DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: Massachusetts

DESCRIPTIVE REPORT
Topographic Sheet No. 4426
Hydrographic

LOCALITY
Newburyport
Merrimack River Entrance

1929

CHIEF OF PARTY
H.E. Finnegar
DESCRIPTIVE REPORT TO ACCOMPANY TOPOGRAPHIC SHEET #1.

Instructions dated - August 1, 1928.

GENERAL DESCRIPTION OF COAST

At the northern end of the sheet, the buildings, roller coaster, etc., at Cushing, make up a very prominent landfall. From Cushing to the entrance of Merrimack River, there are numerous scattered summer cottages fronting along the beach. Merrimack River is marked by two stone jetties. The outer ends of these jetties are awash at high water.

The north end of Plum Island is low and sandy with numerous summer cottages. Newburyport L.H., at this end of the island, is at times hard to distinguish from the numerous surrounding buildings. A prominent object which is easily distinguishable, is the Catholic Church about one-half mile south of the entrance. Sand dunes, some with elevations of about 60 feet, are prominent on Plum Island start-at a point approximately one mile south of Merrimack River entrance and extending southward.

The tall stack at Newburyport is very conspicuous.

LANDMARKS

Prominent landmarks listed for this locality are: Church Cross on Plum Island Catholic Church; Roller Coaster at Cushing; the Tall Stack at Newburyport; a Standpipe and Water Tank near Salisbury. These have been submitted on Form 567.

CHARACTER OF CONTROL USED

Butlers Toothpick 1886, Newburyport L.H. 1912, Salisbury Beach Catholic Church 1912, and Old Town 1850 were recovered as described. Plum 1928 was established at the southern limits of the survey and several additional intersection stations located.

Traverses were run from Butlers Toothpick to Salisbury Beach Catholic Church and from Newburyport L.H. to Plum.

CLOSING ERRORS OF TRAVERSES RUN

While running the traverse northward to the Salisbury Beach Catholic Church, considerable trouble was had with refraction while reading the rod. The closing error of the traverse was found to be far in excess of the allowable. An extension was put on the rod and the traverse re-run. The second traverse checked very closely. No unusual error was obtained in the traverse southward to Plum. Some minor adjustments were made on the sheet.

CHANGES IN PROMINENT OBJECTS, ETC.

Differences were found in the location of buildings and streets at both Salisbury Beach and Plum Island. At Cushing (Salisbury Beach) numerous prominent objects were located by triangulation and the main thoroughfare (Broadway) with surrounding buildings surveyed. A plan of Salisbury Beach was obtained from the local real estate company and checked in the field. The streets and roads shown marked with red are the only ones completed and in use. The southern end of Atlantic Ave. and the junction of Railroad Ave. with Broadway were located by this party and the street drawn in from the plan. The State Highway and Central Ave. were located in the same way. The Old Road shown is only temporary and subject to change depending on the condition of the marsh which it borders.
Only the outer row of houses on the beach is shown. There are numerous cottages on either side of the shown, but as these are only temporary and not prominent in any way, they were not located.

No check could be made with the system of streets as shown on the chart with the exception of the southern end of Atlantic Ave. The electric car line has been removed southward of Broadway but is still in use northward along the State Highway to Hampton Beach.

A plan showing the streets and location of cottages on the northern end of Plum Island is also included with the sheet. This shows considerable difference in the roads and location of buildings. Roads or streets in actual use at the time of survey are shown marked with blue pencil on the plan and also shown on the topographic sheet. Only a general check on the location of cottages shown on the plan was made. These cottages are shown marked with red pencil. Additional cottages have been built since the time of survey of the plan, but as all the cottages are only temporary and not prominent, the additional ones are not shown.

In comparing information and location obtained relative to Badger Rocks with the chart and Topographic Sheet 355A, very little agreement was found. None of the rocks are bare at high water as shown on the chart. The rocks awash on the accompanying topographic sheet show the limits of this group. Part of this reef is made up of old wreckage and concrete of a former wharf. There are no rocks awash further off-shore.

CHANGES IN COASTLINE

The coastline northward from the entrance shows very little change.

To the southward of the entrance, along Plum Island, the coastline shows an emergence varying from 10 to 30 meters starting at a point about one mile south of the entrance and continuing to the southern limits of the sheet.

The shoreline at the entrance inside of the jetties is subject to rapid changes due to the strong currents in that vicinity. Extensive changes have occurred at the northern point of Plum Island with the building up of the sand shoreline near the south jetty. The shoreline on the north side of the entrance is somewhat similar to that shown on the chart with a slight shift to the westward. The sand point near the Badgers has been shifted to the westward about 30 or 40 meters. The small creek at Black Rocks, shown to the eastward of Black Rock Creek has been filled in.

MISCELLANEOUS NOTES

The small landings, used as ferry landings, shown on both sides of the river, are only in place during the summer months.

Topographic signals are shown with circles approximately 2 millimeters in diameter instead of 3 millimeters in diameter as prescribed in the Topographic Manual.

The sheet shows a shrinkage of about 12 meters per mile in a northerly and southerly direction and about 5 meters per mile in a easterly and westerly direction.

A complete list of signals located and used, with a short description, is being included under the list of Plane Table position to facilitate the verifying of the Hydrographic Smooth Sheet.

The survey conforms to the requirements of the general and specific instructions and is adequate.

E. H. Lee, Dec. 4, 1929

[Signature]

Carl F. Ehlers, Jr., H. & G. Eng'r.
<table>
<thead>
<tr>
<th>Object &amp; Name</th>
<th>Latitude</th>
<th>D. M.</th>
<th>Longitude</th>
<th>D. P.</th>
<th>Height</th>
<th>Remarks &amp; Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flag</td>
<td>42 - 49</td>
<td>1802</td>
<td>70 - 48</td>
<td>1265</td>
<td></td>
<td>Flagpole on East end of House.</td>
</tr>
<tr>
<td>Shed</td>
<td>42 - 49</td>
<td>1625</td>
<td>70 - 48</td>
<td>1238</td>
<td></td>
<td>East gable of yellow house.</td>
</tr>
<tr>
<td>Dark</td>
<td>42 - 49</td>
<td>1270</td>
<td>70 - 48</td>
<td>1186</td>
<td></td>
<td>East gable of dark green house.</td>
</tr>
<tr>
<td>How</td>
<td>42 - 49</td>
<td>706</td>
<td>70 - 48</td>
<td>1140</td>
<td></td>
<td>Chimney on end house.</td>
</tr>
<tr>
<td>Red</td>
<td>42 - 49</td>
<td>690</td>
<td>70 - 49</td>
<td>231</td>
<td>22</td>
<td>Front Range, N.side of Merrimack River.</td>
</tr>
<tr>
<td>Gage</td>
<td>42 - 49</td>
<td>599</td>
<td>70 - 48</td>
<td>1113</td>
<td>6</td>
<td>Tide Gauge stand.</td>
</tr>
<tr>
<td>Mon</td>
<td>42 - 49</td>
<td>295</td>
<td>70 - 48</td>
<td>711</td>
<td>10</td>
<td>Heap of rocks marking bend in N. breakwater.</td>
</tr>
<tr>
<td>Post</td>
<td>42 - 49</td>
<td>127</td>
<td>70 - 49</td>
<td>139</td>
<td></td>
<td>Mooring post on beach, S. bank of Merrimack River.</td>
</tr>
<tr>
<td>Chin</td>
<td>42 - 48</td>
<td>1617</td>
<td>70 - 48</td>
<td>875</td>
<td></td>
<td>Chimney on C.G. Lookout.</td>
</tr>
<tr>
<td>Pole</td>
<td>42 - 48</td>
<td>1039</td>
<td>70 - 48</td>
<td>818</td>
<td></td>
<td>Flagpole at L.S.S.</td>
</tr>
<tr>
<td>Cor</td>
<td>42 - 48</td>
<td>420</td>
<td>70 - 48</td>
<td>756</td>
<td></td>
<td>S.E. corner of white house.</td>
</tr>
<tr>
<td>Brown Ho.</td>
<td>42 - 47</td>
<td>1627</td>
<td>70 - 48</td>
<td>722</td>
<td></td>
<td>Center of top of brown house on high sand dune.</td>
</tr>
<tr>
<td>Last</td>
<td>42 - 47</td>
<td>1024</td>
<td>70 - 48</td>
<td>620</td>
<td></td>
<td>Center of last house on beach.</td>
</tr>
<tr>
<td>Gas</td>
<td>42 - 47</td>
<td>424</td>
<td>70 - 48</td>
<td>538</td>
<td></td>
<td>Gas drum covered with signal cloth, set on sand dune.</td>
</tr>
<tr>
<td>Trunk</td>
<td>42 - 47</td>
<td>60</td>
<td>70 - 48</td>
<td>449</td>
<td>12</td>
<td>Old tree trunk set up on beach.</td>
</tr>
<tr>
<td>Dun</td>
<td>42 - 46</td>
<td>1502</td>
<td>70 - 48</td>
<td>389</td>
<td></td>
<td>Fir tree on sand dune.</td>
</tr>
<tr>
<td>Tel</td>
<td>42 - 46</td>
<td>1038</td>
<td>70 - 48</td>
<td>323</td>
<td></td>
<td>Banner on telephone pole.</td>
</tr>
<tr>
<td>House</td>
<td>42 - 48</td>
<td>1145</td>
<td>70 - 48</td>
<td>376</td>
<td></td>
<td>E. gable of McKee's cottage near U.S.E. monument III.</td>
</tr>
<tr>
<td>Tree</td>
<td>42 - 46</td>
<td>234</td>
<td>70 - 50</td>
<td>1316</td>
<td></td>
<td>Prominent tree on Old Town Hill.</td>
</tr>
</tbody>
</table>
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U. S. COAST AND GEODETIC SURVEY

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 No. 1

REGISTER NO: 4426

State: Massachusetts

General locality: Newburyport

Locality: Merrimack River Entrance

Scale: 1 - 10,000

Date of survey: August 17, 1928

Vessel: Launch Ogden & #66

Chief of Party: H.E. Flinnegan

Surveyed by: C.E. Ehlers

Inked by: C.E. Ehlers

Heights in feet above: to ground to tops of trees

Contour: Approximate contour Form line interval: feet

Instructions dated: August 1, 1928

Remarks: Revision Survey