Latrobe's Site Plan for Capitol Hill (1803): Discovering Graphic Complexity in Landscape Design and its Representation

Richard Chenoweth

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Richard Chenoweth
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ABSTRACT

The Library of Congress's collection of Benjamin Henry Latrobe's drawings contains a graphically complex topographical site plan for the US Capitol. This watercolor sheet from 1803 depicts a completed Capitol positioned on the crest of Jenkins Hill (now Capitol Hill) with its principal façades oriented towards east and west. Upon close inspection, Latrobe's site plan communicates two systems: the hill's existing topography and Latrobe's design to reshape it. As a palimpsest of faintly visible layers of information, the plan reveals the city's major avenues converging at the Capitol, illuminating how Latrobe's design is spatially continuous with L'Enfant's 1791 Plan of the city of Washington. Latrobe's drawing represents a formal arrangement and design for the reshaping of Capitol Hill relative to the Capitol building itself, which was in progress, and the visionary city yet to be built. This paper will explore the systems of landscape representation that ultimately led to Latrobe's unique way of quantifying and compiling landscape information. In the decades immediately prior to the creation of the Capitol site plan, rapid advancements in the graphic representation of scientific data included the discovery and use of contour line topography and the emergence of data visualization, also known as information graphics. As industrial, scientific, economic, and architectural advancements occurred during the eighteenth century, new ways of visualizing and communicating data, specifications, and results quickly followed. Essentially, architectural drawings themselves, including site plans, are systems of data visualization. The field note will deconstruct Latrobe's site plan drawing using analog and digital methods and develop new drawings based on computer landform models that reveal the two systems of representation concealed in the graphically complex original. In 1959, the Capitol extension project necessitated the use of ground-penetrating radar to discover the Capitol's topography from 1810 based on undisturbed soils. The paper will compare the accuracy of Latrobe's original survey and drawing with the scientific results achieved in 1959.

INTRODUCTION

In the Benjamin Henry Latrobe collection at the Library of Congress, a Record Group is dedicated to his initial building campaign at the Capitol. The first drawing in this group (No. 1, C Size) is a noteworthy site plan dated 1803, the year Thomas Jefferson appointed Latrobe as Surveyor of Public Buildings (Figure 1). Curiously, this drawing is neither depicted nor referenced in Cohen and Brownell's *The Architectural Drawings of Benjamin Henry Latrobe*, a comprehensive catalogue of the architect's work, nor is it mentioned in *The Engineering Drawings of Benjamin Henry Latrobe,* edited by Darwin H. Stapleton. But Cohen and Brownell elucidate two fundamental concepts regarding Latrobe's oeuvre that merit reiteration.[1]

Firstly, they explain that the catalogue of Latrobe's drawings is "informed by consideration of Latrobe's architectural

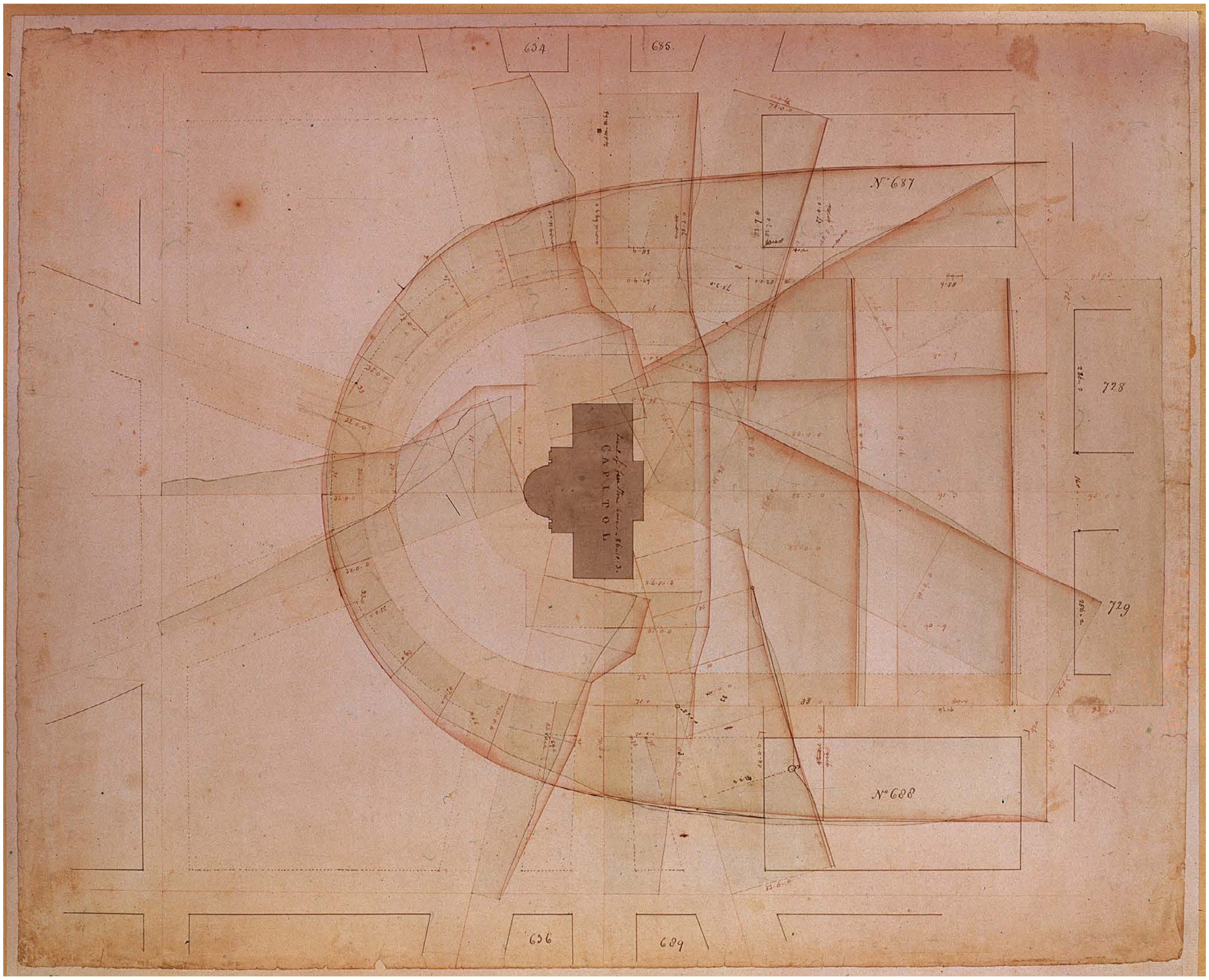


Figure 1. Benjamin Latrobe, Site Plan of the US Capitol, c. 1803 (Benjamin Henry Latrobe, *United States Capitol, Washington, D.C.: Topographical Site Plan with Street Layout and Lot Numbers*, Drawing with graphite, ink, watercolor, and wash on paper, 1803–1814, Call number ADE Unit 2462 no.1, Architecture Design Engineering Drawings, Prints and Photographs Division, Library of Congress, Washington, D.C., https://lccn.loc.gov/2001697183).

designs themselves, of the art of his drawings, and of the artistic currents that conditioned his work."[2] This premise underscores the reciprocity between buildings, which architectural historians analyze, and the drawings that represent those buildings within the context of the cultural milieu that shaped both the edifices and their drawings. Secondly, Cohen and Brownell intend their book to serve as a foundation for future scholarly endeavors. I am appreciative of their aspiration as my examination of Latrobe's drawings and specifically his 1803 site plan in this field note has led me to new insights through the recreation and analysis of his work through computer models. These processes reveal untold stories that are integral to understanding Latrobe's work.

LATROBE'S SITE PLAN

Latrobe's 1803 Site Plan of Capitol Hill places the US Capitol at the precise center of a complex graphic representation that, at first glance, appears inscrutable. While clearly portraying a landscape, the plan demands careful study and analysis to decipher its meaning. The drawing is a palimpsest of lines, grids, angles, geographic data, and spot elevations—appearing to employ a scientific method for representing data that would be characteristic of Latrobe. However, its unconventional presentation differs from modern graphic depictions of topography.

The Capitol's footprint is based on William Thornton's winning design from the 1793 competition for the Capitol.[3] A closer examination of the drawing reveals a vestigial plan of the surrounding city—an enlarged fragment from L'Enfant's 1791 Plan of Washington. Notably, the Capitol is situated at the most prominent intersection of avenues and streets, a circumstance that will be explored further. An annotation in Latrobe's handwriting indicates the "level of the freestone base is 86'-10," representing the finished floor at the entry level, which was constructed of six-inch slabs of freestone atop a granite base-block foundation (Figure 1).

Before delving deeper, it is essential to establish a working definition of the contemporary depiction of topography as a series of contour lines drawn on a two-dimensional plane that delineates a three-dimensional landform, or relief. Each contour line represents a continuous elevation above sea level, with the logic of contour lines precluding any overlap or intersection. The varying spacing between contour lines intuitively conveys the different slopes of a landform. Topography, therefore, is simultaneously a graphic representation—an intuitively informative and visually accessible image of the landscape—and a scientific survey, which comprises a systematic collection and interpretation of data points to determine actual elevations.

A BRIEF HISTORY OF MAPPING

In 1952, the influential American geographer and cartographer Arthur H. Robinson expressed surprise at the relative scarcity of literature on cartographic techniques, considering

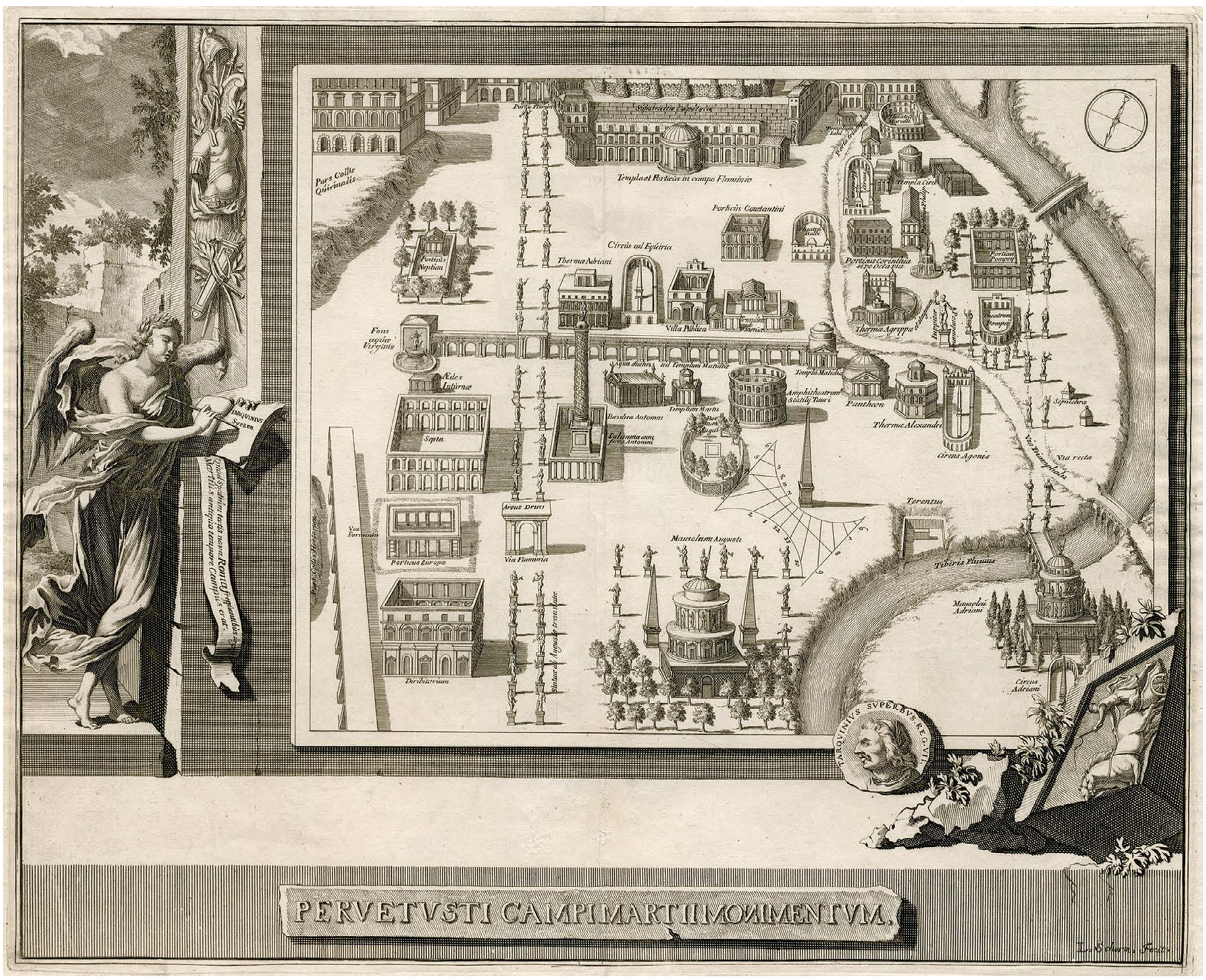
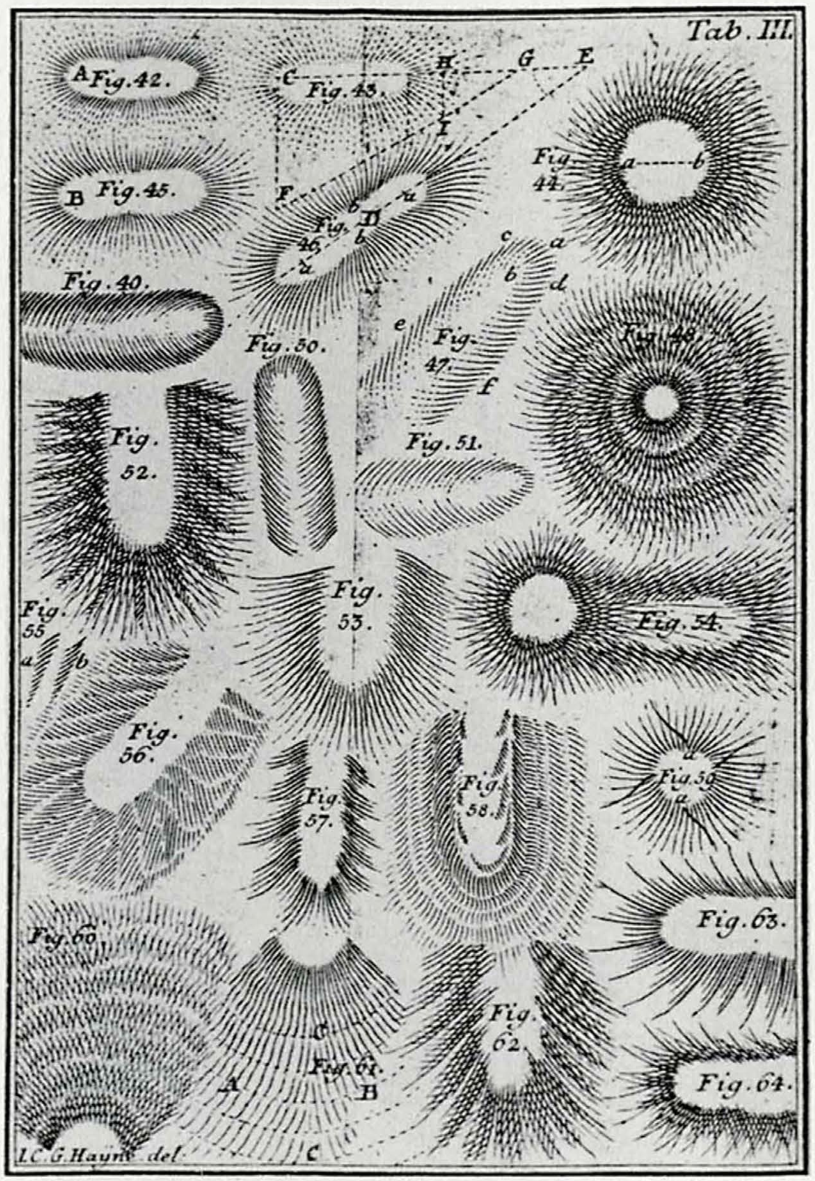


Figure 2. Lorenz/Laurens Scherm, Map of Campus Martius in Ancient Rome, 1704 (Lorenz Scherm [also known as Laurens Scherm, engraver], *Pervetusti Campi Martii Monimentum*, Woodcut engraving, 15 15/16 x 10 1/4 x 1 13/16 in. [40.5 x 26 x 4.6 cm], 1704, Amsterdam, in François Jacques Deseine, *Beschryving van ous en nieuw Rome* [Description of old and new Rome] 2 Parts [Amsterdam: François Halma,1704], double folded plate in part 1 on page 86, https://www.google.com/books/edition/Beschryving_van_oud_en_niew_Rome/xAxdAAAAcAAJ?hl=it&gbpv=1&dq=campi&pg=PA80-IA16&printsec=frontcover, Image scanned from author's collection) Note that this map is attributed to François Halma on numerous print vendor websites, but Halma was the publisher.



Sec. 9, fig. 3 From J. C. G. Hayne, *Deutliche und ausfürliche Anweisung, wie man das militairische Aufnehmen nach dem Augenmaas ohne Lehrmeister erlernen könne* (Leipzig, 1794), tabelle III.

Figure 3. J. C. G. Hayne, Hachuring Examples,1794, Leipzig, Germany (J. C. G. Hayne, *Deutliche und ausführliche Anweisung, wie man das militairische Aufnehmen nach dem Augenmaas ohne Lehrmeister erlernen könne* [Clear and detailed instructions on how to conduct military reconnaissance according to one's sense of visual estimate without a teacher] [Leipzig: Gräff, 1794], Tab III, https://play.google.com/books/reader?id=5UUCPABHP3IC&pg=GBS.RA1-PA370&hl=en).

the significance of maps as vehicles for representing scientific facts.[4] Throughout history, cartography has primarily served as a means to represent intellectual ideas of territorial space. Maps depict the boundary, form, geography, and built environment of territories to underscore their relevance, which is communicated through visual and graphic media.

Early maps were more like pictograms or diagrams, rather than scientific documents, and represent the mapmaker's sense of self within an environment. For example, consider Lorenz Scherm's (1619–1707) woodcut print of Campus Martius, Rome, titled *Pervetusti Campi Martii Monimentum*, published in 1704 (Figure 2).[5] Scherm's map of Rome offers the viewer a conceptual layout of certain Roman monuments as seen from an elevated vantage point. The monuments are descriptively drawn, and the hierarchy of the urban spaces is clearly evident. But this map is not calculable or scientific by any means—the viewer cannot discern true distances in the horizontal plane nor true relief in the vertical dimension. Thus, maps inherently exhibit aspects of both art and science as they visually communicate spatial relationships, scientific ideas, and cultural meaning.

Arthur H. Robinson's seminal work suggests the navigator and the engineer, especially the military engineer, as the primary users of cartographic information during cartography's early development.[6] During the sixteenth century, cartography underwent a renaissance as graphic techniques became more sophisticated. Maps pictorially evolved to be more artistically descriptive, incorporating aerial views, perspective, and graphic methods such as the use of hachures, which are graphic lines used to suggest slope (Figure 3). Yet, cartography had not fully transitioned into a scientific pursuit. Infographics, or data visualization, are contemporary terms for representation that blend images with storytelling to communicate scientific data. Data visualization emerged in the late-eighteenth century and coincided with the historical role of cartography. Architectural drawings, site plans, and traditional mapping are actually forms of data visualization.

EIGHTEENTH-CENTURY MAPPING TECHNIQUES

In the eighteenth century, the relationship between the graphic methods of representation of topography and the quantitative accuracy of its information was not linear. Prior to the widespread use of contour lines, the depiction of landform relief was a graphic exercise.[7] Hachure lines are short graphic lines (or marks) that are perpendicular to a continuous elevation and suggest the steepness or shallowness of the slope. But they are only a graphic suggestion—they are an artistic technique applied to a map. Hachures were commonly used in city plans, site plans, and military maps.

Johann Georg Lehmann (1765–1811) developed a very rigorous system of the use of hachures that set forth a series of strict graphic parameters.[8] Lehmann's system of hachures made clear graphic distinctions between shallow and steep slopes, raking light on slopes, and slopes of exaggerated scale, which represented a topography that appeared to be more exacting. Lehmann's topographic method, however, was not scientific.

A notable example of the use of hachures is found in Guillaume Quérenet de la Combe's (1731–1788) Revolutionary

Figure 4. Guillaume Quérenet de la Combe, Detail from the Map of the Siege of Yorktown, Virginia, 1781 (Guillaume Quérenet de la Combe, *Siege d'York, Plan d'York en Virginie avec les attaques et les campemens de l'Armée combinée de France et d'Amérique,* Scale ca. 1:14, 640, Manuscript, Pen-and-ink and watercolor, 44 x 63 cm, 1781, Call number G3884.Y6S3 1781.Q41, Rochambeau Map Collection, Geography and Map Division, Library of Congress, http://hdl.loc.gov/loc.gmd/g3884y.ar146700).

Figure 5. Benjamin Henry Latrobe, Map and Site Plan Showing Richmond and a Proposed Theater and Hotel Building, c.1798, detail from the map of Richmond, Virginia (Benjamin Henry Latrobe, *Theater and Hotel Building, Richmond, Virginia, 7—map of Richmond, Virginia,* Drawing with watercolor, wash, and ink, 41 x 56 cm, 1797 or 1798, Call number ADE Unit 2885, no. 7, Architecture Design Engineering Drawings, Prints and Photographs Division, Library of Congress, https://www.loc.gov/pictures/item/00651743/).

War map (1781) titled *Plan of York in Virginia with the attacks and encampments of the Combined Army of France and America* (Figure 4). Quérenet de la Combe was a military engineer in the service of General Rochambeau (1725–1807), the Marshall of France and the leader of French troops attached to George Washington at Yorktown. Quérenet's delicate rendering of Yorktown's bluffs and swamps using hachures exemplify the representation of the relief of the land while principally communicating ground plane, or planimetric, information (Figure 4).[9]

Similarly, Latrobe's Richmond city plan from about 1798 utilized watercolor tonal washes and watercolor hachures to convincingly convey the steep topography surrounding the Virginia Capitol (Figure 5). Latrobe's plan illustrates

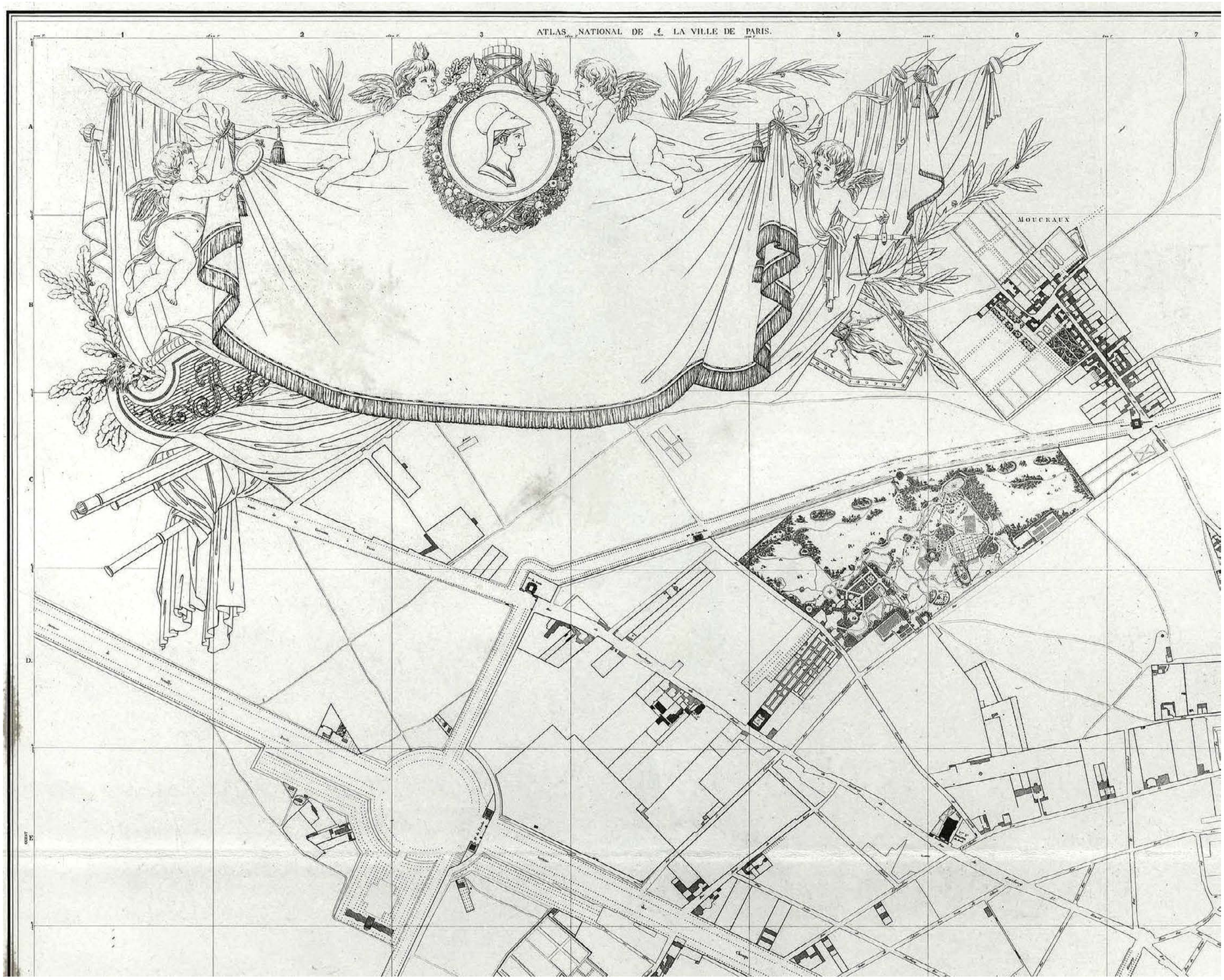


Figure 6. Edmé Verniquet, Plan of the City of Paris,1791, detail of the top left corner of the map (Edmé Verniquet [cartographer], Paul-Thomas Bartholomé and Bellanger [engravers], A. J. Mathieu [draftsman], *Plan de la Ville de Paris avec sa nouvelle enceinte levé géométriquement sur la Méridienne de l'Observatoire parachevé en 1791 [Document cartographique]*, Paris, Scale 1:3 300, Colored map, 210 x 275 cm, 1791, GE DD 299, Notice n° FRBNF40571321, Cartes et plans [Maps and plans], Bibliothèque nationale de France [National Library of France], Paris, http://ark.bnf.fr/ark:/12148/cb40571321t).

a variety of deepened and lightened tones of wash and hachures that suggest raking light, changing slopes, and varying depths. Shockoe Creek can be seen at the lowest elevation, confirming that the reader's intuition is correct in reading the landform. Interestingly, Latrobe's watercolor technique seems to exhibit the breadth of harchures suggested by Lehmann's method.

Despite their intuitive readability, however, hachure lines are not actual measurements calculated through land survey. The evolution of cartography as a scientific method was slow. In the final decade of the eighteenth century, a map celebrated by both cartographers and architects for its engineering precision was Edmé Verniquet's 1791 Plan of the City of Paris (Figure 6).[10] Although famous for its comprehensive and accurate documentation of the city's ground plane information, the Verniquet Plan employed hachures for slopes and hills and thus lacked a scientific basis for its three-dimensional relief.

TOPOGRAPHY AS DATA VISUALIZATION

The introduction of contour lines as a form of accurate topographic representation marks a significant shift in the visualization of data on both architectural drawings and site plans. English scientist Charles Hutton (1737–1823) is credited with pioneering the use of contour lines, developing them while assisting Royal Astronomer Nevil Maskelyne in calculating the weight of the earth during the Scheihallion experiment (1774–76) in Scotland.[11] Hutton developed the system of contour lines to calculate the conical shape of the mountain he was surveying as accurately as possible, including its volume, mass, and density in relation to gravitational attraction, by slicing the mountain into thin horizontal segments that facilitated his calculations. According to Karen Rann and Robin Johnson's research on the invention of contour lines, Hutton's written description of contour lines,

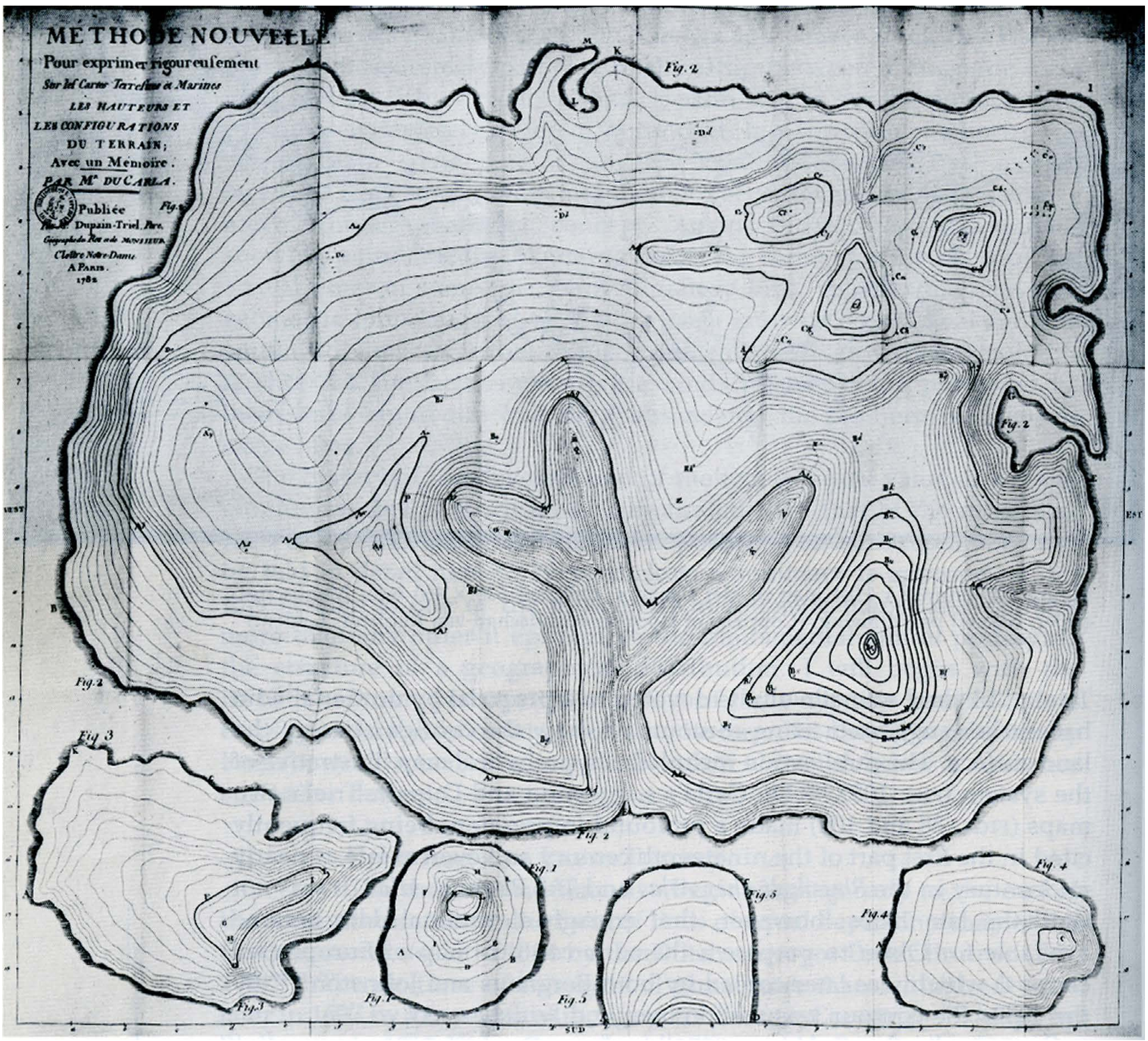


Figure 7. Du Carla, New Methods for Rigorously Indicating the Elevation and Shape of Land and Marine Terrain, 1782, Paris, map considered to be first known example of the use of contour lines (Du Carla [pseudonym for Marc Bonifas, also known as Marc Ducarla Bonifas, Marcelin Ducarla, Marcellin Ducarla, Marc Du Carla Bonifan, and Marcellin du Carla-Boniface], *Expression des nivellemens ou Méthode nouvelle pour marquer rigoureusement sur les cartes terrestres et marines les hauteurs et les configurations du terrain* [Paris: L. Cellot,1782], Notice n° FRBNF12462727, Bibliothèque nationale de France, http://ark.bnf.fr/ark:/12148/cb12462727t, Scanned map courtesy of Dr. Michael Friendly, York University).

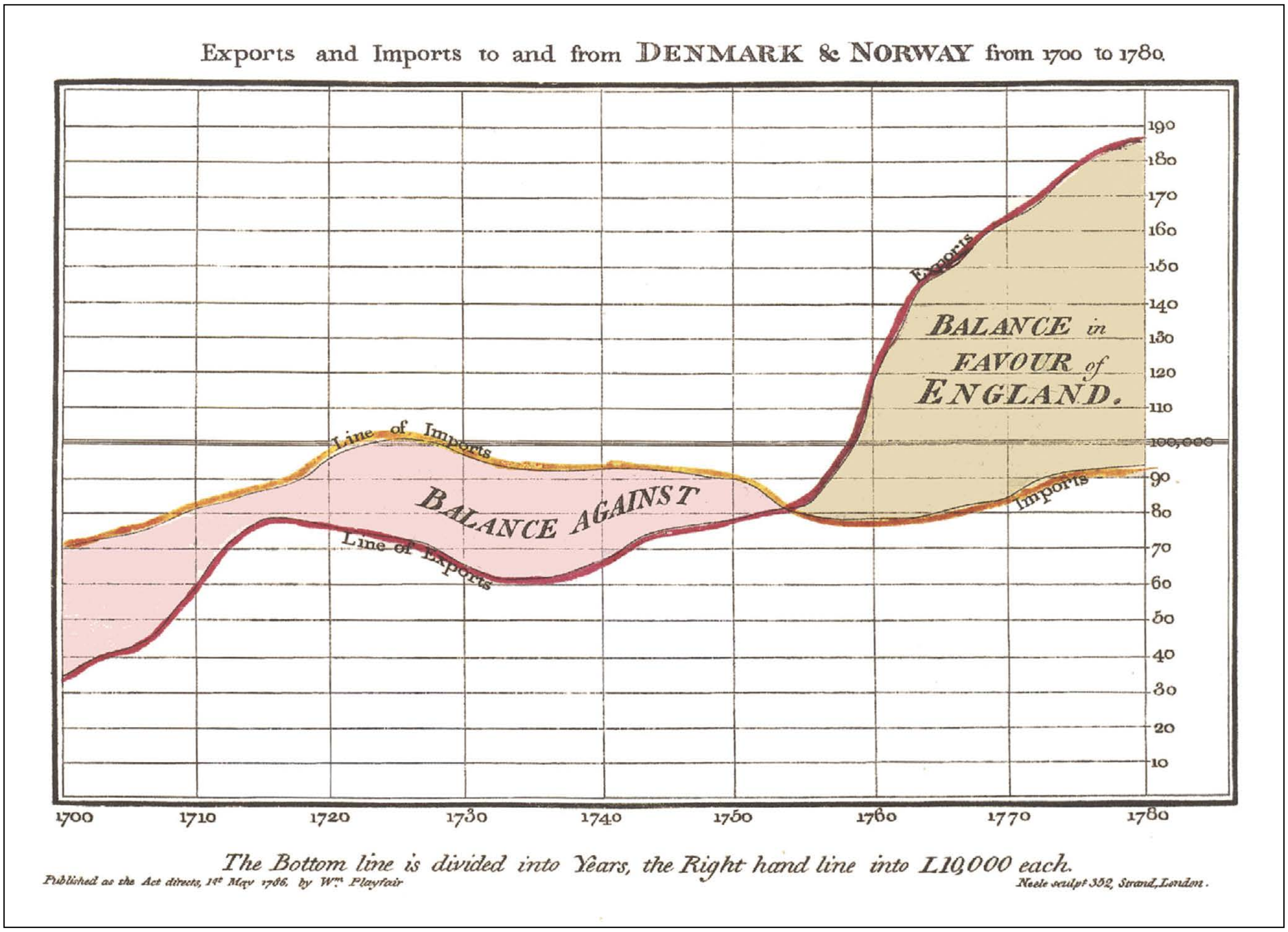


Figure 8. William Playfair, Exports and Imports to and from Denmark & Norway from 1700 to 1780, chart illustrating imports and exports as an example of data visualization (William Playfair, *The Commercial and Political Atlas: Representing, by Means of Stained Copper-Plate Charts, the Progress of the Commerce, Revenues, Expenditure and Debts of England During the Whole of the Eighteenth Century* [London: Printed by T. Burton for J. Wallis, 1786], 11).

although not graphically shown, offers the earliest evidence of their use despite the fact that the map that he reportedly created has been lost.[12]

In 1782, four years after Hutton's publication of a paper presenting his technique, the French cartographer Marcellin du Carla's (1738–1816) map of an imaginary island, published in his book *Expression des nivellemens ou Méthode nouvelle pour marquer rigoureusement sur les cartes terrestres et marines les hauteurs et les configurations du terrain* [New methods for rigorously indicating the elevation and shape of land and marine terrain], is regarded as the earliest graphic use of topographic contour lines (Figure 7).[13] On one hand, nineteenth-century modern governments, increased globalization, and economic needs necessitated precise calculable forms of cartographic elements, and on the other hand, innovations in science and engineering made possible these much needed scientific advances in cartography. This marked the beginning of a rapid confluence between art, engineering, and science in mapmaking in the late-eighteenth century.[14]

Modern European nations and empires needed new quantitative cartographic techniques to grasp the sub-discipline of geography known as economic geography. William Playfair (1759–1823), a Scottish engineer and political economist, published *The Commercial and Political Atlas* in 1786.[15] *The Atlas* did not contain conventional maps but instead contained infographics displaying economic geography in the form of tables and charts depicting trends in global trade between England and its trading partners.[16] Playfair's statistical charts were examples of data visualization, illustrating the increasing convergence of art and science in representing complex space–time data relationships between the spheres of economy, geography, and chronology (Figure 8).

UNDERSTANDING LATROBE'S SITE PLAN FOR CAPITOL HILL

Du Carla's contour map and Playfair's charts represent milestones in quantitatively accurate landform cartography and data visualization, and together they are historic markers of advancements in the graphic techniques of the early Industrial Age. Latrobe, a product of the Enlightenment era, spent his formative years in Prussia, France, Italy, and England, honing his skills in architecture and engineering. While cartography, site design, and architectural drawing were his expertise, his approach to the Capitol Hill site plan is uniquely inventive. Latrobe's failure to acknowledge or utilize contour lines to define landscape form raises questions about his familiarity with this contemporary innovation, a topic that he does not write about in his surviving correspondences.

In order to interpret Latrobe's site plan, this study began by affixing a printout of the original plan to a drawing board and re-drawing the information to confirm its accuracy (Figure 9). This process allowed for the tracing to be brought to the correct scale as indicated in the original plan. The initial drawing revealed Latrobe's layered approach: the site plan juxtaposes an existing landscape with a newly graded one, superimposed onto a fragment of L'Enfant's famous plan for Washington (1791). Every key location in the horizontal plane has a spot elevation. Despite an initial visual complexity, it became evident that all vertical information in the design was projected onto the horizontal plane as land profiles or site sections.

Latrobe's drawing incorporated L'Enfant's street layout, faintly visible, with a new ring road that looped around the west front of the Capitol in a horseshoe shape. Addressing the

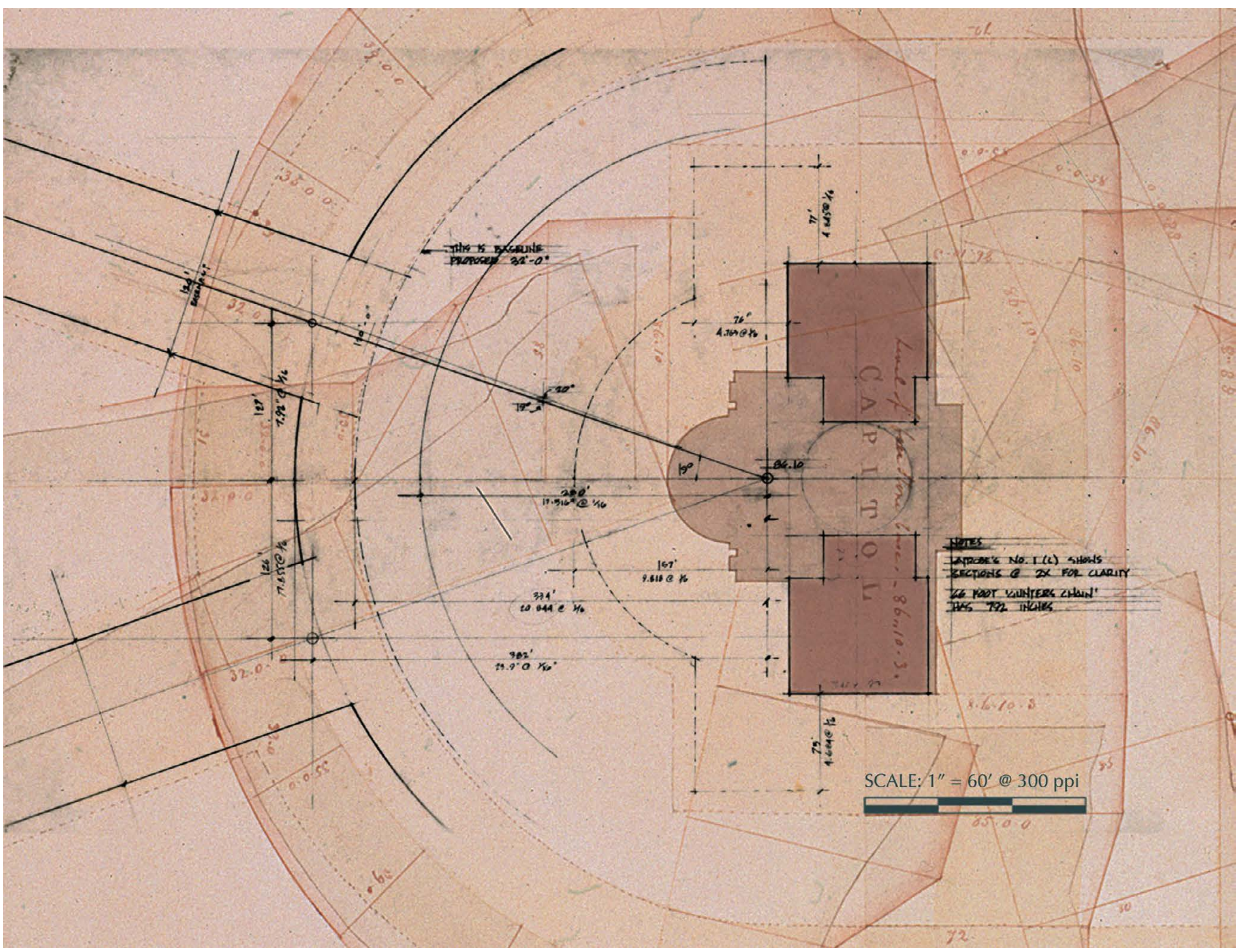


Figure 9. Initial drawing over Latrobe's original (author's drawing, 2024).

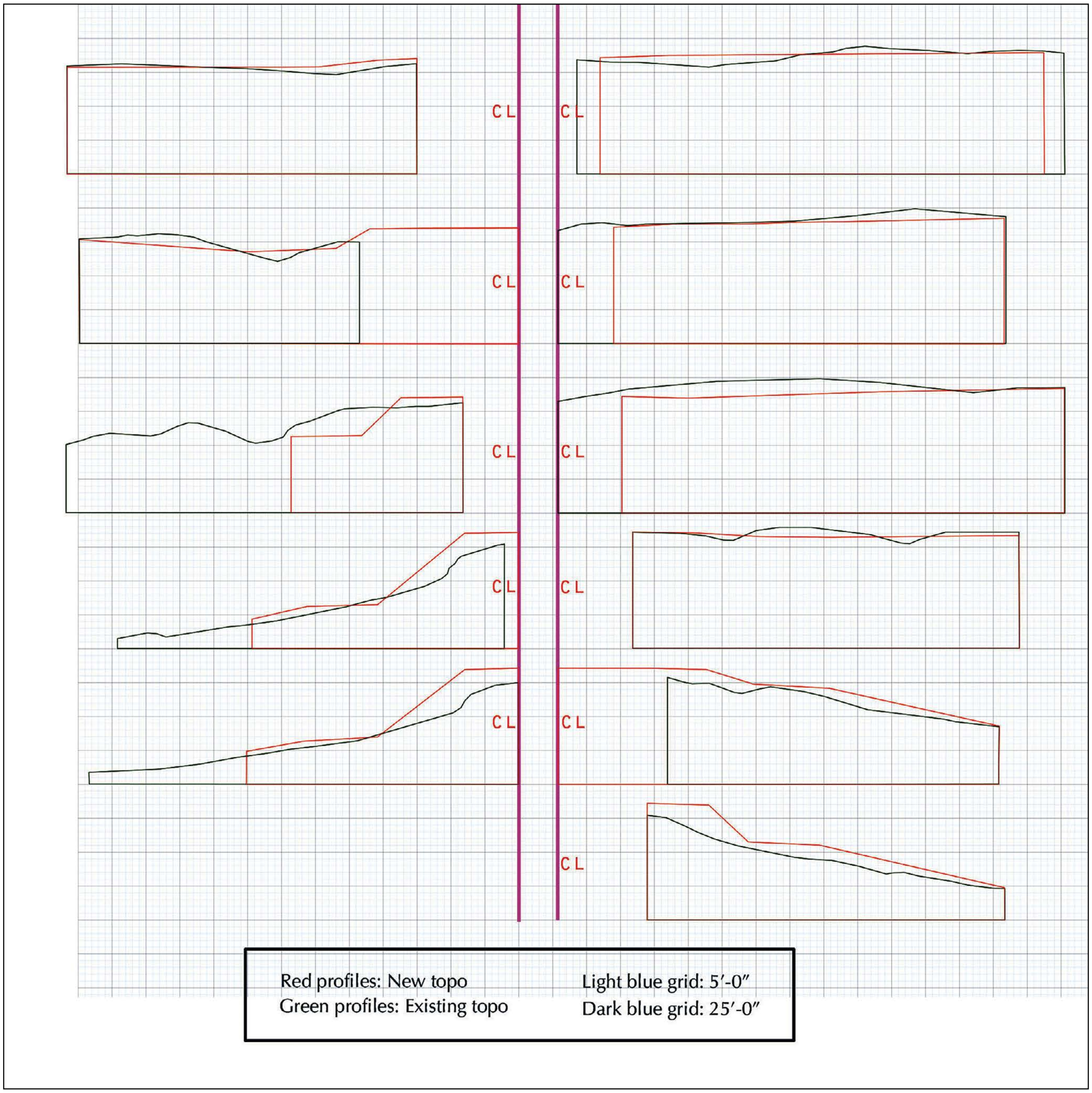


Figure 10. The two sets of scalable landform profiles derived from the original drawing (author's drawing, 2024).

challenge of re-shaping the hill to rectify six major axes converging at the Capitol—which is what L'Enfant's plan called for—Latrobe included eleven radial lines running through the avenue centerlines. Each radial line displayed two land profiles—one in light sienna representing the reshaped or designed landscape, and one in light ochre representing the existing landscape. Once the drawing was properly scaled, the eleven pairs of radial land profiles, or site sections, were isolated as drawings (Figure 10). Interestingly, Latrobe the engineer employed efficient equalized cut and fill technique ensuring that the amount of earth removed is equal to the amount of earth added. In an effort to add more graphic readability to his drawing, Latrobe made the vertical scale twice the horizontal scale (Figure 11).

To transform site sections into the contour line topography we are familiar with, the study then reorganized data

Figure 11. A computer model illustrating the radial landform profiles of the existing landform as drawn by Latrobe [left] and with the vertical scale reduced to one-half [right] (author's drawing, 2024).

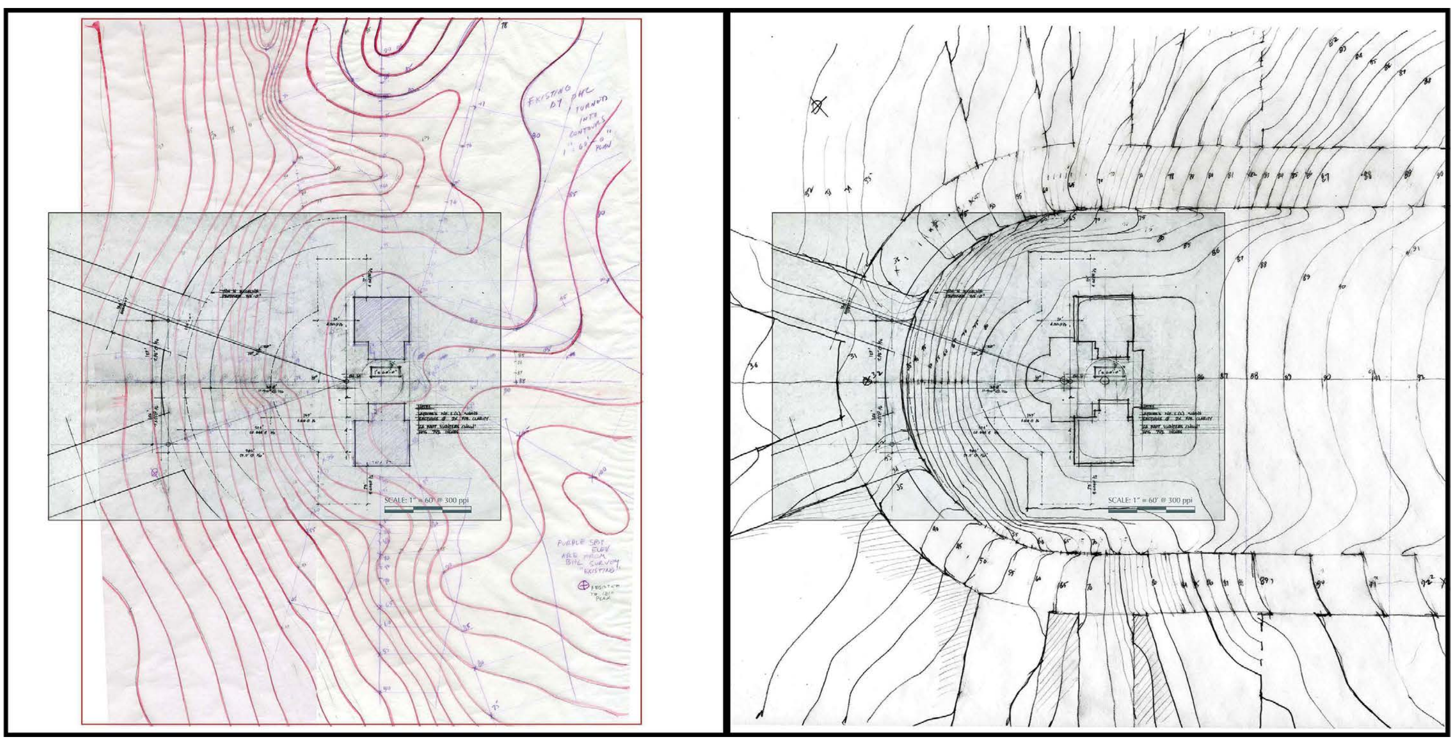


Figure 12. Working interpolation drawings of the existing landform [left] and the designed landform [right] (author's drawing, 2024).

from the site sections into an array of spot elevations in the horizontal plane. Interpolating between spot elevations resulted in a series of continuous contour lines that contain the same information as the original site sections. Unlike the original drawing that contains all this information in one image, the two working drawings (Figure 12) show the existing landscape separated from the designed landscape. The horseshoe-shaped ring road was graded directly into the resulting contours of the designed landscape. Figure 13 shows the existing landscape as it has been returned to the computer modeling program with the footprint of the 1814 Capitol visible.

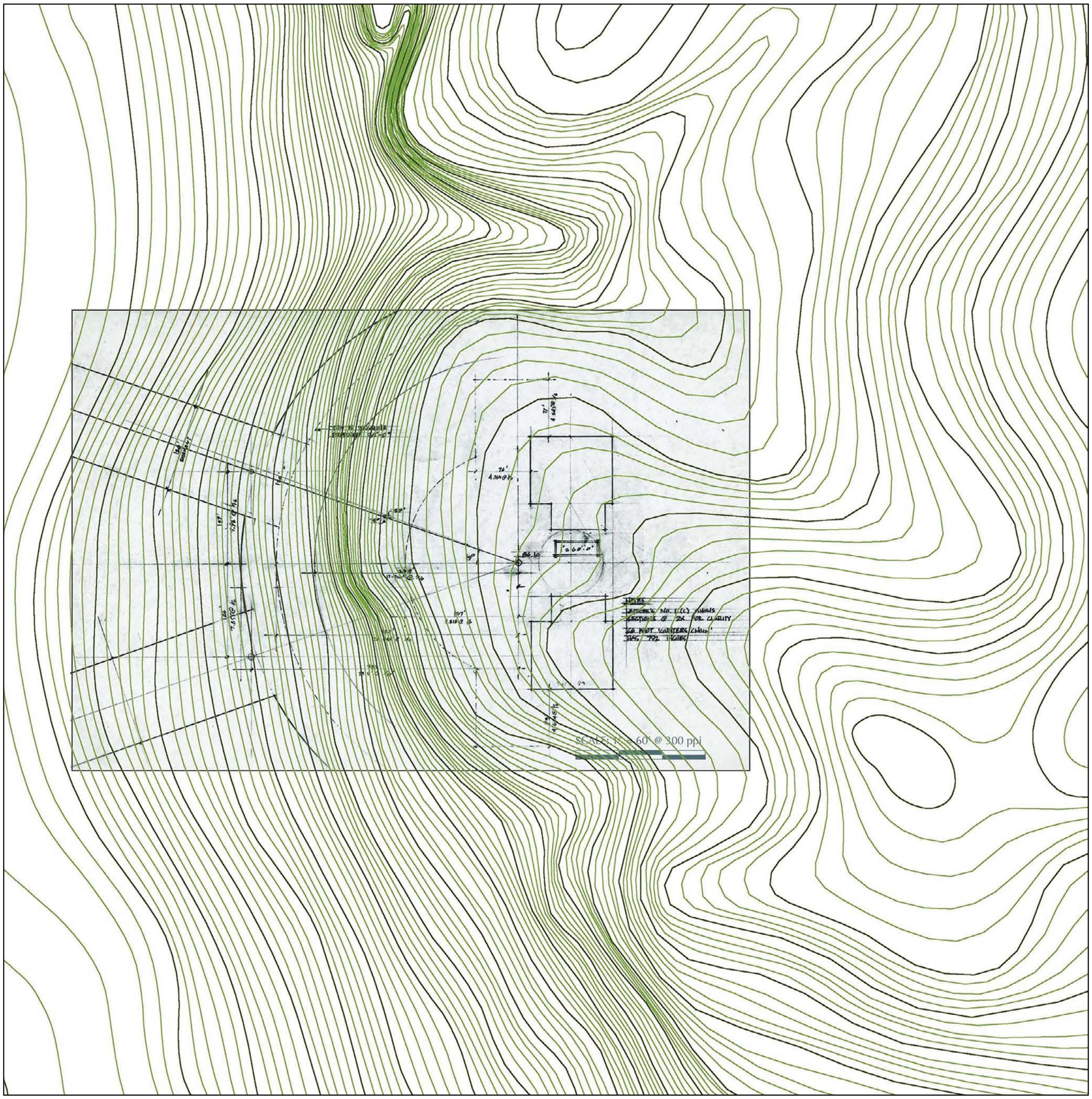


Figure 13. The existing grade of the site recreated as a computer model (author's drawing, 2024).

CONCLUSION

In 1959, the Capitol underwent a significant extension to the east. This expansion was prompted by several factors: the severe deterioration of the east front sandstone, the pressing need for an additional 90,000 square feet of additional office space for the Legislative Branch, and design concerns regarding the proximity of the rotunda and dome to the east portico. The Capitol extension project[17] meticulously replicated the old facade in new Georgia white marble precisely thirty-five feet to the east. As a result, the Capitol's current east front is a 1959 perfect replica of the original sandstone facade buried deep within the structure.

The execution of the Capitol extension involved a survey of ground conditions and undisturbed soil using

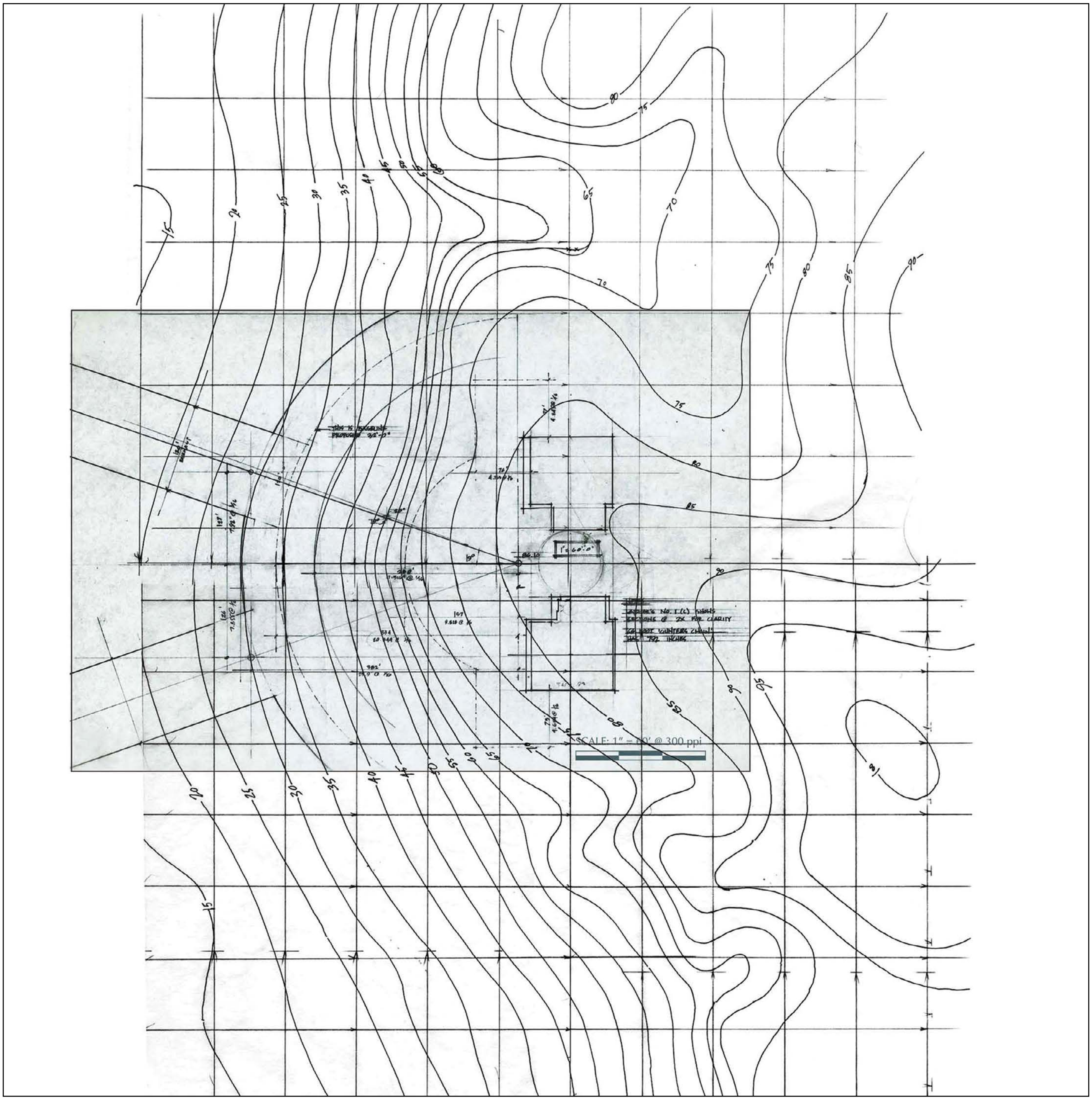


Figure 14. Contour lines of the existing site as generated by ground-penetrating radar, 1959 (author's drawing, 2024).

ground-penetrating radar to determine the hill's topography in 1810 (Figure 14). By comparison, one can observe how accurate Latrobe was. While his method may seem unusual, it is a product of his time and his engineering practices. Given a radial problem, he offered a radial solution. Given the site, his approach to landscape design was characterized by his typical precision and scientific rigor. Although he did not employ the emerging use of contour lines, as might be expected, his approach to the problem as an artist was inventive, and in effect, he presented a unique system of data visualization.

ENDNOTES

1. Jeffrey A. Cohen and Charles Brownell, eds., *The Architectural Drawings of Benjamin Henry Latrobe, Volume 2, Parts 1 & 2* (New Haven: Yale University Press, 1994) and Darwin H. Stapleton, ed., *The Engineering Drawings of Benjamin Henry Latrobe, Volume 1* (New Haven: Yale University Press, 1980). The author first presented a version of this field note at the 2022 SESAH Conference, after having conversations about the subject drawing with William C. Allen, retired Historian in the Architect of the Capitol's office. The author wishes to thank the blind reviewers who assisted with readings, as well as *Arris* editors Vandana Baweja and Stathis Yeros.

2. Cohen and Brownell, *The Architectural Drawings of Benjamin Henry Latrobe*, xiii.

3. William Thornton, *Architectural Drawing for the United States Capitol*, Drawing in ink, wash, graphite, and watercolor on paper, 71 x 102 cm, 1793, Call number ADE Unit 2467 no. 1, Architecture Design Engineering Drawings, Prints and Photographs Division, Library of Congress, Washington, D.C., https://www.loc.gov/pictures/item/95860720/.

4. Arthur H. Robinson, *The Look of Maps: An Examination of Cartographic Design* (Madison: University of Wisconsin Press, 1952), 4–5.

5. Lorenz Scherm [also known as Laurens Scherm], "Pervetusti Campi Martii Monimentum," in François Jacques Deseine, *Beschryving van ous en nieuw Rome* [Description of old and new Rome] 2 Parts (Amsterdam: François Halma,1704), double folded plate in part 1 on page 86, https://www.google.com/books/edition/Beschryving_van_oud_en_niew_Rome/xAxdAAAAcAAJ?hl=it&gbpv=1&dq=campi&pg=PA80-IA16&printsec=frontcover. Note that this map is attributed to François Halma on numerous print vendor websites, but Halma was the publisher. It is available at The Met Fifth Avenue, https://www.metmuseum.org/art/collection/search/360246.

6. Robinson, *The Look of Maps*, 8. See also Derek J. Price, "Medieval Land Surveying and Topographical Maps," *The Geographical Journal* 121, no. 1 (1955): 1–7.

7. J. C. G. Hayne, *Deutliche und ausführliche Anweisung, wie man das militairische Aufnehmen nach dem Augenmaas ohne Lehrmeister erlernen könne* [Clear and detailed instructions on how to conduct military reconnaissance according to one's sense of visual estimate without a teacher] (Leipzig: Gräff, 1794), Tab III, https://play.google.com/books/reader?id=5UUCPABHP3IC&pg=GBS.RA1-PA370&hl=en. Note the current German spelling for Augenmaas is Augenmass.

8. Wolf Günther Koch, "J. G. Lehmann's System of Slope Hachures: An Investigation on the Quality of Relief Representation at the Beginning of the 19th Century," in *Proceedings of the 26th International Cartographic Conference* (Dresden: International Cartographic Association, 2013).

9. The Geography and Map Division at the Library of Congress holds the Rochambeau Map Collection. The map shown in Figure 4 was created by Rochambeau's engineer Quérenet de la Combe.

10. Richard Chenoweth, "Jefferson's Peregrinations and the Verniquet Plan of Paris," *Le Libellio d'Aegis* 11, no. 4 (Hiver 2015): 25–30.

11. Nevil Maskelyne, "An Account of Observations Made on the Mountain Schehallien for Finding Its Attraction," *Philosophical Transactions of the Royal Society of London* 65, (1775): 500–542; and Charles Hutton, "An Account of the Calculations Made from the Survey and Measures Taken at Schehallien, in Order to Ascertain the Mean Density of the Earth," *Philosophical Transactions of the Royal Society of London* 68, (1778): 689–788.

12. Karen Rann and Robin S. Johnson, "Chasing the Line: Hutton's Contribution to the Invention of Contours," *Journal of Maps* 15, no. 3 (2019): 51.

13. Ann E. Komara, "Measure and Map: Alphand's Contours of Construction at the Parc des Buttes Chaumont, Paris 1867," *Landscape* 28, no. 1 (2008): 27; and for the map, see Du Carla [pseudonym for Marc Bonifas, also known as Marc Ducarla Bonifas, Marcelin Ducarla, Marcellin Ducarla, Marc Du Carla Bonifan, and Marcellin du Carla-Boniface], *Expression des nivellemens ou Méthode nouvelle pour marquer rigoureusement sur les cartes terrestres et marines les hauteurs et les configurations du terrain* [New methods for rigorously indicating the elevation and shape of land and marine terrain] (Paris: L. Cellot, 1782).

14. For an overview of this history, see John Pickles, "Introduction: Maps and Worlds," in *A History of Spaces Cartographic Reason, Mapping and the Geo-coded World* (London: Routledge, 2004), 3–21.

15. William Playfair, *The Commercial and Political Atlas: Representing, by Means of Stained Copper-Plate Charts, the Progress of the Commerce, Revenues, Expenditure and Debts of England during the Whole of the Eighteenth Century* (London: T. Burton, 1801).

16. See Ian Spence and Howard Wainer, "William Playfair and the Invention of Statistical Graphs," in *Information Design: Research and Practice*, eds. Alison Black et al. (London: Routledge, 2017), 43–60.

17. William C. Allen, *History of the United States Capitol: A Chronicle of Design and Construction* (Washington, D.C.: United States Government Printing Office, 2001), 420–433. Allen's segment on the Capitol extension describes the project in great detail.