



REV	APPLICATION		REVISIONS			
	NEXT ASSY	USED ON	REV	DESCRIPTION	DATE	APPROVED
D			A	SHEET 1: SIGNATURE BLOCK	7-7-98	K. HIGA
			B	SHEET 1: DISTRIBUTION STATEMENT	7-24-98	K. HIGA
			C	ALL SHEETS : REVISED PER REV L OF CHANGE NOTICE 1	4-1-99	K. HIGA
			D	ALL SHEETS : REVISED PER REV A OF CHANGE NOTICE 2	7-31-99	K. HIGA

NAVSEA DRAWING NO. 7325759
 ESWS 499
 SHIT 1

NOTES:

1. IDENTIFICATION OF THE SUGGESTED ITEMS HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY.
2. SUBSTITUTION OF ITEMS IS NOT ALLOWED WITHOUT APPROVAL OF THE DESIGN ACTIVITY, NSWCCD-SSES CODE 9631.
3. INDIVIDUAL ITEMS SHALL BE PROCURED USING THE VENDOR PART NUMBER.
4. COMPLETE KITS SHALL BE PROCURED USING THE BASE DRAWING NUMBER ONLY.
5. QUANTITIES SHOWN ARE FOR THE INDIVIDUAL ITEMS AND MAY NOT CORRESPOND TO THE QUANTITY SUPPLIED FOR THE VENDOR PART NUMBER LISTED.

REV STATUS OF SHEETS	REV	D	D	D	D	D	D	D	D												
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

DISTRIBUTION STATEMENT A: APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CAGE CODE CONTRACT NO.		DEPARTMENT OF THE NAVY NAVAL SEA SYSTEMS COMMAND WASHINGTON, D.C. 20362-5101				
FRACTIONS n	DECIMALS .XXn	APPROVED	G. BROWN	6-30-98	PIERSIDE CONNECTIVITY, UMBILICAL ASSEMBLY, FIBER OPTIC, SHIP-TO-PIER			
ANGLES P	.XXXn	APPROVED	CDR M. ZIEGLER	7-7-98				
DO NOT SCALE DRAWING		APPROVED	D. INMAN	7-7-98				
		ENGINEER	E. BLUEBOND	6-30-98				
MATERIAL:	ACCEPTED FOR NAVSEA	H. LEWIS	7-7-98	SIZE A	CAGE 53711	ESWS 499	DRAWING NO. 7325759	REV D
FINISHES:	APPROVED BY NAVSEA	(SIGN ONLY IF ENGINEERING HAS BEEN "PROVED" BY MANUFACTURE AND TEST)		SCALE: NONE	UCI	WT GRP	SHEET	1 OF 8



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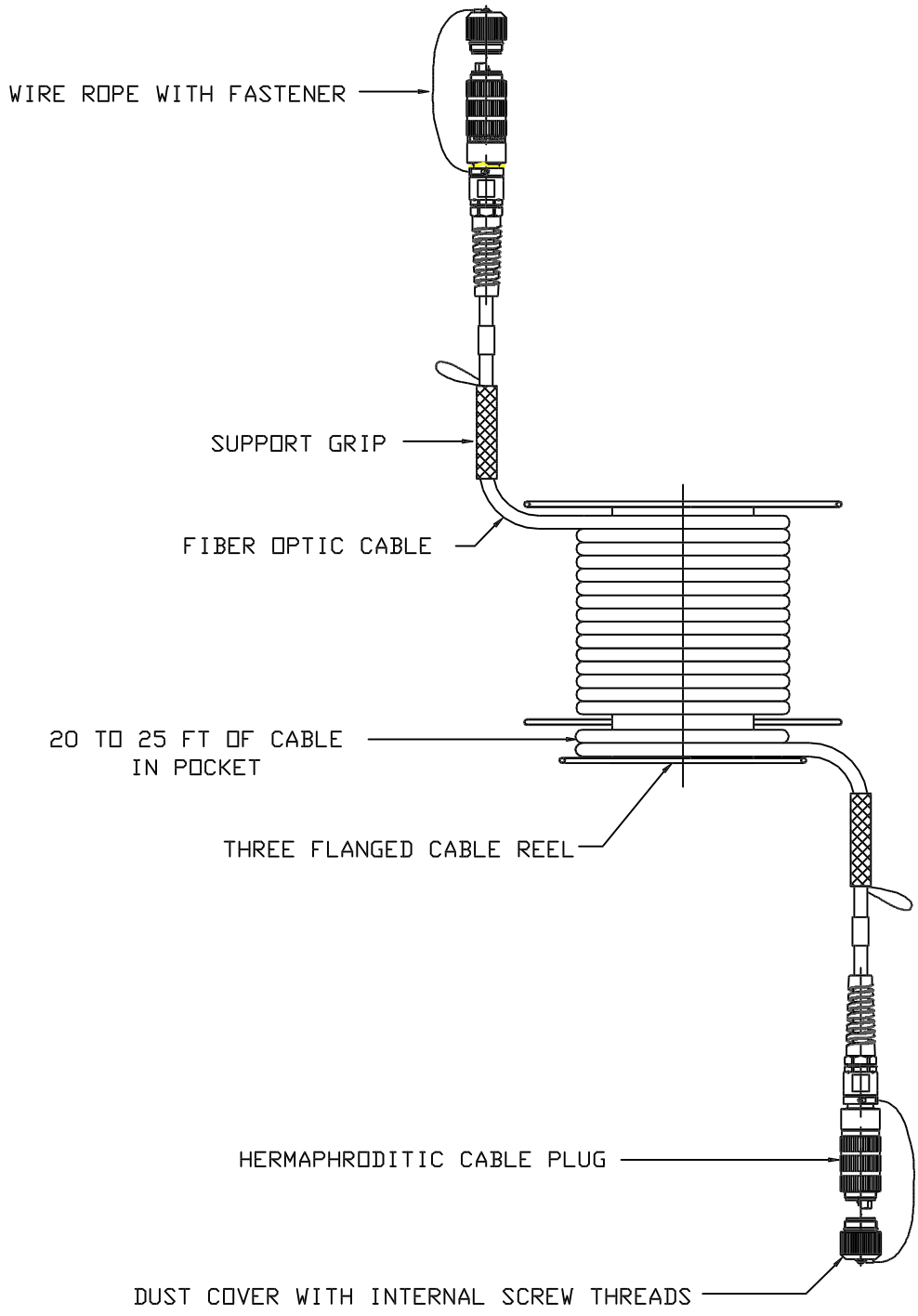


FIGURE 1. ITEMS OFFERED AS PART OF THIS DRAWING,
UMBILICAL ASSEMBLY (CONFIGURATION 6001AD)

SIZE A	CAGE 53711	ESWS 499	DRAWING NO. 7325759	REV D
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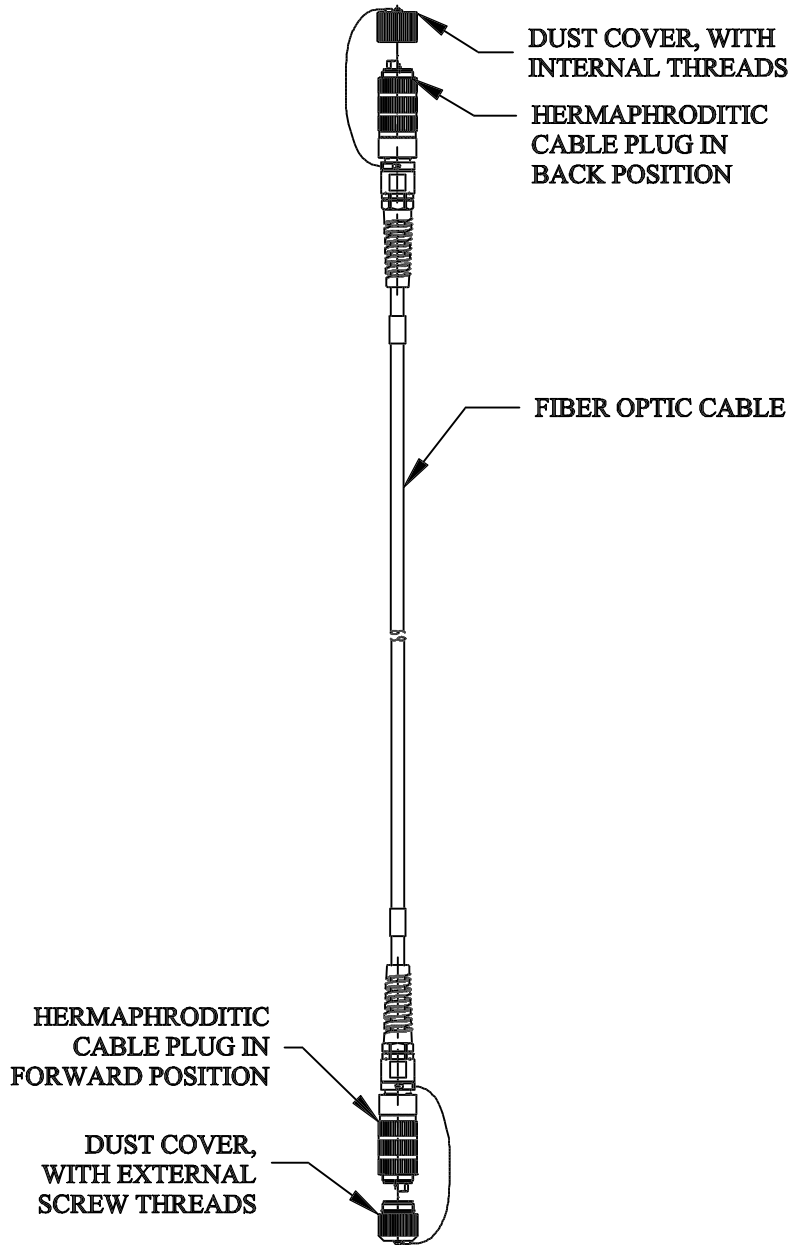


FIGURE 2. ITEMS OFFERED AS PART OF THIS DRAWING, CROSSCONNECT ASSEMBLY (CONFIGURATION 6001AE)

SIZE A	CAGE 53711	ESWS 499	DRAWING NO. 7325759	REV D
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Umbilical Assembly Construction

The umbilical assembly is to be comprised of the components listed in table 1A and assembled as shown in Figure 1.

Notes:

1/ For purposes of ordering an “umbilical assembly” to the NAVSEA drawing number, a quantity of one umbilical assembly, item 6001AD, is to be provided. The cross-connect cable assembly (item 6001AE), as shown in Figure 2, and other umbilical assembly configurations (item 6001AG and 6001AH) are specified separately and are to be built in accordance with this drawing.

2/ Pin-out positions in the cable plugs are shown below for multimode and single mode termini.

3/ Umbilical assembly must be on the exterior of the ship or external to the ship. The umbilical assembly does not use a low smoke, low halogen, low toxicity cable that would be suitable for shipboard interior storage/use.

4/ Cross-connect cable assembly is required when a nested ship is facing the opposite direction as the other ship(s) moored at that berth.

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A	53711	499	7325759	D
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Umbilical Assembly Pin-out

1J >---MM1-----> 1P
 2J >---MM2-----> 2P
 3J >---MM3-----> 3P
 4J >---MM4-----> 4P
 5J >---SM1-----> 5P
 6J >---SM2-----> 6P
 1P >---MM5-----> 1J
 2P >---MM6-----> 2J
 3P >---MM7-----> 3J
 4P >---MM8-----> 4J
 5P >---SM3-----> 5J
 6P >---SM4-----> 6J

Pin-out Designations For Umbilical Assembly

Ethernet: 1J-1P, 1P-1J
 Ethernet: 2J-2P, 2P-2J
 Ethernet: 3J-3P, 3P-3J
 ATM OC-3: 4J-4P, 4P-4J
 ATM OC-12: 5J-5P, 5P-5J
 ATM OC-48: 6J-6P, 6P-6J

Cross-Connect Cable Assembly Pin-out

1J >---MM1-----> 3P
 2J >---MM2-----> 2P
 3J >---MM3-----> 1P
 4J >---MM4-----> 4P
 5J >---SM1-----> 5P
 6J >---SM2-----> 6P
 1P >---MM5-----> 3J
 2P >---MM6-----> 2J
 3P >---MM7-----> 1J
 4P >---MM8-----> 4J
 5P >---SM3-----> 5J
 6P >---SM4-----> 6J

Pin-out Designations For Cross-Connect Cable Assembly

Ethernet: 1J-3P, 3P-1J
 Ethernet: 3J-1P, 1P-3J
 Ethernet: 2J-2P, 3P-2J
 ATM OC-3: 4J-4P, 4P-4J
 ATM OC-12: 5J-5P, 5P-5J
 ATM OC-48: 6J-6P, 6P-6J

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Table 1A. Umbilical Assembly List & Quantity

Item	Description	Quantity
6001AD	Umbilical assembly, pier-to-ship/ship-to-ship <u>7/</u> , <u>9/</u> , <u>12/</u> , <u>13/</u>	1
1	Connector, cable plug, hermaphroditic (CP-12-DI-A-12) <u>1/</u> , <u>5/</u>	2
2	Dust cover, hermaphroditic, connector, with external screw threads, wire rope and fastener (DP1) <u>1/</u> , <u>5/</u>	2
3	Termini, socket, no alignment sleeve (TS-SM-A) <u>2/</u> , <u>5/</u>	12
4	Termini, pin (TP-SM) <u>2/</u> , <u>5/</u>	12
5	Cable, FO, pierside, 12 breakout cable count, 4 SM, 8 MM (PSC-H4) <u>3/</u> , <u>6/</u>	500 ft
6	Support grip, single eye, closed mesh, stainless steel <u>6/</u>	2
6001AF	Reel, cable, 3 flanged, fiber optic, pierside, for PSC-12 type, 500 ft long <u>4/</u> , <u>6/</u>	1
6001AG	Replacement umbilical assembly, pier-to-ship/ship-to-ship (3 flanged cable reel not included) <u>9/</u> , <u>10/</u>	1

Table 1B. Cross-Connect Cable Assembly List & Quantity

Item	Description	Quantity
6001AE	Cable assembly, ship-to-ship, cross-connect <u>8/</u> , <u>9/</u> , <u>13/</u>	1
1	Connector, cable plug, hermaphroditic (CP-12-DI-A-12) <u>1/</u> , <u>5/</u>	2
2	Dust cover, hermaphroditic, connector, with external screw threads, wire rope and fastener (DP1) <u>1/</u> , <u>5/</u>	1
3	Termini, socket, no alignment sleeve (TS-SM-A) <u>2/</u> , <u>5/</u>	12
4	Termini, pin (TP-SM) <u>2/</u> , <u>5/</u>	12
5	Cable, FO, pierside, 12 breakout cable count, 4 SM, 8 MM (PSC-H4) <u>3/</u> , <u>6/</u>	6 ft
7	Dust cover, hermaphroditic, connector, with internal screw threads, wire rope and fastener (DP2) <u>1/</u> , <u>5/</u>	1

Table 1C. Umbilical Assembly Replacement Items

Item	Description	Quantity
6001AF	Reel, cable, 3 flanged, FO, pierside, for 500 ft length PSC-12 type cable <u>4/</u> , <u>6/</u>	1
6001AG	Replacement umbilical assembly, pier-to-ship/ship-to-ship (3 flanged cable reel not included) <u>9/</u> , <u>10/</u> , <u>13/</u>	1

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Table 1D. Shorter Length Umbilical Assembly

Item	Description	Quantity
6001AH	Umbilical assembly, short length 9/, 11/, 13/	1
1	Connector, cable plug, hermaphroditic (CP-12-DI-A-12) 1/, 5/	2
2	Dust cover, hermaphroditic, connector, with external screw threads, wire rope and fastener (DPI) 1/, 5/	2
3	Termini, socket, no alignment sleeve (TS-SM-A) 2/, 5/	12
4	Termini, pin (TP-SM) 2/, 5/	12
5	Cable, FO, pierside, 12 breakout cable count, 4 SM, 8 MM (PSC-H4)) 3/, 6/	100 ft
6	Support grip, single eye, closed mesh, stainless steel 6/	2

Notes for tables 1A through 1D:

1/ Component shall meet Commercial Item Description (CID) A-A-XX159 Fiber Optic Connectors, Hermaphroditic, Multiple Removable Termini, Draft dated 31 July 1999 or latest version.

2/ Component shall meet Commercial Item Description (CID) A-A-XX160 Removable Termini For Multiple Termini Fiber Optic Connectors, Draft dated 31 July 1999 or latest version.

3/ Component shall meet Commercial Item Description (CID) A-A-XX161 Cable, Fiber Optic, Pierside Use Only (Not For Inboard Or Outboard Use), 12 Breakout Cable Count, Multiple Classes (Single Mode, Multimode, Fiber-Hybrid), Draft dated 31 July 1999 or latest version.

4/ Component shall meet Appendix B of Commercial Item Description (CID) A-A-XX161 Cable, Fiber Optic, Pierside Use Only (Not For Inboard Or Outboard Use), 12 Breakout Cable Count, Multiple Classes (Single Mode, Multimode, Fiber-Hybrid), Draft dated 31 July 1999 or latest version.

5/ Approval process for this item to be in accordance with NSWCCD-SSES ltr 9504 Ser 9542/27 of 13 Mar 98 or latest revision. Vendor quality system to be equivalent to that specified in enclosure (2). NSWCCD-SSES audit may be substituted for DSCC audit if deemed appropriate.

6/ Approval process for this item to be in accordance with NSWCCD-SSES ltr 9504 Ser 9542/27 of 13 Mar 98 or latest revision. Vendor quality system to be in compliance with enclosure (3).

7/ Item number 6001AD is comprised of item numbers 1 through 6 and item 6001AF. Umbilical assembly end-to-end length shall be 496 ft +7/-0 % based on an initial cable length of 500 ft +5/-0 %.

8/ Item 6001AE is comprised of items 1 through 5 and item 7. Note that cable length and pin out (wiring) configuration is different from item 6001AD. Cross-connect assembly end-to-end length shall be $1.8 \pm .15$ m (6.0 ± 0.5 ft).

9/ Each umbilical assembly shall be tested to verify the following optical performance requirements: Umbilical assembly shall be tested to and shall meet the link loss performance requirements of MIL-STD-2042, method 7F1. Reflectance (returned optical power at one connection interface) shall be less than or equal to -30 dB for the single mode fiber when tested in accordance with TIA/EIA-455-107. This reflectance requirement is applicable at the interfaces for termini at both ends of the umbilical assembly.

10/ Same as item 6001AD except that the replacement umbilical assembly is provided without the 3 flanged cable reel (item 6001AF). The replacement umbilical assembly shall be provided on a 2 flanged cable reel. The only use (requirement) of the 2 flanged cable reel is to facilitate eventual spooling onto the 3 flanged cable reel.

11/ Same as item 6001AD except that the short length umbilical assembly is provided without the 3 flanged cable reel (item 6001AF) and that the short length umbilical assembly end-to-end length is 254 ± 13 cm (100 ± 5 ft). The short length umbilical assembly shall be provided on a 2 flanged cable reel. The only use of the 2 flanged cable reel is for initial handling.

12/ Cable length of umbilical assembly (6001AD) to be spooled into the pocket on the three flanged cable reel is 6.1 m (20 ft) minimum to 7.6 m (25 ft) maximum.

13/ Umbilical assembly shall contain the following permanent markings: NAVSEA Drawing part number (example: 7325759-6001AD), manufacturer name or logo, manufacturer part number, date code.

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Table 2. Umbilical Assembly & Cross-Connect Cable Assembly Recommended Sources Of Supply

Item	Vendor Name	Part Number	Vendor Address	Vendor Phone/FAX
6001AD	Packard Hughes Interconnect	1123791-1H	17150 Von Karman Ave. Irvine, CA 19685	(949) 660-5704 (949) 660-6981
6001AE	Packard Hughes Interconnect	1123791-2H	17150 Von Karman Ave. Irvine, CA 19685	(949) 660-5704 (949) 660-6981
1	Packard Hughes Interconnect	1123760H	17150 Von Karman Ave. Irvine, CA 19685	(949) 660-5704 (949) 660-6981
2	Packard Hughes Interconnect	1123789H	17150 Von Karman Ave. Irvine, CA 19685	(949) 660-5704 (949) 660-6981
3	Packard Hughes Interconnect	1146719- 126F000H	17150 Von Karman Ave. Irvine, CA 19685	(949) 660-5704 (949) 660-6981
4	Packard Hughes Interconnect	4569994H	17150 Von Karman Ave. Irvine, CA 19685	(949) 660-5704 (949) 660-6981
5	Brand-Rex Company	OC-1648	1600 West Main St. Willimantic, CT 06226-1128	(860) 456-8000 (860) 450-7004
	Chromatic Technologies, Inc.	H1148-S573T-12	20 Forge Park Franklin, MA 02038	(508) 541-2226 (508) 541-7100
	Optical Cable Corp.	RK981105	P.O. Box 11967 Roanoke, VA 24022-1967	(540) 265-0690 (540) 265-0724
6	Hubble Precision Wiring, Inc.	02401013	185 Plains Rd. Milford, CT 06460	(203) 882-4800 (203) 882-4852
	Amtec, Inc.	RO-050-SE-SS	30 Center Pkwy Plainfield, CT 06374	(800) 893-8397 (860) 230-0008
7	Packard Hughes Interconnect	1123846H	17150 Von Karman Ave. Irvine, CA 19685	(949) 660-5704 (949) 660-6981
6001AF	Mossberg Reel & Stamping Co., Inc.	CR270213120CO O-02	160 Bear Hill Rd. Cumberland, RI 02864	(401) 334-2255 (401) 426-0063
	Shane Industries	RFO-3-2000	161 Overlook Rd. Poughkeepsie, NY 12603	(914) 485-3800 (914) 485-3820
6001AG	Packard Hughes Interconnect	1020019H	17150 Von Karman Ave. Irvine, CA 19685	(949) 660-5704 (949) 660-6981
6001AH	Packard-Hughes Interconnect	1020032H	17150 Von Karman Ave. Irvine, CA 19685	(949) 660-5704 (949) 660-6981

SIZE A	CAGE 53711	ESWS 499	DRAWING NO. 7325759	REV D
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