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Form 504  
DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

State: Massachusetts

11-5613

DESCRIPTIVE REPORT.

Topographic Sheet No. A <sup>4393</sup> **4393**

LOCALITY:

Cape Ann

Gloucester Harbor & Inner Harbor

Annisquam Canal & Little River

1928

CHIEF OF PARTY:

Raymond P. Eyman

## DESCRIPTIVE REPORT

to accompany

TOPOGRAPHIC SHEET "A"

GLOUCESTER HARBOR and VICINITY

### (1) Authority

This survey was made under instructions from the Director dated May 22, 1928 to Raymond P. Eyman, Chief of Party, Gloucester Shore Party.

### (2) Limits and Scale.

The work on this sheet includes the upper half of Gloucester Harbor, the Inner Harbor, a part of Annisquam River and Little River. It joins on sheet "D" to the southward and sheet "B" to the northward.

The scale of the sheet is 1:5000.

### (3) General description

The shore line of the outer harbor is mostly rock ledge and large boulders with a few small stretches of sand beach. The sand beaches are located as follows: A small stretch along the eastern shore to the southeastward of Ten Pound Island; a limited extent on the southern side of Stage Head; and a long stretch from the entrance to the canal to the eastward to Fort Point. The shore line proper from the northern side of Stage Head to Fort Point is now made up of a sea wall.

Ten Pound Island is a small rocky islet lying in the eastern half of the harbor about 20 to 25 ft. high and on it are located the lighthouse, lightkeepers dwelling, several large buildings, of the U.S. Fisheries and a large airplane hanger of the Coast Guard. A large L dock is located on the northern side and is maintained by the Fisheries department.

Harbor Cove is a series of old slips and docks in generally a poor state of repair and is usually filled with vessels of the fishing fleet.

The Inner Harbor is similar to Harbor Cove in being made up of old slips and docks, those on the western side being in better condition than the remainder.

Five Pound Island<sup>lies</sup> at the upper end of the inner harbor and is a small rocky islet covered with small sheds and shacks.

Smith Cove has a few slips and docks but the southern part is very shallow and consists mostly of seawall and house foundations of piling extending out over the water.

A canal leads from Gloucester Harbor to the Annisquam River. The northern side of this canal is a built up sloping seawall and the southern side is a high mud bank. From the canal to the railroad bridge the western side of the river is all low lying marsh land with extensive mud flats; the eastern side is higher, firm ground ending in a high, rocky cliff before reaching the bridge. Beyond the bridge both sides are marsh land with the exception of a small area on the eastern side just north of the bridge and an area opposite the entrance of Little River.

Little River is surrounded generally by marsh land. The north side of the mouth of the river is a rocky knoll as is also the area around  $\Delta$  Pole. The land back of the eastern side of the river rises to a high ridge or Woodward Hill but there is generally a small fringe of marsh land at the river bank.

#### (4) Landmarks.

The Harbor and River have several prominent landmarks that are easily distinguished.  $\Delta$  Ham is a square, grey stone tower surmounted with a flag pole on top of the cliff on the western shore of the harbor; to the northward of this is a smaller round, brown stone tower on top of a smaller building at the base of the cliff. ( $\Delta$  Lit)

On Stage Head is a high, prominent, white flag pole ( $\Delta$  Stage)

On Ten Pound Island the prominent feature is the lighthouse of brown brick with the white dwelling house near by.

On the harbor side of Rocky Neck are two prominent dark red, square, brick stacks, one at the northern end ( $\odot$  Neck) and one at the northwest end ( $\Delta$  Tarr)

In the City of Gloucester proper are a number of prominent features, mostly church spires and the City Hall Clock tower, they are shown as follows; Universalist Ch. Spire, Pwr., Baptist Ch. Spire, Catholic Church Spire, Portugese Ch. W. Spire, Portugese Ch. E. Spire, and the City Hall. There is also the tall, yellow, brick stack of the Gloucester Gas and Electric Co. ( $\Delta$  Gas)

In the vicinity of the River the most prominent object is the tall, red, brick stack (the taller of two and only one visible from the Harbor) of the Le Page Glue Factory ( $\Delta$  Lee)

#### (5) Control

The survey was made with the usual plane table outfit and control was had from the number of church spires and prominent objects located by previous and current triangulation. Considerable difficulty was experienced in the start of the survey due to the erroneous location of two triangulation stations. Tarr and Wonson Stack and Fish Company tower; they were both out of position by approximately the same amount and direction and in such a manner that the error could not definitely be detected until considerable headway had been made into the Inner Harbor. These two stations were relocated by triangulation and a number of others cut in and thereafter but little difficulty was had except for distortion in the sheet itself. Practically no traverse was run except for the upper end of Little River as the point fixes could be had at every set up point.

The largest source of dissatisfaction and trouble was experienced with the plane table alidade and rods. The alidade was in very poor condition and could not be focused clearly for usual distance readings and the rods were not calibrated for the particular instrument. The rods were checked up over taped distances and a table constructed to give true distances for individual rod readings.

#### (6) Survey Methods.

All work, except that in and around the slips in Inner Harbor, was done in the usual plane table manner. In and around the slips all the outer corners of docks and many of the inside corners were located with the plane table. A tape traverse was run around the perimeter of all docks, and the slips then placed on the sheet from these distances and tied in to the points previously located by plane table.

(7) Comparison with former work.

Before proceeding to the field a compilation of former work as shown on Chart #243 was enlarged to the scale of the projection and transferred to the sheet and shown as blue lines. As the survey progressed many changes in the delineation of the shore line were found. In the marsh area this was to be expected due to natural changes that may have taken place and also to the fact that an exact location of high water mark is very difficult. Also in the vicinity of the docks some change could be expected due to change in construction and also to the fact that the previous work may have been compiled from separate data and oriented on the chart from best available data and therefore different in details and azimuth.

Many changes were found (the usually of rather small amount) in the rocky shore line where no natural changes would be expected to occur, but it is believed that much of this is due to the fact that the present survey was made on a larger scale and therefore more attention was paid to details and more frequent rod readings at closer intervals were taken. The delineation of the canal is shown to be wider than previously.

Much of the road and street layout is substantially the same as shown. In several places sections of roads were rodged in and a few road intersection sections. Accompanying this sheet is a map of road layouts and on this are indicated the existing and non-existing streets. This map was taken by a party thru the various streets and checked on the ground altho of course time did not permit to measure various distances.

Bp. 224-86

(8) Anchorage.

Harbor Cove is used almost exclusively by the fishing fleet and is usually well filled with boats in all slips and off the head of the docks, at times 5 deep alongside.

In inner harbor to the S.W. of Five Pound Island many boats and small yachts find anchorage, smaller boats anchor to the eastward of Five Pound. In the middle portion of Smith Cove many small boats find anchorage. In Little River are many small boats during the summer season, as many Summer cottages are located along the eastern shore of the river; most of these boats are grounded at low water, however.

(9) Aids to Navigation.

On this sheet a few buoys in the outer harbor were located and checked with the hydrographic locations. A small stake beacon is maintained on the small rock to the eastward of Ten Pound Island. A skeleton steel structure (Keg) is erected on the ledge to the westward of Rocky Neck. To the south-westward of Five Pound Island is a spindle beacon surmounted with a large red ball. The aids in the Annisquam River are numbered and painted as if entering from Ipswich Bay into Gloucester Harbor and seem to be confusing to strangers using the River and entering from the Gloucester side.

There are two draw bridges over this river on this sheet. The highway bridge has a double jackknife draw and the R.R. bridge has a single lift draw.

The River beacons are all alike and consist of a group of 5 piles boarded up pyramid fashion and painted either red or black according to the side of the channel.

(10) Dangers.

A few rocks were located on this sheet. The area known as Field Rocks in Fresh Water Cove on the western side of the outer harbor is foul. One large table rock is to be seen at all times except at H.W., two other smaller rocks bare at about half tide and are to the southward and south-westward of the above.

The area to the eastward of Ten Pound Island is generally foul and a number of rocks are to be seen at low tide.

The beacon to the S.W. of Five Pound Island is built on a series of rocks that have a few detached rocks to the eastward that bare at about 1/3 tide. Between Five Pound Island and the land to the northeastward are a number of small rocks that bare at low water.

(11) Plane Table Positions.

Accompanying this report is a list of plane table positions of points of more or less permanent character that are recoverable.

Respectfully submitted,  
*Raymond P. Eymann*  
Raymond P. Eymann, H. & G. E.  
Chief of Party

## PLANE \*TABLE POSITIONS

Object and description ---- Remarks	Latitude		D. M. meters	Longitude		D. P. meters
	°	'		°	'	
Flag pole on small dock	42	36	274	70	39	607
Beacon, red spindle with ball	42	36.5	532	70	39	442
Red beacon, #8, pile dolphin	42	37	205	70	40.5	163
Large lone granite boulder Marked with disc	42	37.5	397	70	42	178
Chy. of power plant, Fisheries	42	36	264	70	39.5	560
E.chy. of white house on bluff	42	37	51	70	41	334
Fisheries flag pole	42	36	250	70	39.5	546
Cupola on large brick gas tower	42	36.5	516	70	39.5	136
End of stone dock Middle point	42	37	911	70	42	318
Pile dolphin off monument	42	36.5	130	70	40	317
Flag pole, Rocky Neck Railway "Dub"	42	36.5	75	70	39	492
Black beacon #5, pile dolphin	42	37	628	70	41	488
Stake beacon on rock "Fit"	42	36	300	70	39.5	356
Flag pole, Coast Guard Hanger	42	36	230	70	39.5	489
R.R. bridge stop signal	42	37	146	70	40.5	555
Heavy gin pole mast on dock	42	36.5	301	70	39.5	34
Chy. of small white roadhouse "White Gull"	42	36.5	377	70	40.5	490
Chy. on lone house	42	37	326	70	41.5	42
Prominent boulder in marsh	42	37	904	70	41.5	502
Red skeleton iron beacon "Keg"	42	36	674	70	39.5	339
Outer pile of long row	42	36	587	70	39	504
Fisherman Monument (Rocky Neck)	42	36.5	205	70	40	344
Square brick chy. of power plant (Marine Ry.)	42	36.5	50	70	39	508
Outer one of group of piles	42	36	662	70	39	426
Cupola on dock pavilion	42	37	622	70	41	433
Tall red chy. on brick building "PRO"	42	36.5	562	70	39.5	294
Bow of old wrecked boat	42	36.5	650	70	39	250
Brick pier gateway on road - Center of gate'y	42	37	490	70	41	78
Black beacon #7, pile dolphin	42	37	371	70	41	216
Church spire, E. Gloucester	42	36.5	281	70	39	80
Standard Oil Billboard - Center of sign	42	36.5	468	70	40.5	456
R.R. whistle post, white	42	37	136	70	41	10
Small yellow outhouse - Center of roof	42	37	440	70	42	387
Large table top boulder - Marked with disc	42	36	76	70	40.5	193

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

Washington, D. C.

March 12, 1929

DIRECTOR, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted.

*Raymond P. Egan*  
Raymond P. Egan

Sheet "A" T. 44393

Chief of Party.

DESCRIPTION	POSITION					METHOD OF DETERMINATION	CHARTS AFFECTED		
	Latitude		Longitude		Datum				
	°	'	D. M. meters	°				'	D. P. Meters
Red brick stack	42	36	1769.2	70	41	640.1	N.A.	Triangu. △	243
Flag Pole Stage Head	42	36	555.4	70	40	1015.2	N.A.	Triangu. △	243
Sq. Stone Tower, Bldg. Stone	42	35	1676.2	70	41	77.3	N.A.	Triangu. △	243
Yellow brick stack	42	36	1570.6	70	39	635.1	N.A.	Triangu. △	243
Red Sq. brick stack	42	36	711.8	70	39	899.2	N.A.	Triangu. △	243
Red Sq. Brick Stack	42	36	976	70	39	508	N.A.	Plane Table	243
Flag Staff, Skeleton Tower	42	37	1299.4	70	38	1355.7	N.A.	Triangu. △	243
Weather Bureau Mast	42	36	1005.4	70	39	1197.8	N.A.	Triangu. △	243
Pyramid Ch. Spire	42	36	1476.6	70	39	1221.9	N.A.	Triangu. △	243
<i>See also page 2 of this report.</i>									
<i>s.d.</i>									

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstaves and like objects are not sufficiently permanent to chart.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4393

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field Letter A

REGISTER NO. **4393**

State Massachusetts

General locality Cape Ann

Locality Gloucester ~~Inner and Outer Harbor~~ and Annisquam River

Scale 1:5000 Date of survey July - August, 1928

Vessel U. S. C. & G. S. L. #65

Chief of Party Raymond P. Eymann, R. & G. E.

Surveyed by R. P. Eymann and L. C. Johnson

Inked by R. P. E. and L. C. J.

Heights in feet above \_\_\_\_\_ to ground to tops of trees

Contour Approximate contour Form line interval \_\_\_\_\_ feet.

Instructions dated May 22, 1928

Remarks: Blue print showing layout of docks and small scale

map of street layout accompanies sheet.