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ALEXANDER, John Henry (1812-1867). AN HISTORICAL AND EXCEPTIONALLY IMPORTANT ARCHIVE OF ORIGINAL MANUSCRIPT MAPS OF PROPOSED CANAL ROUTES THROUGH THE STATE OF MARYLAND FROM VIRGINIA TO DELAWARE, to accompany the "Report of the Engineer & Geologist, in relation to the New Map, to the Executive of Maryland", Annapolis: William, M'Neir, 1836. [Baltimore:] Topographical Office, December 1835. \$650,000

"INTERESTS OF VAST EXTENT AND IMPORTANCE" (Alexander, page 4)

In 1833 Alexander had been commissioned by the General Assembly of Maryland to "examine and collect information, and report to the next General Assembly a plan and drawing for a complete Map of Maryland and to make such surveys as may be required for the purpose of exhibiting the prominent geographical and topographical features of the country, and also to collect such statistical information as will be useful" ("Report...", 1834). By the end of 1834 the same commission had asked him to put aside that work in order to concentrate on "several works of proposed internal improvement, which either had already engaged, or were expected during the season just past to occupy his care and attention... in carrying into effect the resolutions, and prosecuting the surveys for the respective works, has spared neither personal toil, nor studious investigation" (Alexander, page 3).

This was essentially a series of surveys for a network of proposed canals linking the states of Virginia, Maryland and Delaware by A Joint Board of Commissioners of the States of Delaware, Maryland, and Virginia, which Alexander undertook on behalf of Maryland. Neither Virginia nor Delaware considered further work in their states necessary, and so by the end of 1835 the whole commission was dropped.

In his "Report of the Engineer & Geologist, in relation to the New Map, to the Executive of Maryland" published in Annapolis in 1836, Alexander explains his commission, details the work he has accomplished and makes very clear his disgust and displeasure at having wasted a year's work on a project likely never to be completed, especially when he could have been progressing towards the completion of the much needed new map of Maryland.

CAPE CHARLES AND LEWES CANAL

Alexander presents the surveys in the order in which he accomplished them. The first was the proposed route of the Cape Charles and Lewes Canal. Of the 6 maps he presented for this survey 4 are present: "These maps are all labelled in the margin, and numbered progressively from No. 1 to No. 6, inclusive. Copies of all these maps had also been made by the Undersigned [Alexander], for the use of the other Commissioners [ie Virginia and Delaware [" (Alexander, page 5).

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ALEXANDER, John Henry (1812-1867). Cape Charles and Lewes Canal. Map No. 1. [Baltimore:] Topographical Office. [Map] No. 2. Dec.r 1835.

Single sheet (11 x 38 4/8 inches). A fine, detailed and accurate original manuscript map drawn in pen and black and red ink, showing the proposed route of the Cape Charles and Lewes Canal along Herring Creek to Trap Creek in red ink, and noting numerous homesteads, roads, and contour lines for the creeks. Signed by "J.H. Alexander" lower right.

Provenance: Probable gift of Mrs Phillip T. Tyson to the Maryland Academy of Sciences in January of 1878; deposited at the Enoch Pratt Free Library, Baltimore from 1937, with their ink stamp in the lower right-hand corner and their 20th-century shelfmarks: Md. TH396 C3A6 Map and Md. Map X835 M1 .E3 P53 1835 Part 1.

The second map used to illustrate Alexander's report of 1835, of which he writes: "A Map of the line run to ascertain the direction of the Canal in the neighbourhood of Berlin - from Ayre's mill, at the head of Trap creek, to the head of Herring creek. This is the only work of construction actually necessary in Maryland. The location was established only so far as to enable the Commissioners to make their report" (Alexander page 5).

ALEXANDER, John Henry (1812-1867). Cape Charles and Lewes Canal. Map No. 2. [Baltimore:] Topographical Office. [Map] No. 3. Dec.r 1835.

Single sheet (19 x 30 6/8 inches). A fine, detailed and accurate original manuscript map drawn in pen and red ink, showing the proposed route of the Cape Charles and Lewes Canal in red ink along White's Creek to Bear Trap between Muddy Neck to Miller's Creek and Middle Neck Gut and out into Little Bay, and noting numerous homesteads, roads, and contour lines for the creeks. Signed by "J.H. Alexander" lower right.

Provenance: Probable gift of Mrs Phillip T. Tyson to the Maryland Academy of Sciences in January of 1878; deposited at the Enoch Pratt Free Library, Baltimore from 1937, with their ink stamp in the lower right-hand corner and their 20th-century shelfmarks: Md. TH396 C3A6 Map No. 2 and Md. Map X835 M1 .E3 P53 1835 Part 2.

The third map used to illustrate Alexander's report of 1835, of which he writes: "A map of the location of the Canal from Assawoman, across the Turkey Branch creek to White's creek in the State of Delaware. This will be probably the final location" (Alexander page 5).

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ALEXANDER, John Henry (1812-1867). Cape Charles and Lewes Canal, Map No. 3. [Baltimore:] Topographical Office. [Map] No. 4. Dec.r 1835.

Single sheet (15 x 38 inches). A fine, detailed and accurate original manuscript map drawn in pen and red ink, showing the proposed route of the Cape Charles and Lewes Canal in red ink along the Delaware Beach to Lewes and on to Rehooboth Bay, and noting numerous homesteads, roads, and contour lines for the creeks. Signed by J.H. Alexander lower right.

Provenance: Probable gift of Mrs Phillip T. Tyson to the Maryland Academy of Sciences in January of 1878; deposited at the Enoch Pratt Free Library, Baltimore from 1937, with their ink stamp in the lower right-hand corner and their 20th-century shelfmarks: Md. TH396 C3A6 Map No. 3 and Md. Map X835 M1 .E3 P53 1835 Part 3.

The fourth map used to illustrate Alexander's report of 1835, or which he writes: "A map of the location from Rehoboth bay, at Warren's creek, to Woolff's branch of Lewes creek" (Alexander page 5).

ALEXANDER, John Henry (1812-1867). Profiles of the Several Routes Selected for the Canal connecting the Chesapeake and Delaware Bays by the Commissioners: No. 1. Lane for a Canal from Lewes Creek to Rehoboth Bay (in the State of Delaware); No. 2. Embracing the Line for a Canal from White's Creek to Assawoman Creek (in the State of Delaware); No. 3. Line for a Canal from Trap Creek to Herring Creek (in the State of Maryland). [Baltimore:] Topographical Office. No. 5. Dec.r 1835.

Single sheet ((22 4/8 x 37 2/8 inches). A fine, detailed and accurate original manuscript map drawn in pen and ink showing the depths of the median tide along the three routes. Signed by J.H. Alexander lower right.

Provenance: Probable gift of Mrs Phillip T. Tyson to the Maryland Academy of Sciences in January of 1878; deposited at the Enoch Pratt Free Library, Baltimore from 1937, with their ink stamp in the lower right-hand corner and their 20th-century shelfmarks: Md. TH396 C3A65 Map and Md. Map X835 M1 .E18 P53 1835.

The fifth map used to illustrate Alexander's report of 1835, and essentially an accompaniment to maps 2,3, and 4. The first and sixth maps prepared, but not present here were: "A chart of the headlands between Chincotigue inlet and Fenwick's island" and "The Project of the triangles to be made use of in the survey of the Rehoboth bay".

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THE CHOPTANK AND BLACKWATER CANAL

ALEXANDER, John Henry (1812-1867). Map of the Proposed Canal Between the Choptank and Blackwater Rivers. [Baltimore:] Topographical Office. No. 7. Dec.r 1835.

Single sheet (17 6/8 x 25 6/8). A fine, detailed and accurate original manuscript map drawn in pen and red and black ink, showing the proposed route of the proposed canal along the Blackwater River to the town of Cambridge and Cambridge Creek in red ink, and noting homesteads, roads, and contour lines, a profile of the canal route depth is inset along the bottom edge, all within an elaborate black border. Signed by J.H. Alexander lower right.

Provenance: Probable gift of Mrs Phillip T. Tyson to the Maryland Academy of Sciences in January of 1878; deposited at the Enoch Pratt Free Library, Baltimore from 1937, with their ink stamp in the lower right-hand corner and their 20th-century shelfmarks: Md. TH396 C66 A59 and Md. Map X835 D P53 1835.

"This is a Canal of Navigation, to unite the waters of the Choptank river, at or near Cambridge, with the waters of the Blackwater river – a stream which, taking its rise about two and a half miles south of the town of Cambridge, has a course of about twenty miles south and east, to join in a gulf of the Chesapeake, called Fishing bay... the course of the canal can easily be carried along the ravine of this arm, through a narrow neck of firm land, and then down a natural sink, the head of the Blackwater stream" (Alexander pages 6-7).

Alexander outlines the many advantages connecting the two waterways by a canal. "The basin of the Blackwater and the Transquaking (for they are virtually the same) abounds in timber – some of good quality for building purposes – all of excellent growth for fuel. These articles, supposing them at the mouth of the river, have still a distance of 70 miles to their nearest market, Annapolis; and of 100, nearly, if they are carried to Baltimore, while from Cambridge, the distances are respectively about 43 and 70 miles... an arithmetical saving of nearly thirty-three and a third per cent in time. That saving will be found during about five months of the year, with the probabilities of prevalent winds, to amount actually to about 70 percent – a gain of no inconsiderable account, when it is considered that time is always money, and often more" (Alexander page 6). Alexander also makes the case for establishing systems of drainage in connection with the canal, which would create habitable land of about 100 square miles.

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THE SURVEY OF THE PISCATAWA CREEK

ALEXANDER, John Henry (1812-1867). Reconnaissance of Piscatawa Creek. [Baltimore:] Topographical Office. No. 8. Dec.r 1835.

Single sheet (20 6/8 x 29 2/8 inches). A fine, detailed and accurate original manuscript map drawn in pen and black ink, showing the creek as it runs from Farmington to Piscatawa, noting the homesteads and other landmarks of Wachova, Lyles, Clagett, Lions Den, Semmes, Hattons, Nan Thomas Hole, and Green Landing, roads and contour lines, with an inset of a "Traverse Section", all within an elaborate black border. Signed by J.H. Alexander lower right.

Provenance: Probable gift of Mrs Phillip T. Tyson to the Maryland Academy of Sciences in January of 1878; deposited at the Enoch Pratt Free Library, Baltimore from 1937, with their ink stamp in the lower right-hand corner and their 20th-century shelfmarks: Md. NF1227 .P5A5 Map and Md. Map X835 P1 .P5 C315 1835.

"THE NATURE OF THE DIFFICULTIES FOR WHICH A REMEDY IS DESIRED"

"This valley shows, as well as any other place which has been observed by the Undersigned, the changes which a course of years is producing, not only there, but in many other streams... the stream of the Piscatawa may have originally, before the present difference of level between mid-tide in the Potomac and the surface of the Green Landing and other marshes, a considerable tidal arm of the latter river - every where nearly as wide as to the bases of the hills which now inclose it. It certainly afforded, fifty years ago, a channel for vessels of good draft up to and a little beyond the Tobacco Warehouse: where now, as is seen on the map, the soundings, at quarter ebb, give only 1 foot 10-12 inches... The first thing then to be done is, to shut out from the bed of the stream all the water which now brings down the sediment from the hills. This is to be effected by the digging of auxiliary canals or trenches along both sides of the stream, which shall receive this water and convey it either into the Potomac below the mouth of the creek, or else be made to unite with the creek itself at some point where the additional quantity of water thus furnished will be serviceable" (Alexander page 15). Alexander suggests an alternative plan by which the produce, mainly tobacco and grain, be taken to Green landing by the producers, and then "loaded up in a scow, or vessel of light draft, and conveyed, when the tide serves, to the mouth of the creek, where there is a deep water landing near Farmington; there the produce would be re-loaded upon the schooners or river craft, which ply between that place and Alexandria, the principal port of that District" (Alexander page 15).

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THE DRAINAGE OF THE ZAKIA SWAMP, OR ALLEN'S FRESH CANAL.

ALEXANDER, John Henry (1812-1867). Survey of Zakiah Swamp, No. 1, No. 2, and No. 3, - Map and Profile of the Survey of Allen Fresh, [Baltimore:] Topographical Office, Nos. 9, 10, 11, and 13, Dec.r 1835.

4 separate map-sheets: 3 Zakiah Swamp sheets (25 4/8 x 38 4/8 inches); Allen Fresh sheet (17 2/8 x 38 4/8 inches) (frayed at the edges with minor loss). A series of four fine, detailed and accurate original manuscript maps drawn in pen and black and red ink, showing the route of the proposed canal through Zakiah Swamp and Allen's Fresh from Colonel Cranes to Briantown in red, and noting the homesteads of Col. Merrick, Col. Crane, Mr. Diggins, Maj. Penn, Fi Diggers, Mr Wilson, Mr. Posy, Mr Bruce, Col Cooks, Mr. Hawkins, Mr. Chapman, Mr. Weems, Mr. Simpson, Mrs Fenwick, Mrs Smoots, Mrs Hawkins, Mrs Jameston, B. Jameston, J. Hamilton, H. Jameston, Col. F. Hawkins, roads, creeks, and contours, all within an elaborate black border. Signed by J.H. Alexander lower right on each map.

Provenance: Probable gift of Mrs Phillip T. Tyson to the Maryland Academy of Sciences in January of 1878; deposited at the Enoch Pratt Free Library, Baltimore from 1937, with their ink stamp in the lower right-hand corner and their 20th-century shelfmarks.

These maps illustrate Alexander's plan outlined in his "Report..." to drain Zakiah Swamp, which contains the head stream of the Wicomico river, in Charles county. As with the Piscatawa river, over the years Allen's Fresh has become silted, reducing the kind of vessel that can navigate the natural watercourse. Alexander proposes in addition to excavating a central canal, draining the surrounding 3000 acres with a series of irrigation canals, and so save the area from annual inundation and make it arable.

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THE TRIGONOMETRICAL SURVEY

[ALEXANDER, John Henry (1812-1867)]. Plan of a portion of the Triangles on the Western shore of Maryland. [Baltimore], 1835.

Single sheet (13 6/8 x 16 4/8 inches to the neatline, 14 6/8 x 18 4/8 inches sheet size). A fine original manuscript map drawn in pen and ink and pencil showing original triangulation points along the western shore of Maryland, major towns, rivers and the coastline are also shown, with Alexander's original penciled title in the lower right-hand corner.

Probable gift of Mrs Phillip T. Tyson to the Maryland Academy of Sciences in January of 1878; deposited at the Enoch Pratt Free Library, Baltimore from 1937, with their ink stamp in the lower left-hand corner and their 20th-century shelfmarks: Md. NB 296 U 6M31 map and Md. Map X835. M1 C44 B5 1835.

"THE MOST INTERESTING OF THE CHARGES" (Alexander, page 27)

A fine and important map showing Alexander's original triangulation points along the western shore of the Chesapeake Bay, particularly at Kent Point, Annapolis, Bodkin, Swans, Pools Island, Abingdon, Bull's Mount, Mt. Ararat and Wilmington, Alexander's survey of the waterways illustrated by the maps above took him until July of 1835. After which "the necessary arrangements could be made for the commencement of this most interesting of the charges of the Undersigned [Alexander]. The plans for the direction of the work of the season were all matured under the advice of the chief of the United States Coast Survey, ... the primary object of importance seemed to be, the laying out of a certain and satisfactory connection of the triangles already executed on the coast, with those to be executed in Maryland; and accordingly, to that end the examinations and observations of the Undersigned were first directed. In establishing this communication, which, as is seen on the map, is direct between Wilmington and a point beyond the Delaware, a considerable step has been at once made; and the subsequent verification of the operations in Maryland, in any event, rendered easy and certain. The chain of primitive triangles was then continued south as far down as the mouth of the Patuxent nearly, over an extent of more than 170 miles; and time has been spent so far without any decisive result, in order to effectuate a chain of points westwardly, through Charles and Prince George's counties, to the Potomac at Georgetown, where the highlands of the primitive range will render less difficult and more satisfactory further and future connections... it is expected that points on the Eastern Shore, corresponding in extent and position, with those of the Western, will have been selected and established. The great difficulties in the reconnaissance every where hitherto, and more peculiarly in the districts of the Eastern Shore" (Alexander page 29). Triangulation as a method of surveying large areas, particularly in mountainous regions, or over water, was first demonstrated in the early 17th-century, and was only superseded by satellite navigational tools in the late 20th-century.

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[ALEXANDER, John Henry (1812-1867)]. Plan of a portion of the Triangles on the Western Shore of Maryland. [Baltimore, ca 1835].

Single sheet (27 x 33 3/8 inches to the neatline, 29 2/8 x 35 6/8 inches sheet size, mounted on linen). A fine large scale fair copy manuscript map drawn in pen and ink and pencil showing original triangulation points along the western shore of Maryland, major towns, rivers and the coastline are also shown, elaborate title lower right, all surrounded by two wide black borders (margins with one or two chips and splits, not affecting the image).

Probable gift of Mrs Phillip T. Tyson to the Maryland Academy of Sciences in January of 1878; deposited at the Enoch Pratt Free Library, Baltimore from 1937, with their ink stamp in the lower left-hand corner and their 20th-century shelfmarks: Md. NB 296 U 6M3 map and Md. Map X835. M1 C44 B4 1835.

A fine and important map, showing Alexander's original triangulation points along the western shore of the Chesapeake Bay, particularly from Georgetown Heights in the west, Windmill Hill, Annapolis, Bodkin at Kent Point, Annapolis, Redkin, Abingdon, Bull's Mount, and Wilmington. Alexander had hoped that his work in mapping the state of Maryland would eventually join with the work being accomplished by the larger Coast Survey, and their is no doubt that this map would have been an integral part of that project. Triangulation as a method of surveying large areas, particularly in mountainous regions, or over water, was first demonstrated in the early 17th-century, and was only superseded by satellite navigational tools in the late 20th-century.

Although Alexander worked tirelessly to accurately survey the areas for the proposed improvements, made exhaustive recommendations, and even made cost calculations, none of the projects above was completed. There are still three main canals in Maryland. The oldest is the Chesapeake and Delaware Canal, which connects upper Chesapeake Bay with Delaware Bay, was first authorized by Congress in 1802 and completed in 1829, and is one of only two canals still commercially active in the United States. The Chesapeake and Ohio Canal connects the City of Cumberland in Allegany County, Maryland, with Washington, DC. Chartered in 1825, the Canal measures over 180 miles, and rises more than 600 feet in elevation. Its construction began in 1828, but due to labor and funding problems was not completed until 1850. With budgets exceeding funds, and the Baltimore and Ohio Railroad decreasing the need for the Canal, plans for an Ohio connection never were enacted. Not reaching its intended Ohio markets, the Canal, nonetheless, was able to remain viable by expediting coal, lumber and grain shipments from western Maryland to sites along the Chesapeake Bay.

Construction of the Susquehanna and Tidewater Canal began in 1836. Operated from 1840 to 1894, the Canal linked Havre de Grace, Maryland, to the Pennsylvania Canal at Wrightsville, Pennsylvania. The Susquehanna and Tidewater Canal stretched only 43

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miles, yet it encompassed 29 locks to allow canal boats to rise the more than 230 feet to connect with the Pennsylvania Canal.

In Delaware the Lewes-Rehoboth Canal connecting Rehoboth Bay and Delaware Bay was only authorized by the U.S. River and Harbor Act of 1912. Construction by the U.S. Army Corps of Engineers was completed in 1927.