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PUBLIC WORKS CENTER PEARL HARBOR FLEET MOORINGS UNDERWATER INSPECTION PLAN

15 APRIL 1983

86 4 22 038

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION	1b. RESTRICTIVE MARKINGS
Unclassified	

2a. SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION AVAILABILITY OF REP.
	Approved for public release;
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE	distribution is unlimited

4. PERFORMING ORGANIZATION REPORT NUMBER	5. MONITORING ORGANIZATION REPORT #
FPO-1-83(11)	

6a. NAME OF PERFORM. ORG. 6b. OFFICE SYM	7a. NAME OF MONITORING ORGANIZATION
Ocean Engineering & Construction Project Office CHESNAVFACENGCOM	

6c. ADDRESS (City, State, and Zip Code)	7b. ADDRESS (City, State, and Zip)
BLDG. 212, Washington Navy Yard Washington, D.C. 20374-2121	

8a. NAME OF FUNDING ORG. 8b. OFFICE SYM	9. PROCUREMENT INSTRUMENT INDENT #

8c. ADDRESS (City, State & Zip)	10. SOURCE OF FUNDING NUMBERS

PROGRAM ELEMENT #	PROJECT #	TASK #	WORK UNIT ACCESS #

11. TITLE (Including Security Classification)
Public Works Center Pearl Habor Fleet Moorings Underwater Inspection Plan

12. PERSONAL AUTHOR(S)

13a. TYPE OF REPORT	13b. TIME COVERED FROM TO	14. DATE OF REP. (YYMMDD) 83-04-15	15. PAGES 80

16. SUPPLEMENTARY NOTATION

17. COSATI CODES	18. SUBJECT TERMS (Continue on reverse if nec.)
FIELD GROUP SUB-GROUP	Public Works Center Pearl Harbor, Fleet moorings, Mooring inspections, Underwater inspection, Pearl Harbor, HI

19. ABSTRACT (Continue on reverse if necessary & identify by block number)
As part of COMNAVFACENGCOM's Fleet Mooring Maintenance (FMM) Program, CHESNAV-FACENGCOM has been assigned the responsibility to conduct the underwater inspections of fleet moorings worldwide. This plan provides guidelines for the underwater inspection of 45 fleet moorings operated and maintained (Con't)

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT SAME AS RPT.	21. ABSTRACT SECURITY CLASSIFICATION
22a. NAME OF RESPONSIBLE INDIVIDUAL Jacqueline B. Riley	22b. TELEPHONE 202-433-3881 22c. OFFICE SYMBOL

DD FORM 1473, 84MAR
SECURITY CLASSIFICATION OF THIS PAGE

BLOCK 19 (Con't)

by the Public Works Center, Pearl Harbor, HI. The inspection is scheduled to
take place during the 1-21 may time frame.

CHESNAVFACENGCOM has designated an Engineer-in-Charge (EIC) to provide on-site
technical guidance to Underwater Construction Team Two (UCT-2) divers who were
tasked by CINCPACFLT message 210331Z August 1982 to perform the underwater
portion of the inspection. In addition, the EIC will prepare the post
inspection report which will include the results of the inspection and
recommendations for required maintenance actions.

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PWC PEARL HARBOR
UNDERWATER INSPECTION PLAN

1.0   BACKGROUND

As part of COMNAVFACENGCOM's Fleet Mooring Maintenance (FMM) Program, CHESNAV-FACENGCOM has been assigned the responsibility to conduct the underwater inspections of fleet moorings worldwide. This plan provides guidelines for the underwater inspection of 45 fleet moorings operated and maintained by the Public Works Center, Pearl Harbor, HI. The inspection is scheduled to take place during the 1 - 21 May time frame.

CHESNAVFACENGCOM has designated an Engineer-in-Charge (EIC) to provide on-site technical guidance to Underwater Construction Team Two (UCT-2) divers who were tasked by CINCPACFLT message 210331Z August 1982 to perform the underwater portion of the inspection. In addition, the EIC will prepare the post inspection report which will include the results of the inspection and recommendations for required maintenance actions.

2.0   PROJECT RESPONSIBILITIES

CHESNAVFACENGCOM will develop the FM underwater inspection plan, provide technical assistance to the dive team, prepare the required inspection forms, evaluate the observed inspection data, and report the results of the inspection to interested activities.

UCT-2 will provide sufficient divers to accomplish the inspection within the allotted time frame, gather and accurately report all required data, and ensure that the required amount of diving support material/equipment is available. In addition, UCT-2 divers will perform the underwater inspection in accordance with this plan and collect the data specified in paragraph 4.0.

The activity responsible for the moorings being inspected will provide logistics support as required by the Engineer-in-Charge and the UCT dive team.

3.0   GENERAL MOORING HISTORY

PWC Pearl Harbor currently operates and maintains 45 fleet moorings. The geographical positions of these moorings are shown in Figure 1. Although these moorings have been periodically removed,
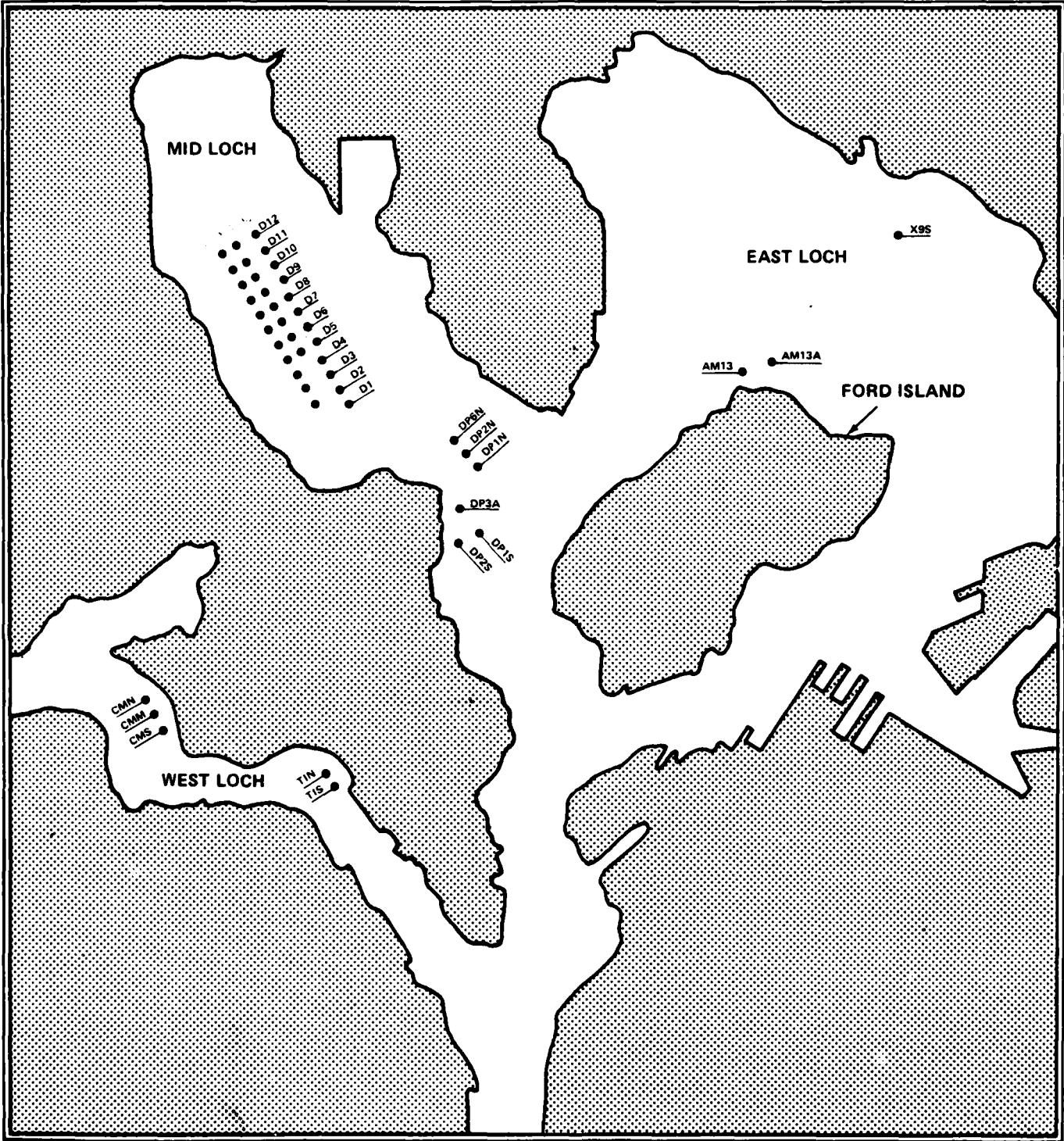
FIGURE 1. PEARL HARBOR FLEET MOORING LOCATION PLAN

inspected, repaired, overhauled, and downgraded as required, they have been in use for 30-35 years and much of the currently utilized mooring material is probably deteriorated and near the wear limit. The last underwater inspection of most of these moorings was conducted in November 1979 by CHESNAVFAC-ENGCOM with the assistance of divers from UCT-2.

The design of the PWC Pearl Harbor mooring systems and their mooring components vastly differ from the standard designs contained in DM-26. For example, the anchors for all of these systems are comprised of concrete clumps, concrete anchors, or combinations of both. In addition, the actual class of most of the moorings, based on results of the 1979 inspection, represents a substantial downgrade from the intended class indicated in PWC Pearl Harbor records (see Table 1). As-built data, schematics, and other historical data concerning these buoys are contained in Annex C.

4.0   INSPECTION PROCEDURES

4.1   Inspection Objectives. The purpose of mooring inspections is to determine the general physical condition of buoys and chain assemblies and, when possible, to verify or update existing as-built and maintenance records. Divers inspect only a portion of the submerged buoy hull and chain assemblies in order to compile a general description of the mooring's condition. The existence of fairly consistent measurements during this inspection provides a good indication of the mooring's overall condition. It should be kept in mind that periodic underwater inspections are intended as an expedient and relatively inexpensive supplement to accurate maintenance records. As such, they cannot fully substitute for a complete inspection involving recovery of the mooring and the measurement and evaluation of each component.

One of the more important parameters used to evaluate the condition of a mooring is chain wire diameter. After cleaning to bare metal, a selective sampling of the wire diameter of chain links and connecting hardware is taken in order to determine the amount of deterioration due to corrosion and wear. "Single Link" measurements are taken where chain is slack, and detect only corrosion loss. "Double Link" measurements, taken where two links connect under tension, detect the combined effects of corrosion and wear. Chain links and other components which measure 90% or greater of original wire diameter are considered to be in "good" condition; a measurement between 80% and 90% of original diameter is considered "fair" condition and is cause for the mooring to be downgraded in classification; any measurement less than 80% is considered "poor" and is cause for the mooring to be declared unsatisfactory for fleet use. Figure A-1 in Annex A depicts the proper method of taking both single and double link measurements.

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TABLE 1. PWC PEARL HARBOR FLEET MOORINGS

Mooring No.	Mooring Class[1] (Designed/Current)	Water Depth (Ft.)	Last Overhaul
AM13	C/D	31	?
AM13A	C/C	38	?
CMN	G/G	39	5/70
CMM	G/G	39	5/70
CMS	G/G	42	5/70
D1M	C/G	34	3/78
D2N	A/D	33	?
D2S	A/G	25	?
D3N	A/G	34	10/75
D3S	(2)	33	?
D4N	A/G	32	3/78
D4S	A/G	22	?
D5N	D/F	37	?
D5M	C/G	24	?
D5S	D/G	24	1/71
D6N	D/D	35	3/78
D6M	C/C	35	?
D6S	D/D	24	?
D7N	D/D	34	8/82
D7M	C/C	29	1/81
D7S	D/D	23	1/81
D8N	D/D	35	1/81
D8M	C/C	34	1/81
D8S	D/D	23	12/82
D9N	A/A	27	12/82
D9M	A/A	20	12/82
D9S	A/A	21	12/82
D10N	A/F	24	9/71
D10M	A/F	24	9/71
D10S	A/F	27	9/71
D11N	A/D	23	5/70
D11M	A/D	27	5/70
D11S	A/D	27	4/68
D12N	A/F	24	2/74
D12M	A/F	26	2/74
D12S	A/F	28	9/71
DP1N	A/A	40	3/82
DP1S	A/A	40	3/82
DP2N	C/C	36	3/82
DP2S	C/C	40	3/82
DP3A	C/F	12	1/72
DP6N	C/C	12	3/82
T1N	C/G	29	1/72
T1S	C/G	28	1/72
X9S	A/A	42	12/82

[1] Lower classification is a result of downgrading after 1979 underwater inspection.

[2] Buoy broke loose from anchorage in 1979 and is currently on shore.

Standard underwater inspection procedures do not call for the inspection of any part of the mooring which is buried. Ground legs and risers are observed only to the point at which they become buried; no attempt is made to locate and inspect anchors or other mooring materials which are not readily visible.

4.2 **Buoy.** The geographic position of each buoy will be verified. In order to accomplish this, a transit will be used to sight each buoy from known positions ashore.

4.2.1 **Buoy Upper Portion.** The buoy shall be observed to determine its general condition. The size of the buoy (diameter and height' should be recorded along with its freeboard. Physical damage such as holes, dents, or listing shall be described. If the buoy is fiberglass coated, the fiberglass should be inspected for cracks, wear, peeling, or rust-bleeding. A check will be made to see if the hatches have been fiberglassed over. If the buoy has not been fiberglassed, the paint will be checked for cracking, chipping, and peeling. Hatches, openings, and penetrations will be examined and broken parts and rust will be reported. Inspection check lists are contained in Annex B.

The buoy fenders and rubbing rails shall be checked for integrity and secure connection to the buoy.

Buoy top jewelry shall be identified and measured with calipers to find the overall outside dimensions and areas of most severe reduction in wire size. Methods for presetting calipers are contained in Annex A.

4.2.2 **Buoy Lower Portion.** Divers shall thoroughly inspect the buoy below the waterline. The thickness of marine growth shall be recorded, three one-foot-square areas shall be selected and cleared of growth without damaging the paint or fiberglass, and the condition of the paint or fiberglass will be noted. If the buoy is a riser-type with a hawse pipe, the presence and condition of the rubbing casting shall be recorded. If the buoy is cathodically protected, the condition, dimensions, and connection of anodes are to be noted. Then, electrical potential readings are to be taken with an underwater voltmeter at three locations on the buoy bottom.

4.2.3 **Bottom Jewelry.** On each mooring, the jewelry connecting the buoy to the riser shall be identified and measured with calipers. As with the topside jewelry, the overall dimensions and the smallest wire size of each type of link or shackle will be recorded.

4.3   Riser. Three consecutive double link measurements using pre-cut gauges will be made at both ends and near the center of the riser. Procedures for the use of pre-cut gauges are also contained in Annex A. The swivel and detachable links contained within the riser assembly shall be visually inspected and measured. As the divers swim down the riser, all chain links and other mooring hardware will be visually observed. Material suspected to be in worn or damaged condition will be investigated.

4.4   Ground Legs. Three consecutive double link measurements of each ground leg shall be taken at both ends and near the center of the visible portion of each ground leg. If the visible portion is longer than 90 feet, measurements shall be made every 45 feet. In those cases where the ground leg chain is slack and not in tension, three single link measurements shall be taken of each selected link as shown in Figure A-1 (Annex A). All connecting hardware including detachable links, anchor joining links, pear links, end links, swivels and shackles shall be identified and measured with calipers. Worn hardware and unusual chain joining practices shall be recorded and photographed.

The legs shall be labeled A, B, C, etc., clockwise from magnetic north and their orientation (determined by the diver's compass) sketched as in Figure 2.

4.5   Anchors. If an anchor is located, a pop float shall be attached to it so that the relative positions of the anchor from the mooring buoy can be observed from the surface. The anchor's position shall be recorded. The hardware connecting an anchor to its ground leg will be measured by calipers and the wire diameters recorded.

4.6   Photography

4.6.1   Topside. Topside photography and ashore photographs are the responsibility of the Engineer-in-Charge.

Photographs will be taken of each buoy showing its general condition. Photographs of the topside jewelry and damaged buoy components will be taken as deemed appropriate by the EIC.

Photographs will be taken of ashore spare mooring material inventories and construction equipment as deemed necessary.

4.6.2   Underwater. Underwater photography shall be the responsibility of the dive team. Buoy bottoms, bottom jewelry, worn links, swivels, ground rings, and other hardware shall be photographed wherever
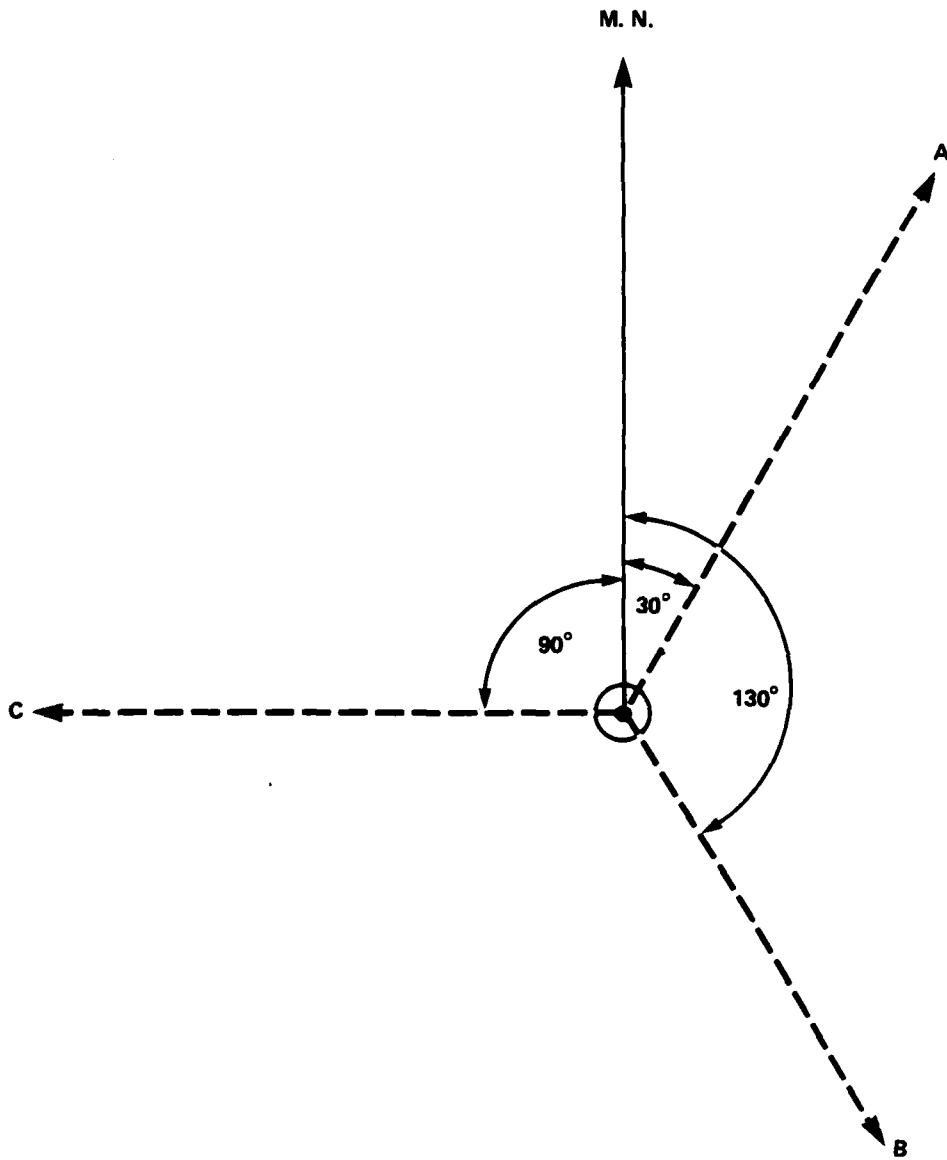
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FIGURE 2. MAGNETIC BEARING OF GROUND LEGS

required to support material conditions and when environmentally feasible. Photographs shall include clear annotation as to the location of the hardware being photographed.

4.7   Cathodic Protection.   Any moorings found to have cathodic protection will be inspected using the following procedures.

The underwater voltmeter will be used (after on-site calibration by the dive team) to probe the chain every 5 feet commencing with the buoy and bottom jewelry and continuing until the anchor is reached or the chain disappears into the bottom. All potential measurements will be recorded in the "Comments" column of Figure B-1. Before cleaning, divers will photograph each anode and record the thickness, type and accumulation of the coating. Several anodes should be brushed to remove the oxidation and the length, width and depth of the remaining zinc measured and photographed. Anodes in poor condition should be measured, reported and photographed.

5.0   DOCUMENTATION

The Engineer-in-Charge will document the inspection procedures used and record the data obtained by the dive team. He may require additional or alternative inspection procedures as deemed necessary during the course of the inspection. He will maintain a time log of events occurring during the inspection, and the master inspection form. In addition, the EIC must be prepared to debrief each diver, upon his return to the surface, in order to gain immediate knowledge of what the diver observed. The information obtained from the divers will be recorded, and this data will subsequently be the basis for the development of the moorings as-built configuration and for the preparation of the Fleet Mooring Inspection Report, which will contain the results of the inspection and recommendations for corrective maintenance actions.

While on site, the EIC will investigate the availability and cost of local mooring maintenance support. In addition he will conduct a cursory inspection of any on-shore Fleet Mooring Inventory (FMI) used for maintenance and repair or ready reserve. The type, size, quantity and general condition of the inventory shall be reported.

6.0   MEETINGS/BRIEFINGS

Upon arrival on site, the Engineer-in-Charge will conduct a pre-dive briefing to familiarize diving personnel with the mooring inspection procedures and to advise them of possible modifications to this

inspection plan. In addition, after approval by CHESDIV, the EIC will give a post-inspection debriefing to advise station personnel of the preliminary inspection findings.

7.0   LOGISTICS

7.1   **UCT TWO.** All arrangements for messing, berthing, and transportation of diver personnel, and the acquisition of a suitable dive platform/boat, will be the responsibility of UCT-2. In addition, the following equipment will be provided by the divers in support of this inspection:

- All diving support equipment

- Measuring aids

  - Inclinometer
  - 100' tape measures for use underwater
  - Scales 1, 2, and 3 feet with large numbers suitable for underwater photo documentation
  - Accurate depth gauges
  - Marker tags to relocate or mark chain links or accessories
  - Calipers (24 inch minimum)
  - Go/no-go guages

- Survey equipment

  - Compass (diver's)
  - Survey buoys with line (pop floats)
  - Surveying transits for establishing mooring buoy locations.

- Underwater voltmeters.

- Two Underwater still cameras (35mm) with film (color and B & W) and flash with spare batteries

- Cleaning equipment — Hand tools including wire brushes, chipping hammers, and sharp chisels. Water blaster with water or hydraulic power supply and brush tool.

7.2   **CHESNAVFACENGCOM.** The CHESNAVFACENGCOM Engineer-in-Charge will provide the following:

- Inspection plan
- Data sheets and forms
- 35mm surface camera and film
- Drafting supplies, graph paper, scales
- Calculator
- Pre-dive briefing data
- DM-26

ANNEX A

MEASURING DEVICES AND THEIR USE

ANNEX A

1.0   MEASURING DEVICES AND THEIR USE

Tables A-1 and A-2 outline the 80 and 90 percent measurements for mooring components. These tables are based on the standard sizes of mooring material listed in DM-26 and can be used to preset calipers before measuring various items. For example, a class BB riser type mooring will require calipers set to 3.15" (90%) and 2.8" (80%) for single link measurements on the riser. These values are then doubled obtaining 6.3" (90%) and 5.6" (80%) for double link measurements on the riser. Similarly, for the ground legs, single link measurements of 2.25" (90%) and 2.0" (80%) are obtained from Table A-1. These values are also doubled to obtain 4.5" and 4.0" for double link measurements. For the ground ring, the 90% and 80% single link measurements are determined to be 5.85" and 5.2".

The preferred measuring devices, however, are back-to-back 80 and 90 percent "go-no go" gauges. These gauges simplify the diver's job in that, unlike calipers, they have to be damaged to be knocked out of adjustment underwater, and they normally do not have to be reset between dives. The locations for measuring chain links are shown in Figure A-1. Figure A-2 contains the drawings and data required to fabricate these gauges. Although these gauges provide a simpler way of sampling the wire size of chain links and some jewelry, the divers still have to carry calipers to measure ground rings and chain connecting links.
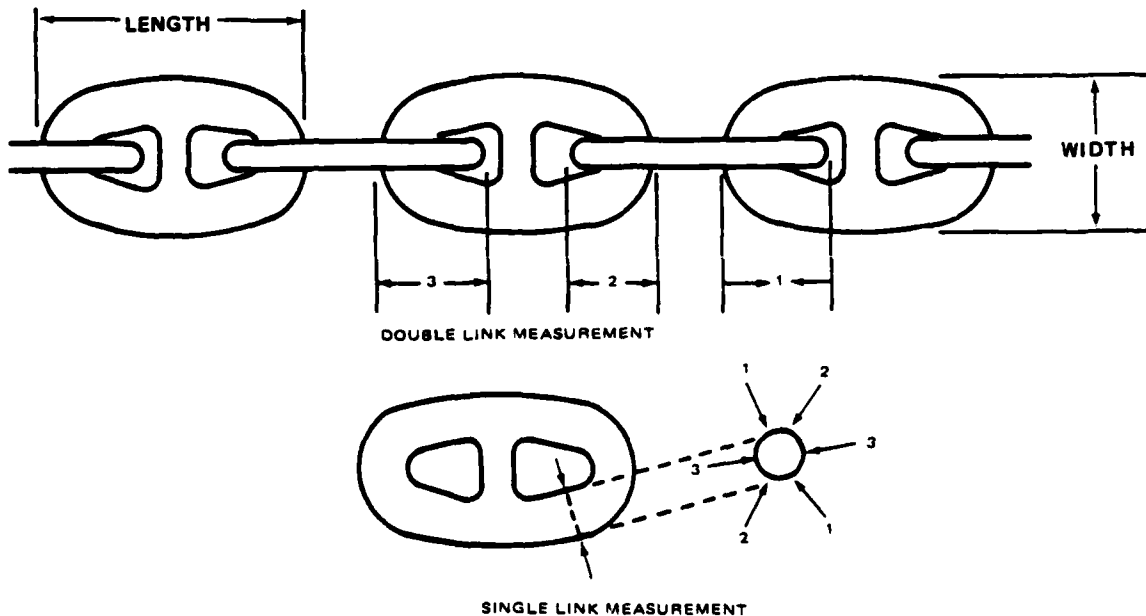

FIGURE A-1. LOCATIONS FOR TAKING CHAIN LINK MEASUREMENTS

TABLE A-1. SINGLE LINK MEASUREMENTS FOR COMPONENTS OF RISER-TYPE MOORINGS
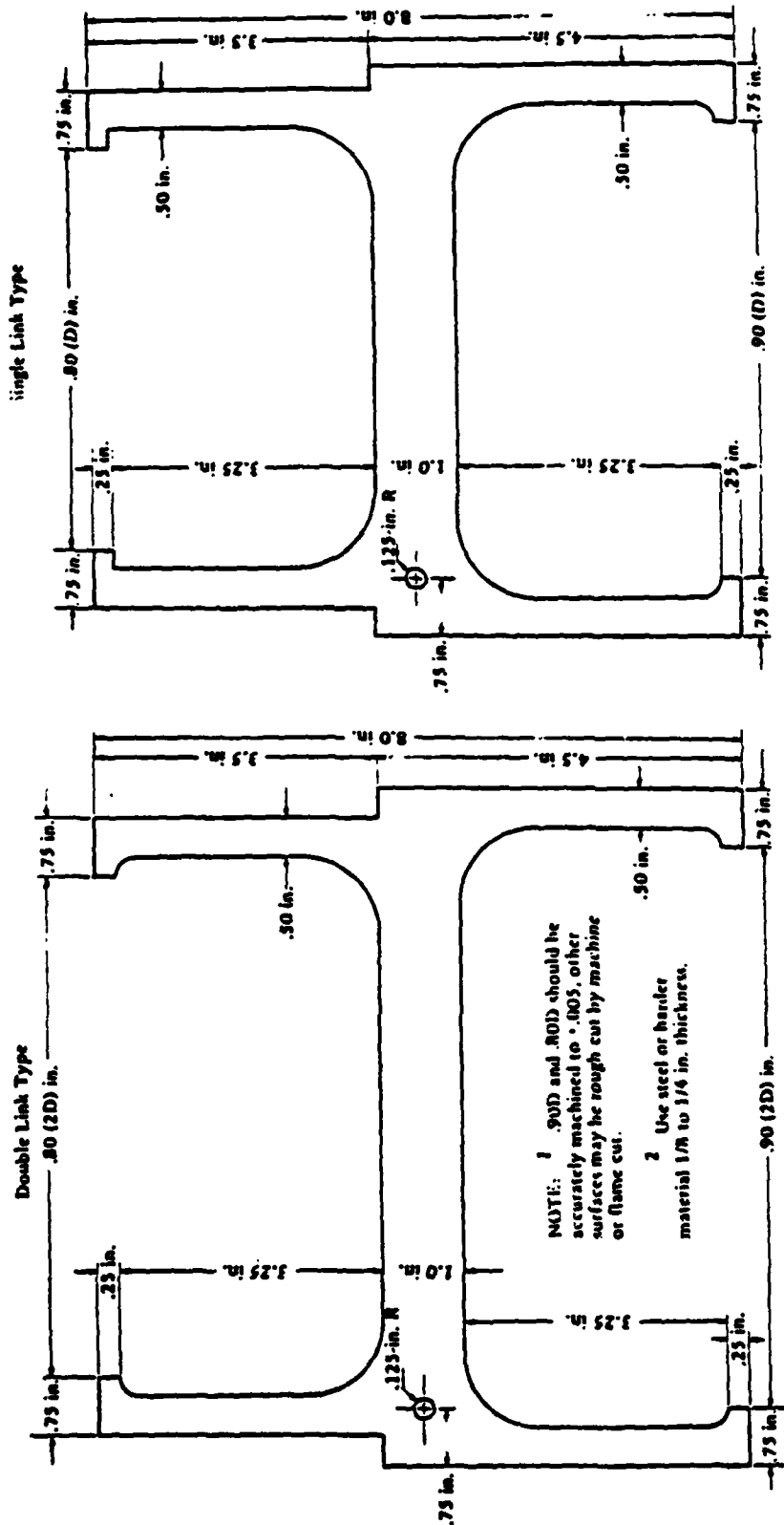### (DOUBLE LINK MEASUREMENTS ARE OBTAINED BY MULTIPLYING SINGLE LINK MEASUREMENTS BY TWO)

Class Mooring	Percent Remaining	Top of Buoy F-Shackle	Top of Buoy End Link	Top of Buoy Ajt[1]	Riser Chain	Riser Ajt[1]	Ground Ring Ring	Ground Ring Ajt[1]	Spider	Ground Tackle Chain[3]	Ground Tackle Ajt[1]	Anchor[2] Stockless w/Stabilizer	lbf
A-A	100	5 3/8	4½	4" type	4	4" type	6½	4" type	4 / 3	2 3/4	2 3/4" type	25,000	-
	90	4.838	3.285		3.6		5.85		3.6 / 2.7	2.475			
	80	4.3	2.92		3.2		5.2		3.2 / 2.4	2.2			
B-B	100	4 15/16	3 15/16	3½" type	3½	3½" type	6½	3½" type	4 / 3	2½	2½" type	20,000	13,000
	90	4.44	3.544		3.15		5.85		3.6 / 2.7	2.25			
	80	3.75	3.15		2.8		5.2		3.2 / 2.4	2.0			
C-C	100	4 15/16	3 15/16	3½" type	3½	3½" type	6½	3½" type	4 / 3	2	2½" type	18,000	10,000
	90	4.44	3.544		3.15		5.85		3.6 / 2.7	2.025			
	80	3.95	3.15		2.8		5.2		3.2 / 2.4	1.8			
D-D	100	4 3/16	3 3/4	3" type	3	3" type	6	3" type	-	3	3" type	30,000	-
	90	3.769	3.375		2.7		5.4			2.7			
	80	3.35	3		2.4		4.8			2.4			
A	100	3 7/8	3 3/8	2 3/4" type	2 3/4	2 3/4" type	5½	2 3/4" type	-	2 3/4	2 3/4" type	25,000	-
	90	3.488	3.038		2.475		4.95			2.475			
	80	3.1	2.7		2.2		4.4			2.2			
B	100	3 1/8	3 1/8	2½" type	2½	2½" type	4 3/4	2½" type	-	2½	2½" type	20,000	13,000
	90	2.813	2.813		2.25		4.275			2.25			
	80	2.5	2.5		2.0		3.8						
C	100	2 13/16	2 3/4	2½" type	2	2½" type	4½	2½" type	-	2½	2½" type	10,000	10,000
	90	2.531	2.813		2.025		4.05			2.025			
	80	2.25	2.5		1.8		3.6			1.8			
D	100		2½	2" type	2	2" type	4	2" type	-	2	2" type	13,000	6,000
	90		2.25		1.8		3.6			1.8			
	80		2.0		1.6		3.2			1.6			
E	100	2 7/16	2½	1 3/4" type	1 3/4	1 3/4" type	3½	1 3/4" type	-	1 3/4	1 3/4" type	9,000	4,000
	90	2.174	2.025		1.575		3.15			1.575			
	80	1.95	1.8		1.4		2.8			1.4			
F	100	1 3/4	1 3/4	1" type	1½	1" type	2 3/4	1" type	-	1½	1½" type	5,000	2,000
	90	1.575	1.575		1.125		2.813			1.125			
	80	1.4	1.4		1.0		2.5			1.0			
G	100	1 1/16	.1	3/4" type	3/4	3/4" type	1 7/8	3/4" type	-	3/4	1" type	3,000	300
	90	.956	.9		.675		1.688			.675			
	80	.85	.8		.6		1.5			.6			

1. Ajt measurement vary according to manufacturer, see PM-26
2. Assumes firm sand bottom
3. Assumes cast steel chain

TABLE A-2. SINGLE LINK MEASUREMENTS FOR COMPONENTS OF TELEPHONE-TYPE MOORINGS
(DOUBLE LINK MEASUREMENTS ARE OBTAINED BY MULTIPLYING SINGLE LINK MEASUREMENTS BY TWO)

Class Mooring	Percent Prevailing	Top of Buoy End Link	Top of Buoy Adj.	Buoy-to-Ground Tackle D/T-Shackle	Buoy-to-Ground Tackle Adj.	Spider	Ground Tackle Adj.	Ground Tackle Chain	Anchor Stockless/Stabilizer	Anchor Lwt
A-A	100	4"	4" type	4 11/16	4" type	4 3	2 1/4" type	2 3/4	25,000	-
	90	3.285		4.219		3.6 2.7		2.475		
	80	2.92		3.75		3.2 2.4		2.2		
B-B	100	4"	4" type	4 11/16	3" type	4 3	2" type	2"	20,000	13,000
	90	3.285		4.219		3.6 2.7		2.25		
	80	2.92		3.75		3.2 2.4		2.9		
C-C	100	4"	4" type	4 11/16	3" type	4 3	2" type	2"	18,000	10,000
	90	3.285		4.219		3.6 2.7		2.025		
	80	2.92		3.75		3.2 2.4		1.8		
D-D	100	4"	4" type	4 11/16	3" type		3" type	3	30,000	-
	90	3.285		4.219				2.7		
	80	2.92		3.75				2.4		
A	100	3 3/8	3.5" type	3 7/8	2 3/4" type		2 3/4" type	2 3/4	25,000	-
	90	3.038		3.486				2.475		
	80	2.7		3.1				2.2		
B	100	3 3/8	3.5" type	3 1/8	2" type		2" type	2"	20,000	13,000
	90	3.038		3.15				2.25		
	80	2.7		2.8				2.0		
C	100	3 3/8	3.5" type	3 1/8	2" type		2" type	2"	18,000	10,000
	90	3.038		2.813				2.025		
	80	2.7		2.5				1.8		
D	100	3 1/4	3.5" type	2 13/16	2" type		2" type	2"	13,000	6,000
	90	3.030		2.531				1.8		
	80	2.7		2.25				1.6		

1. All measurements vary according to manufacturer, see IM-26
2. Assumes firm sand bottom
3. Assumes cast steel chain

Single Link Type

Double Link Type

NOTE: 1 .90D and .80D should be accurately machined to ±.005, other surfaces may be rough cut by machine or flame cut.

2 Use steel or harder material 1/8 to 1/4 in. thickness.

D"	Single Link		Double Link	
	.90D	.80D	.90(2D)	.80(2D)
2	⑪ 1.80	1.60	㉒ 3.60	3.20
1-7/8	⑫ 1.69	1.50		
1-3/4	⑬ 1.58	1.40	㉓ 3.06	2.80
1-1/2	⑭ 1.35	1.20	㉔ 2.70	2.40
1-1/4	⑮ 1.125	1.00		

D"	Single Link		Double Link	
	.90D	.80D	.90(2D)	.80(2D)
3-1/2	⑥ 3.15	2.80	⑰ 6.30	5.60
3	⑦ 2.70	2.40	⑱ 5.40	4.80
2-3/4	⑧ 2.48	2.20	⑲ 4.96	4.40
2-1/2	⑨ 2.25	2.00	⑳ 4.50	4.00
2-1/4	⑩ 2.03	1.80	㉑ 4.06	3.60

D"	Single Link		Double Link	
	.90D	.80D	.90(2D)	.80(2D)
6-1/2	① 5.85	5.20	—	—
6	② 5.40	4.80	—	—
5-1/2	③ 4.95	4.40	—	—
4-1/2	④ 4.05	3.60	⑯ 7.20	6.40
4	⑤ 3.60	3.20		

FIGURE A-2. 10 PERCENT "GO-NO-GO" GAUGES

A-5

ANNEX B

SAMPLE INSPECTION FORMS

Figures B-1 and B-2 depict two forms the EIC and divers may use to record measurements and as-built summations.

MOORING NO.: _____ CLASS: _____ LOCATION: _____ LAT: _____ LONG: _____

WATER DEPTH: _____ ANCHOR SIZE/TYPE: _____ BUOY TYPE: _____

BOTTOM TYPE: ☐ SAND ☐ MUD ☐ CLAY ☐ CORAL ☐ ROCK   Visibility _____   D = depth   NI = not inspected, inaccessible

COMPONENTS		NI	NEW	CONDITION							D	COMMENT
				SINGLE LINK %			DOUBLE LINK %					
				90+	80+	80-	90+	80+	80-			
BUOY HARDWARE												
RISER	NEAR BUOY											
	MIDDLE											
	NEAR GRD RG											
GROUND RING												
GROUND LEG NO. A	UPPER END											
	MIDDLE											
	ENTERS BOTTOM											
GROUND LEG NO. B	UPPER END											
	MIDDLE											
	ENTERS BOTTOM											
GROUND LEG NO. C	UPPER END											
	MIDDLE											
	ENTERS BOTTOM											
GROUND LEG NO. D	UPPER END											
	MIDDLE											
	ENTERS BOTTOM											

DATE: _____   ENGINEER IN CHARGE: _____   DIVERS: _____

MOORING DATA SUMMARY FOR PREPARATION OF AS-BUILTS

MOORING# _____ CLASS _____ LOCATION _____ DATE _____

BOTTOM TYPE _____ WATER DEPTH _____ MOORING CONDITION _____

ENGINEER-IN-CHARGE _____ DIVERS _____

BUOY TYPE
    DIMENSIONS _____
    CONDITION _____
    TOP HARDWARE _____
    BOTTOM HARDWARE _____

RISER LENGTH
    TYPE CHAIN _____
    LINK WIDTH _____
    WIRE DIAM. _____

GROUND RING LOC.
    OUTER DIAM. _____
    WIRE DIAM. _____
    CONDITION _____

LEG A LENGTH
    EXPOSED LENGTH _____
    TYPE CHAIN _____
    LINK WIDTH _____
    WIRE DIAM. _____

LEG B LENGTH
    EXPOSED LENGTH _____
    TYPE CHAIN _____
    LINK WIDTH _____
    WIRE DIAM. _____

LEG C LENGTH
    EXPOSED LENGTH _____
    TYPE CHAIN _____
    LINK WIDTH _____
    WIRE DIAM. _____

LEG D LENGTH
    EXPOSED LENGTH _____
    TYPE CHAIN _____
    LINK WIDTH _____
    WIRE DIAM. _____

RISER CONNECTIONS _____
_____

LEG CONNECTIONS _____
_____

OTHER _____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

ANNEX C

MOORING HISTORICAL DATA SUMMARY

(GFI PROVIDED BY PWC PEARL HARBOR)

FLEET MOORING DATA SHEET

MRG ID = AM13   GENERAL LOC = Ford Island (Near F-13) DES CLASS = C (*)

DATE ESTAB = 1943   DEPTH = 31.0 ft./MLLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-30.5"   LONG. COORD. (W) = 157°-57'-38.0"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12' ⌀ × 6' hi

FENDER = Wood   FIBERGLASS COATING = No

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 20,000 #   PADEYE SIZE = 2¼" ⌀

OF ANCHORS = 2

ANCHOR 1 WT = 60,000 #   PADEYE SIZE = 2¼" ⌀
ANCHOR 2 WT = (Do.)   PADEYE SIZE = (Do.)
ANCHOR 3 WT = —   PADEYE SIZE = —
ANCHOR 4 WT = —   PADEYE SIZE = —

USAGE DURING PAST YEAR = 0 days

TYPE OF SHIPS MOORED = CV

DATE OF LAST REPAIR/COST = 1977/$4,050

DATE OF LAST OVERHAUL/COST = ?/?

DATE OF LAST UNDERWATER INSPECTION = 1979
    CONDUCTED BY = CHESDIV (UCT TWO)

NEXT SCHED. REPAIR = 1985

NEXT SCHED. OVERHAUL = 1987

DATE SHEET COMPILED = 5-82/MS

(*) Down-graded to Class D after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = _AMIBA_   GENERAL LOC = _Ford Island (Nr. F-13)_   DES CLASS = _C_

DATE ESTAB = _1945_   DEPTH = _38.0 ft. Mlw_ BOTTOM = _Mud_

LAT. COORD. (N) = _21'-22'-31.8"_   LONG. COORD. (W) = _157°-57'-34.3"_

BUOY TYPE = _Riser-chain w/ hawsepipe_   SIZE = _12'φ × 6'hi_

FENDER = _Wood_   FIBERGLASS COATING = _No_

CHAIN SIZE = _2¾"_

SINKER = _1_   WT. OF SINKER = _60,000 #_   PADEYE SIZE = _2¼"_

OF ANCHORS = _—_

        ANCHOR 1 WT = _—_   PADEYE SIZE = _—_
        ANCHOR 2 WT = _—_   PADEYE SIZE = _—_
        ANCHOR 3 WT = _—_   PADEYE SIZE = _—_
        ANCHOR 4 WT = _—_   PADEYE SIZE = _—_

USAGE DURING PAST YEAR = _0 days_

TYPE OF SHIPS MOORED = _CV_

DATE OF LAST REPAIR/COST = _1977 / $4,050_

DATE OF LAST OVERHAUL/COST = _?/?_

DATE OF LAST UNDERWATER INSPECTION = _1979_
        CONDUCTED BY = _CHESDIV (UCT TWO)_

NEXT SCHED. REPAIR = _1985_

NEXT SCHED. OVERHAUL = _1987_

DATE SHEET COMPILED = _8-82/MS_

FLEET MOORING DATA SHEET

MRG ID = _CMN_   GENERAL LOC = _West Loch_   DES CLASS = _G_

DATE ESTAB = _1943_   DEPTH = _39.0 Ft.,(MLW)_ BOTTOM = _Mud_

LAT. COORD. (N) = _21°-21'-26.8"_   LONG. COORD. (W) = _157°-59'-34.3"_

BUOY TYPE = _Riser-chain w/ hausepipe_   SIZE = _12'φ × 6' hi_

FENDER = _Rubber_   FIBERGLASS COATING = _Yes_

CHAIN SIZE = _2¾"_

SINKER = _1_   WT. OF SINKER = _34,000 #_   PADEYE SIZE = _2½" φ_

OF ANCHORS = _0_

ANCHOR 1 WT = —	PADEYE SIZE = —
ANCHOR 2 WT = —	PADEYE SIZE = —
ANCHOR 3 WT = —	PADEYE SIZE = —
ANCHOR 4 WT = —	PADEYE SIZE = —

USAGE DURING PAST YEAR = _365 days_

TYPE OF SHIPS MOORED = ~~Army~~ _caisson_

DATE OF LAST REPAIR/COST = _1977 / $2,750_

DATE OF LAST OVERHAUL/COST = _5-70 / ?_

DATE OF LAST UNDERWATER INSPECTION = _1979_
        CONDUCTED BY = _CHESDIV (UCT TWO)_

NEXT SCHED. REPAIR = _1983_

NEXT SCHED. OVERHAUL = _1985_

DATE SHEET COMPILED = _3-82/MS_

FLEET MOORING DATA SHEET

MRG ID = CMM   GENERAL LOC = West Loch   DES CLASS = G

DATE ESTAB = 1943   DEPTH = 39.0 ft.(MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°21'-24.8"   LONG. COORD. (W) = 157°-59'-33.2"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'Ø x 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 34,000 #   PADEYE SIZE = 2¼" Ø

OF ANCHORS = 0

ANCHOR 1 WT = —   PADEYE SIZE = —
ANCHOR 2 WT = —   PADEYE SIZE = —
ANCHOR 3 WT = —   PADEYE SIZE = —
ANCHOR 4 WT = —   PADEYE SIZE = —

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = ~~heavy~~ caisson

DATE OF LAST REPAIR/COST = 1977 / $2,750

DATE OF LAST OVERHAUL/COST = 5-70 / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
CONDUCTED BY = CHESDIV (UCT TWO)

NEXT SCHED. REPAIR = 1983

NEXT SCHED. OVERHAUL = 1985

DATE SHEET COMPILED = 8-82/MS

FLEET MOORING DATA SHEET

MRG ID = CMS GENERAL LOC = West Loch DES CLASS = G

DATE ESTAB = 1940 DEPTH = 42.0 ft. (MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-21'-22.9" LONG. COORD. (W) = 157°-59-33.1"

BUOY TYPE = Riser-chain w/ hansepipe SIZE = 12'⌀ x 6'hi

FENDER = Rubber FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1 WT. OF SINKER = 34,000 # PADEYE SIZE = 2¼"

OF ANCHORS = 0

    ANCHOR 1 WT = —   PADEYE SIZE = —
    ANCHOR 2 WT = —   PADEYE SIZE = —
    ANCHOR 3 WT = —   PADEYE SIZE = —
    ANCHOR 4 WT = —   PADEYE SIZE = —

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = ~~Army~~ caisson

DATE OF LAST REPAIR/COST = 1977/$2,750

DATE OF LAST OVERHAUL/COST = 5-70/ ?

DATE OF LAST UNDERWATER INSPECTION = 1979
    CONDUCTED BY = CHESDIV (UCT Two)

NEXT SCHED. REPAIR = 1988

NEXT SCHED. OVERHAUL = 1985

DATE SHEET COMPILED = 8-82/MS

FLEET MOORING DATA SHEET

MRG ID = 31M   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = C/(*)

DATE ESTAB = 1950   DEPTH = 34.0 ft. (MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-19.2"   LONG. COORD. (W) = 157°-59'-00.6"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'ø x 6'hi

    FENDER = Wood   FIBERGLASS COATING = No

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60,000 #   PADEYE SIZE = 2¼"

OF ANCHORS = —

    ANCHOR 1 WT = —   PADEYE SIZE = —
    ANCHOR 2 WT = —   PADEYE SIZE = —
    ANCHOR 3 WT = —   PADEYE SIZE = —
    ANCHOR 4 WT = —   PADEYE SIZE = —

USAGE DURING PAST YEAR = 0

TYPE OF SHIPS MOORED = ?

DATE OF LAST REPAIR/COST = 1977/ $4,850

DATE OF LAST OVERHAUL/COST = 3-78/ ?

DATE OF LAST UNDERWATER INSPECTION = 1979
    CONDUCTED BY = CHESDIV (UCT Two)

NEXT SCHED. REPAIR = 1985

NEXT SCHED. OVERHAUL = ~~1982~~ (**)

DATE SHEET COMPILED = 4-83 / ~~8-82~~ NS

(*) Down-graded to class G after 1979 u/w Insp.

(**) Overhaul expected to be accomplished by Contr. N62471-82-C-2164 in 1982.
However, DBS substituted vice this mooring in contract work.

FLEET MOORING DATA SHEET

MRG ID = 32N GENERAL LOC = Middle Loch (TSHP) DES CLASS = A (*)

DATE ESTAB = 1943 DEPTH = 33.0 ft.(MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-23.9" LONG. COORD. (W) = 157°-59'-01.0"

BUOY TYPE = Riser-chain w/ hawsepipe SIZE = 12'φ x 6' ht.

FENDER = Rubber FIBERGLASS COATING = Yes

CHAIN SIZE = 2 3/4"

SINKER = 1 WT. OF SINKER = 60,000 # PADEYE SIZE = 2 1/4"φ

OF ANCHORS = 4

  ANCHOR 1 WT = 60,000 #   PADEYE SIZE = 2 1/4"φ
  ANCHOR 2 WT = (Do.)   PADEYE SIZE = (Do.)
  ANCHOR 3 WT = (Do.)   PADEYE SIZE = (Do.)
  ANCHOR 4 WT = (Do.)   PADEYE SIZE = (Do.)

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = YO/YCV/OTEC

DATE OF LAST REPAIR/COST = 1976 / $2,000

DATE OF LAST OVERHAUL/COST = ? / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
  CONDUCTED BY = CHESDIV (UCT TWO)

NEXT SCHED. REPAIR = 1982

NEXT SCHED. OVERHAUL = 1984

DATE SHEET COMPILED = 8-82/NS

(*) Down-graded to class D after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = 52.5   GENERAL LOC = Middle Loch (ZSMF)   DES CLASS = A (*)

DATE ESTAB = 1943   DEPTH = 25.0 ft./(MLLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-20.8"   LONG. COORD. (W) = 157°-59-05.2"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12' ⌀ × 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60,000 #   PADEYE SIZE = 2¼" ⌀

OF ANCHORS = 4

ANCHOR 1 WT = 60,000 #	PADEYE SIZE = 2¼" ⌀
ANCHOR 2 WT = (Do.)	PADEYE SIZE = (Do.)
ANCHOR 3 WT = (Do.)	PADEYE SIZE = (Do.)
ANCHOR 4 WT = (Do.)	PADEYE SIZE = (Do.)

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = YO/YCV/OTEC

DATE OF LAST REPAIR/COST = 1976/ $2,000

DATE OF LAST OVERHAUL/COST = ?/?

DATE OF LAST UNDERWATER INSPECTION = 1979
    CONDUCTED BY = CHESDIV (UCT Two)

NEXT SCHED. REPAIR = 1987

NEXT SCHED. OVERHAUL = 1984

DATE SHEET COMPILED = 8-82/ IMS

(*) Down-graded to class C after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = DEN   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = A (*)

DATE ESTAB = 21°-22'-27.0"   DEPTH = 34.0 ft. (MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-27.0"   LONG. COORD. (W) = 157°-59'-03.6"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'φ × 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60.000 #   PADEYE SIZE = 2½" φ

OF ANCHORS = 4

ANCHOR 1 WT = 60,000 #		PADEYE SIZE = 2½" φ
ANCHOR 2 WT = (Do.)		PADEYE SIZE = (Do.)
ANCHOR 3 WT = (Do.)		PADEYE SIZE = (Do.)
ANCHOR 4 WT = (Do.)		PADEYE SIZE = (Do.)

USAGE DURING PAST YEAR = 0 days

TYPE OF SHIPS MOORED = ? / OTEC

DATE OF LAST REPAIR/COST = 1977 / $13,000

DATE OF LAST OVERHAUL/COST = 10-75 / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
CONDUCTED BY = ODESSY? / NAVFAC Tug?

NEXT SCHED. REPAIR = 1980

NEXT SCHED. OVERHAUL = 1983

DATE SHEET COMPILED = 6-82 / WS

(*) Down-graded to class C after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = D33   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = A

DATE ESTAB = 1943   DEPTH = 33.0 ft. MLW BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-24.0"   LONG. COORD. (W) = 157°-59'-07.8"

BUOY TYPE = Riser-chain w/ hausepipe (*)   SIZE = 12'Ø x 6' hi

     FENDER = Wood   FIBERGLASS COATING = No

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60,000 #   PADEYE SIZE = 2¼"Ø

OF ANCHORS = 4
     ANCHOR 1 WT = 60,000 #   PADEYE SIZE = 2¼"Ø
     ANCHOR 2 WT = (Do.)   PADEYE SIZE = (Do.)
     ANCHOR 3 WT = (Do.)   PADEYE SIZE = (Do.)
     ANCHOR 4 WT = (Do.)   PADEYE SIZE = (Do.)

USAGE DURING PAST YEAR = 0 (*)

TYPE OF SHIPS MOORED = ?

DATE OF LAST REPAIR/COST = 1977/ $4,550

DATE OF LAST OVERHAUL/COST = ? / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
     CONDUCTED BY = CHESDIV (UCT No)

NEXT SCHED. REPAIR = 1982

NEXT SCHED. OVERHAUL = 1983

DATE SHEET COMPILED = 8·87/MC

(X) Buoy broke loose from anchorage 1979 ; Buoy presently on shore
at Waipio Pt.

FLEET MOORING DATA SHEET

MRG ID = 54N   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = A (*)

DATE ESTAB = 1943   DEPTH = 32.0 ±/MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-30.1"   LONG. COORD. (W) = 157°-59'-06.2"

BUOY TYPE = Riser-chain "/ hawsepipe   SIZE = 12'ø x 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60,000 #   PADEYE SIZE = 2¼" ø

OF ANCHORS = 4

ANCHOR 1 WT = 60,000 #	PADEYE SIZE =	2¼" ø
ANCHOR 2 WT = (Do.)	PADEYE SIZE =	(Do.)
ANCHOR 3 WT = (Do.)	PADEYE SIZE =	(Do.)
ANCHOR 4 WT = (Do.)	PADEYE SIZE =	(Do.)

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = DER/ASR/YFN /OTEC

DATE OF LAST REPAIR/COST = 1979/# 990

DATE OF LAST OVERHAUL/COST = 3-78/ ?

DATE OF LAST UNDERWATER INSPECTION = 1979
     CONDUCTED BY = CHESD'V (UCT TWO)

NEXT SCHED. REPAIR = 1983

NEXT SCHED. OVERHAUL = 1985

DATE SHEET COMPILED = 8-82/MS

(*) Down-graded to class G after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = 543   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = A (*)

DATE ESTAB = 1943   DEPTH = 22.0 ft./MLW BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-27.1"   LONG. COORD. (W) = 157°-59'-10.4"

BUOY TYPE = Riser-chain w/hawsepipe   SIZE = 12'∅ × 6'hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60,000 #   PADEYE SIZE = 2¼"∅

OF ANCHORS = 4

ANCHOR 1 WT =	60,000 #	PADEYE SIZE =	2¼"∅
ANCHOR 2 WT =	(Do.)	PADEYE SIZE =	(Do.)
ANCHOR 3 WT =	(Do.)	PADEYE SIZE =	(Do.)
ANCHOR 4 WT =	(Do.)	PADEYE SIZE =	(Do.)

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = DER/ASR/YFN/OTEC

DATE OF LAST REPAIR/COST = 1979/$13,000

DATE OF LAST OVERHAUL/COST = ?/?

DATE OF LAST UNDERWATER INSPECTION = 1979
     CONDUCTED BY = CHESDIV (UCT Two)

NEXT SCHED. REPAIR = 1985

NEXT SCHED. OVERHAUL = 1985

DATE SHEET COMPILED = 3-32/83

(*) Down-graded to class C after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = 2511   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = D (*)

DATE ESTAB = 1944   DEPTH = 37.0 ft./(MLLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-33.3"   LONG. COORD. (W) = 157°-59'-08.8"

BUOY TYPE = Riser-chain w/ housepipe   SIZE = 12'ø x 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

OF ANCHORS = 1

ANCHOR 1 WT = 60,000 #	PADEYE SIZE = 2¼" ø
ANCHOR 2 WT = —	PADEYE SIZE = —
ANCHOR 3 WT = —	PADEYE SIZE = —
ANCHOR 4 WT = —	PADEYE SIZE = —

USAGE DURING PAST YEAR = ~~2 days~~

TYPE OF SHIPS MOORED = ? /OTEC

DATE OF LAST REPAIR/COST = 1979 / $9,060

DATE OF LAST OVERHAUL/COST = ? / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
      CONDUCTED BY = CHESDIV (UCT Two)

NEXT SCHED. REPAIR = 1986

NEXT SCHED. OVERHAUL = 1983

DATE SHEET COMPILED = 8-82/MS

(*) Down-graded → class E after 1979 U/W Insp.

C-13

FLEET MOORING DATA SHEET

MRG ID = 25M   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = C (*)

DATE ESTAB = 1950   DEPTH = 24.0 ft. (MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-31.8"   LONG. COORD. (W) = 157°-59'-10.9"

BUOY TYPE = Riser-chain "7 hawsepipe   SIZE = 12'Ø x 6' hi

FENDER = Rubber   .   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60,000 lb   PADEYE SIZE = 2¼" Ø

OF ANCHORS = 0

ANCHOR 1 WT = —		PADEYE SIZE = —
ANCHOR 2 WT = —		PADEYE SIZE = —
ANCHOR 3 WT = —		PADEYE SIZE = —
ANCHOR 4 WT = —		PADEYE SIZE = —

USAGE DURING PAST YEAR = ~~0 days~~

TYPE OF SHIPS MOORED = ?/? / OTEC

DATE OF LAST REPAIR/COST = 1976/$2,000

DATE OF LAST OVERHAUL/COST = ?/?

DATE OF LAST UNDERWATER INSPECTION = 1979
    CONDUCTED BY = CHESDIV (UCT TWO)

NEXT SCHED. REPAIR = 1986

NEXT SCHED. OVERHAUL = 1988

DATE SHEET COMPILED = 3-87/MG

(*) Down-graded to class G after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = D33   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = D (*)

DATE ESTAB = 1944   DEPTH = 24.0± (MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-30.3"   LONG. COORD. (W) = 157°-59'-13.0"

BUOY TYPE = Riser chain w/ hawsepipe   SIZE = 12'ø x 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

OF ANCHORS = 1

ANCHOR 1 WT = 60,000 #	PADEYE SIZE = 2¼ ø
ANCHOR 2 WT = —	PADEYE SIZE = —
ANCHOR 3 WT = —	PADEYE SIZE = —
ANCHOR 4 WT = —	PADEYE SIZE = —

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = CTEC-1

DATE OF LAST REPAIR/COST = 1979 / $4,680

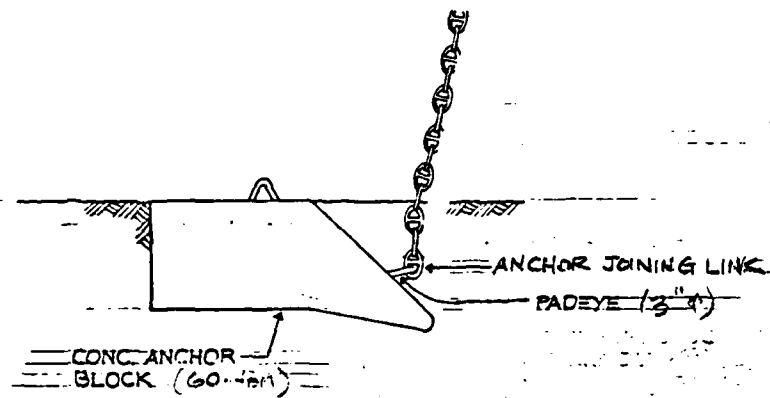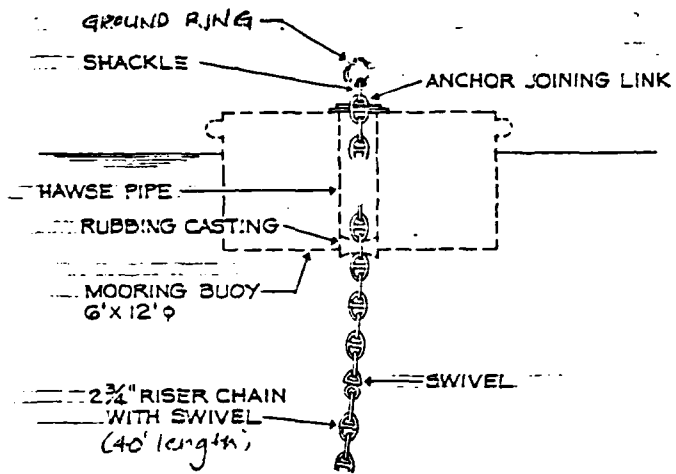DATE OF LAST OVERHAUL/COST = 1-71 / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
    CONDUCTED BY = CHESDIV (UCT Two)

NEXT SCHED. REPAIR = 1986

NEXT SCHED. OVERHAUL = 1988

DATE SHEET COMPILED = 8-82/HS

(*) Down-graded to class G after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = DGM   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = D

DATE ESTAB = 1944   DEPTH = 35.0 ft.(MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-36.4"   LONG. COORD. (W) = 157°-59'-11.4"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'ϕ x 6'hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

OF ANCHORS = 1

ANCHOR 1 WT = 60,000 #		PADEYE SIZE = 2¼"ϕ
ANCHOR 2 WT = —		PADEYE SIZE = —
ANCHOR 3 WT = —		PADEYE SIZE = —
ANCHOR 4 WT = —		PADEYE SIZE = —

USAGE DURING PAST YEAR = ~~0 days~~

TYPE OF SHIPS MOORED = ? / OTEC / DD 948

DATE OF LAST REPAIR/COST = 1979 / #780

DATE OF LAST OVERHAUL/COST = 3-78 / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
    CONDUCTED BY = CNRSN/UCT TWO

NEXT SCHED. REPAIR = 1983

NEXT SCHED. OVERHAUL = 1984

DATE SHEET COMPILED = 8-82 / MG

FLEET MOORING DATA SHEET

MRG ID = _D6.A_   GENERAL LOC = _Middle Loch (ISMF)_   DES CLASS = _C_

DATE ESTAB = _1950_   DEPTH = _35.0 ft/MLW_ BOTTOM = _Mud_

LAT. COORD. (N) = _21°-22'-35.4"_   LONG. COORD. (W) = _157°-59-13.4"_

BUOY TYPE = _Riser-chain w/ hawsepipe_   SIZE = _12'd x 6'hi_

FENDER = _Rubber_   FIBERGLASS COATING = _Yes_

CHAIN SIZE = _2¾"_

SINKER = _—_   WT. OF SINKER = _—_   PADEYE SIZE = _—_

\# OF ANCHORS = _1_

ANCHOR 1 WT = _60,000 #_	PADEYE SIZE = _2¼" ⌀_
ANCHOR 2 WT = _—_	PADEYE SIZE = _—_
ANCHOR 3 WT = _—_	PADEYE SIZE = _—_
ANCHOR 4 WT = _—_	PADEYE SIZE = _—_

USAGE DURING PAST YEAR = ~~various~~

TYPE OF SHIPS MOORED = _? /OTEC/DD948_

DATE OF LAST REPAIR/COST = _1976/$2,000_

DATE OF LAST OVERHAUL/COST = _?/?_

DATE OF LAST UNDERWATER INSPECTION = _1979_
     CONDUCTED BY = _CHESDIV (UCT Two)_

NEXT SCHED. REPAIR = _1987_

NEXT SCHED. OVERHAUL = _1984_

DATE SHEET COMPILED = _8-82/WC_

FLEET MOORING DATA SHEET

MRG ID = P&S   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = D

DATE ESTAB = 1944   DEPTH = 24.0 ft. (MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-33.4"   LONG. COORD. (W) = 157°-59'-15.5"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'⌀ × 6'hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2 3/4"

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

OF ANCHORS = 1

ANCHOR 1 WT = 60,000 #	PADEYE SIZE = 2 1/4" ⌀
ANCHOR 2 WT = —	PADEYE SIZE = —
ANCHOR 3 WT = —	PADEYE SIZE = —
ANCHOR 4 WT = —	PADEYE SIZE = —

USAGE DURING PAST YEAR = ~~0 days~~

TYPE OF SHIPS MOORED = ?/OTEC/DD948

DATE OF LAST REPAIR/COST = 1979/ #8,780

DATE OF LAST OVERHAUL/COST = ?/?

DATE OF LAST UNDERWATER INSPECTION = 1979
   CONDUCTED BY = CHESDIV (UCT TWO)

NEXT SCHED. REPAIR = 1987

NEXT SCHED. OVERHAUL = 1984

DATE SHEET COMPILED = 8-82/VS

FLEET MOORING DATA SHEET

MRG ID = D7N   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = D

DATE ESTAB = 1944   DEPTH = 34.0 ft./MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-39.6"   LONG. COORD. (W) = 157°-59-13.9"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'Ø x 6' hi

FENDER = Rubber (6"D)   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

OF ANCHORS = 1

ANCHOR 1 WT = 110,000 # (*)   PADEYE SIZE = 3" Ø
ANCHOR 2 WT = —   PADEYE SIZE = —
ANCHOR 3 WT = —   PADEYE SIZE = —
ANCHOR 4 WT = —   PADEYE SIZE = —

USAGE DURING PAST YEAR = ~~0 days~~

TYPE OF SHIPS MOORED = ? / DD 34

DATE OF LAST REPAIR/COST = 1979 / $9,280

DATE OF LAST OVERHAUL/COST = 8-82/ Remove + replace mooring • $25,000 (*)

DATE OF LAST UNDERWATER INSPECTION = 1979
          CONDUCTED BY = CHESDIV (UCT Two)

NEXT SCHED. REPAIR = 1984

NEXT SCHED. OVERHAUL = 1986

DATE SHEET COMPILED = 8-82 / WS

(*) Overhaul finally accomplished under J.O. 163-8161 (FY79 Funds)
with funds expiring 9-30-82 - only 10,000 # anchor available
(removed from Supervisor Facility on 8-82); accomplished by PHNSY
floating crane + public shop forces.

GROUND RING

SHACKLE

ANCHOR JOINING LINK

HAWSE PIPE

RUBBING CASTING

MOORING BUOY
6' X 12' ⌀

2¾" RISER CHAIN
WITH SWIVEL
(40' length)

SWIVEL

ANCHOR JOINING LINK

PADEYE (3" ⌀)

CONC ANCHOR
BLOCK (60 TON)

MOORING D7N

(B-84/MS)

FLEET MOORING DATA SHEET

MRG ID = _D7M_   GENERAL LOC = _Middle Loch (ISMF)_   DES CLASS = _C_

DATE ESTAB = _1950_   DEPTH = _29.0 ft./(MLW)_ BOTTOM = _Mud_

LAT. COORD. (N) = _21°-22'-38.2"_   LONG. COORD. (W) = _157°-59'-16.0"_

BUOY TYPE = _Riser-chain w/ hawsepipe_   SIZE = _12'∅ × 6' hi_

FENDER = _Rubber_   FIBERGLASS COATING = _Yes_

CHAIN SIZE = _2¾"_

SINKER = _—_   WT. OF SINKER = _—_   PADEYE SIZE = _—_

OF ANCHORS = _1_

ANCHOR 1 WT = _60,000#_	PADEYE SIZE = _2¼"∅_
ANCHOR 2 WT = _—_	PADEYE SIZE = _—_
ANCHOR 3 WT = _—_	PADEYE SIZE = _—_
ANCHOR 4 WT = _—_	PADEYE SIZE = _—_

USAGE DURING PAST YEAR = ~~0 days~~

TYPE OF SHIPS MOORED = _? / DD 34_

DATE OF LAST REPAIR/COST = _1975 / $7,000_

DATE OF LAST OVERHAUL/COST = _1-81 / $25,000 (*)_

DATE OF LAST UNDERWATER INSPECTION = _1979_
CONDUCTED BY = _CHESDIV (UCT Two)_

NEXT SCHED. REPAIR = _1984_

NEXT SCHED. OVERHAUL = _1986_

DATE SHEET COMPILED = _8-82/ MG_

(*) _Contr. N62471-80-C-1422 (Healy-Tibbets) : Remove & replace mooring and refurbish buoy._

FLEET MOORING DATA SHEET

MRG ID = _D73_   GENERAL LOC = _Middle Loch (ISMF)_   DES CLASS = _D_

DATE ESTAB = _1944_   DEPTH = _23.0 ft./(MLW)_ BOTTOM = _Mud_

LAT. COORD. (N) = _21°-22'-36.6"_   LONG. COORD. (W) = _157°-59'-18.1"_

BUOY TYPE = _Riser-chain w/ hawsepipe_   SIZE = _12'⌀ x 6'hi_

FENDER = _Rubber_   FIBERGLASS COATING = _Yes_

CHAIN SIZE = _2¾"_

SINKER = _—_   WT. OF SINKER = _—_   PADEYE SIZE = _—_

\# OF ANCHORS = _1_

ANCHOR 1 WT = _60,000 #_	PADEYE SIZE = _2¼"⌀_
ANCHOR 2 WT = _—_	PADEYE SIZE = _—_
ANCHOR 3 WT = _—_	PADEYE SIZE = _—_
ANCHOR 4 WT = _—_	PADEYE SIZE = _—_

USAGE DURING PAST YEAR = ~~0 days~~

TYPE OF SHIPS MOORED = _? / DD34_

DATE OF LAST REPAIR/COST = _1976 / $2,000_

DATE OF LAST OVERHAUL/COST = _1-81 / $25,000 (*)_

DATE OF LAST UNDERWATER INSPECTION = _1979_
    CONDUCTED BY = _CHESDIV (UCT Two)_

NEXT SCHED. REPAIR = _1984_

NEXT SCHED. OVERHAUL = _1986_

DATE SHEET COMPILED = _3-82/ MS_

(*) _Contr. N62471-80-C-1422 (Healy Tibbits): Remove & replace mooring and refurbish buoy_

C-22

FLEET MOORING DATA SHEET

MRG ID = 28N   GENERAL LOC = Middle Loch (ICMF)   DES CLASS = D

DATE ESTAB = 1945   DEPTH = 35.0 ft.(MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-42.7"   LONG. COORD. (W) = 157°-59'-16.5"

BUOY TYPE = Riser-chain w/ hawse pipe   SIZE = 12'⌀ x 6'hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

OF ANCHORS = 1

ANCHOR 1 WT = 60,000 #	PADEYE SIZE = 2¼"
ANCHOR 2 WT = —	PADEYE SIZE = —
ANCHOR 3 WT = —	PADEYE SIZE = —
ANCHOR 4 WT = —	PADEYE SIZE = —

USAGE DURING PAST YEAR = ~~0 days~~

TYPE OF SHIPS MOORED = ?

DATE OF LAST REPAIR/COST = 1977 / $2,750

DATE OF LAST OVERHAUL/COST = 1-81 / $25,000 (*)

DATE OF LAST UNDERWATER INSPECTION = 1979
     CONDUCTED BY = CHESDIV (UCT Two)

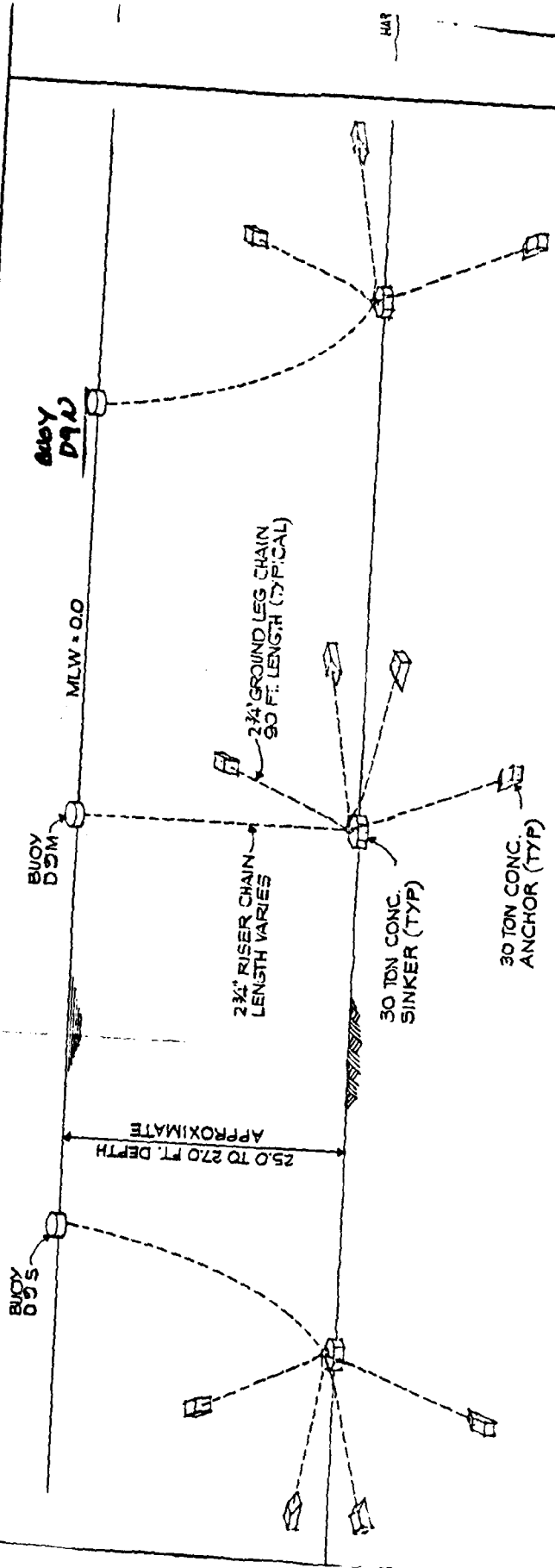NEXT SCHED. REPAIR = 1984

NEXT SCHED. OVERHAUL = 1986

DATE SHEET COMPILED = 8-82/VS

(*) Contr. N62471-80-C-1422 (Healy Tibbets) : Remove & replace mooring and
     refurbish buoy

C-23

FLEET MOORING DATA SHEET

MRG ID = DBM   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = C

DATE ESTAB = 1950   DEPTH = 34.0 ft.(MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-41.2"   LONG. COORD. (W) = 157°-59'-18.6"

BUOY TYPE = Riser chain w/ hawsepipe   SIZE = 12'ø x 6'hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾."

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

\# OF ANCHORS = 1

ANCHOR 1 WT = 60,000 #	PADEYE SIZE = 2¼"ø
ANCHOR 2 WT = —	PADEYE SIZE = —
ANCHOR 3 WT = —	PADEYE SIZE = —
ANCHOR 4 WT = —	PADEYE SIZE = —

USAGE DURING PAST YEAR = ~~0 days~~

TYPE OF SHIPS MOORED = ? / YW101 / YW83 / YOG68

DATE OF LAST REPAIR/COST = 1977 / $2,750

DATE OF LAST OVERHAUL/COST = 1-81 / $25,000 (*)

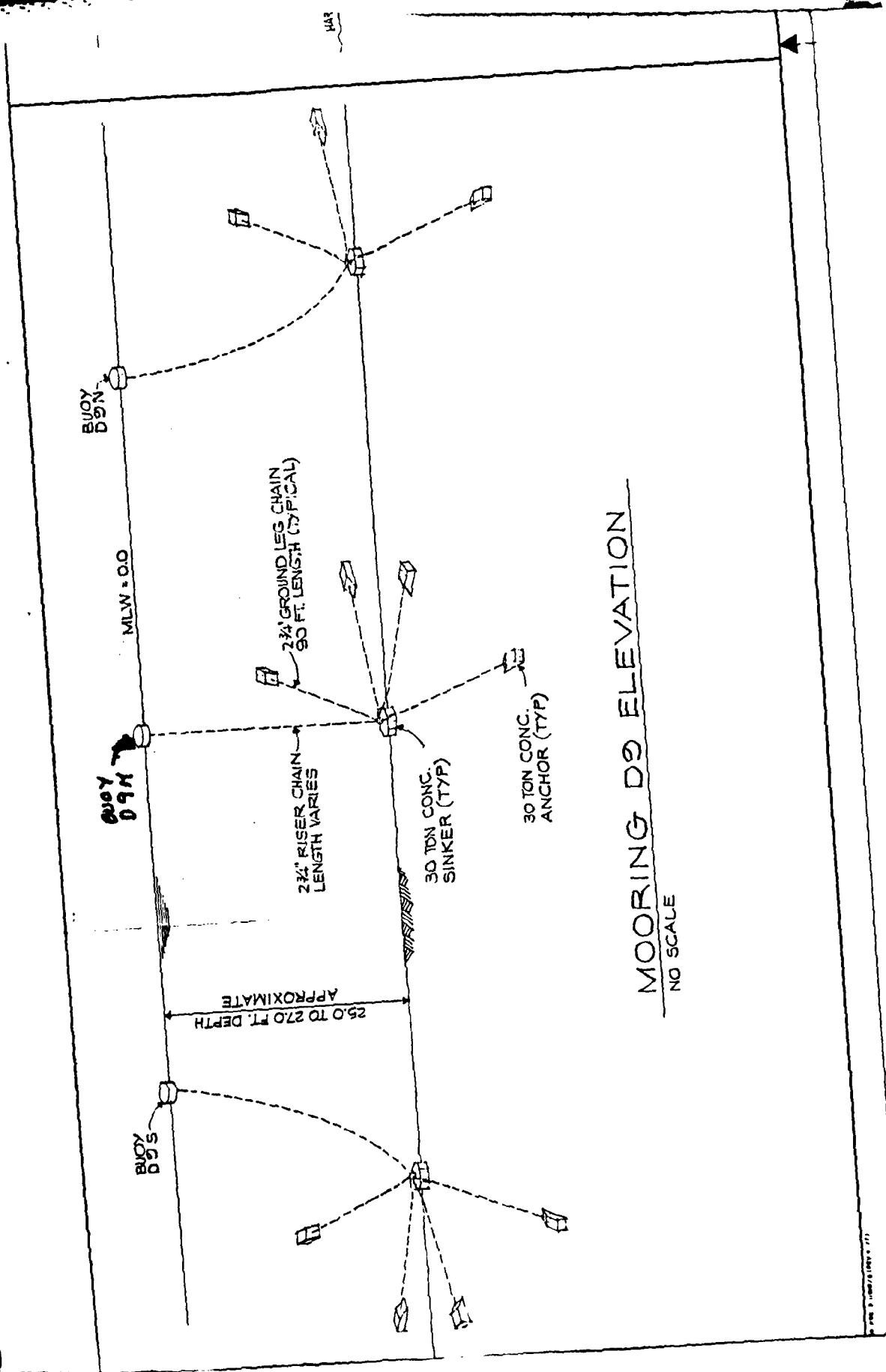DATE OF LAST UNDERWATER INSPECTION = 1979
    CONDUCTED BY = CHESDIV (UCT TWO)

NEXT SCHED. REPAIR = 1984

NEXT SCHED. OVERHAUL = 1986

DATE SHEET COMPILED = 3-Dec/VG

(*) Contr, N62471-80-C-1422 (Healy-Tibbets) : Remove & replace mooring
    and refurbish buoy

FLEET MOORING DATA SHEET

MRG ID = DES   GENERAL LOC = Middle Loch (ICMF)   DES CLASS = D

DATE ESTAB = 1945   DEPTH = 23.0 ft.(MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-39.7"   LONG. COORD. (W) = 157°-59'-20.7"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'd × 6'hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

OF ANCHORS = 1

ANCHOR 1 WT =	60,000 #	PADEYE SIZE =	2¾" d̶ 2¾" ø
ANCHOR 2 WT =	—	PADEYE SIZE =	—
ANCHOR 3 WT =	—	PADEYE SIZE =	—
ANCHOR 4 WT =	—	PADEYE SIZE =	—

USAGE DURING PAST YEAR = ~~0 days~~

TYPE OF SHIPS MOORED = ? / YW 101 / YW 83 / YOG-68

DATE OF LAST REPAIR/COST = 1977/ $2,750

DATE OF LAST OVERHAUL/COST = ~~1-81/ $25,000 (*)~~ 12-82/ $31,000 (*)

DATE OF LAST UNDERWATER INSPECTION = 1979
    CONDUCTED BY = CHESDIV (UCT Twin)

NEXT SCHED. REPAIR = 1986

NEXT SCHED. OVERHAUL = 1986

DATE SHEET COMPILED = 4-83 ~~8-82~~ /MG

~~(*) Contr. N62471-80-C-1622 (Healy-Tibbets): Remove & replace mooring and refurbish buoy~~

(*) Overhaul accomplished by Contr N62471-82-C-2164;
    Necessitated when mooring failed due to high winds during passage of
        Hurricane Iwa 11/23/82;
    This mooring done vice DIM of original contract.

FLEET MOORING DATA SHEET

MRG ID = _D7N_   GENERAL LOC = _Middle Loch (ISMF)_   DES CLASS = _A_ ~~(E)~~

DATE ESTAB = _1946_   DEPTH = _27.0 ft. (MLW)_ BOTTOM = _Mud_

LAT. COORD. (N) = _21°-22'-45.9"_   LONG. COORD. (W) = _157°-59'-19.1"_

BUOY TYPE = _Riser-chain w/ hawsepipe_   SIZE = _12'd x 6'hi_

FENDER = _Rubber_   FIBERGLASS COATING = _Yes_

CHAIN SIZE = _2¾"_

SINKER = _____   WT. OF SINKER = _60,000 #_   PADEYE SIZE = ~~2¼"~~ _2¾" φ_

OF ANCHORS = _3_

ANCHOR 1 WT = _60,000 #_		PADEYE SIZE = ~~2¼" φ~~ _2¾" φ_	
ANCHOR 2 WT = _(Do.)_		PADEYE SIZE = _(Do.)_	
ANCHOR 3 WT = _(Do.)_		PADEYE SIZE = _(Do.)_	
ANCHOR 4 WT = —		PADEYE SIZE = —	

USAGE DURING PAST YEAR = _365 days_

TYPE OF SHIPS MOORED = _YWN/YOG/YO/YOG/YON_

DATE OF LAST REPAIR/COST = _1977/$2,450_

DATE OF LAST OVERHAUL/COST = ~~4-91/?~~ _12-82/$51,000 (**)_

DATE OF LAST UNDERWATER INSPECTION = _1979_
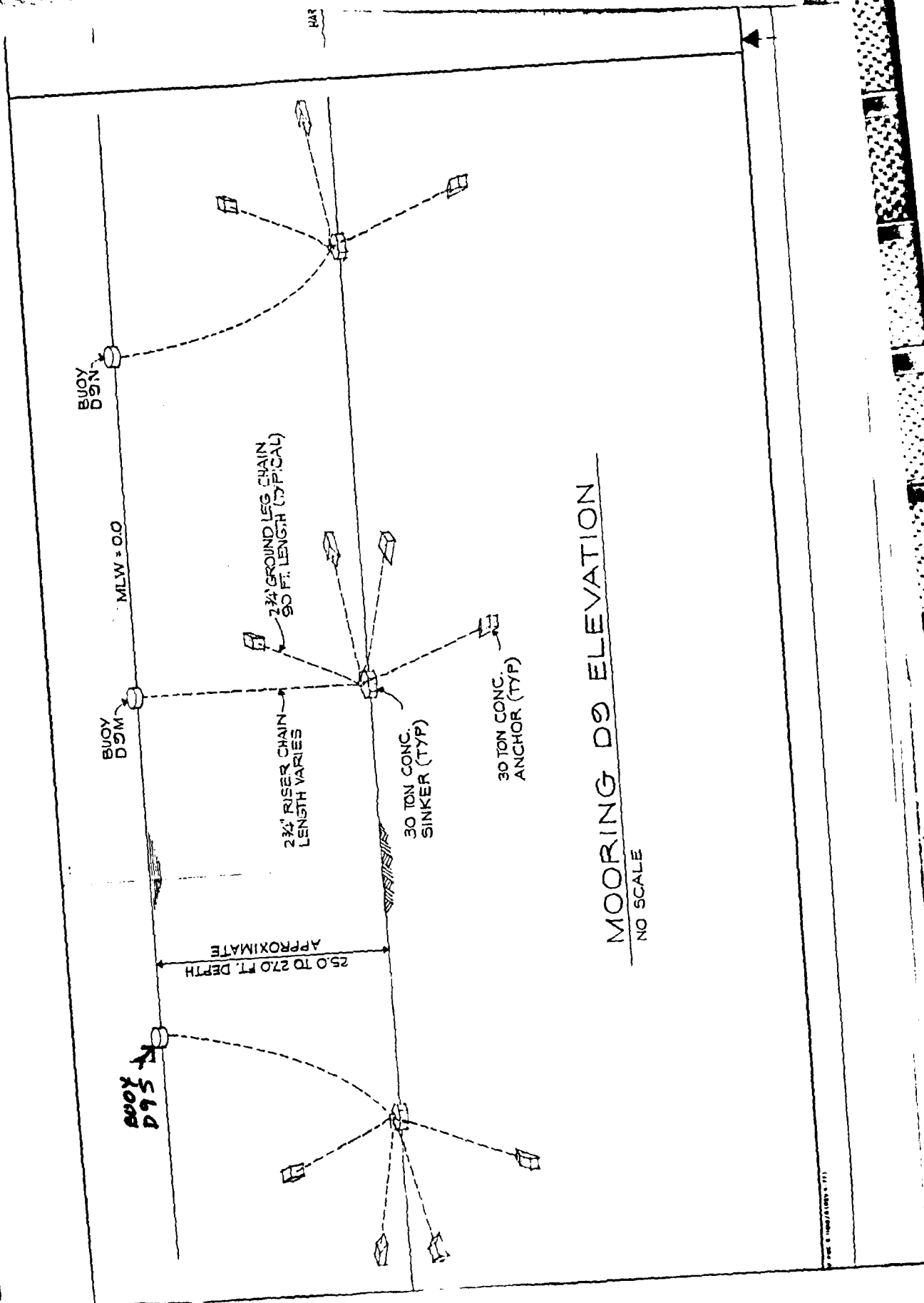   CONDUCTED BY = _CHESDIV (UCT Two)_

NEXT SCHED. REPAIR = _1984_

NEXT SCHED. OVERHAUL = _1982 (**)_

DATE SHEET COMPILED = ~~2-82~~ _4-83_/NS

~~(*) Down-graded to class E after 1979 U/W insp.~~

(**) Overhaul ~~directed to be~~ accomplished by Contr. N62471-82-C-2164

MOORING D9 ELEVATION
NO SCALE

Buoy D9U

MLW = 0.0

2¾" GROUND LEG CHAIN
90 FT. LENGTH (TYPICAL)

BUOY D9M

2¾" RISER CHAIN
LENGTH VARIES

30 TON CONC.
SINKER (TYP)

30 TON CONC.
ANCHOR (TYP)

25.0 TO 27.0 FT. DEPTH
APPROXIMATE

BUOY D9S

FLEET MOORING DATA SHEET

MRG ID = 29M   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = A ~~(B)~~

DATE ESTAB = 1950   DEPTH = 20.0 ~~26.0 ft~~ (MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-44.4"   LONG. COORD. (W) = 157°-59'-21.2"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'⌀ × 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60,000 #   PADEYE SIZE = ~~2½" ⌀~~ 2¾ ⌀

OF ANCHORS = 4

ANCHOR 1 WT = 60,000 #   PADEYE SIZE = ~~2½" ⌀~~ 2¾ ⌀
ANCHOR 2 WT = (Do.)   PADEYE SIZE = (Do.) ✓
ANCHOR 3 WT = (Do.)   PADEYE SIZE = (Do.) ✓
ANCHOR 4 WT = (Do.)   PADEYE SIZE = (Do.) ✓

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = YWN/YOG/YO/YOG/YON /// 4-YW's

DATE OF LAST REPAIR/COST = 1979 / $450

DATE OF LAST OVERHAUL/COST = ~~4-74/?~~ 12-82/$51,000 (**)

DATE OF LAST UNDERWATER INSPECTION = 1979
CONDUCTED BY = CHESDIV (UCT Trio)

NEXT SCHED. REPAIR = 1984

NEXT SCHED. OVERHAUL = ~~1982 (**)~~ 1987

DATE SHEET COMPILED = 4-83 ~~3-83~~ /MS

~~(*) Downgraded to class B after 1979 U/W Insp.~~

(**) Overhaul ~~expected to be~~ accomplished by Contr. N62471-82-C-2164

MOORING D9 ELEVATION

NO SCALE

Buoy D9N.

Buoy D9N.

Buoy D9S.

MLW = 0.0

2¾" GROUND LEG CHAIN
90 FT. LENGTH (TYPICAL)

2¼" RISER CHAIN
LENGTH VARIES

30 TON CONC.
SINKER (TYP)

30 TON CONC.
ANCHOR (TYP)

25.0 TO 27.0 FT. DEPTH
APPROXIMATE

FLEET MOORING DATA SHEET

MRG ID = _D9S_ GENERAL LOC = _Middle Loch (ICMF)_ DES CLASS = _A_ ~~BB~~

DATE ESTAB = _1946_ DEPTH = _~~25.0~~ 21.0 ft. (MLW)_ BOTTOM = _Mud_

LAT. COORD. (N) = _21°-22'-42.9"_ LONG. COORD. (W) = _157°-59'-23.3"_

BUOY TYPE = _Riser-chain w/ hawsepipe_ SIZE = _12'ø x 6' hi_

FENDER = _Rubber_ FIBERGLASS COATING = _YES_

CHAIN SIZE = _2¾"_

SINKER = _1_ WT. OF SINKER = _60,000 #_ PADEYE SIZE = ~~3½"~~ _2¾" ø_

OF ANCHORS = _4_

ANCHOR 1 WT = _60,000 #_	PADEYE SIZE = ~~3½"~~ _2¾" ø_
ANCHOR 2 WT = _(Do.)_	PADEYE SIZE = _(Do.)_
ANCHOR 3 WT = _(Do.)_	PADEYE SIZE = _(Do.)_
ANCHOR 4 WT = _(Do.)_	PADEYE SIZE = _(Do.)_

USAGE DURING PAST YEAR = _365 days_

TYPE OF SHIPS MOORED = _4 - YW's_

DATE OF LAST REPAIR/COST = _1977 / $3,275_

DATE OF LAST OVERHAUL/COST = ~~1-71/?~~ _12-82 / $51,000 (**)_

DATE OF LAST UNDERWATER INSPECTION = _1979_
CONDUCTED BY = _CHESDIV (UCT Two)_

NEXT SCHED. REPAIR = _1984_

NEXT SCHED. OVERHAUL = ~~1982 (**)~~ _1987_

DATE SHEET COMPILED = _~~3-82~~ 4-83 / MS_

~~(*) Downgraded to class F after 1979 U/W Insp.~~

(**) Overhaul ~~expected to be~~ accomplished by Contr. N62471-82-C-2164

BUOY D9N

MLW = 0.0

2¾" GROUND LEG CHAIN
90 FT. LENGTH (TYPICAL)

2¾" RISER CHAIN
LENGTH VARIES

BUOY D9M

30 TON CONC.
SINKER (TYP)

30 TON CONC.
ANCHOR (TYP)

BUOY D9S

25.0 TO 27.0 FT. DEPTH
APPROXIMATE

MOORING D9 ELEVATION
NO SCALE

FLEET MOORING DATA SHEET

MRG ID = _DION_   GENERAL LOC = _Middle Loch (ISMF)_   DES CLASS = _A (*)_

DATE ESTAB = _1946_   DEPTH = _24.0 ft. (MLW)_ BOTTOM = _Mud_

LAT. COORD. (N) = _21°-22'-47.1"_   LONG. COORD. (W) = _157°-59'-21.7"_

BUOY TYPE = _Riser-chain w/ hawsepipe_   SIZE = _12'⌀ × 6' hi_

FENDER = _Rubber_   FIBERGLASS COATING = _Yes_

CHAIN SIZE = _2¾"_

SINKER = _1_   WT. OF SINKER = _60,000 #_   PADEYE SIZE = _2¼"⌀_

OF ANCHORS = _4_

ANCHOR 1 WT = _60,000 #_	PADEYE SIZE = _2¼"⌀_
ANCHOR 2 WT = _(Do.)_	PADEYE SIZE = _(Do.)_
ANCHOR 3 WT = _(Do.)_	PADEYE SIZE = _(Do.)_
ANCHOR 4 WT = _(Do.)_	PADEYE SIZE = _(Do.)_

USAGE DURING PAST YEAR = _365 days_

TYPE OF SHIPS MOORED = _YFN /3-YFRN's_

DATE OF LAST REPAIR/COST = _1977/ $10,240_

DATE OF LAST OVERHAUL/COST = _9-71 / ?_

DATE OF LAST UNDERWATER INSPECTION = _1979_
CONDUCTED BY = _CHESDIV (UCT Two)_

NEXT SCHED. REPAIR = _1986_

NEXT SCHED. OVERHAUL = _1988_

DATE SHEET COMPILED = _8-82/ WS_

(*) Down-graded to class F after 1979 u/w Insp.

FLEET MOORING DATA SHEET

MRG ID = _DIC14_   GENERAL LOC = _Middle Loch (ISMF)_   DES CLASS = _A (*)_

DATE ESTAB = _1950_   DEPTH = _24.0 ft.(MLW)_ BOTTOM = _Mud_

LAT. COORD. (N) = _21°-22'-47.5"_   LONG. COORD. (W) = _157°-59'-23.8"_

BUOY TYPE = _riser-chain w/ hawsepipe_   SIZE = _12'⌀ X 6' hi_

FENDER = _Rubber_   FIBERGLASS COATING = _Yes_

CHAIN SIZE = _2³/₄"_

SINKER = _1_   WT. OF SINKER = _60,000 #_   PADEYE SIZE = _2¼"_

OF ANCHORS = _2_

ANCHOR 1 WT = _60,000 #_	PADEYE SIZE = _2¼"_
ANCHOR 2 WT = _(in.)_	PADEYE SIZE = _(in.)_
ANCHOR 3 WT = _—_	PADEYE SIZE = _—_
ANCHOR 4 WT = _—_	PADEYE SIZE = _—_

USAGE DURING PAST YEAR = _365 days_

TYPE OF SHIPS MOORED = _YFN/3-YFRN's /// YFND/YFNB/YR/YO_

DATE OF LAST REPAIR/COST = _1979 / $1,200_

DATE OF LAST OVERHAUL/COST = _9-71 / ?_

DATE OF LAST UNDERWATER INSPECTION = _1979_
CONDUCTED BY = _CHESDIV (UCT TWO)_

NEXT SCHED. REPAIR = _1986_

NEXT SCHED. OVERHAUL = _1983_

DATE SHEET COMPILED = _8-82/MS_

(*) Down-graded to class F after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = ㄱicc GENERAL LOC = Middle Loch (ISMF) DES CLASS = A /(*)

DATE ESTAB = 1946 DEPTH = 27.0 ft. (MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-46.0" LONG. COORD. (W) = 157°-59'-25.9"

BUOY TYPE = Riser chain w/ hawsepipe SIZE = 12'∅ × 6' hi

FENDER = Rubber FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1 WT. OF SINKER = 60,000 # PADEYE SIZE = 2¼" ∅

OF ANCHORS = 4

ANCHOR 1 WT =	60,000 #	PADEYE SIZE =	2¼" ∅
ANCHOR 2 WT =	(Do.)	PADEYE SIZE =	(Do.)
ANCHOR 3 WT =	(Do.)	PADEYE SIZE =	(Do.)
ANCHOR 4 WT =	(Do.)	PADEYE SIZE =	(Do.)

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = YFND/YFNB/YR/YO

DATE OF LAST REPAIR/COST = 1977/ # 3,275

DATE OF LAST OVERHAUL/COST = 9-71 / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
  CONDUCTED BY = CHESDIV (UCT Two)

NEXT SCHED. REPAIR = 1986

NEXT SCHED. OVERHAUL = 1983

DATE SHEET COMPILED = 8-82/MS

(*) Down-graded to class E after 1979 U/W Insp

FLEET MOORING DATA SHEET

MRG ID = D1131   GENERAL LOC = Middle Loch (ISMF)   DES CLASS = A (*)

DATE ESTAB = _____ 1946 _____   DEPTH = 23.0 ft. (MLLW)   BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-52.2"   LONG. COORD. (W) = 157°-59'-24.2"

BUOY TYPE = Riser-chain 'j hawsepipe   SIZE = 12'6 x 6'in

     FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60,000 #   PADEYE SIZE = 2¼"

OF ANCHORS = 4

          ANCHOR 1 WT = 60,000 #   PADEYE SIZE = 2¼"
          ANCHOR 2 WT = (Do.)   PADEYE SIZE = (Do.)
          ANCHOR 3 WT = (Do.)   PADEYE SIZE = (Do.)
          ANCHOR 4 WT = (Do.)   PADEYE SIZE = (Do.)

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = YRBH-/YRBH

DATE OF LAST REPAIR/COST = 1979 / #1,730

DATE OF LAST OVERHAUL/COST = 5-70 / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
          CONDUCTED BY = OHFSDIV /IICT Two

NEXT SCHED. REPAIR = 1988

NEXT SCHED. OVERHAUL = 1985

DATE SHEET COMPILED = 8-82/VS

(*) Down-graded to class D after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = 2HM   GENERAL LOC = Middle Loch (ECMF)   DES CLASS = A(*)

DATE ESTAB = 1950   DEPTH = 27.0 ft.(MLW)   BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-56.7"   LONG. COORD. (W) = 157°-59-26.2"

BUOY TYPE = Riser chain w/ hawsepipe   SIZE = 12'⌀ x 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60,000 #   PADEYE SIZE = 2¼"⌀

OF ANCHORS = 3

ANCHOR 1 WT = 60,000 #	PADEYE SIZE =	2¼"⌀
ANCHOR 2 WT = (Lo.)	PADEYE SIZE =	(Lo.)
ANCHOR 3 WT = (Lo.)	PADEYE SIZE =	(Lo.)
ANCHOR 4 WT = —	PADEYE SIZE =	—

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = YRDH/YRDH

DATE OF LAST REPAIR/COST = 1977/$4,650

DATE OF LAST OVERHAUL/COST = 5-70/ ?

DATE OF LAST UNDERWATER INSPECTION = 1979
CONDUCTED BY = CHESDIV (ACT Two)

NEXT SCHED. REPAIR = 1982

NEXT SCHED. OVERHAUL = 1985

DATE SHEET COMPILED = 5-82/MG

(*) Down-graded to class D after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = _DIIS_   GENERAL LOC = _Middle Loch (ISMF)_   DES CLASS = _A (*)_

DATE ESTAB = _1946_   DEPTH = _27.0 ft. (MLW)_ BOTTOM = _Mud_

LAT. COORD. (N) = _21° 22' 49.2"_   LONG. COORD. (W) = _157° 59' 28.4"_

BUOY TYPE = _Riser-chain "7 ~~tension bar~~_   SIZE = _12' φ × 6' hi_
(tension bar written above)

FENDER = _Rubber (top & side)_   FIBERGLASS COATING = _Yes_

CHAIN SIZE = _2¾"_

SINKER = _1_   WT. OF SINKER = _60,000 #_   PADEYE SIZE = _2¼" φ_

OF ANCHORS = _4_

ANCHOR 1 WT = _60,000 #_	PADEYE SIZE = _2¼" φ_		
ANCHOR 2 WT = _(Do.)_	PADEYE SIZE = _(Do.)_		
ANCHOR 3 WT = _(Do.)_	PADEYE SIZE = _(Do.)_		
ANCHOR 4 WT = _(Do.)_	PADEYE SIZE = _(Do.)_		

USAGE DURING PAST YEAR = _O days_

TYPE OF SHIPS MOORED = _?_

DATE OF LAST REPAIR/COST = _1977/ $3,275_

DATE OF LAST OVERHAUL/COST = _4-68/ ?_

DATE OF LAST UNDERWATER INSPECTION = _1979_
CONDUCTED BY = _CHESDIV/UCT Two_

NEXT SCHED. REPAIR = _1988_

NEXT SCHED. OVERHAUL = _1985_

DATE SHEET COMPILED = _8-82/MS_

(*) _rown-graded to class D after 1979 U/W Insp._

FLEET MOORING DATA SHEET

MRG ID = D.2 N   GENERAL LOC = Middle Loch (ICMF)   DES CLASS = A (*)

DATE ESTAB = _1946_   DEPTH = 24.0 ft. (MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-56.8"   LONG. COORD. (W) = 157°-59'-26.8"

BUOY TYPE = Riser chain ~Hawsepipe   SIZE = 12'ø × 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60,000#   PADEYE SIZE = 2¼" ø

OF ANCHORS = 4

ANCHOR 1 WT = 60,000#		PADEYE SIZE = 2¼" ø
ANCHOR 2 WT = (Do.)		PADEYE SIZE = (Do.)
ANCHOR 3 WT = (Do.)		PADEYE SIZE = (Do.)
ANCHOR 4 WT = (Do.)		PADEYE SIZE = (Do.)

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = YTM/YTM/YFR/YF

DATE OF LAST REPAIR/COST = 1977/$2,750

DATE OF LAST OVERHAUL/COST = 2-74 / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
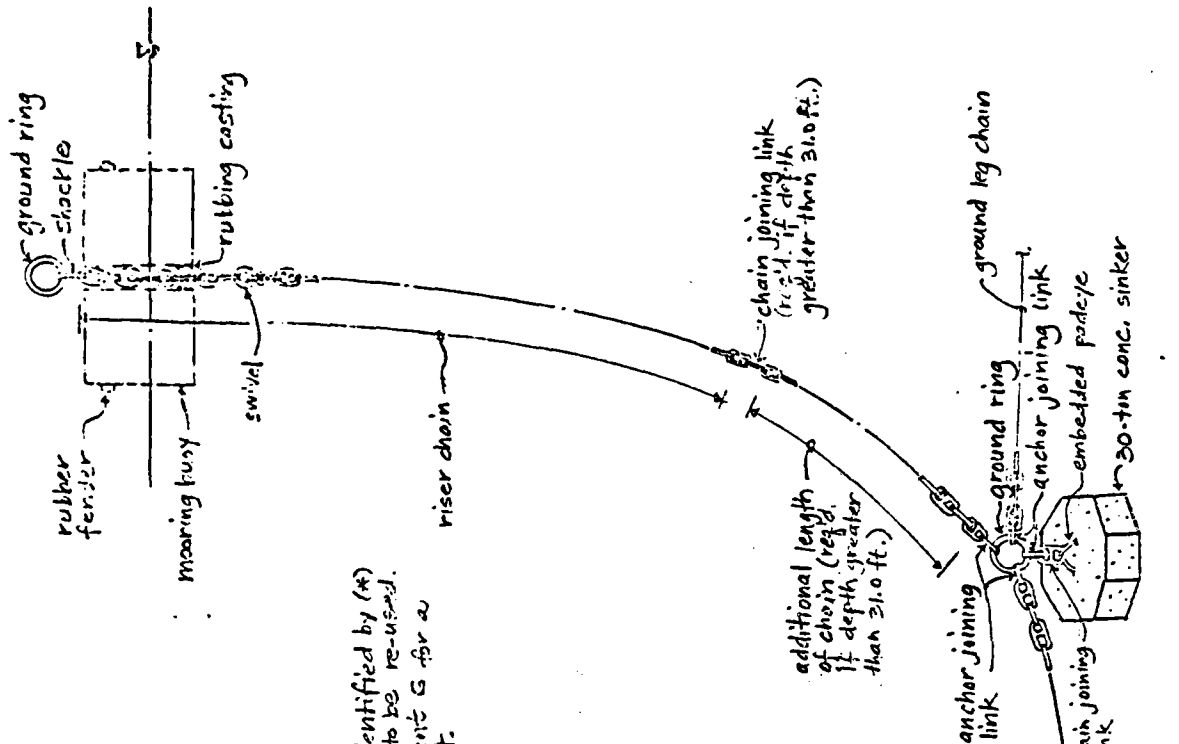   CONDUCTED BY = CHESDIV (UCT Two)

NEXT SCHED. REPAIR = 1987

NEXT SCHED. OVERHAUL = 1984

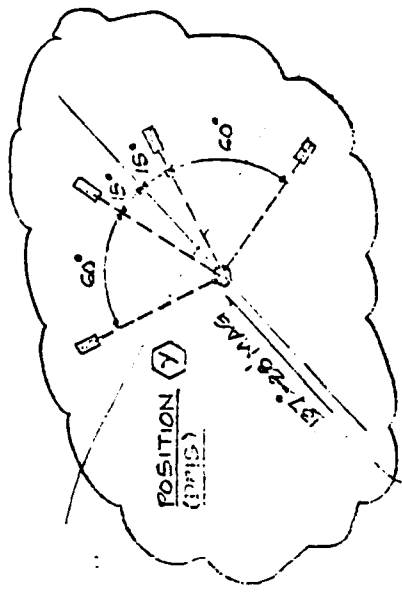DATE SHEET COMPILED = 6-37/MS

(*) Down-graded to class E after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = D1211   GENERAL LOC = Middle Loch (ICMF)   DES CLASS = A (*)

DATE ESTAB = 1950   DEPTH = 26.0 ft.(MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-53.8"   LONG. COORD. (W) = 157°-59'-28.9"

BUOY TYPE = Riser-chain "7 hawse pipe   SIZE = 12'∅ x 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2 3/8"

SINKER = ___   WT. OF SINKER = 60,000 #   PADEYE SIZE = 2 1/4" ∅

OF ANCHORS = 2

    ANCHOR 1 WT = 60,000 #   PADEYE SIZE = 2 1/4 ∅
    ANCHOR 2 WT = (Do)   PADEYE SIZE = (Lo.)
    ANCHOR 3 WT = —   PADEYE SIZE = —
    ANCHOR 4 WT = —   PADEYE SIZE = —

USAGE DURING PAST YEAR = 365 days

TYPE OF SHIPS MOORED = YTM/YTM/YFR/YF

DATE OF LAST REPAIR/COST = 1977/ $3,275

DATE OF LAST OVERHAUL/COST = 2-74 / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
    CONDUCTED BY = CHESDIV (UCT Two)

NEXT SCHED. REPAIR = 1987

NEXT SCHED. OVERHAUL = 1984

DATE SHEET COMPILED = 6-82/MG

(*) Down-graded to class E after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = D12.C   GENERAL LOC = Middle Loch (ESMF)   DES CLASS = A (*)

DATE ESTAB = 1946   DEPTH = 28.0 ft./(MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-52.3"   LONG. COORD. (W) = 157°-59'-31.0"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'∅×6' hi

          FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2 3/4"

SINKER = 1   WT. OF SINKER = 60,000 #   PADEYE SIZE = 2 1/4" d

OF ANCHORS = 4

          ANCHOR 1 WT = 60,000 #   PADEYE SIZE = 2 1/4 d
          ANCHOR 2 WT = _____   PADEYE SIZE = —
          ANCHOR 3 WT = _____   PADEYE SIZE = —
          ANCHOR 4 WT = _____   PADEYE SIZE = —

USAGE DURING PAST YEAR = 0 days

TYPE OF SHIPS MOORED = ?

DATE OF LAST REPAIR/COST = 1977/$3,275

DATE OF LAST OVERHAUL/COST = 4-71/?

DATE OF LAST UNDERWATER INSPECTION = 1979
          CONDUCTED BY = CHESDIV (UCT Two)

NEXT SCHED. REPAIR = 1987

NEXT SCHED. OVERHAUL = 1984

DATE SHEET COMPILED = 5-82/MC

(*) Down-graded to class F after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = DP1N   GENERAL LOC = Deperming Fac.   DES CLASS = A (*)

DATE ESTAB = 1942   DEPTH = 40.0 ft./MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-12.0"   LONG. COORD. (W) = 157°-56'-33.6"   .

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'ø x 6'hi

     FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60,000 #   PADEYE SIZE = 2¼"ø

OF ANCHORS = 4

     ANCHOR 1 WT = 60,000 #   PADEYE SIZE = 2¼"ø
     ANCHOR 2 WT = (Do.)   PADEYE SIZE = (Do.)
     ANCHOR 3 WT = (Do.)   PADEYE SIZE = (Do.)
     ANCHOR 4 WT = (Do.)   PADEYE SIZE = (Do.)

USAGE DURING PAST YEAR = 10 days

TYPE OF SHIPS MOORED = LHA/CC/CV

DATE OF LAST REPAIR/COST = 1977/$3,000

DATE OF LAST OVERHAUL/COST = 2-82/ Installation cost = $22,000 (**)

DATE OF LAST UNDERWATER INSPECTION = —
     CONDUCTED BY = —

NEXT SCHED. REPAIR = 1965

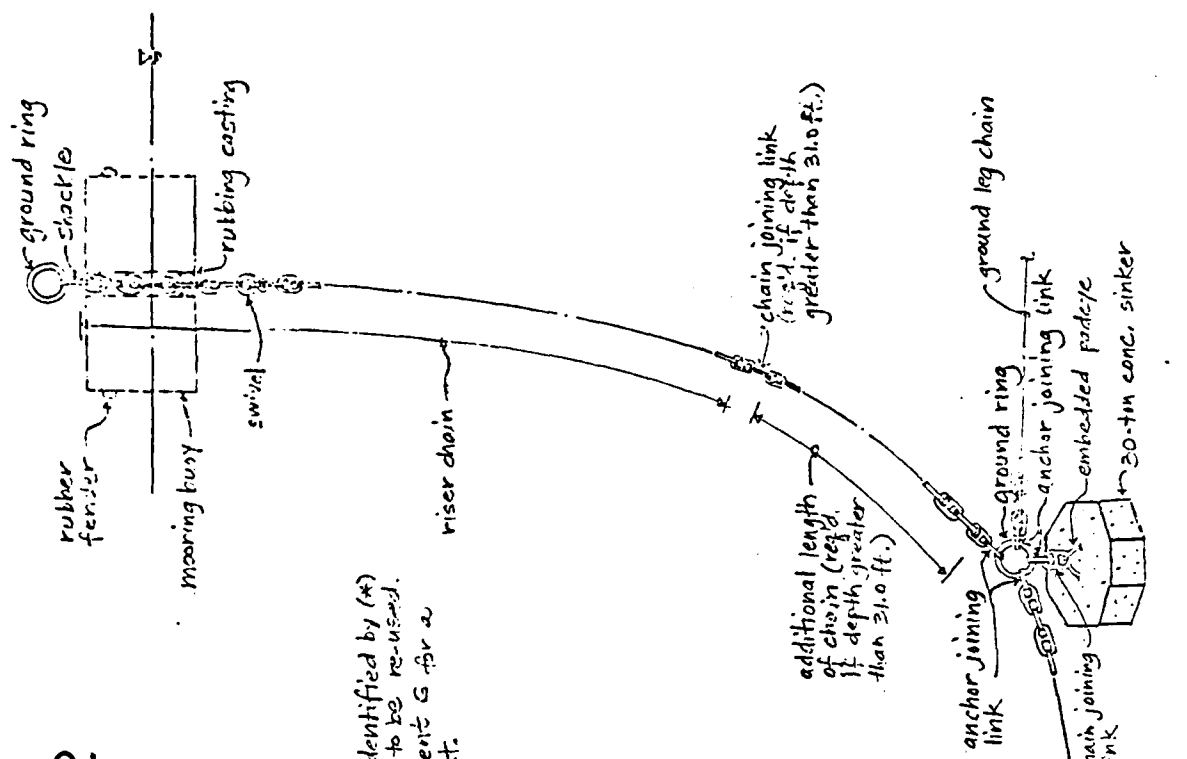NEXT SCHED. OVERHAUL = 1987

DATE SHEET COMPILED = 6-82/ M.C

(*) Mooring was Class C prior to 3/82; was relocated from DIN 4/81

(**) FWO J.O. 190-6626, completed 3/82; PHNSY floating crane and diver
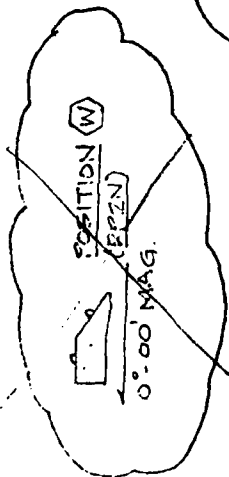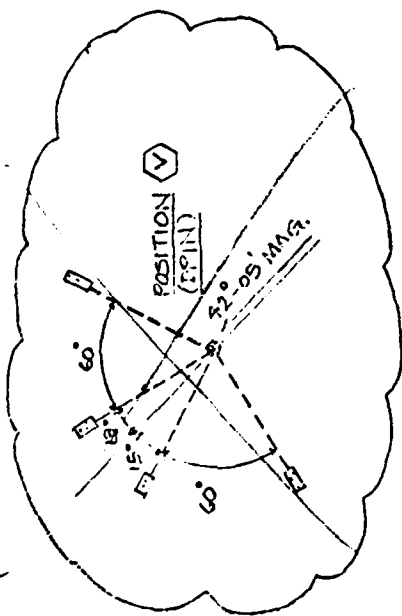   services & PWC shop forces; super URGENT accomplishment for
     LHA deperming 6/82.

C-41
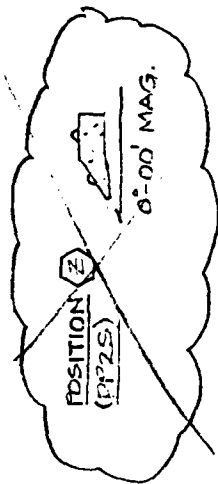
CLASS "A" MOORING AT POSITION (Y), MIN 6 (Y) (OPIS)

ground ring
shackle

rubbing casting

rubber fender

mooring buoy

swivel

riser chain

chain joining link
(req'd if depth
greater than 31.0 ft.)

ground ring

anchor joining link

embedded padeye

30-ton conc. sinker

additional length
of chain (req'd
if depth greater
than 31.0 ft.)

anchor joining
link

chain joining
link

ground leg chain

ground leg chain

embedded
padeye

chain joining link

30-ton conc.
sinker

Notes:
1. Components identified by (*)
   are existing to be re-used.
2. See Attachment 6 for a
   material list.

SCHEMATIC REPRESENTATION
OF CLASS "A" MOORING

mooring buoy

ground leg chain
(typ.)

30-ton conc.
anchor (typ.)

riser chain

30-ton conc.
sinker

ATTACHMENT 5

C-42

MOORING ANCHOR BLOCK LAYOUT

POSITION Y
(1°11'S)
37°20' MAG.
60°
15°
15°
60°
60°

POSITION Z
(1°12.5'S)
0°-00' MAG.

POSITION V
(0°14'N)
42°-05' MAG.
60°
15°
15°
60°

POSITION W
(0°3'N)
0°-00' MAG.

POSITION X
(0°12'N)
315°-00' MAG.
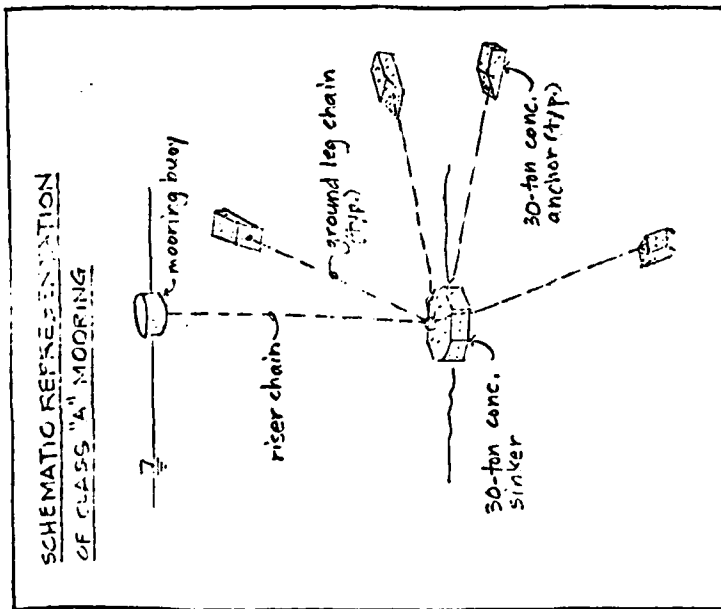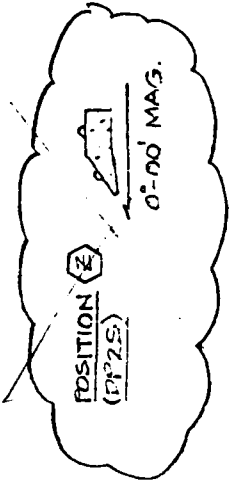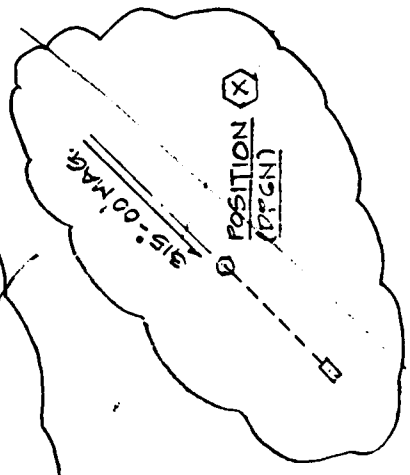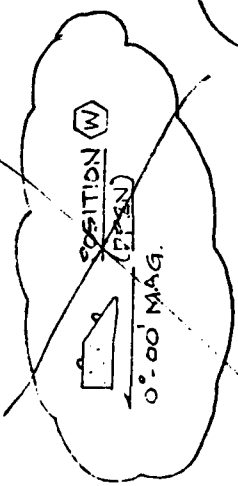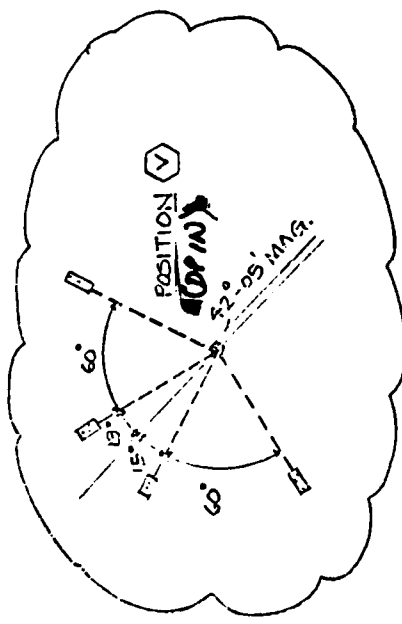
FLEET MOORING DATA SHEET

MRG ID = DP1G   GENERAL LOC = Deperming Fac.   DES CLASS = A (*)

DATE ESTAB = 1942   DEPTH = 40.0 ft. (MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-00.0"   LONG. COORD. (W) = 157°-58'-35.7"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'⌀ × 6'hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1   WT. OF SINKER = 60,000 #   PADEYE SIZE = 2¼"⌀

OF ANCHORS = 4

ANCHOR 1 WT = 60,000 #	PADEYE SIZE = 2¼"⌀
ANCHOR 2 WT = (Do.)	PADEYE SIZE = (Do.)
ANCHOR 3 WT = (Do.)	PADEYE SIZE = (Do.)
ANCHOR 4 WT = (Do.)	PADEYE SIZE = (Do.)

USAGE DURING PAST YEAR = 10 days

TYPE OF SHIPS MOORED = LHA/CC/CV

DATE OF LAST REPAIR/COST = —

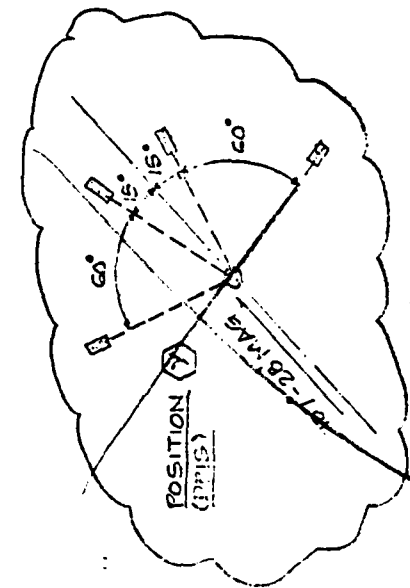DATE OF LAST OVERHAUL/COST = 3-82/ Installation cost = $22,000 (**)

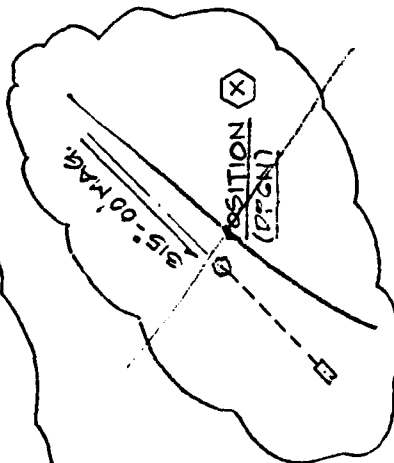DATE OF LAST UNDERWATER INSPECTION = —
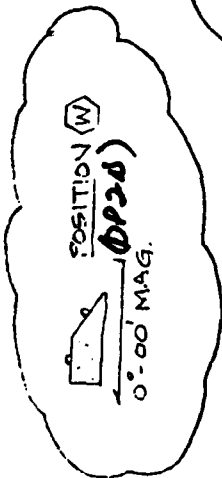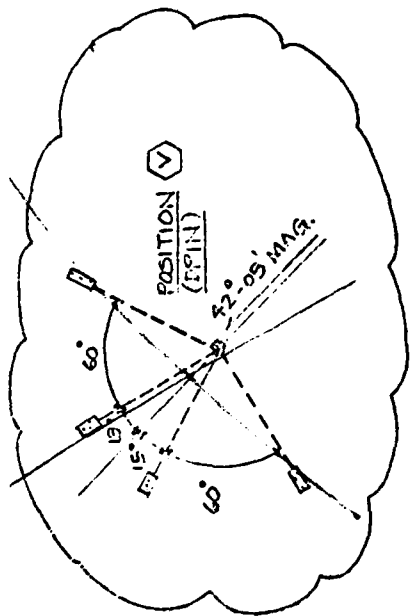CONDUCTED BY = —

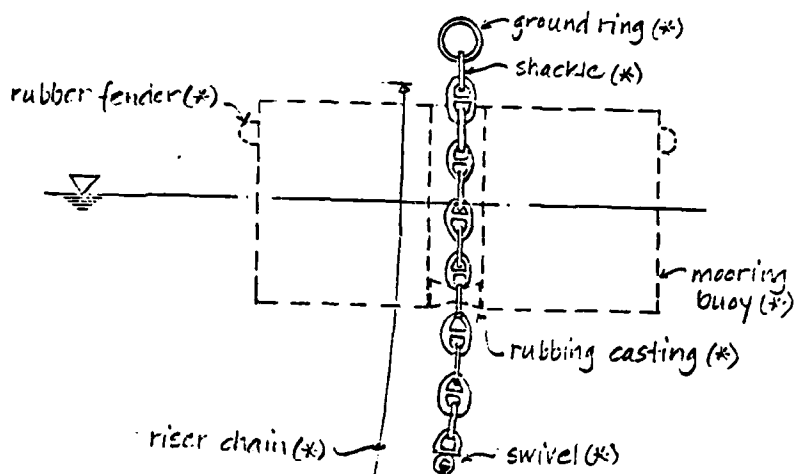NEXT SCHED. REPAIR = 1985

NEXT SCHED. OVERHAUL = 1987

DATE SHEET COMPILED = 8-82/MS

(*) Mooring was Class C prior to 3/82; was relocated from D1S 4/81

(**) FWC J.O. 170-6626, completed 3/82; PHNSY floating crane and diver services & FWC shop forces; super URGENT accomplishment for LHA deperming 4/82.

CLASS "A" MOORING AT POSITION ⑦ (DFIN) & ⑧ (DPIS)

ground ring shackle

rubbing casting

rubber fender

mooring buoy

swivel

riser chain

chain joining link (req'd. if depth greater than 31.0 ft.)

additional length of chain (req'd. if depth greater than 31.0 ft.)

anchor joining link

ground ring

anchor joining link

embedded padeye

30-ton conc. sinker

chain joining link

ground leg chain

ground leg chain

chain joining link

embedded padeye

30-ton conc. sinker

Notes:
1. Components identified by (*) are existing to be re-used.
2. See Attachment 6 for a material list.

SCHEMATIC REPRESENTATION OF CLASS "A" MOORING

mooring buoy

ground leg chain (typ.)

30-ton conc. anchor (typ.)

riser chain

30-ton conc. sinker

MOORING ANCHOR BLOCK LAYOUT

POSITION (Y) (DP15)

137·28' MAG.

60° 15° 15° 60°

POSITION (Z) (PT25)

0·00' MAG.

POSITION (V) (RP1N)

52·05' MAG.

60° 15° 15° 60°

POSITION (W) (RP2N)

0·00' MAG.

POSITION (X) (PT6N)

315·00' MAG.

FLEET MOORING DATA SHEET

MRG ID = DP2N   GENERAL LOC = Deperming Fac.   DES CLASS = C

DATE ESTAB = March 1952   DEPTH = 36.0 ft./(MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-13.6"   LONG. COORD. (W) = 157°-58'-35.8"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'∅ x 6'hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

OF ANCHORS = 1

    ANCHOR 1 WT = 110,000 #   PADEYE SIZE = 2½"∅
    ANCHOR 2 WT = —   PADEYE SIZE = —
    ANCHOR 3 WT = —   PADEYE SIZE = —
    ANCHOR 4 WT = —   PADEYE SIZE = —

USAGE DURING PAST YEAR = 10 days

TYPE OF SHIPS MOORED = LHA / CG/CV

DATE OF LAST REPAIR/COST = —

DATE OF LAST OVERHAUL/COST = Installation cost - $11,000 (*)
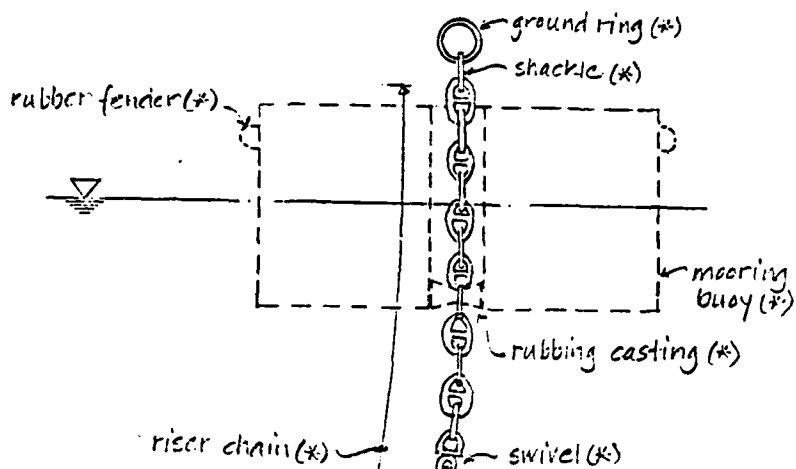
DATE OF LAST UNDERWATER INSPECTION = —
    CONDUCTED BY = —
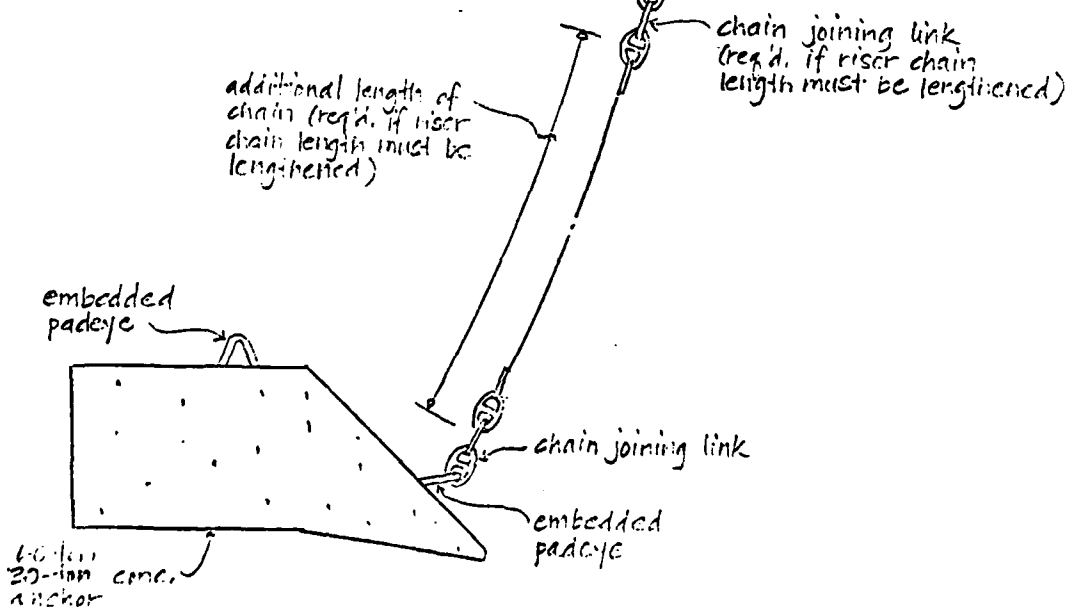
NEXT SCHED. REPAIR = 1985

NEXT SCHED. OVERHAUL = 1987

DATE SHEET COMPILED = 8-82/MC

(*) FISC J.O. 190-6626, completed 3-82 - PHNSY floating crane & diver services
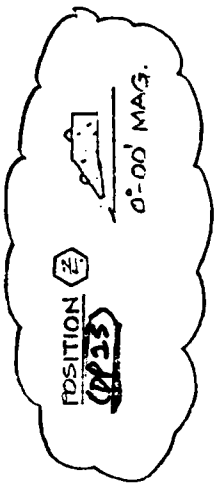and FISC shop forces; super URGENT accomplishment for LHA
deperming appt.

MOORING ANCHOR BLOCK LAYOUT

ground ring (*)

shackle (*)

rubber fender (*)

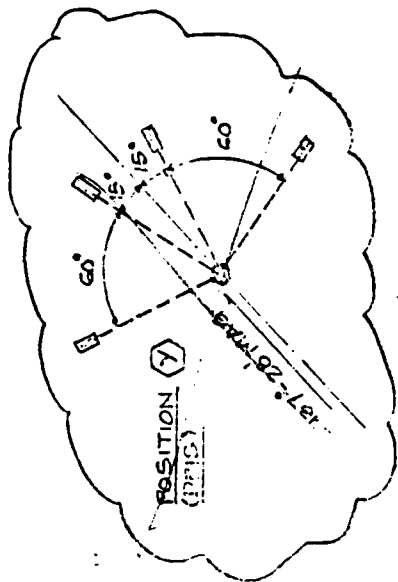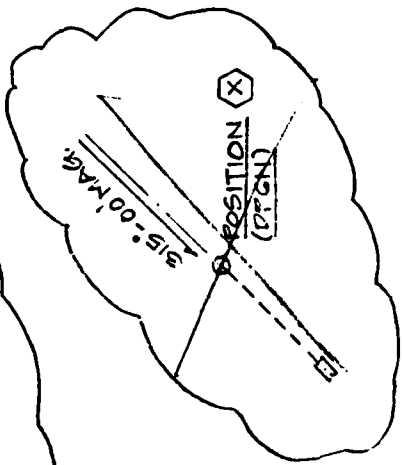mooring buoy (*)

rubbing casting (*)

riser chain (*)

swivel (*)

Notes:
1. Components identified by (*) are existing to be re-used.
2. See Attachment 6 for a material list.

chain joining link (req'd. if riser chain length must be lengthened)

additional length of chain (req'd. if riser chain length must be lengthened)

embedded padeye

chain joining link

embedded padeye

60-ton 20-ton conc. anchor
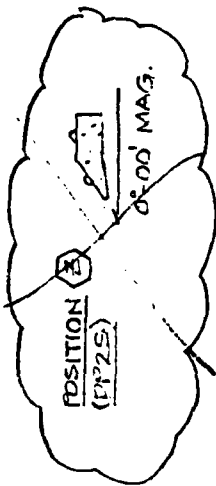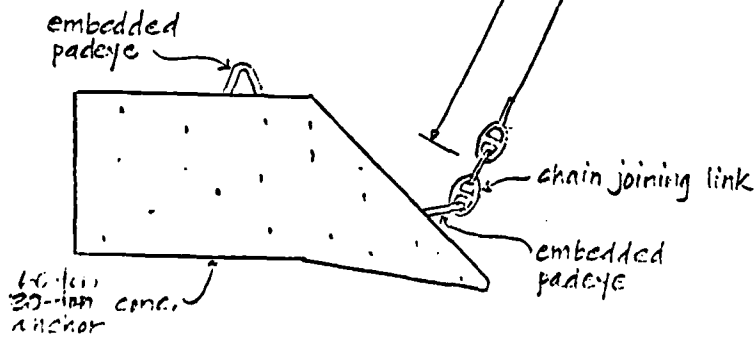
CLASS "C" MOORING AT POSITION (W) (DP2W) & (E) (DP2S)

C-49

FLEET MOORING DATA SHEET

MRG ID = DP2S   GENERAL LOC = Deperming Fac.   DES CLASS = C

DATE ESTAB = March 1952   DEPTH = 40.0 ft.(MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-01.0"   LONG. COORD. (W) = 157°-58'-38.4"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'φ x 6'hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

OF ANCHORS = 1

ANCHOR 1 WT = 110,000 #	PADEYE SIZE = 2½"φ
ANCHOR 2 WT = —	PADEYE SIZE = —
ANCHOR 3 WT = —	PADEYE SIZE = —
ANCHOR 4 WT = —	PADEYE SIZE = —

USAGE DURING PAST YEAR = 10 days

TYPE OF SHIPS MOORED = LHA/CC/CV

DATE OF LAST REPAIR/COST = —

DATE OF LAST OVERHAUL/COST = Installation cost = $11,000 (*)

DATE OF LAST UNDERWATER INSPECTION = —
CONDUCTED BY = —

NEXT SCHED. REPAIR = 1985

NEXT SCHED. OVERHAUL = 1987

DATE SHEET COMPILED = 8-82/MS

(*) PWC J.O. 170-6626, completed 3/82; PHNSY floating crane & diver services
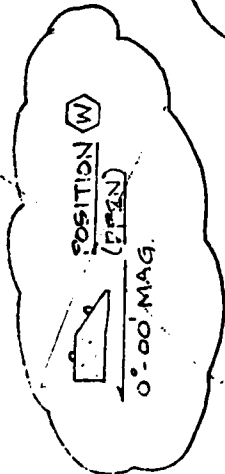and PWC shop forces : super URGENT accomplishment for LHA
deperming 4/82.

ground ring (*)

shackle (*)

rubber fender (*)

mooring buoy (*)

rubbing casting (*)

riser chain (*)

swivel (*)

Notes:

1. Components identified by (*) are existing to be re-used.

2. See Attachment 6 for a material list.

chain joining link (req'd. if riser chain length must be lengthened)

additional length of chain (req'd. if riser chain length must be lengthened)

embedded padeye

chain joining link

embedded padeye

1.6-m 20-ton conc. anchor

CLASS "C" MOORING AT POSITION Ⓦ (DP2N) & Ⓩ (DP25)

MOORING ANCHOR BLOCK LAYOUT

C-52

FLEET MOORING DATA SHEET

MRG ID = DF5A   GENERAL LOC = Deperming Fac.   DES CLASS = C (*)

DATE ESTAB = 1948   DEPTH = 12.0 ft.(MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-02.9"   LONG. COORD. (W) = 157°-58'-39.1"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'∅ x 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

OF ANCHORS = 1

ANCHOR 1 WT = 60,000 #	PADEYE SIZE = 2¼" d:
ANCHOR 2 WT = —	PADEYE SIZE = —
ANCHOR 3 WT = —	PADEYE SIZE = —
ANCHOR 4 WT = —	PADEYE SIZE = —

USAGE DURING PAST YEAR = 10 days

TYPE OF SHIPS MOORED = LHA/CC/CV

DATE OF LAST REPAIR/COST = 1977/ $2,750

DATE OF LAST OVERHAUL/COST = 1-72 / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
    CONDUCTED BY = CHESD"/ UCT Two)

NEXT SCHED. REPAIR = 1985

NEXT SCHED. OVERHAUL = 1987

DATE SHEET COMPILED = 6-82/ MS

(*) Down-graded to class E after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = DPGN   GENERAL LOC = Deperming Fac.   DES CLASS = C

DATE ESTAB = 1943   DEPTH = 12.0 ft.(MLLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-12.8"   LONG. COORD. (W) = 157°-58'-38.8"

BUOY TYPE = Riser-chain 'I hawsepipe   SIZE = 12'φ × 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = 1 (+)   WT. OF SINKER = 60,000 #   PADEYE SIZE = 2¼"φ

OF ANCHORS = 1 (+)

ANCHOR 1 WT = 60,000 #		PADEYE SIZE = 2¼"φ	
ANCHOR 2 WT = --		PADEYE SIZE = -	
ANCHOR 3 WT = ...		PADEYE SIZE = --	
ANCHOR 4 WT = --		PADEYE SIZE = -	

USAGE DURING PAST YEAR = 10 days

TYPE OF SHIPS MOORED = LHA/CC/CV

DATE OF LAST REPAIR/COST = 1977/ #4,050

DATE OF LAST OVERHAUL/COST = Installation cost = #11,000 (**)

DATE OF LAST UNDERWATER INSPECTION = 1979
        CONDUCTED BY = CHESD·V (UCT Two)

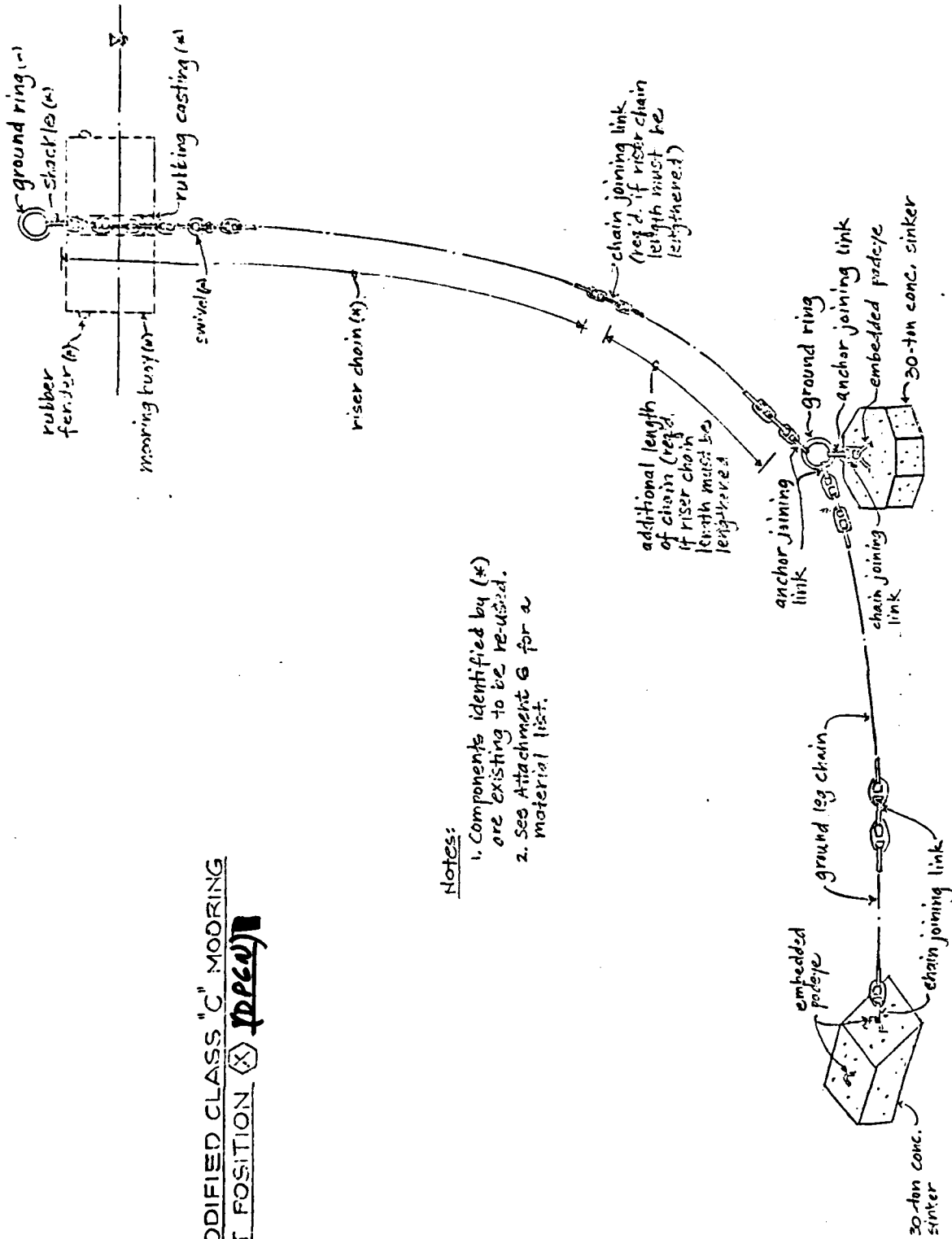NEXT SCHED. REPAIR = 1985

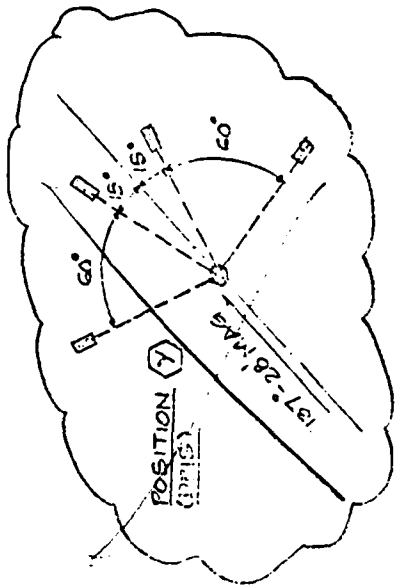NEXT SCHED. OVERHAUL = 1987
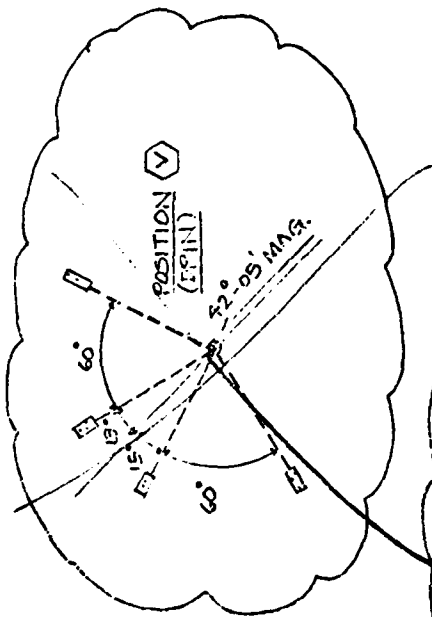
DATE SHEET COMPILED = 5-82/MS

(*) This class C mooring has 1 sinker & 1 ground leg as directed
        by Deperming Facility.

(**) FWC J.O. 170-6626, completed 3/82; PHNSY floating crane & diver services
        and FWC shop forces; super urgent accomplishment for LHA
        deperming 4/82.
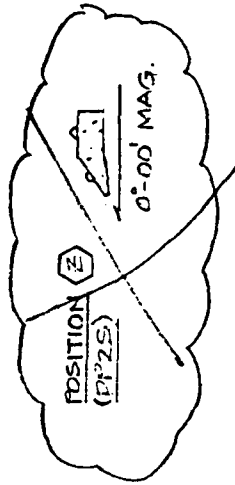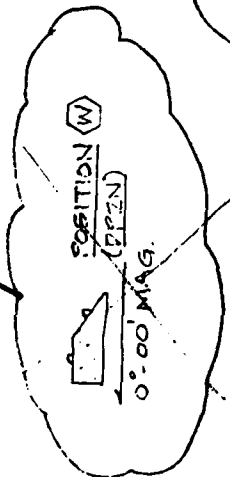
C-54

MODIFIED CLASS "C" MOORING
AT POSITION ⊗ PREW

Notes:
1. Components identified by (*) are existing to be re-used.
2. See Attachment 6 for a material list.

ground ring (*)
shackle (*)
pulling casting (*)
rubber fender (*)
mooring buoy (*)
swivel (*)
riser chain (*)
chain joining link (req'd. if riser chain length must be lengthened.)
additional length of chain (req'd. if riser chain length must be lengthened.)
ground ring
anchor joining link
embedded padeye
30-ton conc. sinker
anchor joining link
chain joining link
ground leg chain
embedded padeye
chain joining link
30-ton conc. sinker
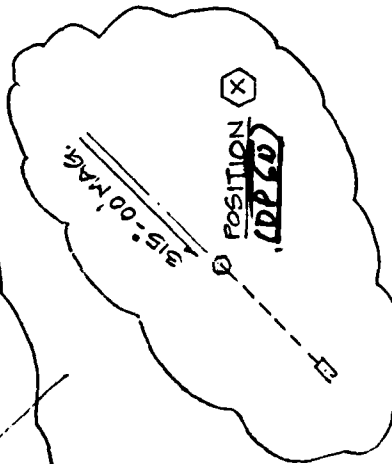
MOORING ANCHOR BLOCK LAYOUT

C-56

FLEET MOORING DATA SHEET

MRG ID = T1N   GENERAL LOC = West Loch   DES CLASS = C(*)

DATE ESTAB = 1957   DEPTH = 29.0 ft. (MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-21'-13.5"   LONG. COORD. (W) = 157°-58'-59.7"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12' φ × 6' hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

OF ANCHORS = 1

ANCHOR 1 WT = 60,000 #	PADEYE SIZE = 2¼" φ	
ANCHOR 2 WT = —	PADEYE SIZE = —	
ANCHOR 3 WT = —	PADEYE SIZE = —	
ANCHOR 4 WT = —	PADEYE SIZE = —	

USAGE DURING PAST YEAR = 10 days

TYPE OF SHIPS MOORED = Landing craft

DATE OF LAST REPAIR/COST = 1977 / $2,750

DATE OF LAST OVERHAUL/COST = 1-72 / ?

DATE OF LAST UNDERWATER INSPECTION = 1979
    CONDUCTED BY = CHESDIV (UCT TWO)

NEXT SCHED. REPAIR = 1984

NEXT SCHED. OVERHAUL = 1966

DATE SHEET COMPILED = 8-82/MS

(*) Down-graded to Class G after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = T1S   GENERAL LOC = West Loch   DES CLASS = C(*)

DATE ESTAB = 1957   DEPTH = 28.0 ft. (MLW) BOTTOM = Mud

LAT. COORD. (N) = 21°-22'-14.5"   LONG. COORD. (W) = 157°-59'-00.7"

BUOY TYPE = Riser-chain w/ hawsepipe   SIZE = 12'ø × 6'hi

FENDER = Rubber   FIBERGLASS COATING = Yes

CHAIN SIZE = 2¾"

SINKER = —   WT. OF SINKER = —   PADEYE SIZE = —

OF ANCHORS = 1

ANCHOR 1 WT = 60,000 #   PADEYE SIZE = 2¼"ø
ANCHOR 2 WT = —   PADEYE SIZE = —
ANCHOR 3 WT = —   PADEYE SIZE = —
ANCHOR 4 WT = —   PADEYE SIZE = —

USAGE DURING PAST YEAR = 10 days

TYPE OF SHIPS MOORED = Landing craft

DATE OF LAST REPAIR/COST = 1977 / $2,750

DATE OF LAST OVERHAUL/COST = 1-72/ ?

DATE OF LAST UNDERWATER INSPECTION = 1979
CONDUCTED BY = CHESDIV (UCT Two)

NEXT SCHED. REPAIR = 1984

NEXT SCHED. OVERHAUL = 1986

DATE SHEET COMPILED = 8-82/MS

(*) Down-graded to Class G after 1979 U/W Insp.

FLEET MOORING DATA SHEET

MRG ID = __X9S__   GENERAL LOC = __East Loch__   DES CLASS = __A (B)__

DATE ESTAB = _____1940_____   DEPTH = 42.0 ~~36.0~~ ft. (MLW) BOTTOM = __Mud__

LAT. COORD. (N) = __22°-22'-48.0"__   LONG. COORD. (W) = __157'-57'-16.5"__

BUOY TYPE = __Riser-chain w/ hawsepipe__   SIZE = __12'Φ x 6'hi__

FENDER = __Rubber__   FIBERGLASS COATING = __Yes__

CHAIN SIZE = __2 3/4"__

SINKER = __1__   WT. OF SINKER = __60,000 #__   PADEYE SIZE = ~~2¼"Φ~~ 2 3/4"Φ

OF ANCHORS = __4__

ANCHOR 1 WT = __60,000 #__	PADEYE SIZE = ~~2¼"Φ~~ 2 3/4"Φ
ANCHOR 2 WT = __(Do.)__	PADEYE SIZE = __(Do.)__
ANCHOR 3 WT = __(Do.)__	PADEYE SIZE = __(Do.)__
ANCHOR 4 WT = __(Do.)__	PADEYE SIZE = __(Do.)__

USAGE DURING PAST YEAR = __20 days__

TYPE OF SHIPS MOORED = __CG/DDG/DD/FF/AO/ARS__

DATE OF LAST REPAIR/COST = __1977/#3,075__

DATE OF LAST OVERHAUL/COST = ~~??/??~~ 12-82/#51,000 (**)

DATE OF LAST UNDERWATER INSPECTION = __1979__
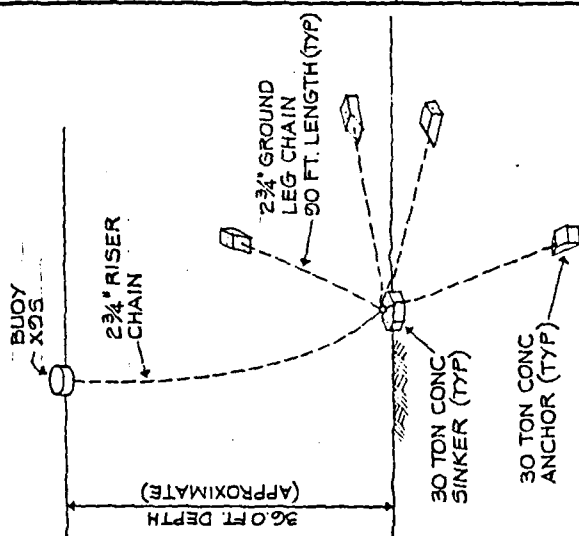   CONDUCTED BY = __CHESDIV (UCT Two)__

NEXT SCHED. REPAIR = __1985__
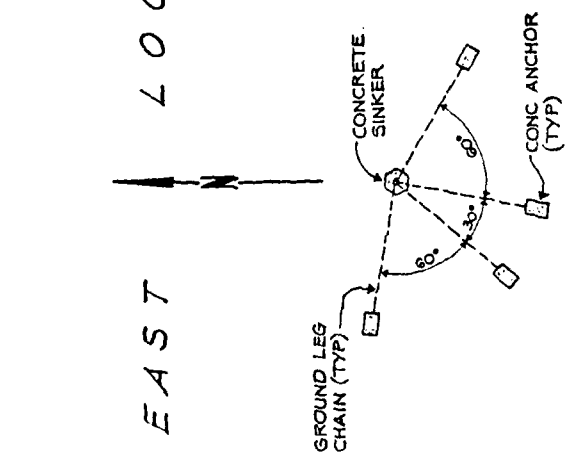
NEXT SCHED. OVERHAUL = ~~1983 (**)~~

DATE SHEET COMPILED = 4-83 ~~8-82~~/MG

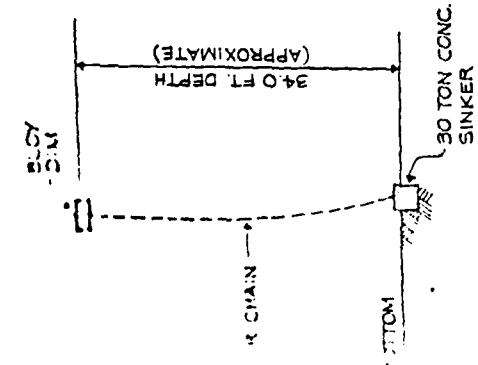~~(*) Down graded to Class B after 1979 U/W Insp.~~

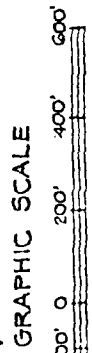(**) Overhaul ~~expected to be~~ accomplished by Contr. N62171-82-C-2164

EAST LOCH

PLAN

BUOY X95

2¾" RISER CHAIN

2¾" GROUND LEG CHAIN
90 FT. LENGTH (TYP)

30 TON CONC SINKER (TYP)

30 TON CONC ANCHOR (TYP)

36.0 FT. DEPTH (APPROXIMATE)

ELEVATION

"MOORING X93"
NO SCALE

CONCRETE SINKER

CONC ANCHOR (TYP)

GROUND LEG CHAIN (TYP)

60°

30°

N

GRAPHIC SCALE

200' 100' 0   200'   400'   600'

1"=200'

BUOY DIM

BUOY DIM

34.0 FT. DEPTH (APPROXIMATE)

30 TON CONC. SINKER

CHAIN

BOTTOM

MORING DIM
SCALE

C-60

DEPARTMENT OF THE NAVY   NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS CENTER
PEARL HARBOR, HAWAII

OVERHAUL OF MOORINGS
D9N, D9M, D9S, X9S & DIM
PEARL HARBOR

EXISTING MOORING BUOY PLANS & DETAILS

SHT	OF		
DES	LI SHILLAB MURO		
DR	K. KAGAWA		
CHK	LT. SHILLABONJIRO		
DFPE			
INIT BR MGR			
DIV DIR			
DEPT HD			
ACE			

DATE 29-9-82

APPROVED

BY DIRECTION OF COMMANDING OFFICER

SATISFACTORY TO
DIR. DIV.
TITLE

SIZE F   CODE IDENT NO 80091   NAVFAC DRAWING NO 74G3358

CONSTR CONTR NO N62471-82-C-2164

SPEC 14-82-2164   SHEET 2 OF 5

SCALE AS NOTED

W R NO

END
FILMED

6-86

DTIC