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REMOTE MEDICAL DIAGNOSIS SYSTEM (RMDS): SHIPBOARD INSTALLATION --ETC(U)
APR 80 W T RASMUSSEN, I STEVENS

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REMOTE MEDICAL DIAGNOSIS SYSTEM (RMDS): SHIPBOARD INSTALLATION AND WIRING ON USS ENTERPRISE, CVN-65

W T Rasmussen
and
I Stevens

April 1980

Final Report: January — March 1978

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Naval Medical Research and Development Command

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NAVAL OCEAN SYSTEMS CENTER
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SL GUILLE, CAPT, USN

Commander

HL BLOOD

Technical Director

ADMINISTRATIVE INFORMATION

This report is one in a series of reports for the Remote Medical Diagnosis System (RMDS), NOSC Work Unit CM38, sponsored by the Naval Medical Research and Development Command. This document is based on work performed by the Naval Electronic Systems Engineering Center, Vallejo, California, between 1 January 1978 and 17 March 1978. Contained in this document are specifications and schematics for electrical cable runs and installation of RMDS Advanced Development Model (ADM) aboard the USS ENTERPRISE, CVN-65.

The RMDS ADM was tested for technical performance at sea by Ilya Stevens and Patrick D. Hayes of the Naval Ocean Systems Center (NOSC), Biomedical Engineering Branch, Code 8233, and James West of WESTEC Services, Inc., under the direction of Dr. W.T. Rasmussen, Head, Code 8233.

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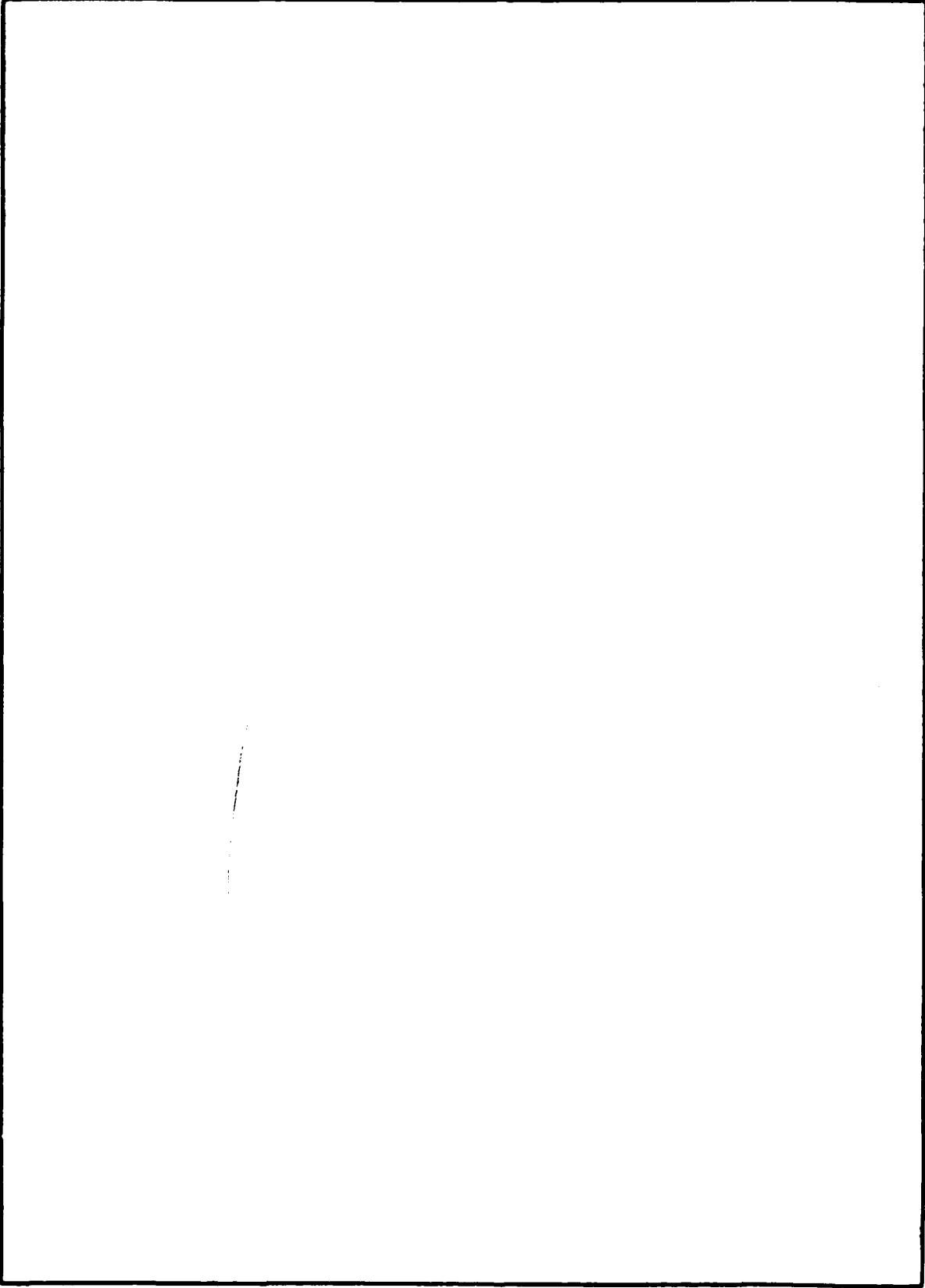
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I. INTRODUCTION

The mission of the Remote Medical Diagnosis System (RMDS) is to improve medical diagnosis at remote sites. This is accomplished by transmitting medical data and diagnostic information between remote ship or shore sites and full-capability medical centers. The RMDS will enable the medical personnel at a remote site to contact a physician at a diagnostic center (ashore or shipboard) and transmit a visual and auditory presentation of the medical data needed for diagnosis, such as patient history, laboratory tests, ECG tracings, x-ray images, images of a patient injury, heart-lung sounds, and verbal descriptions. By return link, the physician will be able to send diagnosis and treatment information. The communication requirements for this are satisfied by any two-way, voice-grade, narrowband communication channel such as telephone line, HF or UHF radio, or satellite links.

The system as a whole consists essentially of the Remote Medical Diagnosis Terminals (RMDTs), user personnel, and existing voice-grade communication links which can be used to interconnect the terminals. All the hardware which is unique to the system is contained in the terminals, including a TV camera, TV monitor, x-ray light box, electronic stethoscope, ECG monitor, audio tape recorder, audio handsets, and the electronics package, consisting of signal modulator, demodulator, and modems.

Shipboard feasibility tests of an early RMDS were completed during FY-75/76. This testing showed that the concept was feasible and that equipment could be developed to meet the requirements using available technology. Advanced Development Models (ADMs) were specified and procured in September 1977.

The USS ENTERPRISE (CVN-65) was designated as the test ship for the at-sea tests of the RMDS ADMs. The at-sea tests were performed in February and March 1978. One of the RMDS units was installed in the sickbay area on board the USS ENTERPRISE. The second RMDS unit was located at the Naval Ocean Systems Center (NOSC), San Diego, California.

All work on the cable runs, their design and installation, and the choice of cable routes were performed by the Naval Electronic Systems Engineering Center, Vallejo, California. This work was performed in accordance with the drawings and specifications contained in this report.



II. CABLE RUNNING LISTS

This section contains the cable run lists used for wiring and installation.

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

REFERENCES		
NO.	TITLE	DRAWING NO.
1	RIDS ARR & FDNS	CVN-65-445-4791576
2	RIDS BLK & ELEM	CVN-65-409-4791578

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
RIDS										CABLE										RUNNING										LISTS																													

TOLERANCES:	DESIGN AGENT:	NAVELEX	 NAVAL ELECTRONIC SYSTEMS ENGINEERING CENTER VALLEJO VALLEJO, CALIFORNIA 94592		
	DRAWN: <i>[Signature]</i> / <i>[Date]</i> CHECKED: <i>[Signature]</i> APPROVED: <i>[Signature]</i> / <i>[Date]</i> APPROVED NAVELEX DATE: <i>[Signature]</i> / <i>[Date]</i> SATISFACTORY TO: <i>[Signature]</i> / <i>[Date]</i> FOR:	PROJ. ENGR. <i>[Signature]</i> / <i>[Date]</i> PROJ. HEAD <i>[Signature]</i> DIV. HEAD <i>[Signature]</i> DEPT. HEAD <i>[Signature]</i>	REMOTE MEDICAL DIAGNOSIS SYSTEM (RIDS) CABLE RUNNING LISTS		
MATERIAL:	SIZE	CODE IDENT. NO.	DRAWING NO.		REV.
	A	14203	CVN-65	409	4791577
	SCALE	WEIGHT	SH 1		OF 11

◆ GPO 716-570

▲

GENERAL NOTES:

1. INSTALLATION OF CABLES WITHIN SECURE AND NON-SECURE SPACES SHALL BE IN ACCORDANCE WITH MIL-STD-1680 (SHIPS) AND MIL-STD-1310C RESPECTIVELY. SEE REF 2 SHEET
2. CABLE INSTALLATION SHALL BE IN ACCORDANCE WITH NS 0967-000-0110.
3. REMOVE EXISTING WIRING FROM TWO REMOTE POSITIONS ON SB-363 TRANSMITTER SWITCHBOARDS DESIGNATED BY SHIPS FORCE AND HOOK UP CABLES R-RQ-MED1 AND R-RQ-MED2 TO SAME.
4. REMOVE EXISTING WIRING FROM TWO REMOTE POSITIONS ON SB-82 RECEIVER SWITCHBOARDS DESIGNATED BY SHIPS FORCE AND HOOK UP CABLES R-RR-MED1 AND R-RR-MED2 TO SAME.
5. R-RQ-MED1, R-RQ-MED2 AND R-DD-MEDIA CABLE ROUTE AS FOLLOWS:
 - A. 2ND DECK, FRAME 120, WARD 1
 - B. 2ND DECK, FRAME 124, WARD 2
 - C. 2ND DECK, FRAME 124, POPT PASSAGE
 - D. MAIN DECK, FRAME 124, PORT
 - E. 03 LEVEL, FRAME 122, PORT
 - F. 02 LEVEL, FRAME 122, PORT
 - G. 03 LEVEL, FRAME 122, PORT
 - H. 03 LEVEL, FRAME 121, POPT PASSAGE 03-121-6
 - I. 03 LEVEL, FRAME 121-104 POPT PASSAGE
 - J. 03 LEVEL, FRAME 104 PORT/STBD ATHWART PASSAGE
 - K. 03 LEVEL, FRAME 104-20 STBD PASSAGE
 - L. 03 LEVEL, FRAME 20, STBD, RADIO CENTRAL
6. CABLES SHALL BE ROUTED IN EXISTING CABLE MAYS WHEREVER POSSIBLE. IF NEW CABLE ROUTES ARE REQUIRED, NEW CABLE SUPPORTS SHALL BE INSTALLED IN ACCORDANCE WITH NS 0967-000-0110.

SIZE	CODE IDENT	DRAWING NO.			REV.
A	14203	CVN-65	409	4791577	
SCALE		WEIGHT		SH 2	OF 11

LEAD NO. (D-M-F)			CABLE TYPE 2S110				ACTIVE COND 16	
UNIT A 01-143			CONNECTOR TYPE MS3216T20-41SY		UNIT B ANDROXSY1434		CONNECTOR TYPE 07	
NO	PAIR NO	COLOR CODE	TERMINAL	WIRE MARKING	TERMINAL	WIRE MARKING	REMARKS	
1	1		J14-J	J14-J/TB1-1	TB1-1	TB1-1/J14-J	XMT DATA	
2	1		J14-K	J14-K/TB1-2	TB1-2	TB1-2/J14-K	XMT DATA RTN	
3	2		J14-L	J14-L/TB1-3	TB1-3	TB1-3/J14-L	XMT CLK	
4	2		J14-M	J14-M/TB1-4	TB1-4	TB1-4/J14-M	XMT CLK RTN	
5	3		J14-N	J14-N/TB1-5	TB1-5	TB1-5/J14-N	RCV DATA	
6	3		J14-P	J14-P/TB1-6	TB1-6	TB1-6/J14-P	RCV DATA RTN	
7	4		J14-R	J14-R/TB1-7	TB1-7	TB1-7/J14-R	RCV CLK	
8	4		J14-S	J14-S/TB1-8	TB1-8	TB1-8/J14-S	RCV CLK RTN	
9	5		J14-T	J14-T/TB1-9	TB1-9	TB1-9/J14-T	DATA KEY	
10	5		J14-U	J14-U/TB1-10	TB1-10	TB1-10/J14-U	DATA KEY RTN	
11	6		J14-V	J14-V/TB1-11	TB1-11	TB1-11/J14-V	CH BUSY	
12	6		J14-W	J14-W/TB1-12	TB1-12	TB1-12/J14-W	CH BUSY RTN	
13	7		J14-h	J14-h/TB1-13	TB1-13	TB1-13/J14-h	ALM RESET	
14	7		J14-i	J14-i/TB1-14	TB1-14	TB1-14/J14-i	ALM RESET RTN	
15	8		J14-j	J14-j/TB1-15	TB1-15	TB1-15/J14-j	ALM IND	
16	8		J14-k	J14-k/TB1-16	TB1-16	TB1-16/J14-k	ALM IND RTN	
17	9		GND	SPARE	GND	SPARE	SPARE	
18	9		GND	SPARE	GND	SPARE	SPARE	
19	10		GND	SPARE	GND	SPARE	SPARE	
20	10		GND	SPARE	GND	SPARE	SPARE	
21								
22								
23								
24								
25								
26							NOTE: GROUND SHIELDS AND SPARE WIRES AT BOTH ENDS OF CABLE IN ACCORDANCE WITH MIL-STD-1680 (SHIPS), SEE REF 2 SHEET	
27								
28								
29								
30								
31								
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34								
35								
36								

CABLE RUNNING LIST

SIZE A	CODE IDENT 14203	DRAWING NO.		REV.
SCALE	WEIGHT	CVN-65	409	4791577
		SH 3	OF 11	

◆ GPO 790-270 Printed on Bonding 40-532

LEAD NO R-DD-MEDIA			CABLE TYPE 25010				ACTIVE COND 16	
UNIT A IN BOX SY: 1434			CONNECTOR TYPE BX		UNIT B IN BOX SY: 1522.1		CONNECTOR TYPE BX	
NO	PAIR NO	COLOR CODE	TERMINAL	WIRE MARKING	TERMINAL	WIRE MARKING	REMARKS	
1	1		TB1-1	TB1-1/TB2-5	TB2-5	TB2-5/TB1-1	XMT DATA	
2	1		TB1-2	TB1-2/TB2-6	TB2-6	TB2-6/TB1-2	XMT DATA PTN	
3	2		TB1-3	TB1-3/TB2-7	TB2-7	TB2-7/TB1-3	XMT CLK	
4	2		TB1-4	TB1-4/TB2-8	TB2-8	TB2-8/TB1-4	XMT CLK RTN	
5	3		TB1-5	TB1-5/TB2-9	TB2-9	TB2-9/TB1-5	RCV DATA	
6	3		TB1-6*	TB1-6/TB2-10	TB2-10	TB2-10/TB1-6	RCV DATA PTN	
7	4		TB1-7	TB1-7/TB2-11	TB2-11	TB2-11/TB1-7	RCV CLK	
8	4		TB1-8	TB1-8/TB2-12	TB2-12	TB2-12/TB1-8	RCV CLK RTN	
9	5		TB1-9	TB1-9/TB2-13	TB2-13	TB2-13/TB1-9	DATA KEY	
10	5		TB1-10	TB1-10/TB2-14	TB2-14	TB2-14/TB1-10	DATA KEY RTN	
11	6		TB1-11	TB1-11/TB2-15	TB2-15	TB2-15/TB1-11	CH BUSY	
12	6		TB1-12	TB1-12/TB2-16	TB2-16	TB2-16/TB1-12	CH BUSY RTN	
13	7		TB1-13	TB1-13/TB2-17	TB2-17	TB2-17/TB1-13	ALM RESET	
14	7		TB1-14	TB1-14/TB2-18	TB2-18	TB2-18/TB1-14	ALM RESET RTN	
15	8		TB1-15	TB1-15/TB2-19	TB2-19	TB2-19/TB1-15	ALM IND	
16	8		TB1-16	TB1-16/TB2-20	TB2-20	TB2-20/TB1-16	ALM IND RTN	
17	9		GND	SPARE		SPARE	SPARE	
18	9		GND	SPARE		SPARE	SPARE	
19	10		GND	SPARE		SPARE	SPARE	
20	10		GND	SPARE		SPARE	SPARE	
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								



NOTE: GROUND SHOULD BE TO CHASSIS AT BOTH ENDS OF CABLE.

CABLE RUNNING LIST

SIZE A	CODE IDENT 14203	DRAWING NO. CVN-65 409		REV. 4791577
SCALE		WEIGHT		SH ⁴ OF 11

★ GPO 793-578 Printed on Drawing 40-532

UNIT A SB-863			CABLE TYPE TTRS-B				ACTIVE COND 14	
CONNECTOR TYPE BX			UNIT B C4NBOXSYM522.1				CONNECTOR TYPE BX	
NO	PAIR NO	COLOR CODE	TERMINAL	WIRE MARKING	TERMINAL	WIRE MARKING	REMARKS	
1	1		R-1	R-1/TB1-1	TB1-1	TB1-1/R-1	START	
2	1		R-2	R-2/TB1-2	TB1-2	TB1-2/R-2	COMMON	
3	2		R-3	R-3/TB1-3	TB1-3	TB1-3/R-3	STOP	
4	2		R-4	R-4/TB1-4	TB1-4	TB1-4/R-4	POWER IND	
5	3		R-5	R-5/TB1-5	TB1-5	TB1-5/R-5	CH KEY	
6	3		R-6	R-6/TB1-6	TB1-6	TB1-6/R-6	CH KEY RTN	
7	4		R-7	R-7/TB1-7	TB1-7	TB1-7/R-7	-12VDC	
8	4		R-8	R-8/TB1-8	TB1-8	TB1-8/R-8	+12VDC	
9	5		R-9	R-9/TB1-9	TB1-9	TB1-9/R-9	MODULATOR	
10	5		R-10	R-10/TB1-10	TB1-10	TB1-10/R-10	MODULATOR	
11	6		R-11	R-11/TB1-11	TB1-11	TB1-11/R-11	PUSH TO TALK	
12	6		R-12	R-12/TB1-12	TB1-12	TB1-12/R-12	CARRIER IND	
13	7	*	SPLICE	SPL1/TB1-13	TB1-13	TB1-13/SPL1	RCV AUDIO	
14	7	*	SPLICE	SPL2/TB1-14	TB1-14	TB1-14/SPL2	RCV AUDIO	
15	8			SPARE		SPARE	SPARE	
16	8			SPARE		SPARE	SPARE	
17								
18								
19								
20								
21		*	INLINE SPLICE TO CABLE R-30-MFD1					
22								
23								
24			NOTE: GROUND CABLE SHIELDS TO CHASSIS AT BOTH ENDS OF CABLE					
25								
26			REMOVE EXISTING WIRES ON SB-863					
27			REMOVE POSITION DESIGNATED BY					
28			SHIPS FORCE. IDENTIFY, LABEL					
29			INSULATE AND TIE BACK EXISTING WIRES.					
30			HOOK UP NEW CABLE R-30-MFD1					
31			TO REMOTE TERMINALS PREVIOUSLY					
32			VACATED.					
33								
34								
35								
36								

CABLE RUNNING LIST	SIZE	CODE IDENT	DRAWING NO.			REV.
	A	14203	CVN-65	409	4791577	
SCALE		WEIGHT		SH 5 OF 11		

☆ GPO 793-378 Printed on Bonding 40 532

LEAD NO R-R0-MED2			CABLE TYPE TTRS-8				ACTIVE COMP	
UNIT A SB-863			CONNECTOR TYPE BX		UNIT B COMBOSYM522.J		CONNECTOR TYPE BX	
NO	PAIR NO	COLOR CODE	TERMINAL	WIRE MARKING	TERMINAL	WIRE MARKING	REMARKS	
1	1		R-1	R-1/TB1-15	TB1-15	TB1-15/R-1	START	
2	1		R-2	R-2/TB1-16	TB1-16	TB1-16/R-2	COMMON	
3	2		R-3	R-3/TB1-17	TB1-17	TB1-17/R-3	STOP	
4	2		R-4	R-4/TB1-18	TB1-18	TB1-18/R-4	POWER IND	
5	3		R-5	R-5/TB1-19	TB1-19	TB1-19/R-5	CH KEY	
6	3		R-6	R-6/TB1-20	TB1-20	TB1-20/R-6	CH KEY RTN	
7	4		R-7	R-7/TB1-21	TB1-21	TB1-21/R-7	-12VDC	
8	4		R-8	R-8/TB1-22	TB1-22	TB1-22/R-8	+12VDC	
9	5		R-9	R-9/TB1-23	TB1-23	TB1-23/R-9	MODULATION	
10	5		R-10	R-10/TB1-24	TB1-24	TB1-24/R-10	MODULATION	
11	6		R-11	R-11/TB2-1	TB2-1	TB2-1/R-11	PUSH TO TALK	
12	6		R-12	R-12/TB2-2	TB2-2	TB2-2/R-12	CARRIER IND	
13	7	*	SPLICE	SPL1/TB2-3	TB2-3	TB2-3/SPL1	RCV AUDIO	
14	7	*	SPLICE	SPL2/TB2-4	TB2-4	TB2-4/SPL2	RCV AUDIO	
15	8			SPARE		SPARE	SPARE	
16	8			SPARE		SPARE	SPARE	
17								
18								
19								
20								
21		*	INCLINE SPLICE TO CABLE R-R-MED2					
22								
23								
24			NOTE: GROUND CABLE SHIELDS TO CHASSIS					
25			AT BOTH ENDS OF CABLE					
26			REMOVE EXISTING WIRES ON SB-863					
27			REMOTE POSITION DESIGNATED BY					
28			STRIPS FORCE. IDENTIFY, LABEL,					
29			INSULATE AND TIE BACK EXISTING WIRES.					
30			HOOK UP NEW CABLE R-R-MED2					
31			TO REMOTE TERMINALS PREVIOUSLY					
32			VACATED.					
33								
34								
35								
36								

CABLE RUNNING LIST

SIZE A	CODE IDENT 14203	DRAWING NO.		REV.
		CMN-65	409	4791577
SCALE		WEIGHT		SH 6 OF 11

LEAD NO. R-RR-MED1			CABLE TYPE RG-108				ACTIVE COND 2	
UNIT A SB-82			CONNECTOR TYPE BX		UNIT B SB-863		CONNECTOR TYPE BX	
NO.	PAIR NO.	COLOR CODE	TERMINAL	WIRE MARKING	TERMINAL	WIRE MARKING	REMARKS	
1	1	*	RMT	RMT/SPL1	SPLICE	SPL1/RMT	RCV AUDIO	
2	1	*	RMT	RMT/SPL2	SPLICE	SPL2/RMT	RCV AUDIO	
3								
4								
5								
6								
7		*	INLINE SPLICE TO CABLE R-RR-MED1					
8								
9								
10			NOTE: GROUND SHIELD TO CHASSIS					
11			AT BOTH ENDS OF CABLE					
12			REMOVE EXISTING WIRES ON SB-82					
13			REMOTE POSITION DESIGNATED BY					
14			STRIPS FORCE. IDENTIFY, LABEL,					
15			INSULATE AND TIE BACK EXISTING					
16			WIRES. HOOK UP NEW CABLE R-RR-MED1					
17			TO REMOTE TERMINALS PREVIOUSLY					
18			VACATED.					
19								
20								
21								
22								
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36								

CABLE RUNNING LIST

SIZE A	CODE IDENT 14203	DRAWING NO. CVN-65 409		REV. 4791577
SCALE	WEIGHT	SH 7 OF 11		

LEAD NO R-RR-MED2			CABLE TYPE RG-108				ACTIVE COND 2	
UNIT A SB-82			CONNECTOR TYPE BX		UNIT B SB-863		CONNECTOR TYPE BX	
NO	PAIR NO	COLOR CODE	TERMINAL	WIRE MARKING	TERMINAL	WIRE MARKING	REMARKS	
1	1	*	RMT	RMT/SPL1	SPLICE	SPL1/RMT	RCV AUDIO	
2	1	*	RMT	RMT/SPL2	SPLICE	SPL2/RMT	RCV AUDIO	
3								
4								
5								
6								
7		*	INLINE SPLICE TO CABLE R-RR-MED2					
8								
9								
10			NOTE: GROUND SHIELD TO CHASSIS AT					
11			BOTH ENDS OF CABLE					
12			REMOVE EXISTING WIRES ON SB-82					
13			REMOTE POSITION DESIGNATED BY					
14			SHIPS FORCE. IDENTIFY, LABEL,					
15			INSULATE AND TIE BACK EXISTING					
16			WIRES. HOOK UP NEW CABLE R-RR-MED2					
17			TO REMOTE TERMINALS PREVIOUSLY					
18			VACATED.					
19								
20								
21								
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36								

CABLE RUNNING LIST

SIZE A	CODE IDENT 14203	DRAWING NO. CVN-65 409 4791577		REV.
SCALE	WEIGHT	SH 8 OF 11		

LEAD NO. R-RP-MEDI			CABLE TYPE 3SJ14			ACTIVE COND 2	
UNIT A		PWR PNL	CONNECTOR	TYPE BX	UNIT B AC RESEP		CONNECTOR TYPE BX
NO	PAIR NO	COLOR CODE	TERMINAL	WIRE MARKING	TERMINAL	WIRE MARKING	REMARKS
1		BLK	BRK1-C	115VAC/PH C	1	115VAC/PH C	115VAC PHASE C
2		WHT	BRK1-A	115VAC/PH A	2	115VAC/PH A	115VAC PHASE A
3		RED	GND	GND	GND	GND	GROUND
4							
5							
6			NOTE: GROUND SHIELD TO CHASSIS				
7			AT BOTH ENDS OF CABLE				
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36							

CABLE RUNNING LIST

SIZE A	CODE IDENT 14203	DRAWING NO.		REV.
		CVN-65	409	4791577
SCALE	WEIGHT	SH 9 OF 11		

© GPO 793-376 Printed on Bonding 40-532

LEAD NO			CABLE TYPE			ACTIVE COND		
R-PP-MED2			3SJJ4			2		
UNIT A		CONNECTOR TYPE			UNIT B		CONNECTOR TYPE	
PWR PHL		BX			AC RECP		BX	
NR	PAIR NO	COLOR CODE	TERMINAL	WIRE MARKING	TERMINAL	WIRE MARKING	REMARKS	
1		BLK	BRK2-C	115VAC/PH C	1	115VAC/PH C	115VAC PHASE C	
2		WHT	BRK2-B	115VAC/PH B	2	115VAC/PH B	115VAC PHASE B	
3		RED	GND	GND	GND	GND	GROUND	
4								
5								
6			NOTE: GROUND SHIELD TO CHASSIS					
7			AT BOTH ENDS OF CABLE.					
8								
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CABLE RUNNING LIST

SIZE	CODE IDENT	DRAWING NO.		REV.
A	14203	CVN-65	409	4791577
SCALE	WEIGHT	SH 10 OF 11		

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LEAD NO R-RP-MED3			CABLE TYPE 3S,114				ACTIVE COND 2	
UNIT A PWR PNL		CONNECTOR	TYPE BX		UNIT B RMDS RACK		CONNECTOR TYPE BX	
NO	PAIR NO	COLOR CODE	TERMINAL	WIRE MARKING	TERMINAL	WIRE MARKING	REMARKS	
1		BLK	BRK3-C	115VAC/PH C	1	115VAC/PH C	115VAC PHASE C	
2		WHT	BRK3-A	115VAC/PH A	2	115VAC/PH A	115VAC PHASE A	
3		RED	GND	GND	GND	GND	GROUND	
4								
5								
6			NOTE: GROUND SHIELD TO CHASSIS AT BOTH ENDS OF CABLE.					
7								
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CABLE RUNNING LIST

SIZE A	CODE IDENT 14203	DRAWING NO.		REV.
SCALE	WEIGHT	CVN-65 409	4791577	SH 11 OF 11

☆ GPO 793-378 Printed on Bonding 40-532



III. RMDS SHIPBOARD WIRING SCHEMATICS

This section contains all wiring schematics used for the shipboard installation and testing on the USS ENTERPRISE.

INDEX	
SHEET	TITLE
1	TITLE, INDEX, NOTES, REFERENCES, APPLICABILITIES
2	MATERIAL LIST
3	POWER WIRING DIAGRAM
4	ALL POWER, E-MOUNT DETAILS
5	SHIELDING LABEL FOR DET TO BE IN SPACES

PROJECT: REMOTE MEDICAL DIAGNOSIS SYSTEM

NAVSEA ELECTRONIC SYSTEMS

REMOTE MEDICAL DIAGNOSIS SYSTEM

POWER WIRING DIAGRAM

NOV 85 099 479670

14203 407 479157
 14203 445 479157
 CODE IDENT NAVSEA SYSCOM
 DRAWING NO

REV
 SHIP
 DATE

GENERAL NOTES CONTINUED:

- 11. SEE DETAILS THIS PLAN, SHEET 5, FOR MOUNTING AND PENETRATION INSTRUCTIONS FOR GROUND BOX, PC NO 1.
- 12. SEE DETAILS THIS PLAN, SHEET 5, FOR SHIELD GROUND CONNECTION FOR CONNECTOR, PC NO 11.
- 13. MOUNT CONNECTION BOX, PC NO 2, ON BULKHEAD BEHIND RMDS CABINET FOUNDATION TO SUIT.
- 14. WIRING BETWEEN RMDS CABINET AND RMDS CONNECTION BOX, PC NO 2, IS THE RESPONSIBILITY OF NAVAL OCEAN SYSTEMS CENTER.
- 15. INSTALLING ACTIVITY TO FURNISH ALL NAMEPLATES, CABLE TAGS AND MISCELLANEOUS INSTALLATION HARDWARE.
- 16. ALL NAMEPLATES SHALL BE ENGRAVED PHENOLIC, ALL CABLE TAGS SHALL BE EMBOSSED ALUMINUM AND ALL WIRE MARKERS SHALL BE VINYL SLEEVING.

D

C

B

A

REV	QTY	PIECE NO	DESCRIPTION	UNITS	TOTAL WEIGHT	MATERIAL	SPEC	FEDERAL STOCK NO	REMARKS
	8	30	LOCK NUT 1/4 DIA.						
	2	38	PIPE 1/4 DIA X 5 IN LONG SCH 40						
	A/R	94	W. KE STRANDED			ANG-10			USED WITH PC USED WITH PC USED WITH PC
		33							
		32							
	1	31	BOX CONNECTOR, 90 DEGREE						
	1	30	TERMINAL BOARD						
	3	29	NUT, HEX 3/8-16						
	3	28	WASHER LOCK 3/8						
	3	27	WASHER, FLAT 3/8						
	3	26	STD 3/8-16						
	1	25	N PPLE, PIPE						
	3	24	LOCK NUT						
	1	23	COUPLING, PIPE						
	1	22	BOX CONNECTOR, STRAIGHT						
		21							
		20							
	35	19	CABLE			55J14			
	90	18				56J14			
	20	17				R6-10B/L			
	60	16				22U-10			
	300	15	CABLE			RS-8			
		14							
		13							
	1	12	BACKSHELL						
	1	11	CONNECTOR			M53120F20-415V			SUPPLIED WITH SUPPLIED WITH
		10							
		9							
	4	8	CIRCUIT BREAKER			ALB-1	ISA		USED WITH PC
	2	7	CONVEANCE INLET, DAL, AC						SEE GEN. NOTE
	3	6	DUPLEX BOX						SEE GEN. NOTE
	3	5	TRANSFORMER			9TBY52			
	1	4	LIGHT, FLUORESCENT 60W			SYM 333.1			GEN. ELECTRIC
	1	3	POWER PANEL ASMT			ALB-1			
	1	2	CONNECTION BOX			SYM 522.1			
	1	1	CONNECTION BOX			SYM 424			

LIST OF MATERIAL



LEGEND

GFE GOVERNMENT FURNISHED EQUIPMENT
IAF INSTALLING ACTIVITY FURNISH

USED WITH PC 55
USED WITH PC 5
USED WITH PC 5

IAF
IAF
IAF

AF
GFE
AF
AF
IAF
IAF
IAF
IAF
AF
AF

GFE
GFE
GFE
GFE

SUPPLIED W/ON 43
SUPPLIED W/ON 43

GFE
GFE

USED WITH PC 5
SEE GEN. NOTE
SEE GEN. NOTE

GFE
AF
AF
GFE
GFE
GFE
GFE

REMARKS

SOURCE

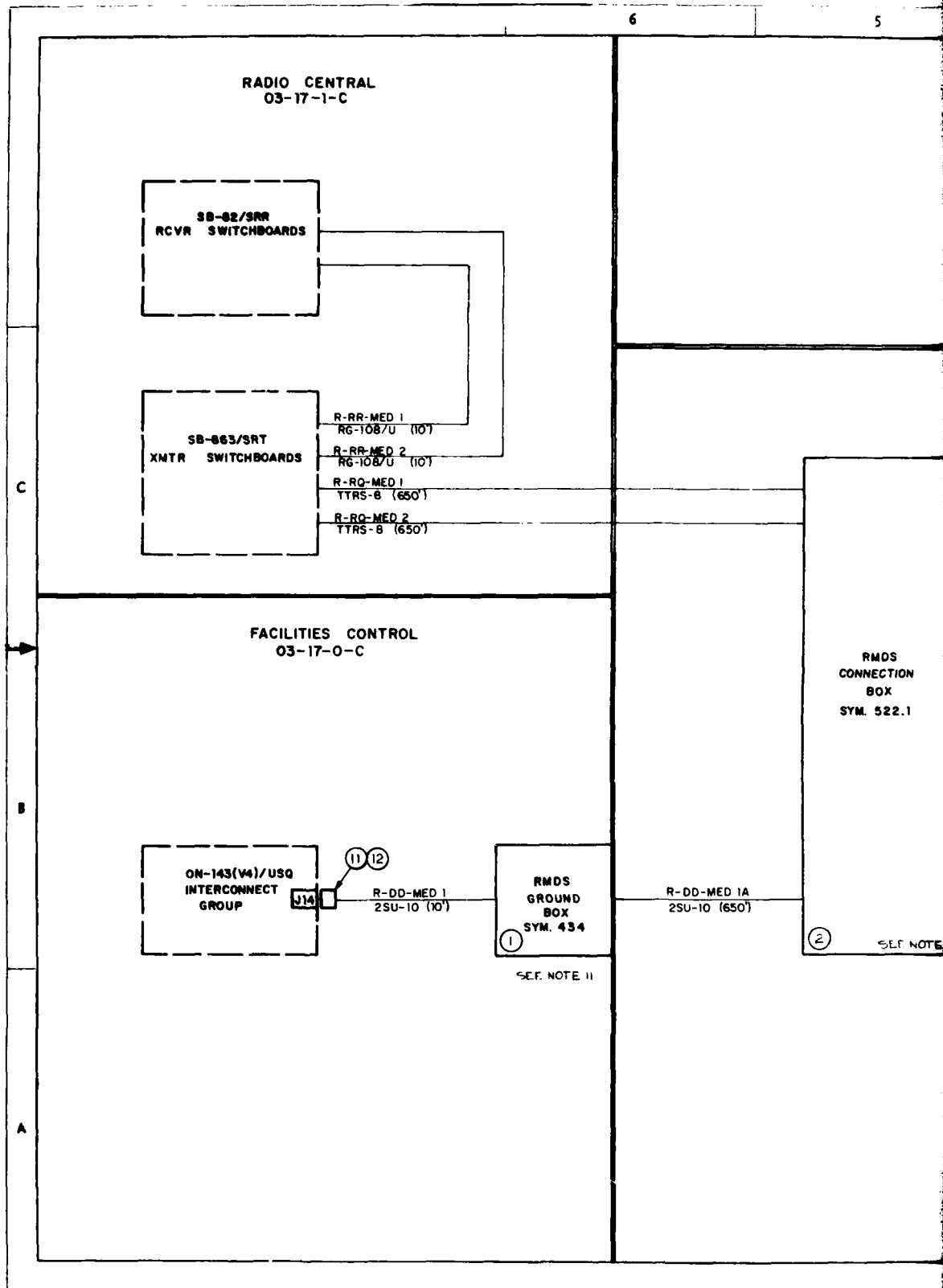
...TRONIC SYSTEMS
...
REMOTE MEDICAL DIAGNOSIS SYSTEM
(RMDS)

MATERIAL LIST

CVN 65 409 4791578

Handwritten signature

Handwritten number 2



PASSAGE
2-138-2

POWER PANEL
440VAC, 3PH, 60Hz
59-4P-(2-138-2)

59-4P (2-138-2)
TSGU-14 (70')

WARD NO. 1
2-120-1-L

TRANSFORMER
440/115 VAC
3 PH, 60 Hz
59-4P/IP(2-120-1)

59-1P(2-120-1)
TSGU-14 (20')

POWER PANEL
115 VAC, 3PH, 60Hz
59-1P-(2-120-1)

DUPLEX
AC RECEPTACLE

R-RP-MED 1
3SJ-14 (10')

SEE NOTE 9

DUPLEX
AC RECEPTACLE

R-RP-MED 2
3SJ-14 (10')

SEE NOTE 9

R-RP-MED 3
3SJ-14 (10')

TO RMDS RACK PWR

SYM. 333.1
LIGHT

R-RP-MED 4
3SJ-14 (5')

DUPLEX BOX

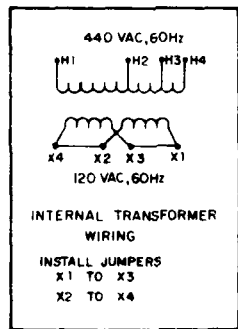
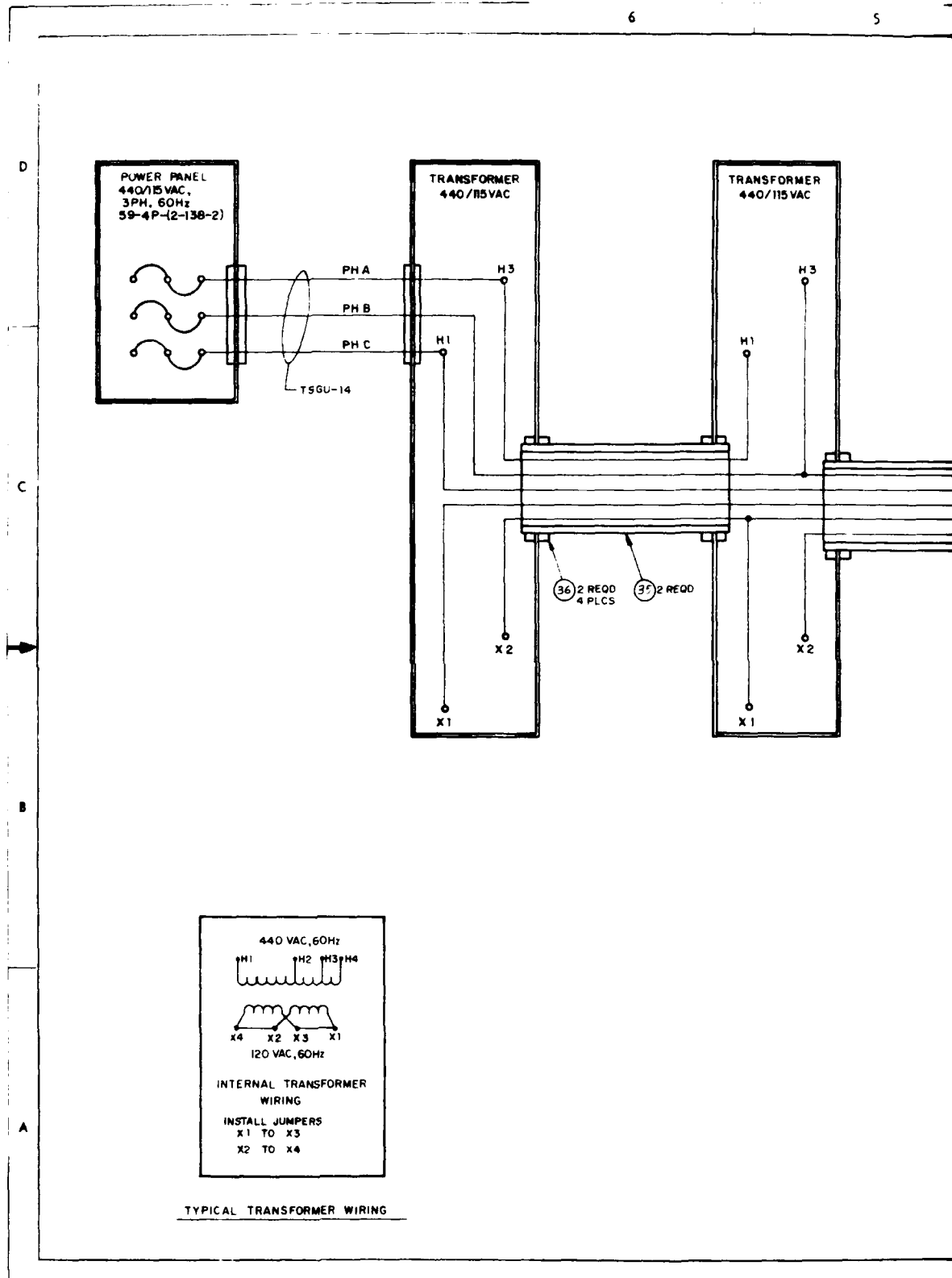
SEE NOTE 4

RMDS
INJECTION
BOX
A 522.1

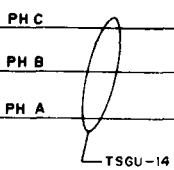
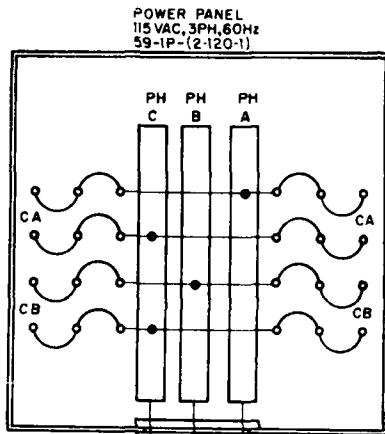
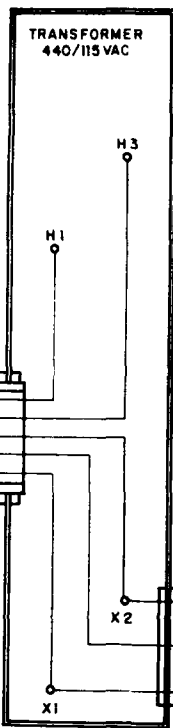
SEE NOTE 12

DESIGNED BY <i>[Signature]</i> DATE 12/29	NAVAL ELECTRONIC SYSTEMS
FOR ACTIVITY APPROVAL SEE SHEET	REMOTE MEDICAL DIAGNOSIS SYSTEM (RMDS) BLOCK WIRING DIAGRAM
D 14205	CVN 65 409 4791578
SCALE	3 5

2



TYPICAL TRANSFORMER WIRING



TRANSFORMER
59-4P/IP-(2-120-1)
440/115 VAC, 3PH

FOR POWER PANEL
59-4P-(2-138-2)

R-RP-MED 1 PH CA
AC RECEPTAC
TR EL 15A

RMDS
GROUND BOX

R-RP-MED 2 PH CA
AC RECEPTAC
TR EL 15A

RMDS
CONNECTION BOX

R-RP-MED 3 PH CB
RMDS RACK
TR EL 15A

R-RP- PH CB
SPARE
TR EL 15A

FOR POWER PANEL
59-1P-(2-120-1)

POWER PANEL 59-1P-(2-120-1)
115 VAC, 3PH, 60Hz
FED FROM PWR PNL 59-4P-(2-138-2)
VIA 440/115 VAC XFER

FOR POWER PNL 59-1P-(2-120-1)

TRANSFORMER 59-4P/IP-(2-120-1)
440/115, 3 PH, 60Hz
FED FROM PWR PNL
59-4P-(2-138-2)

FOR TRANSFORMER

RMDS NO. 1

RMDS NO. 2

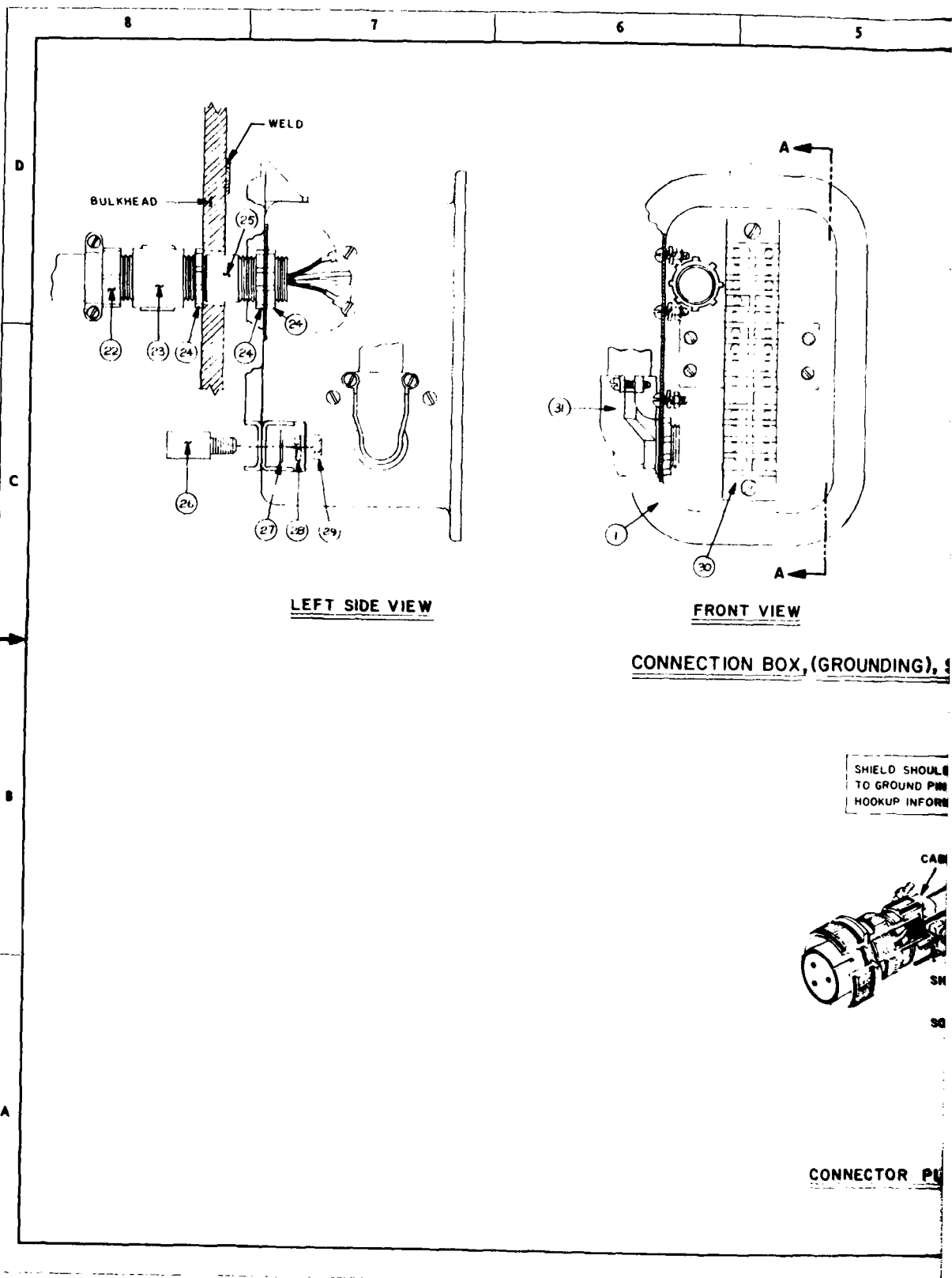
FOR SB-82

FOR SB-863

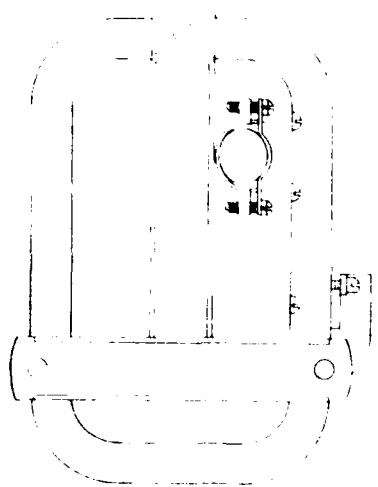
WHITE LETTERS WITH BLACK BACKGROUND

WHITE LETTERS WITH BLACK BACKGROUND

NAVAL ELECTRONICS
REMOTE MEDICAL DIAGNOSIS SYSTEM (RMDS)
AC POWER AND MISCELLANEOUS DETS
14202 CVN 65 409 4791578
4 5

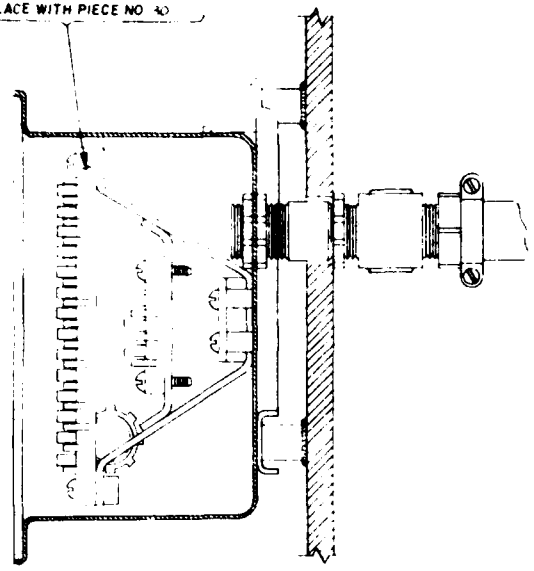


1



REAR VIEW

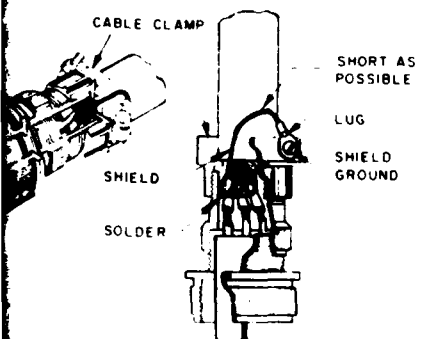
REMOVE EXISTING TERMINAL BLOCK AND REPLACE WITH PIECE NO 40



SECTION A-A

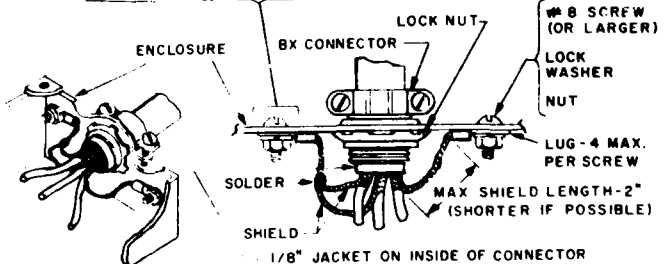
UNDING), SYM. 434, (MODIFIED 34 TERMINAL)

SHIELD SHOULD ALSO BE CONNECTED TO GROUND PIN WHEN SO INDICATED BY LOOKUP INFORMATION



ECTOR PLUG GROUNDING

BOTH SIDES CLEANED OF PAINT, ANODIC FILM, GREASE, ETC., TO COVER AREA ONE & ONE-HALF THAT OF MATING SURFACES.



SHIELD GROUNDING TO CONNECTOR BOX

WESTNAVAL PLS STANDARD PLAN 17800		NAVAL ELECTRONIC SYSTEMS COMMAND WESTERN DIVISION WESTERN CALIFORNIA DISTRICT	
REVISIONS WESTNAVAL		REMOTE MEDICAL DIAGNOSIS SYSTEM (RMPDS) SHLD GND AND CABLE PEN. DET TO SECURE SPACES	
FOR ACTIVITY APPROVALS SEE SHEET 1		D 14208	CVN 65 409 4791578
SCALE NONE		SH 5 OF 5	

2

5 4 3 2 1

INDEX		REVISIONS				
SHEET	TITLE	ZONE	LYR.	DESCRIPTION	DATE	APPR. BY
1	TITLE, INDEX, NOTES, REFERENCES, APPLICABILITIES					
2	MATERIAL LIST					
3	AIR> PLAN, ELEVATION & SECTION					
4	FOUNDATION DETAILS					

D
C
B

RMDS EQUIP ARR AND FDNIS

DRAWING LISTS		UNLESS OTHERWISE SPECIFIED		DESIGN AGENT		 NAVAL ELECTRONIC SYSTEMS ENGINEERING CENTER VALLEJO VALLEJO, CALIFORNIA 94582	
CIRCUIT WIRING DIAGRAM		DIMENSIONS ARE IN INCHES		[Signature] [Signature] [Signature]		REMOTE MEDICAL DIAGNOSIS SYSTEM (RMDS) EQUIPMENT ARRANGEMENT AND FOUNDATIONS	
TITLE	4203 CVN65 409 4791577	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-1000	REV	SHIP	CODE	DATE	DATE: D 14203 CODE IDENT: CVN-65 445 47915 76 SCALE: 5 SHEET: 1 OF 4
REFERENCES	14203 CVN65 409 4791578	DO NOT SCALE THIS DRAWING	NAVSEASYS COM	~	CVN 65	POW 2 116 B	

2

GENERAL NOTES CONTINUED:

- 11 SYMBOL () DENOTES MATERIAL PIECE NO AS FOLLOWS: UPPER SECTION REFERS TO PIFCE PARTS, LOWER SECTION REFERS TO MATERIAL FIND NUMBER AS REFERENCED ON LIST OF MATERIALS THIS SHEET.
- 12 TEMPLATE CABINET CORNER BACKING BRACES, PC NO 9, AND SWAY BRACE, IC NO 4, TO CABINET, IC NO 1, AND VERTICAL ANGLES, IC NO 3, DRILL AND MOUNT TO SUIT.
- 13 TEMPLATE CAMERA SUPPORT SWAY BRACE, IC NO 5, TO CAMERA SUPPORT ANGLE AND DESK, DRILL AND MOUNT TO SUIT.
- 14 MOUNT CABINET, IC NO 1, AND DESK, IC NO 2, TO DECK USING 3/8-16 STUDS.
- 15 REMOVE TWO BUNKS PRIOR TO INSTALLATION OF RMD'S EQUIPMENT AND FOUNDATIONS.

D

C

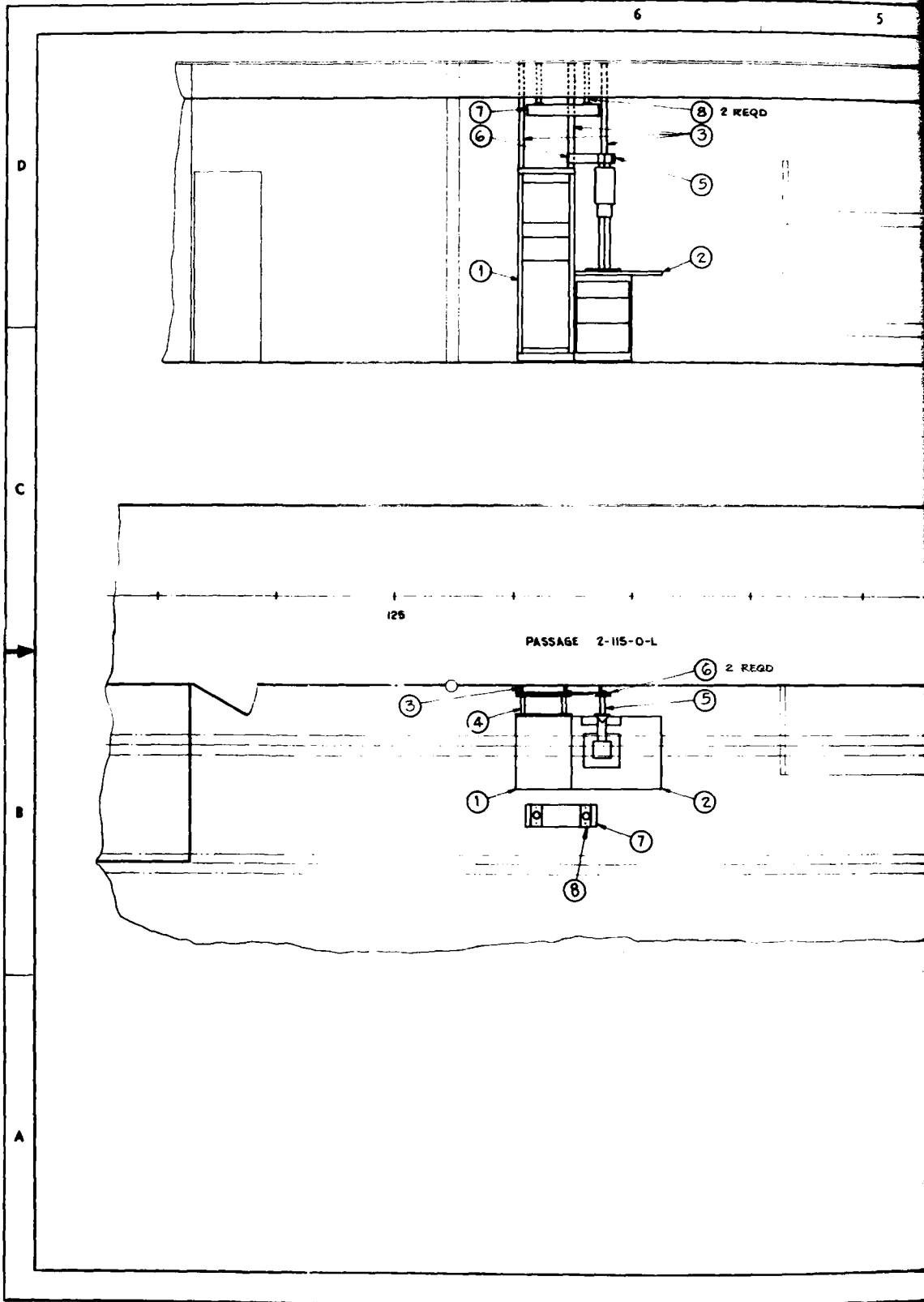
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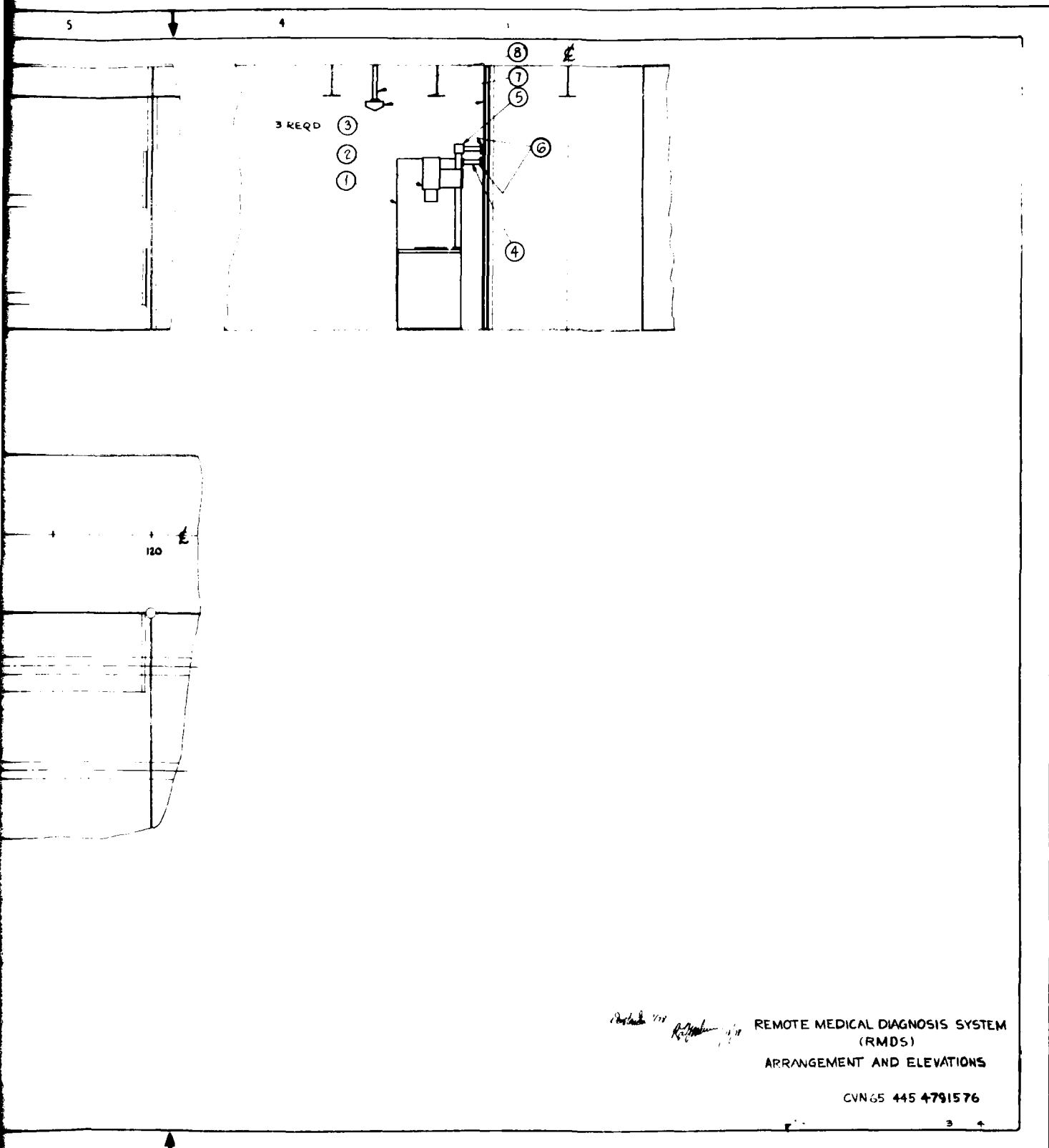
REV	QTY	PIECE NO	DESCRIPTION	IDENTIFICATION NO	UNIT WEIGHT	TOTAL WEIGHT	MATERIAL	SPEC	FEDERAL STOCK NO	REMARKS
	2	10	ANGLE 2 1/2 X 2 1/2 X 3/16 X 2' 0"		8	16	STEEL			FOR PC NO 5 R
	2	9	CORNER BACKING BRACKET	12 X 3 X 3/16 FLT BAR	2	4	STEEL			
	2	8	LIGHT FOUNDATION		3	6	STEEL			
	1	7	LIGHT	SYM 35-1	12	12				ORDERED ON R
	2	6	FLAT BAR 2 1/4 X 3 X 3/16		4	8	STEEL			
	1	5	CAMERA SUPPORT SWAY BRACE		5	5	STEEL			
	1	4	CABINET SWAY BRACE		12	12	STEEL			
	3	3	ANGLE 2 1/2 X 2 1/2 X 3/16		40	120	STEEL			
	1	2	DESK		60	60				INCLUDES CAM
	1	1	CABINET		300	300				

LIST OF MATERIAL

1



1



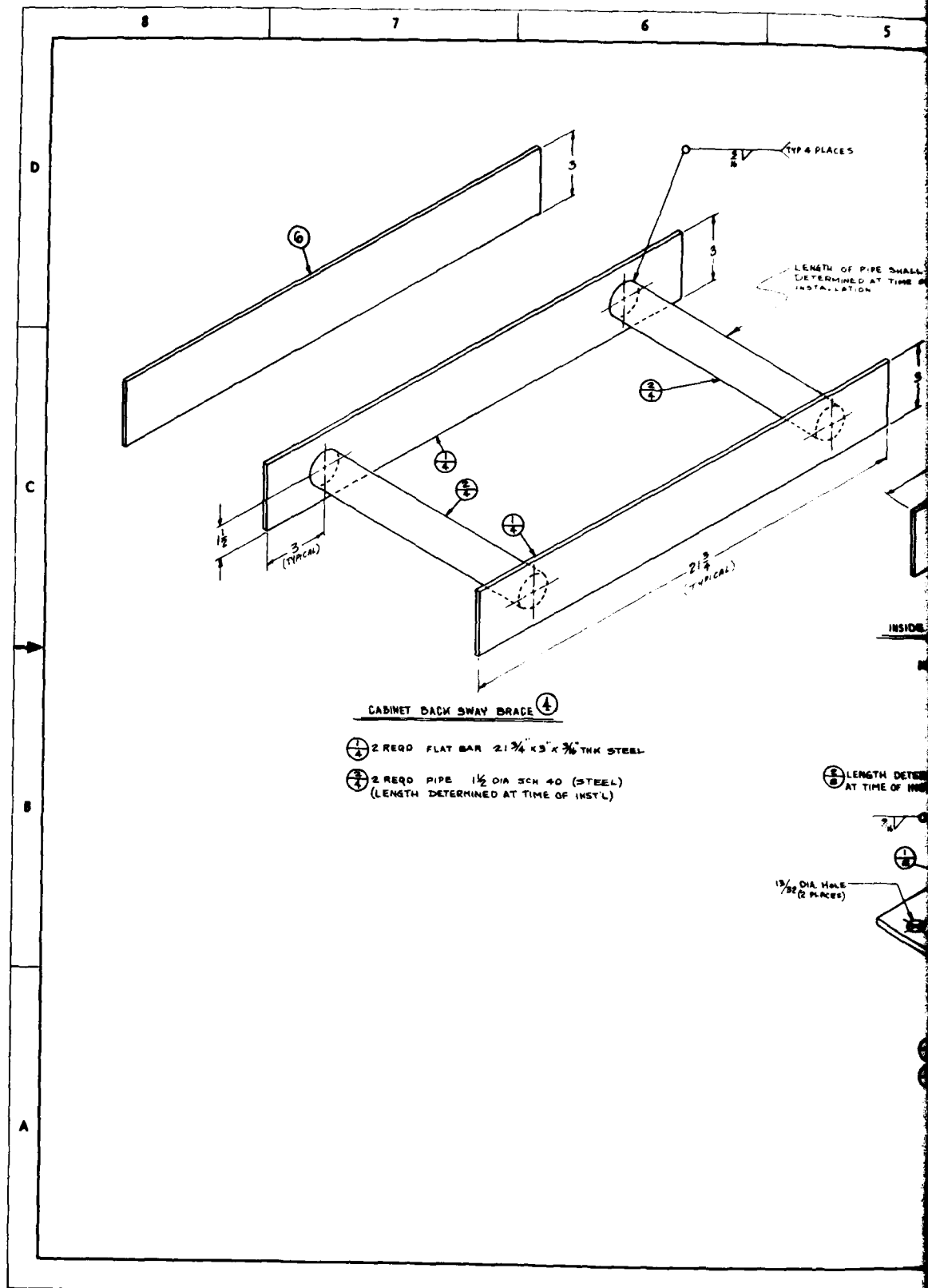
Handwritten signatures and initials

REMOTE MEDICAL DIAGNOSIS SYSTEM
(RMDS)
ARRANGEMENT AND ELEVATIONS

CVN65 445 4791576

3 4

Handwritten number 2



CABINET BACK SWAY BRACE ①

- ② 2 REQD FLAT BAR 2 1/4" X 3/8" THK STEEL
- ③ 2 REQD PIPE 1 1/2" DIA SCH 40 (STEEL)
(LENGTH DETERMINED AT TIME OF INST'L)

④ LENGTH DETERMINED AT TIME OF INST'L

1 1/2" DIA. HOLE / 2 PLACES

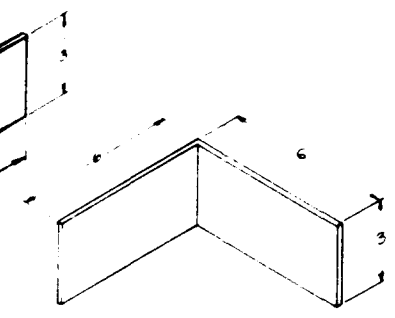
LENGTH OF PIPE SHALL DETERMINED AT TIME OF INSTALLATION

TYP 4 PLACES

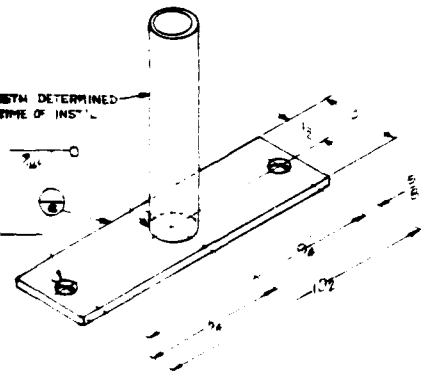
INSIDE

5 4 3 2 1

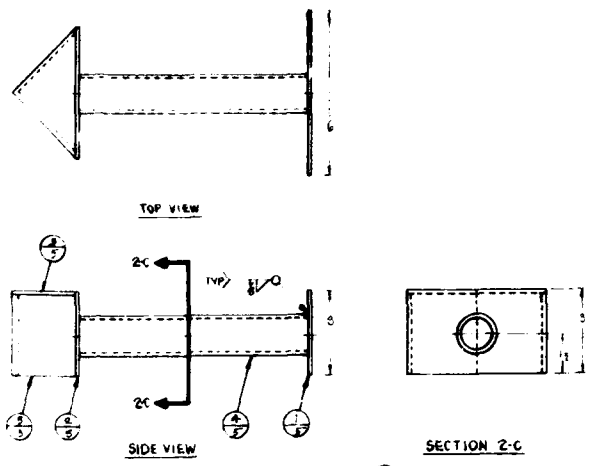
PIPE SHALL BE
AT TIME OF
I



INSIDE TOP CORNER BACKING BRACKET ⑨
2 REQD
MATER 2. 3 16 THK STEEL



LIGHT FOUNDATION ⑧
2 REQD FLAT BAR 10 1/2 x 5 x 3 1/16 STEEL
2 REQD PIPE 1 1/2 DIA SCH 40 STEEL



CAMERA SUPPORT SWAY BRACE ⑤

- ① FLAT BAR 6 x 3 x 3/16 THK STEEL
- ② FLAT BAR 5 x 3/16 (LENGTHS SUIT ANGLE)
- ③ TOP x 3/16 (SIZE TO SUIT ANGLE)
- ④ PIPE (STL) 1 1/2 DIA SCH 40 (LENGTH DETERMINED AT TIME OF INST'L)
- ⑤ ANGLE (STL) (DIMENSIONS DETERMINED AT TIME OF INST'L)

DESIGN AGENT		NAVAL ELECTRONIC SYSTEMS ENGINEERING CENTER VALLEJO VALLEJO, CALIFORNIA 94580			
DATE: 1/10/68 DRAWN: [Signature] CHECKED: [Signature]		REMOTE MEDICAL DIAGNOSIS SYSTEM (RMDS) FOUNDATION DETAILS			
FOR ACTIVITY APPROVALS SEE SHEET 1	D	14203	CVN 65 445	4791576	REV
SCALE		SH 4 OF 4			