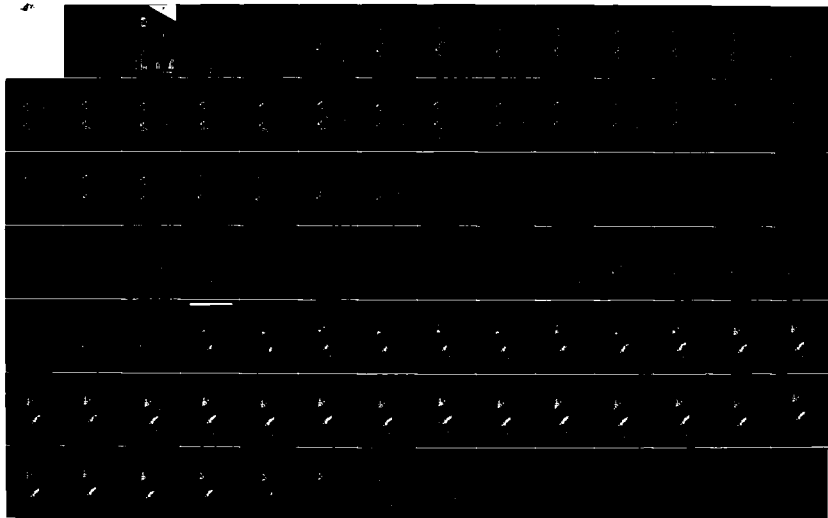


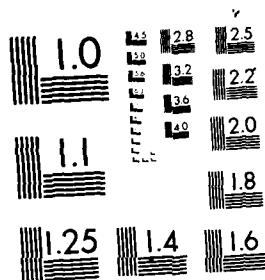
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**EASTERN—WESTERN
ARCTIC SEA ICE ANALYSIS
1985**

**PREPARED BY
NAVAL POLAR OCEANOGRAPHY CENTER,
BETHESDA, MD**

**PREPARED FOR
COMMANDER,
NAVAL OCEANOGRAPHY COMMAND
NAVSTA STATION, BAY ST. LOUIS, MS 39529**

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FOREWORD

The U.S. Navy has a long and colorful history of polar exploration and currently is an active participant in the growing national activity in the Arctic and Antarctic. The strategic importance and increased demand for the natural resources of these areas have resulted in a greater requirement for environmental information. In 1976, the National Oceanic and Atmospheric Administration (NOAA) joined the Navy in forming a Joint Ice Center (JIC) to combine efforts and resources in sea ice analysis and forecasting.

Through 1972, reliable sea ice information in the polar regions was based on relatively few shore station and ship reports augmented by limited aerial reconnaissance data. These data were further restricted mainly to the relatively small areas observed primarily during the ship operating seasons. The advent of high resolution satellite imagery combined with the ground truth of conventional observations has in recent years enabled a description of the polar ice fields on a semi-synoptic scale in both polar regions.

This publication is the twelfth in a continuing yearly series of Arctic sea ice atlases prepared in the Joint Ice Center at the Naval Polar Oceanography Center, Suitland. The atlas contains weekly charts depicting Northern Hemisphere and Great Lakes ice conditions and extents. The information presented was prepared under operational time constraints principally from satellite imagery supplemented by conventional observations. The Great Lakes ice analyses are derived from satellite imagery and information provided by the National Weather Service Forecast Office, Ann Arbor, Michigan. Table 1 located on the inside back cover summarizes satellite data availability for 1985.

The purpose of this atlas is to provide operators and researchers with panoramic weekly hemispheric sea ice analyses. Satellite data limitations and other difficulties involved in manually synthesizing various forms of ice data have evolved the following analysis procedures:

a. Conventional shore station, ship and aerial ice reconnaissance observations are plotted on base charts and evaluated for timeliness.

b. Satellite data is analyzed for ice information content, with the most recent and highest resolution considered first. Synthesis of conventional with satellite data yields the final analysis.

c. Where sufficient data are not available to define the sea ice limit, an estimated boundary is depicted. After one week of no data availability the ice edge position is based on analyzed theoretical ice drift data and other diagnostic aids. During subsequent weeks of no data availability the ice edges approach seasonal mean positions.

Joint Ice Center
Naval Polar Oceanography Center
4301 Suitland Road
Washington, DC 20390-5180

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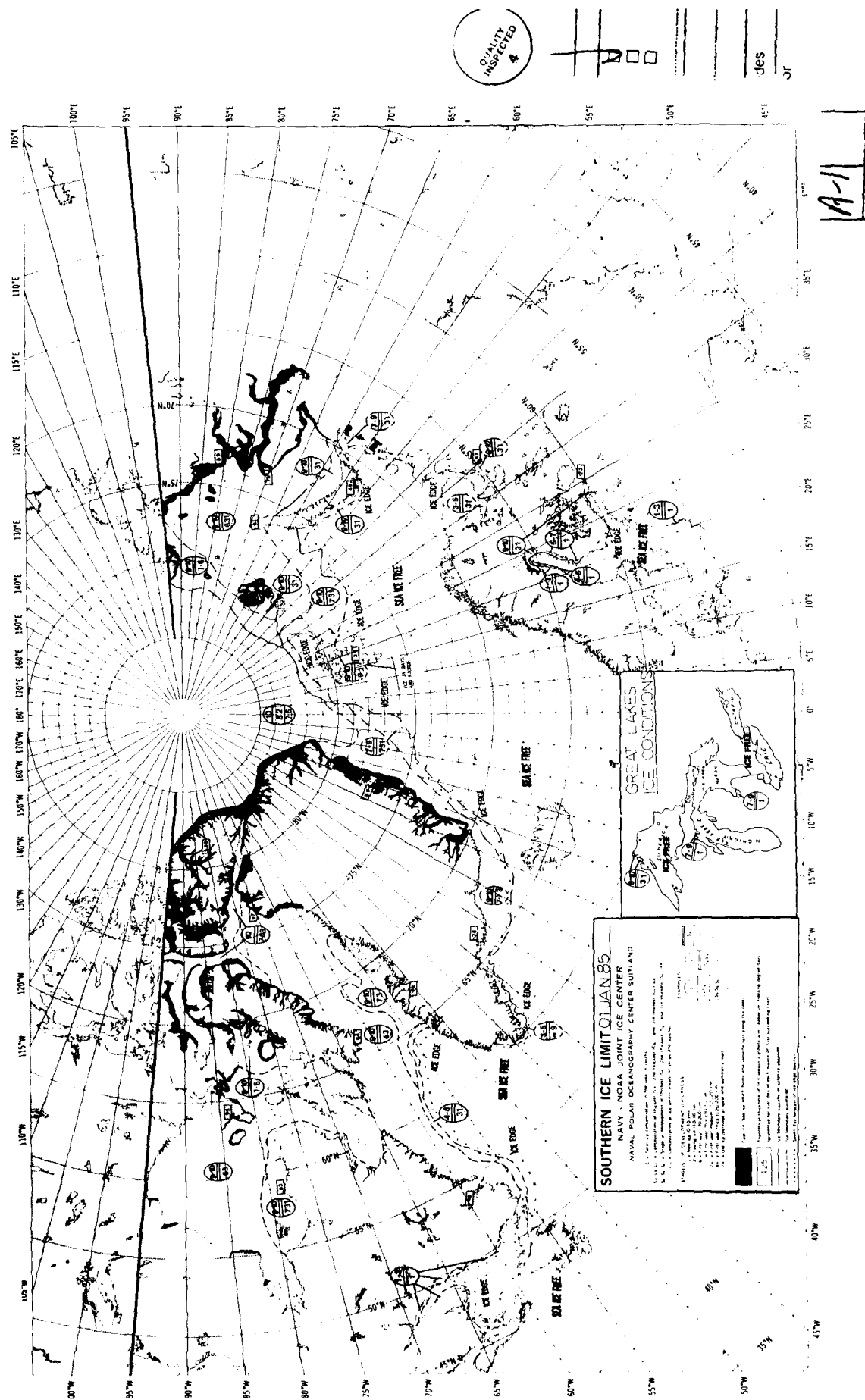
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) These are approximately 7-days analysis of sea ice prepared by the Naval Polar Oceanography Center, Suitland, MD. Included are ice concentration and ice thickness (age).		

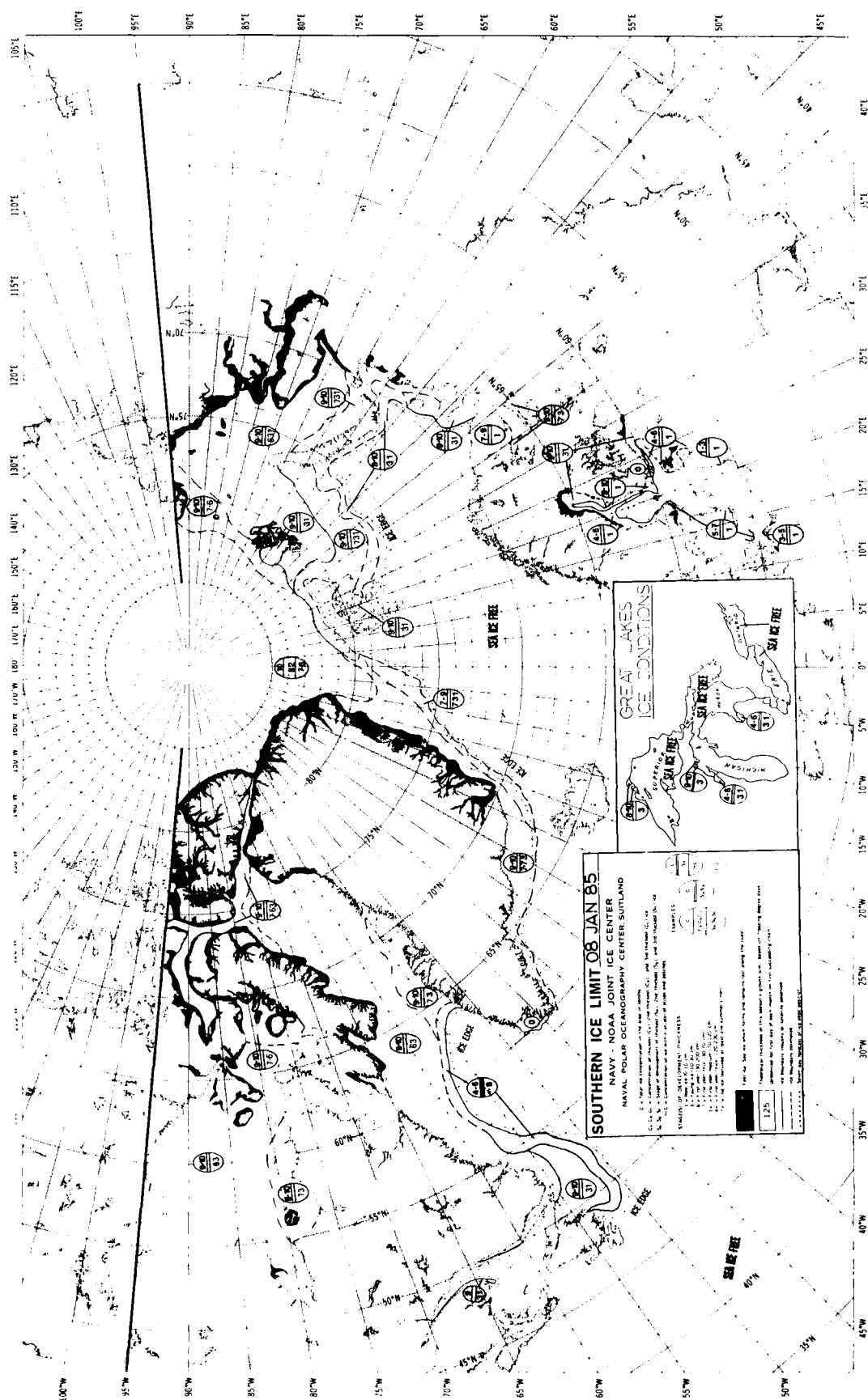
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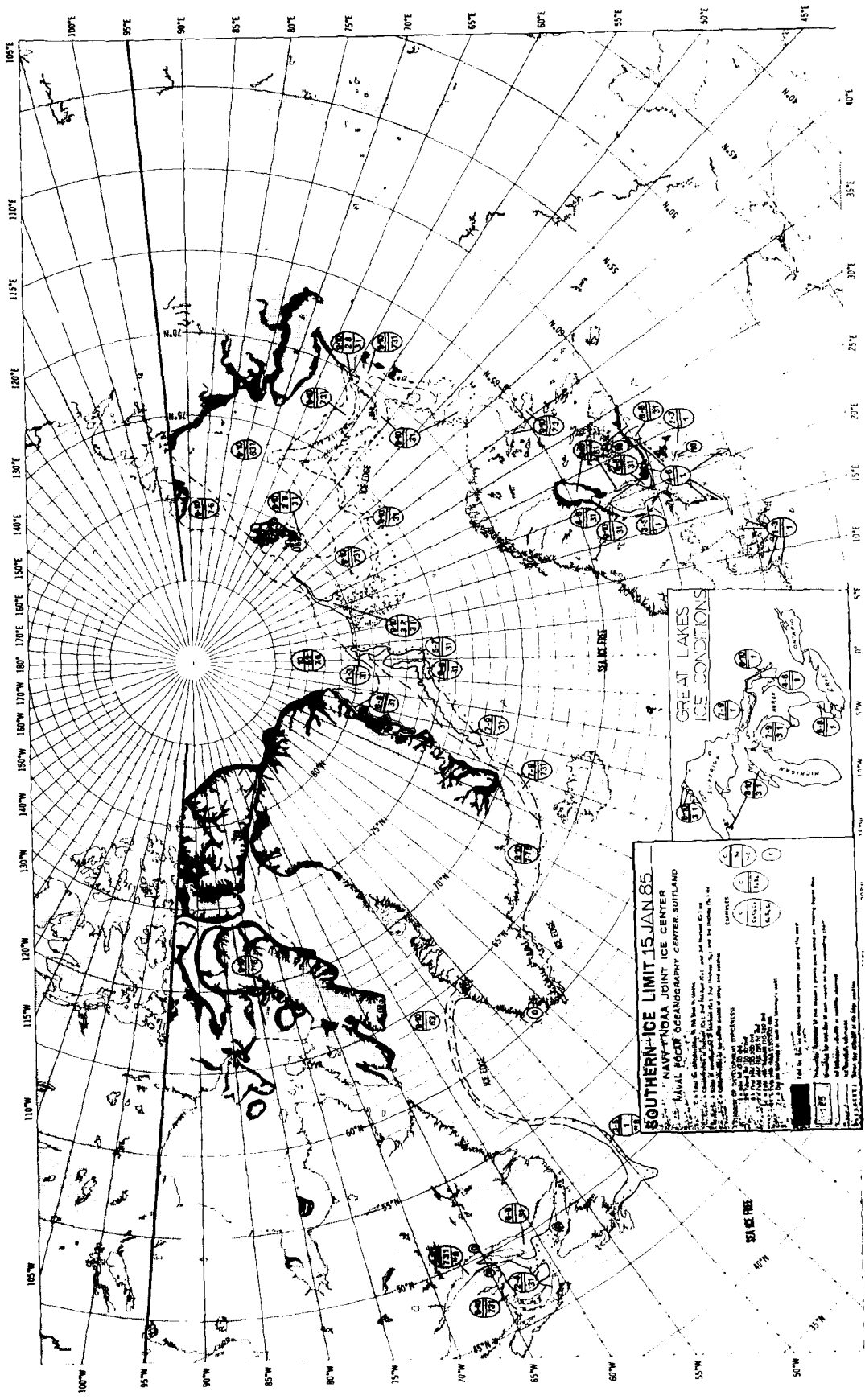
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SOUTHERN-ICE LIMIT 15 JAN 85

NAVY-NOAA JOINT ICE CENTER
NAVAL HOCKEY OCEANOGRAPHY CENTER SUTLAND

1. This map is a representation of the ice limit as observed on 15 January 1985. It is based on data from the Navy's ice reconnaissance flights and the NOAA's ice reconnaissance flights. The ice limit is defined as the southernmost edge of the ice field.

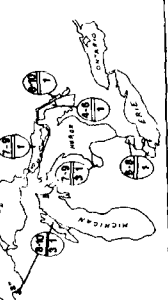
2. The ice limit is shown as a solid line. The area to the north of the ice limit is shaded. The area to the south of the ice limit is unshaded.

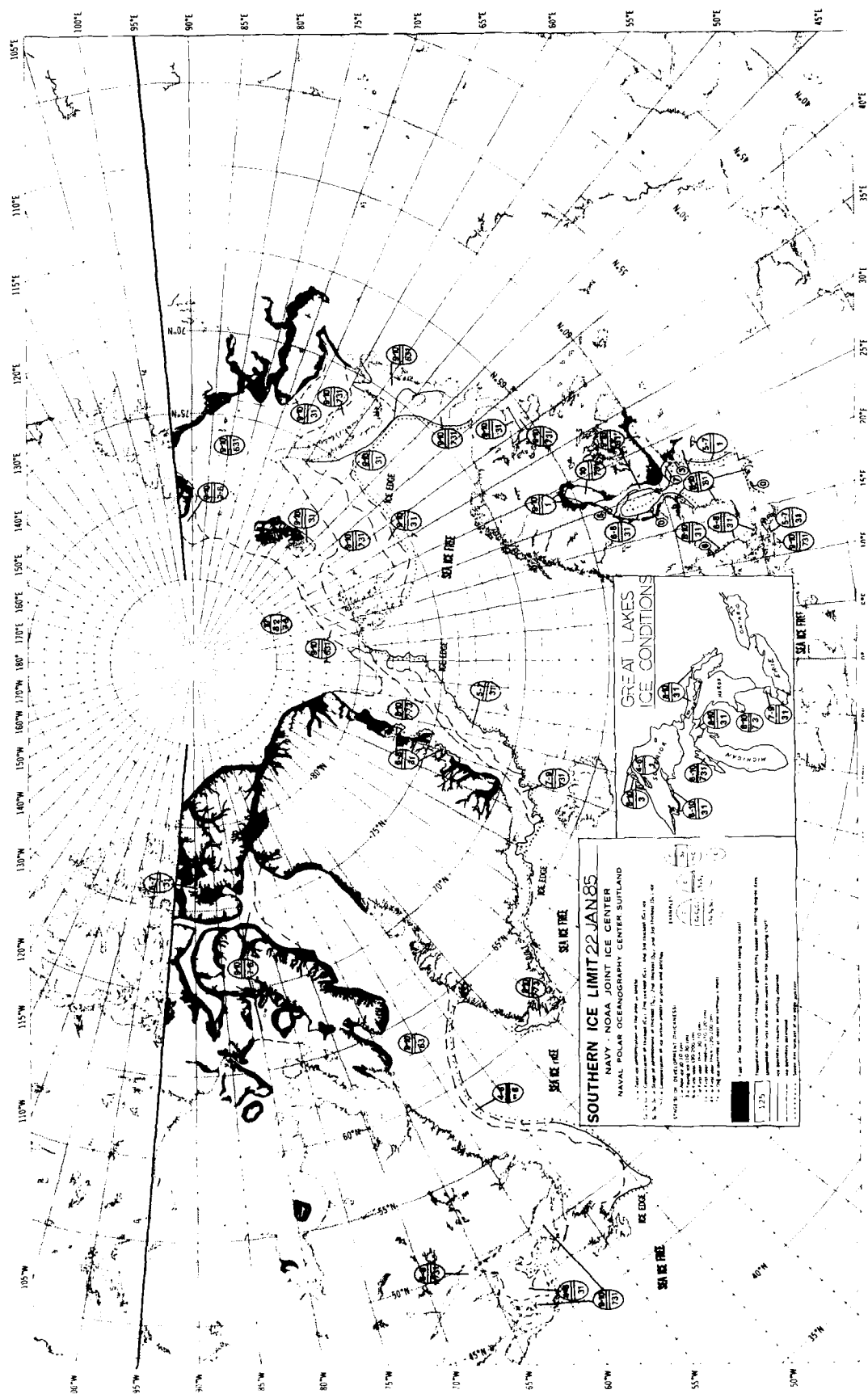
3. The ice limit is shown as a solid line. The area to the north of the ice limit is shaded. The area to the south of the ice limit is unshaded.

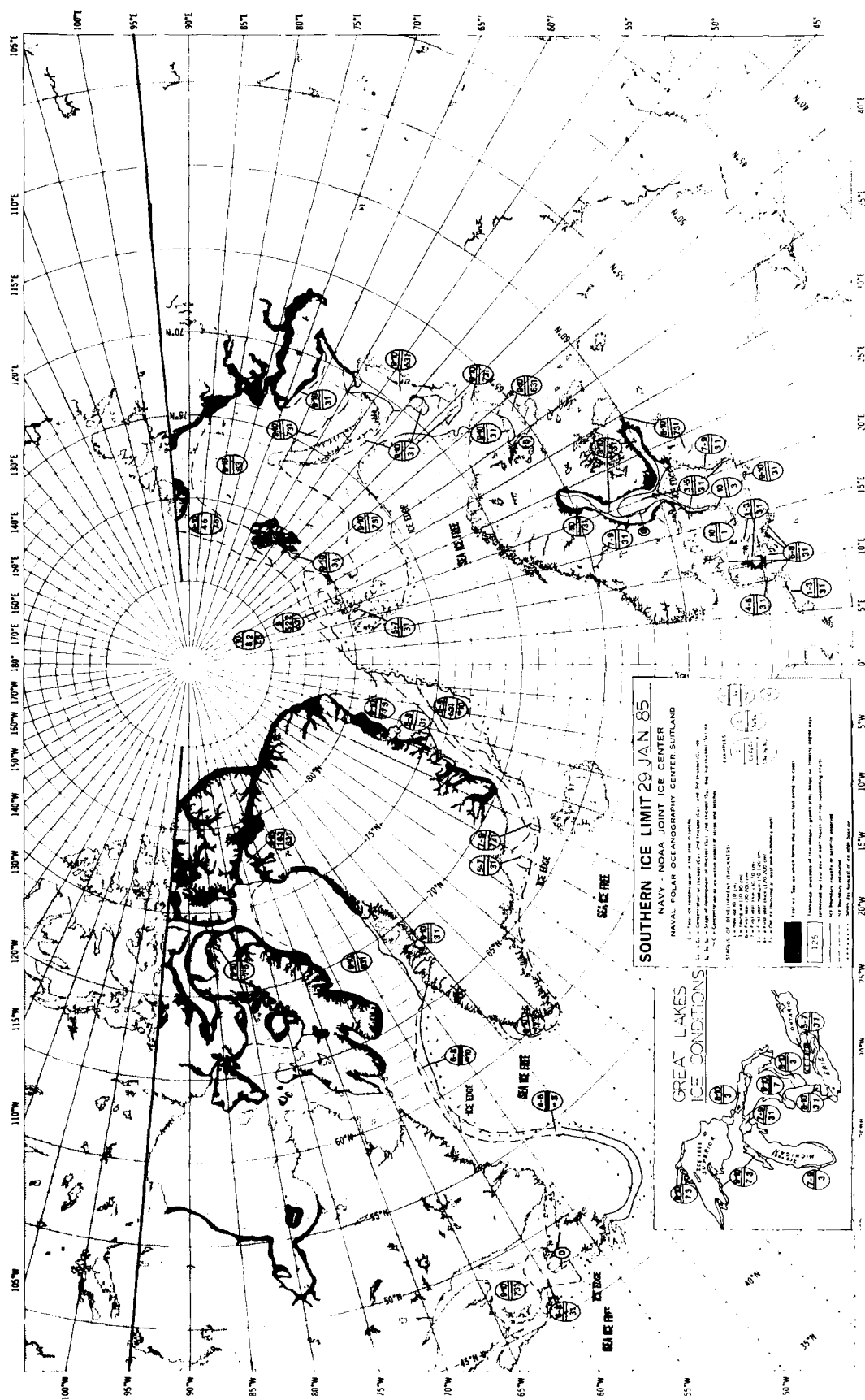
4. The ice limit is shown as a solid line. The area to the north of the ice limit is shaded. The area to the south of the ice limit is unshaded.

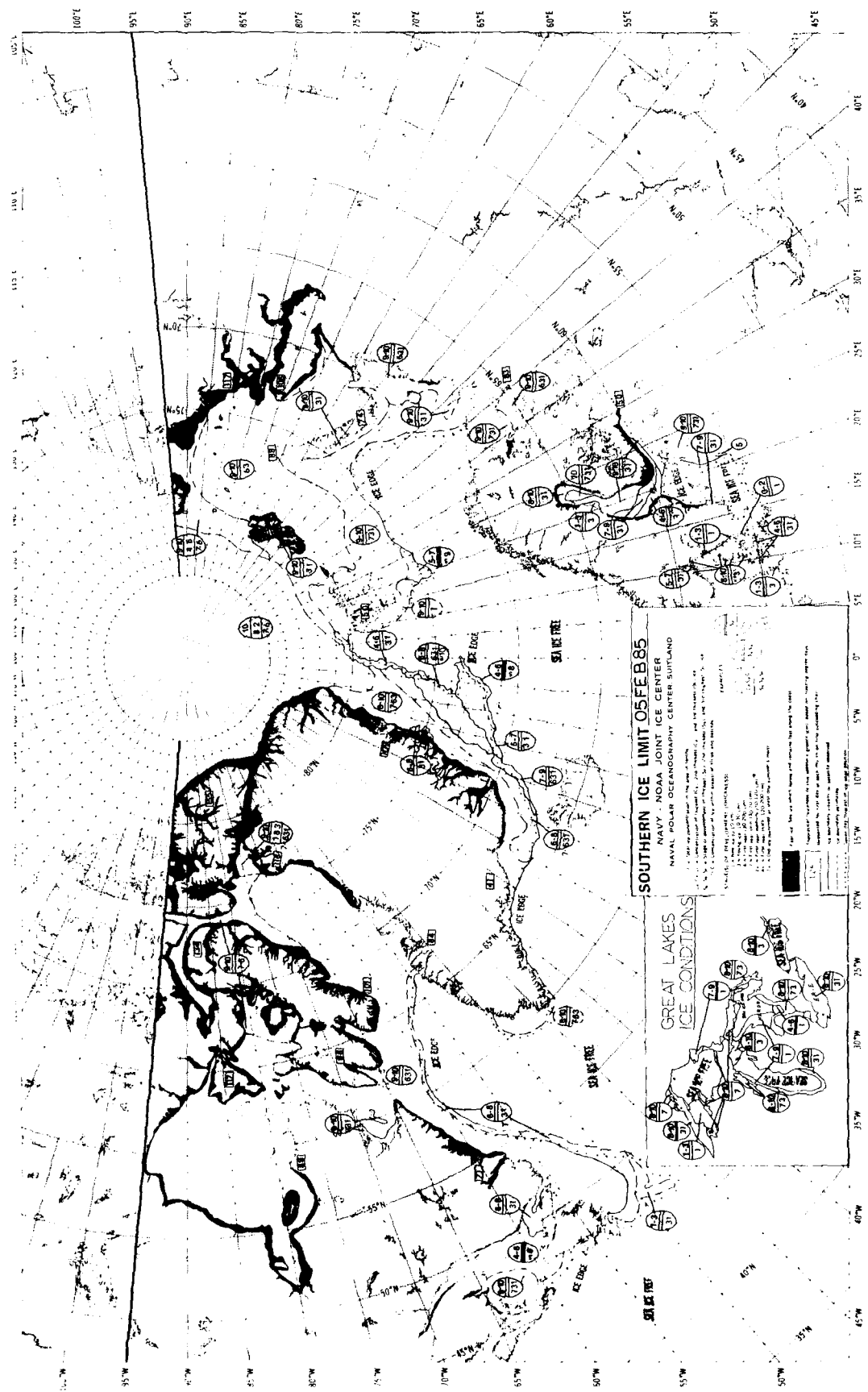
5. The ice limit is shown as a solid line. The area to the north of the ice limit is shaded. The area to the south of the ice limit is unshaded.

**GREAT LAKES
ICE CONDITIONS**









SOUTHERN ICE LIMIT 05 FEB 85

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND

1. This map is a summary of the ice limit data received from the Navy and NOAA Joint Ice Center, Suitland, Alaska, for the period 01 February 1985 to 05 February 1985.

2. The data was obtained from the Navy and NOAA Joint Ice Center, Suitland, Alaska, and is based on the information received from the Navy and NOAA Joint Ice Center, Suitland, Alaska.

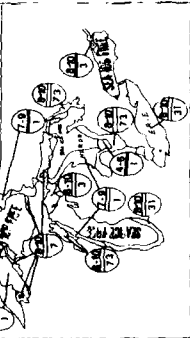
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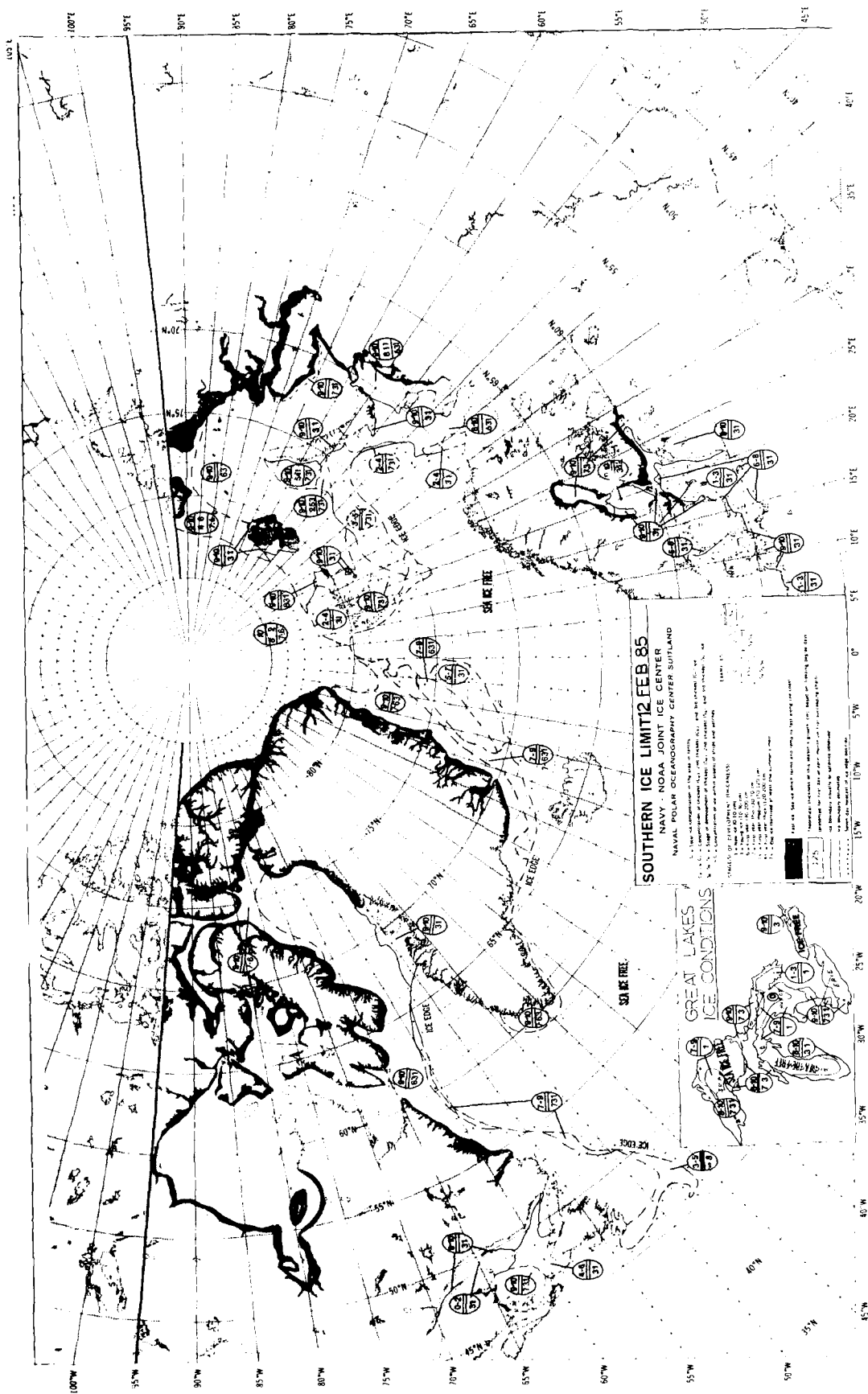
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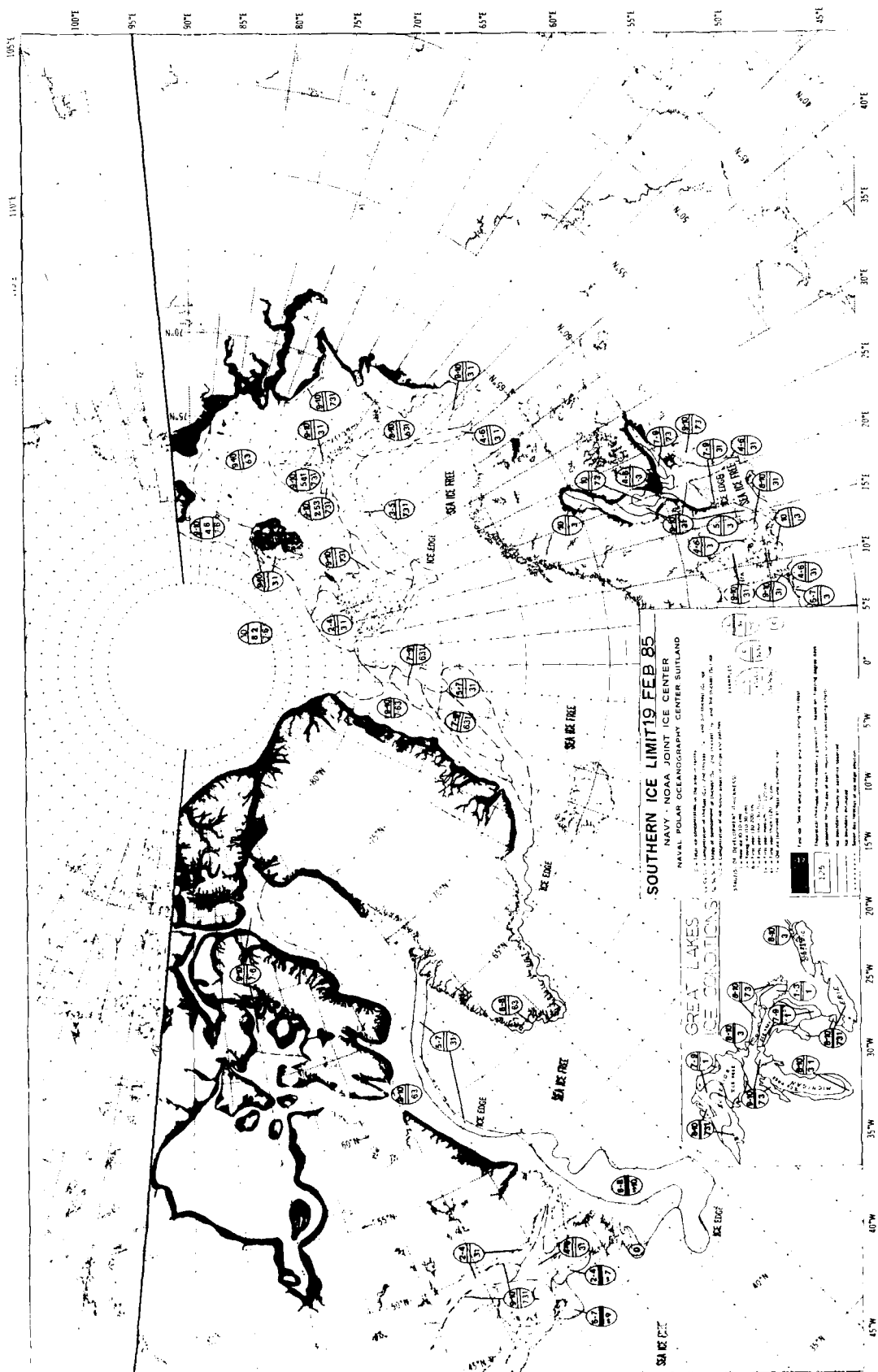
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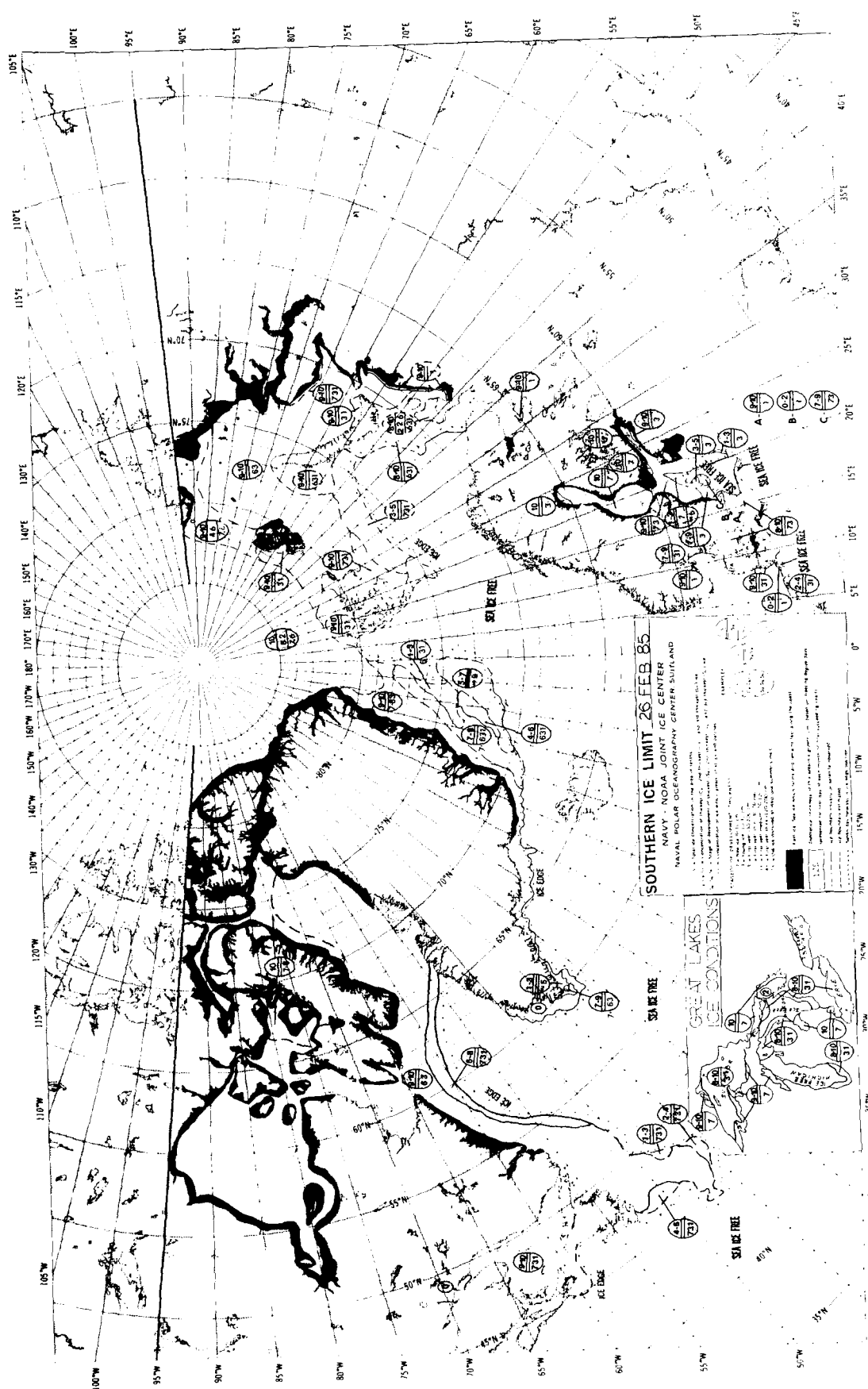
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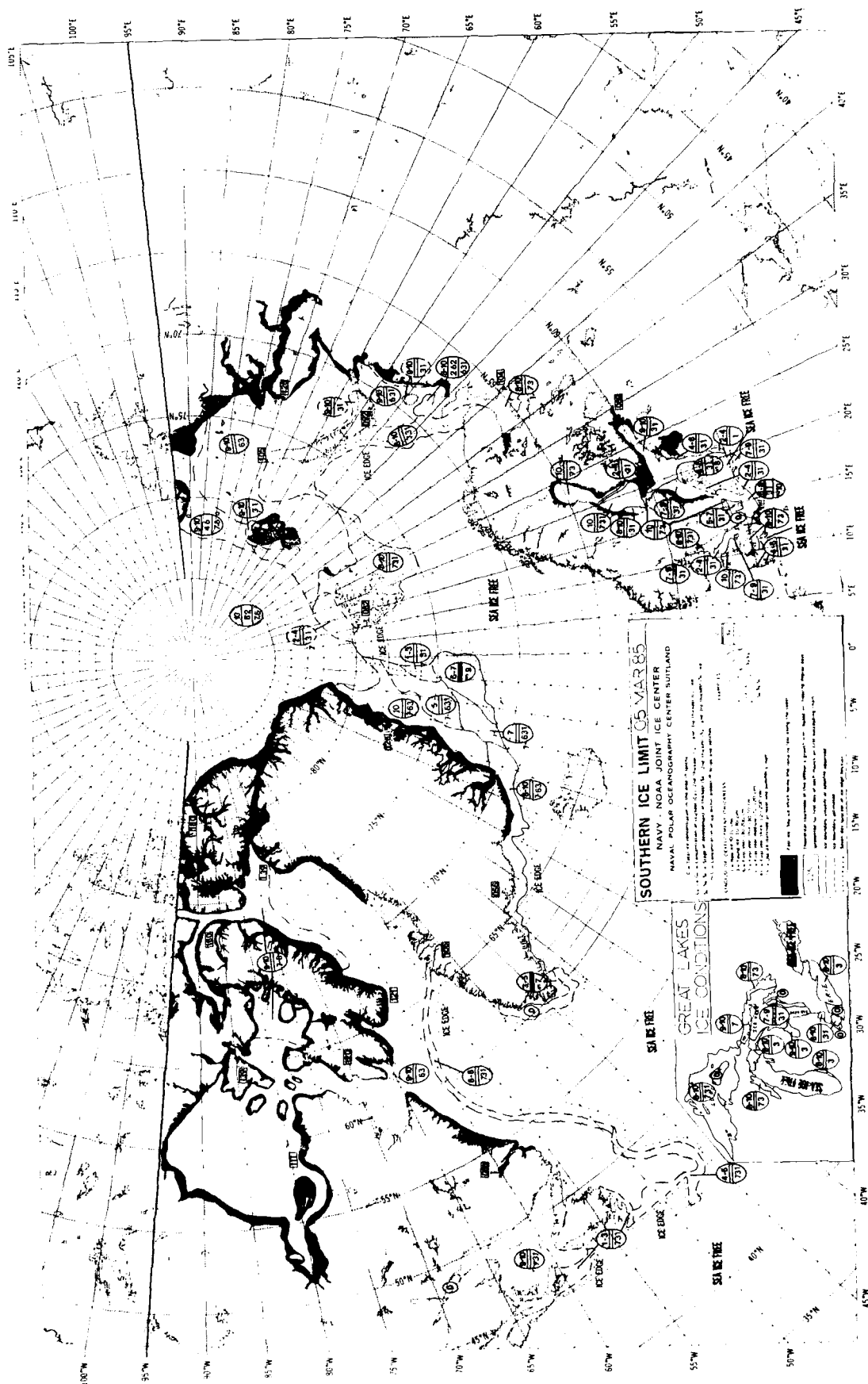
**GREAT LAKES
ICE CONDITIONS**

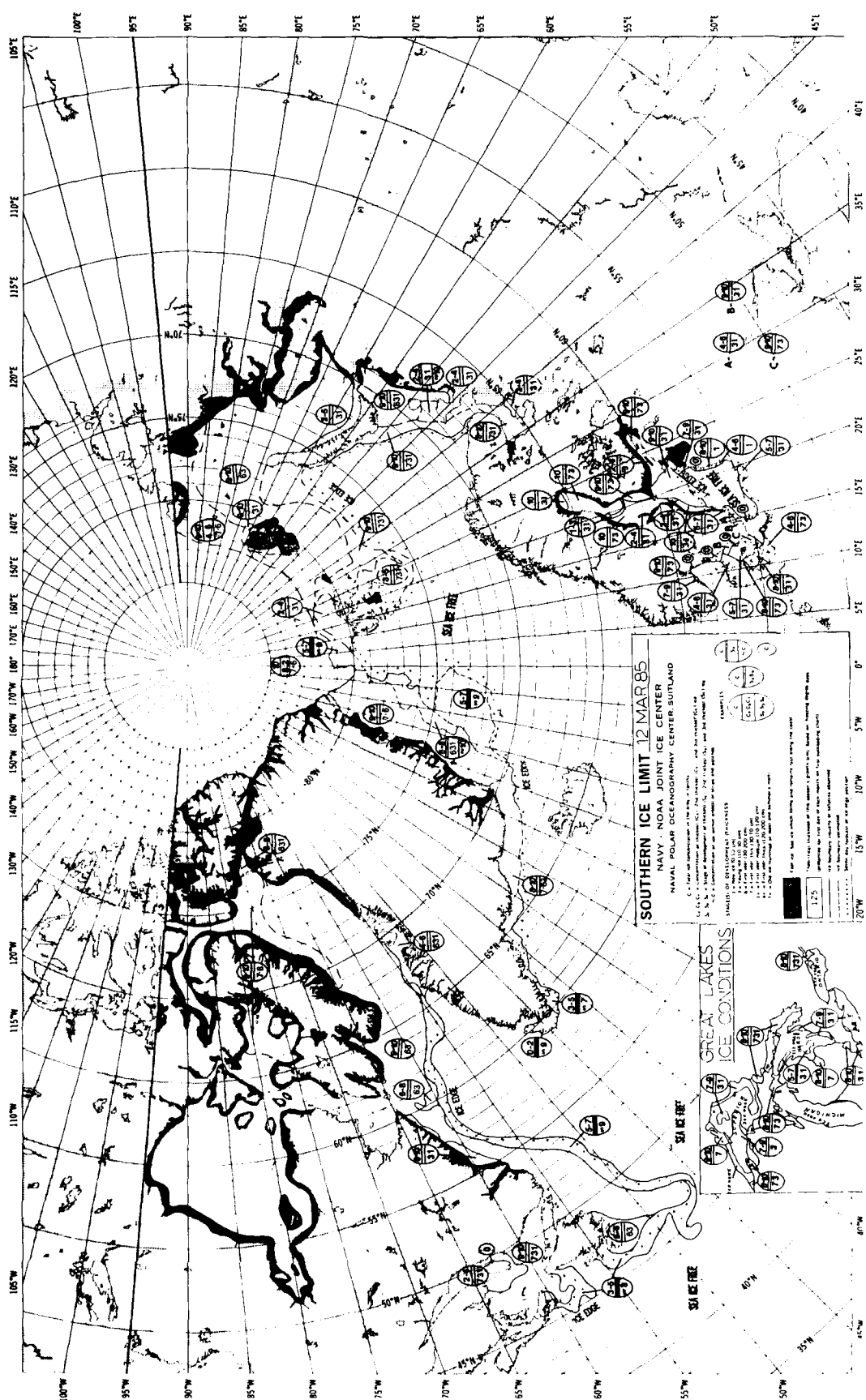


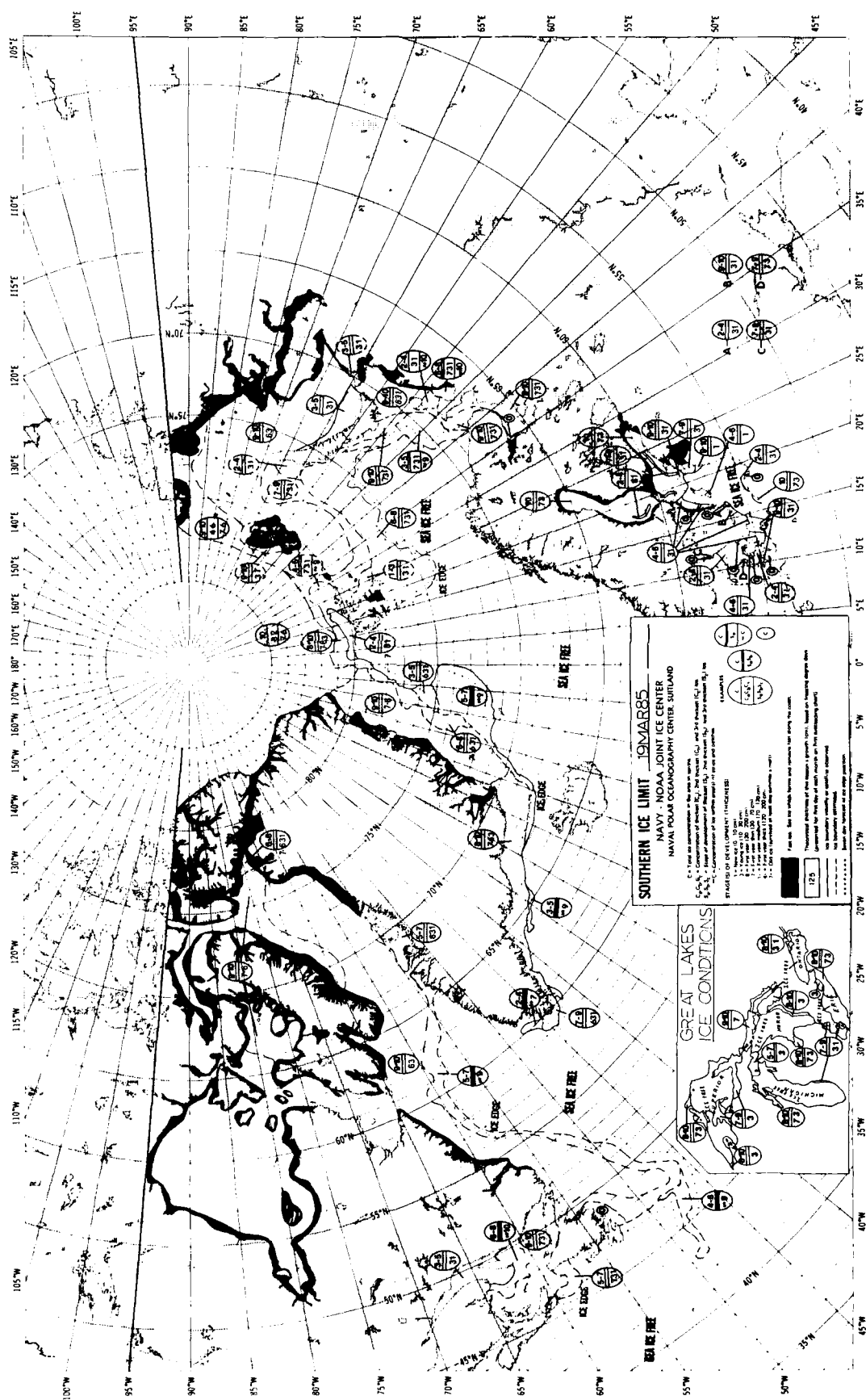


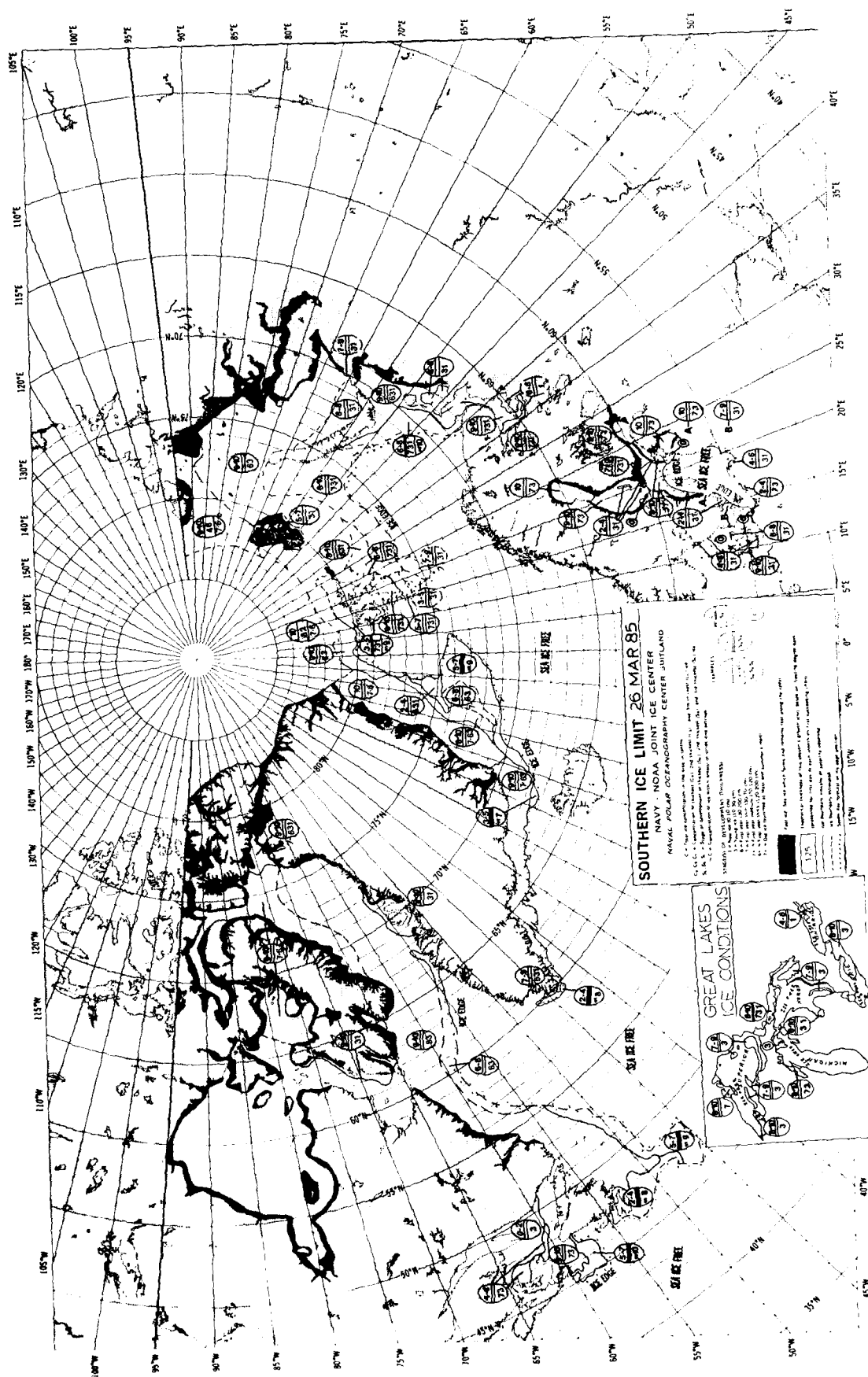


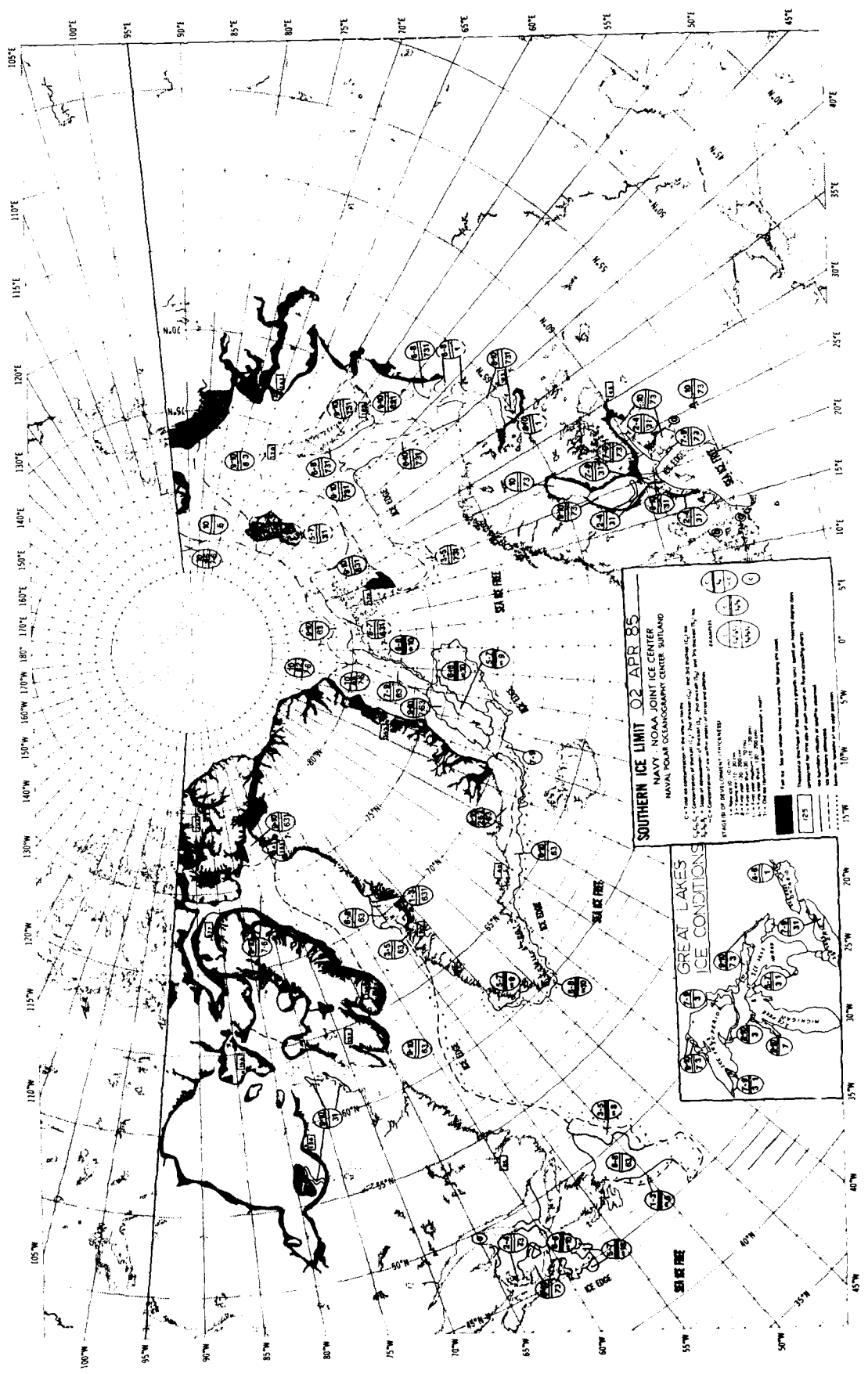


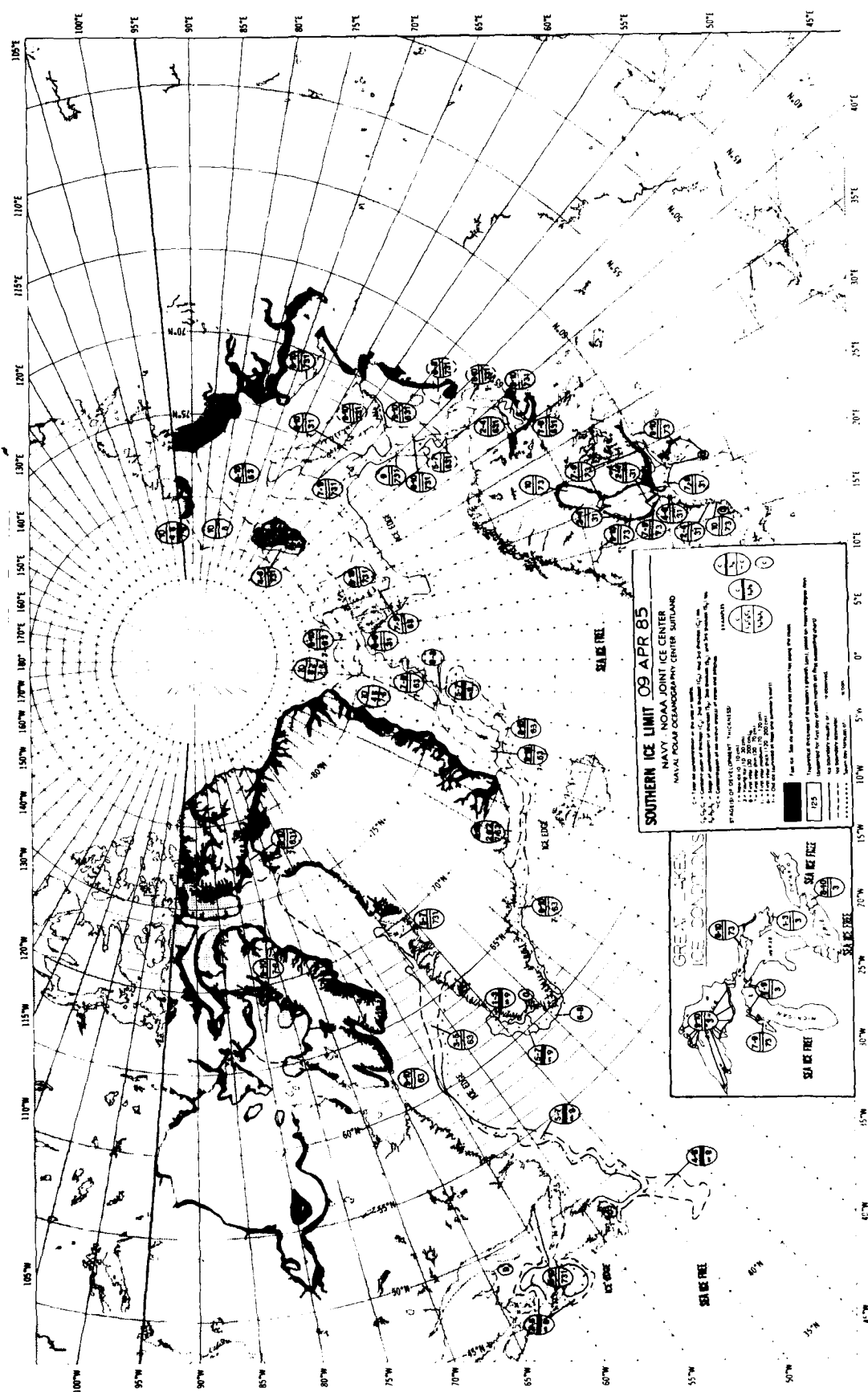


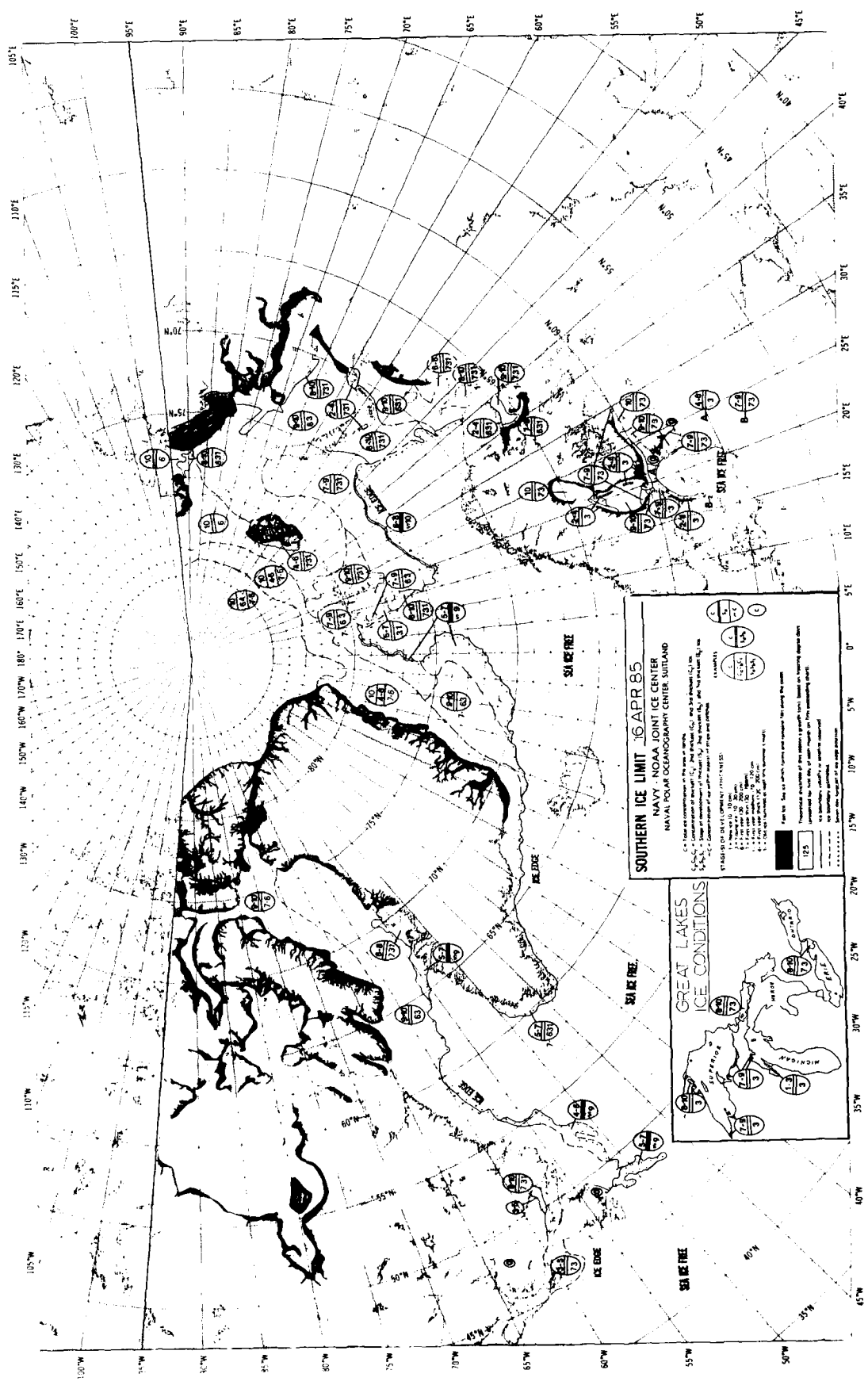






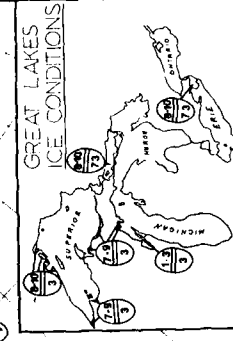


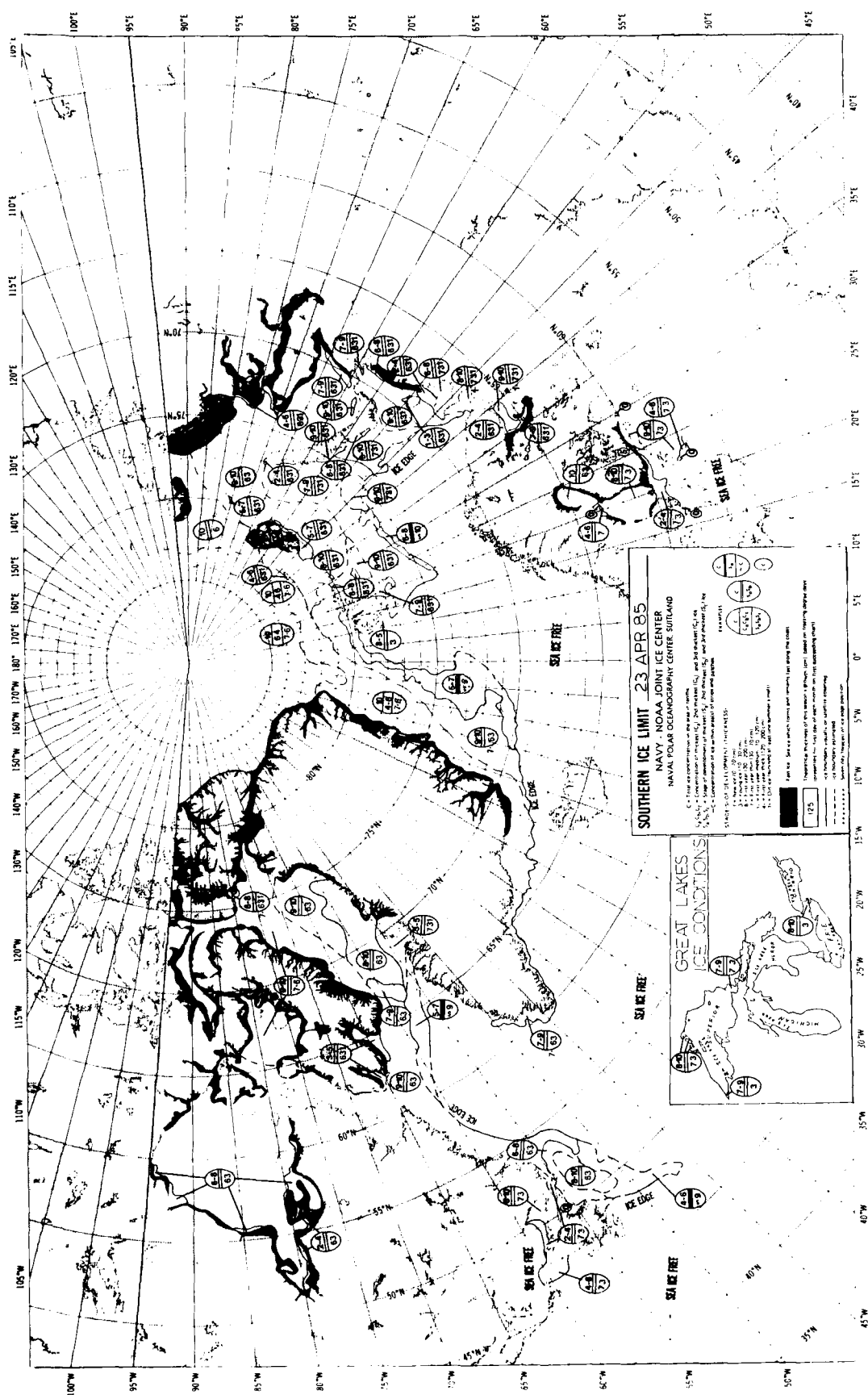


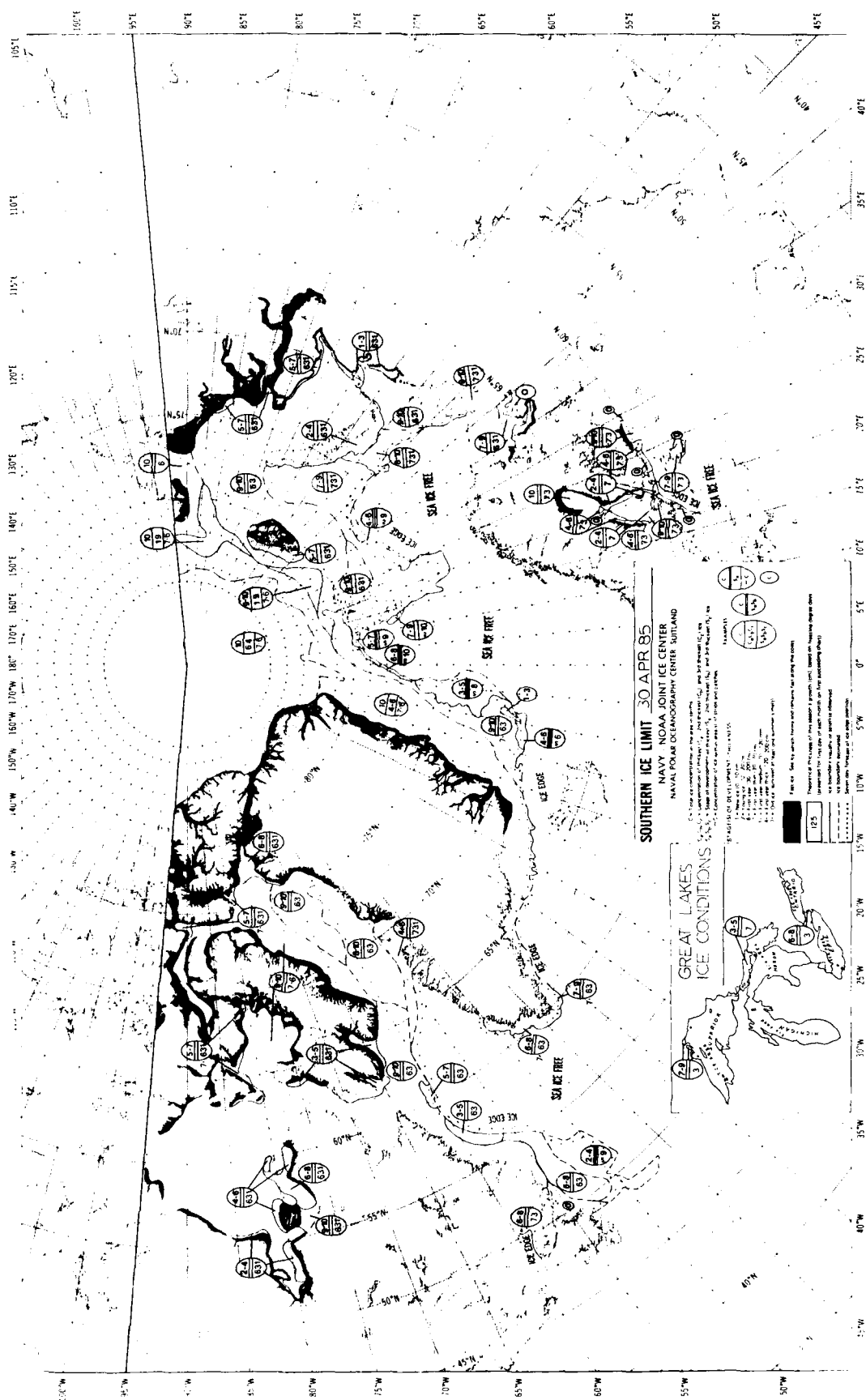


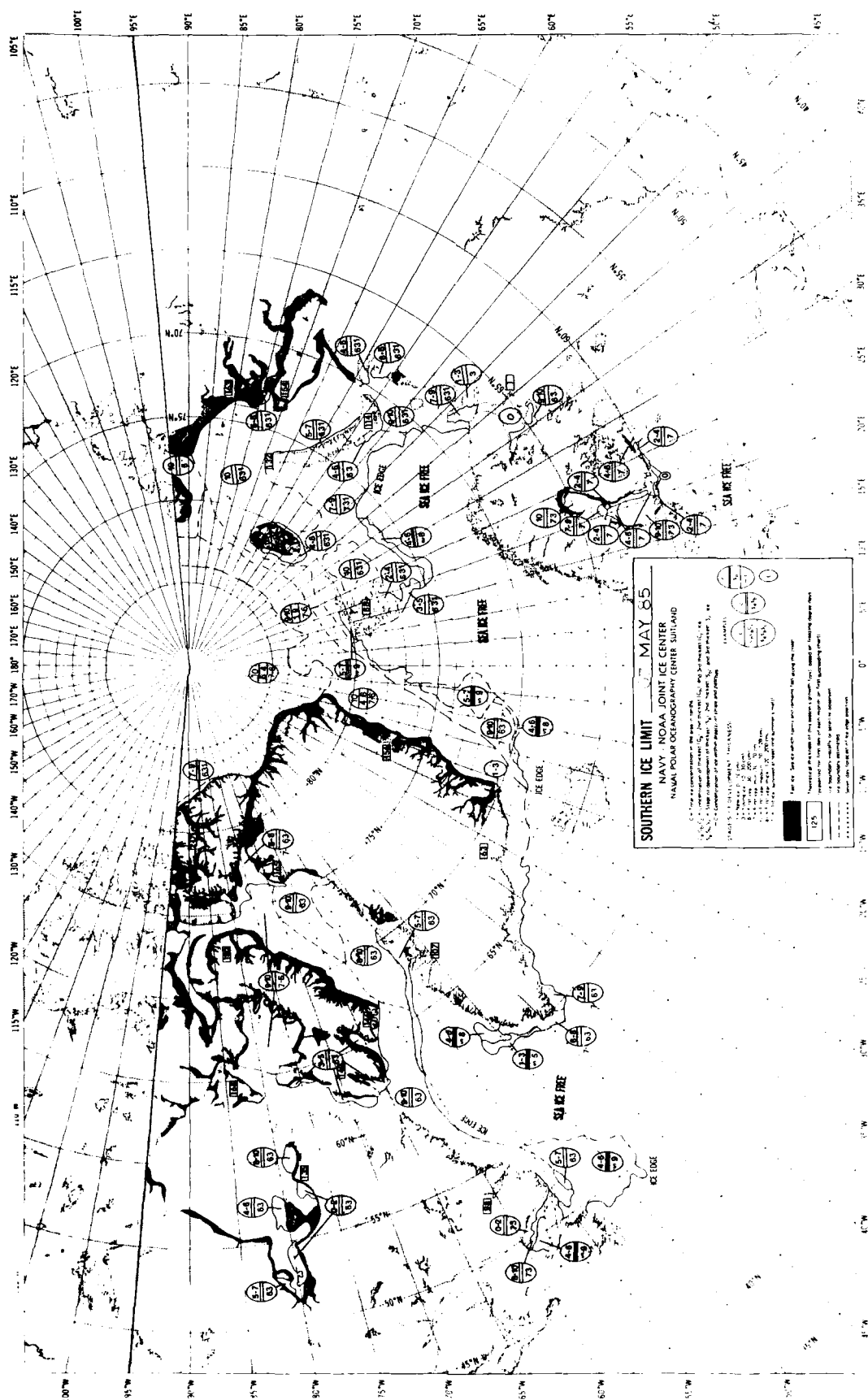
SOUTHERN ICE LIMIT 16 APR 85
NAVY - NOAA JOINT ICE CENTER
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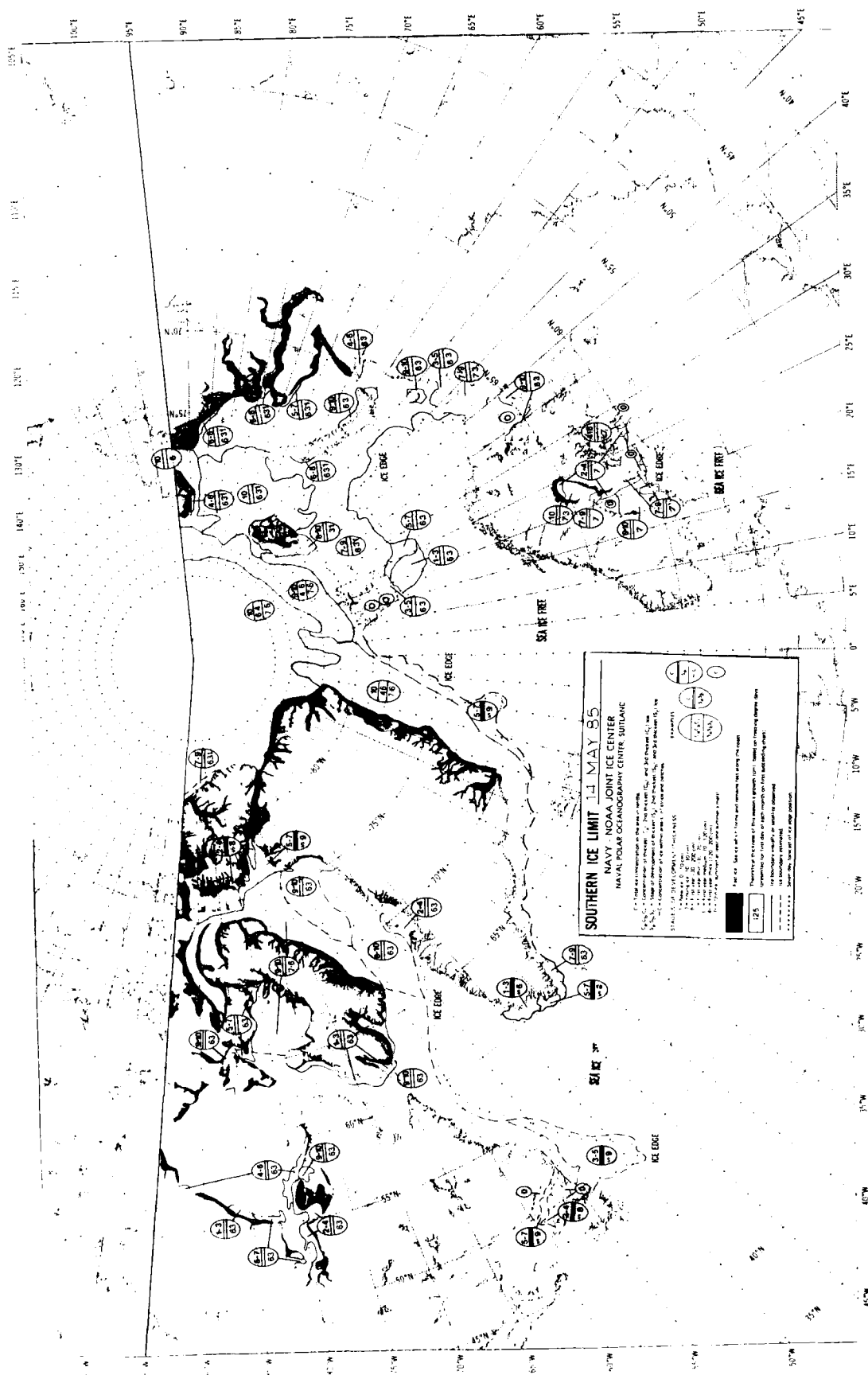
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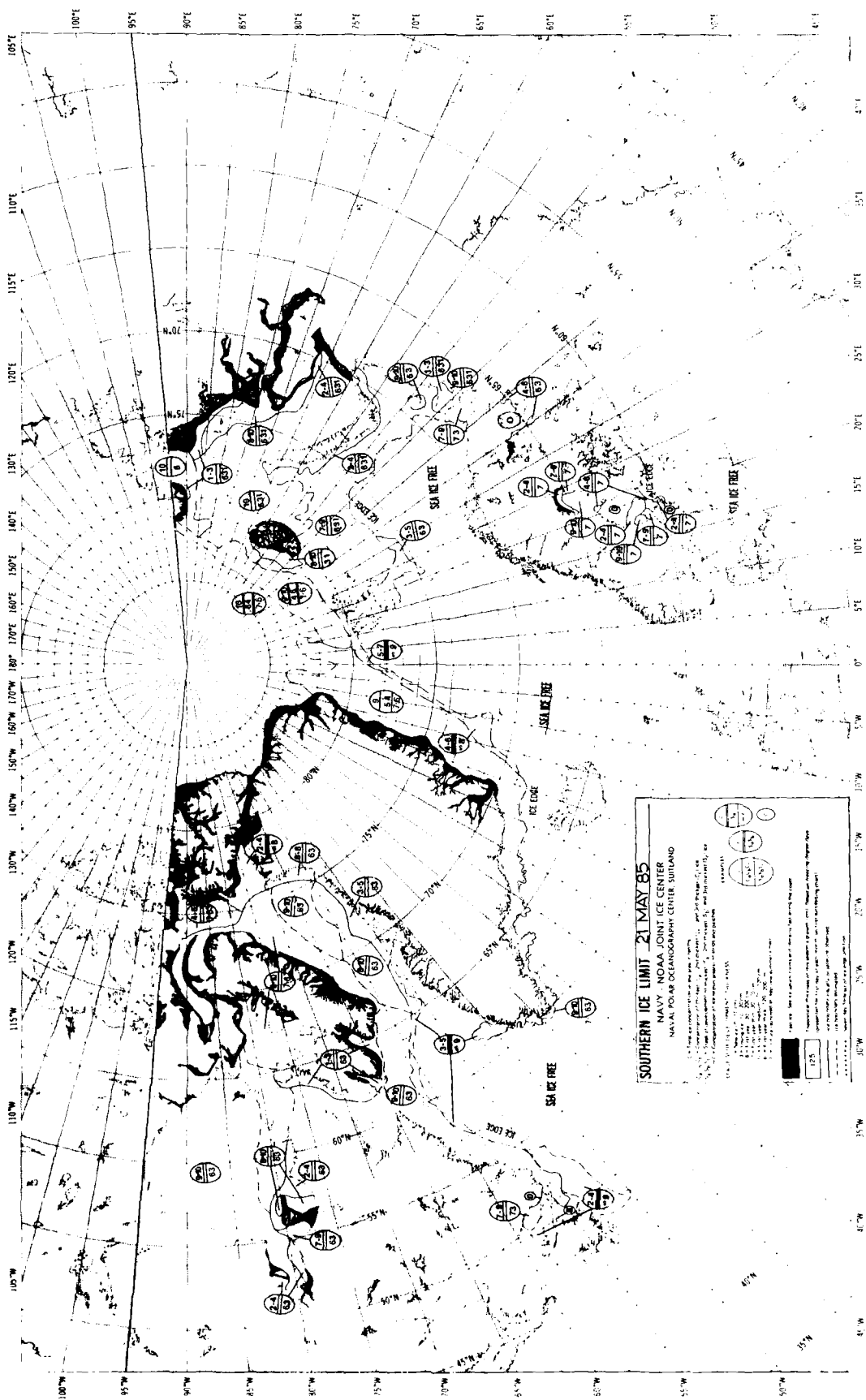


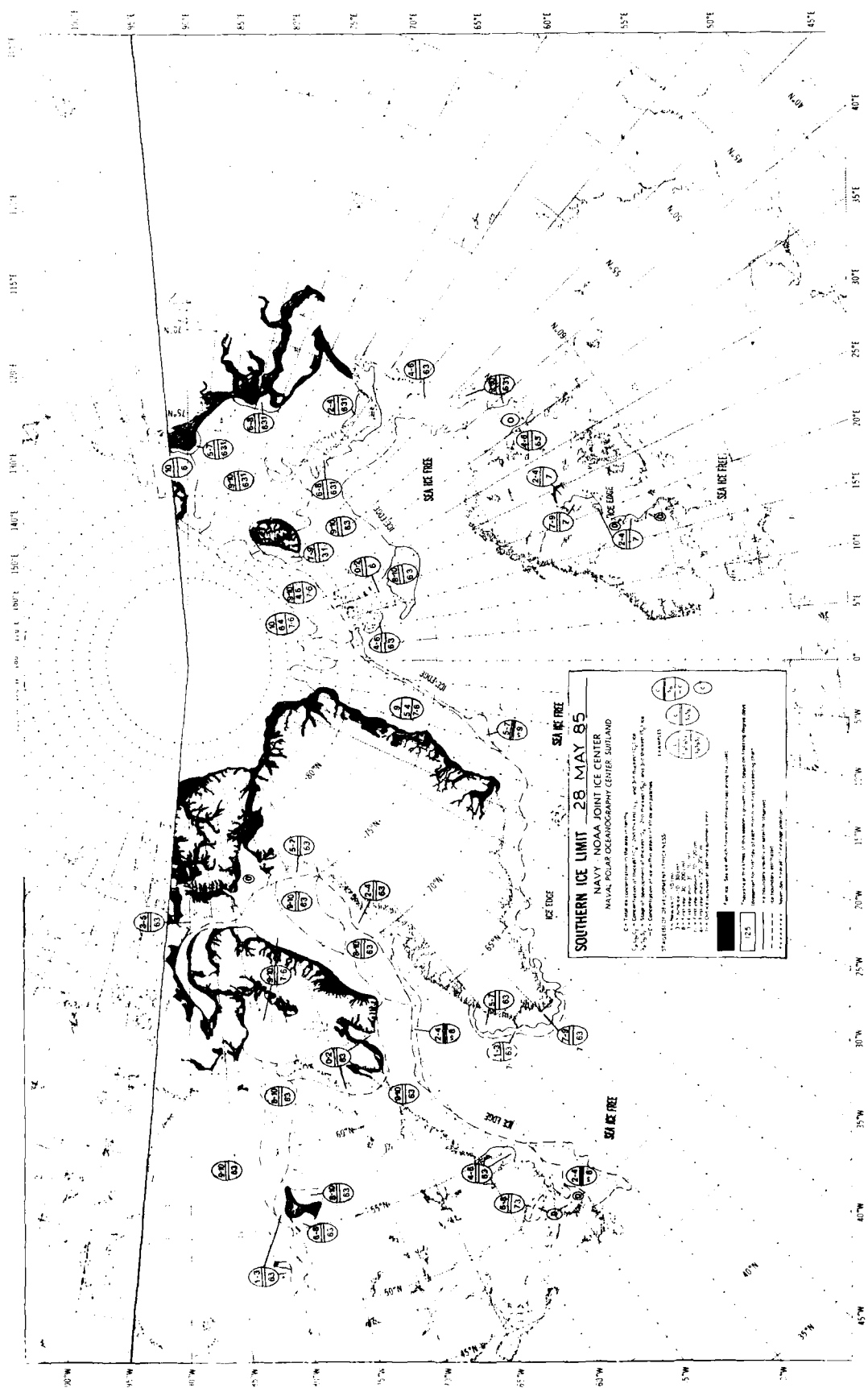


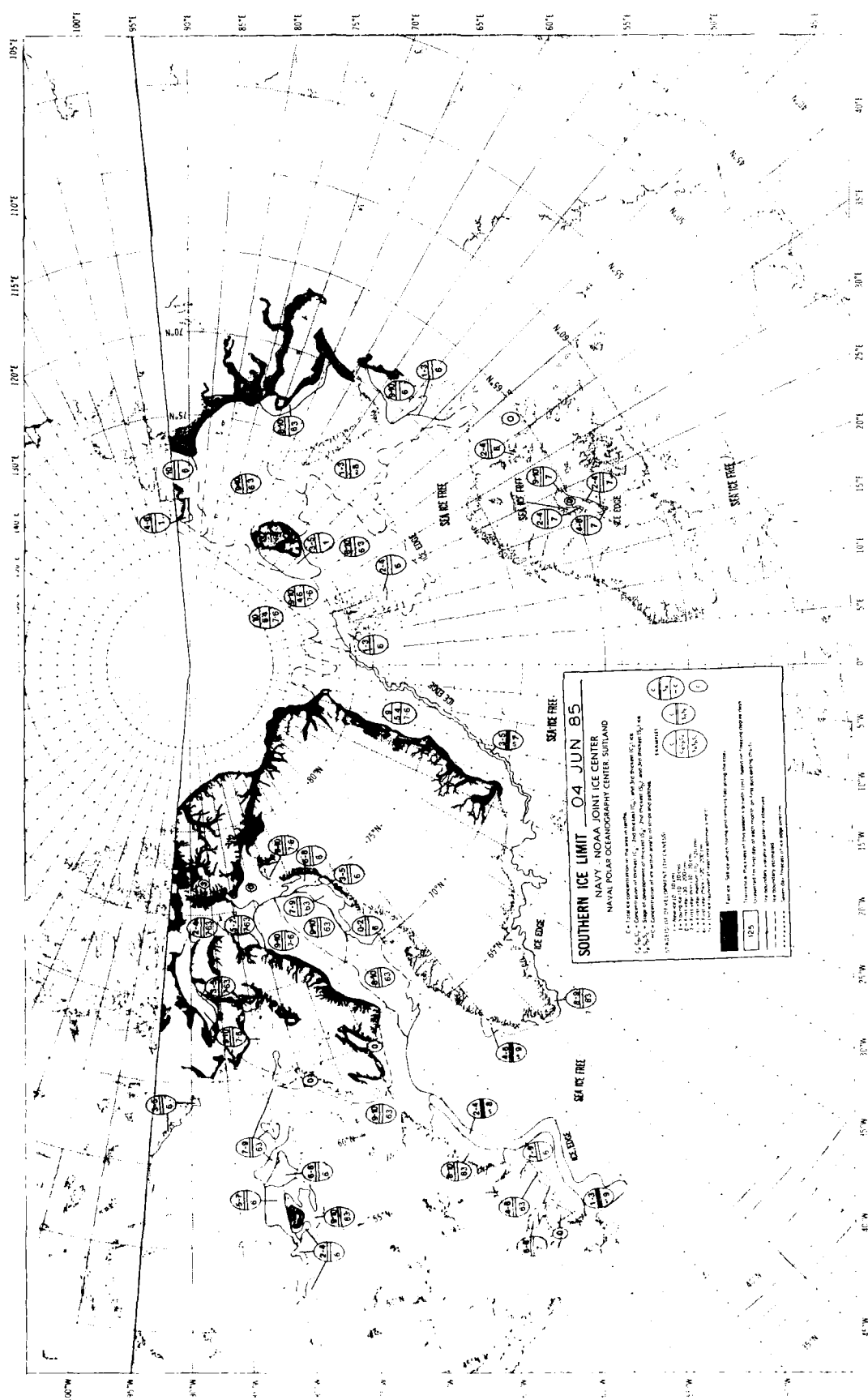


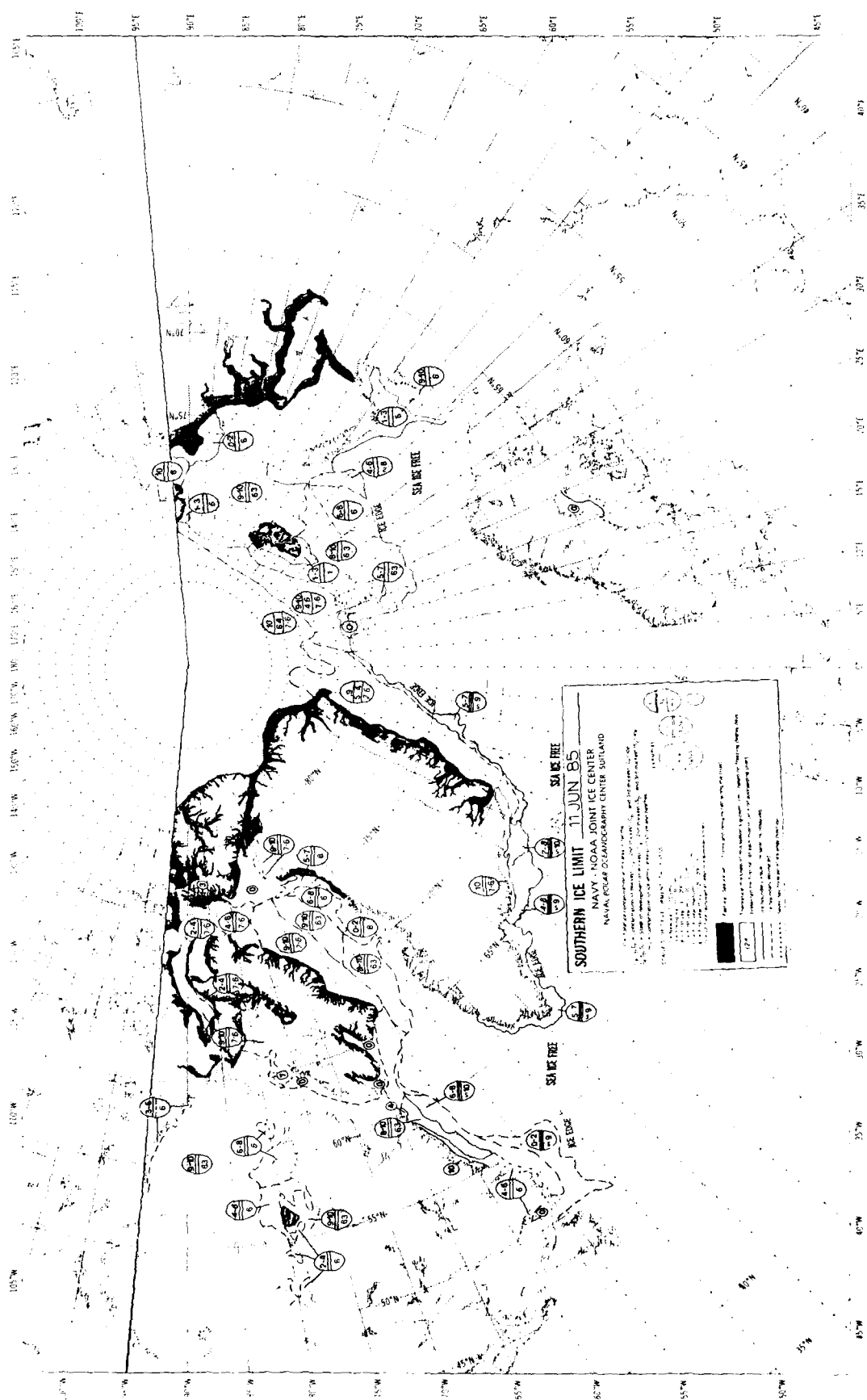


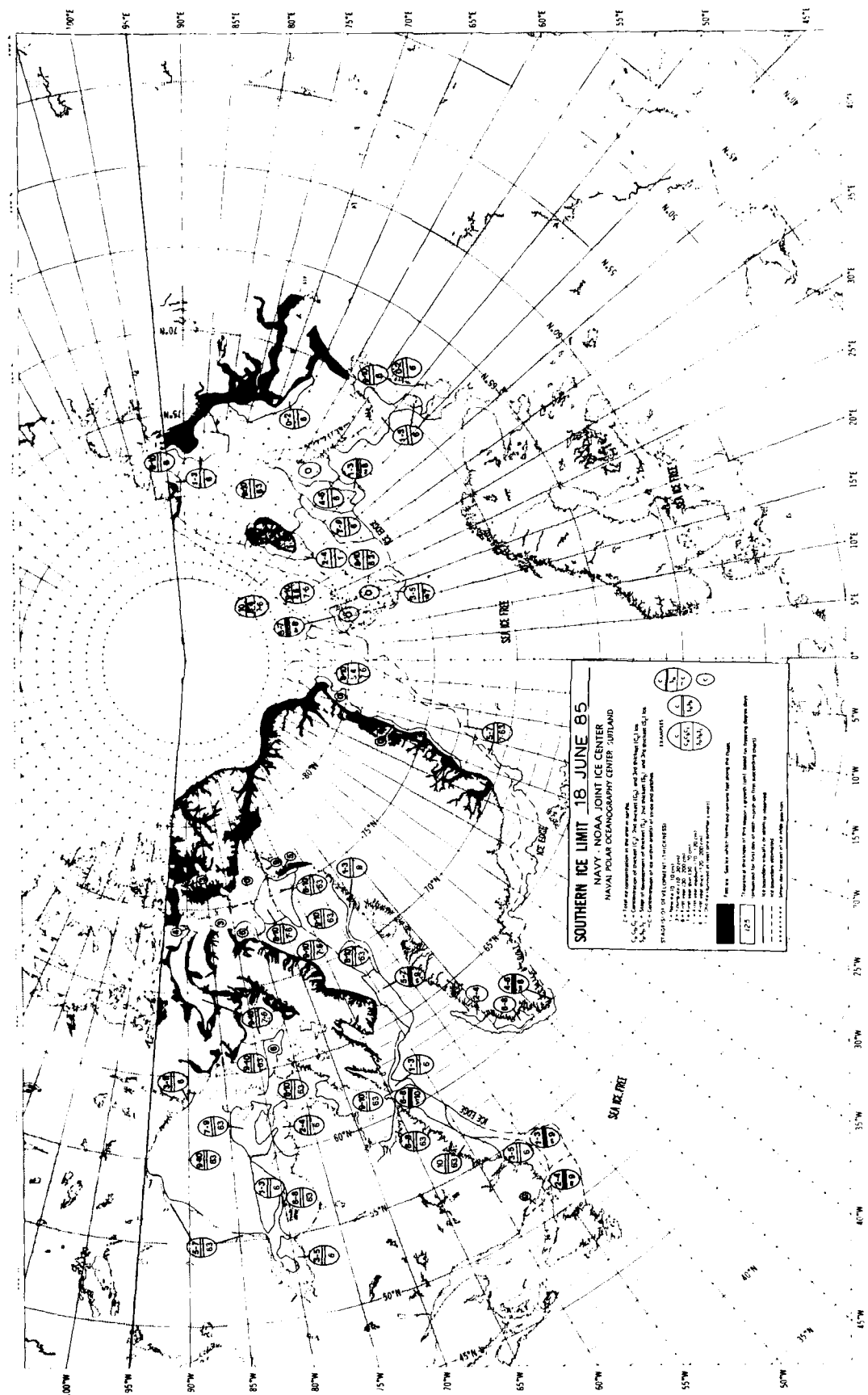


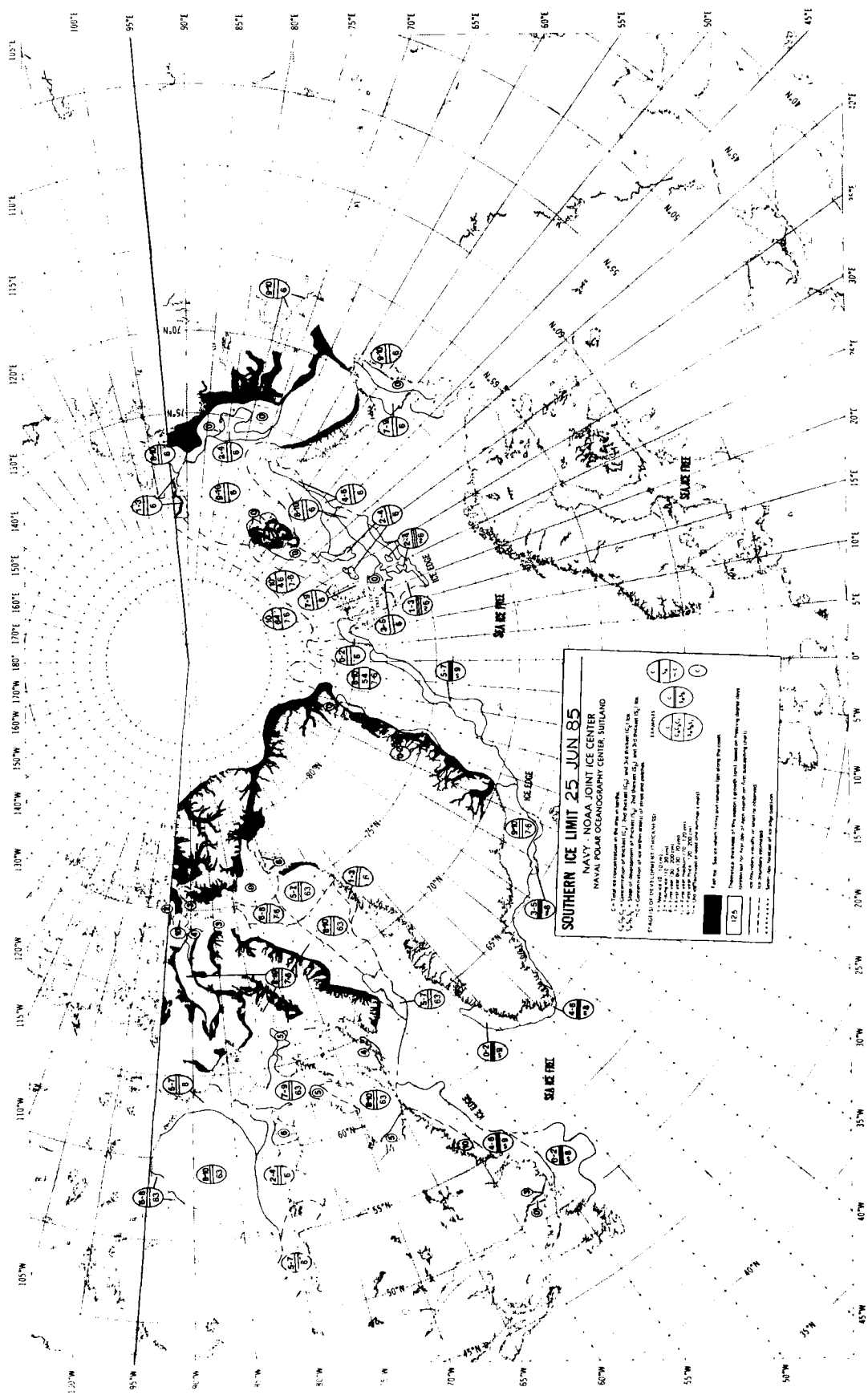


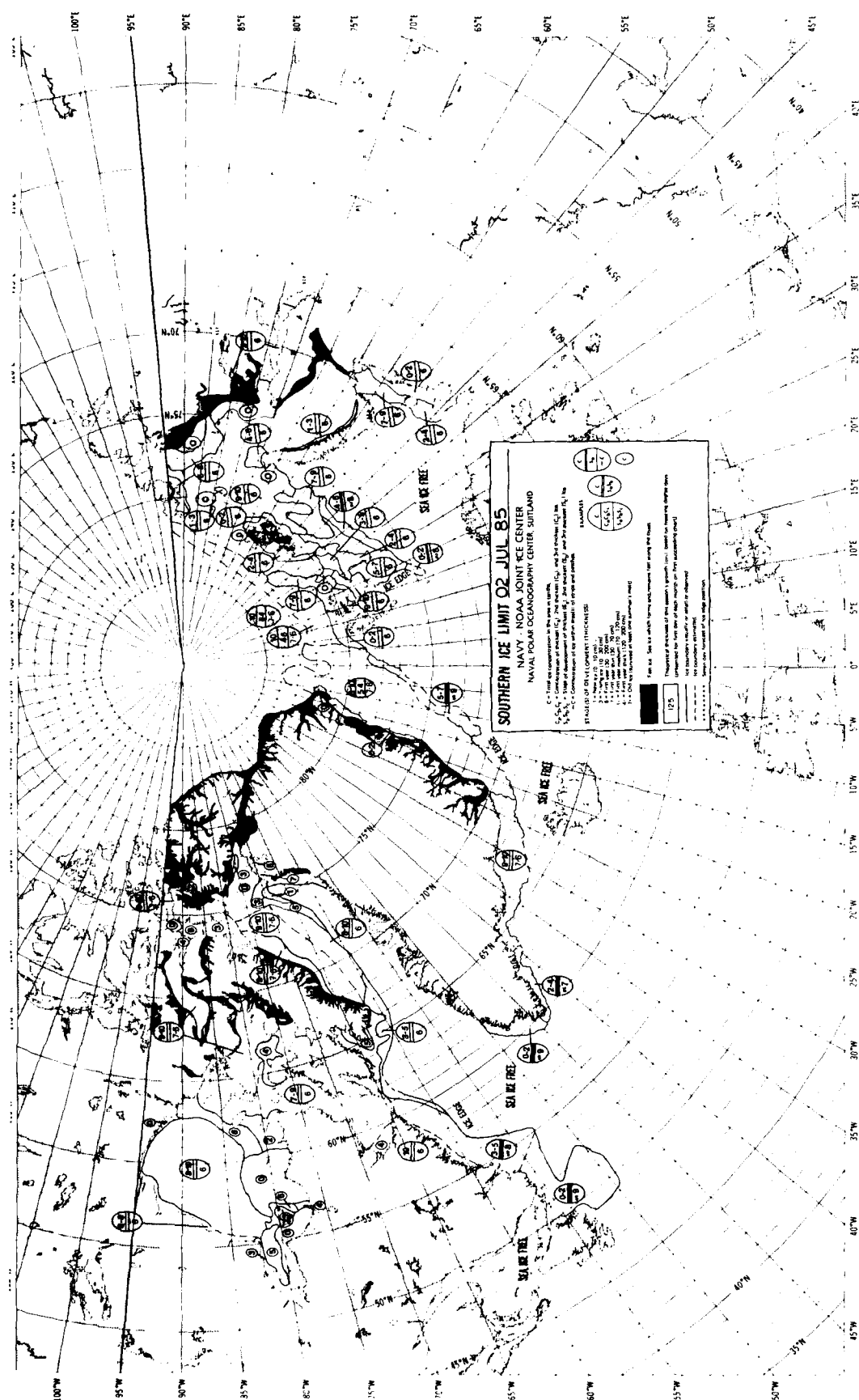


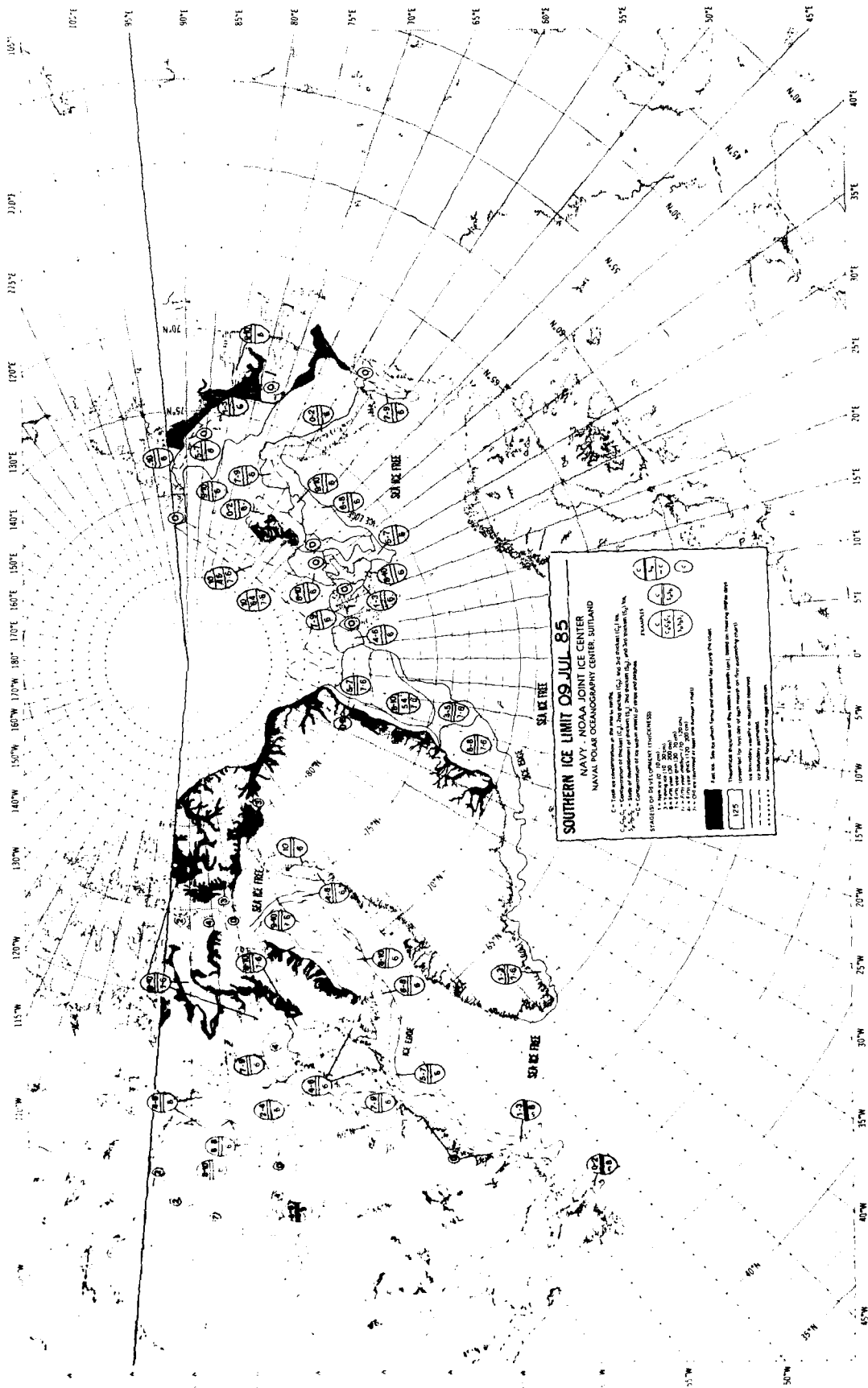


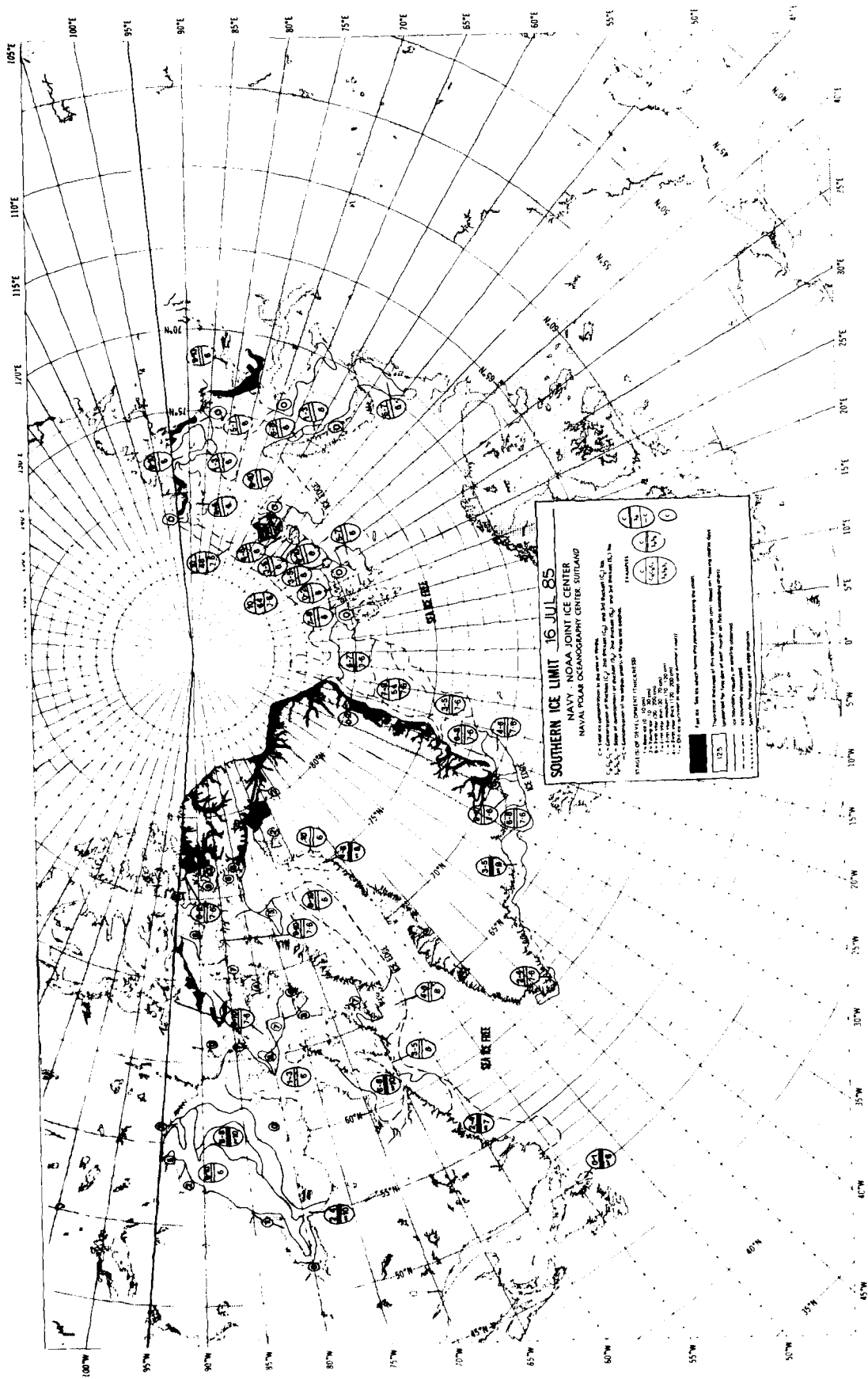


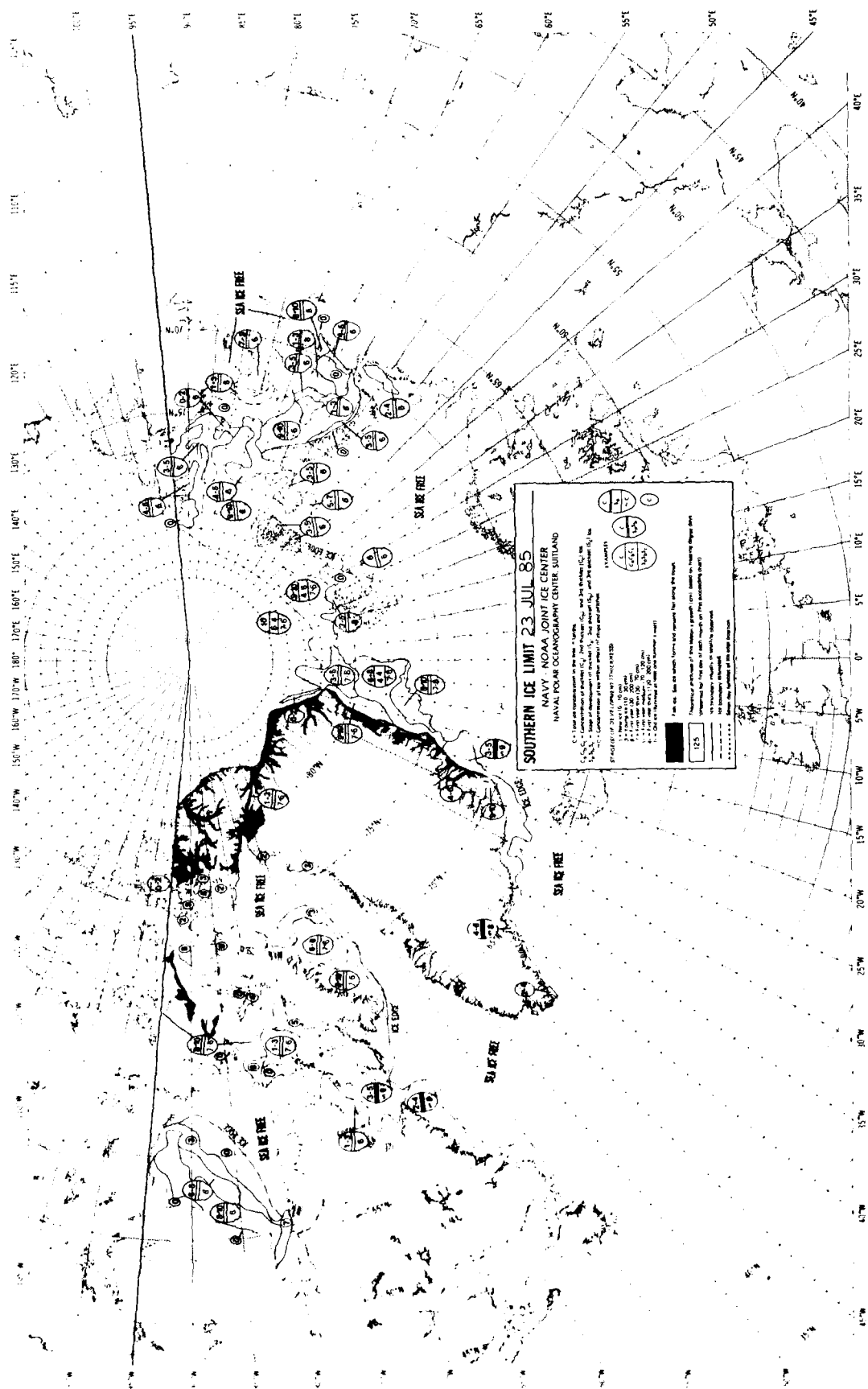


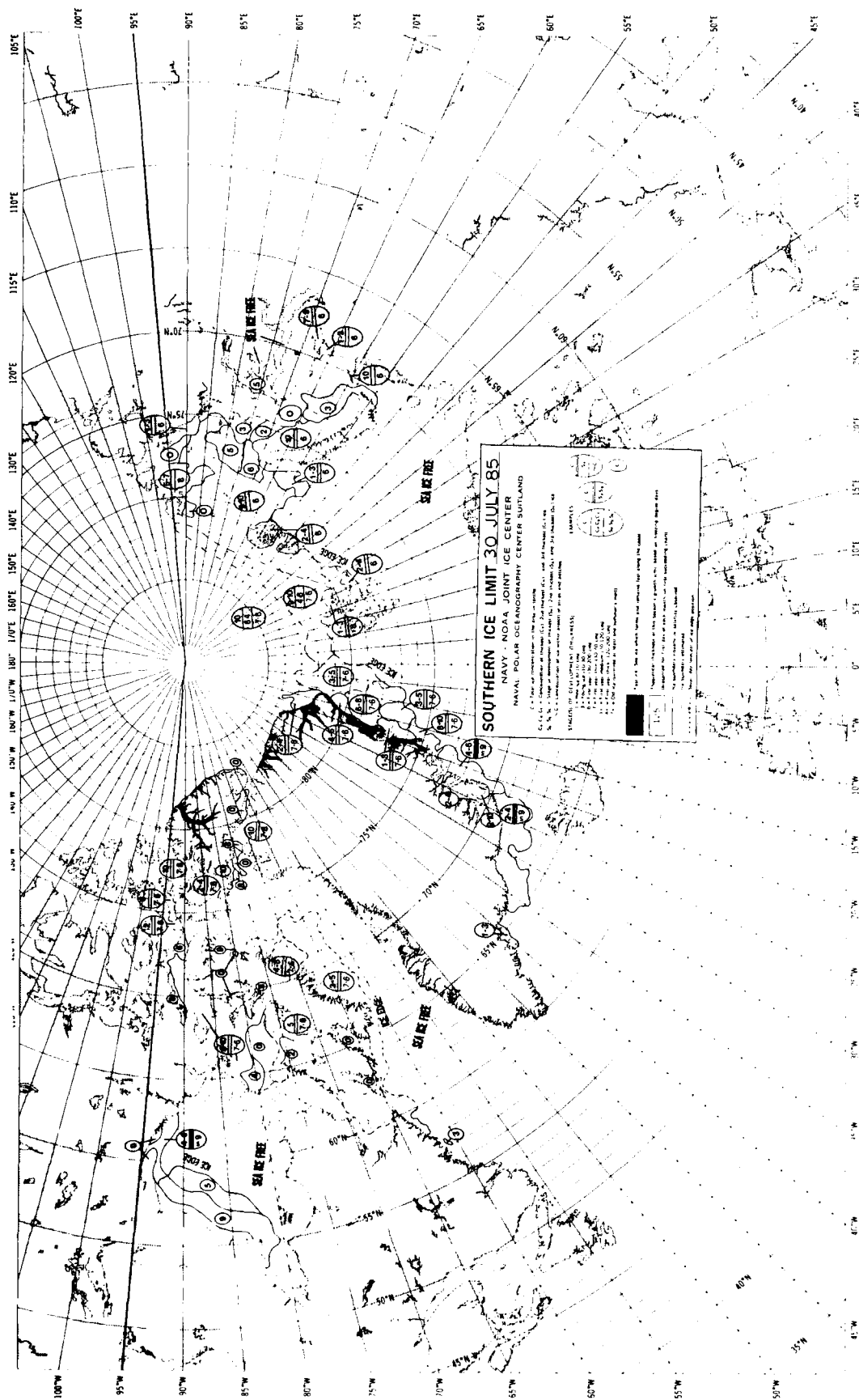


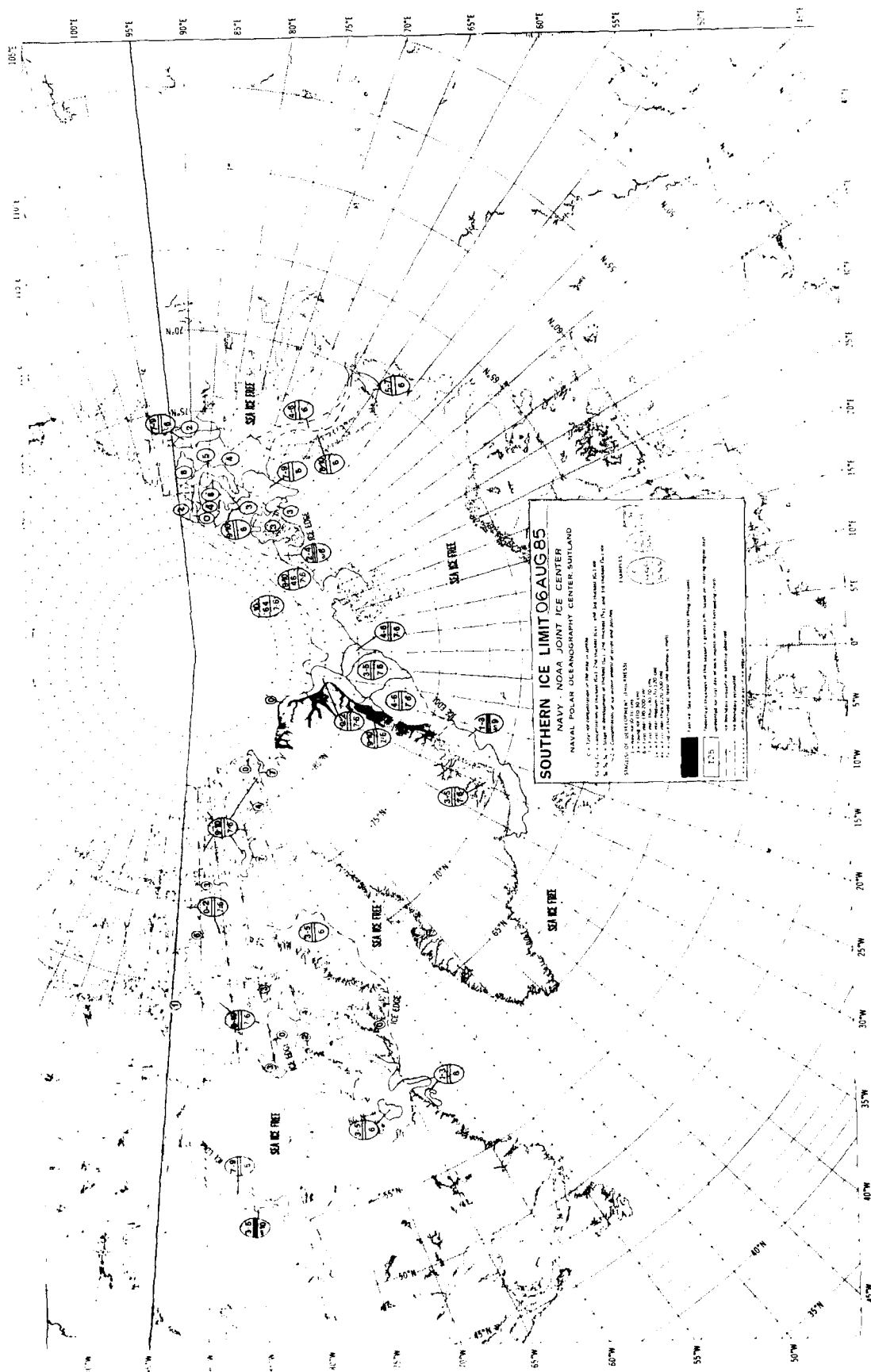


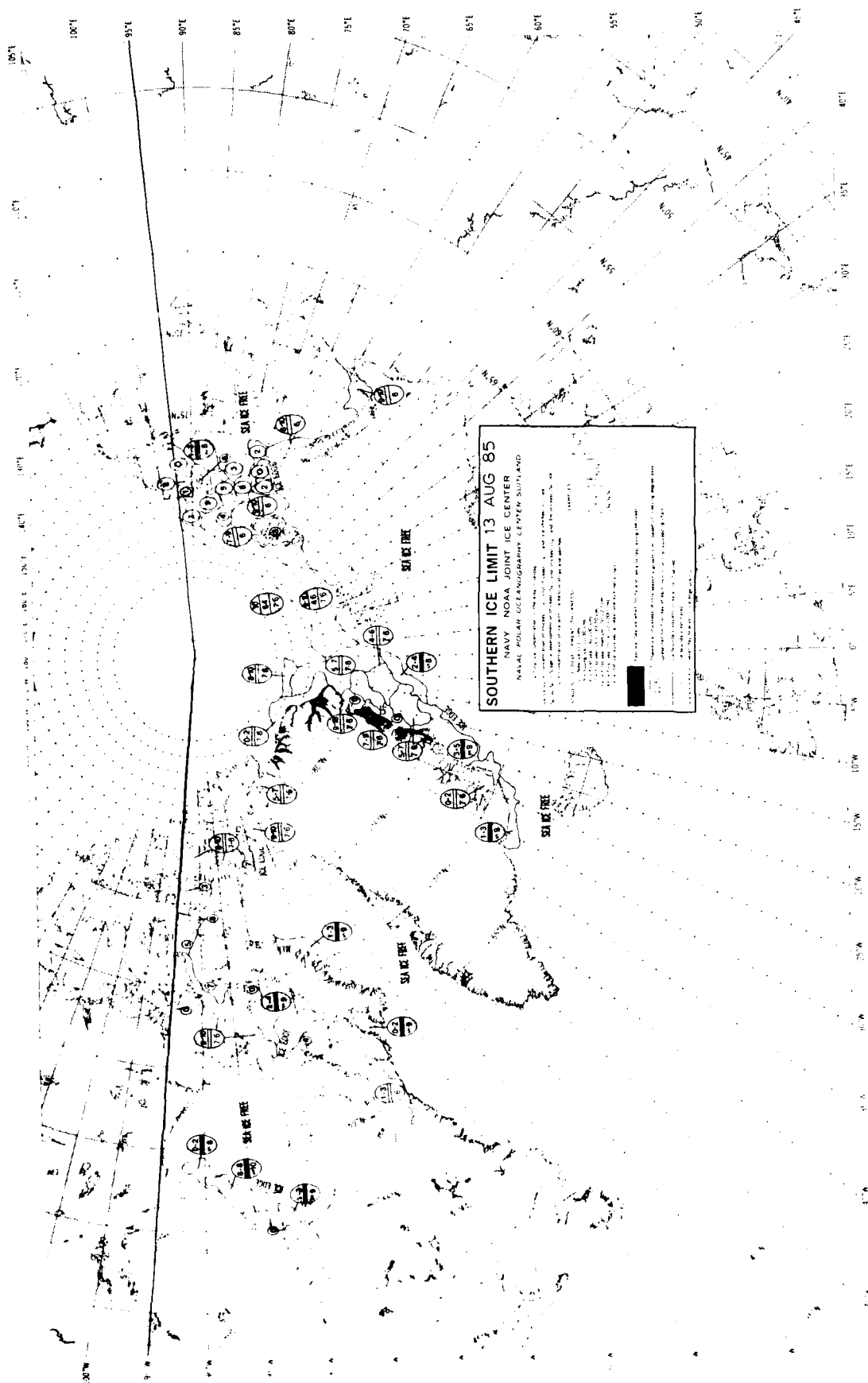


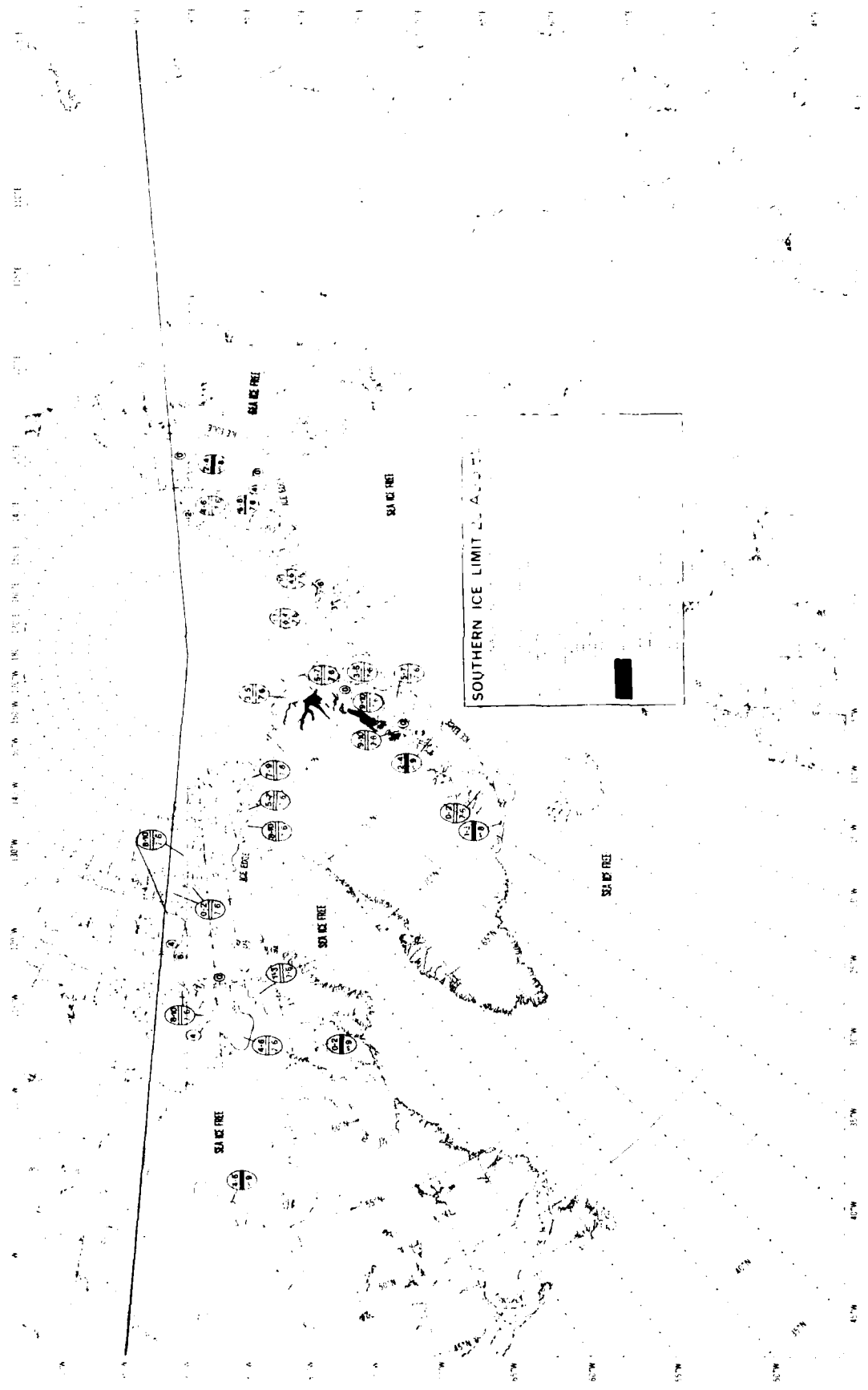


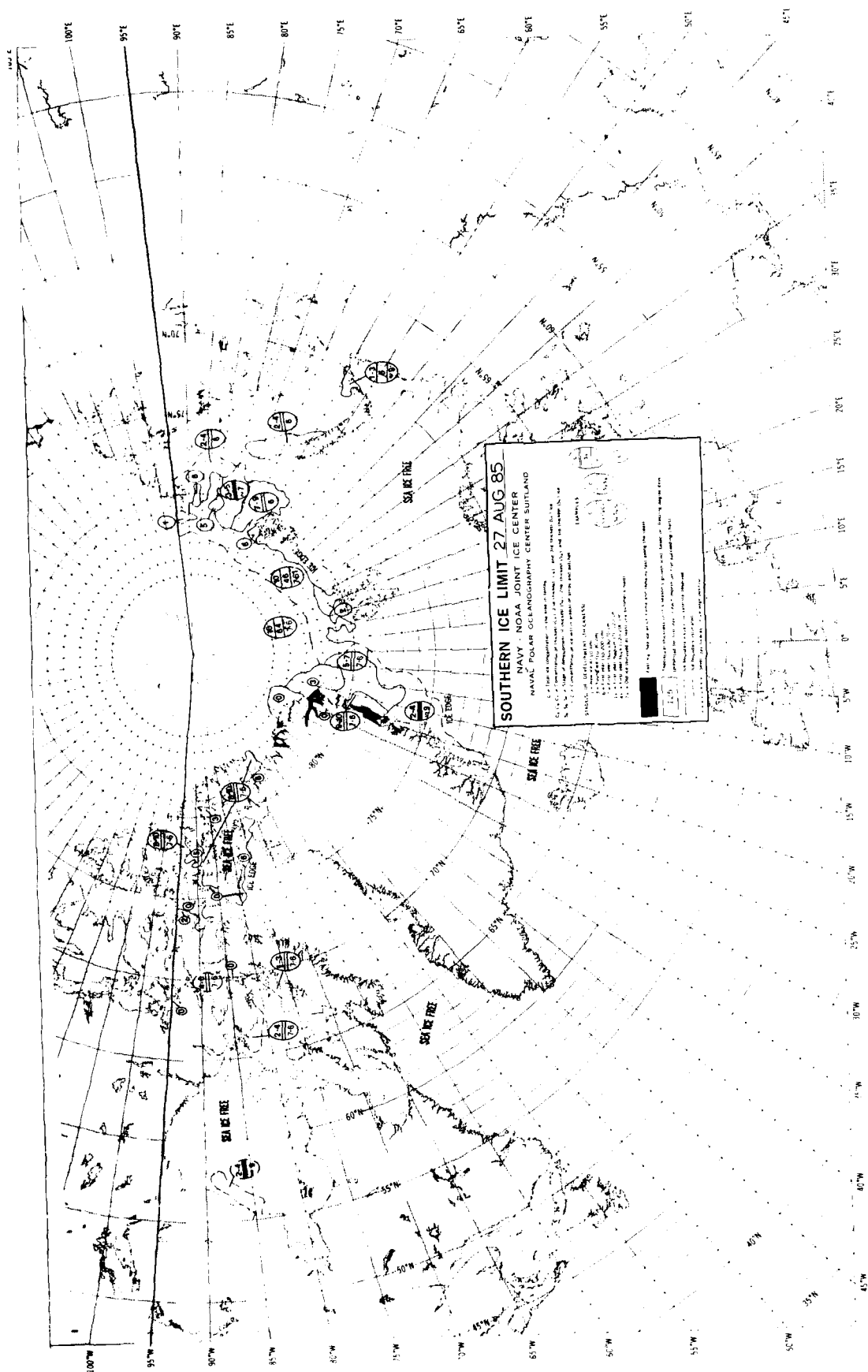


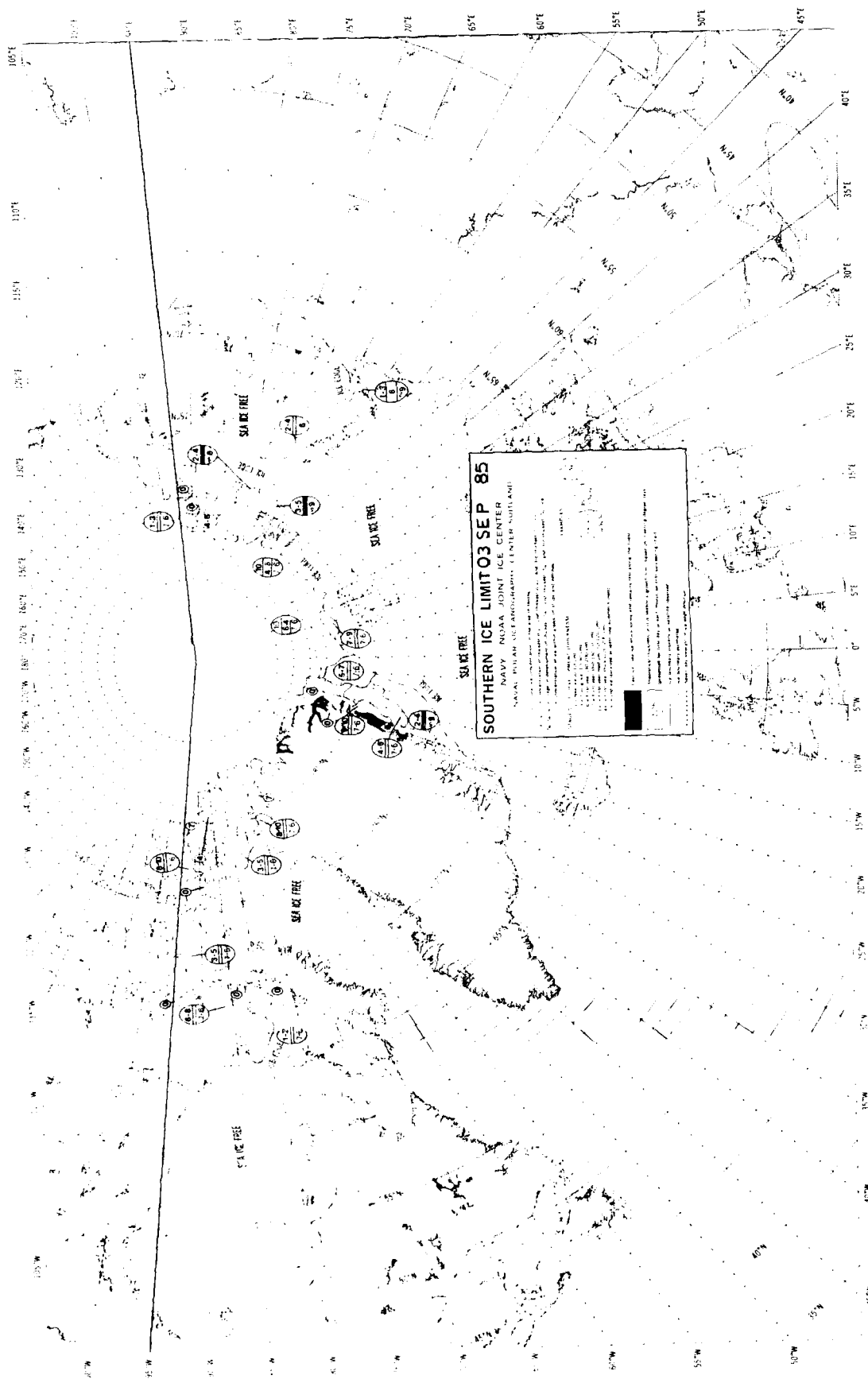








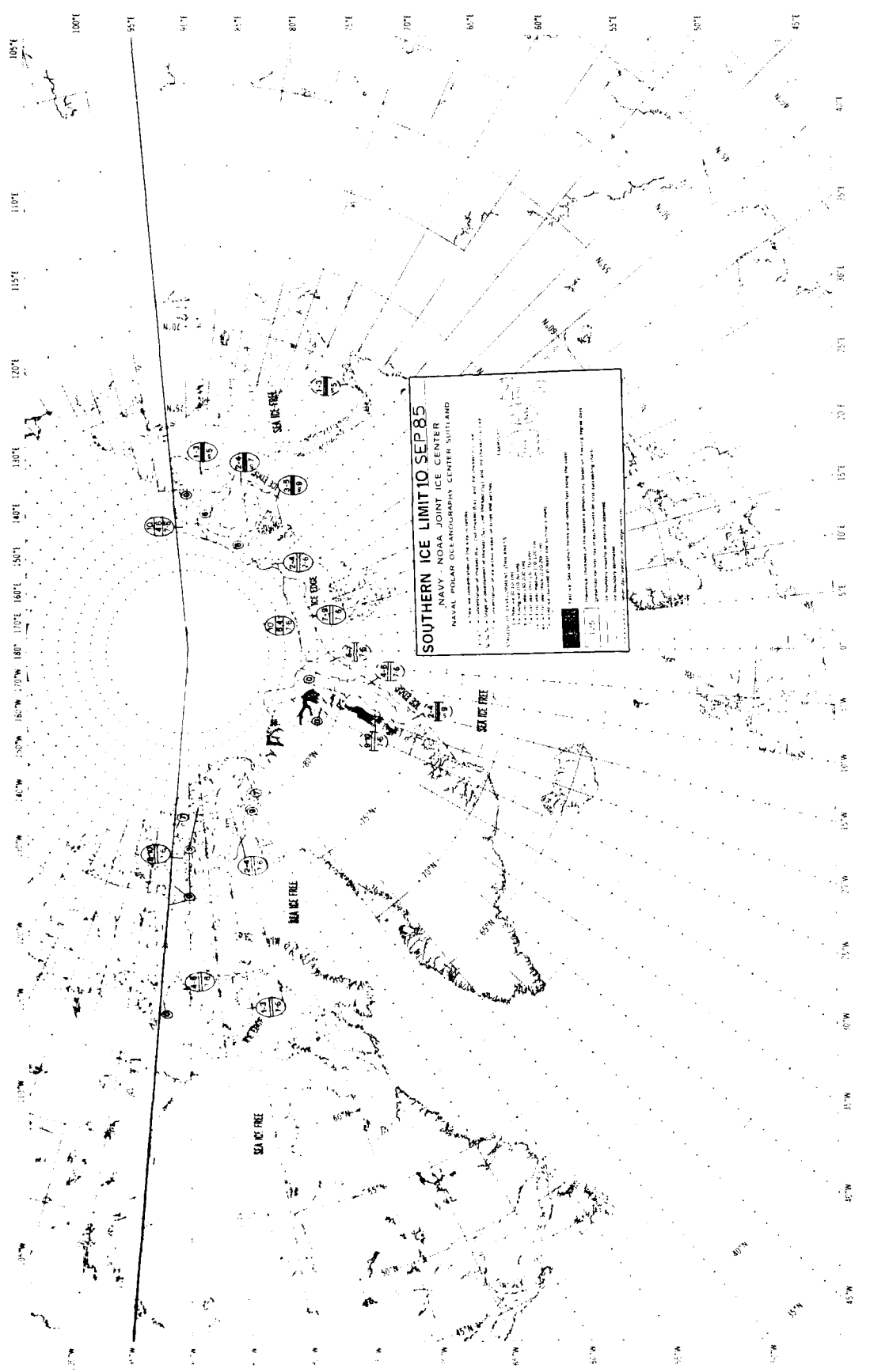




SOUTHERN ICE LIMIT 03 SEP 85

NAVY NOAA JOINT ICE CENTER
NAVAL PIRAN OCEANOGRAPHY CENTER (NITLANT)

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SOUTHERN ICE LIMIT 10 SEP 85
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUTLAND

1. This chart is a summary of the ice limit data for the Southern Ocean, based on the latest available information. It is not a navigational chart and should not be used for navigation. It is intended for informational purposes only.

2. The ice limit data is based on the latest available information from the Navy and NOAA. It is not a navigational chart and should not be used for navigation. It is intended for informational purposes only.

3. The ice limit data is based on the latest available information from the Navy and NOAA. It is not a navigational chart and should not be used for navigation. It is intended for informational purposes only.

4. The ice limit data is based on the latest available information from the Navy and NOAA. It is not a navigational chart and should not be used for navigation. It is intended for informational purposes only.

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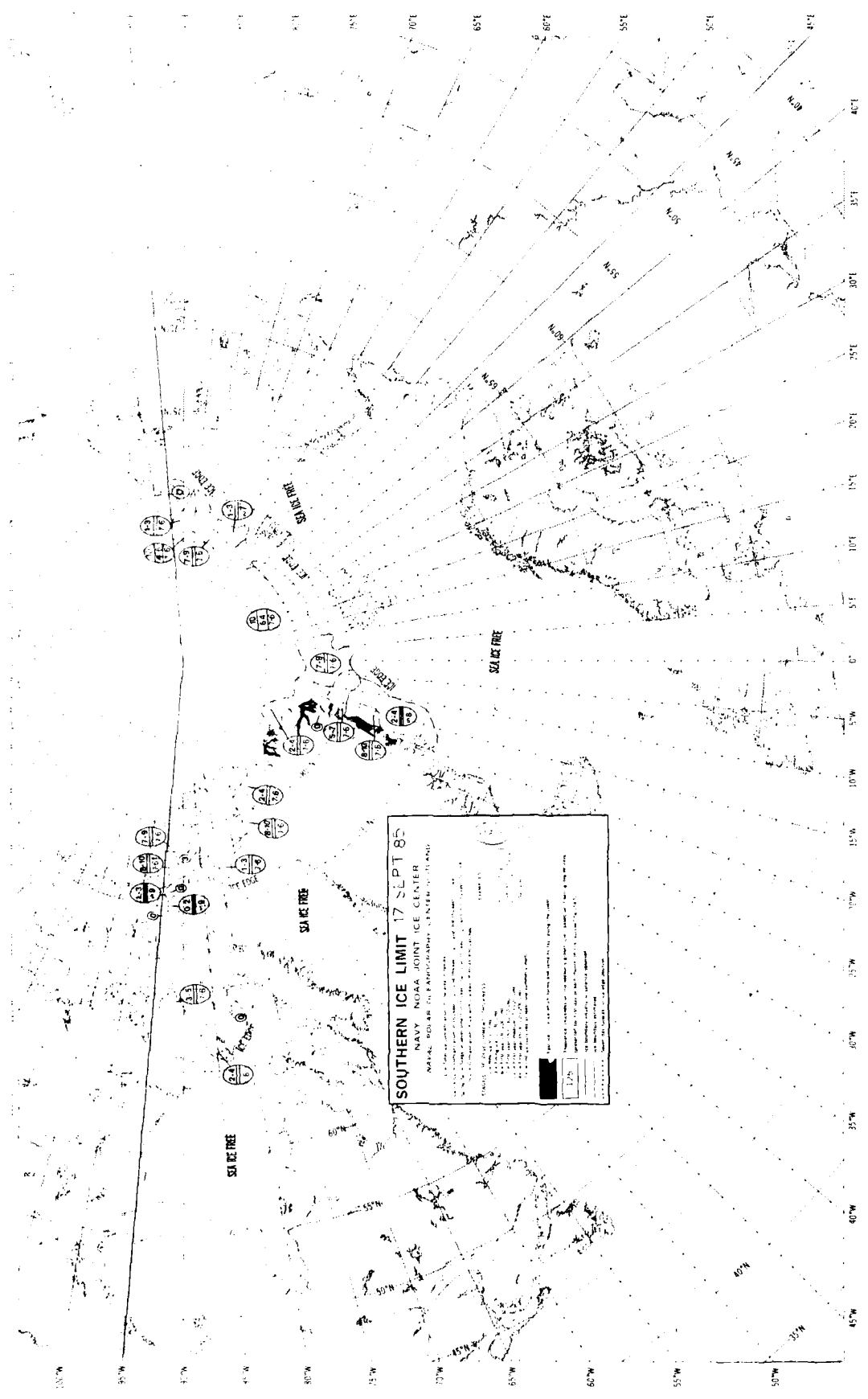
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7. The ice limit data is based on the latest available information from the Navy and NOAA. It is not a navigational chart and should not be used for navigation. It is intended for informational purposes only.

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9. The ice limit data is based on the latest available information from the Navy and NOAA. It is not a navigational chart and should not be used for navigation. It is intended for informational purposes only.

10. The ice limit data is based on the latest available information from the Navy and NOAA. It is not a navigational chart and should not be used for navigation. It is intended for informational purposes only.



SOUTHERN ICE LIMIT 17 SEPT 85
NAVY NOAA JOINT ICE CENTER
NAVAL ROTAR TO PANGLOSS CENTER 1011 AND

1. This chart is a composite of data from the Navy and NOAA Joint Ice Center, and is intended for use as a reference only. It is not a substitute for a detailed ice chart or a current ice report.

2. The chart is based on data from the Navy and NOAA Joint Ice Center, and is intended for use as a reference only. It is not a substitute for a detailed ice chart or a current ice report.

3. The chart is based on data from the Navy and NOAA Joint Ice Center, and is intended for use as a reference only. It is not a substitute for a detailed ice chart or a current ice report.

4. The chart is based on data from the Navy and NOAA Joint Ice Center, and is intended for use as a reference only. It is not a substitute for a detailed ice chart or a current ice report.

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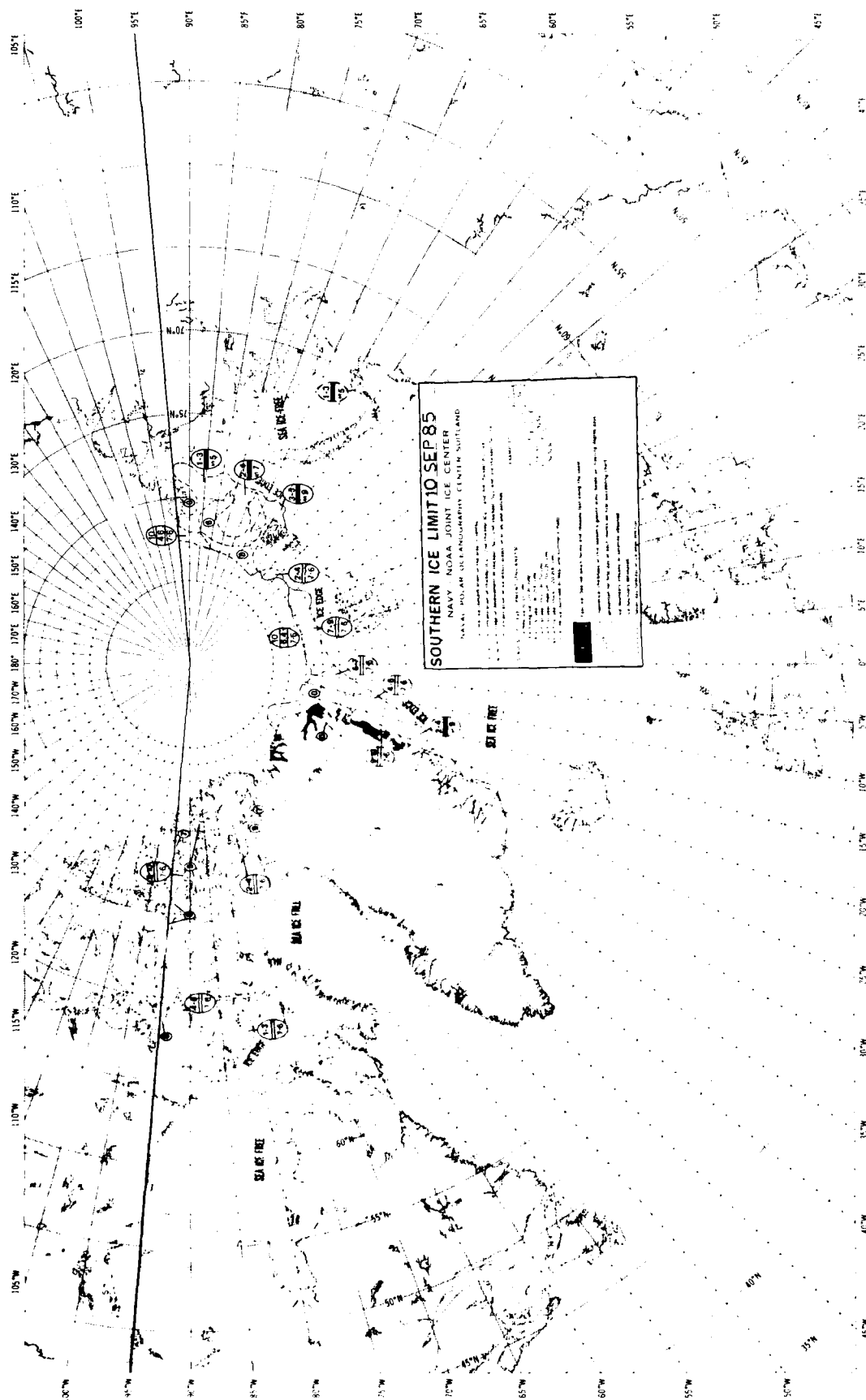
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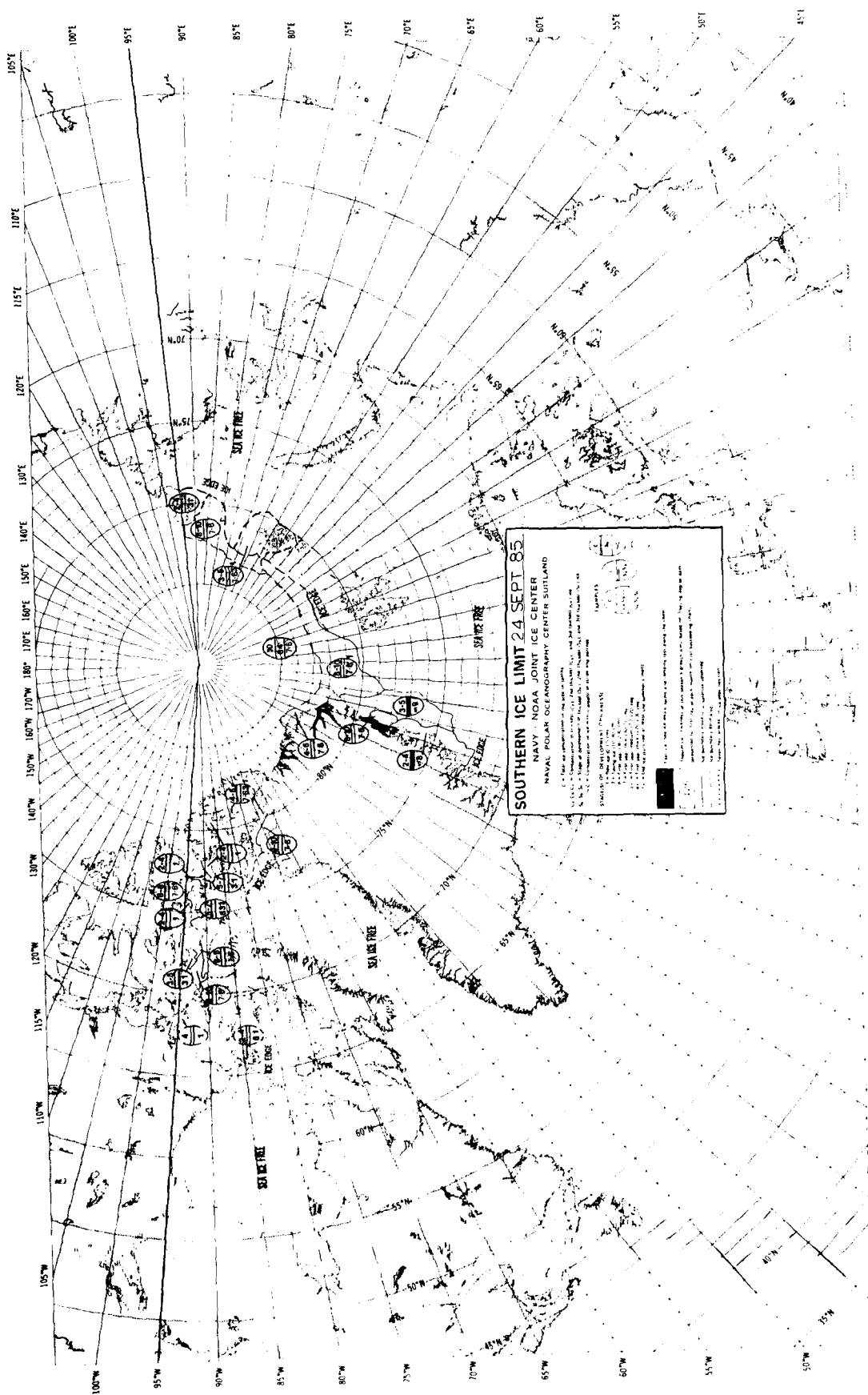
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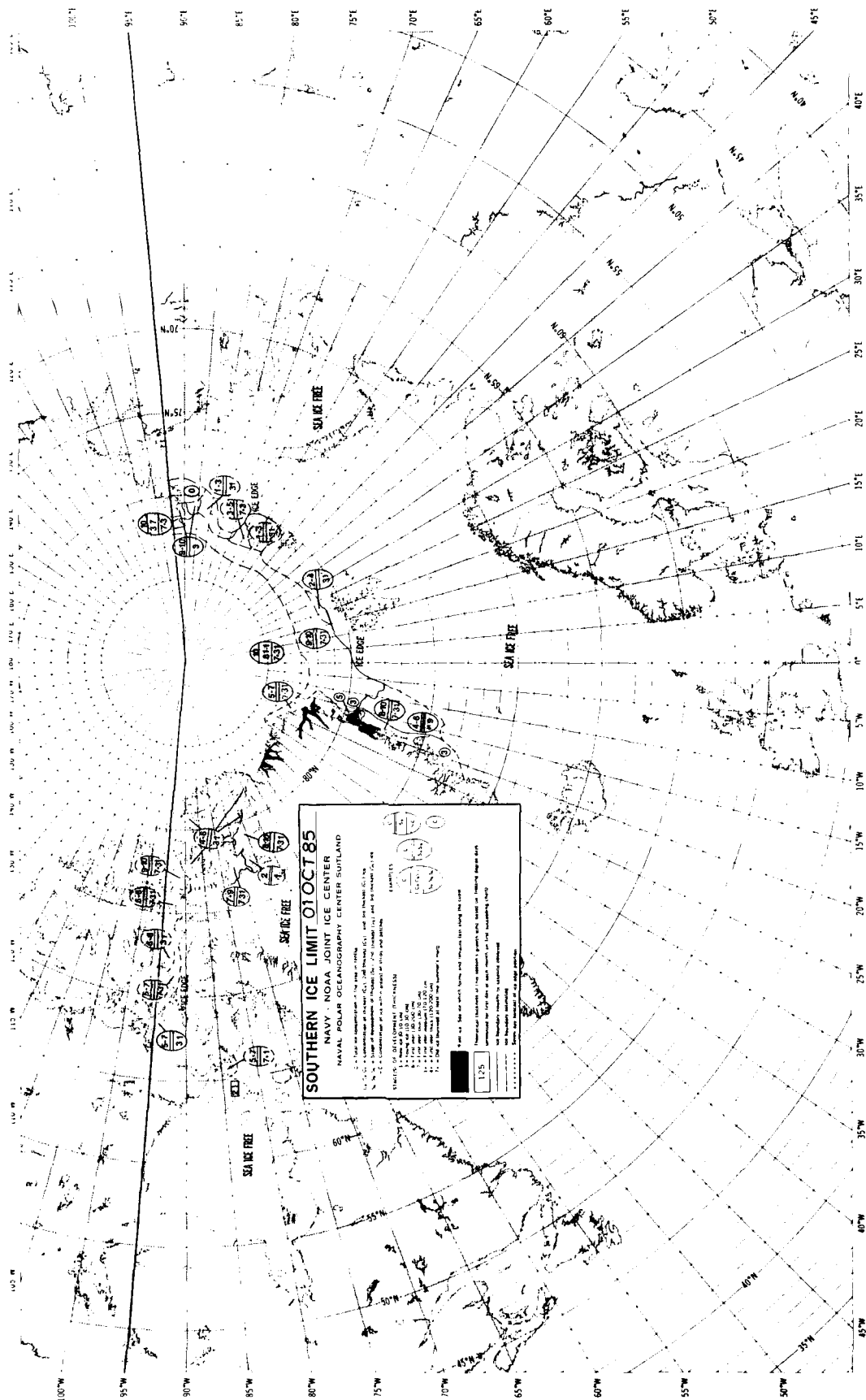
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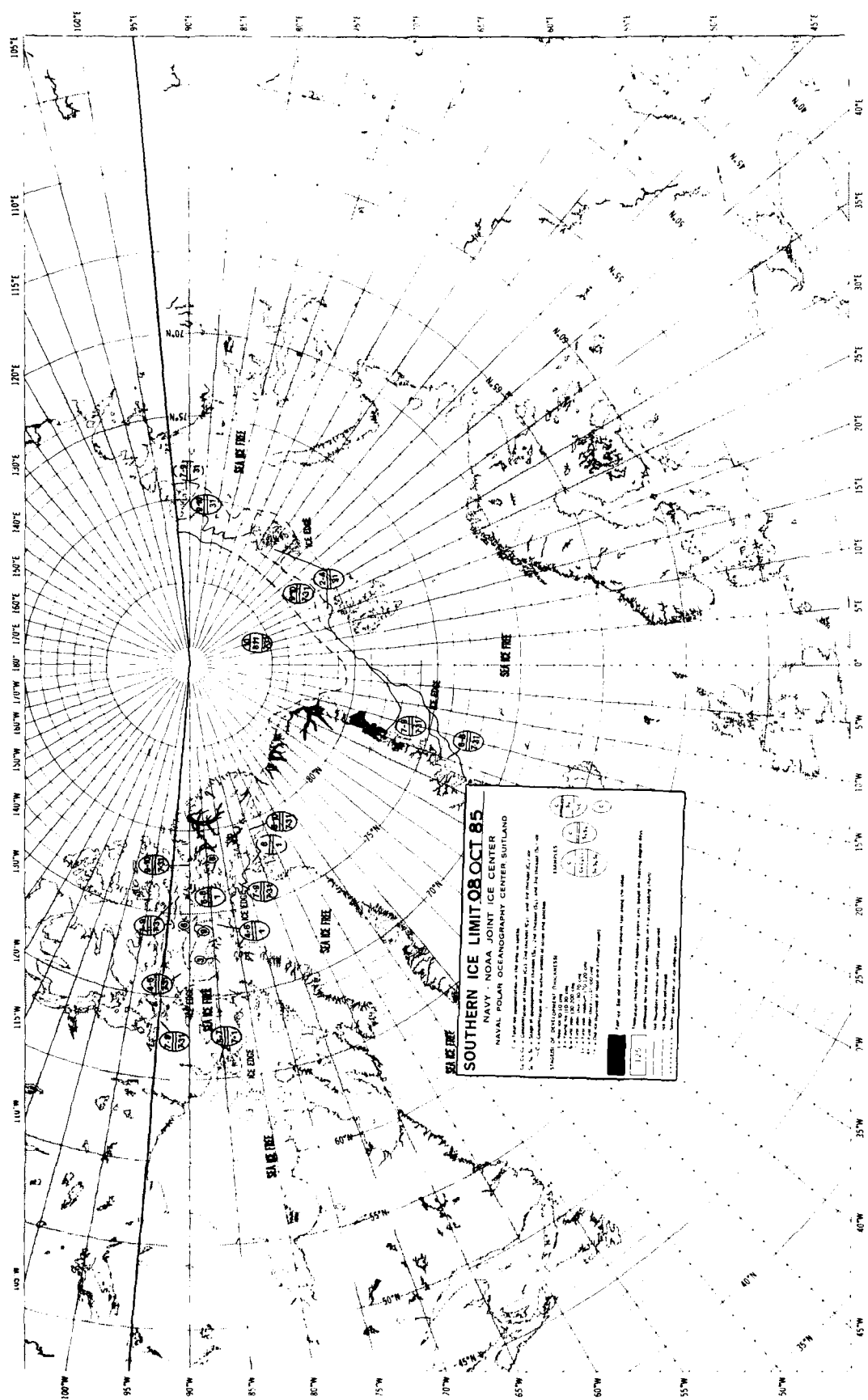
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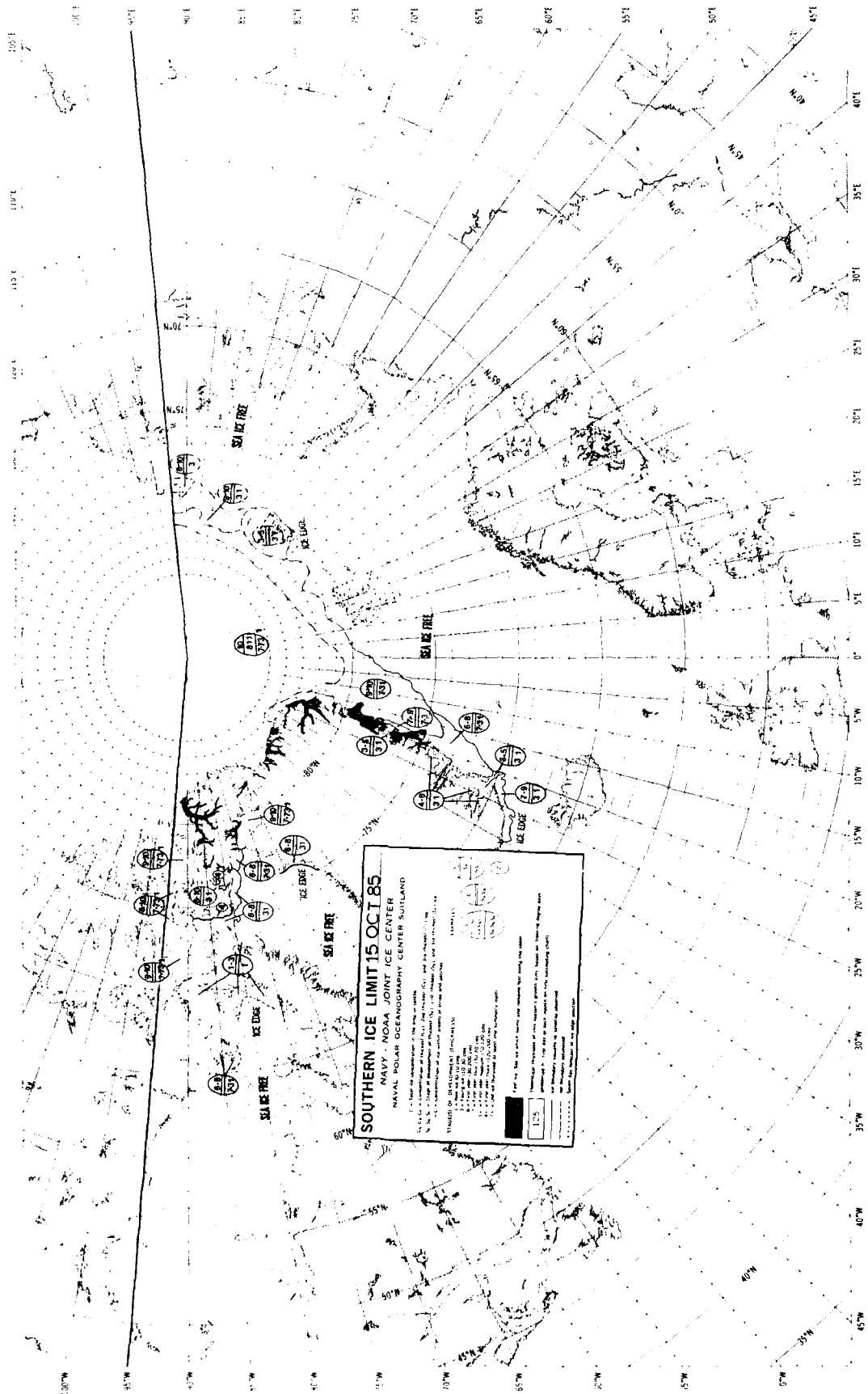
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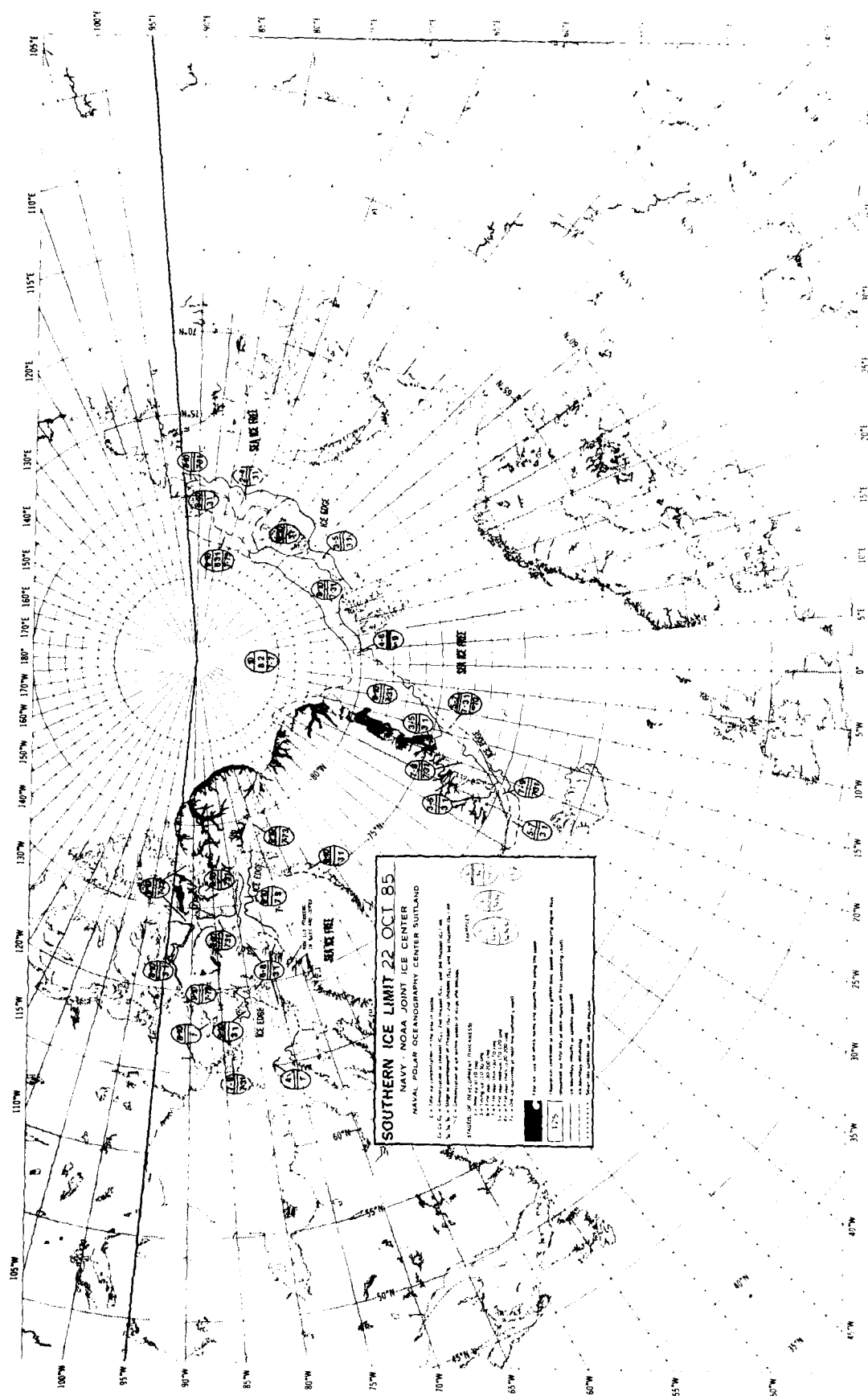


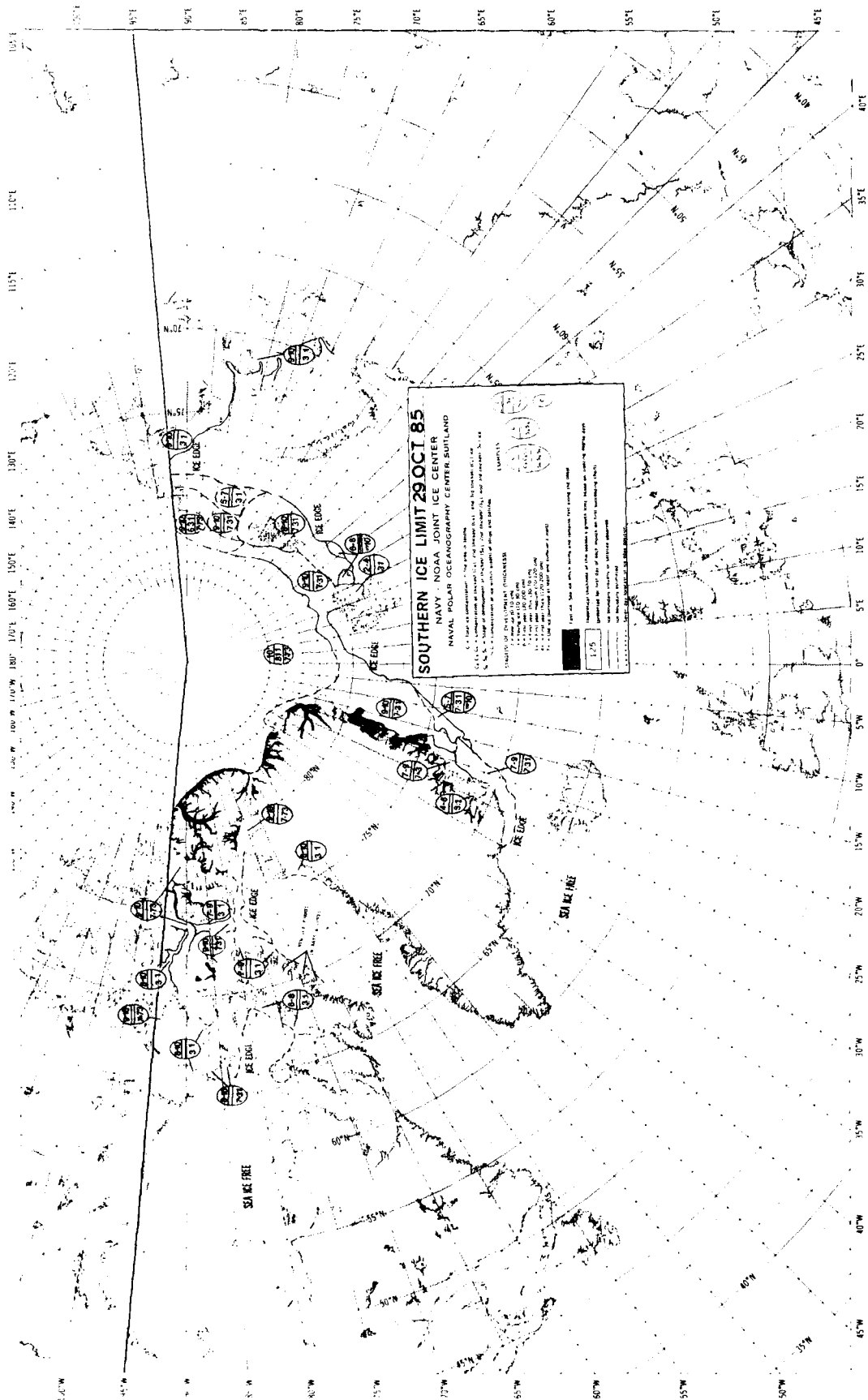
SOUTHERN ICE LIMIT 15 OCT 85
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND

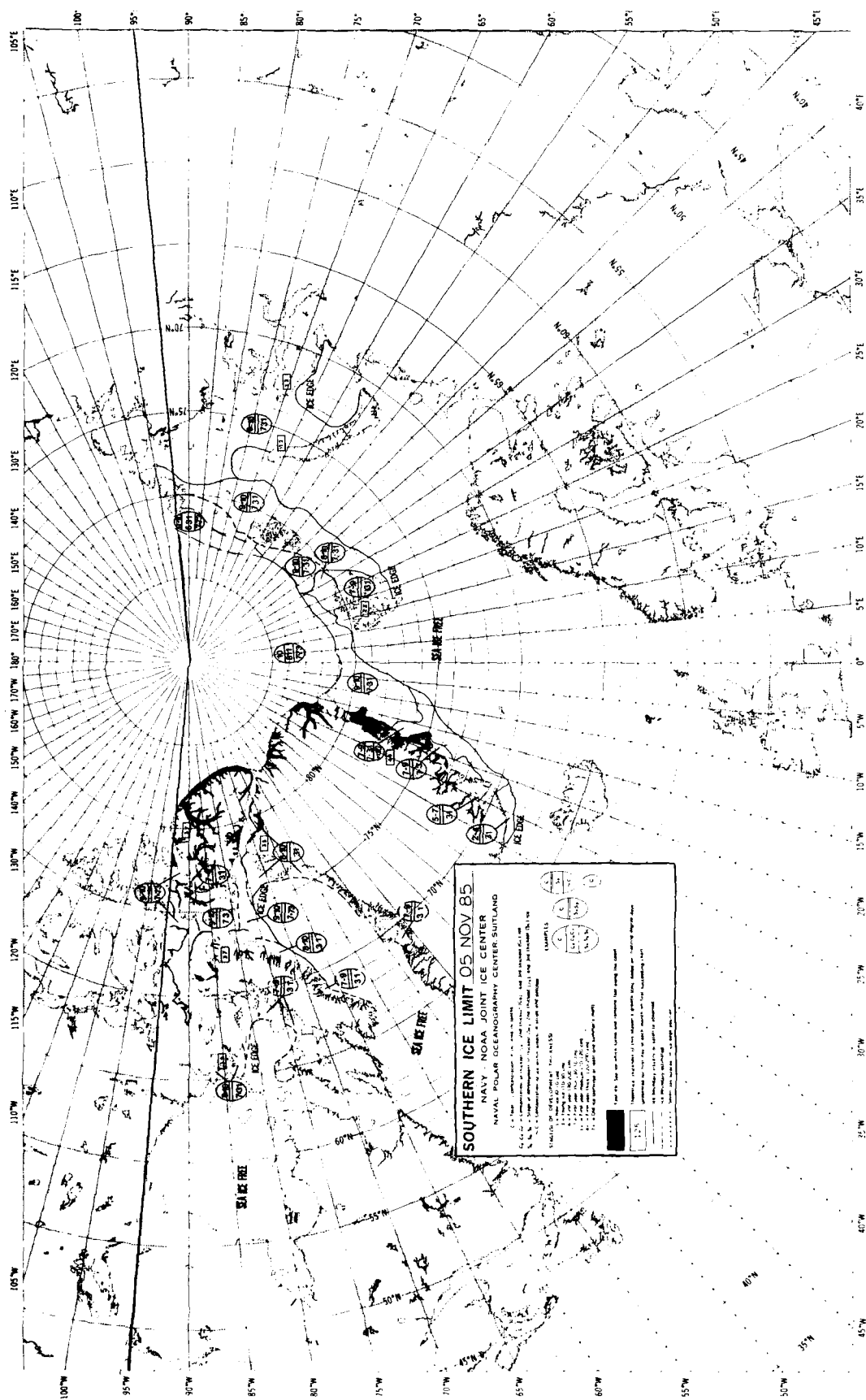
1. For use in the Southern Ocean only.
2. This map is based on the latest available data from the Navy and NOAA.
3. The map is a composite of data from various sources and is not a true representation of the actual ice conditions.
4. The map is for informational purposes only and should not be used for navigation.
5. The map is subject to change without notice.
6. The map is the property of the Navy and NOAA and is not to be distributed outside of the Navy and NOAA.

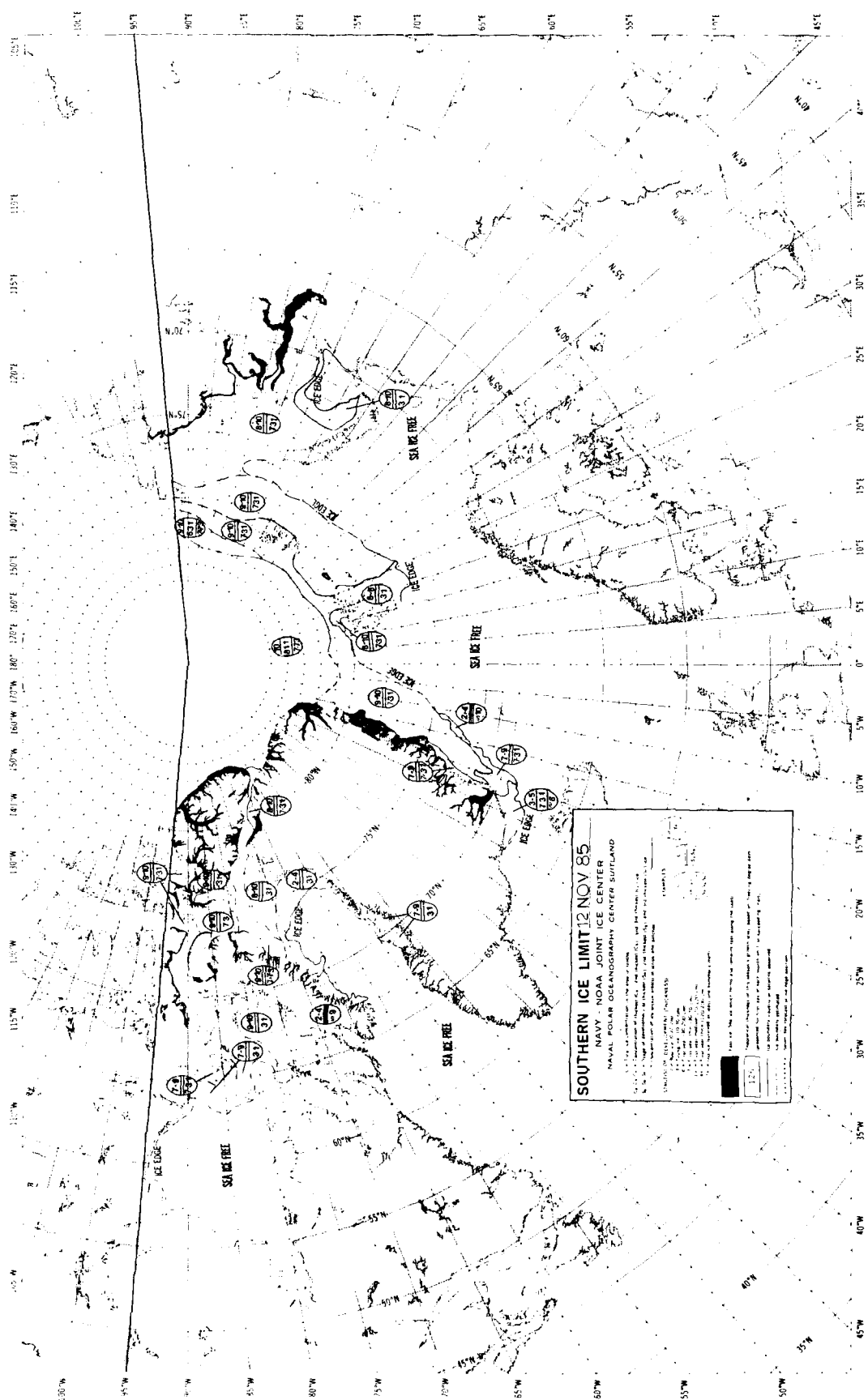
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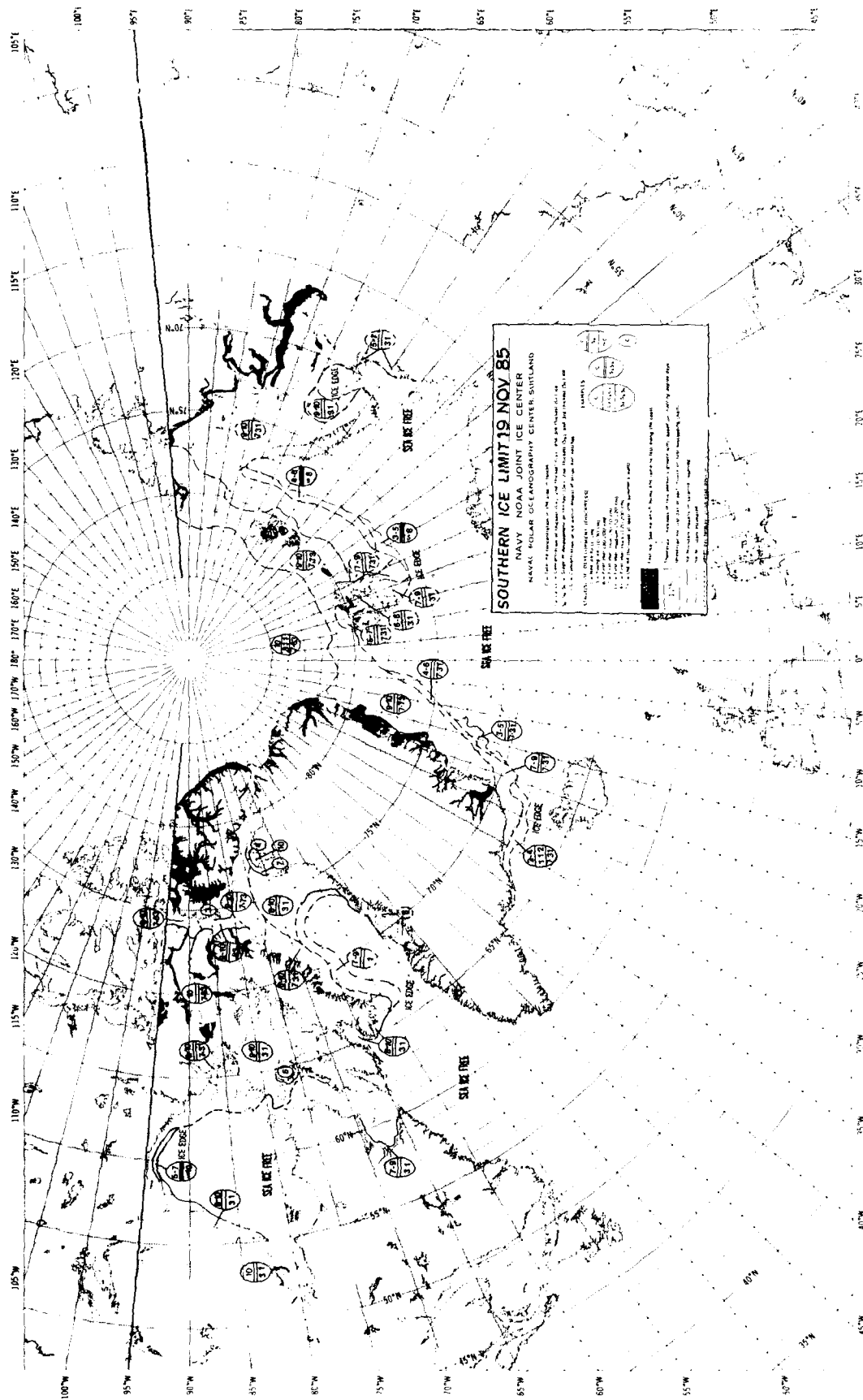
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1.37	1.37
1.38	1.38
1.39	1.39
1.40	1.40
1.41	1.41
1.42	1.42
1.43	1.43
1.44	1.44
1.45	1.45
1.46	1.46
1.47	1.47
1.48	1.48
1.49	1.49
1.50	1.50

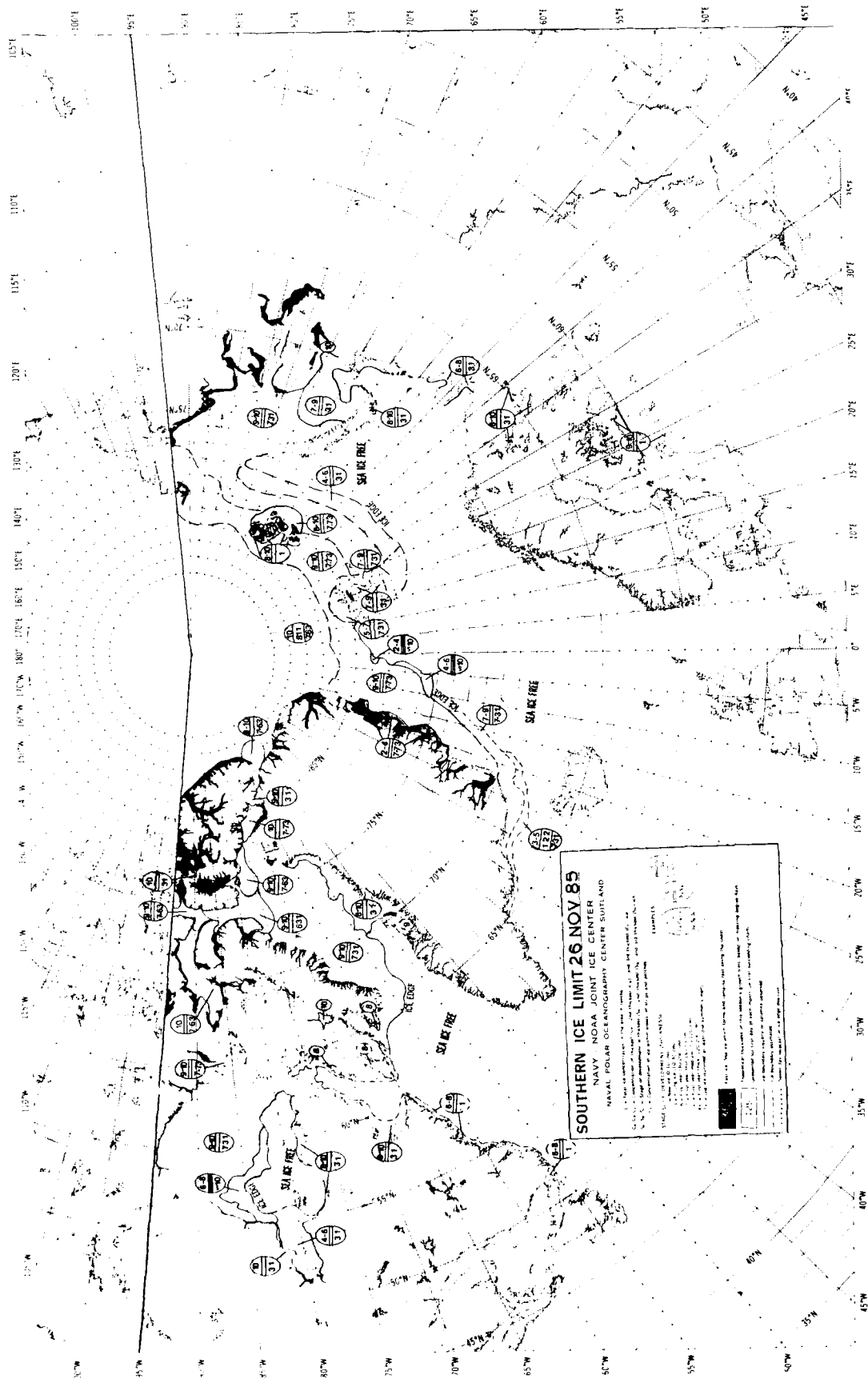












SOUTHERN ICE LIMIT 26 NOV 89
 NAVY NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER SUTLAND

1. This map was prepared by the Navy NOAA Joint Ice Center, Naval Polar Oceanography Center, SUTLAND, Alaska, and the Naval Oceanographic Office, SUTLAND, Alaska, from data received from the Navy NOAA Joint Ice Center, Naval Polar Oceanography Center, SUTLAND, Alaska, and the Naval Oceanographic Office, SUTLAND, Alaska.

2. This map is a representation of the ice limit for the month of November 1989. It is not a forecast of the ice limit for the month of November 1990.

3. This map is a representation of the ice limit for the month of November 1989. It is not a forecast of the ice limit for the month of November 1990.

4. This map is a representation of the ice limit for the month of November 1989. It is not a forecast of the ice limit for the month of November 1990.

5. This map is a representation of the ice limit for the month of November 1989. It is not a forecast of the ice limit for the month of November 1990.

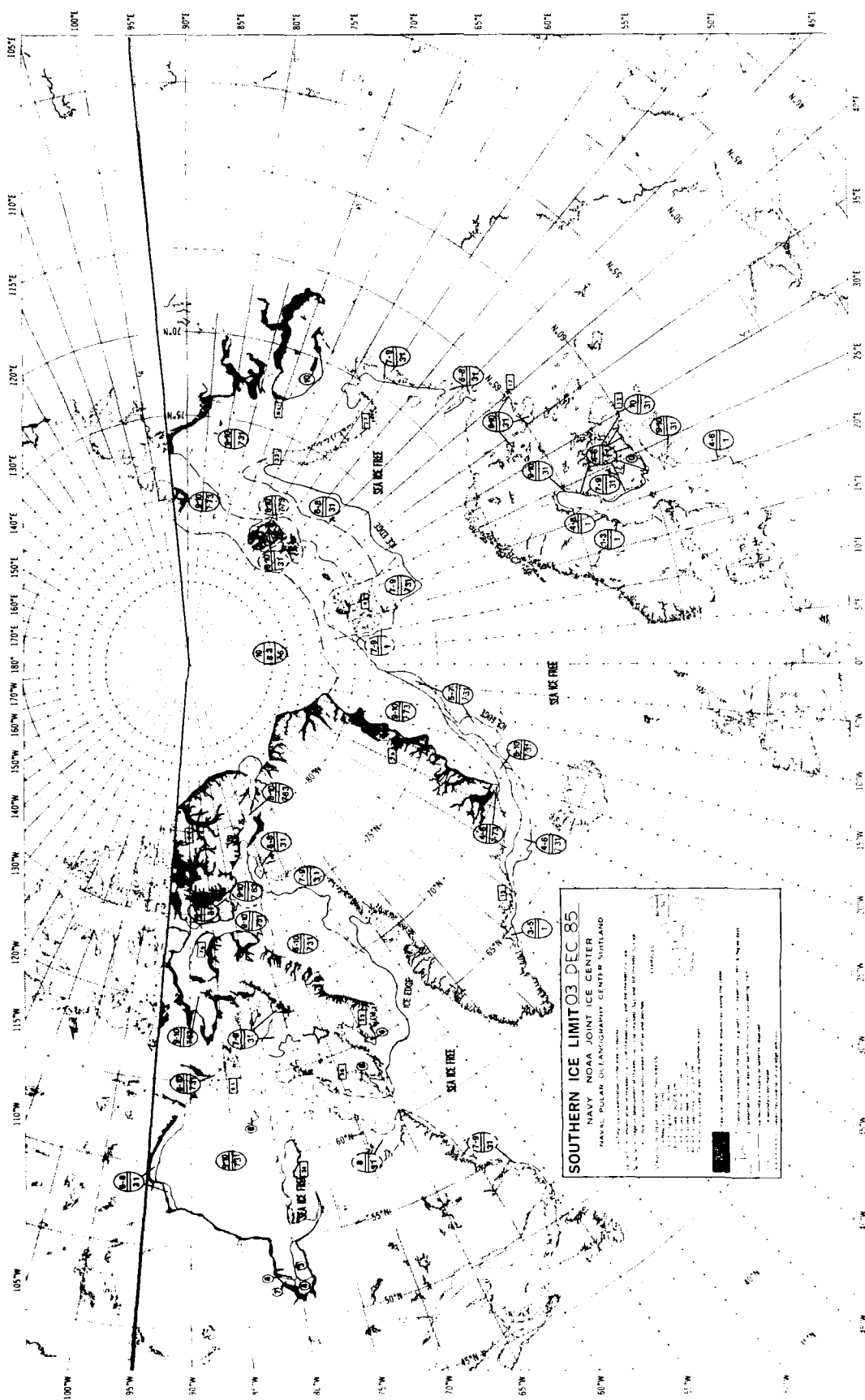
6. This map is a representation of the ice limit for the month of November 1989. It is not a forecast of the ice limit for the month of November 1990.

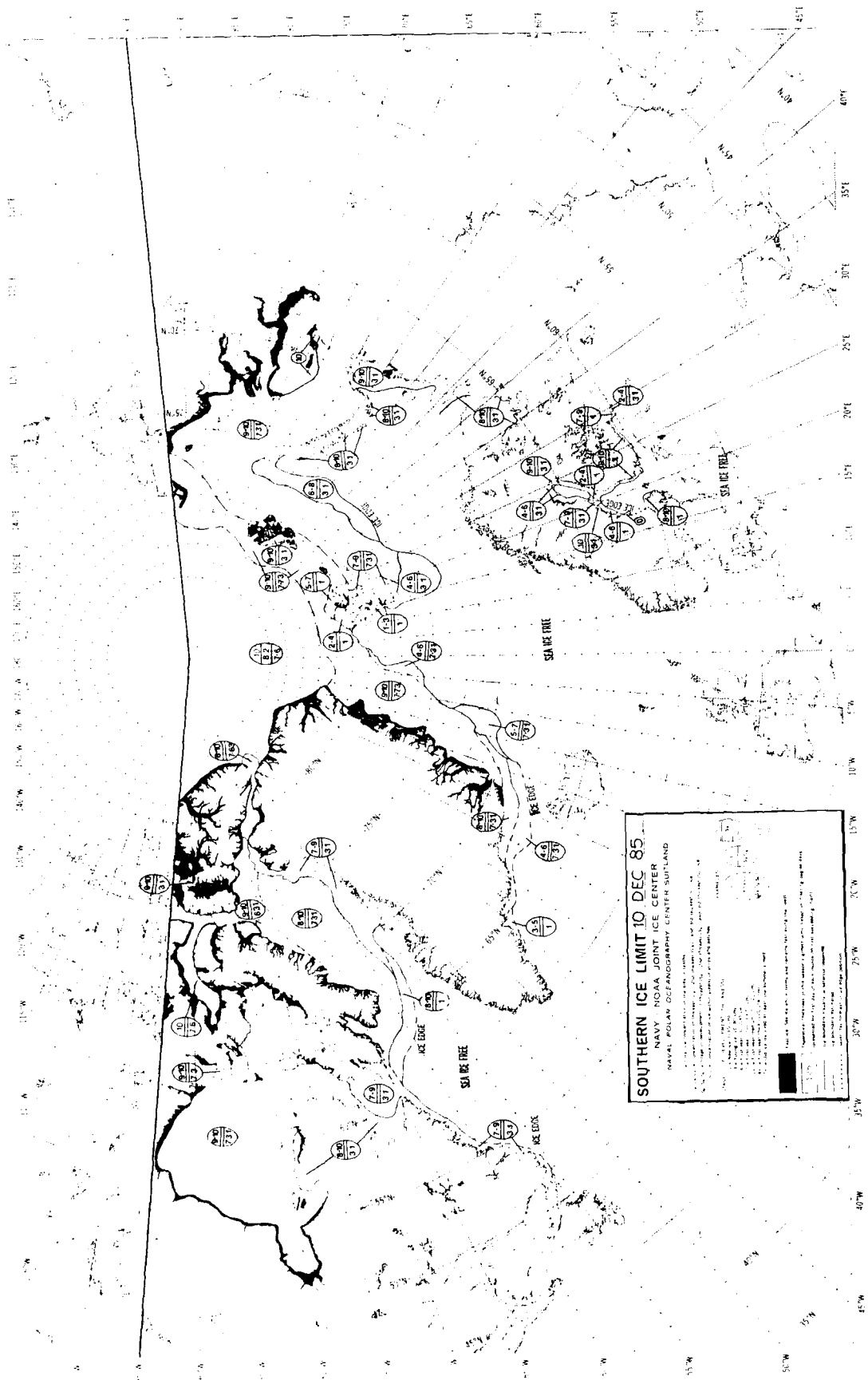
7. This map is a representation of the ice limit for the month of November 1989. It is not a forecast of the ice limit for the month of November 1990.

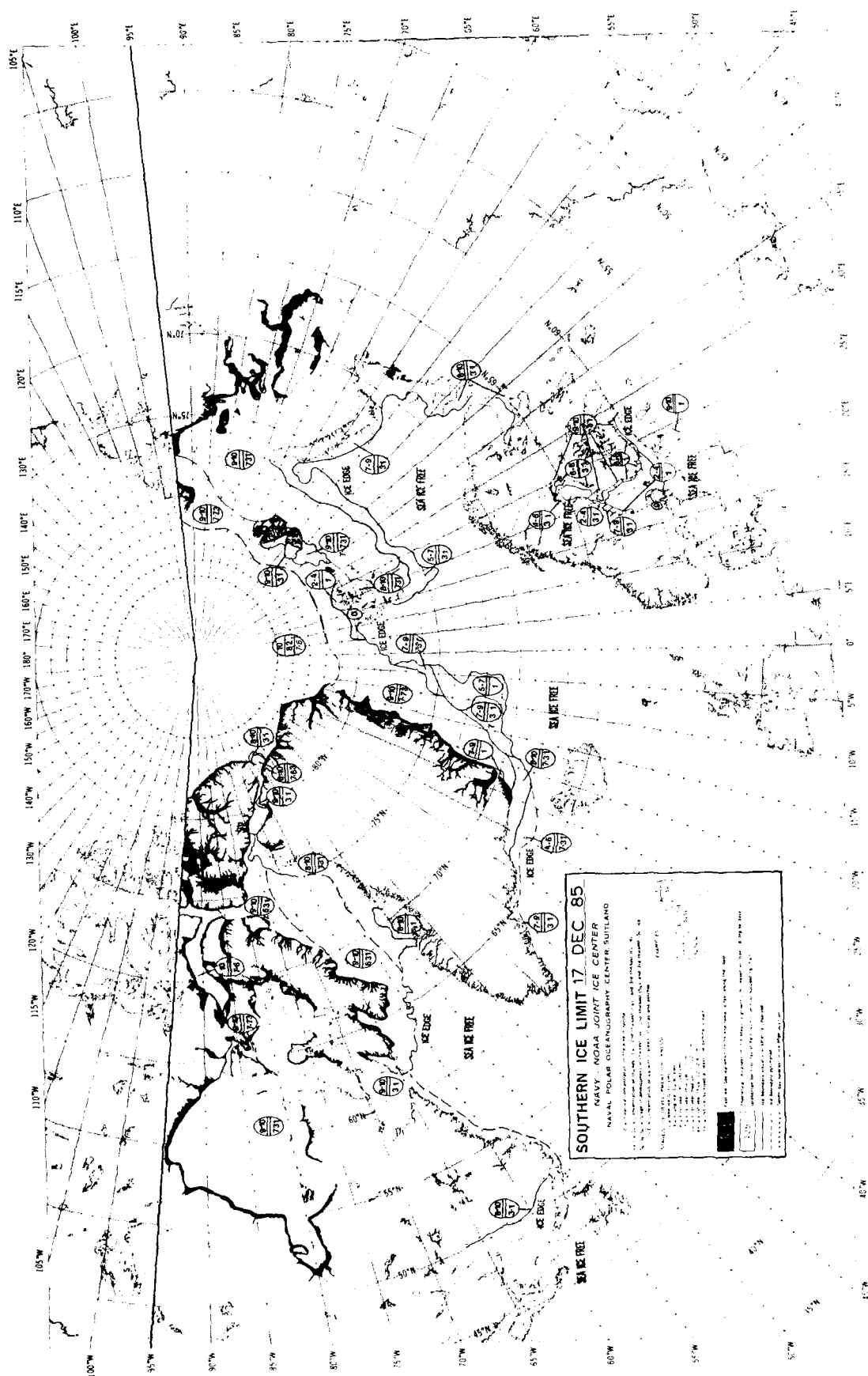
8. This map is a representation of the ice limit for the month of November 1989. It is not a forecast of the ice limit for the month of November 1990.

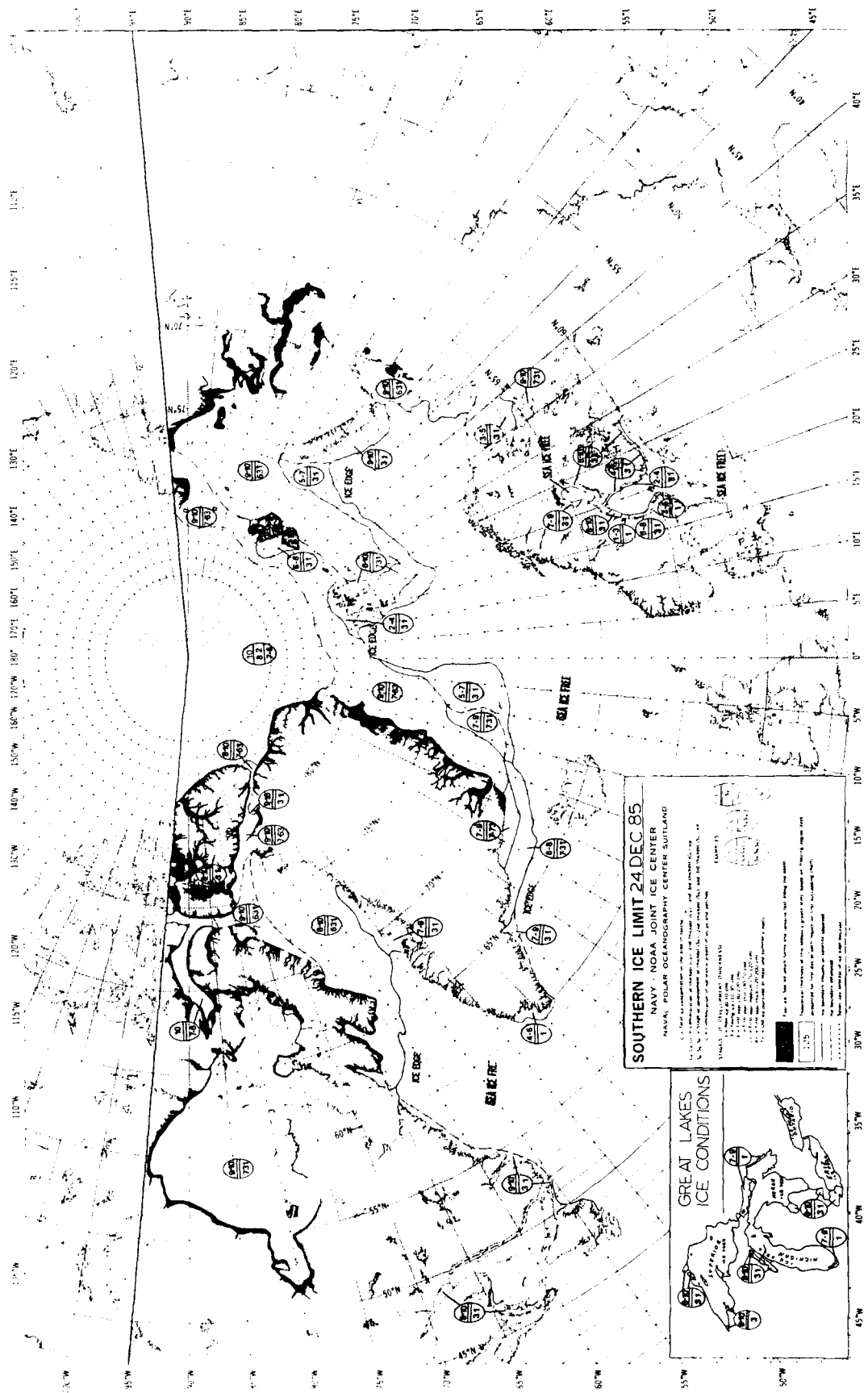
9. This map is a representation of the ice limit for the month of November 1989. It is not a forecast of the ice limit for the month of November 1990.

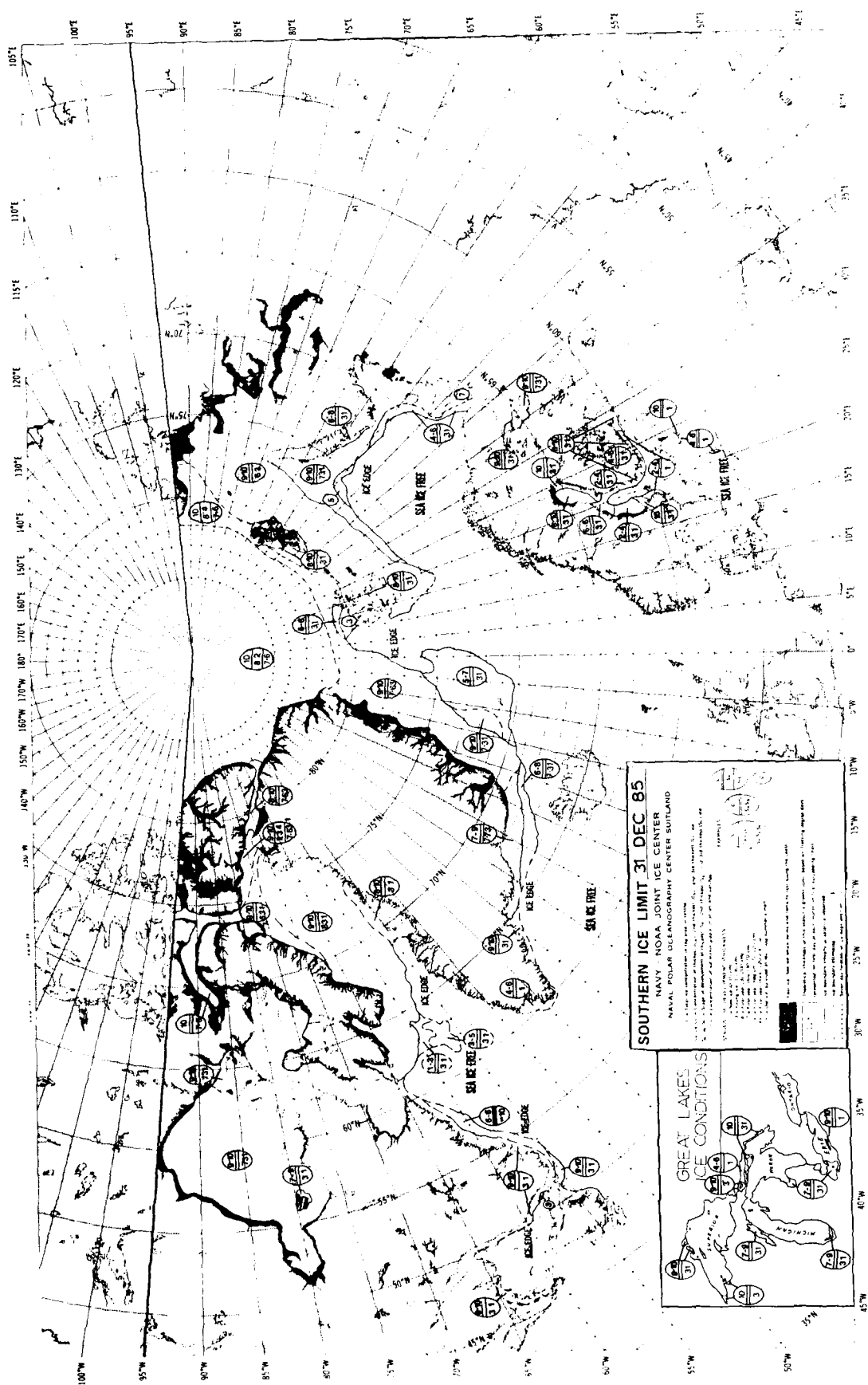
10. This map is a representation of the ice limit for the month of November 1989. It is not a forecast of the ice limit for the month of November 1990.

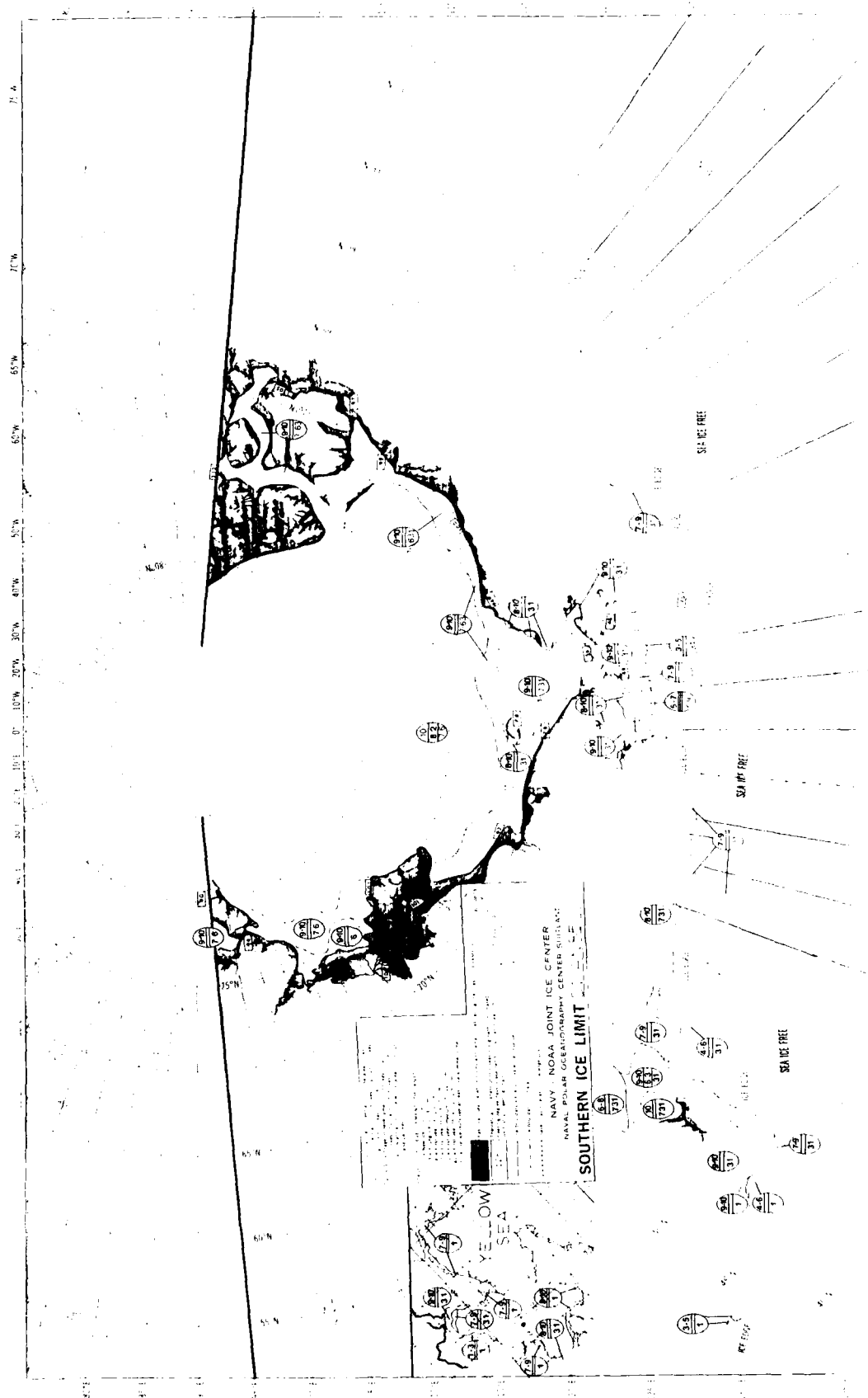


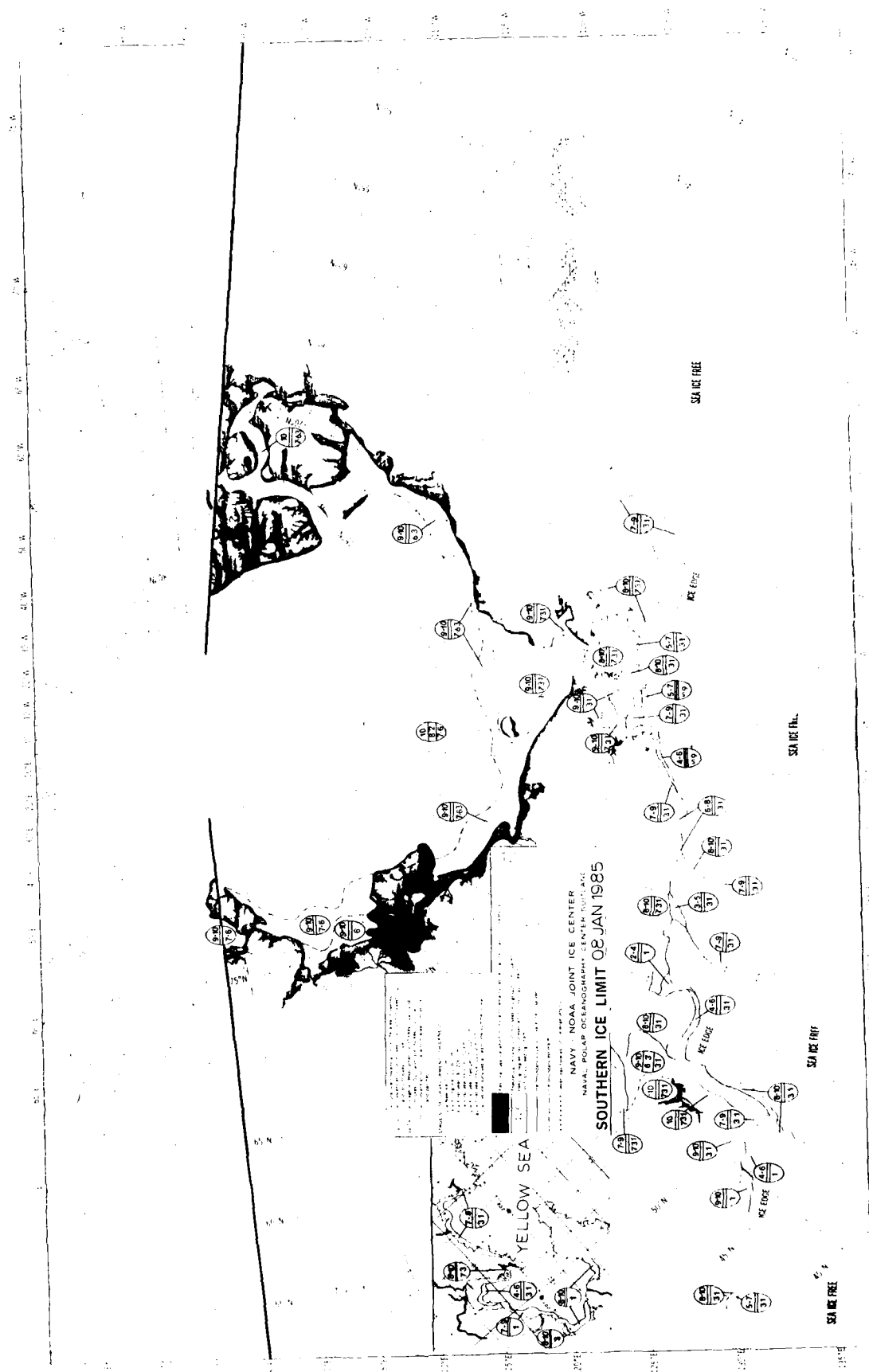


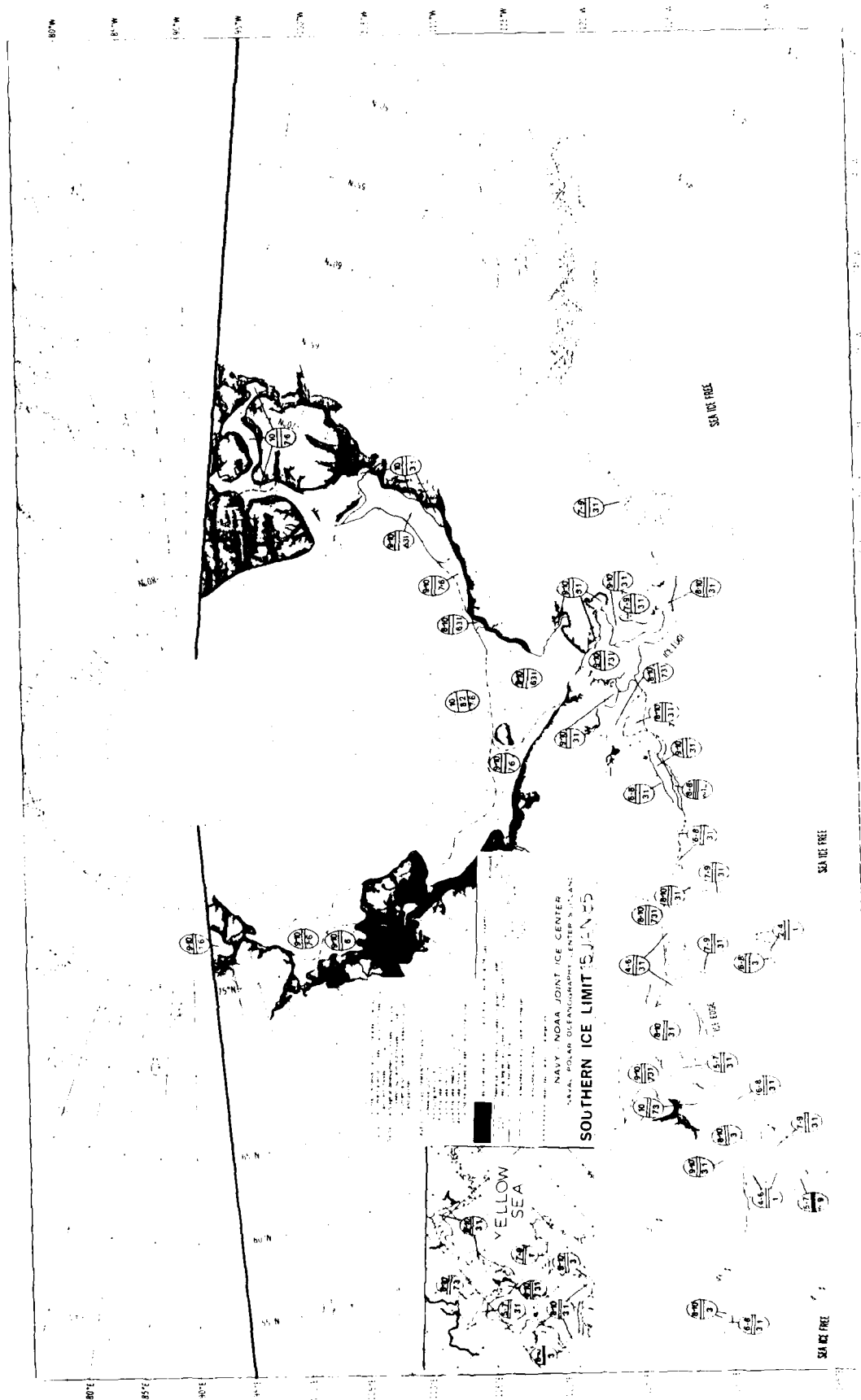


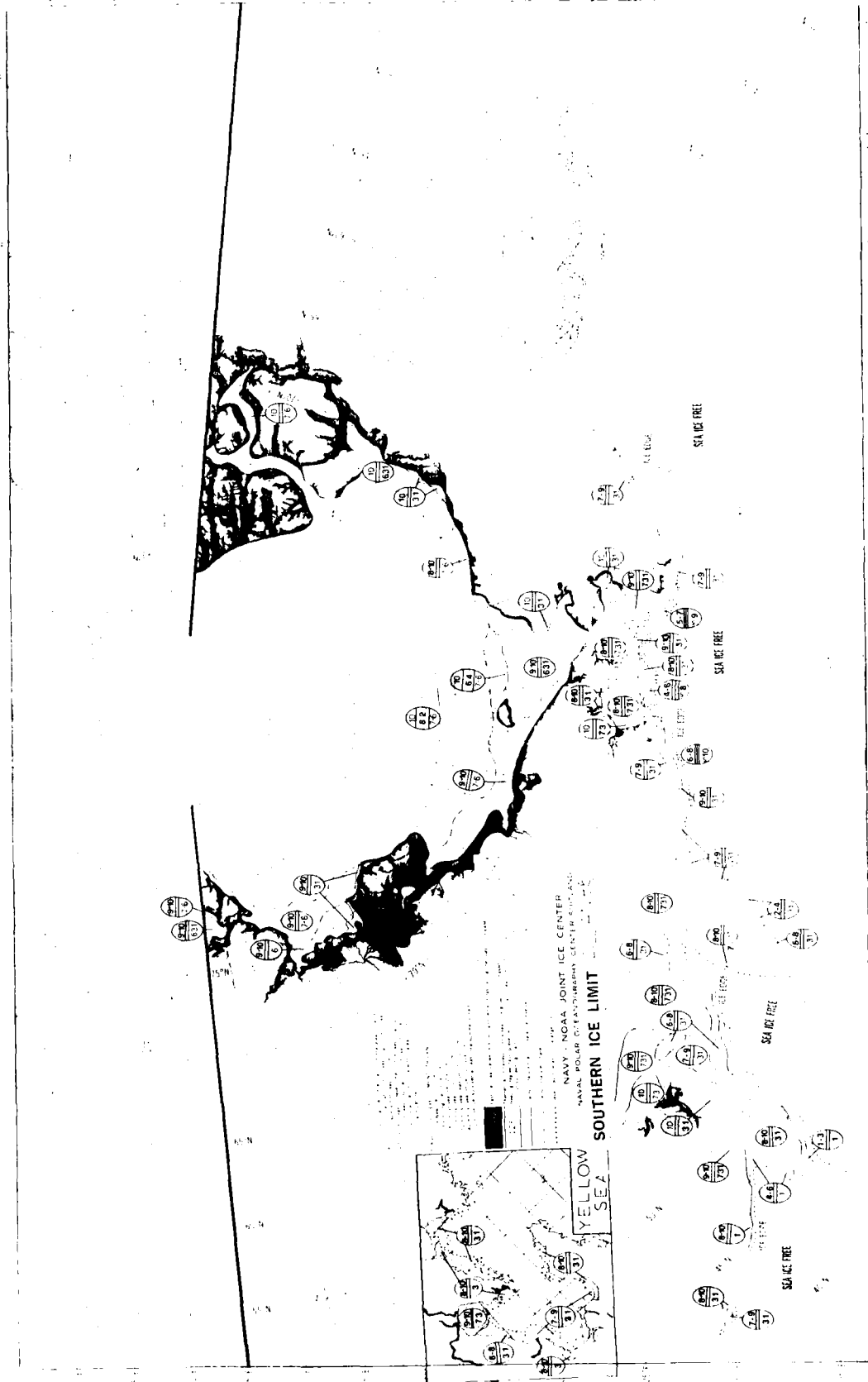


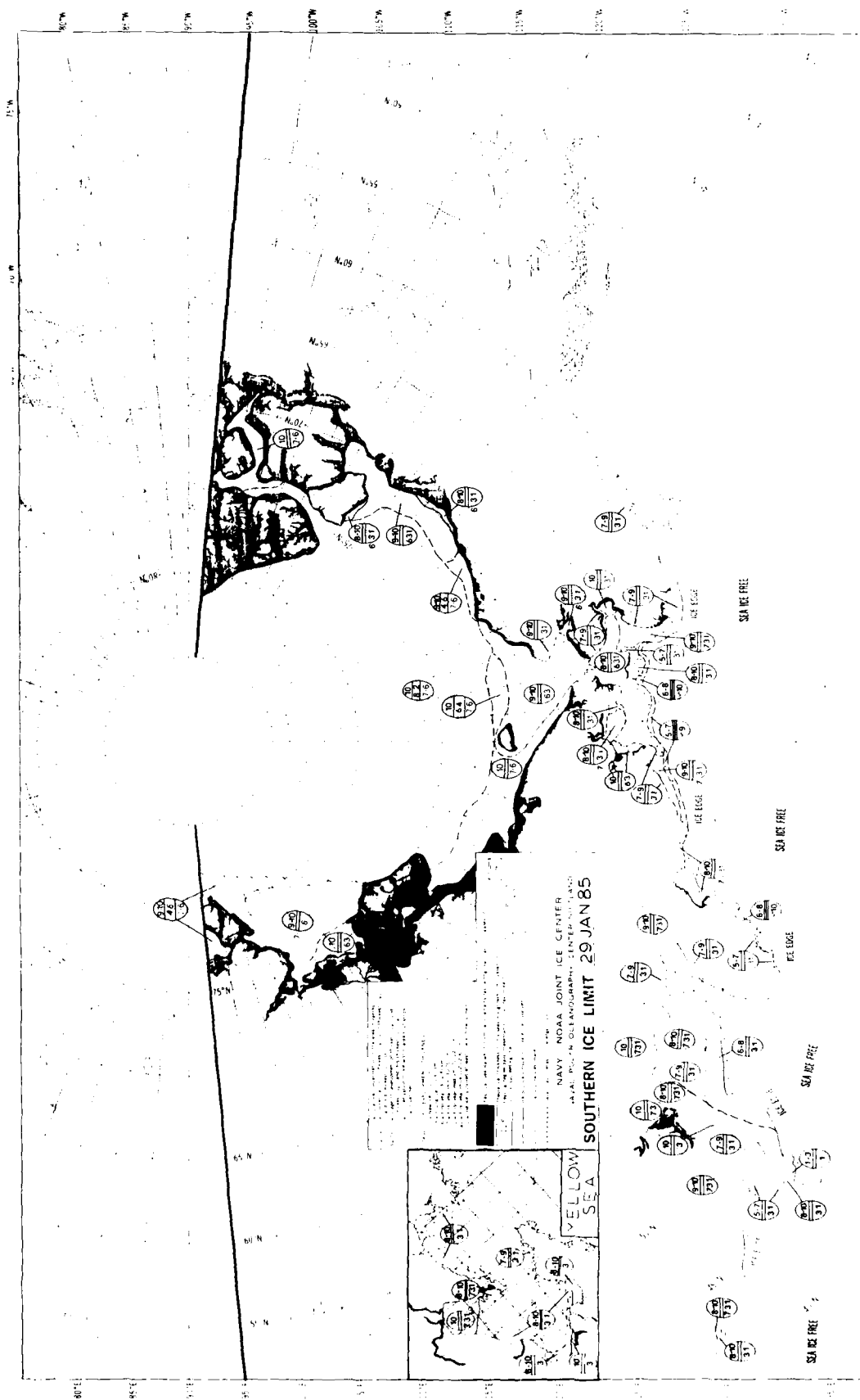


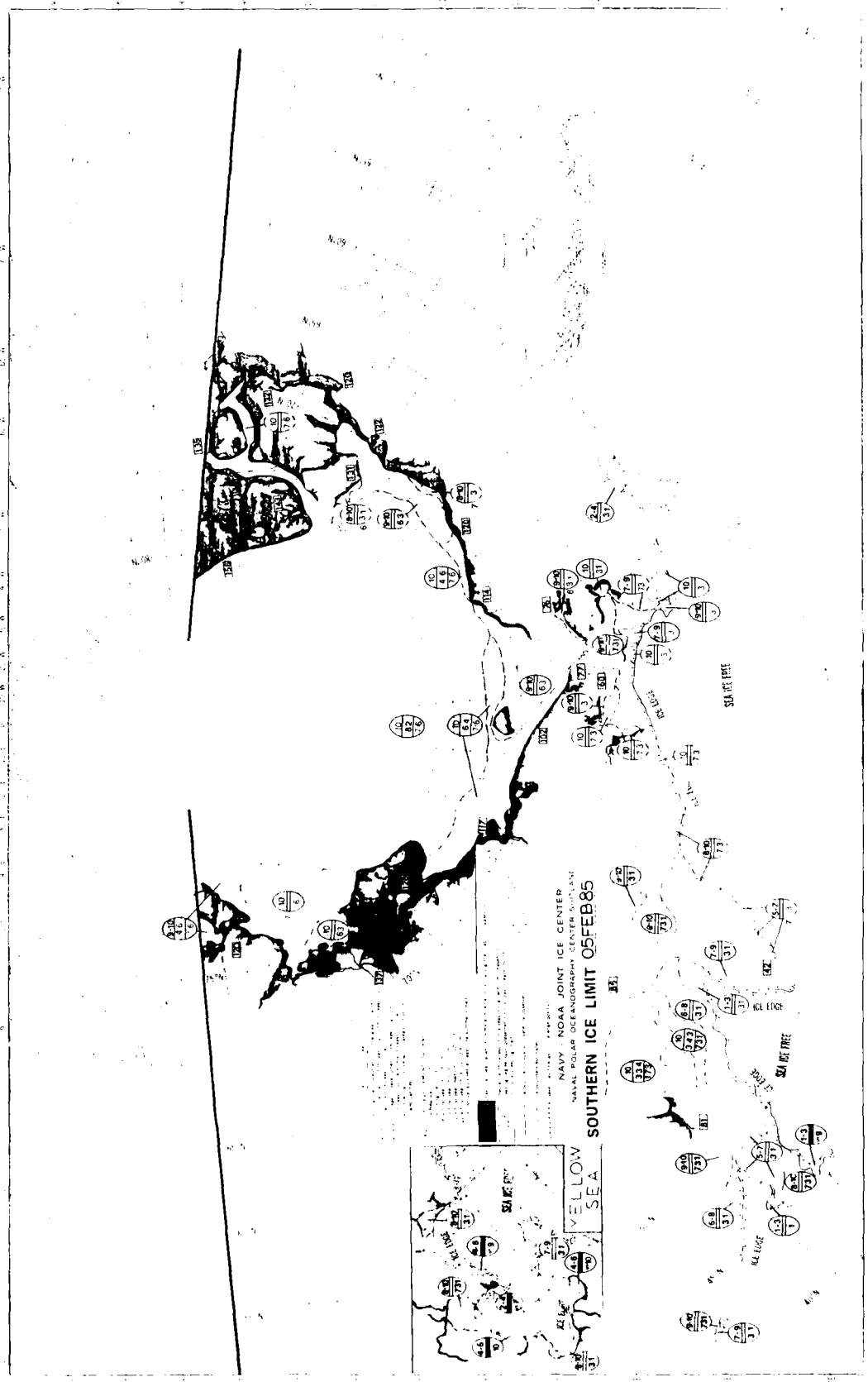




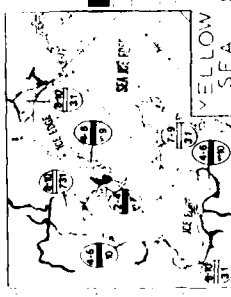


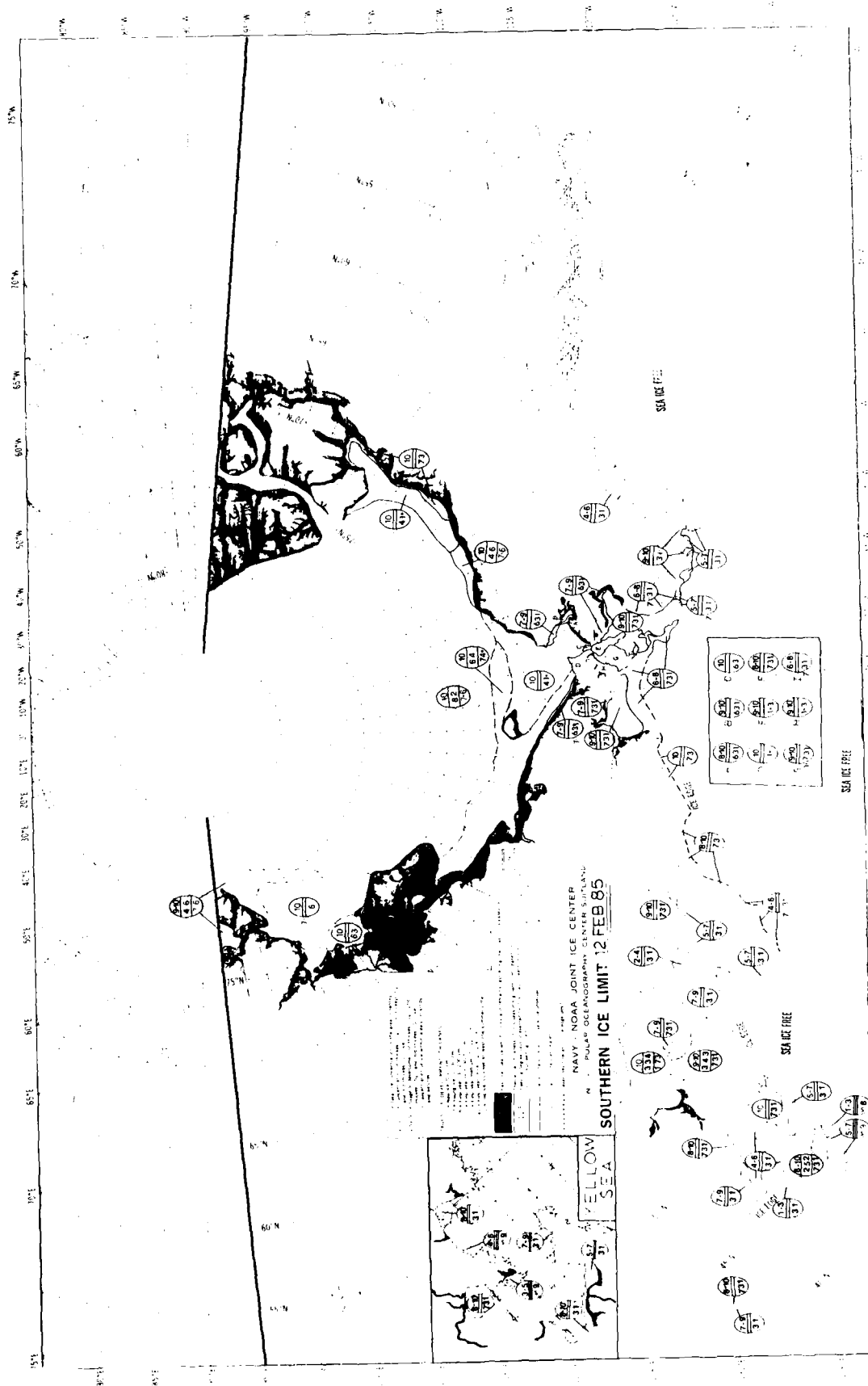


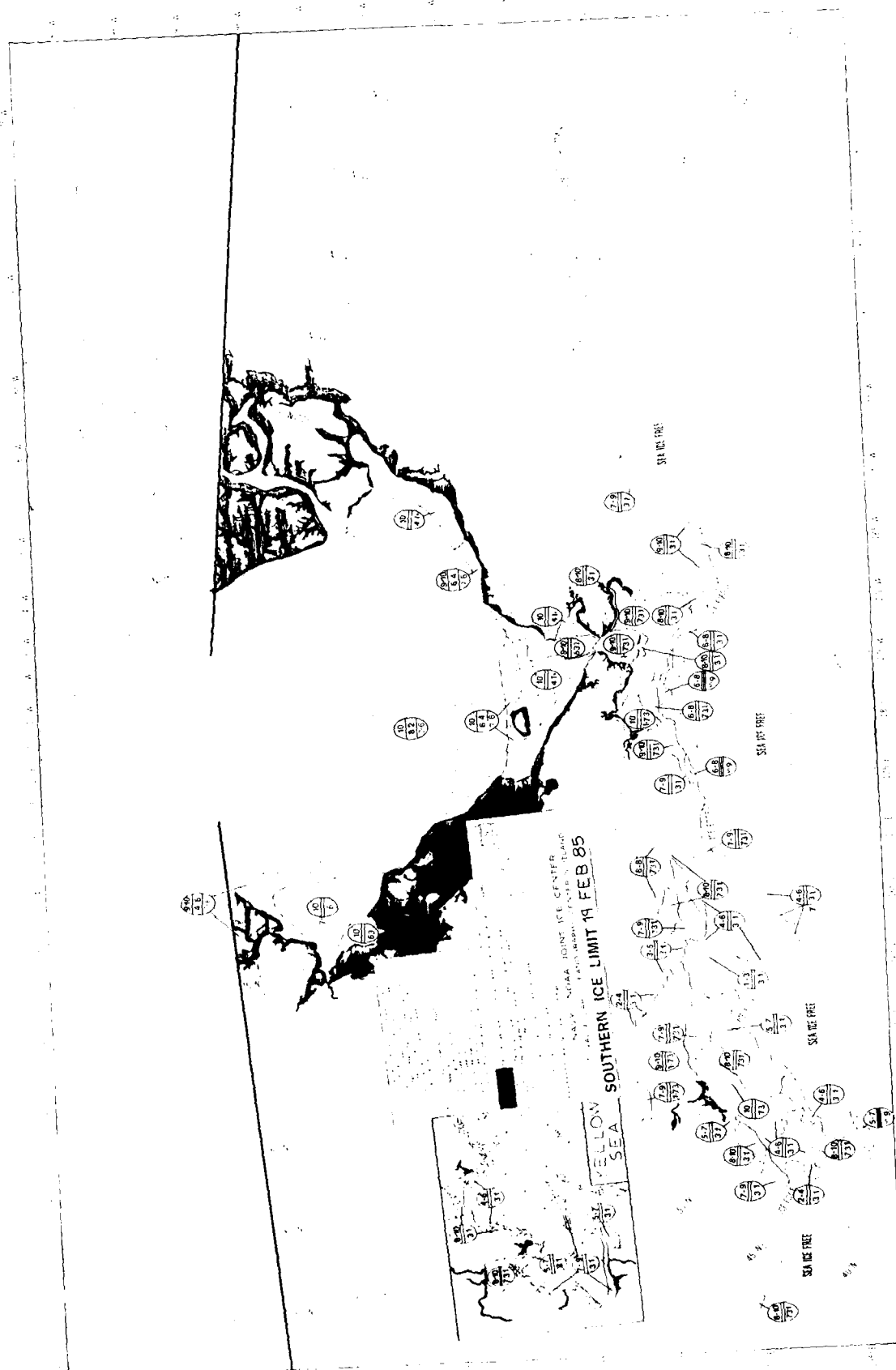


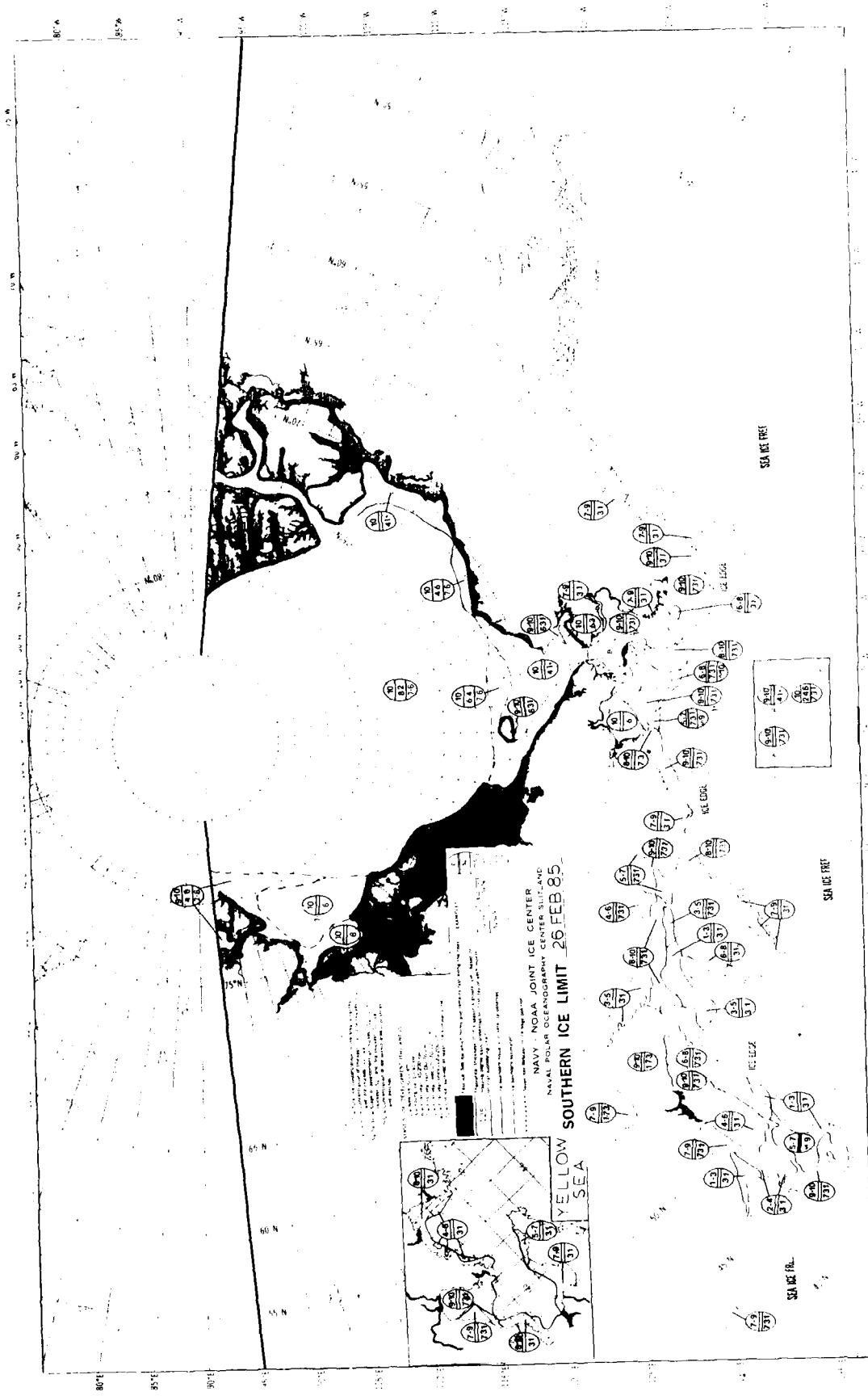


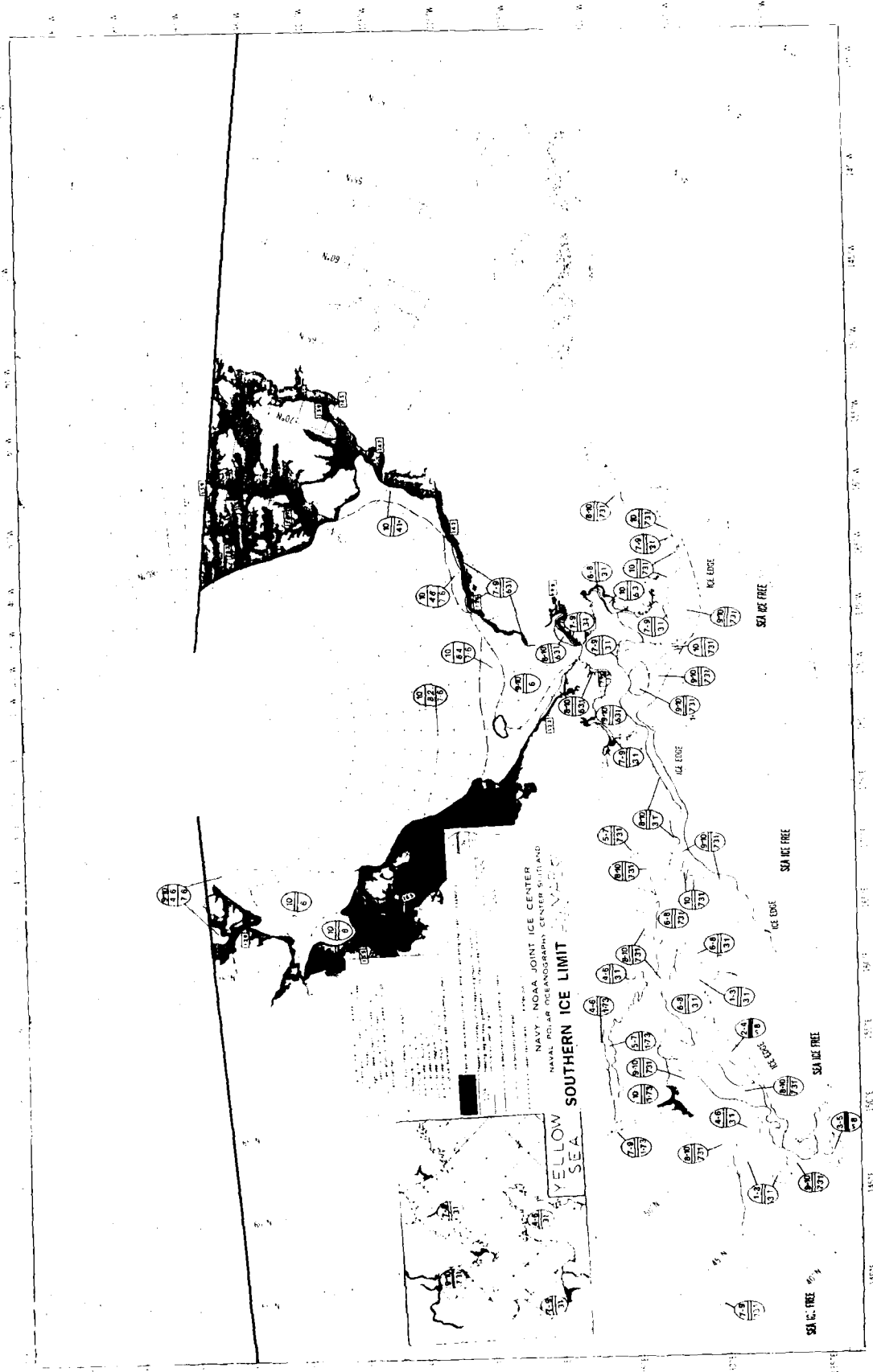
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHIC CENTER
SOUTHERN ICE LIMIT 05FEB85

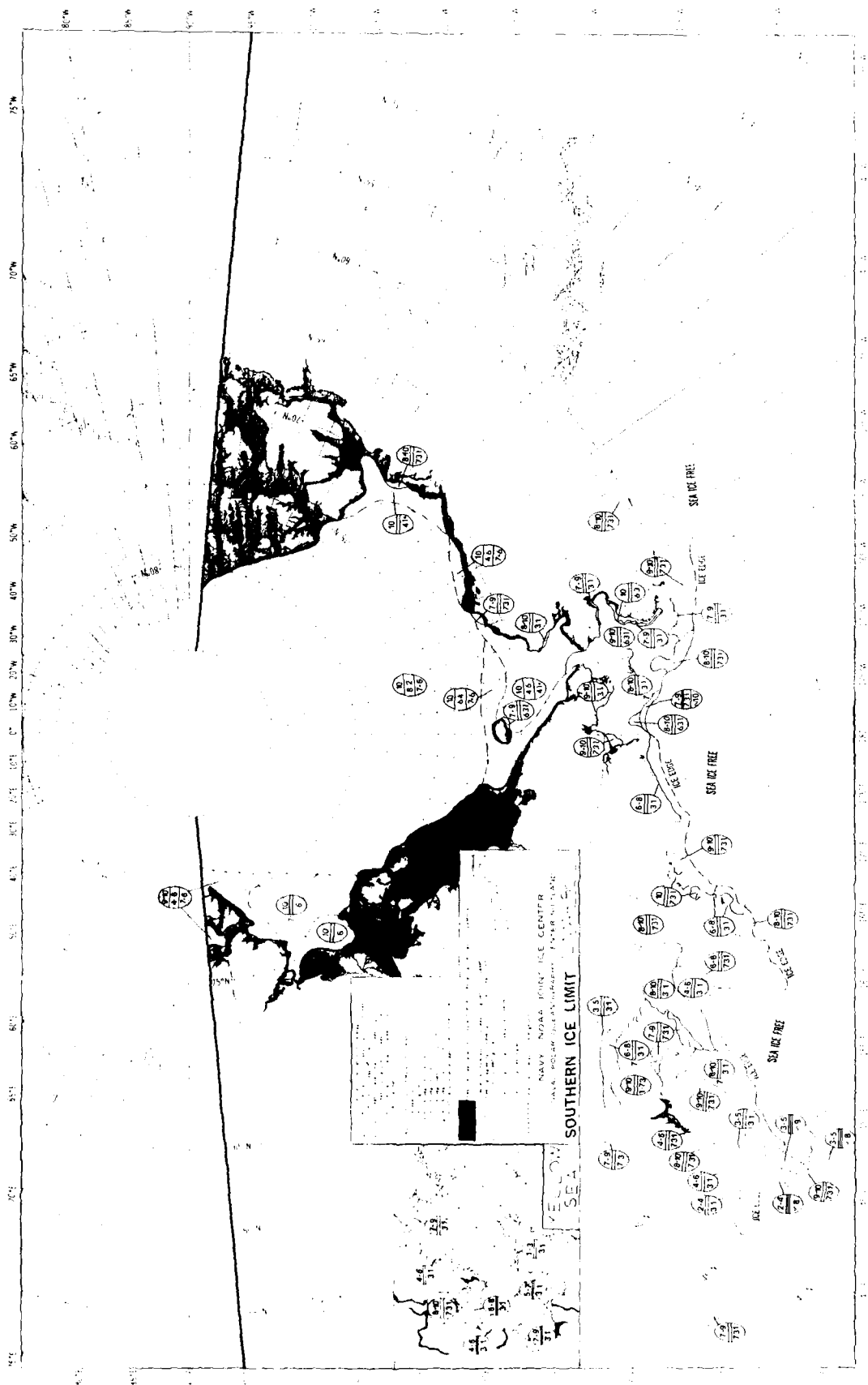


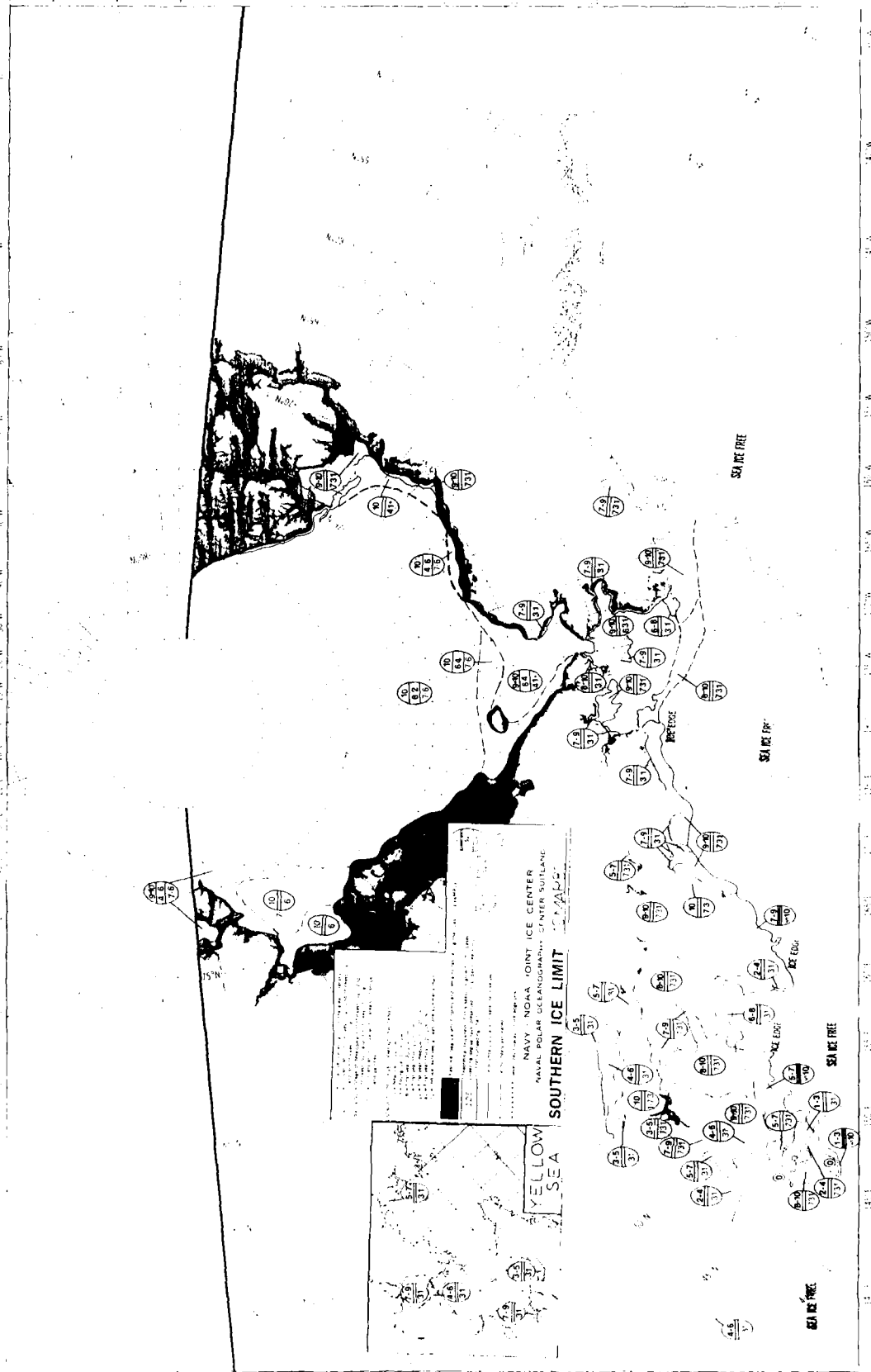


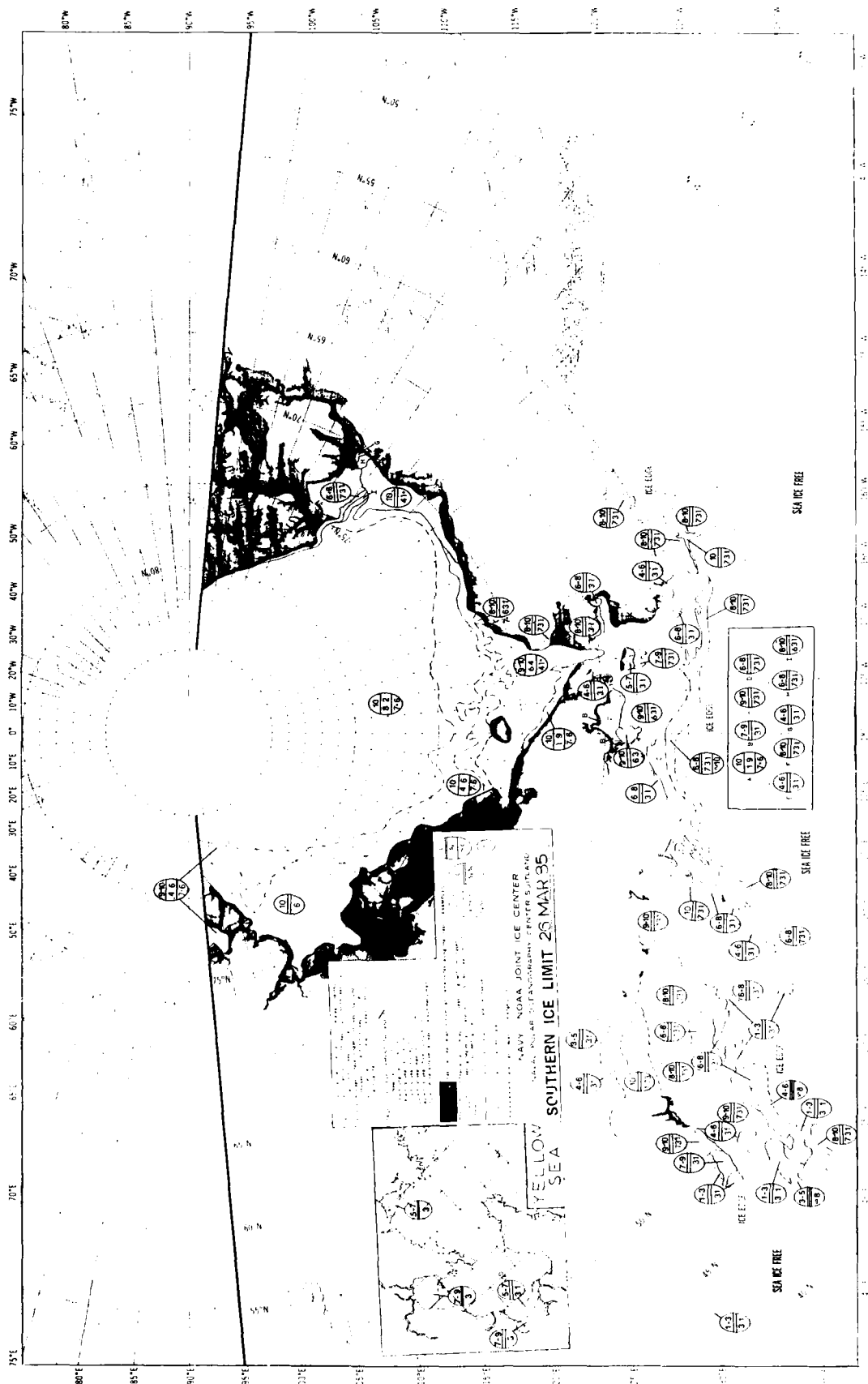


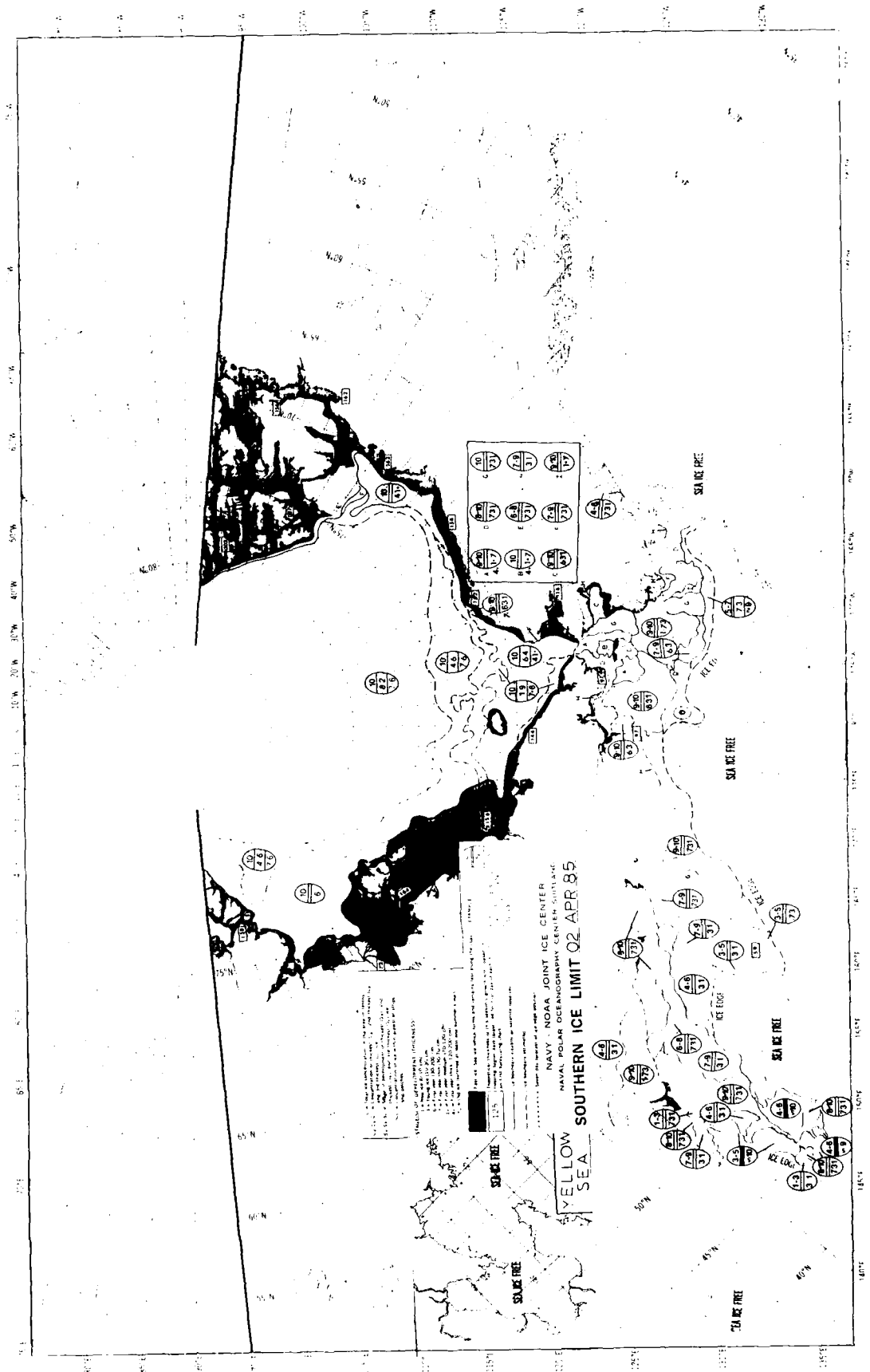


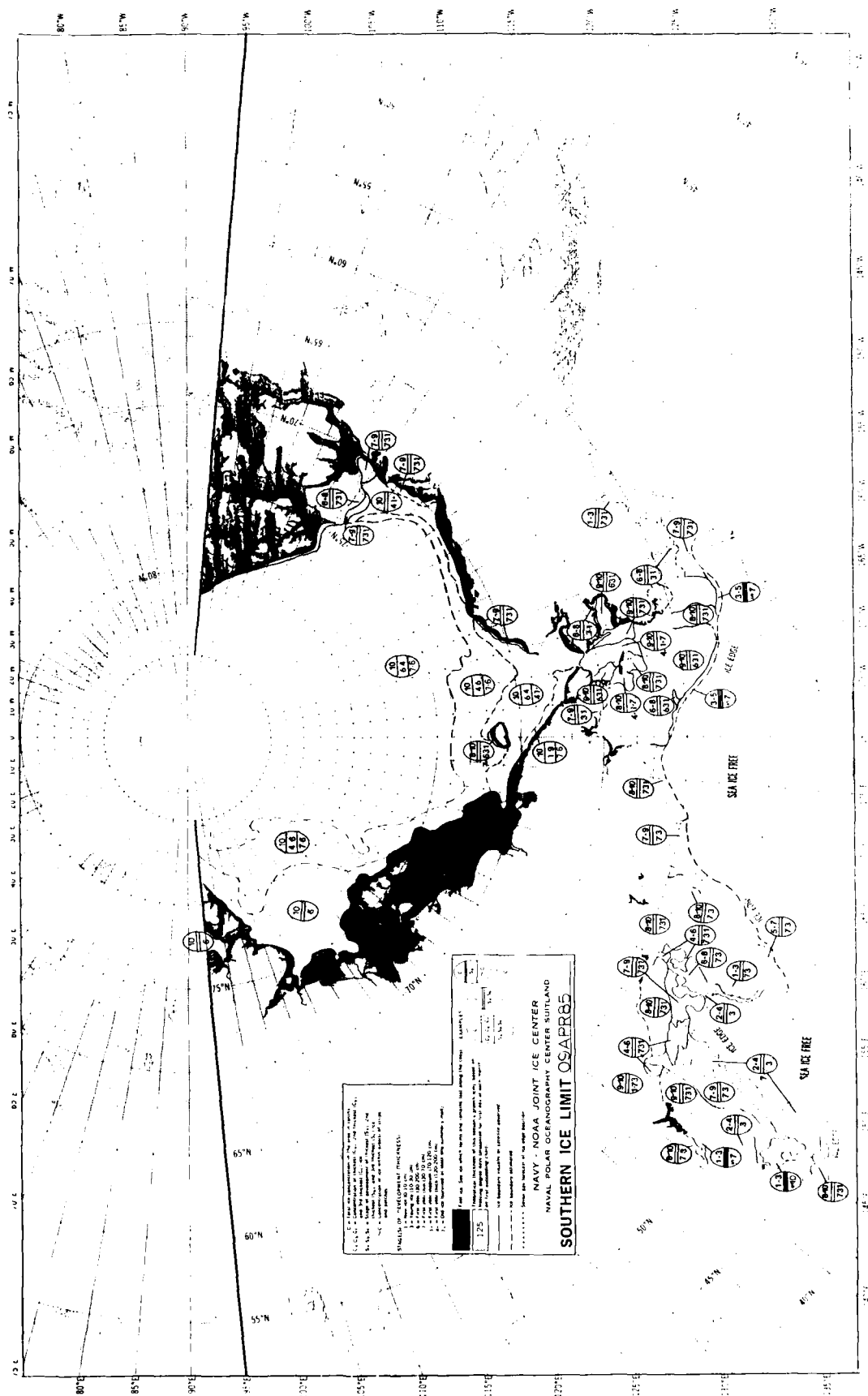


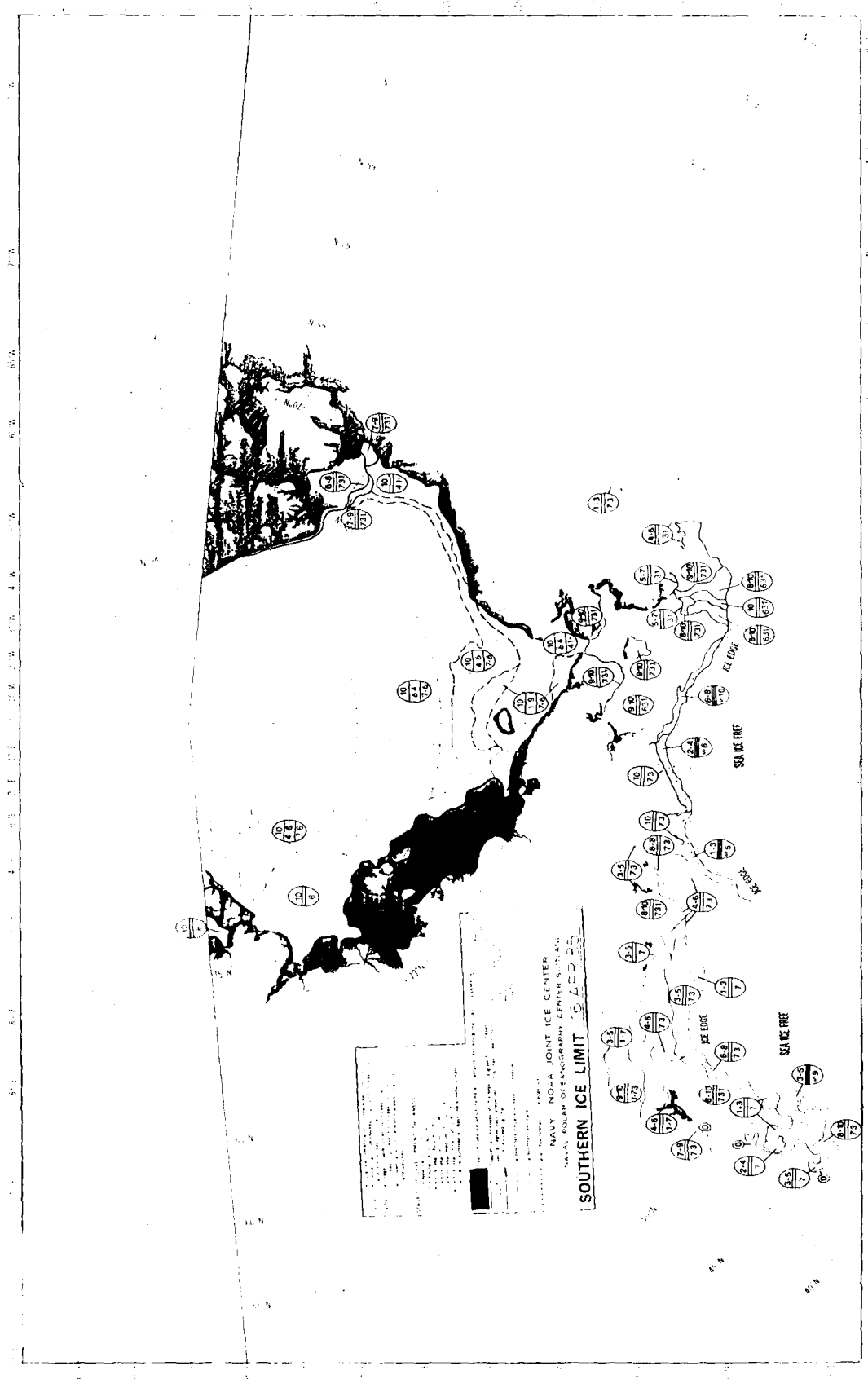




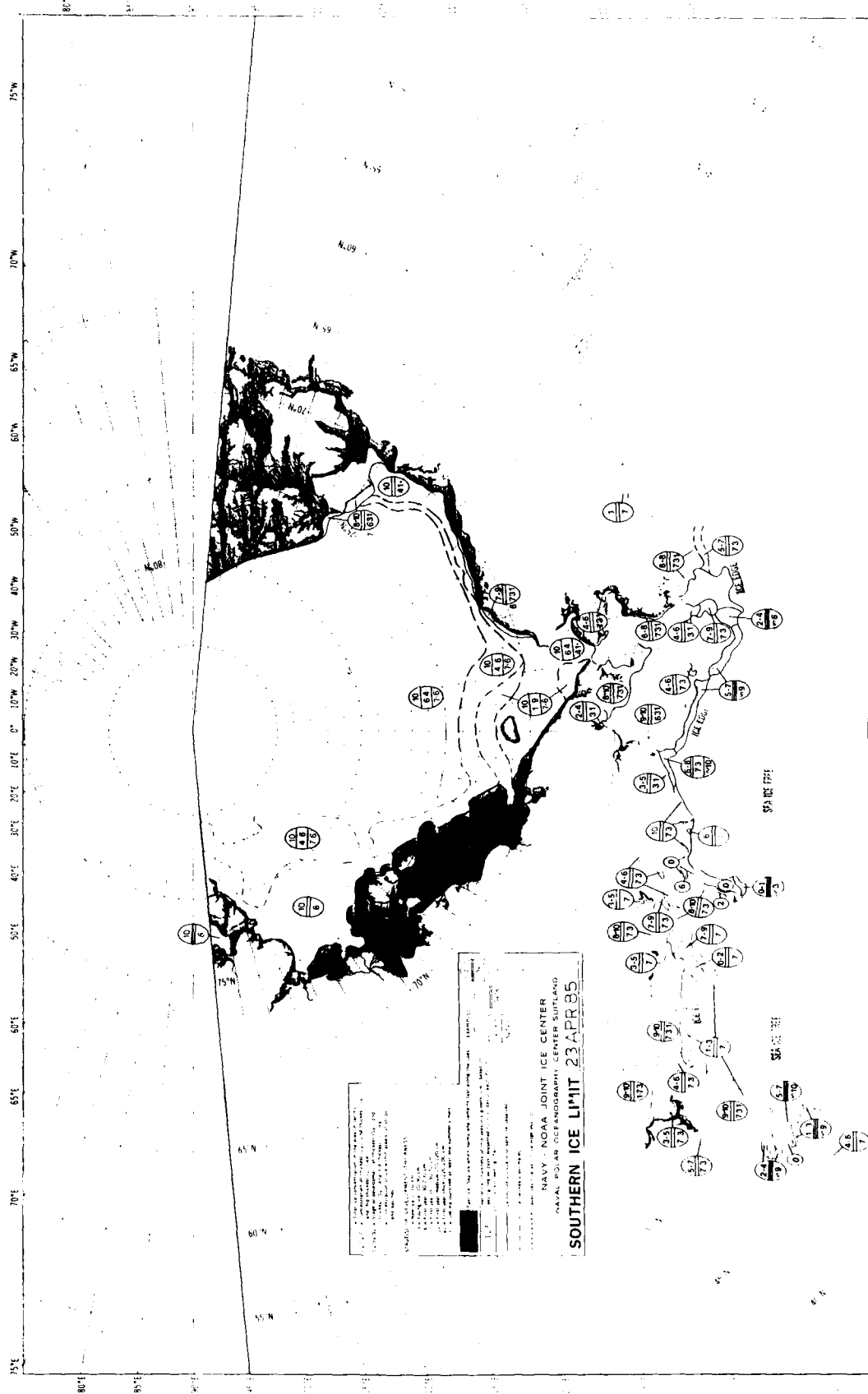


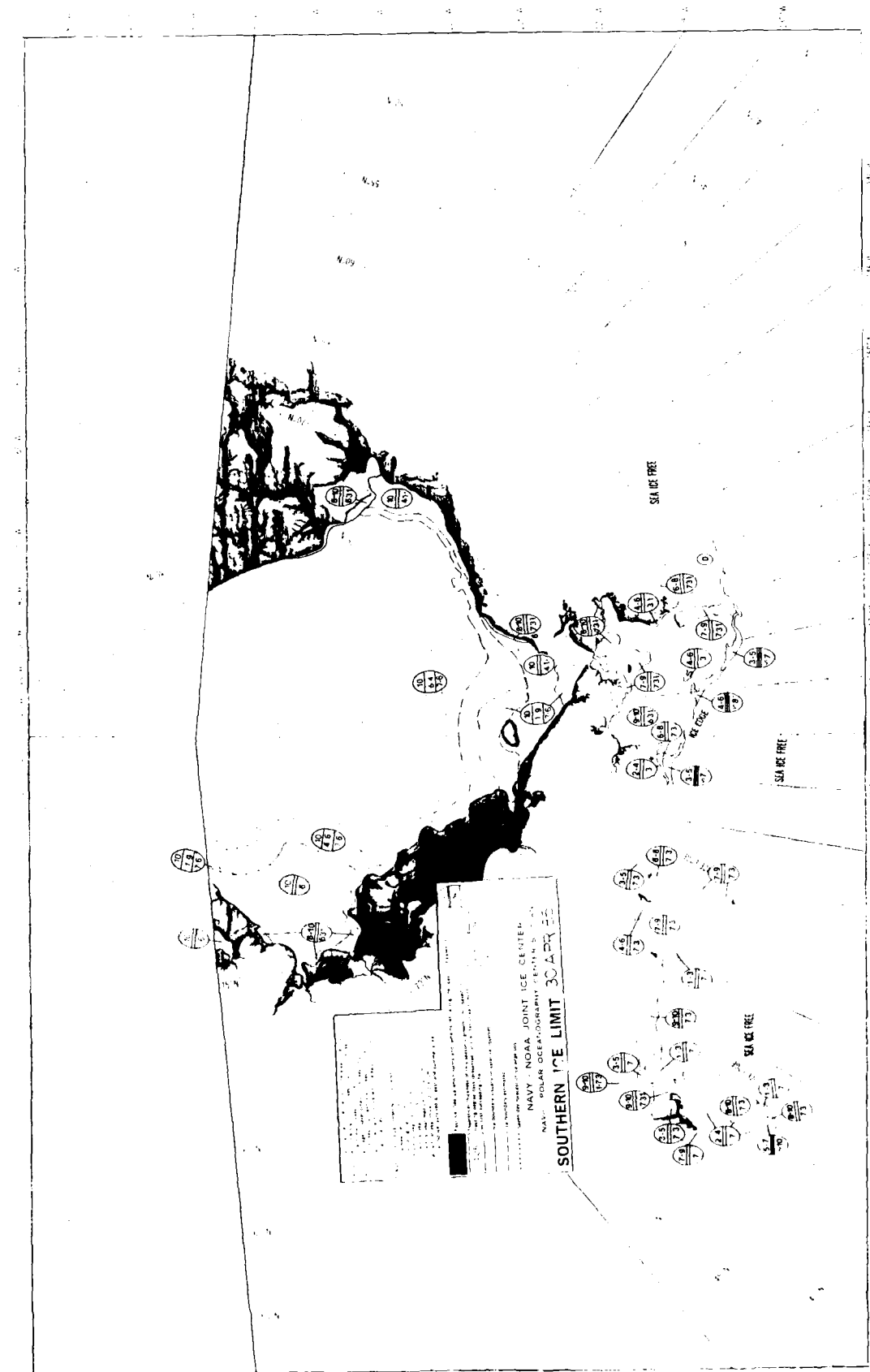


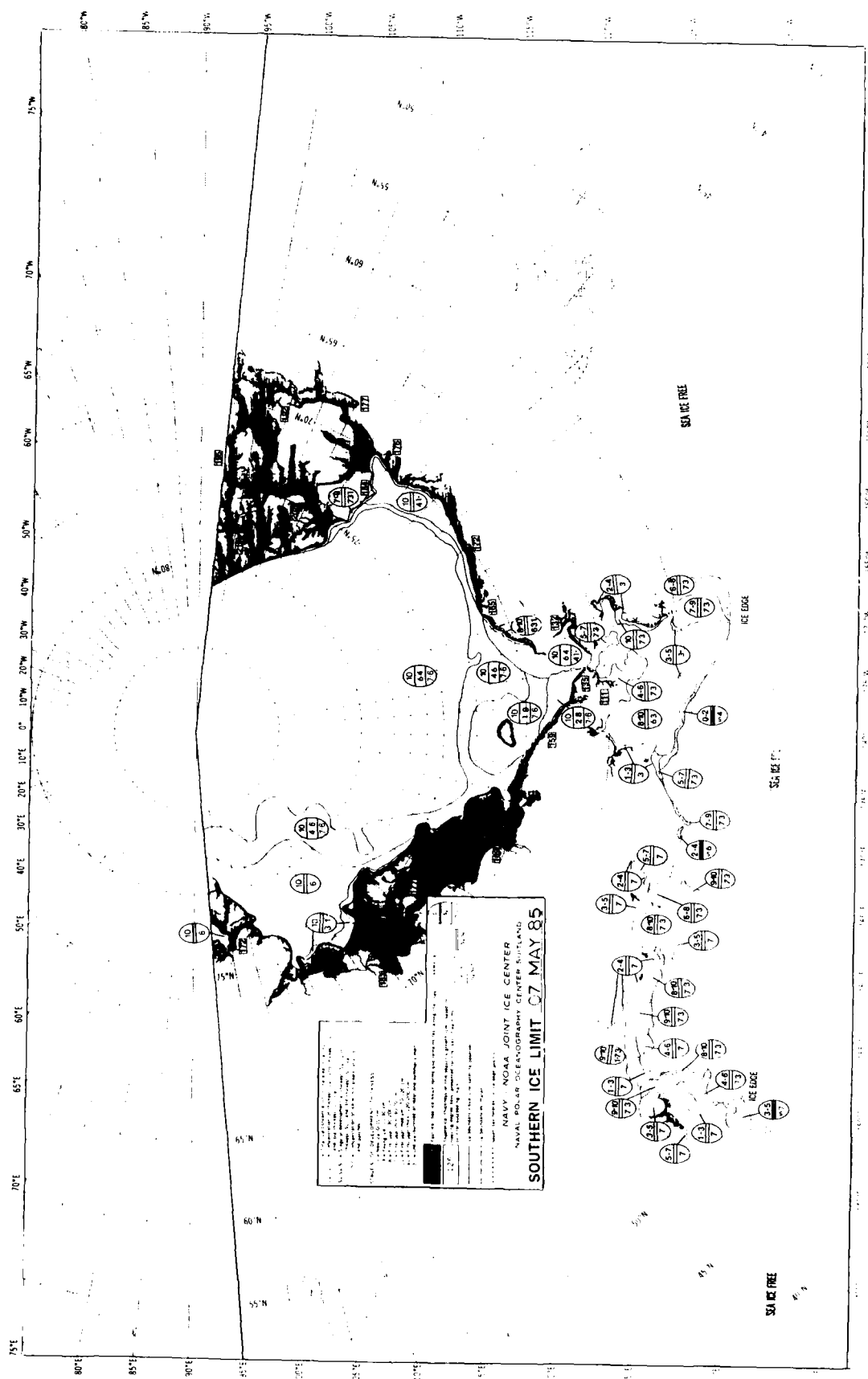


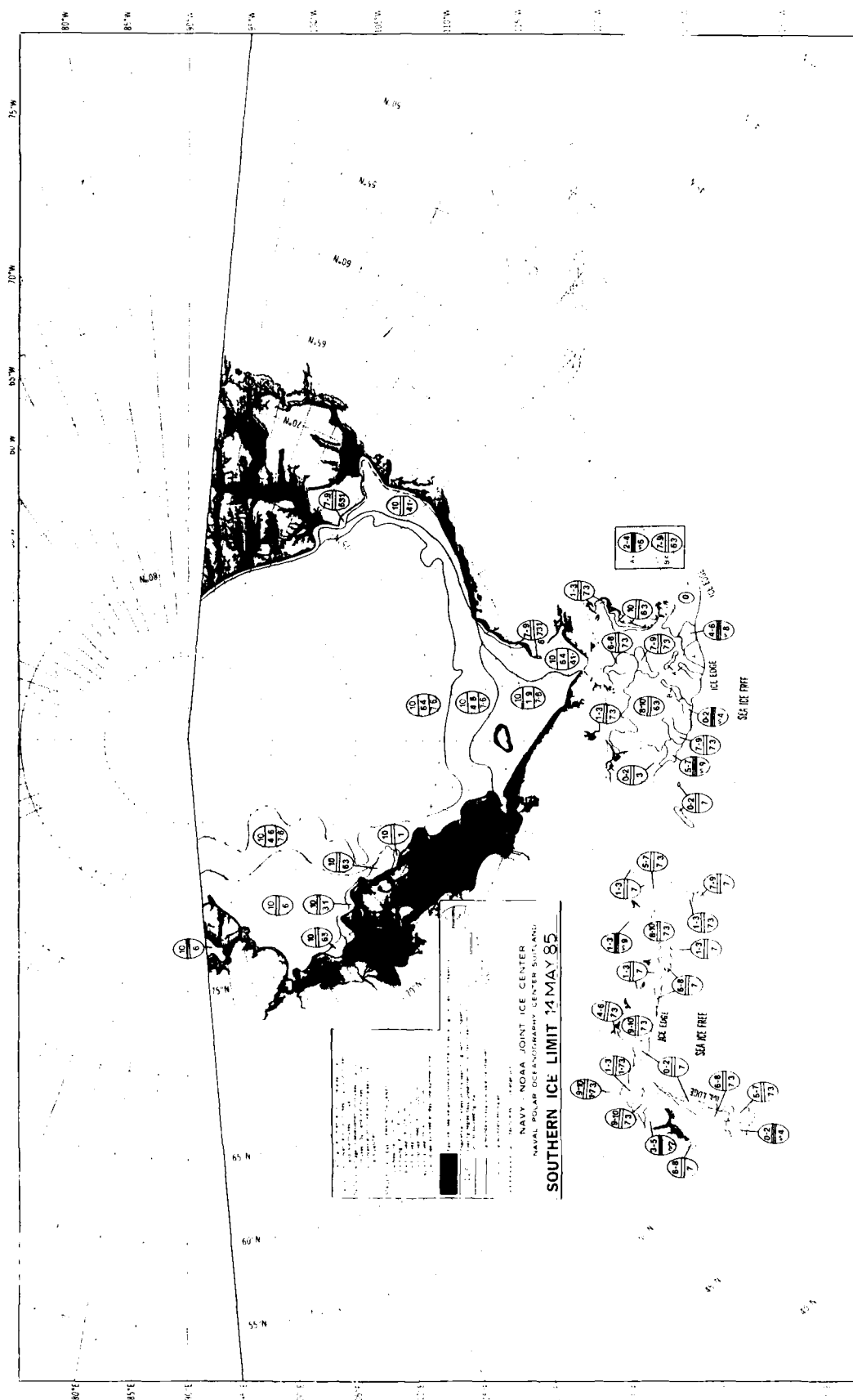


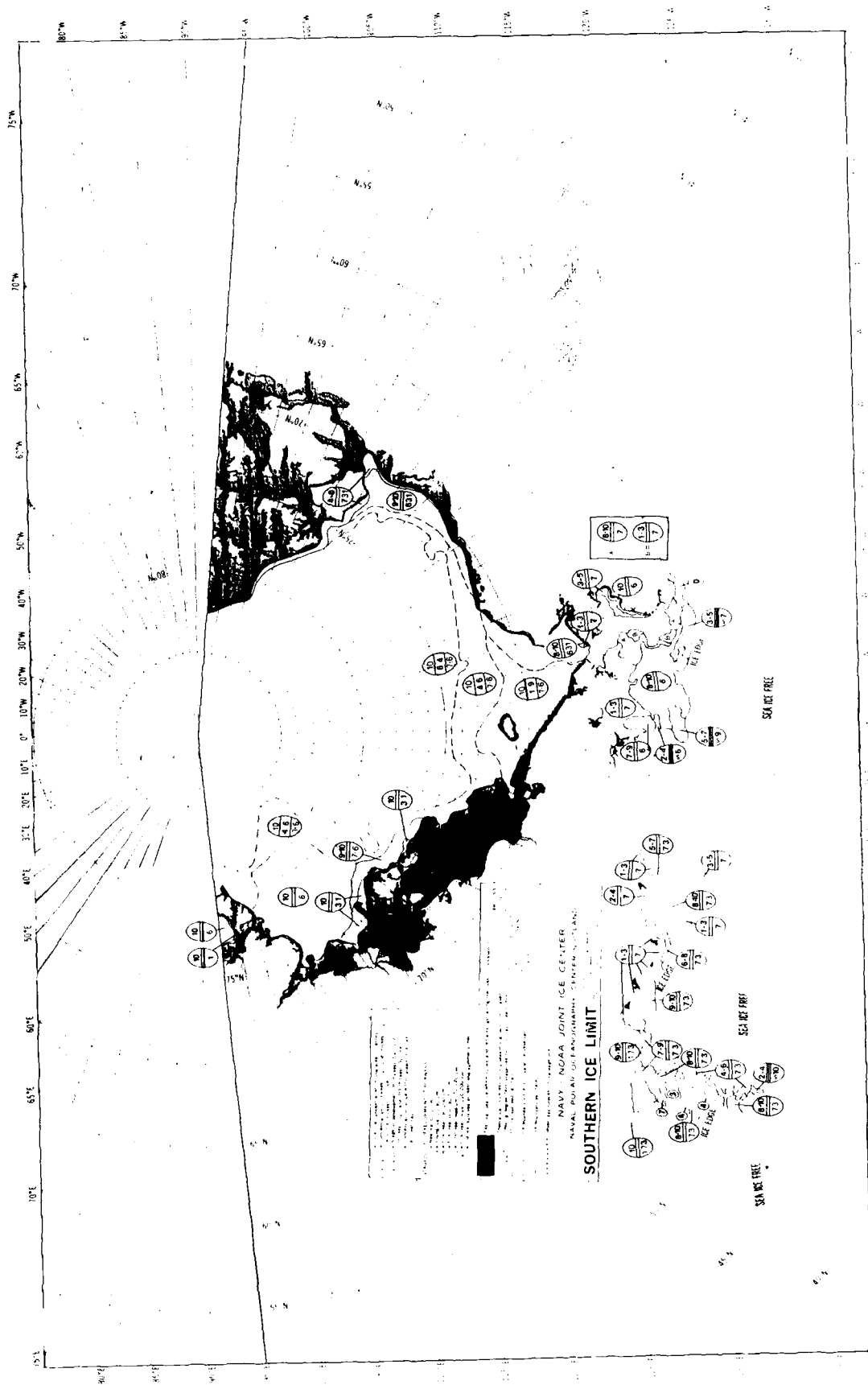
NAVY JOINT ICE CENTER
NAVAL POLAR OBSERVATION CENTER, U.S.N.A.
SOUTHERN ICE LIMIT 64°25'









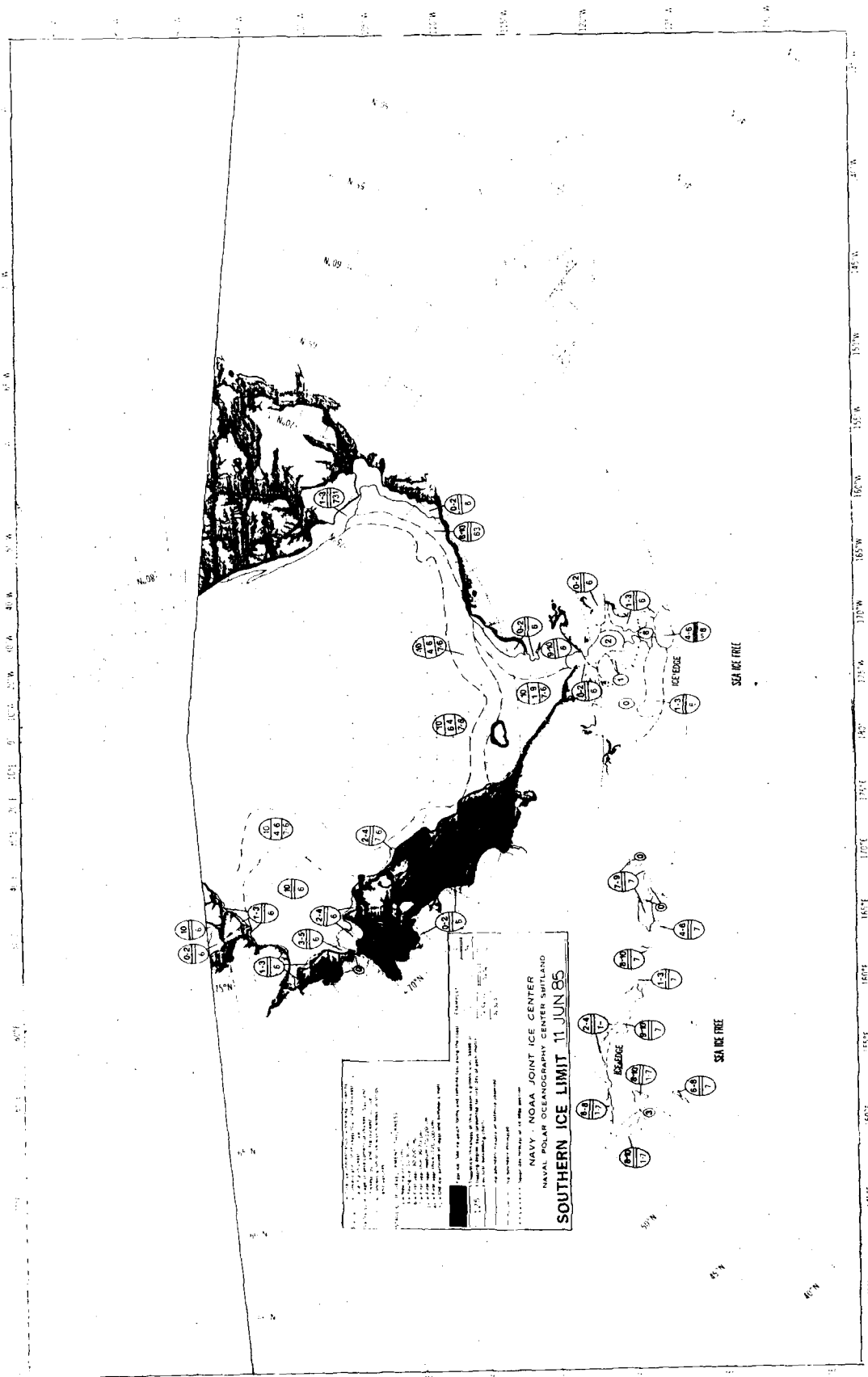




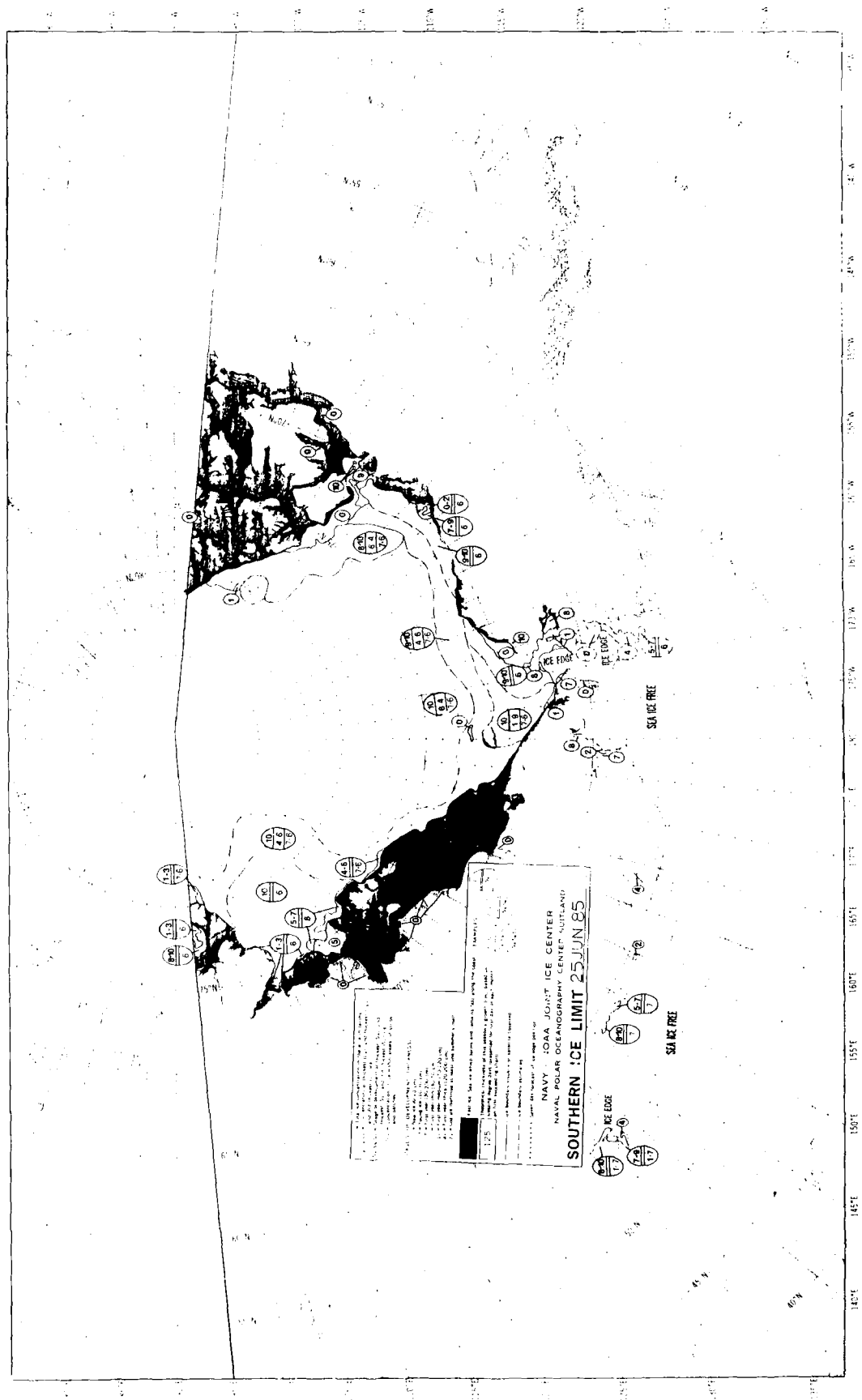
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR DE BRANCHING CENTER NUTLAND
SOUTHERN ICE LIMIT 28 MAY 85

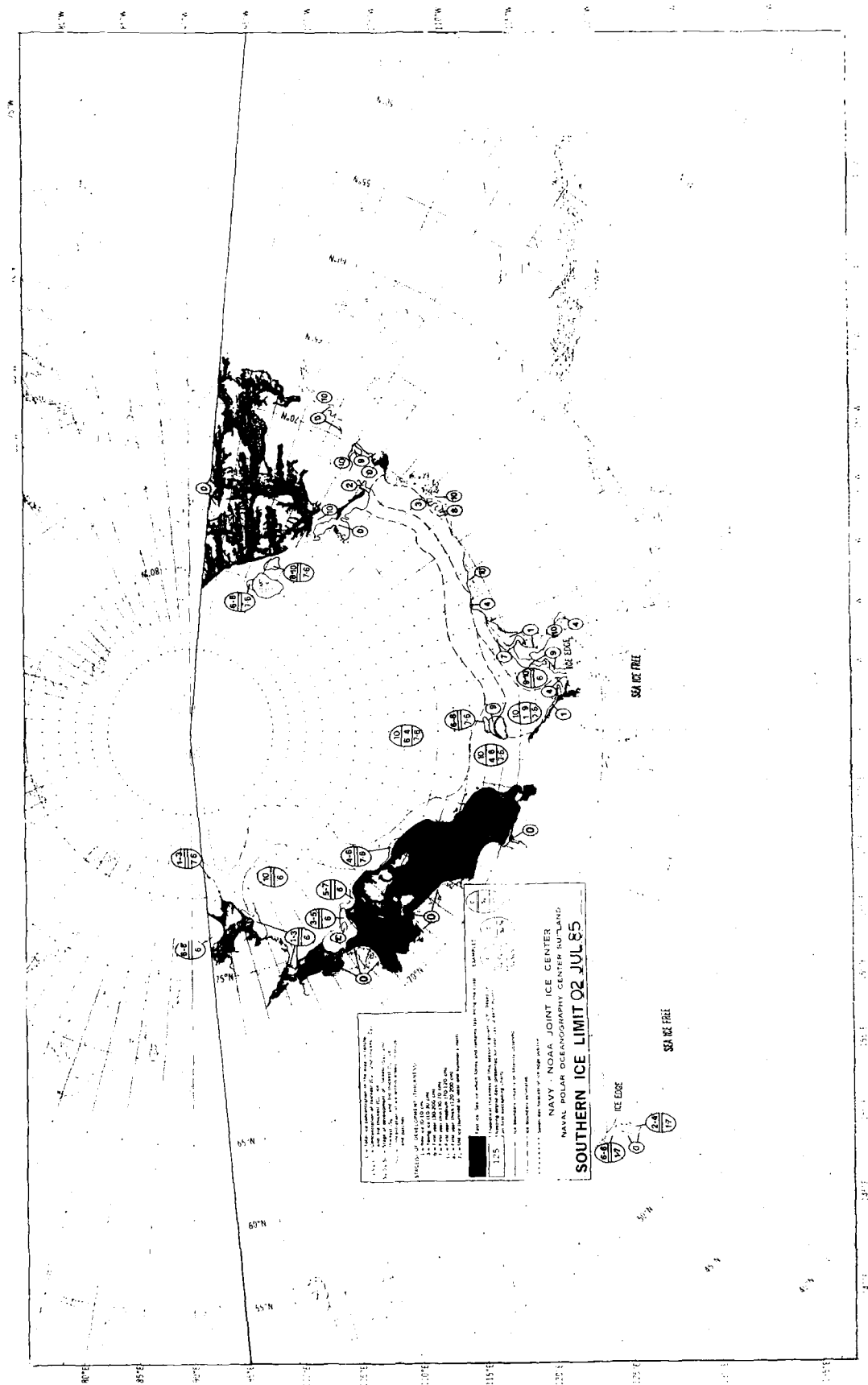


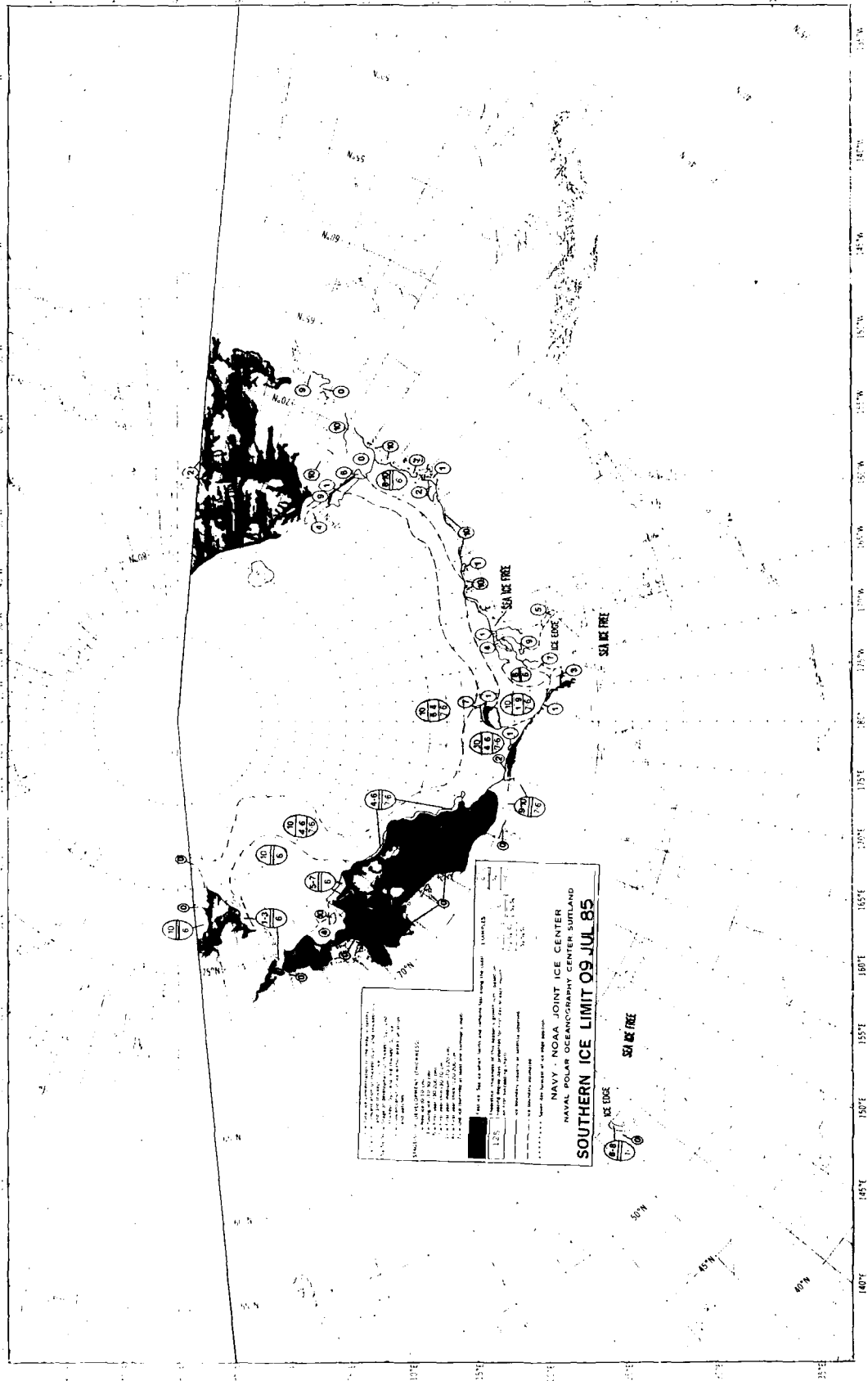
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUTTER
SOUTHERN ICE LIMIT 04 JUN 85

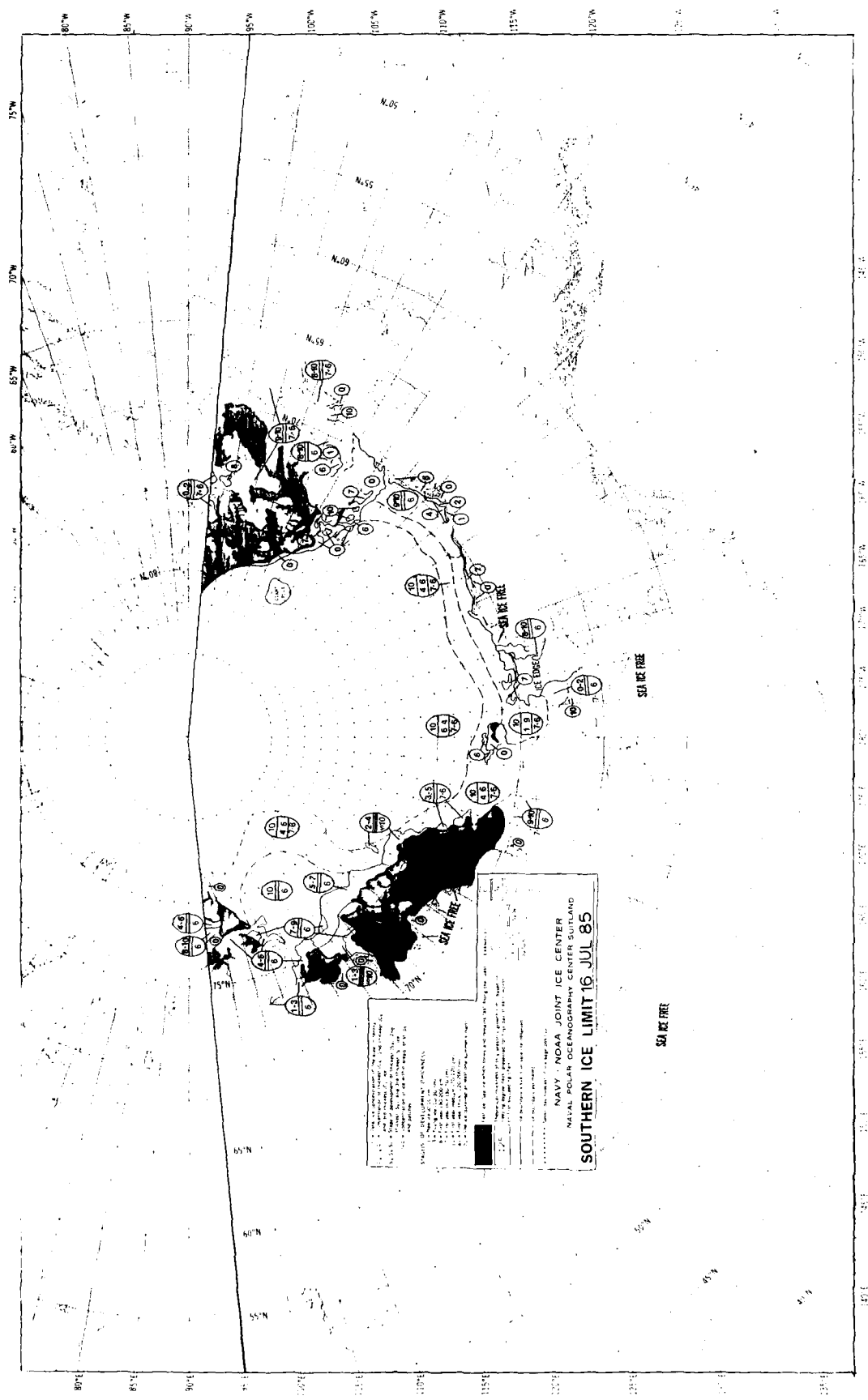






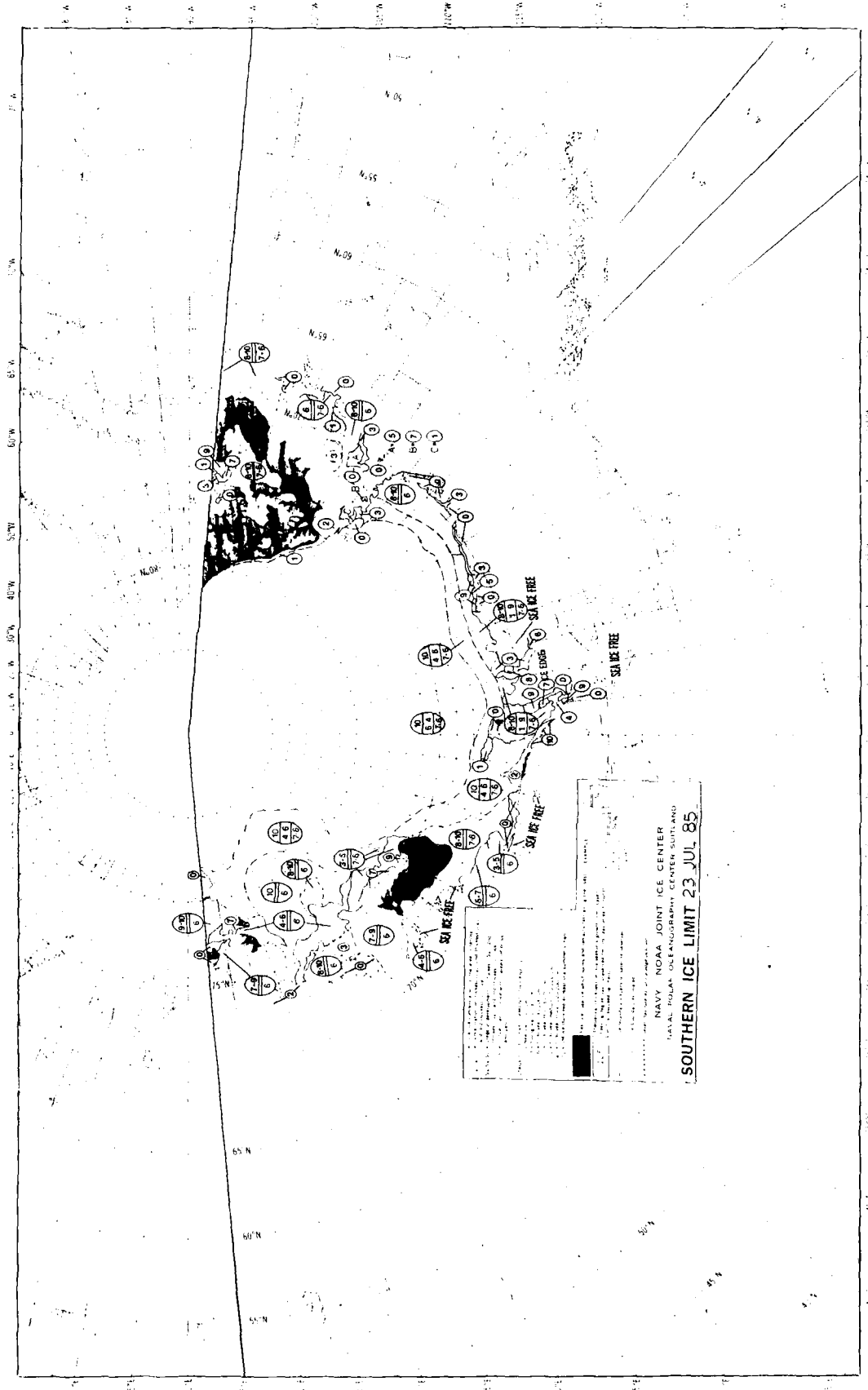


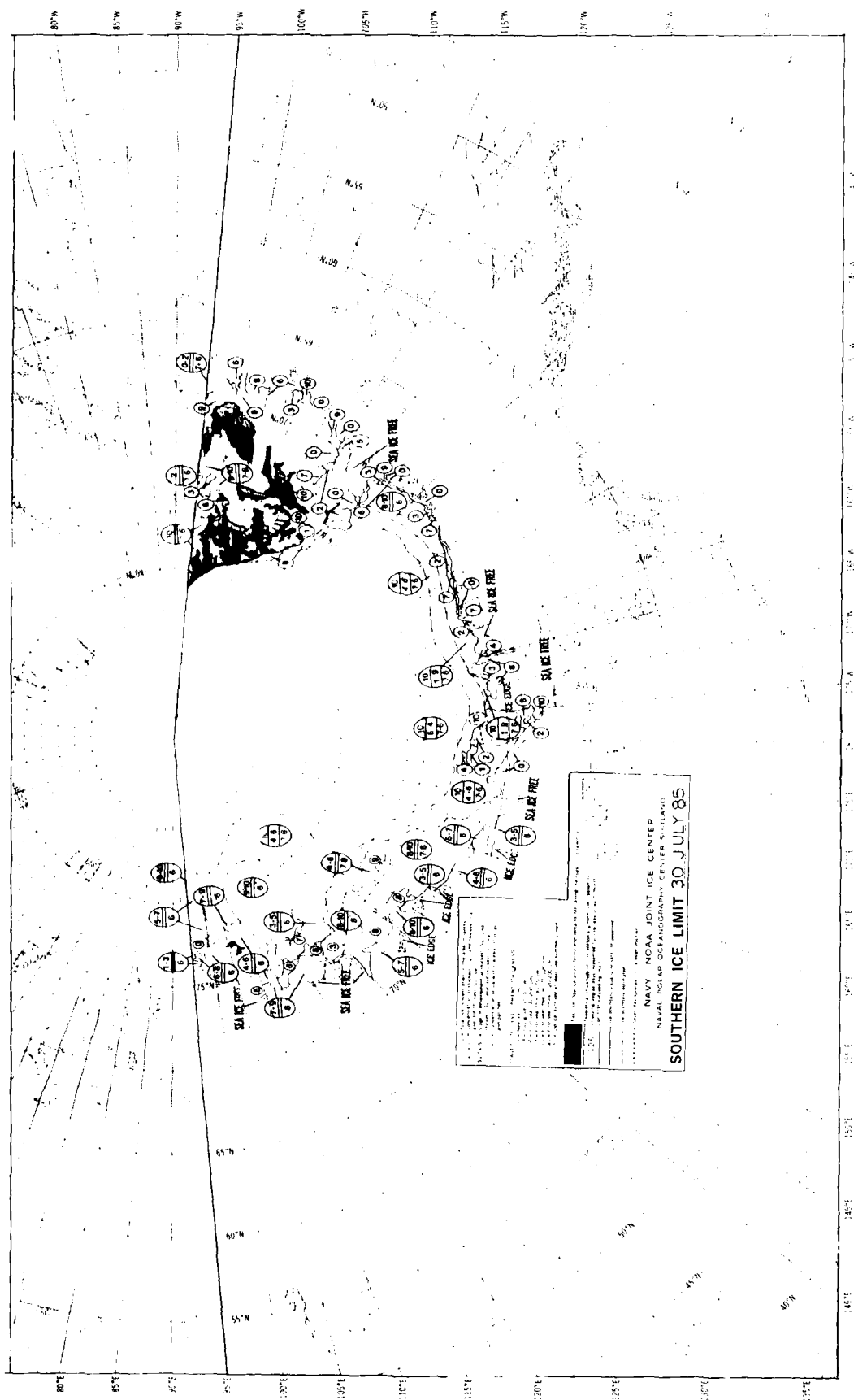


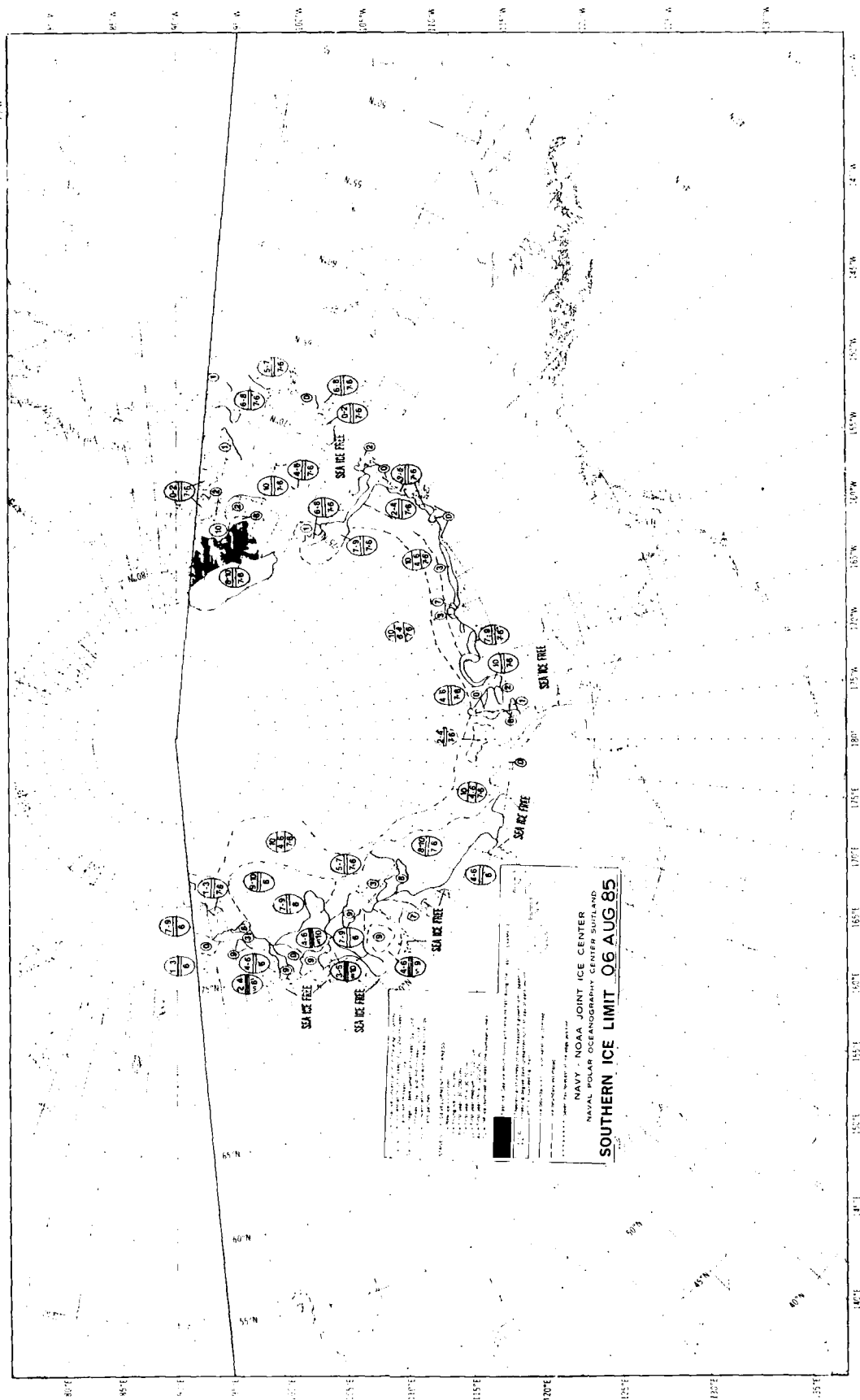


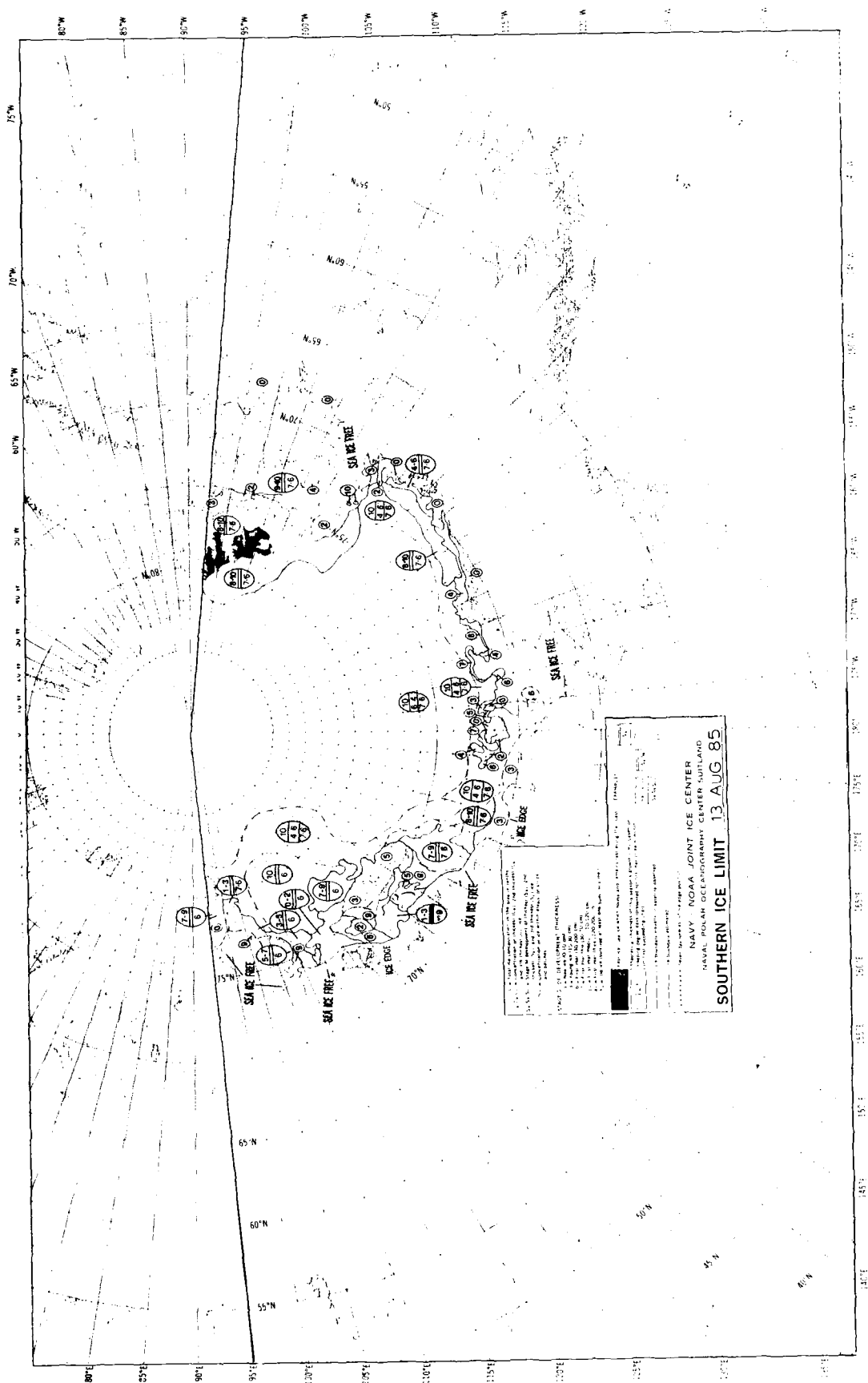
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 16 JUL 85

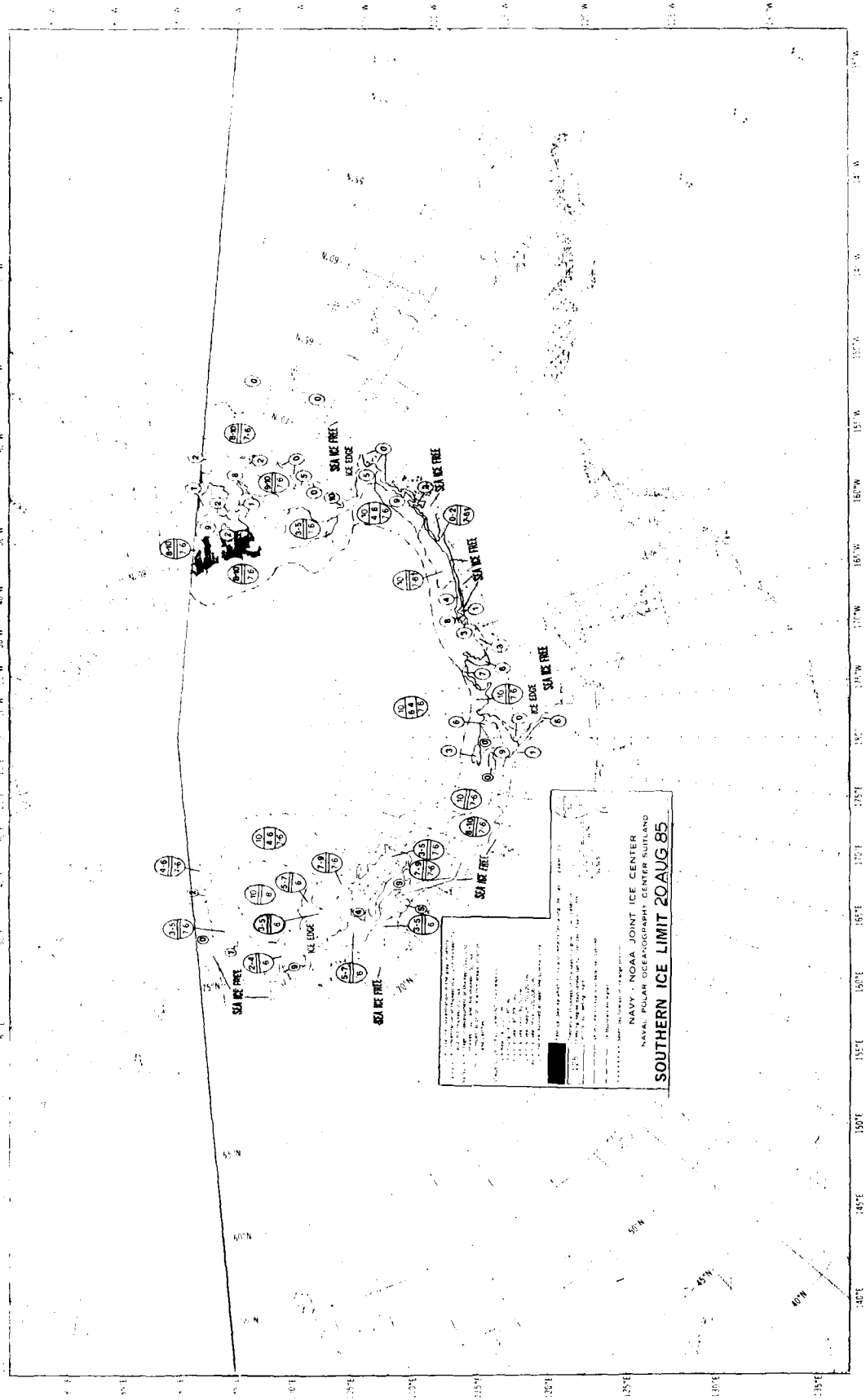
1. This map shows the ice limit for the Southern Ocean as of 16 July 1985. The ice limit is defined as the outer edge of the ice field. The ice limit is shown as a dashed line. The area inside the dashed line is shaded. The area outside the dashed line is unshaded.



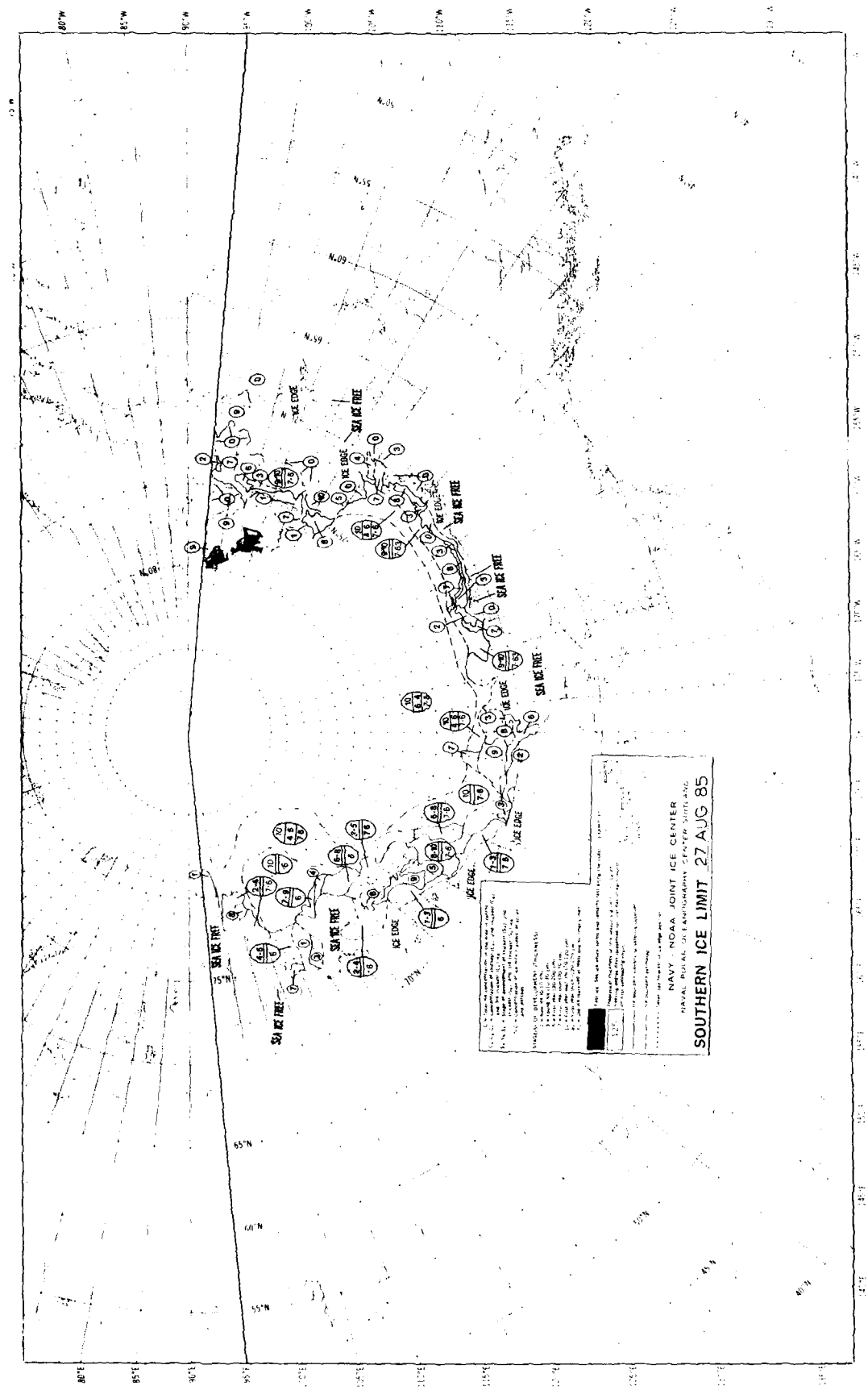






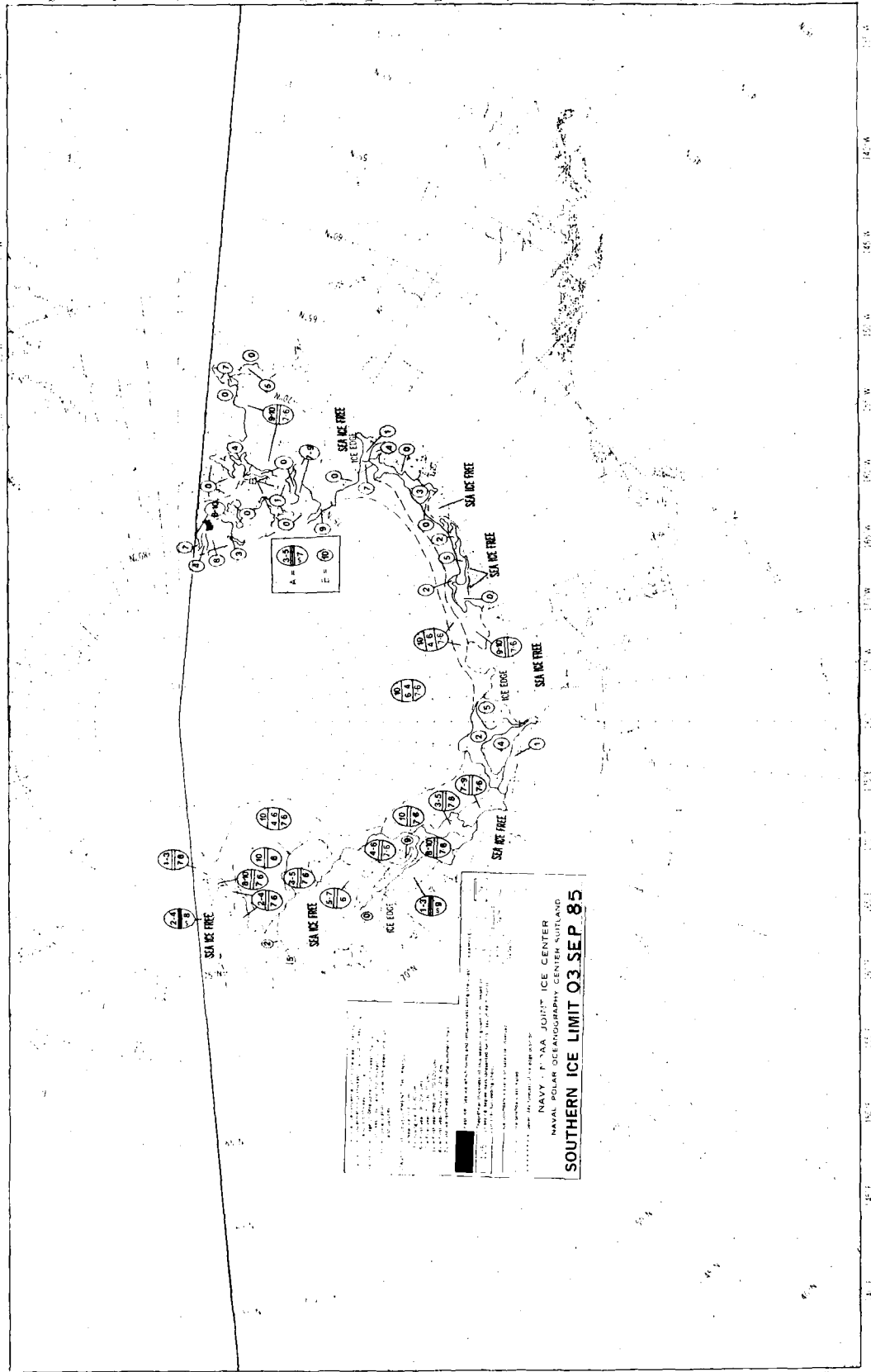


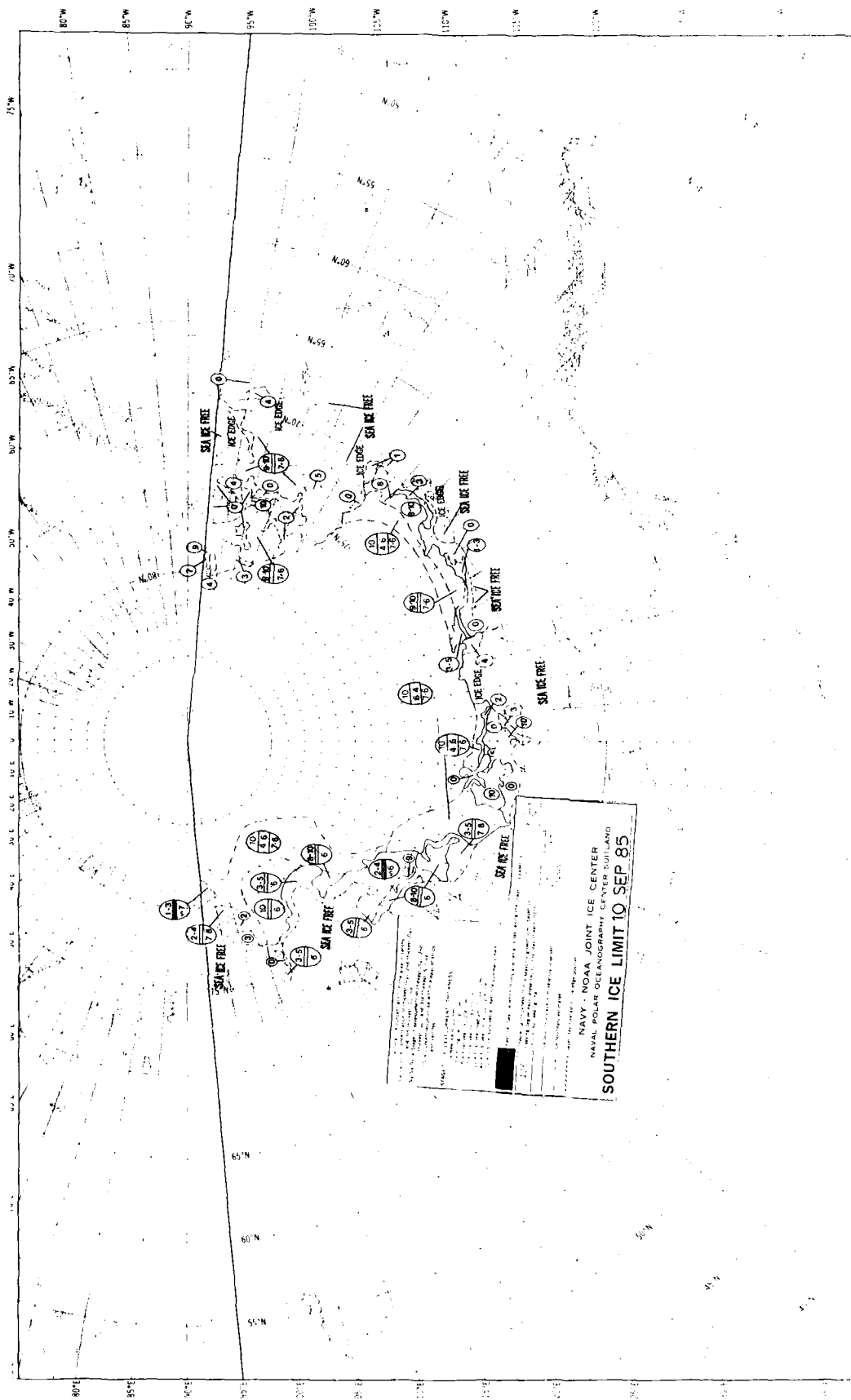
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 20 AUG 85

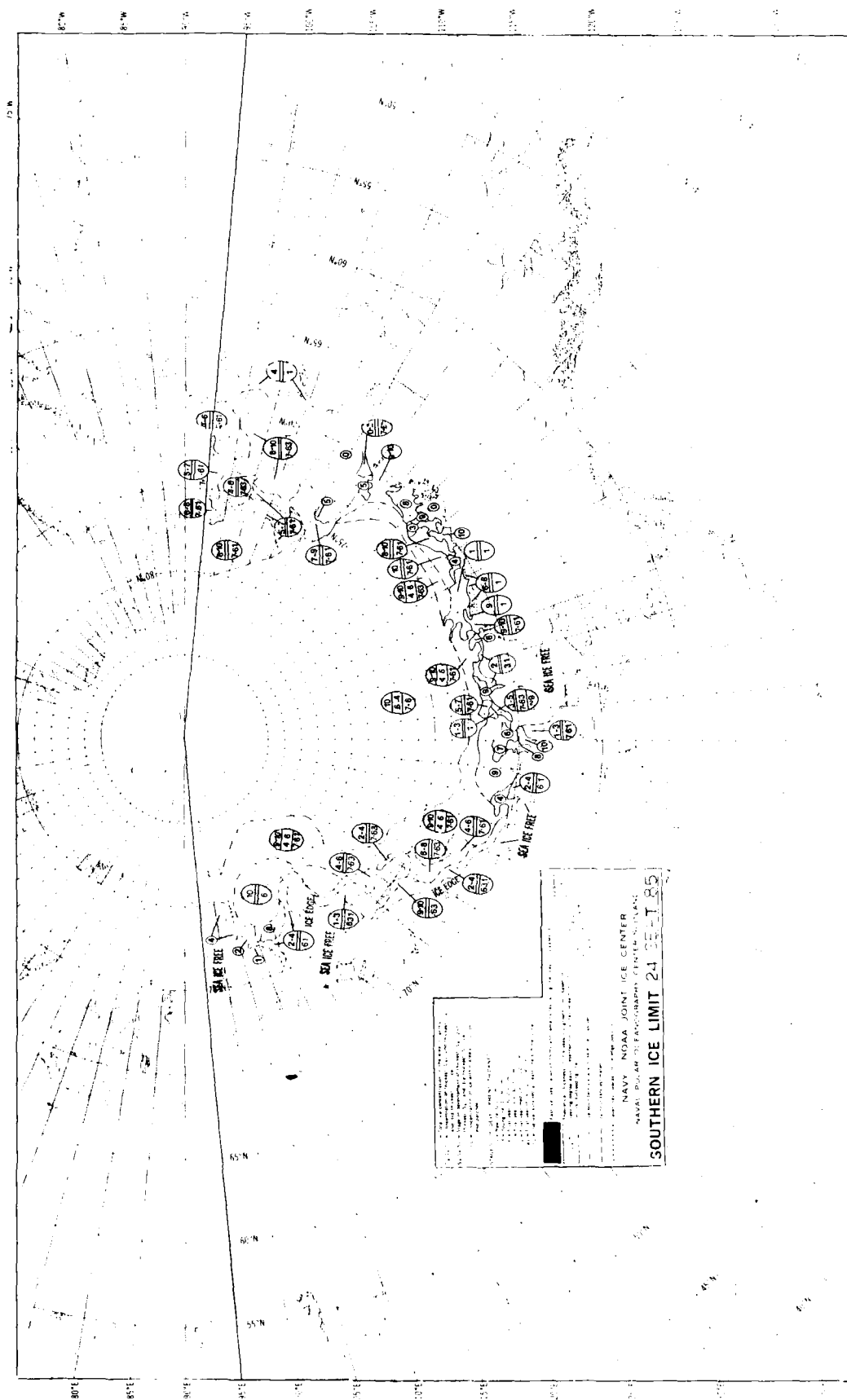


NAVY - NOAA JOINT ICE CENTER
 NAVAL BUREAU OF HYDROGRAPHY CENTER SUTLAND
 SOUTHERN ICE LIMIT 27 AUG 85

1. This map was prepared from the following sources:
 a. Navy Ice Charts, 1:50,000 scale, 1985 edition.
 b. Navy Ice Charts, 1:50,000 scale, 1985 edition.
 c. Navy Ice Charts, 1:50,000 scale, 1985 edition.
 d. Navy Ice Charts, 1:50,000 scale, 1985 edition.
 e. Navy Ice Charts, 1:50,000 scale, 1985 edition.
 f. Navy Ice Charts, 1:50,000 scale, 1985 edition.
 g. Navy Ice Charts, 1:50,000 scale, 1985 edition.
 h. Navy Ice Charts, 1:50,000 scale, 1985 edition.
 i. Navy Ice Charts, 1:50,000 scale, 1985 edition.
 j. Navy Ice Charts, 1:50,000 scale, 1985 edition.







AD-A173 972

EASTERN--WESTERN ARCTIC SEA ICE ANALYSIS--1985(U) NAVAL 2/2
POLAR OCEANOGRAPHY CENTER WASHINGTON DC NOV 86

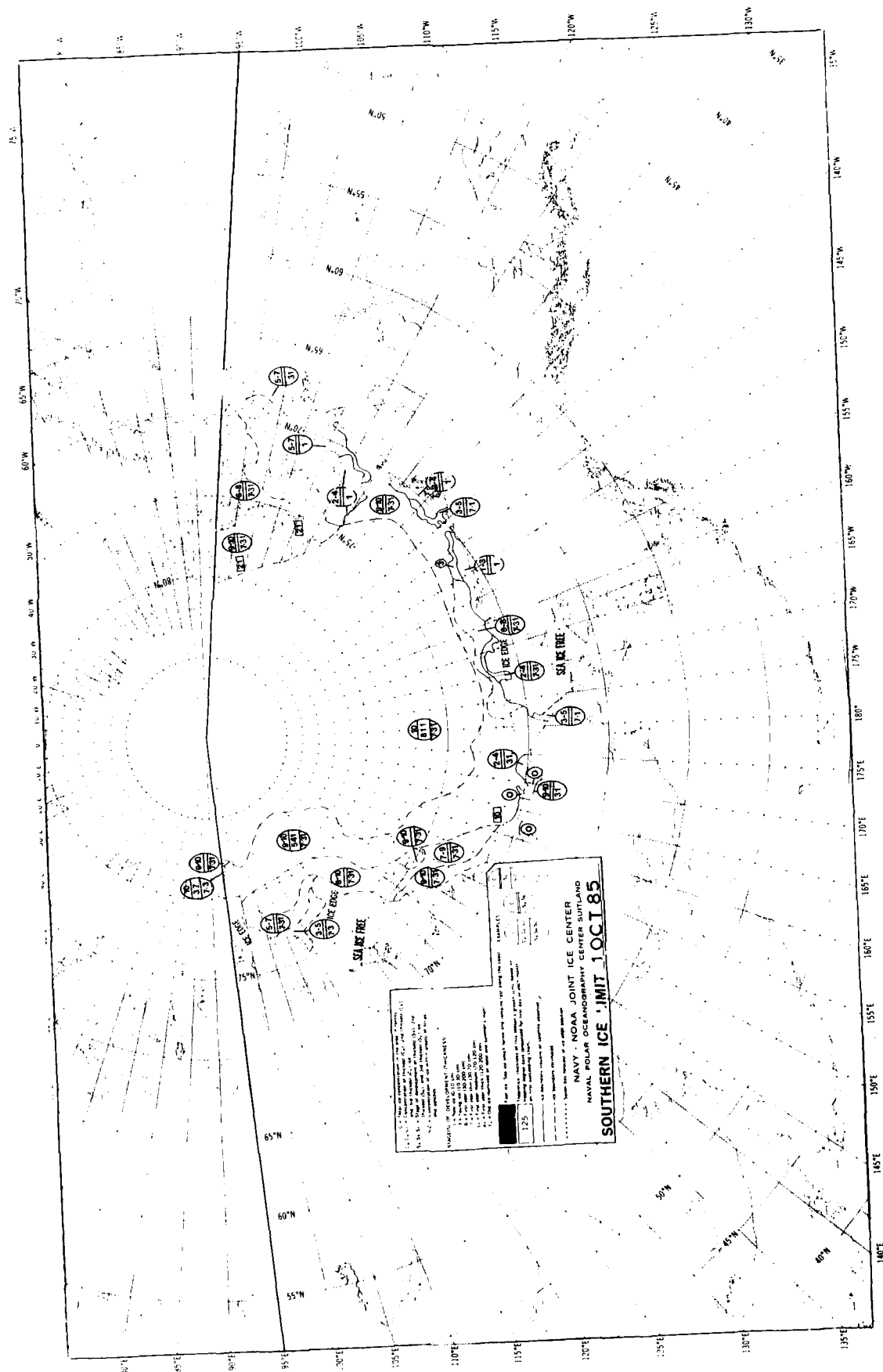
UNCLASSIFIED

F/G 8/12 NL

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

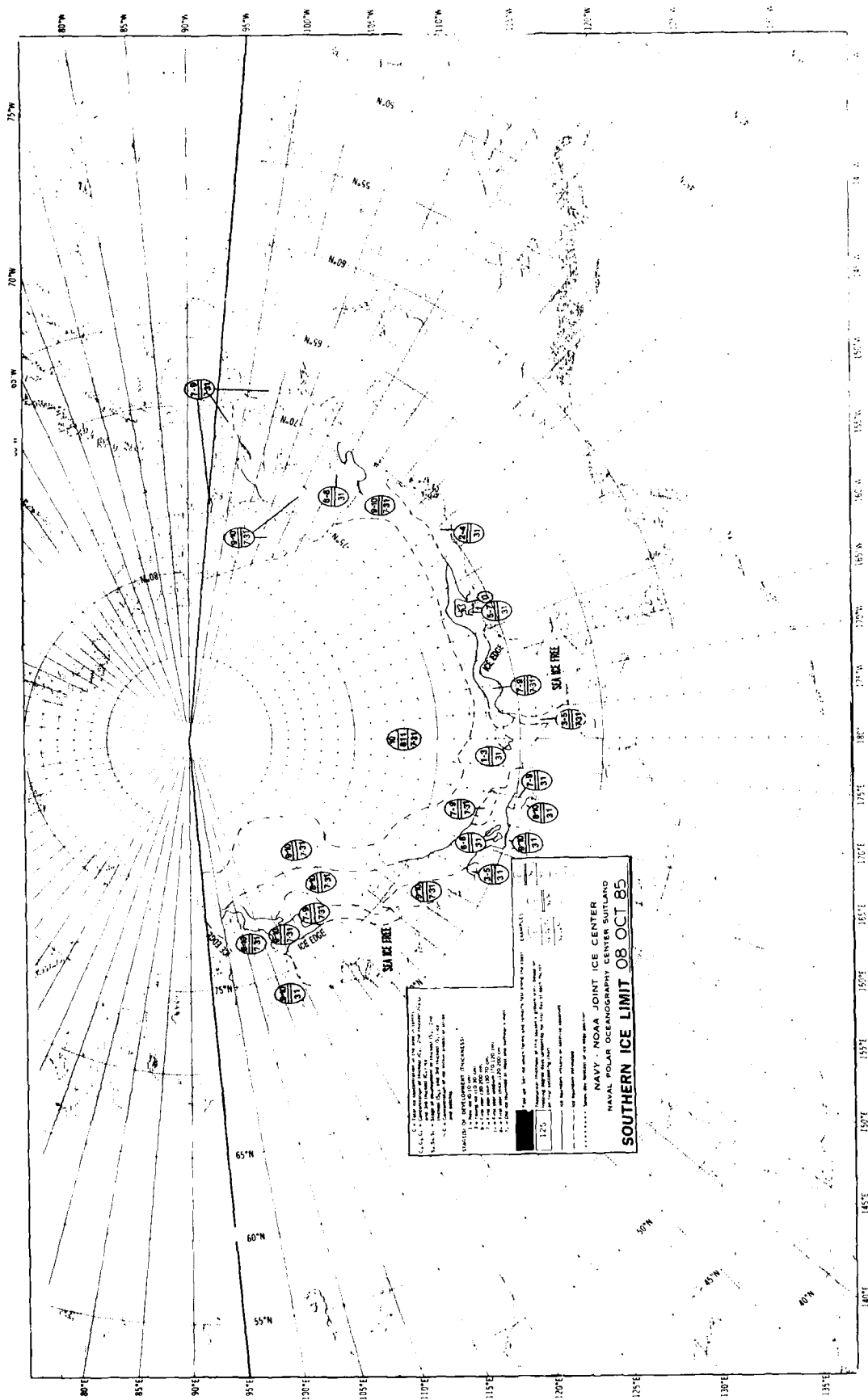


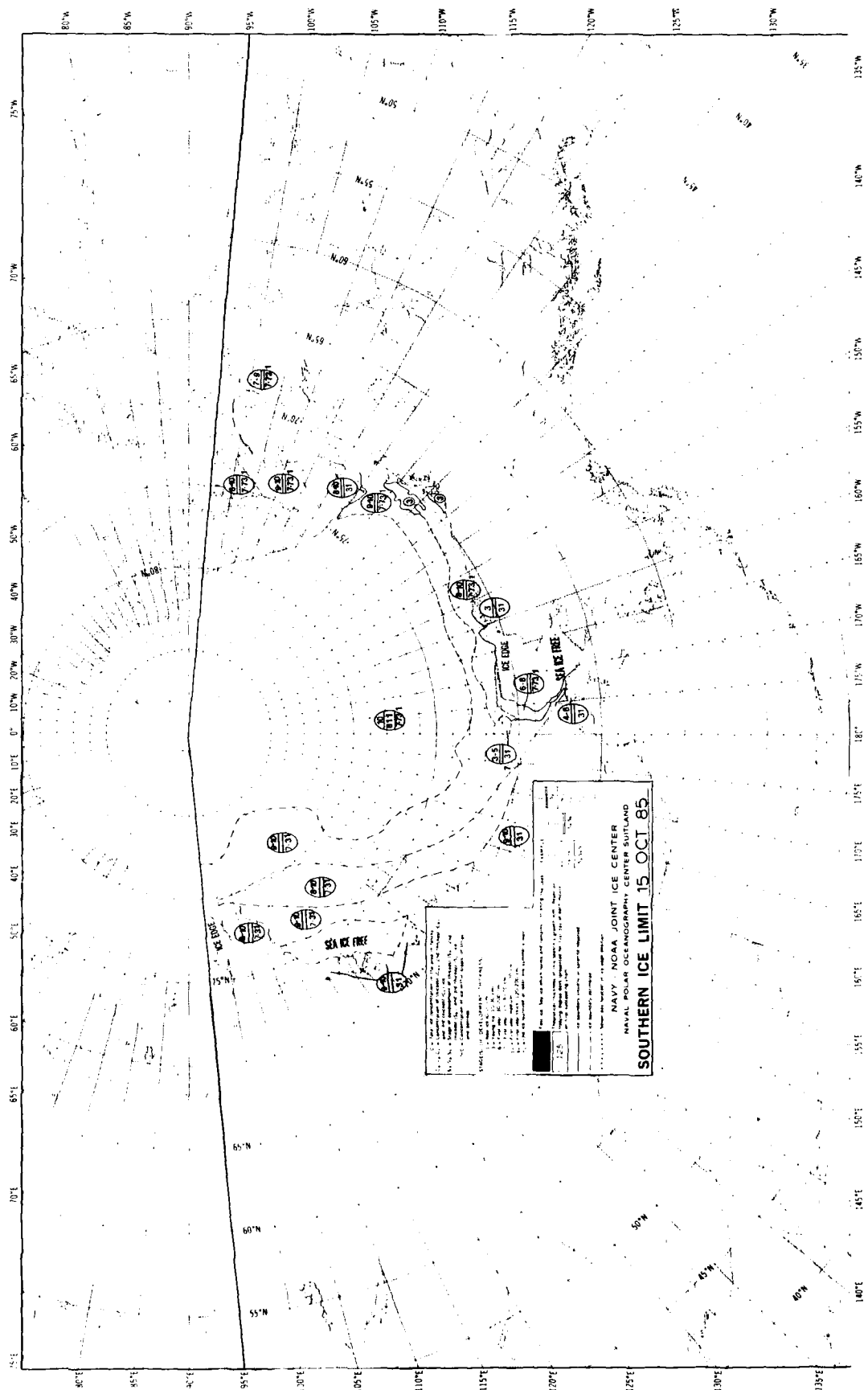
SOUTHERN ICE LIMIT 1 OCT 85

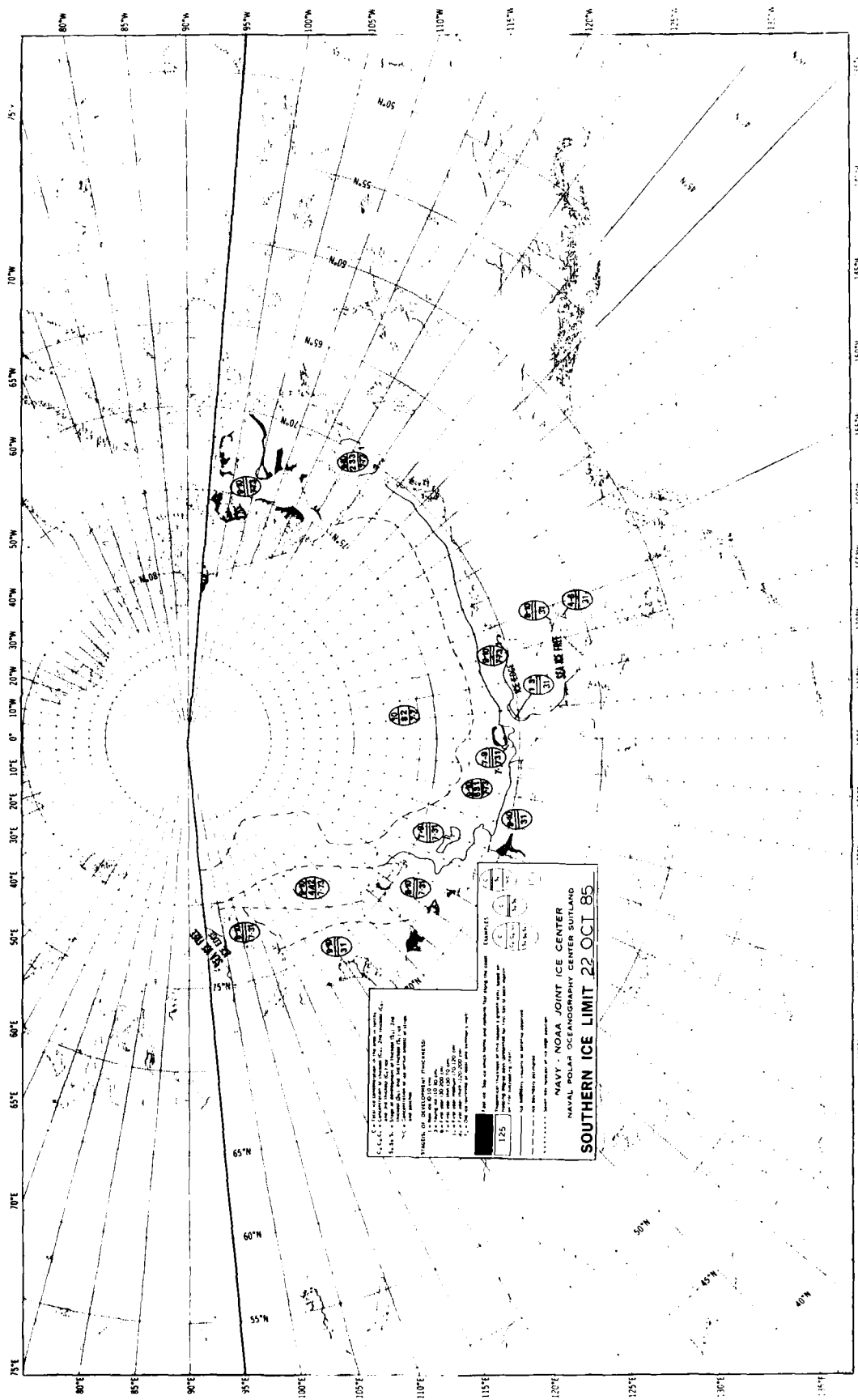
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUTLAND

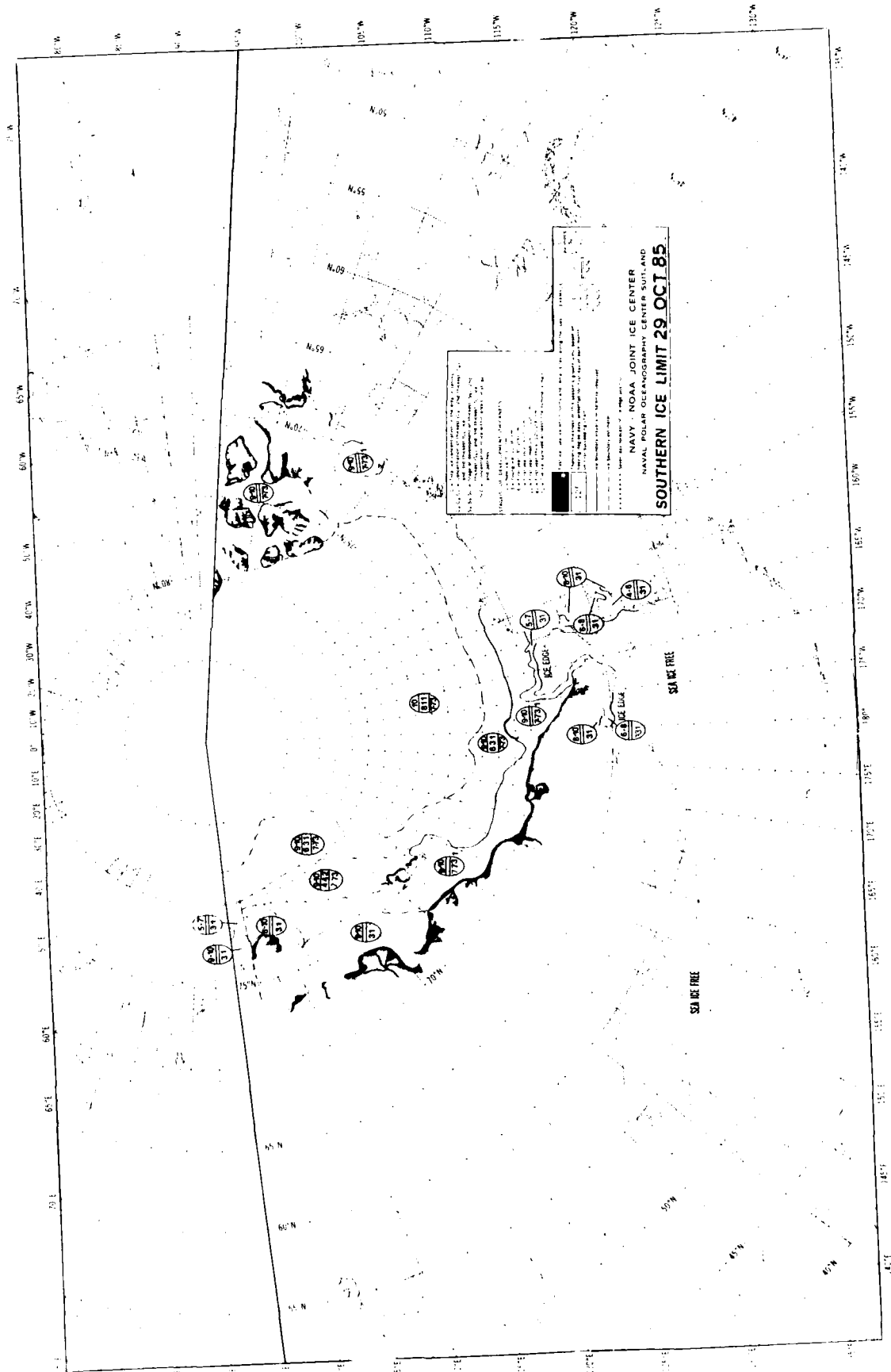
125

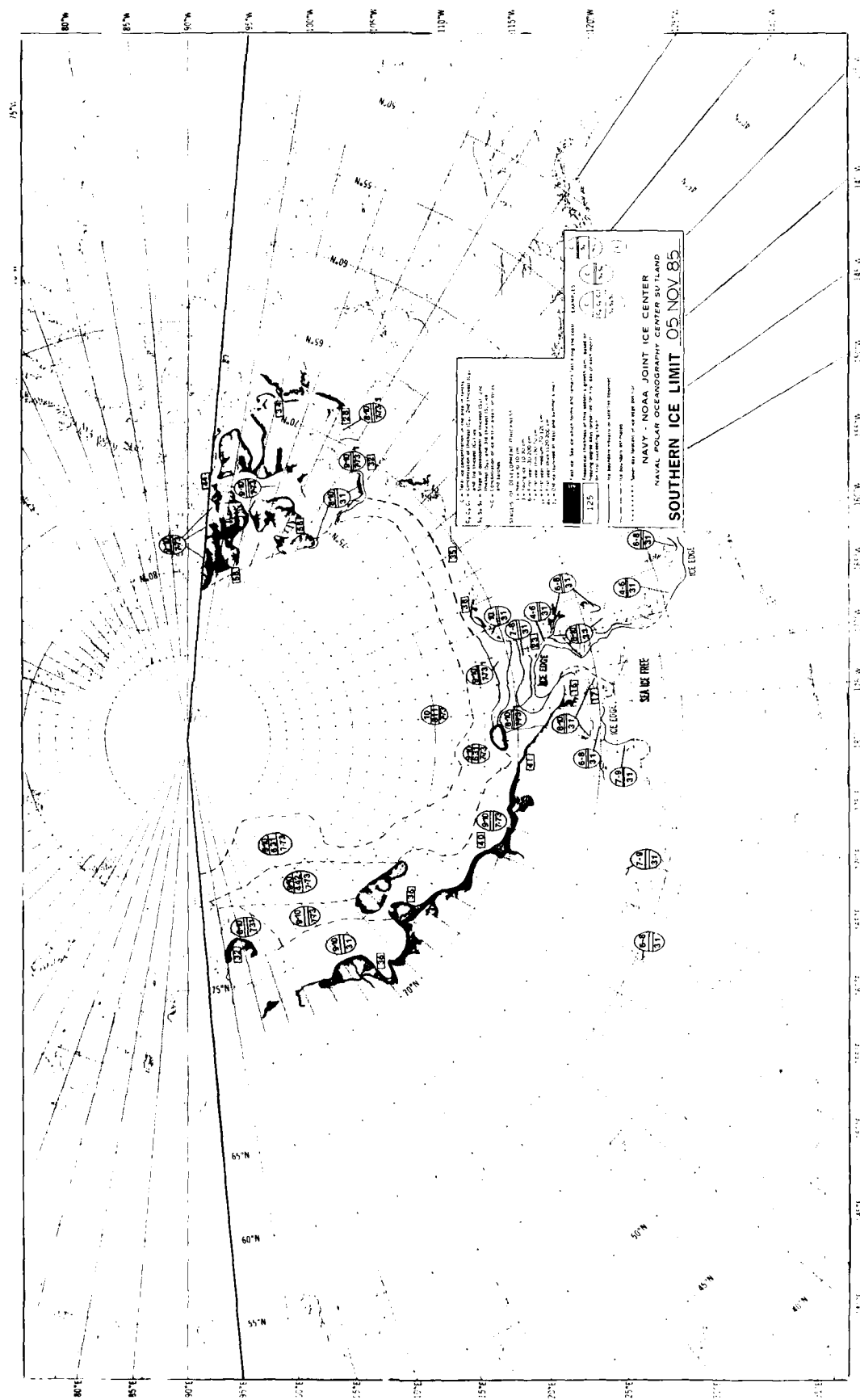
1. This chart is a reproduction of the original chart published by the Navy - NOAA Joint Ice Center. It is not to be used for navigation purposes. It is a technical document used for maritime navigation.

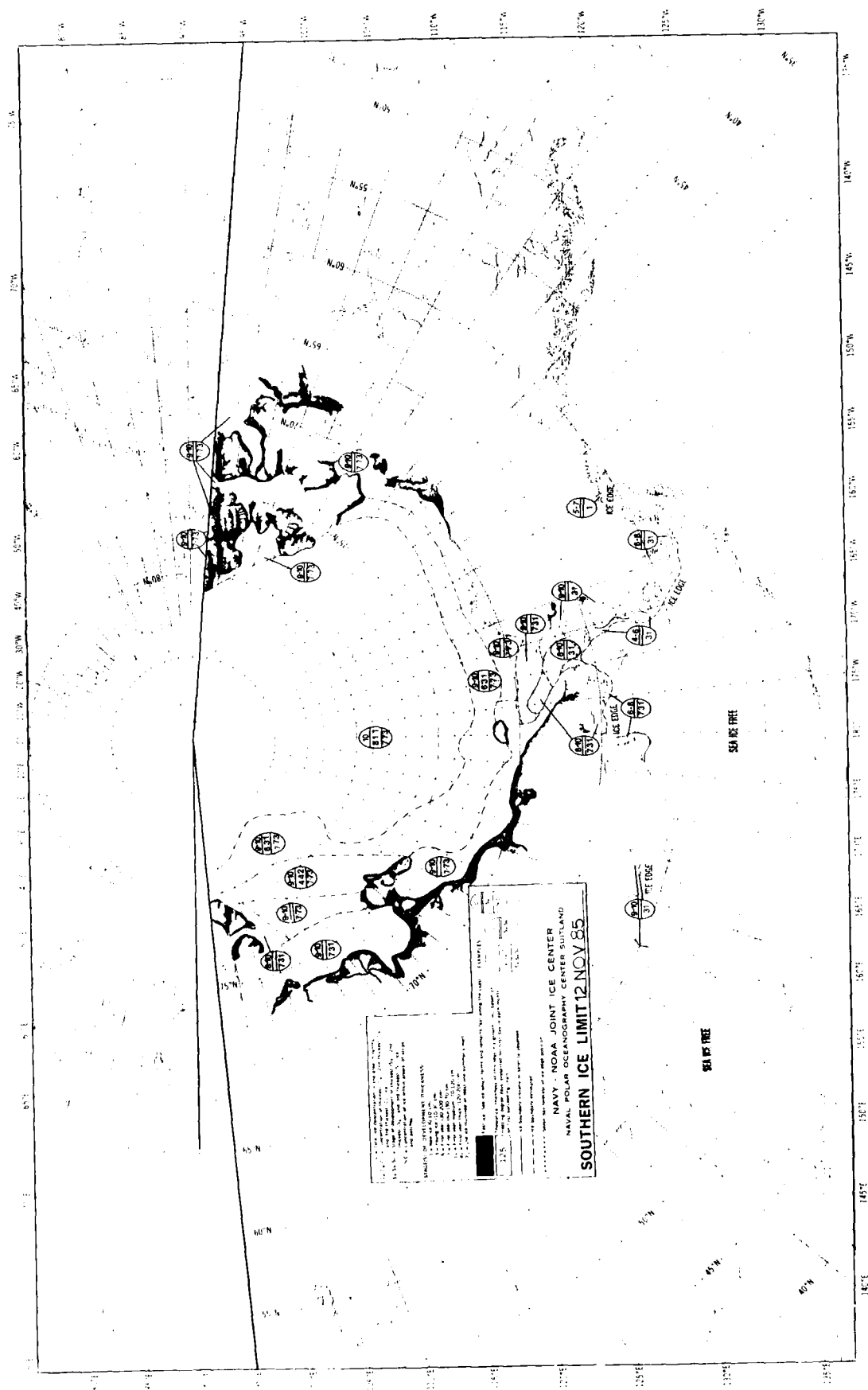


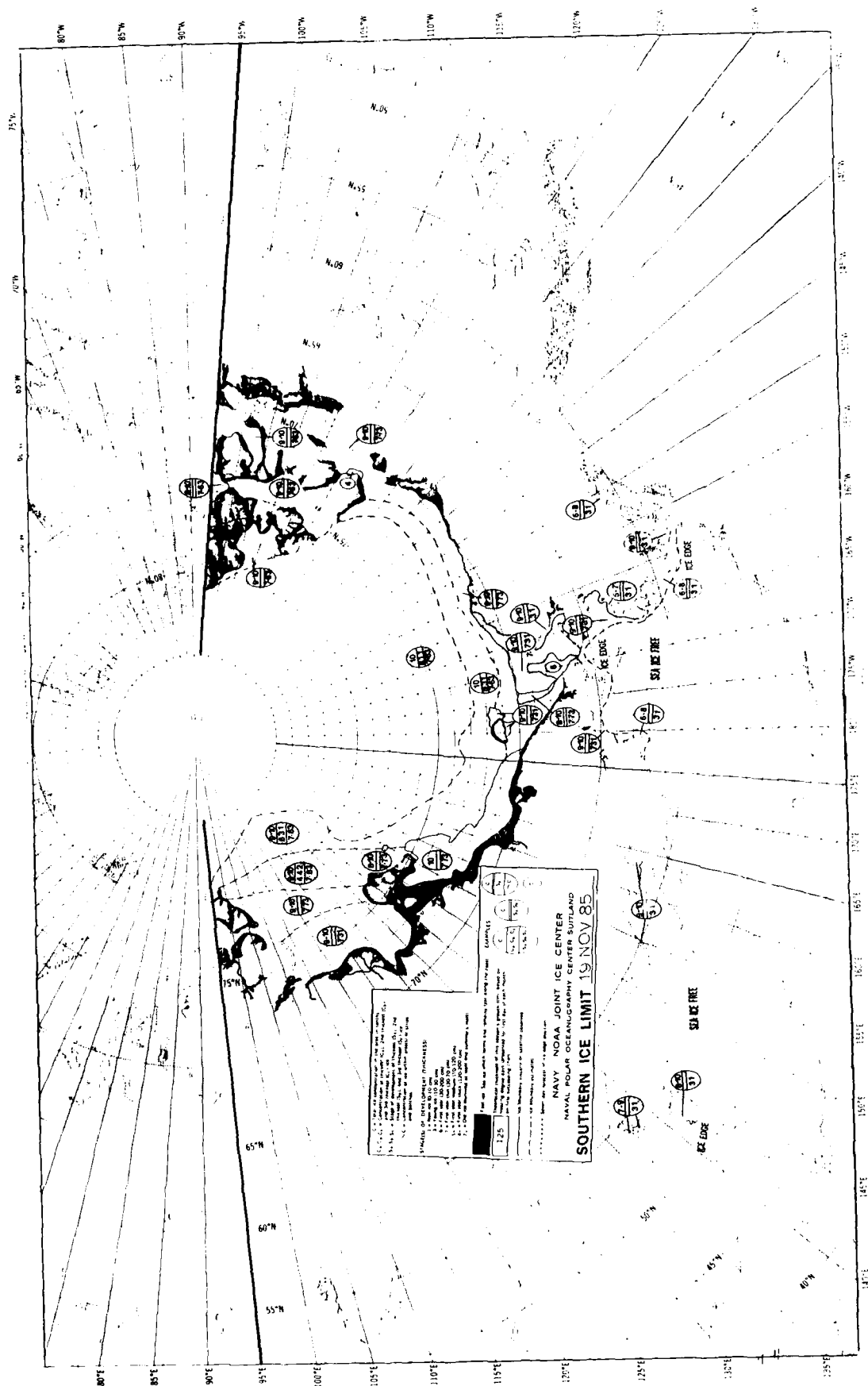


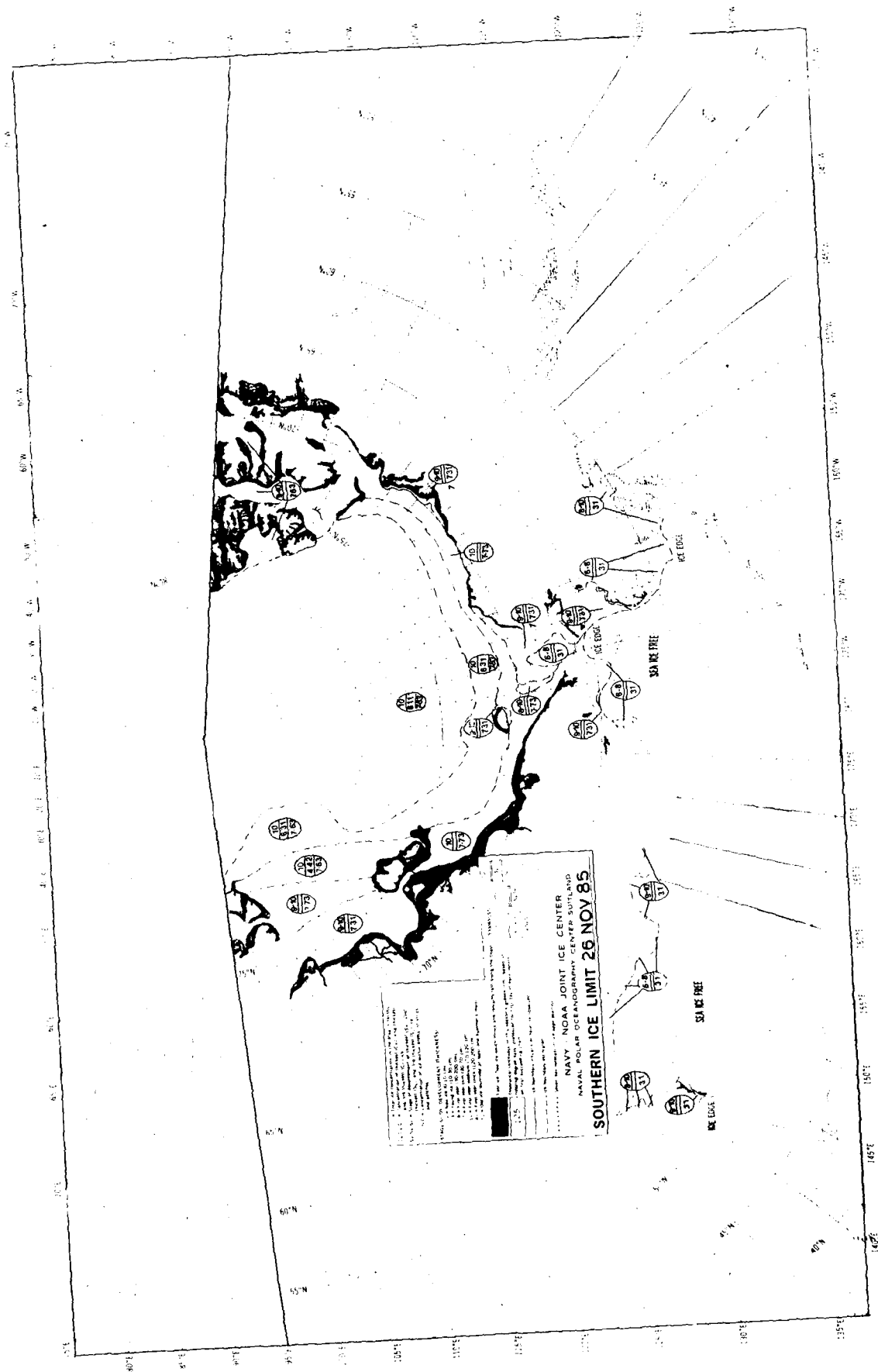


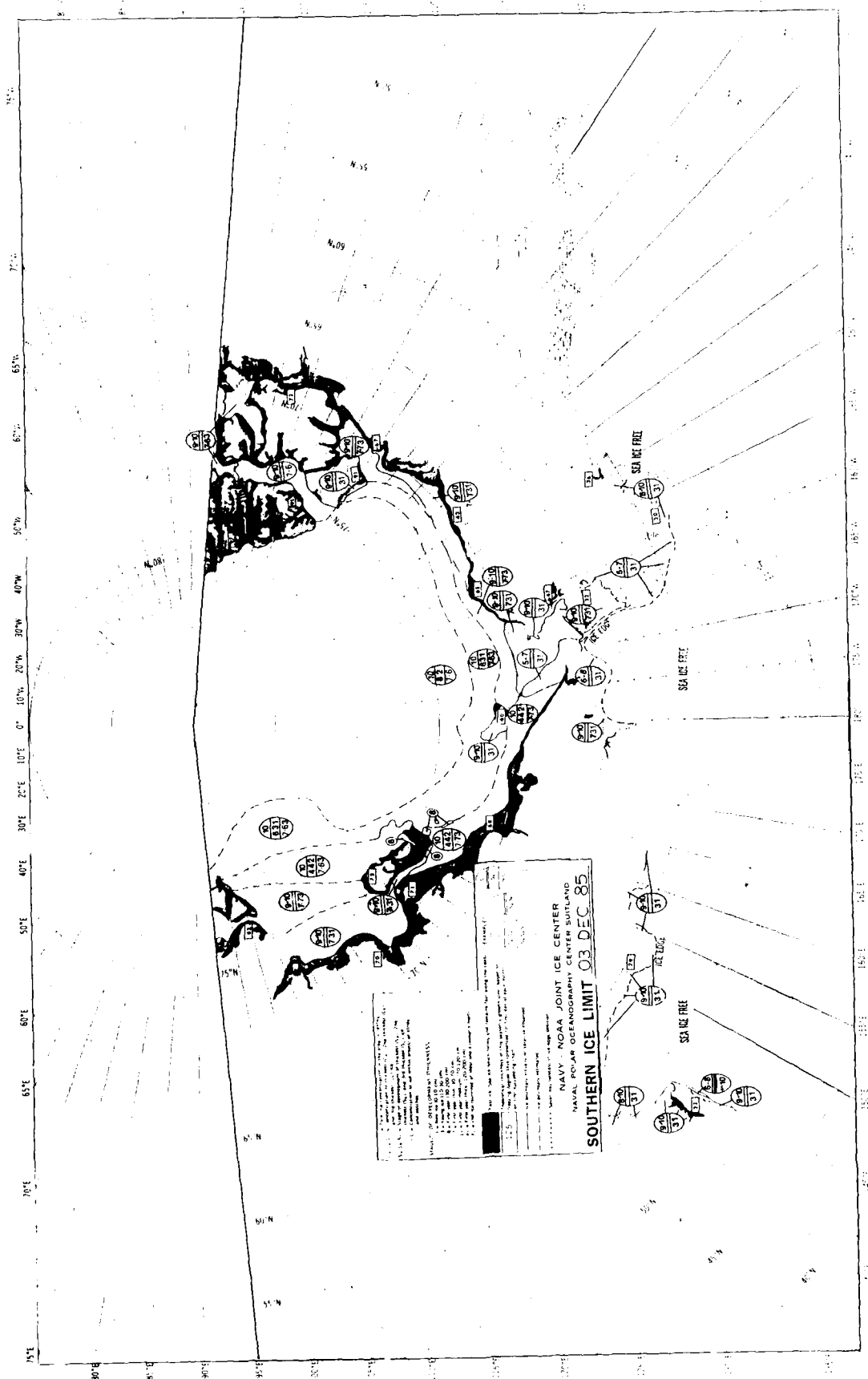


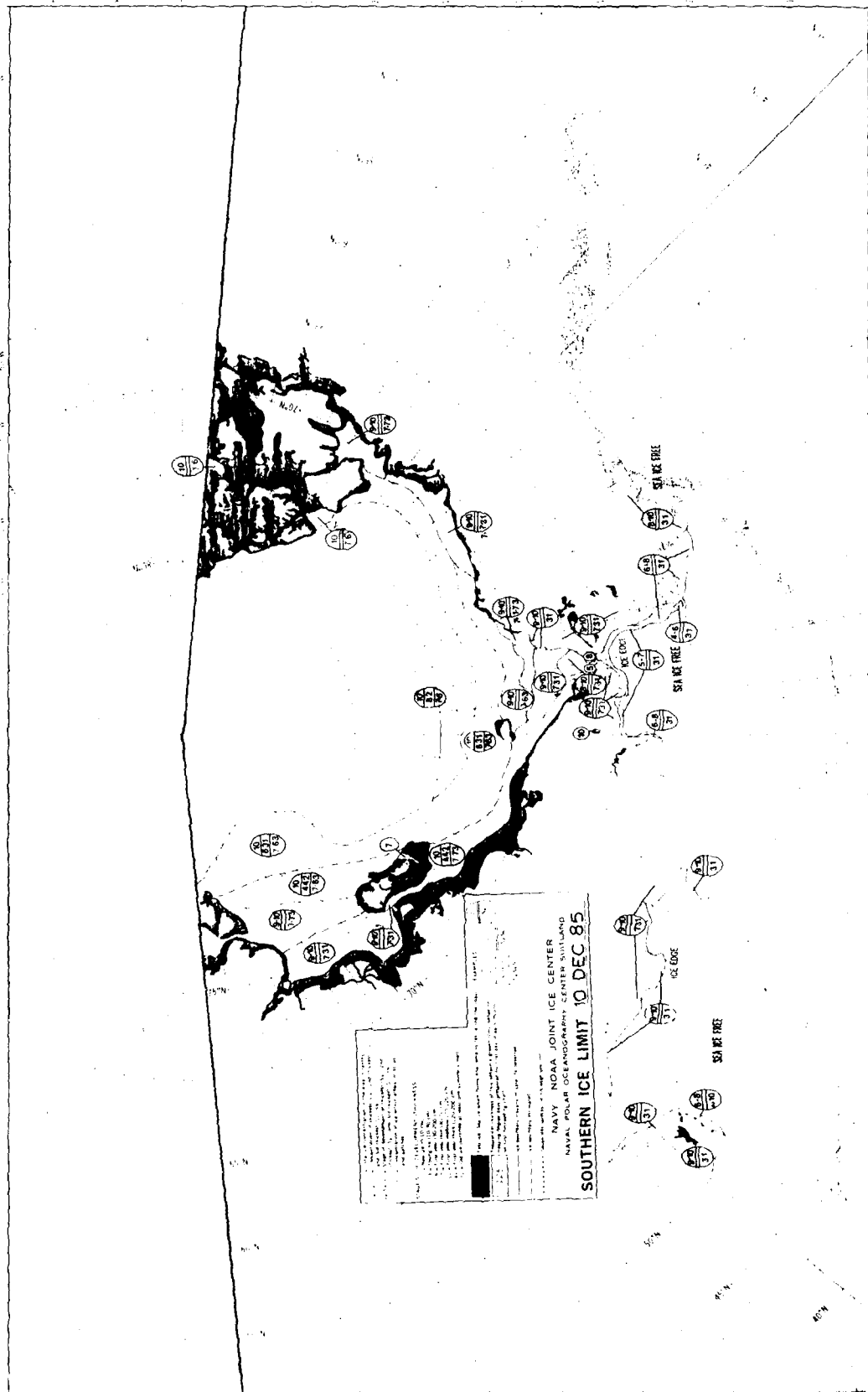






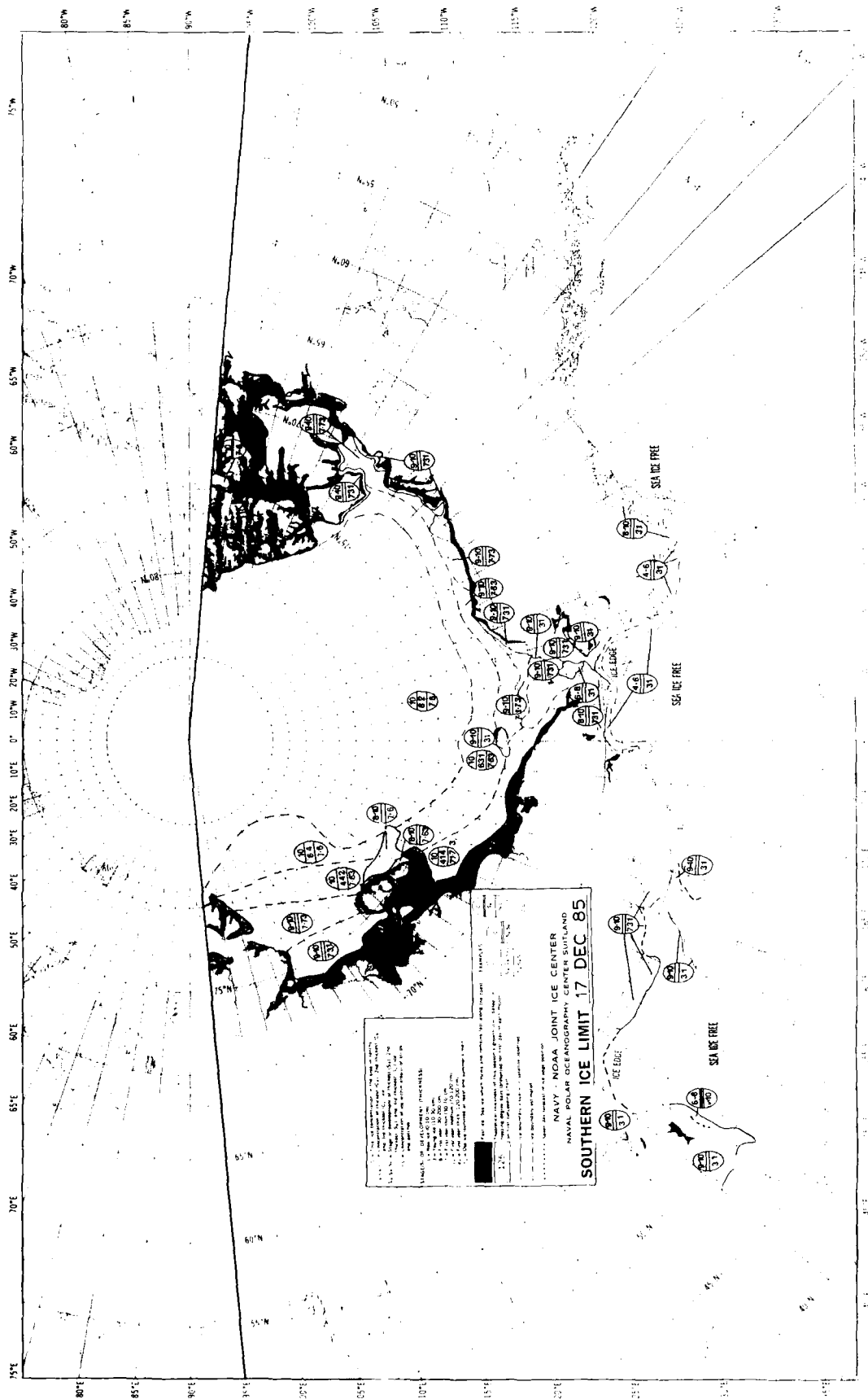






NOAA JOINT ICE CENTER
NAVY POLAR OCEANOGRAPHY CENTER SUTLAND
SOUTHERN ICE LIMIT 10 DEC 85

Legend:
- Ship Tracks
- Ice Edge
- Ice Free
- Sea Ice Free
- Ice Limit
- Ice Edge
- Ice Free
- Sea Ice Free



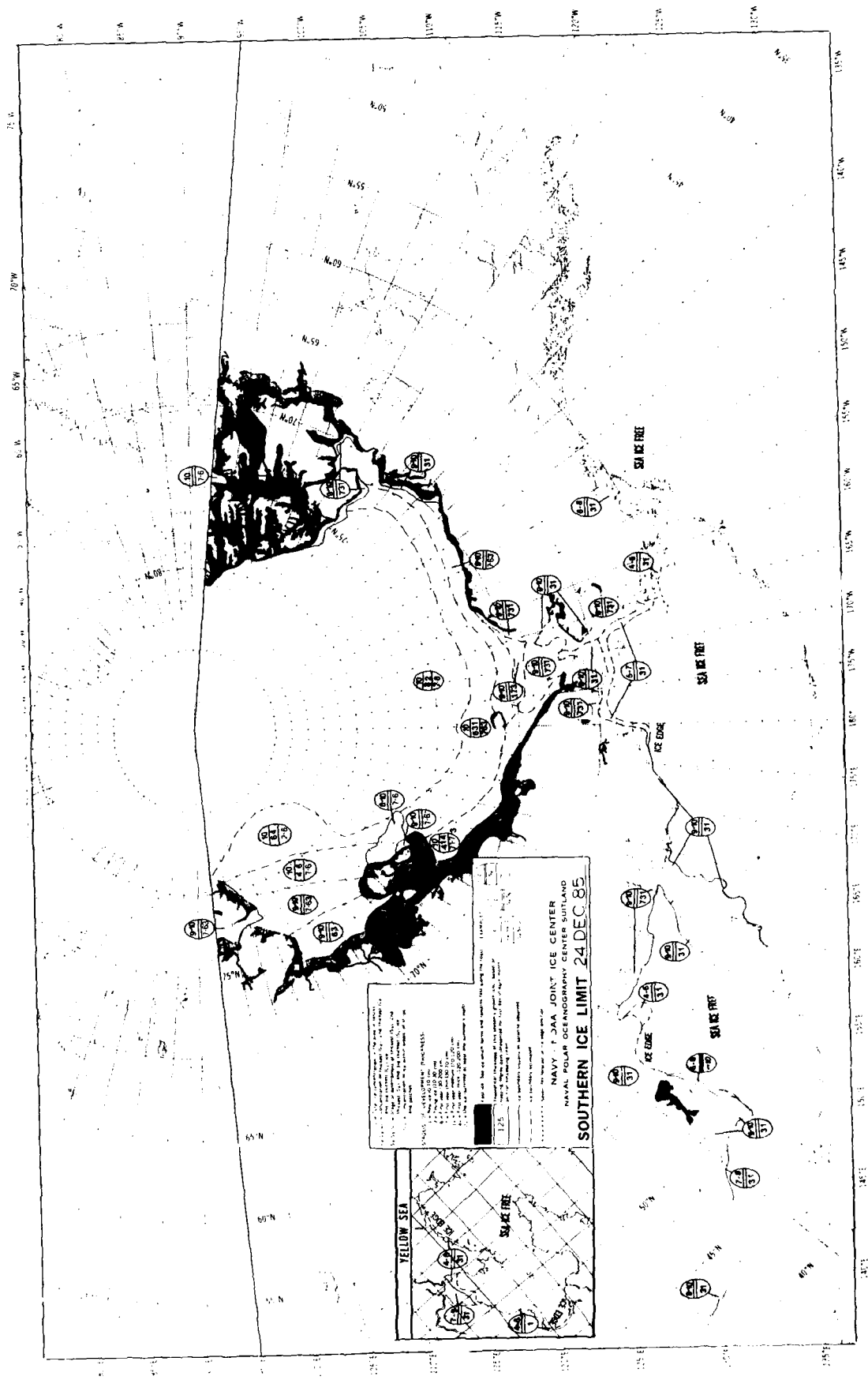


TABLE 1 SATELLITE DATA UTILIZED DURING 1985

Time Period		Satellite Remote Sensing			Resolution	Coverage
From	To	Sensor Platform	Sensor Type	Spectral Region		
1-85	1-85	NOAA-6	AVHRR	0.58-0.68 um 0.73-1.10 um 10.5-11.5 um	1 km	Regional
2-85	6-85		HRPT/LAC			
7-85	12-85		VIS NIR IR			
			GAC	0.58-0.68 um 10.5-11.5 um	4 km	Global
			VIS			
			IR			
1-85	2-85	NOAA-7	AVHRR	0.58-0.68 um 0.73-1.10 um 10.5-11.3 um	1 km	Regional
			HRPT/LAC			
			VIS NIR IR			
			GAC	0.58-0.68 um 10.5-11.3 um	4 km	Global
			VIS			
			IR			
7-85	10-85	NOAA-8	AVHRR	0.58-0.68 um 0.73-1.10 um 10.5-11.5 um	1 km	Regional
			HRPT/LAC			
			VIS NIR IR			
			GAC	0.58-0.68 um 10.5-11.5 um	4 km	Global
			VIS			
			IR			
1-85	12-85	NOAA-9	AVHRR	0.58-0.68 um 0.73-1.10 um 10.5-11.5 um	1 km	Regional
			HRPT/LAC			
			VIS NIR IR			
			GAC	0.58-0.68 um 10.5-11.5 um	4 km	Global
			VIS			
			IR			
1-85	12-85	NIMBUS-7	SPMR	0.81 cm 1.66 cm	50 km	Global
1-85	12-85	DMSP-F(6)	VIS IR	0.4-1.1 um 10.2-12.0 um	3.7 km 4.4 km	Global
1-85	12-85	DMSP-F(7)	VIS IR	0.4-1.1 um 10.2-12.0 um	3.7 km 4.4 km	Global

Abbreviations and Acronyms

AVHRR - Advanced Very High Resolution Radiometer
 GAC - Geostationary Advanced Coverage
 HRPT - High Resolution Picture Transmission
 LAC - Low Resolution Picture Transmission
 NIMBUS-7 - Earth Radiation Budget Experiment
 DMSP-F(6) - Defense Meteorological Satellite Program
 DMSP-F(7) - Defense Meteorological Satellite Program
 SPMR - Scanning Polarimeter Microwave Radiometer
 VIS - Visible
 NIR - Near Infrared
 IR - Infrared

END

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