



**BOSTON EDISON**

Pilgrim Nuclear Power Station  
Rocky Hill Road  
Plymouth, Massachusetts 02360

BECO 90- 014  
January 15, 1990

**Ralph G. Bird**  
Senior Vice President — Nuclear

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

License DPR-35  
Docket 50-293

ANNUAL MAIN BREAKWATER MONITORING REPORT

- References:
1. BECo letter from Mr. A. V. Morisi to Mr. T. A. Ippolito, dated March 30, 1981 (BECO 81-67)
  2. BECo letter from Mr. W. D. Harrington to Mr. D. B. Vassallo, dated July 7, 1983 (BECO 83-176)
  3. NRC letter from Mr. J. A. Zwolinski to Mr. W. D. Harrington, dated March 25, 1986

Attached is the report of our annual survey of the main breakwater at the Pilgrim Nuclear Power Station. This report fulfills the commitment made in Reference 1, as modified by References 2 and 3, to submit annually to the NRC the documented findings of all surveys of the main breakwater performed during the previous year. The survey was performed by a surveyor registered in the State of Massachusetts and included the seaward and landward sides of the main breakwater as well as a topographical survey.

We have determined that no major stone movement or major damage has occurred to the main breakwater based on comparing the 1989 survey results with 1981 and 1988 survey results. Walkdowns and year-to-year photograph comparisons have revealed some rock dislodging along both sides of the main breakwater, but these rock movements are considered minor and insignificant to the structural integrity of the main breakwater. We therefore conclude that the main breakwater remains adequately constructed to perform its designed safety function.

The survey photographs are provided in Attachment 2 for your information. The results of the topographical survey are provided in Drawing C1181 (Attachment 3).

This survey report is the ninth annual report concluding that the main breakwater has sustained no major stone movement or major change. Based on this, Attachment 1 of this submittal describes our intention to modify our survey program and presents information in support of the change. Should you have any questions or concerns regarding this new survey program, please contact our Licensing Staff.

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PDR ADOCK 05000293  
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*R. G. Bird*  
R. G. Bird

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BOSTON EDISON COMPANY

January 15, 1990

U. S. Nuclear Regulatory Commission

Page 2

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- Attachments:
1. Modification of Boston Edison's Performance and Submittal of an Annual Main Breakwater Survey
  2. Survey Photographs of the Main Breakwater, 1989 (Attachment 2 provided with the original letter only).
  3. Drawing C1181, Sheet 2 of 2, Revision E1, Main Breakwater Camera Locations and Survey Information (November 10, 1989)

cc: Mr. D. McDonald, Project Manager  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation  
Mail Stop: 1401  
U. S. Nuclear Regulatory Commission  
1 White Flint North  
11555 Rockville Pike  
Rockville, MD 02852

U. S. Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406

Senior NRC Resident Inspector  
Pilgrim Nuclear Power Station

ATTACHMENT 1 TO BECO LETTER 90- 014

Modification of Boston Edison's Performance  
and Submittal of an Annual Main Breakwater Survey

This attachment describes Boston Edison's new survey program for inspecting the Pilgrim Nuclear Power Station main breakwater and submitting an annual report on survey results.

Past Survey Program

Since 1981, our survey program included a main breakwater walkdown and a photographic survey and comparison conducted at least annually or following a storm when onshore winds are in excess of 50 miles per hour (mph) for 2 hours as measured at the site. The documented findings of all surveys conducted during the year were submitted to the NRC annually. The past program also required notification of the NRC at the initiation of a survey.

New Survey Program

BECO is making the following changes to the above survey program:

- (1) The walkdown of the main breakwater will continue to be conducted annually by a qualified structural engineer. If the walkdown indicates the need for a full survey, one will be performed and the documented results will be submitted to the NRC. If a full survey is not required, the documented results of the walkdown will not be submitted to the NRC, but will be available for NRC review at BECO's offices.
- (2) A full survey will be conducted every five years instead of annually. The documented results of the full survey will be submitted to the NRC.
- (3) The documented results of full surveys performed as a result of storm conditions as defined in our past survey program will be submitted to the NRC.
- (4) The NRC will not be notified of the initiation of surveys, but will be provided with the results of routine and non-routine full surveys.

Reason for Changes

Since 1981, the surveys have detected no major stone movement or major damage to the main breakwater. These nine year's of survey data demonstrate that a full survey can be conducted at an interval longer than once per year. Lengthening the full survey interval allows the reassignment of BECO resources and reduces documentation that must be prepared and reviewed, but does not jeopardize the timely detection of breakwater degradation.

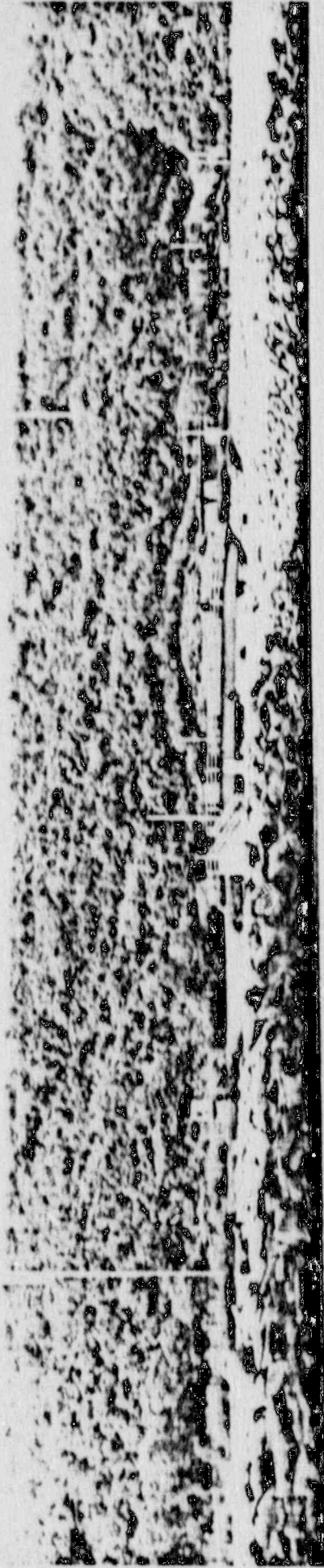
Walkdowns will continue to be conducted annually and in response to storms that have the potential to degrade breakwater structural integrity. Qualified engineering personnel will continue to conduct these walkdowns and assess the need for a full survey.

Removing the need to notify the NRC of the initiation of a survey reduces the regulatory burden without impacting breakwater structural integrity. NRC oversight of breakwater integrity is not reduced because the documented results of full surveys, as well as taken or planned corrective actions, will continue to be submitted to the NRC.

ATTACHMENT 3 TO BECO LETTER 90-014

Main Breakwater Camera Locations and Survey Information

Drawing C1181 Sheet 2 of 2 Revision E1



01 11 11

A-1

Unit 1 Pilgrim Station 600

Plymouth Ma

Monitoring Movement at

Northerly Breakwater

Station: Boat A 1

Date: Fri Sept 22 1989

Time: 11:23 AM

Camera: Hasselblad #UT 182608

Lens: 150mm NR 5888790

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

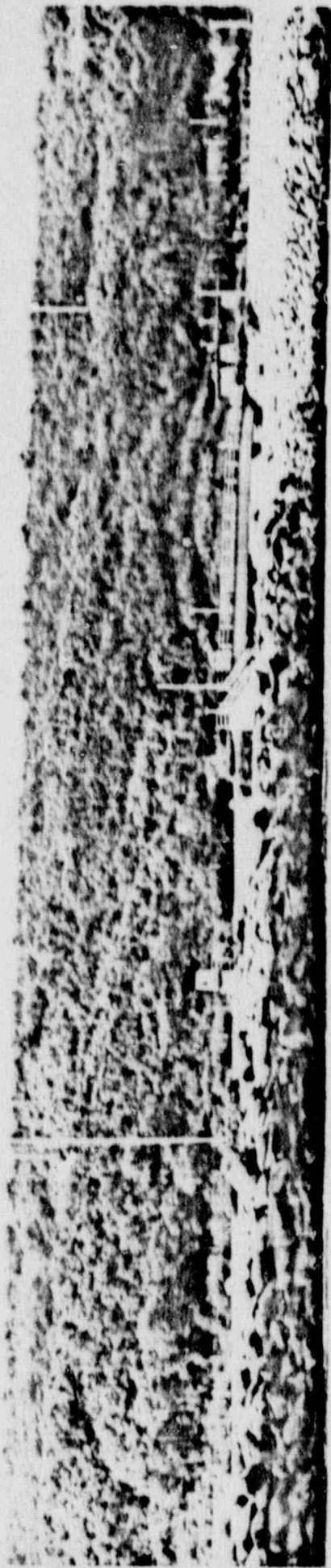
Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed: Rudolph Mitchell

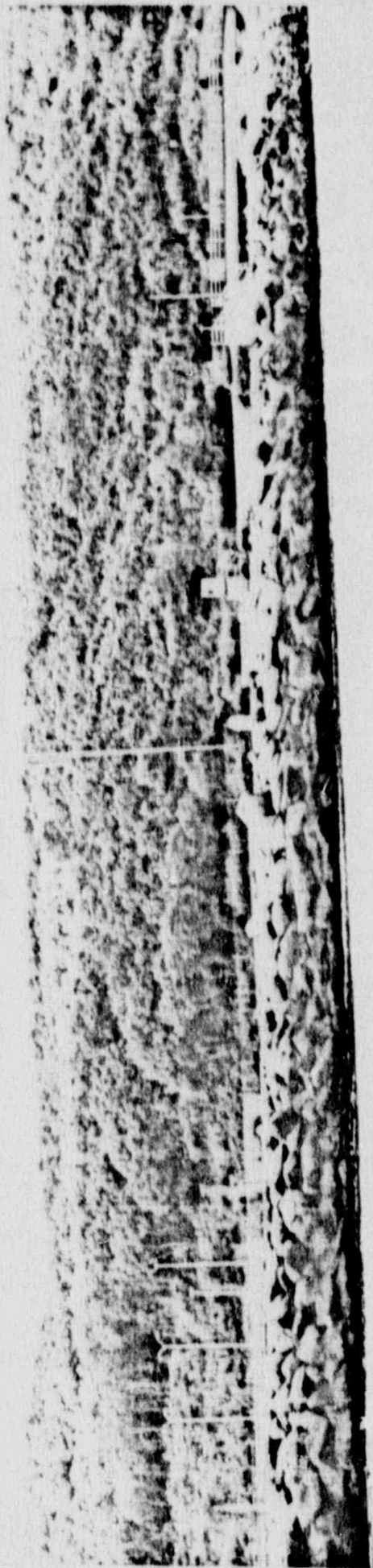


STA. A-2 1989

A-2

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat A 2  
Date: Fri Sept 22 1989  
Time: 11:25 AM  
Camera: Hasselblad #A/T 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell





STA. A-3 1989

A-3

Unit 1 Pilgrim Station 600  
Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: Boat A 3

Date: Fri Sept 22 1989

Time: 11:26 AM

Camera: Hasselblad #UT 182608

Lens: 150mm NR 5888790

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed: Rudolph Mitchell



STA. A-4 1989



A-4

Unit 1 Pilgrim Station 600  
Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: Boat A 4

Date: Fri Sept 22 1989

Time: 11:29 AM

Camera: Hasselblad #AJT 182608

Lens: 150mm NR 5888790

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed: Rudolph Mitchell



STA. A-5 1989

A-5

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat A 5  
Date: Fri Sept 22 1989  
Time: 11:30 AM  
Camera: Hasselblad #AJT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

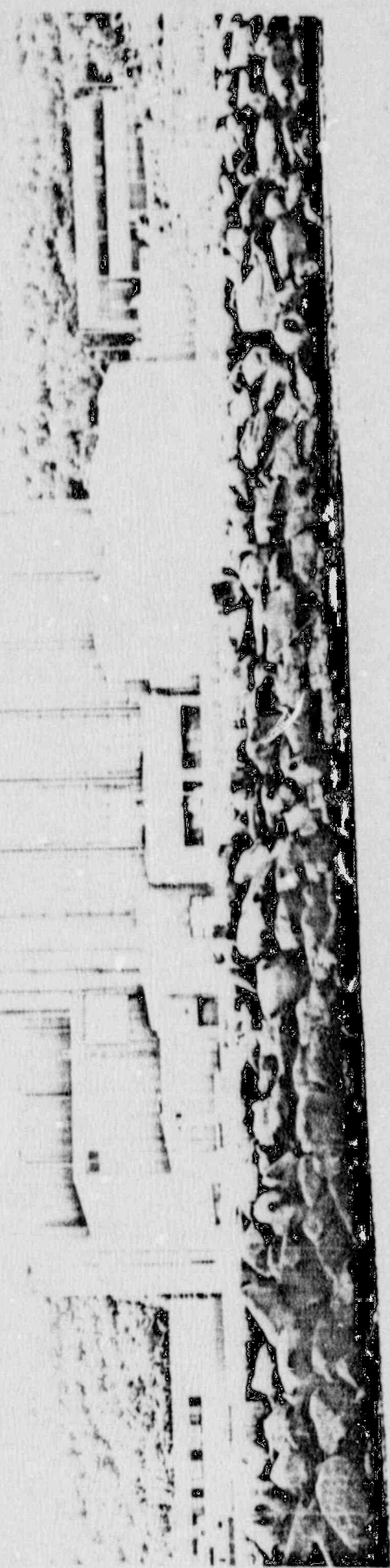


STA. A-6 1989

176

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat A 6  
Date: Fri Sept 22 1989  
Time: 11:31 AM  
Camera: Hasselblad #A/T 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

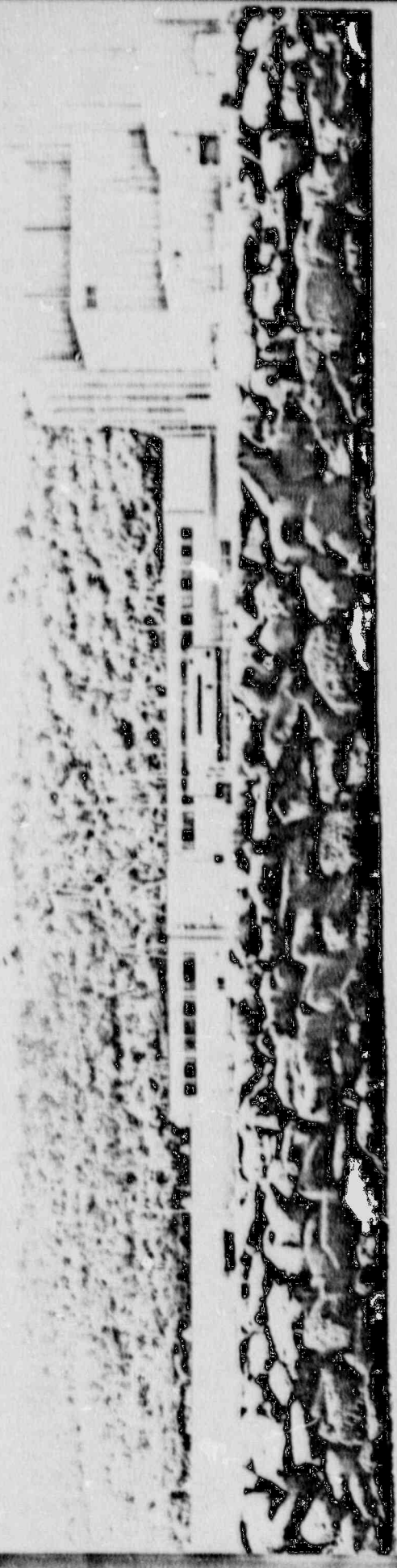




STA. A-7 1989

A-7

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat A 7  
Date: Fri Sept 22 1989  
Time: 11:33 AM  
Camera: Hasselblad #A/T 182608  
Lens: 150mm NR 5888790  
Shutier Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. A-8 1989

A-8

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat A 8  
Date: Fri Sept 22 1989  
Time: 11:34 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. A-9 1989

A-9

Unit 1 Pilgrim Station 600  
Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: Boat A 9

Date: Fri Sept 22 1989

Time: 11:36 AM

Camera: Hasselblad #UT 182608

Lens: 150mm NR 5888790

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed: Rudolph Mitchell

STA. A-10 1989

A-10

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat A 10  
Date: Fri Sept 22 1989  
Time: 11:37 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell





STA. A-11 1989

A-11

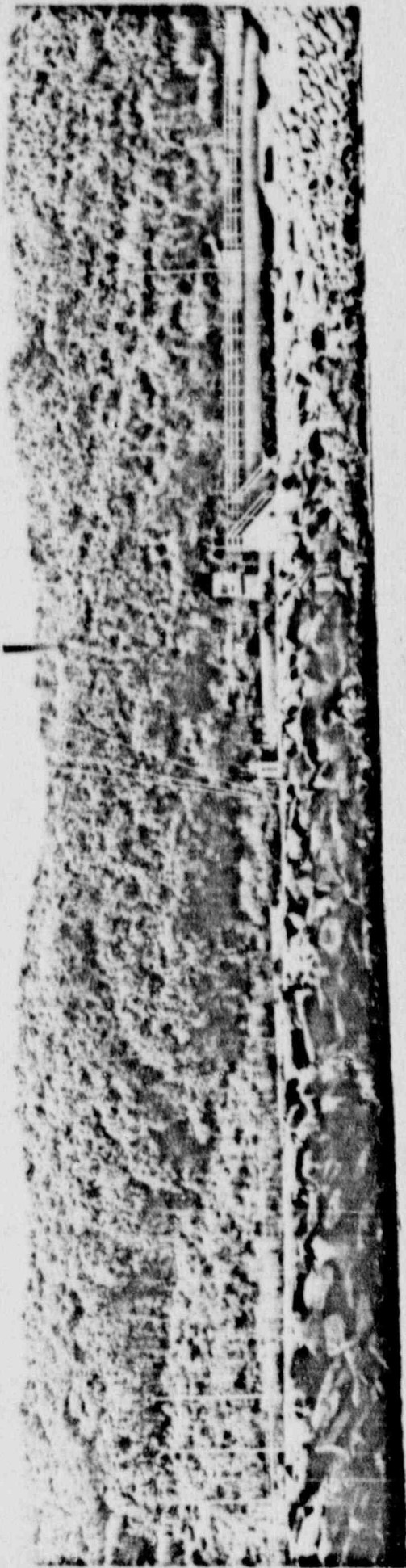
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Station: Boat A 11  
Date: Fri Sept 22 1989  
Time: 11:38 AM  
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Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. A-12 1989

A-12

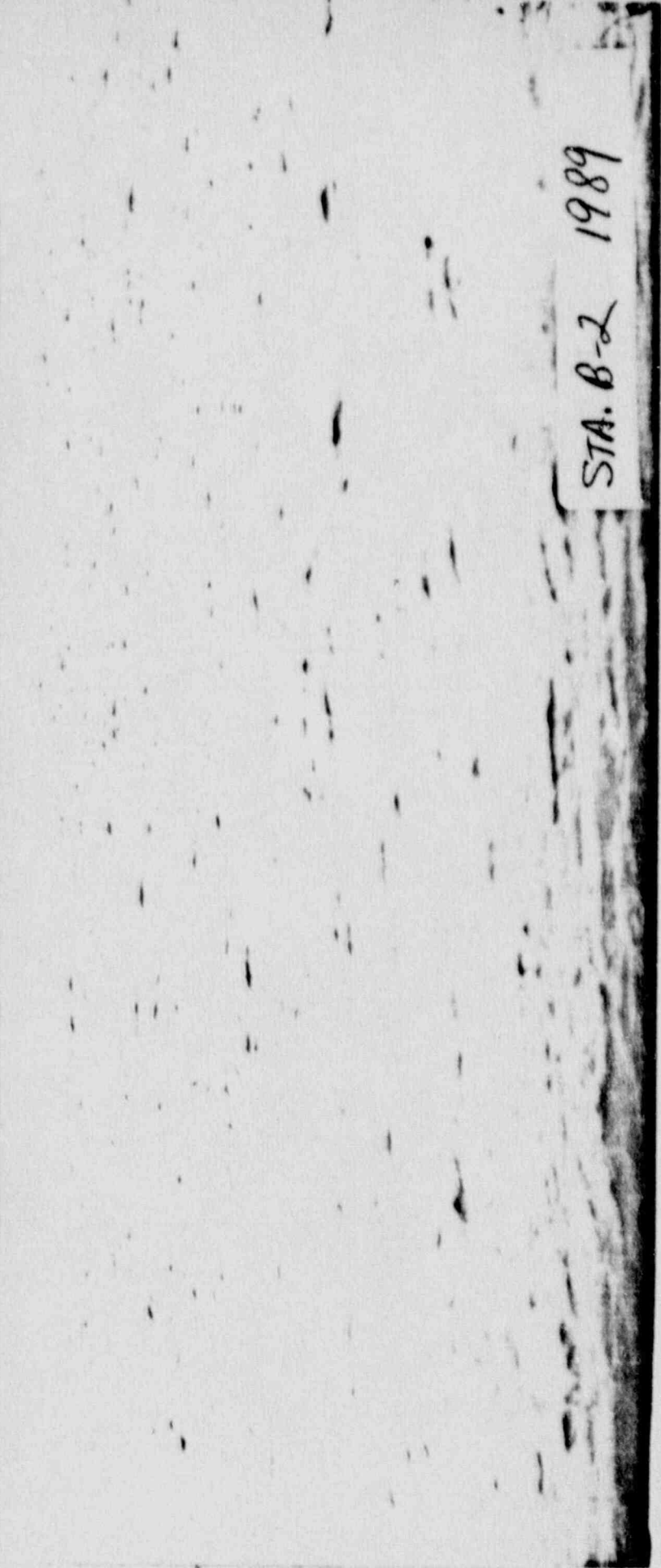
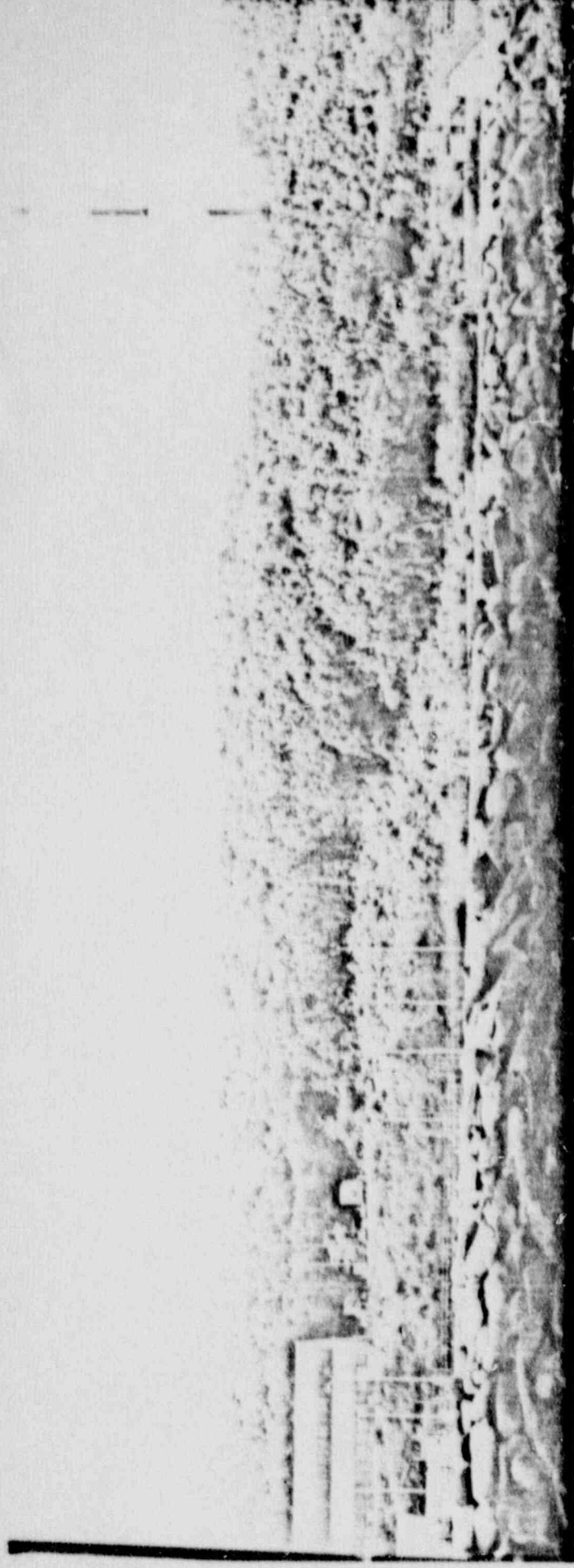
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Plymouth Ma  
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Station: Boat A 12  
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Time: 11:40 AM  
Camera: Hasselblad #AJT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. B-1 1989

B-1

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat B 1  
Date: Fri Sept 22 1989  
Time: 12:12 AM  
Camera: Hasselblad #AUT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. B-2 1989

B-2

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat B 2  
Date: Fri Sept 22 1989  
Time: 12:11 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell





STA. B-3 1989

B-3

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat B 3  
Date: Fri Sept 22 1989  
Time: 12:09 AM  
Camera: Hasselblad #AJT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. B-4 1989

B-4

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat B 4  
Date: Fri Sept 22 1989  
Time: 12:07 AM  
Camera: Hasselblad #AJT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. B-5 1989

B-5

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat B 5  
Date: Fri Sept 22 1989  
Time: 12:05 AM  
Camera: Hasselblad #AT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. B-6 1989

B-6

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat B 6  
Date: Fri Sept 22 1989  
Time: 12:03 AM  
Camera: Hasselblad #AJT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell





STA. 0-7 1989

B-7

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat B 7  
Date: Fri Sept 22 1989  
Time: 12:02 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. B-8 1989

B-A

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat B 8  
Date: Fri Sept 22 1989  
Time: 12:00 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. B-11 1989

B-11

Unit 1 Pilgrim Station 600  
Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: Boat B 11

Date: Fri Sept 22 1989

Time: 11:56 AM

Camera: Hasselblad #UT 182608

Lens: 150mm NR 5888790

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed: Rudolph Mitchell



STA. B-12 1989

B-12

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat B 12  
Date: Fri Sept 22 1989  
Time: 11:54 AM  
Camera: Hasselblad #AUT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell





STA. B-10 1989

B-10

Unit I Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat B 10  
Date: Fri Sept 22 1989  
Time: 11:58 AM  
Camera: Hasselblad #AJT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

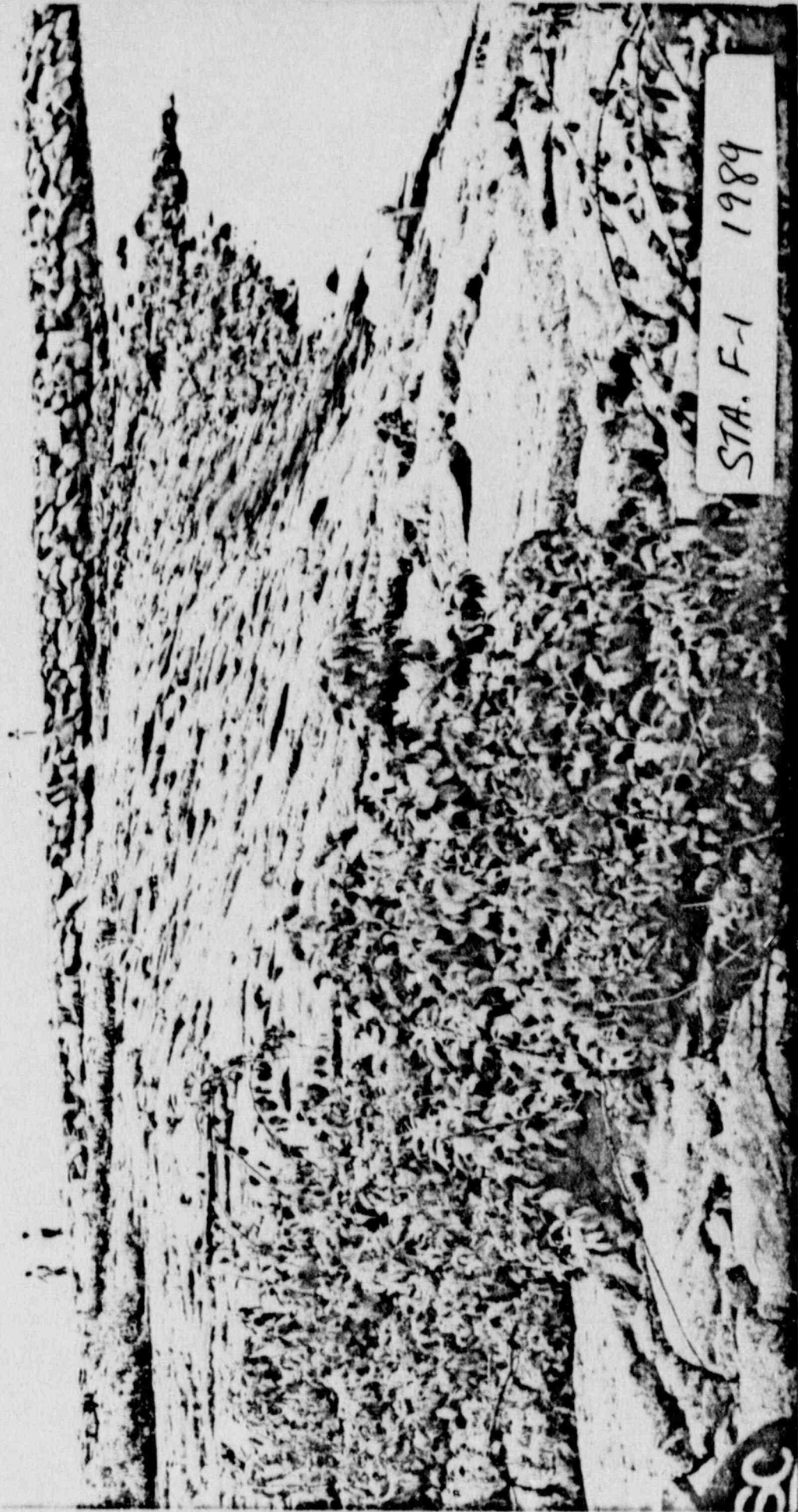


STA. B-9 1989

B-9

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: Boat B 9  
Date: Fri Sept 22 1989  
Time: 11:58 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. F-1 1989



F-1

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: F-1  
Date: Fri Sept 22 1989  
Time: 9:10 AM  
Camera: Hasselblad #AJT 182608  
Lens: 80mm NR 1594049  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. F-3 1989



F-3

Unit 1 Pilgrim Station 600  
Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: F-3

Date: Fri Sept 22 1989

Time: 9:08 AM

Camera: Hasselblad #UT 182608

Lens: 80mm NR 1594049

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed: Rudolph Mitchell



F-3

Unit 1 Pilgrim Station 600  
Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: F-3

Date: Fri Sept 22 1989

Time: 9:08 AM

Camera: Hasselblad #UT 182608

Lens: 80mm NR 1594049

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

Rudolph Mitchell

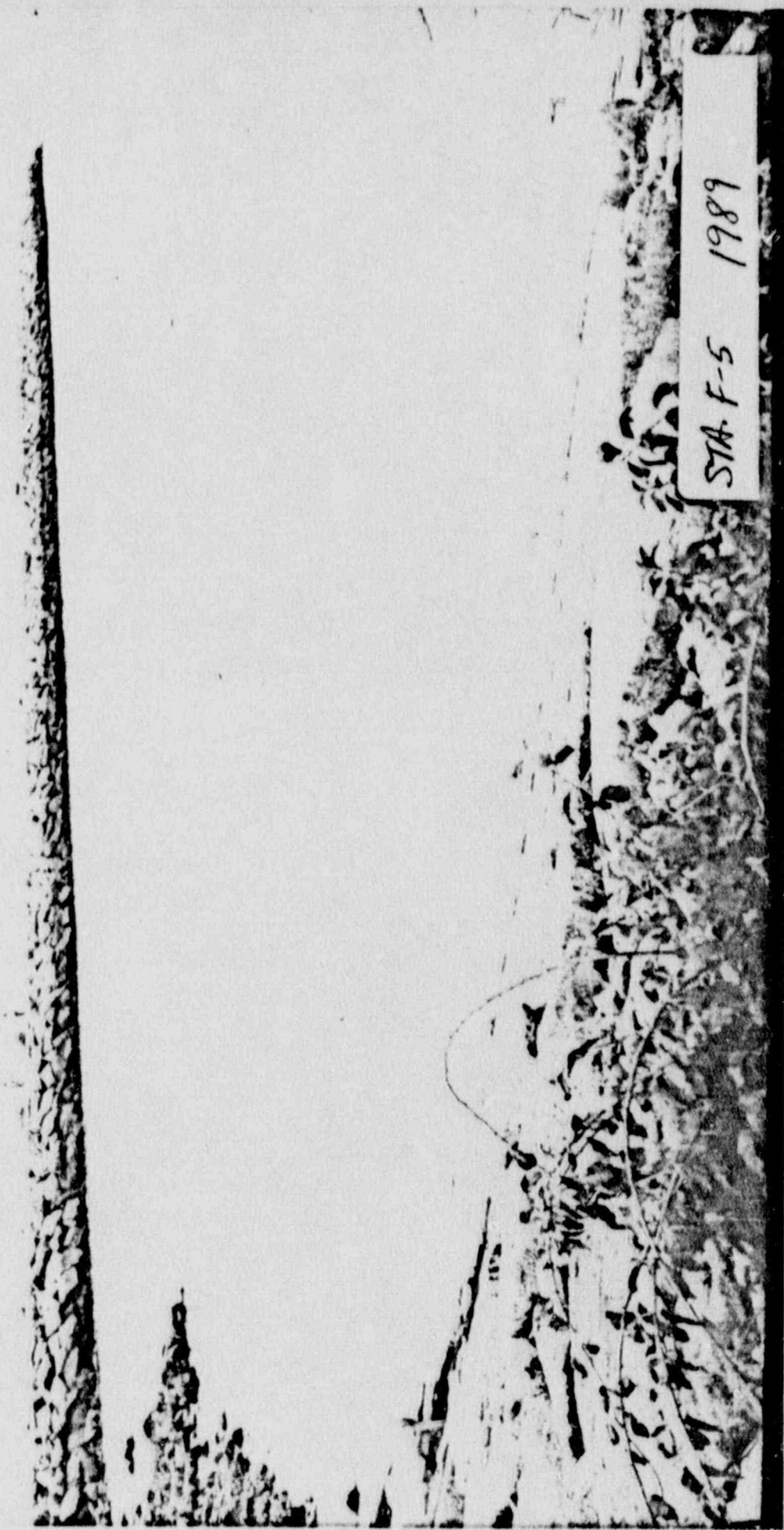
93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed: Rudolph Mitchell

STA. F-5 1989



F-5

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: F-5  
Date: Fri Sept 22 1989  
Time: 9:07 AM  
Camera: Hasselblad #UT 182608  
Lens: 80mm NR 1594049  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. F-7 1989



F-7

Unit 1 Pilgrim Station 600  
Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: F-7

Date: Fri Sept 22 1989

Time: 9:05 AM

Camera: Hasselblad #UT 182608

Lens: 150mm NR 5888790

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed: Rudolph Mitchell

144

STA. F-9 1989

F-9

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: F-9  
Date: Fri Sept 22 1989  
Time: 9:04 AM  
Camera: Hasselblad #AT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. F-10 1989

10



F-10

Unit 1 Pilgrim Station 600

Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: F-10

Date: Fri Sept 22 1989

Time: 9:03 AM

Camera: Hasselblad #UT 182608

Lens: 150mm NR 5888790

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed:

*Rudolph Mitchell*

STA. F-12 1989

F-12

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: F-12  
Date: Fri Sept 22 1989  
Time: 9:02 AM  
Camera: Hasselblad #AUT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. 1000-1 1989

1000-1

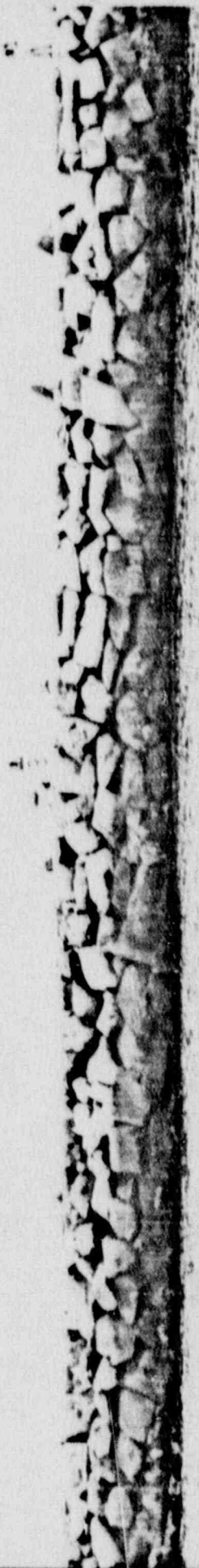
Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 1000-1  
Date: Fri Sept 22 1989  
Time: 10:13 AM  
Camera: Hasselblad #AT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. 1000-2 1989

1000-2

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 1000-2  
Date: Fri Sept 22 1989  
Time: 10:14 AM  
Camera: Hasselblad #A/T 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. 1000-3 1989





1000-3

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 1000-3  
Date: Fri Sept 22 1989  
Time: 10:15 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. 1000-4 1989

1000-4

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 1000-4  
Date: Fri Sept 22 1989  
Time: 10:16 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. 1000-5 1989



1000-5

Unit 1 Pilgrim Station 600  
Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: 1000-5

Date: Fri Sept 22 1989

Time: 10:16 AM

Camera: Hasselblad #UT 182608

Lens: 150mm NR 5888790

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed: Rudolph Mitchell

6

STA. 1000-6 1989

1000-6

Unit 1 Pilgrim Station 600  
Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: 1000-6

Date: Fri Sept 22 1989

Time: 10:18 AM

Camera: Hasselblad #UT 182608

Lens: 150mm NR 5888790

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

Rudolph Mitchell

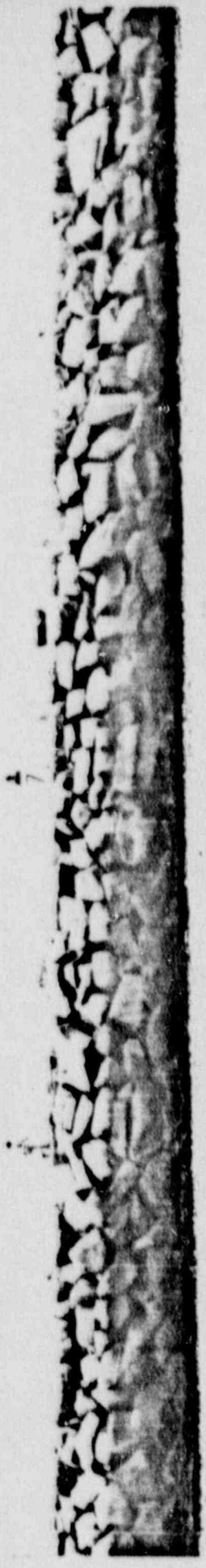
93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed: Rudolph Mitchell

STA. 1000-7 1989





1000-7

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 1000-7  
Date: Fri Sept 22 1989  
Time: 10:19 AM  
Camera: Hasselblad #AJT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. 1000-8 1989

1000-8

Unit I Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 1000-8  
Date: Fri Sept 22 1989  
Time: 10:21 AM  
Camera: Hasselblad #AT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. 1000-9 1989

1000-9

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 1000-9  
Date: Fri Sept 22 1989  
Time: 10:22 AM  
Camera: Hasselblad #A/T 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

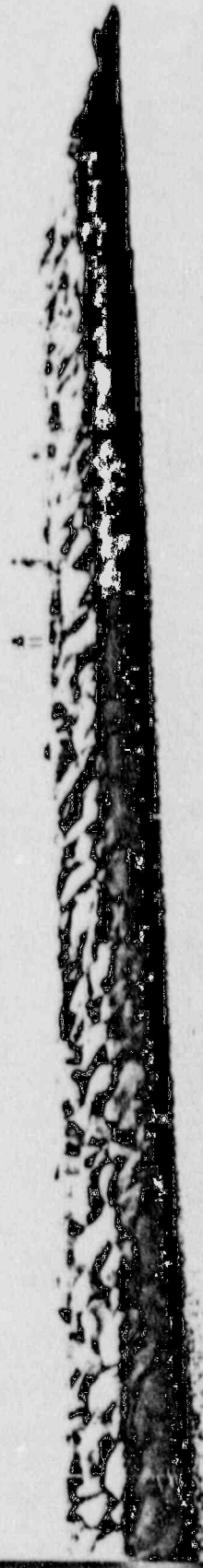
7  
STA. 1000-10 1989



1100-10

Unit I Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 1000-10  
Date: Fri Sept 22 1989  
Time: 10:22 AM  
Camera: Hasselblad #AUT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. 1000-11 1989





1000-11

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 1000-11  
Date: Fri Sept 22 1989  
Time: 10:23 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. 1000-12 1989



1000-12

Unit I Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 1000-12  
Date: Fri Sept 22 1989  
Time: 10:25 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. 10.1-1 1989



10.1-1

Unit 1 Pilgrim Station 600  
Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: 10.1-1

Date: Fri Sept 22 1989

Time: 10:45 AM

Camera: Hasselblad #AJT 182608

Lens: 150mm NR 5888790

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

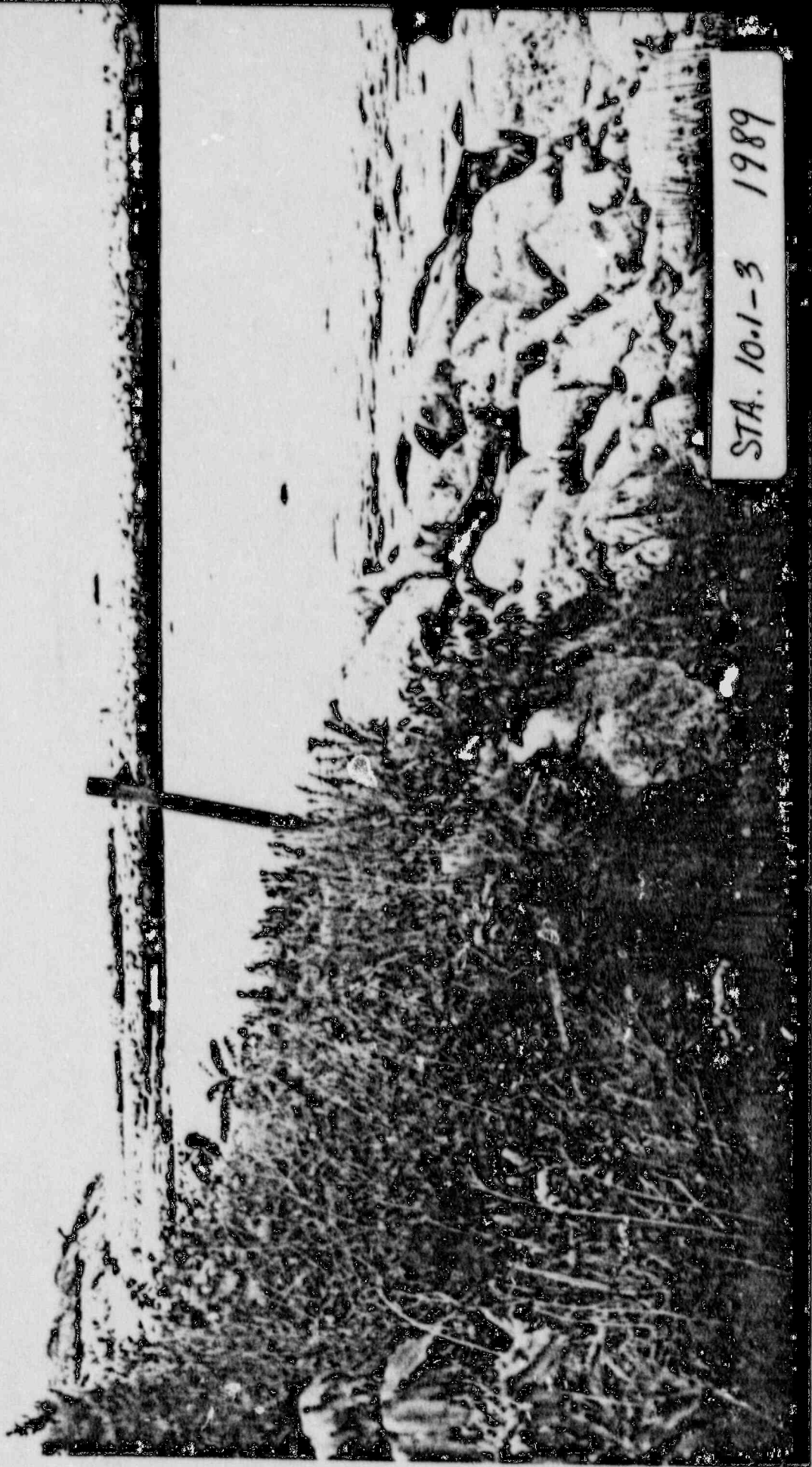
Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed: Rudolph Mitchell



STA. 10.1-3 1989

10.1-3

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 10.1-3  
Date: Fri Sept 22 1989  
Time: 10:44 AM  
Camera: Hasselblad #AJT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

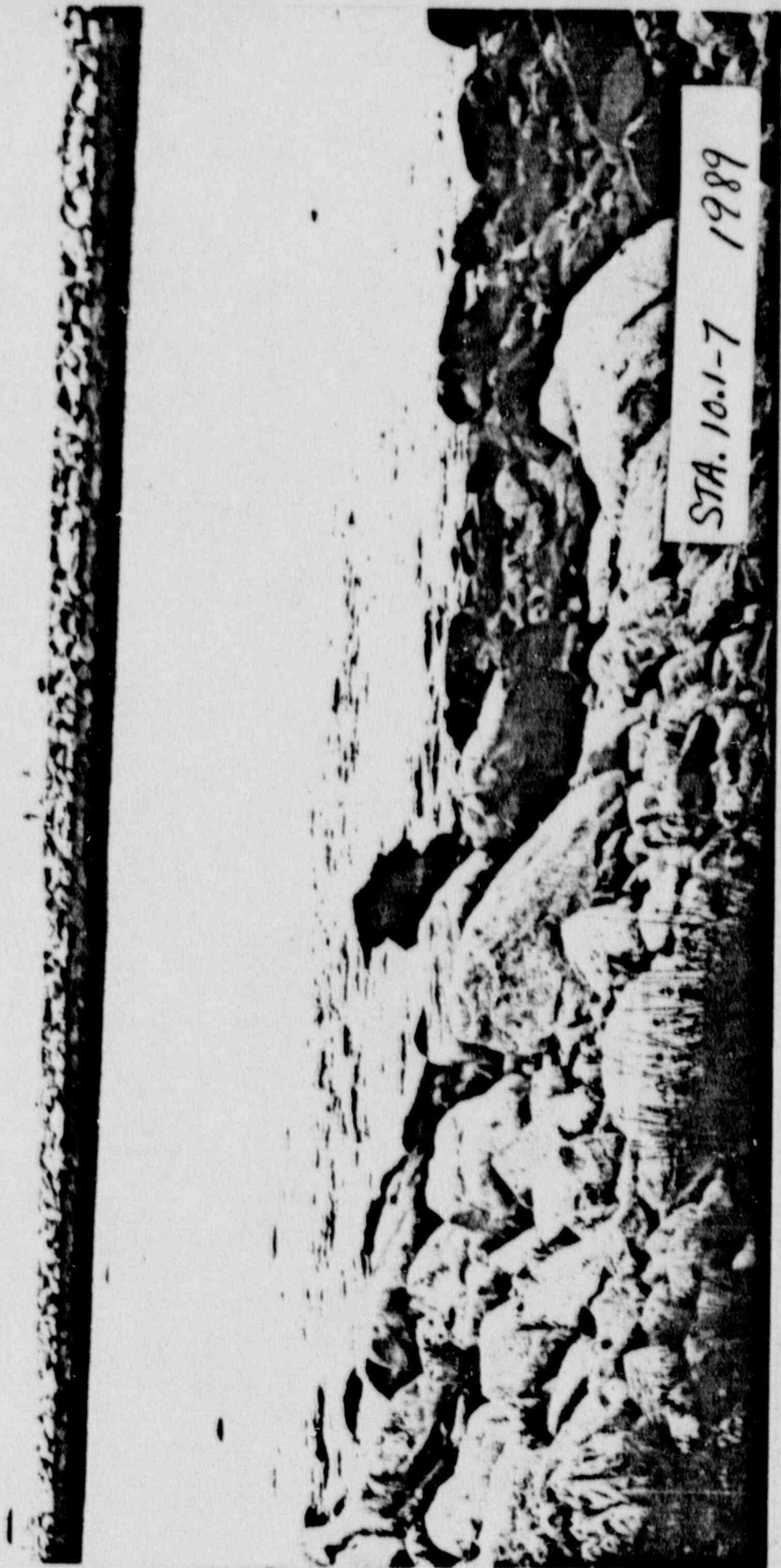


STA. 10.1-5



10.1-5

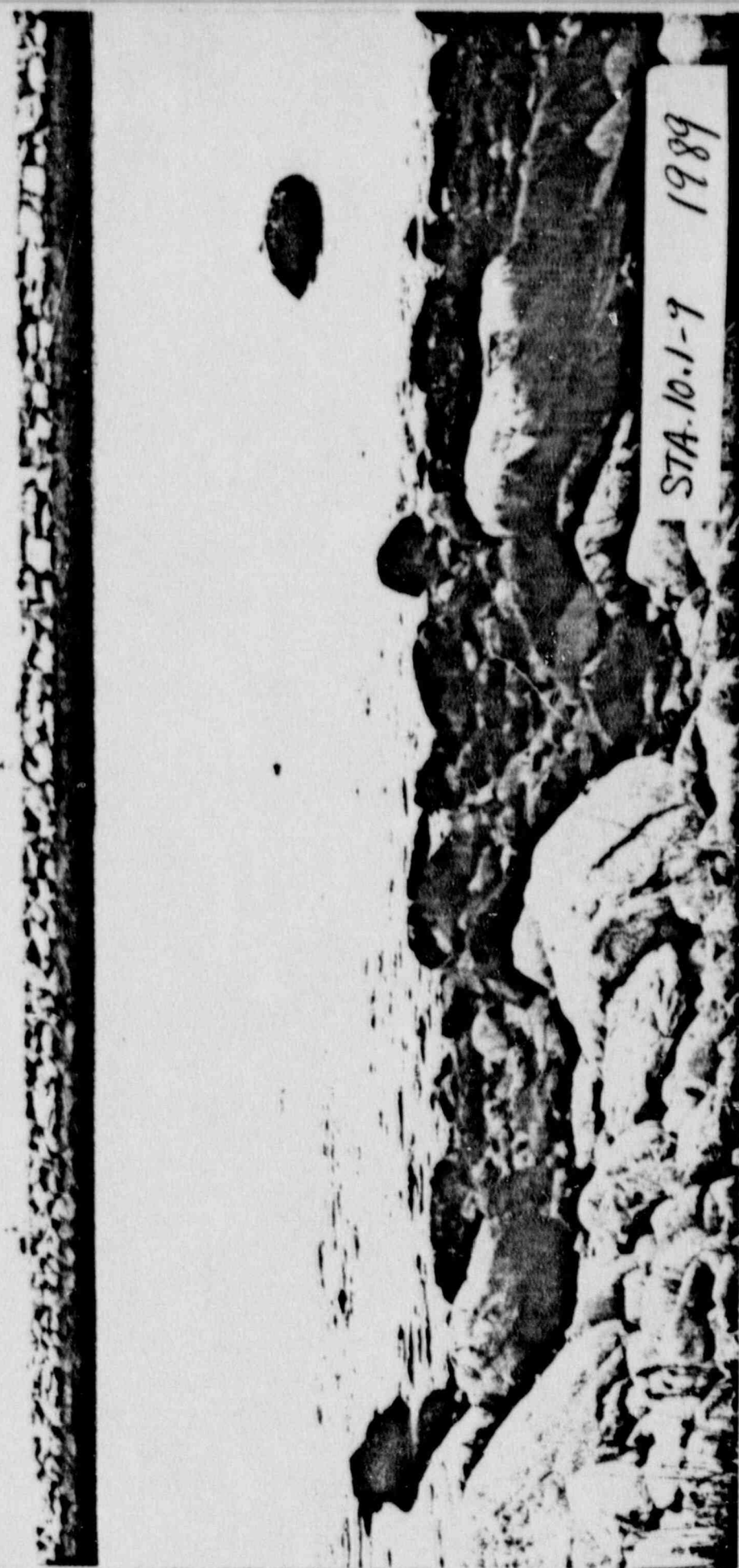
Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 10.1-5  
Date: Fri Sept 22 1989  
Time: 10:43 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. 10.1-7 1989

10.1-7

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 10.1-7  
Date: Fri Sept 22 1989  
Time: 10:41 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

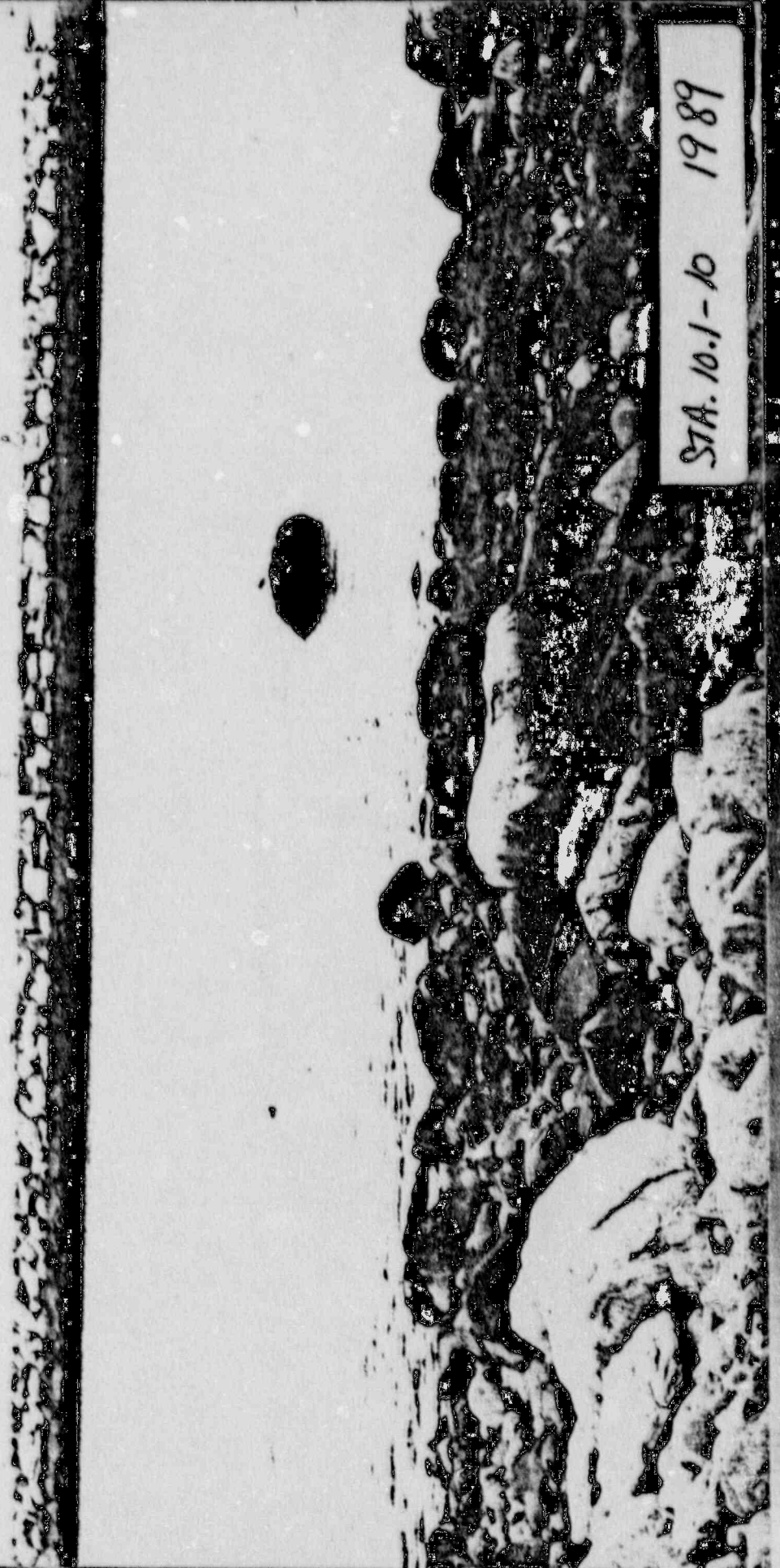


STA. 10.1-9 1989

10.1-9

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 10.1-9  
Date: Fri Sept 22 1989  
Time: 10:40 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: ini  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph M. Mitchell

STA. 10.1-10 1989



10.1-10

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: 10.1-10  
Date: Fri Sept 22 1989  
Time: 10:39 AM  
Camera: Hasselblad #UT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: in?  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



STA. 10.1-12 1989



10.1-12

Unit 1 Pilgrim Station 600  
Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: 10.1-12

Date: Fri Sept 22 1989

Time: 10:38 AM

Camera: Hasselblad #UT 182608

Lens: 150mm NR 5888790

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

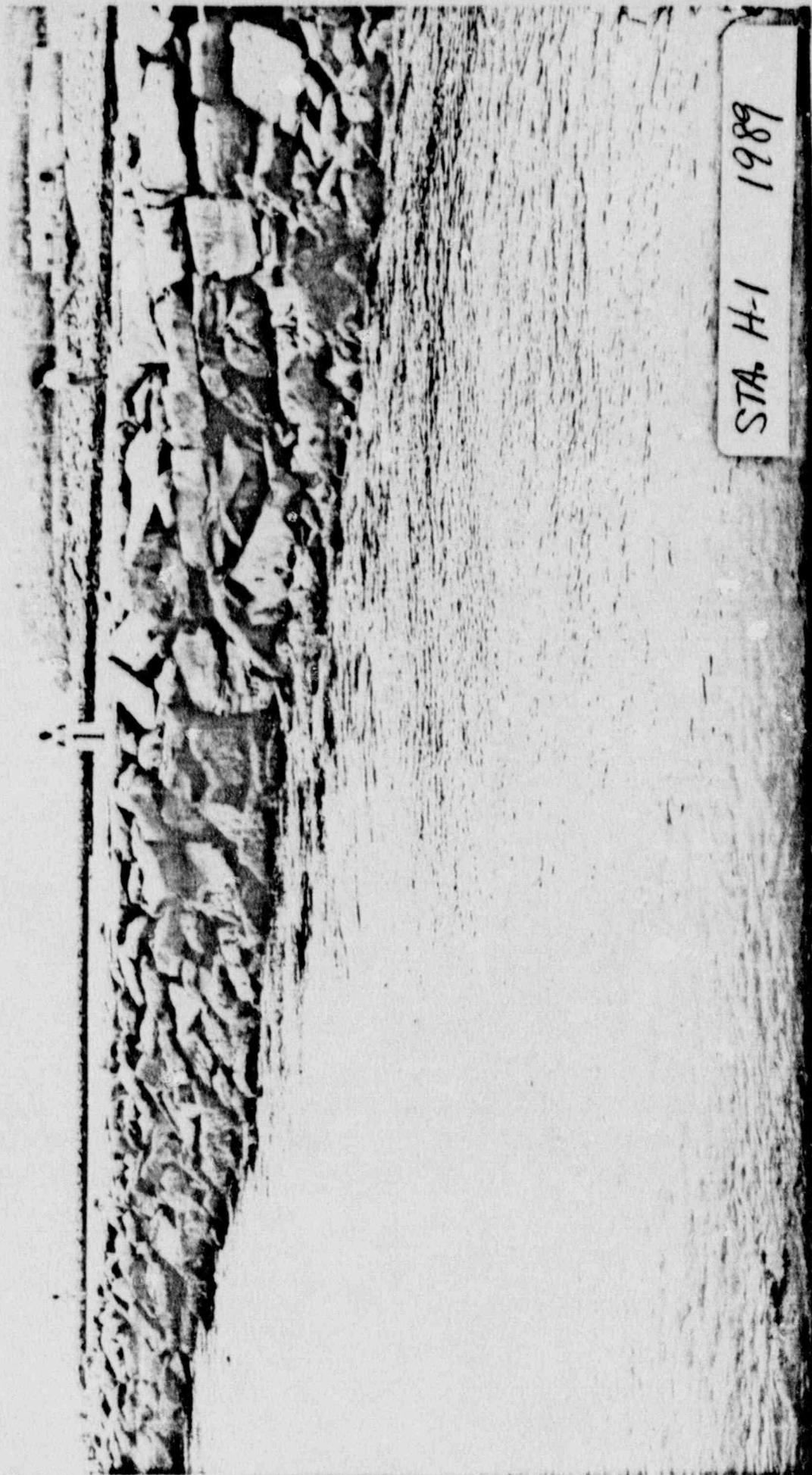
Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

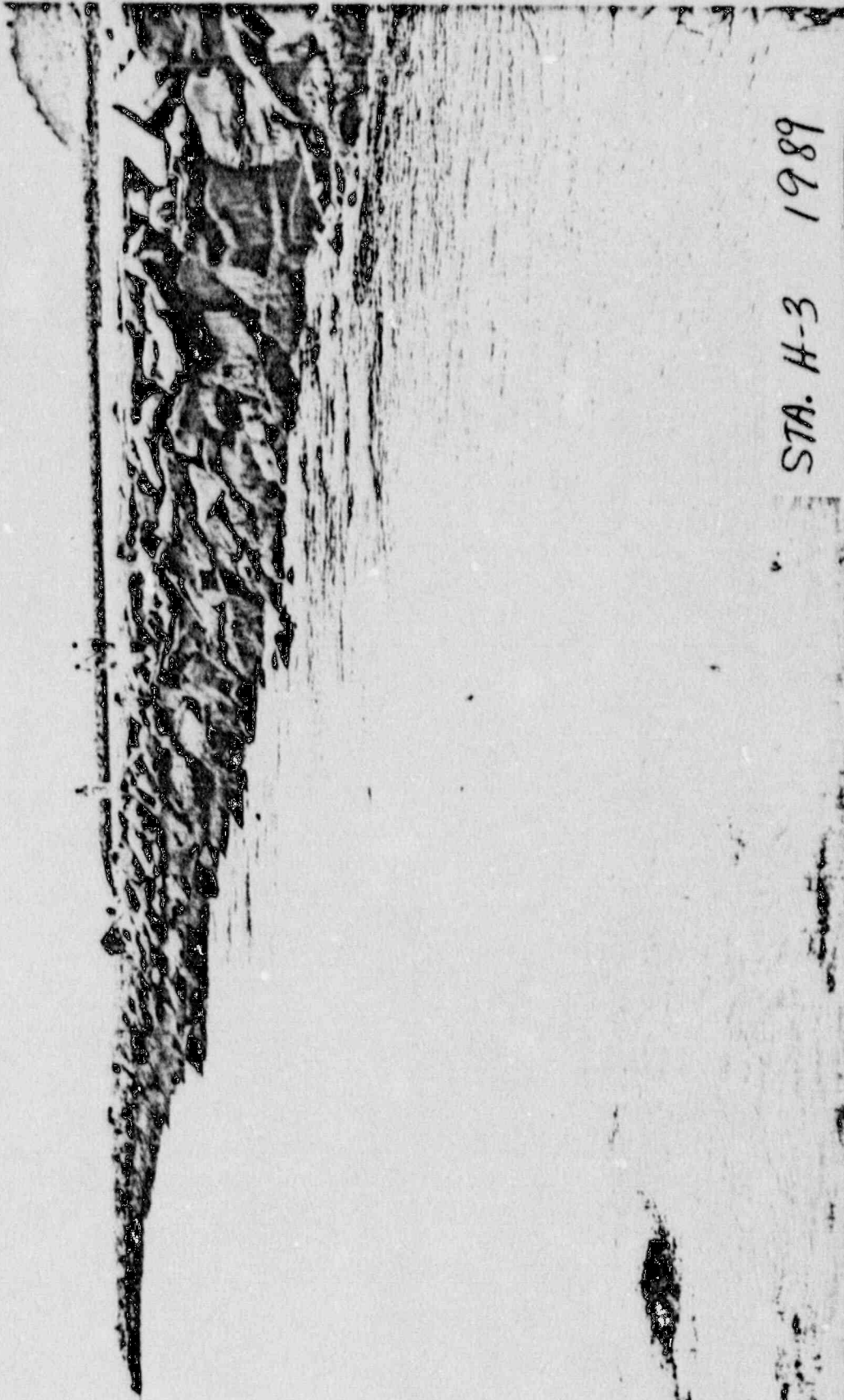
Signed: Rudolph Mitchell



STA. H-1 1989

H-1

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: H-1  
Date: Fri Sept 22 1989  
Time: 8:50 AM  
Camera: Hasselblad #A182608  
Lens: 80mm NR1594049  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph M. Mitchell



STA. H-3 1989

H-3

Unit 1 Pilgrim Station 600

Plymouth Ma

Monitoring Movement at

Northerly Breakwater

Station: H-3

Date: Fri Sept 22 1989

Time: 8:50 AM

Camera: Hasselblad #UT182608

Lens: 80mm NR1594049

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

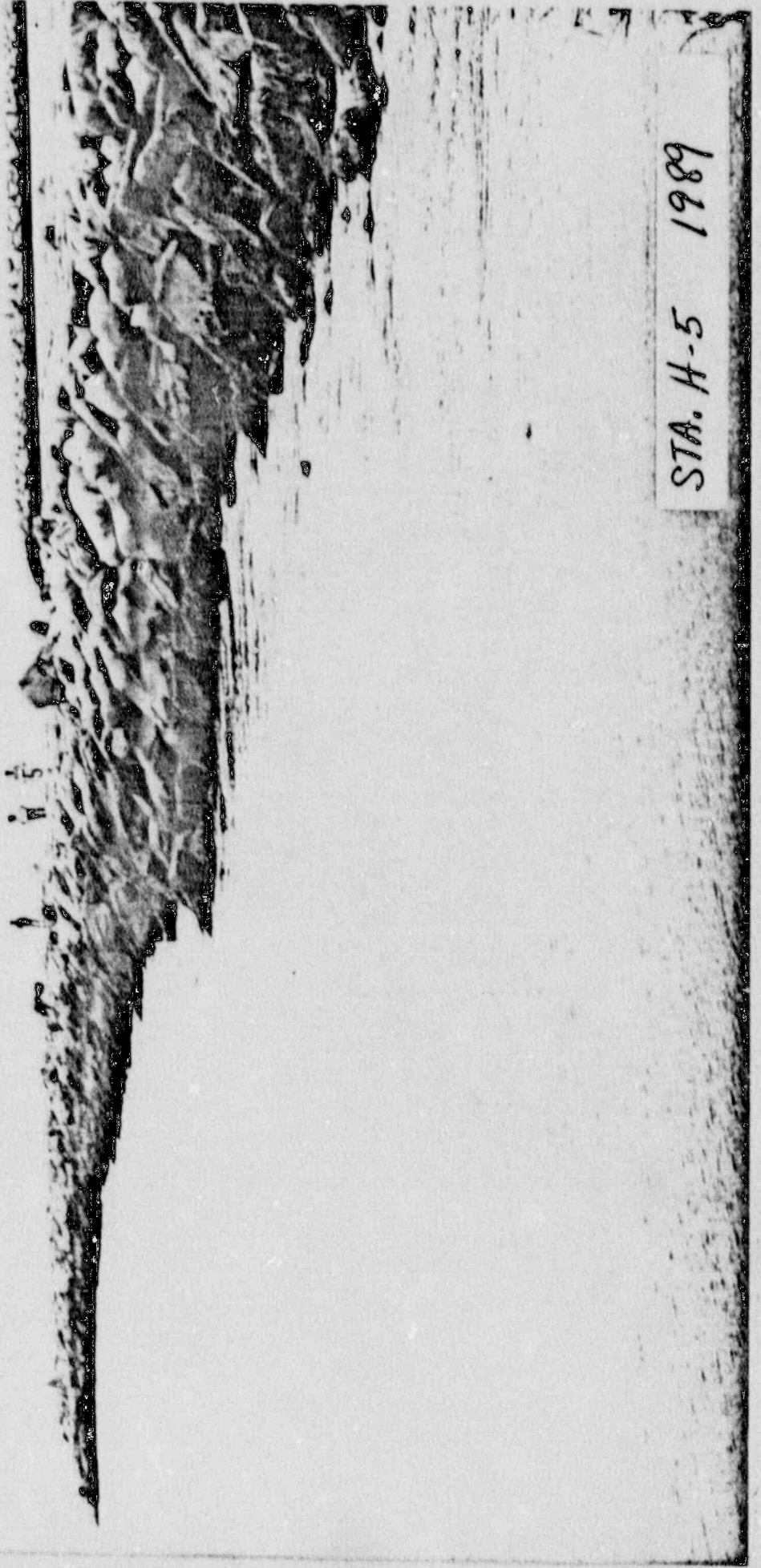
Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

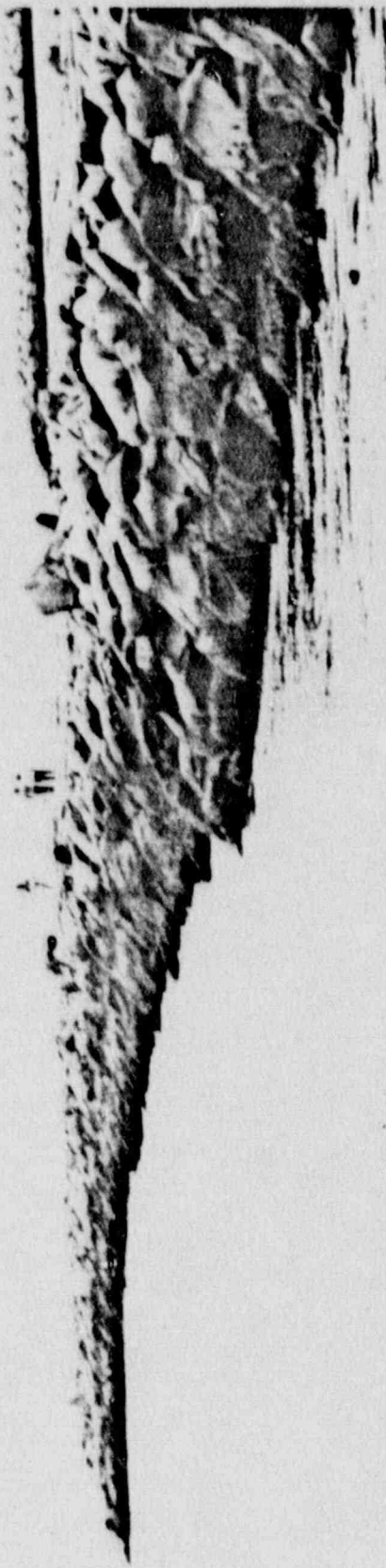
Signed: Rudolph Mitchell



STA. H-5 1989

H-5

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: H-5  
Date: Fri Sept 22 1989  
Time: 8:53 AM  
Camera: Hasselblad #AUT 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell



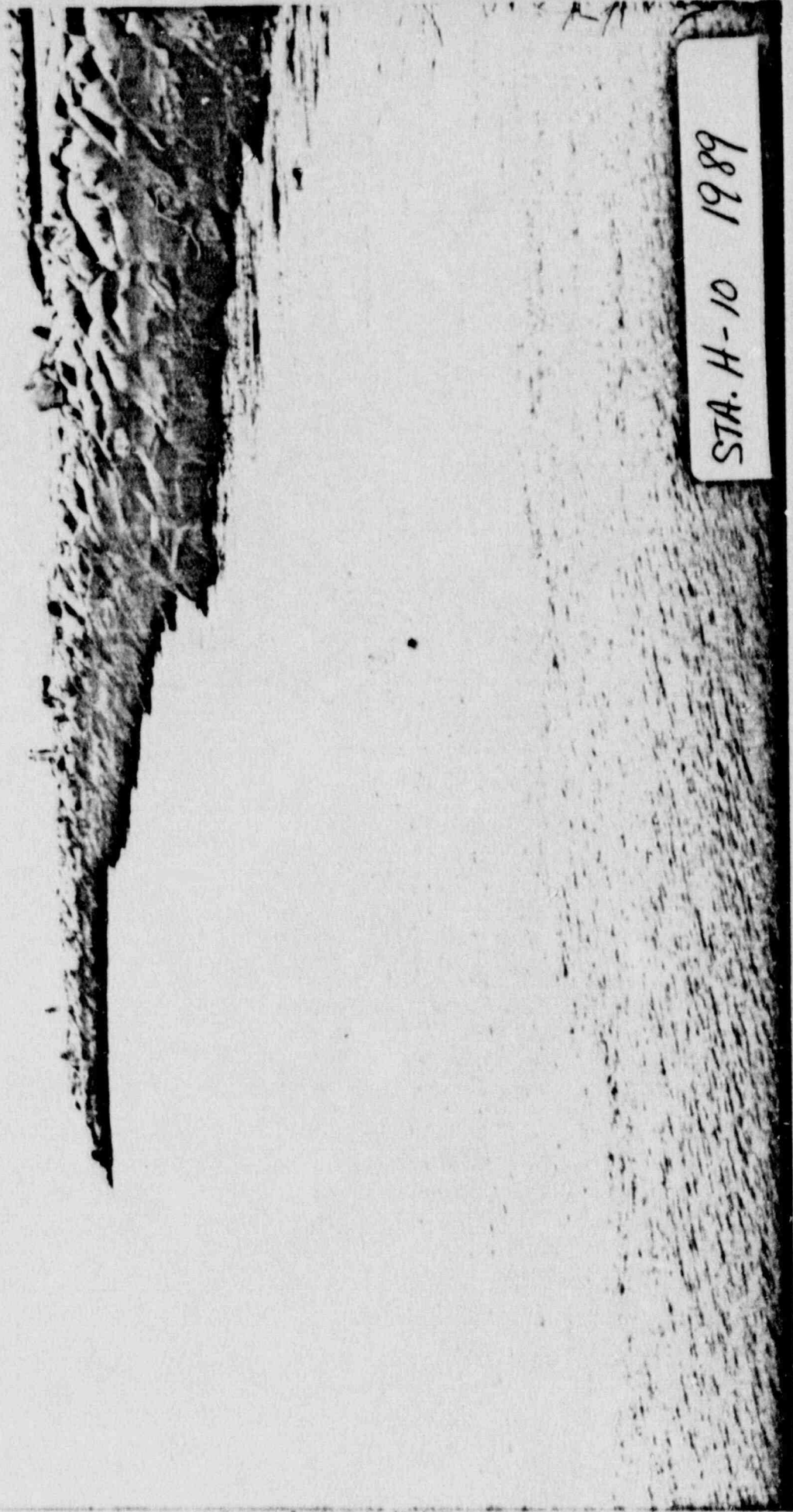
STA. H-7 1989



H-7

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: H-7  
Date: Fri Sept 22 1989  
Time: 8:53 AM  
Camera: Hasselblad #AUT 182608  
Lens: 15Gmm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

STA. H-10 1989



H-10

Unit 1 Pilgrim Station 600  
Plymouth Ma

Monitoring Movement at  
Northerly Breakwater

Station: H-10

Date: Fri Sept 22 1989

Time: 8:56 AM

Camera: Hasselblad #AJT 182608

Lens: 150mm NR 5888790

Shutter Speed: 1/60 sec

Distance: inf

Weather: cloudy

Rudolph Mitchell

93 Maple St

Scituate Ma 02066

Tel: 617 545-2137

Signed: Rudolph Mitchell

STA. H-12 1989



A-12

Unit 1 Pilgrim Station 600  
Plymouth Ma  
Monitoring Movement at  
Northerly Breakwater  
Station: H-12  
Date: Fri Sept 22 1989  
Time: 8:57 AM  
Camera: Hasselblad #J1 182608  
Lens: 150mm NR 5888790  
Shutter Speed: 1/60 sec  
Distance: inf  
Weather: cloudy  
Rudolph Mitchell  
93 Maple St  
Scituate Ma 02066  
Tel: 617 545-2137  
Signed: Rudolph Mitchell

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PAGE PULLED**

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