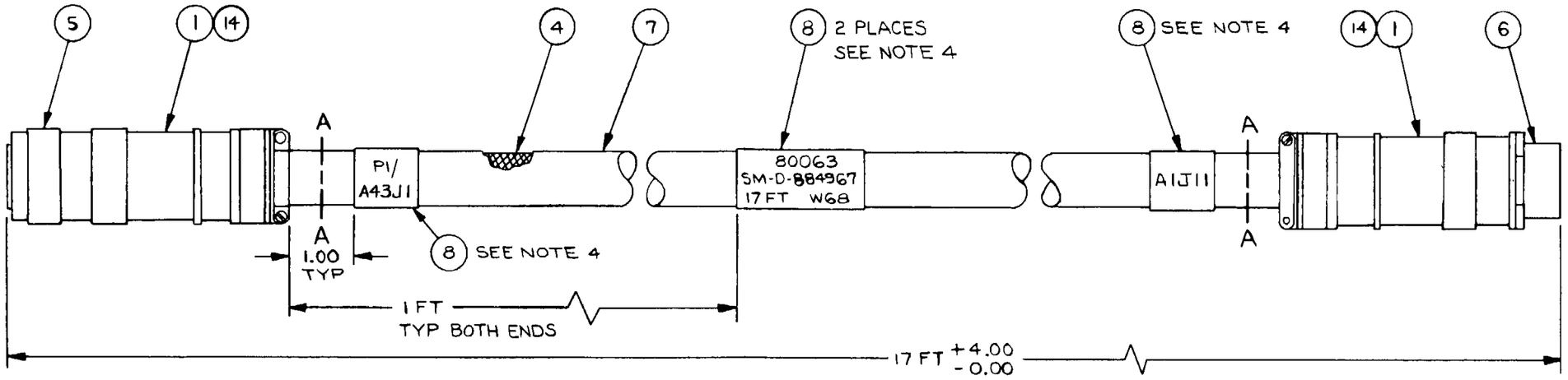


WIRE RUN LIST

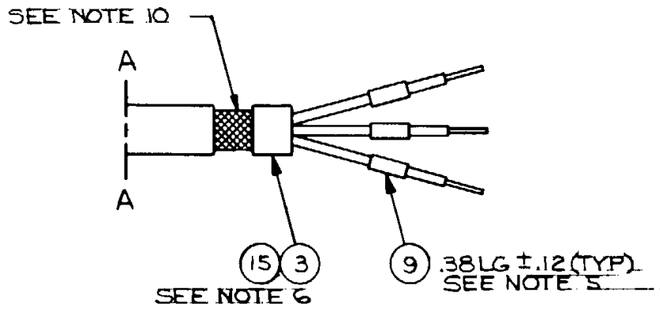
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	FROM REF DES	FROM STRIP LENGTH	FROM ATTACH FIND NO	NOTE	TO REF DES	TO STRIP LENGTH	TO ATTACH FIND NO	NOTE
1	2	WHT	120.00	P3-A	3/16	7	5,9	S3-6	1/2	15	9, 12
2	2	↑	120.00	↓ B	↑	↑	↑	S3-9	1/2	15	9, ↑
3	2		160.00	↓ C				A25TB1-4A	1/4	15,23	
4	2		120.00	P3-D				S3-3	1/2	15	9,
5	2		117.00	P2-A				S2-6	1/2	15	9,
6	2		117.00	↓ B				S2-9	1/2	15	9,
7	2		160.00	↓ C				A25TB1-4B	1/4	15,23	
8	2		117.00	P2-D				S2-3	1/2	15	9,
9	2		117.00	P1-A				S1-6	1/2	15	9,
10	2		117.00	↓ B				S1-9	1/2	15	9,
11	2	↓	160.00	↓ C	↓	↓	↓	A25TB1-5A	1/4	15,23	
12	2	WHT	117.00	P1-D	3/16	7	5,9	S1-3	1/2	15	9, ↓
SHLD	5	—	7.00	CABLE BRAID	—	—	—	A25E1	—	17,21	12
SHLD	4	—	14.00	P1-SHELL	—	11	—	JUNCTION 1	—	—	10
SHLD	4	—	16.00	P2-SHELL	—	11	—	↑ 1	—	—	10
SHLD	4	—	18.00	P3-SHELL	—	11	—	1	—	—	10
SHLD	6	—	36.00	JUNCTION 2	→	10	—	↓ 1	—	—	10
SHLD	4	—	36.00	JUNCTION 2	—	10	—	JUNCTION 3	—	—	10

EL2VD149

Figure FO-67. Cable assembly, W60.



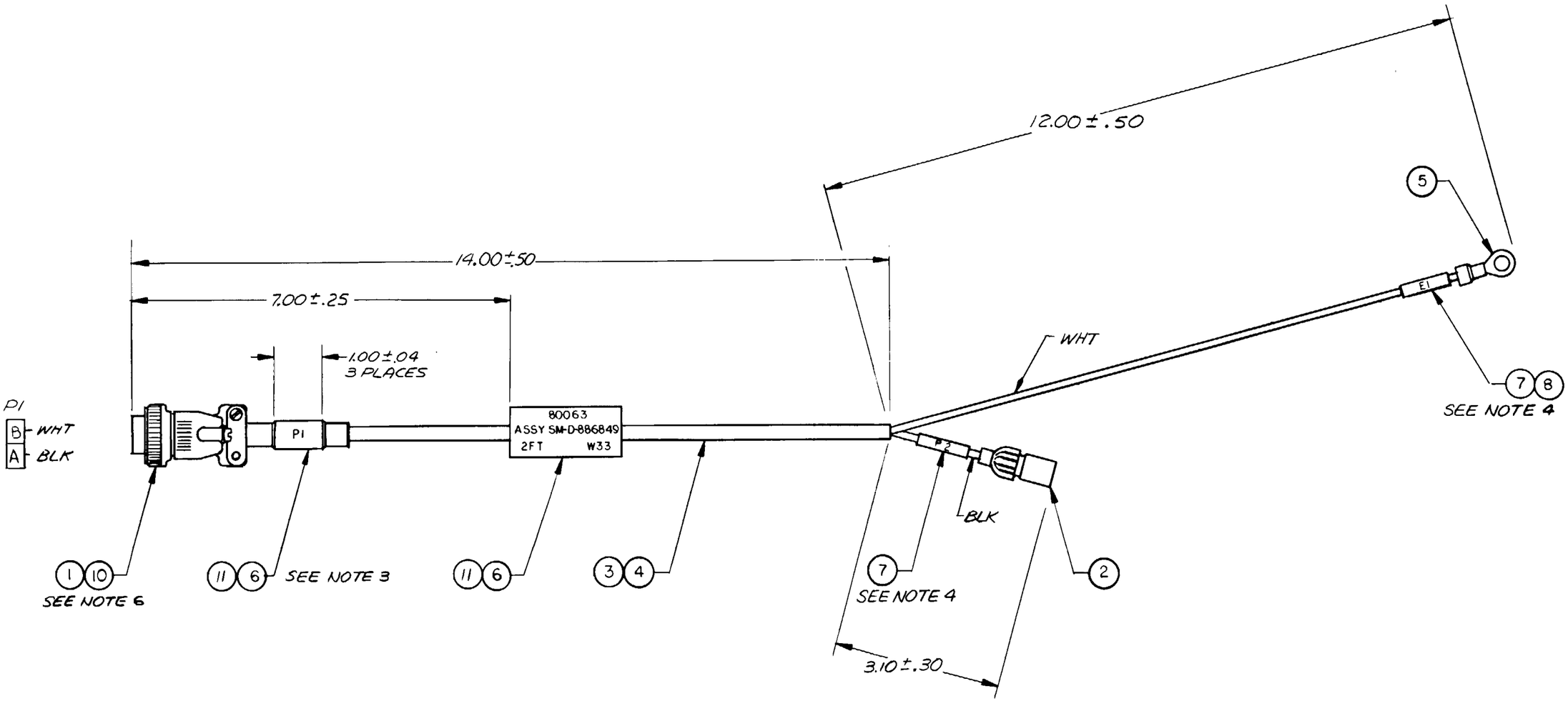
WIRE RUN LIST											
				FROM				TO			
WIRE NO	FIND NO	COLOR	WIRE LENGTH (REF)	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE	REF DES	STRIP LENGTH	ATTACH FIND NO	NOTE
1	2	WHT	17 FT	P1-A	3/16	9,10	5,9	J11-A	3/16	9,11	5,9
2	↑	↑	↑	B	↑	↑	↑	B	↑	↑	↑
3				C				C			
4				D				D			
5				E				E			
6				F				F			
7	↓	↓	↓	G	↓	↓	↓	G	↓	↓	↓
8	2	WHT	17 FT	P1-H	3/16	9,10	5,9	J11-H	3/16	9,11	5,9
SHIELD	4	BRAID	—	P1 SHELL	—	—	—	J11 SHELL	—	—	10



CABLE PREPARATION
BOTH ENDS

EL2VD150

Figure FO-68. Cable assembly, W68.



EL2VD145

Figure FO-69. Cable assembly, W33.

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