THE 1780 WILLIAM CLARK MAP OF FORT JEFFERSON

KENNETH C. CARSTENS

Only two 18th-century maps are known to exist that indicate the location of George Rogers Clark's 1780 fort at the mouth of the Ohio River. One of these maps, the William Clark map of 1780, was drawn by someone who was stationed at the fort. This map will be the focus of our attention. Although it does not include a scale or a compass orientation, it does exhibit features which include the fort, associated civilian community, and parts of the physical environment which are identifiable today (e.g., chute of the Mississippi River and Mayfield Creek). By applying commonly used 18th-century scales to a copy of this map, it becomes possible to suggest which scale might have been used to illustrate the details present.[1]

Determining the most probable scale of the original drawing of the Fort Jefferson map allows for a more accurate understanding of the relationships among its features. That knowledge can be used to match the map's 18th-century features with those of the 20th century. As a result, it becomes

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1 This is a revised version of a paper presented during the fifth annual George Rogers Clark Trans-Appalachian Frontier History Conference on 3 October 1987, in Vincennes, Indiana. The conference was co-sponsored by the National Park Service and Vincennes University. Many persons have contributed to the Fort Jefferson project. Foremost among them are my students at Murray State University, without whom much of the Fort Jefferson research would be left undone. I wish also to thank the archivists at The Filson Club, the Missouri State Historical Society, and the Virginia State Library. Permission to publish the William Clark Map came from the State Historical Society of Wisconsin. I alone am responsible for any errors within.

possible to suggest an area in which to search for the remains of the fort.

When the Fort Jefferson research project began in 1980, it had as its main goal the archaeological discovery of George Rogers Clark's fort at the mouth of the Ohio River (figure one). That goal was deemed important because it was believed that Fort Jefferson was the last of the American Revolutionary War era forts (not including stations) in the midwest not yet disturbed by either environmental or cultural factors; other American occupied forts in the midwest (e.g., Fort Boonesborough, Fort Bowman, Fort Clark, Fort Harrodsburg, Fort Nelson, and Fort Sackville/Patrick Henry) are believed to have been altered to varying degrees. One of those sites (Fort Clark at Kaskaskia) is known to have been completely destroyed, while the status of the others remains questionable. Portions of Fort Harrodsburg, Fort Boonesborough, and Fort Nelson may still be extant. Recent work near Bowman and Sackville/Patrick Henry have provided evidence that only small areas of those sites may be intact.[2] Without intact archaeological deposits at these sites, little new information can be added by archaeologists to supplement existing histories of pioneer Kentucky and the American Revolution in the west.

After ten years of intermittent field archaeological studies and intensive archival research about Fort Jefferson, much new information about the site is known. Unfortunately, we still have not pinpointed the exact location of the fort, but we have recovered a handful of out-of-context, 18th-century artifacts (e.g., creamware and pearl-ware sherds, fragments of "white

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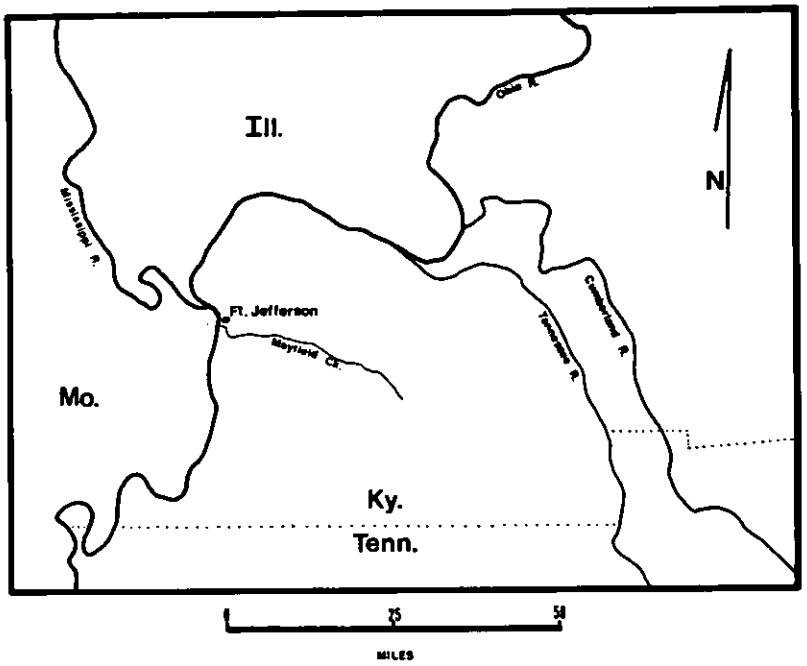
2 Bonnie Gums, *Archaeology at French Colonial Cahokia* (Studies in Illinois Archaeology, No. 3; Springfield: Illinois Historic Preservation Agency, 1988). Nancy O'Malley, *Searching for Boonesborough* (Archaeological Report 193, Program for Cultural Resource Assessment, Kentucky Anthropological Research Facility, University of Kentucky; Lexington, 1989); Curtis H. Tomak, *Archaeological Investigations at the George Rogers Clark National Memorial, National Park Service Contract Report* (Vincennes, 1972).



General location of Fort Jefferson
Kenneth Carstens, photograph by Danna Kilby

clay" pipebowls, and a single perforated bone buttonback) from the general site area. Those artifacts may represent occupational debris from the fort or the adjacent civilian community of Clarksville.

As a result of years of archival research, we know considerably more about the history of Fort Jefferson than we do about the archaeological site because our pursuit of written records has resulted in locating more than 5,000 original, previously unpublished Fort Jefferson documents — most of

which will be published soon.[3] These documents have created a substantial database for both archaeological and historical model-building and testing.

As a result of the field and archival work it also has been possible to present a more accurate history of Fort Jefferson than any which have filled most history books since the nineteenth century.[4] As good as all of this sounds, one might still ask, "So, if you know so much about Fort Jefferson why have you not found it?" This question goes to the very heart of this paper, and it is hoped that the results of the work presented here will help determine the probable location of Fort Jefferson.

This paper focuses principally on determining which mapping scale was used to make the William Clark map of 1780,[5] but it also touches upon the William Clark map of

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3 Kenneth C. Carstens, "At the Confluence of the Ohio and Mississippi Rivers: Virginia's Claim to the West," Paper Presented to the Second Annual Ohio Valley History Conference, Murray State University, 1986; "In Pursuit of Fort Jefferson: A Summary of Investigations 1980-1986," Paper Presented to the Forty-Third Southeastern Archaeological Conference, Nashville, 1986; "Issues at Fort Jefferson, 1780-1781: The Quartermaster Books of John Dodge and Martin Carney," Paper Presented to the Sixth Annual George Rogers Clark Trans-Appalachian Frontier History Conference, Vincennes, 1988.

4 Kenneth C. Carstens, "In Search of Fort Jefferson: Past, Present, and Future Studies," *Proceedings of the Symposium on Ohio Valley Urban and Historic Archaeology* 2 (1984): 45-56; "At the Confluence"; *The Quartermaster Books of John Dodge and Martin Carney from George Rogers Clark's Fort Jefferson, 1780-1781* (New York: AMS Press, In Press); *The Personnel of George Rogers Clark's Fort Jefferson, 1780-1781* (New York: AMS Press, In Press); *A Calendar of Activities at George Rogers Clark's Fort Jefferson, 1780-1781* (New York: AMS Press, In Press); Kathryn M. Fraser, "Fort Jefferson: George Rogers Clark's Fort at the Mouth of the Ohio River, 1780-1781" *Register of the Kentucky Historical Society* 81 (1983): 1-24; William Potter and Kenneth C. Carstens, "Floral Reconstruction and Early 19th Century Land Surveys: A Test Case from the Fort Jefferson Area," Paper Presented at the Forty-Third Southeastern Archaeological Conference (Nashville, 1986); Julie Stein, Kenneth C. Carstens, and Kit W. Wesler, "Geoarcheology and Historical Archeology: An Example from Fort Jefferson, Kentucky," *Southeastern Archaeology* 2(1983): 132-44.

5 Lyman C. Draper, Draper Manuscripts, 1M11.

1795[6] as well as several other primary documents. Most of these documents have been found or analyzed only recently.[7]

Contrary to what some historians have suggested, there were at least two William Clarks who lived during the late eighteenth century, both of whom were relatives of George Rogers Clark and both of whom left records about George Rogers Clark's Fort Jefferson.

The William Clark who drew the 1795 map was the younger brother of George Rogers Clark. He was the Clark of the famous Lewis and Clark expedition. A person of high intellect and fame, this William Clark was but a lad of ten when the 1780 Fort Jefferson map was drawn.[8] He was a man of twenty-five, however, when he made one of two trips to New Madrid (Missouri) to meet with Manuel Gayoso de Lemos, the Spanish lieutenant governor. It was on the 1795 trip that this William Clark drew his generalized map of the Fort Jefferson area (figure two).[9]

The William Clark who drafted the 1780 map (figure three)[10] was the cousin of George Rogers Clark rather than his younger brother as some historians have proposed. This William Clark was the son of Benjamin Clark, the brother of George's father. Because of that mistaken identity, many of cousin William's papers survived, including the 1780 map. Cousin William Clark served in the Illinois Regiment as personal secretary to George Rogers Clark and as a lieutenant in Captain

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6 The William Clark 1795 Map, Geography and Map Division, Library of Congress, Washington, D. C.

7 Potter and Carstens, "Floral Reconstruction."

8 John L. Loos, *A Biography of William Clark, 1770-1813* (Ph.d. dissertation, Department of History, Washington University, 1953).

9 William Clark Papers, box 1, folder 21, Missouri Historical Society, Forest Park, St. Louis; Samuel W. Thomas, "William Clark's 1795 and 1797 Journals and Their Significance," *Bulletin of the Missouri Historical Society* 25 (July 1969): 277-95.

10 Draper Manuscripts, 1M11.

John Bailey's company in 1780 and 1781.[11] Like several other Clark family members, he was a surveyor. The focus of this paper will be the map cousin William drew of Fort Jefferson and the associated community of Clarksville in 1780.

The existence of two William Clarks, both drawing maps of Fort Jefferson — although fifteen years apart — has resulted in confusion. To avoid misunderstanding, throughout the remainder of this paper, I shall refer to the cousin's map as the 1780 map and the younger brother's map as the 1795 map.

Why are the two Clark maps important? The 1780 map is the only map[12] yet located that details the layout of Fort Jefferson and the Clarksville community.[13] Unfortunately, the 1780 map does not contain a scale or a compass orientation; it does include William Clark's signature and his cursive style. Most importantly, it provides clues about the fort and community that were not known previously and confirms information about the area suggested elsewhere. The characteristics of the 1780 map will be discussed later.

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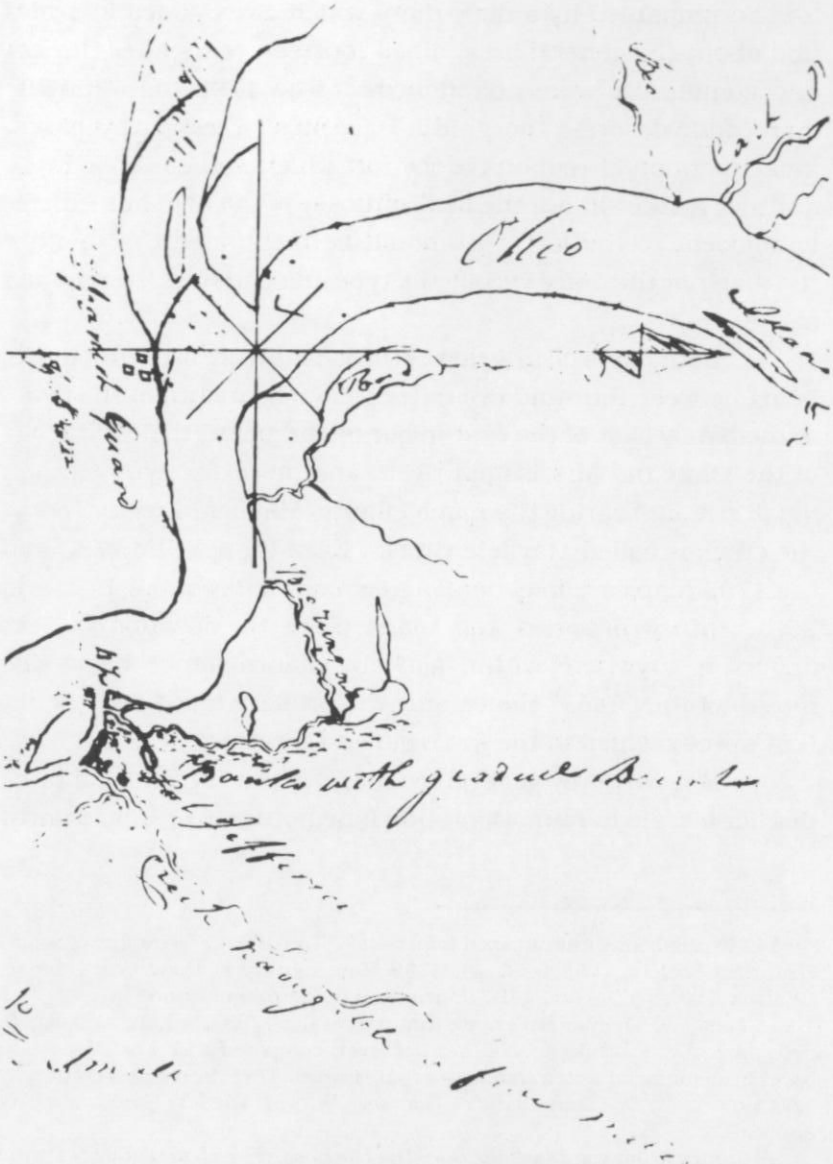
11 Carstens, *Personnel*; Margery H. Harding, *George Rogers Clark and His Men: Military Records, 1778-1784* (Frankfort: Kentucky Historical Society, 1981), 35, 46; James A. James, ed., *George Rogers Clark Papers, 1771-1784* (Vol. II; reprinted by AMS Press, 1972), 415, 418.

12 According to James, in the late spring of 1780 Thomas Walker and Daniel Smith were directed by Thomas Jefferson to locate and survey the precise position of Clark's fort at the mouth of the Ohio. Jefferson wished to make sure Fort Jefferson would be built within Virginia's western land claim and not on that of North Carolina. According to George L. Sioussat, Walker and Smith complied and were to have returned several copies of their work to Jefferson and Clark, though none have been located. John D. Barnhart, ed., *Henry Hamilton and George Rogers Clark in the American Revolution with the Unpublished Journal of Henry Hamilton* (Crawfordsville, Indiana: R. E. Banta, 1951). James A. James, *Clark Papers*; St. George L. Sioussat, "The Journal of General Daniel Smith . . . August 1779 to July 1780," *Tennessee Historical Magazine* 1 (1915): 40-65.

13 The "map of Fort Jefferson" illustrated in Juliette Magee's book, which she attributes to the Virginia State Library-Archives Division, is actually "the 'new Fort' at Lexington, Kentucky, erected . . . in the spring of 1781, and not Fort Jefferson on the Mississippi," Paul Chestnut, Virginia State Library, to author, 12 October 1982. Juliette M. Magee, *Old Fort Jefferson* (Wickliffe, Kentucky: Advance Yeoman Press, 1975), 14.

Portion of William Clark's 1795 Map
National Archives, photography by Danna Kilby



Portion of William Clark's 1795 Map
National Archives, photography by Danna Kilby

The 1795 map, on the other hand, is important because it is accompanied by a daily diary which gives added information about the general area, albeit fourteen years after the fort and community were abandoned.[14] The 1795 map and the diary both describe the gradual ascent of the nearby bluffs, make mention of remains of the fort which still could be seen, and give an idea about the healthfulness of the area immediately adjacent to the fort.[15] It should be mentioned that neither the map nor the diary specify the type or location of the remains of the fort.

Both maps clearly depict the location of Fort Jefferson as being between four and five miles below the mouth of the Ohio, immediately east of the first major island below the confluence of the Ohio and Mississippi rivers and immediately north of a small stream bearing the name Liberty/Mayfield Creek. Today, the creek is called Mayfield Creek. Even though the 1780 and the 1795 maps are in general agreement, subsequent 19th and 20th-century histories and maps place the location of Fort Jefferson anywhere within a twelve-mile distance below the mouth of the Ohio.[16] Hence only the primary maps give us our first specific clues to the fort's general location.

But why only general location? The 1780 map contains neither a scale nor an orientation (one normally assumes north

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14 Miscellaneous unpublished papers of William Clark, Clark file, Missouri Historical Society; William Clark 1795 Map, Library of Congress; Thomas, "William Clark's 1795 and 1797 Journals and Their Significance."

15 Loos and Thomas both state that part of the 1795 Clark mission was to determine the healthfulness of Fort Jefferson compared with Fort Massac in order to recommend which should be re-garrisoned. Fort Massac was eventually selected. Loos, "William Clark"; Thomas, "William Clark's 1795 and 1797 Journals."

16 James A. James, *Oliver Pollock: The Life and Times of an Unknown Patriot* (1970); John E. L. Robertson, "West to the Iron Banks" (M. A. thesis, Department of History, University of Louisville, 1961); B. Hardy Stovall, miscellaneous correspondence during 1883 with Lyman C. Draper, Draper Manuscripts, 27J7; H. Young, W. T. Poussin, and S. Tuttle, *1821 Survey of the Ohio River from Louisville, Ky. to Mississippi River* (Knightstown, Indiana, 1977 reprint), 14.

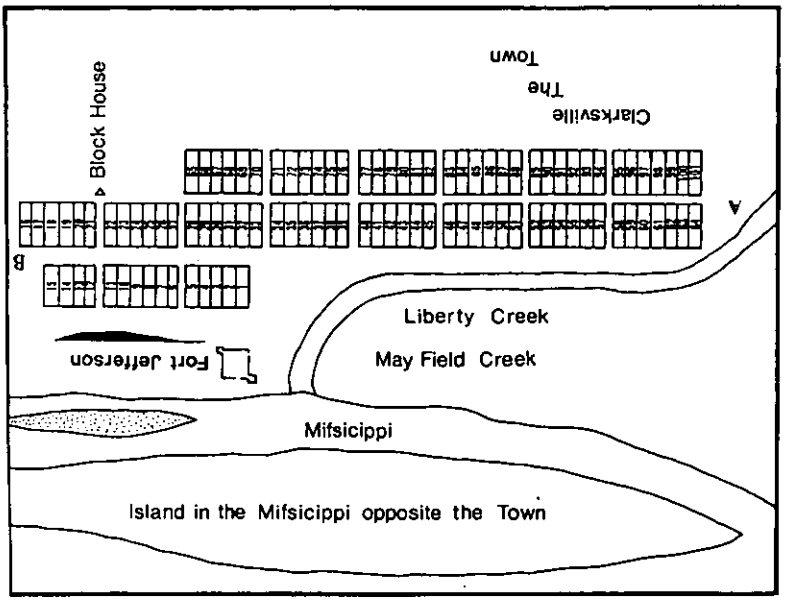
is to the top of the page); the exact location of the fort is, therefore, difficult to determine. The 1795 map is drawn at such a small scale that a single mark on that map might represent a considerable distance. Despite the problems associated with the two Clark maps, however, both provide significant databases which help in locating the fort and reconstructing its environment.

The rest of this paper will focus chiefly on the 1780 map and its significance for the Fort Jefferson research project. It is initially important to discuss several interpretations of the document in order to identify its potential research strengths and weaknesses. There are four negative interpretations that may be legitimately raised about it: (1) it may be completely inaccurate with nothing drawn to scale; (2) it may represent only a proposed plan of Fort Jefferson and the Clarksville community; (3) it may be nothing more than an "idealized" doodle; or (4) it may have been drawn from memory years after the fort and community were abandoned.

The positive interpretations of the 1780 map, however, are: (1) it is completely accurate, being drawn to an exact but unspecified scale and orientation; (2) it is accurate in scale but is inaccurately oriented to the cardinal directions[17] (an occurrence not unheard of in "river-north" Vincennes;[18] (3) the

17 Curtis H. Tomak, "Archaeological Investigations at the George Rogers Clark National Memorial. Contract Report," National Park Service (Vincennes, 1972).

18 Generally speaking, the Wabash River flows north to south, but the community of Vincennes is built adjacent to and south of a meander. At the meander the Wabash actually flows from the east-northeast towards the west, but verbal directions in Vincennes are usually given in reference to "river-north," including the street numbering system. Similar confusion was apparent during the days of French, British, and American occupancy. Henry Duverner, "Plan of Fort Sackville" (1778), map filed in the Indiana State Library, Indianapolis; Barnhart, ed., *Henry Hamilton and George Rogers Clark*; Edwin C. Bearss, *George Rogers Clark and the Winning of the Old Northwest: Vincennes Sites Study and Evaluation* (U.S. Department of the Interior, National Park Service, Division of History, Office of Archaeological and Historic Preservation, 1967). Henry Hamilton, letter to General Haldimand, 24 January 1779; H. W.



Redrafted version of William Clark's 1780 map.
Source of original, Draper Manuscripts.

spatial characteristics of the fort and community are correct, but those which depict the distances between the cultural (fort and community) and physical features (creek and river) are not correct; or (4) unknown portions of it are drawn to scale, accurately reflecting the unknown scaled areas of the map.

These lists of negative and positive interpretations clearly demonstrate that a literal interpretation of the 1780 map must be questioned. As with most problems, there might be several possible interpretations and solutions. It is important to note — without going into detail — that each of the negative interpre-

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Beckwith, ed., *Collections of the Illinois State Historical Library* (Springfield, 1903), I, 389-93; Tomak, *Archaeological Investigations.*

tations can be demonstrated to be false by primary historical documents and geomorphological information.[19]

Until other negative interpretations can be presented or different data becomes available, therefore, one of the four positive interpretations will be assumed to be correct. Consequently, the task at hand becomes one of determining which of the four is correct. To do this requires two levels of examination: nominal (verbal descriptions of observations) and ratio (comparison of measured data and distances).[20]

The nominal characteristics consist of a detailed description of the cultural and physical attributes illustrated on the 1780 map. The descriptive elements are as follows (see also figure three).

A. **Cultural Features**

1. a square-shaped fort (schematic outline);
2. two bastions, each square and located on the northeastern (upper right-hand) and southwestern (lower left-hand) corners of the fort (note that although compass directions are given as if compass north is at the top of the map, this orientation may not be correct);
3. possibly, two entrances into the square-shaped fort: a Mississippi River chute entrance (west or left fort wall or curtain) and a Liberty/Mayfield Creek entrance (south or lower wall or curtain).

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19 The first negative interpretation (no use of scale and completely inaccurate) is weakened by the consistency of the metrical characteristics present on the map, especially those shared by the fort, blockhouse, "streets," and community (see figure two and table one). The second and third negative interpretations can be proved wrong through the use of primary documentation, e.g., information found in the published *Clark Papers* edited by James, the unpublished George Rogers Clark papers in the archives division of the Virginia State Library, and the unpublished William Clark papers at the Missouri Historical Society in St. Louis.

20 David H. Thomas, *Figuring Anthropology: First Principles of Probability and Statistics* (New York: Holt, Rinehart and Winston, 1976).

The breaks in the drawn lines of the walls are interpreted as entrances to the fort although it is possible that they may not be entrances but only interruptions in the drafted lines. Hinges were made for three gates by the fort's blacksmith. One gate was used for the munitions magazine. The use of the remaining two sets of gate hinges was not specified, but they may have been used for the fort's gates.[21]

4. seventeen rectangular plots, varyingly subdivided into units of four, five, six, and seven (thereby totalling 101 small units (inlots);
5. the rectangular-shaped blocks are oriented north-south (lengthwise on the map), but the sub-unit "inlots" are oriented on an east-west axis and numbered from the most northern to the most southern (top to bottom on the map) per column of lots;
6. the lots are collectively labeled "Clarksville the Town";
7. "Clarksville the Town" is arranged and organized to the east (right) of the fort and consists of three major columns of grouped inlots, all of which are parallel to each other on a north-south axis and subdivided by seven east-west oriented "streets" or alleyways;
8. the two major north-south streets appear to be labeled "A" (the more easterly of the two) and "B" (street closest to the fort);
9. an equilateral-triangle blockhouse is located northeast of the fort and community, adjacent to the eastern edge of the most northern street

21 George Rogers Clark Papers, Box 20, Virginia State Library, Archives Division, Richmond, Virginia.

between inlots 21 and 22 (the structure is labeled "block house");

10. the fort and community appear to be organized parallel to the riverine features, such as the elongated aspect of Liberty/Mayfield Creek and the chute and island in the Mississippi River.

B. **Physical Features**

1. the main channel of the Mississippi River is clearly illustrated along the western (left) edge of the map;
2. a large island (labeled "Island in the Mississippi Opposite the Town") is present immediately east of the main Mississippi River channel;
3. a chute of the Mississippi River is present between the major island and the mainland;
4. a second, much smaller, island is illustrated at the top of the map within the chute between the large island and the mainland;
5. both islands appear to have been accurately illustrated to reflect general geomorphological and hydrological characteristics (e.g., narrow and cut away in the upstream margins on the westerly or main current side and wider on the depositional downstream margins);
6. the mouth of Liberty/Mayfield Creek empties into the chute of the Mississippi River, south-southwest of the fort (the creek does not empty directly into the Mississippi River);
7. the 1780 map illustrates that Liberty/Mayfield Creek contains two major bends (meanders) before it flows into the chute of the Mississippi;
8. there is a complete absence of any indication of the presence of a bluff, bluff-line, ridge system (uplands) or any mention of a spring or springs or any other physical feature.

Table 1 exhibits a listing of the cultural features previously discussed, their frequency of occurrence, their measurements based on the use of a 40-parts-per-inch scale[22] and the resulting dimensions of those cultural features when their measurements are converted through multiplication to 18th-century units of measure, e.g., chains (66 feet per chain), half-chains (33 feet), poles or rods (16.5 feet), and tens-of-feet. As an example, the 1780 map illustrates one four-sided square fort. The length of one wall is ten in terms of units on the 40-parts-per-inch scale. Therefore, reading across the first entry of table 1, the possible lengths for a single wall of Fort Jefferson are 660 feet (10 multiplied by 66 feet — the length of a chain), 330 feet if scaled by half-chain, 165 feet per wall if scaled by rod or pole, or 100 feet per wall if scaled in tens-of-feet.

Of the four most likely scales used to make the 1780 map, the tens-of-feet scale is the most logical for several reasons. The tens-of-feet scale is — as might be expected — the only scale in which all numbers or units of measure are computed whole numbers. The numbers are — for the most part — "even," thereby suggesting symmetry in design, a very important architectural, cartographic, and social consideration during the eighteenth century. This was the "Georgian" way of imitating the symmetry and balance of nature. The pole and tens-of-feet scales produce results similar to other western frontier forts but their respective measures for the blockhouse diverge significantly. The pole is too large a unit of measure when compared to archaeological and archival evidence of other blockhouses constructed during the 18th century.[23] It would

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22 According to John Muller, "When a plan of a fortification is to be drawn . . . it will be convenient to have a scale divided into equal parts, as for example, an inch divided into 20 . . ., 30 . . ., [or] 40 [units] . . . in order to express every part distinctly." See John Muller, *A Treatise Containing the Elementary Part of Fortification Regular and Irregular* (Ottawa: Museum Restoration Service, 1968; reprinted from the London 1746 edition), 13-14.

23 Charles M. Stotz, "The Reconstruction of Fort Ligonier: The Anatomy of A Frontier Fort," *Bulletin of the Association for Preservation Technology* 6 (1974).

appear, therefore, that the tens-of-feet scale, when used in conjunction with the 40-parts-per-inch rule, is the scale most likely used by William Clark to make the 1780 map. Only actual archaeological identification of structures (such as the fort's walls, the blockhouse, etc.) at Fort Jefferson will prove which scale was actually used. Until the fort is discovered and actual measurements can be taken, it will be assumed that the 10:1 scale was used to make the 1780 map.

Several other points need to be mentioned regarding the measurements given in table 1. It is interesting that the straight-line distance between the northeast corner bastion and the triangular-shaped blockhouse is 750 feet (using the 10:1 ratio and 40-parts-per-inch rule). When converted to yards (250 yards) and divided in half (125 yards), one approximates the effective ranges of 18th-century muskets.[24] Musket fire directed from the blockhouse and the fort's northeastern bastion could be effectively directed at the civilian community should it become infiltrated by the enemy (as did happen in August 1780).[25] It is possible that the original planning of fort, community, and blockhouse took this defensive tactic into account.

Primary information disclosing the size of Fort Jefferson has not yet been located. However, in November 1779 — about six months prior to its construction — George Rogers Clark began to formalize his plans for erecting the fort. Meeting with

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24 Harold L. Peterson, *The Book of the Continental Soldier* (Harrisburg, Pennsylvania: The Stackpole Company, 1968). It should be pointed out also that musket fire should not be thought of in terms of accuracy (as is rifle fire) but rather in terms of volleys. The theory of musket fire does not stress aiming but rather multiple shots. One hundred and twenty-five yards is well within the killing range of muskets. For additional discussion by leading authorities, see Edward E. Curtis, *The Organization of the British Army in the American Revolution* (New York: AMS Press, 1969; originally published in 1926), 16-17; and M. L. Brown, *Firearms in Colonial America: The Impact on History and Technology, 1492-1792* (Washington, D. C.: Smithsonian Institution Press, 1980), 166, 228, 289, 337.

25 Robert George to John Montgomery, 2 September 1780, William Clark Papers, Box 1, Folder 21, Missouri Historical Society, St. Louis.

Measurements from 1:1 Copy of Original Wm Clark 1780-1781 Fort Jefferson/Clarksville Map Based on 40 Parts/Inch.

NO. ITEMS	DESCRIPTION OF ITEM	DIMENSIONS ON 40 SCALE	DIMENSIONS IF ONE UNIT OF MEASURE TAKEN IN: CHAINS	¼CHAIN	POLES	10's OF FEET
1	Fort	10 sq.	660' sq.	330' sq.	165' sq.	100' square
2	Bastions	2 sq.	132' sq.	66' sq.	33' sq.	20' square
101	Inlots	Variable	N-S x E-W	N-S x E-W	N-S x E-W	N-S x E-W
Individual	----------	5 x 16	330'x1056'	165' x 528'	82.5'x 264'	50' x 160'
1	4 Inlots	20 x 16	1320'x1056'	660' x 528'	330.0'x264'	200' x 160'
1	5 Inlots	25 x 16	1650'x1056'	825' x 528'	412.5'x264'	250' x 160'
13	6 Inlots	30 x 16	1980'x1056'	990' x 528'	495.0'x264'	300' x 160'
2	7 Inlots	35 x 16	2310'x1056'	1115' x 528'	577.5'x264	350' x 160'
1	Blockhouse (Triangular)	3 x 3 x 3	198'/side	99'/side	49.5'/side	30'/side
2	North-South Streets					
	Street A	220 x 2.5	14520'x165'	7260'x 82.5'	3630.0'x41.25'	2200'x 25'
	Street B	80 x 7	5280'x462'	2640'x 231.0'	1320.0'x115.5'	800' x 70'
7	East-West Streets					
	Street 1 (Top)	2.0 x 40	132'x2640'	66'x1320'	33.0'x 660.0'	20.0' x 400'
	Street 2	2.0 x 60	132'x3960'	66'x1980'	33.0'x 990.0'	20.0' x 600'
	Street 3	4.0 x 35	264'x2310'	132'x1155'	66.0'x 577.5'	40.0' x 350'
	Street 4	4.0 x 35	264'x2310'	131'x1155'	66.0'x 577.5'	40.0' x 350'
	Street 5	2.0 x 35	132'x2310'	66'x1155'	33.0'x 577.5'	20.0' x 350'
	Street 6	2.0 x 35	132'x2310'	66'x1155'	33.0'x 577.5'	20.0' x 350'
	Street 7 (Bottom)	2.0 x 35	132'x2310'	66'x1155'	33.0'x 577.5'	20.0' x 350'
BLOCKHOUSE LOCATION (50° E OF N)						
-----from center of fort:		84 units	5544'	2772'	1386'	840'
-----from NE fort bastion:		75 units	4950'	2475'	1237.5'	750'

Note: 1 chain equals 66 feet (4 poles); ¼ chain equals 33 feet (2 poles); 1 pole or rod equals 16½';
Street "A" is East of Street "B"
East-West Streets are numbered consecutively from North to South, one through seven.

Table 1: Measurement Rations Taken from the 1780 Clark Map and Based on a 40-Parts-Per-Inch Scale.

his junior officers, Clark sought their recommendations for construction. They responded by stating that the fort should "be one hundred feet square...with bastions at each corner so proportioned that [gunfire from] one shall clear another."[26]

By coincidence, the president of those junior officers at that meeting was Captain Robert George. Captain George subsequently became the commandant at Fort Jefferson in May 1780. Indeed, he was present at the planning of the fort, present throughout its construction, and present during its evacuation fourteen months later.

With respect to construction plans, the junior officers further recommended to Clark that the fort should be "built of earth dug out of an entrenchment... (and should)...they conceive it necessary there should be a wooden wall of sawed or hewn timber."[27]

On 4 June 1780, forty-six days after arriving at the site of the newly planned fort, Captain Robert George wrote to George Rogers Clark concerning its construction:

> As to our situation here, we are endeavoring to make it as strong as possible, I have got the *Trenches for the Pickets* ready & the inhabitants are hurrying the Pickets to me as fast as their circumstances do well admit... I hope to have *the Fort enclosed* within this Week [emphasis added].[28]

It would appear that the construction of Fort Jefferson did proceed as initially recommended by Clark's junior officers. It also seems that the 1780 map meets the various proportional characteristics they recommended if the 10:1 ratio and 40-parts-per-inch scale are used jointly.

Lastly, the earliest written evidence found for the presence of cousin William Clark at Fort Jefferson is 12 June

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26 James A. James, *Clark Papers.*

27 *Ibid.*

28 George to Clark, 4 June 1780, George Rogers Clark Papers, Box 11, Virginia State Library, Archives Division, Richmond, Virginia.

1780.[29] On that date, Captain Robert George ordered Captain John Dodge, the post's quartermaster, to provide Lieutenant William Clark with several items of clothing. Frequently, clothing was issued to officers at Fort Jefferson upon their arrival or departure. If such was the case for Lieutenant Clark, then his 1780 map could not be a plan, but rather an illustration of the recently completed fort and community since he apparently had arrived after the fort had been completed.

Also, the last date Clark was known to be present at the fort was 20 March 1781.[30] It is possible that he was also present during the evacuation of Fort Jefferson, although no evidence has yet been found to support that idea.

Could the map have been drawn by William Clark sometime after his departure from Fort Jefferson? Although it is possible that he may have done so, there is no evidence to support that belief. If the 1780 map was drawn after his departure from Fort Jefferson, why did he draw only a single blockhouse when it is clear from the Virginia state records that three blockhouses existed at the completed fort? One possibility is that the map was made between the time the single blockhouse was constructed and the erection of the remaining two blockhouses. It also has been suggested that the placement of the blockhouse, the fort, and the banks of Mayfield Creek and the Mississippi River were arbitrary and that the only purpose of the map was to illustrate the lots of the Clarksville community. These are all plausible explanations that can not be proved one way or the other at present.

Determining the correct scale of the 1780 map does not reveal the exact location of the fort or community. Without a particular point of reference for compass orientation or several cross points from which to match or triangulate and link 18th-century and 20th-century landforms, an exact location for

29 *Ibid.*
30 *Ibid.*, Box 17.

the fort can not be ascertained. To overcome this obstacle, it is again necessary to check the historical primary documentation for additional clues.

References were found to "the blockhouse on the hill" as well as to ammunition issues to three blockhouses by Quartermaster John Dodge.[31] Two of the blockhouses were on the hills north of town, but the exact locations are not known. The third blockhouse was in the "southern part of town" adjacent to Mayfield Creek.[32] Moreover, the 1780 map exhibits no hills, bluffs, or uplands — only riverine features and a single blockhouse.

Riverine features are present on the 1780 map; such features are not usually stable geomorphic forms, however, and usually can not be used to link physical features through time because they tend to change rapidly. If, however, a fit between 18th-century and 20th-century riverine landforms could be made, an approximate orientation for the 1780 Clark map could be suggested.

Potter and Carstens recently studied the Fort Jefferson area's earliest land survey records in order to reconstruct the 1780-1820 physical setting in which the fort and community would have been built.[33] As part of that study, it was noted

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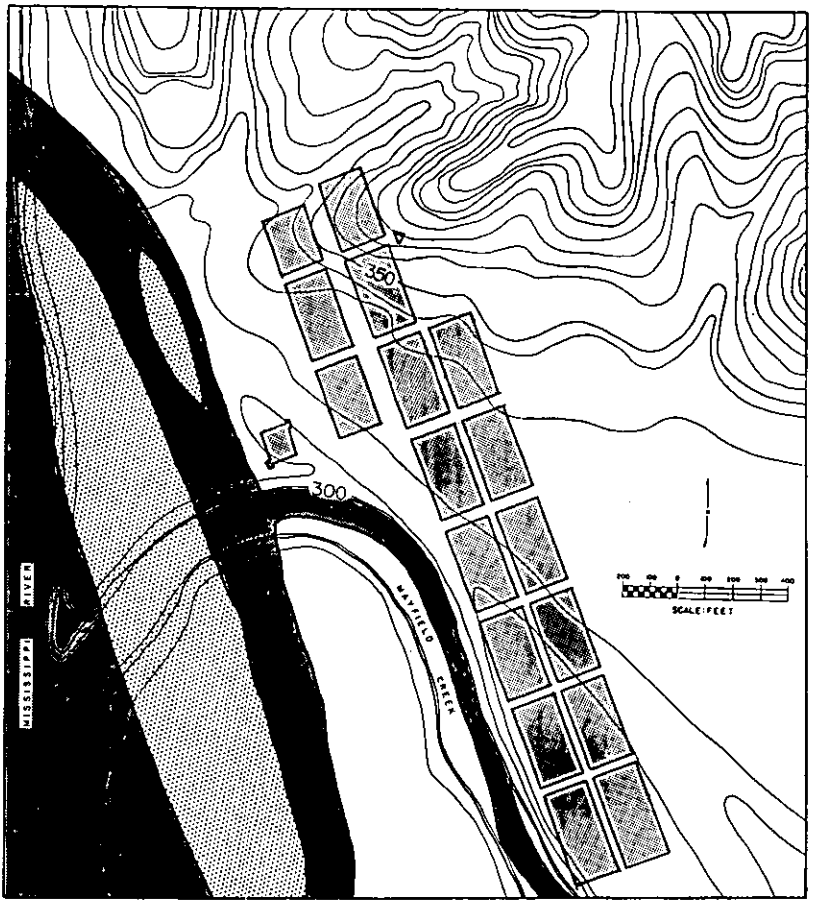
31 George Rogers Clark Papers, Boxes 13 and 48, Virginia Library Archives Division, Richmond, Virginia.

32 George to Montgomery, 2 September 1780, Clark Papers.

33 According to the findings of Potter and Carstens, the canopy trees (mature, established trees) identified in the call-outs of the initial 1821 land surveys in the Jackson Purchase region revealed that in the swamps of the study area, ash and oak were dominant, followed by hickory and elm. On the banks of rivers and creeks, hickory and oak dominated, followed closely by ash, cottonwood, and gum. On bottomland, ash was dominant, with hickory, oak, and beech in lesser numbers. On slopes, hickory clearly dominated, outnumbering the next genus, ash, two to one. Gum was third most frequent for the slope areas. On the uplands, hickory again dominated, outnumbering oak, beech, and gum two to one. Ash was notably absent from the upland forest sample. In terms of the total forestation, hickories formed 25%, ash 16%, oak 14%, and gum 13% of the original 1821 mature forest canopy. It was within this mixed mesophytic forest, that George Rogers Clark helped Virginia justify



1780 Clark map fitted to modern topography and oriented twenty-one degrees west of north.
Kenneth Carstens

that a portion of Mayfield Creek illustrated on the 1780 map had not changed its lower course in almost two hundred years.

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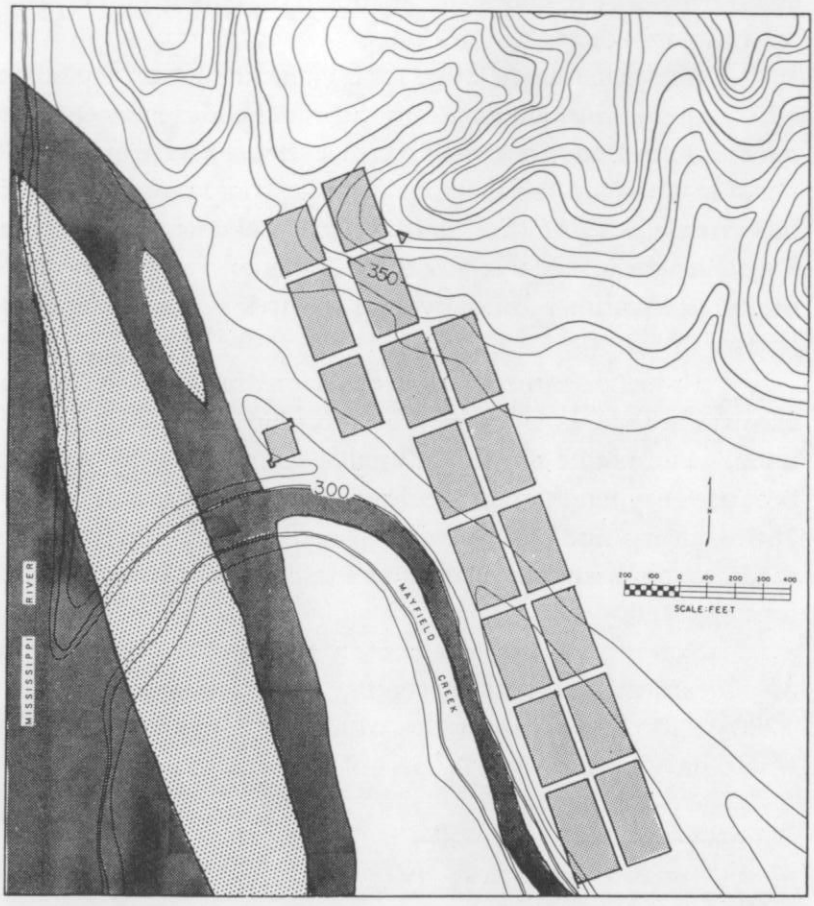
its claim to its western boundary by building Fort Jefferson. Potter and Carstens, "Floral Reconstruction."



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The modern topography matched almost exactly with the land surveys of two hundred years earlier; changes that were observed were either in the bottoms north or considerably east of the fort area. Additionally, the old "chute" of the Mississippi River, although now silted shut, was still discernable on the Wickliffe topographical map.[34] This made it possible to tie 18th-century and 20th-century landforms together and identify the probable orientation for the 1780 William Clark map as twenty-one degrees west of north. The three landform tie-ins used included two meanders of Liberty/Mayfield Creek and the former chute of the Mississippi River.

Redrafting the Wickliffe Geological Survey topographical map to a scale of 10:1 and making a transparency overlay of the William Clark map at the same scale permitted an approximation of alignment of 18th- century and 20th-century landforms and riverine features (figure four). As a result, it appears that the 1780 Fort Jefferson map was drawn with a "river-north" orientation.[35] More importantly, it is now possible accurately to predict a probable location of Fort Jefferson and recommend where future archaeological field work should be directed.

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34 *Topographic and Geologic Map of Wickliffe Quadrangle, Kentucky-Missouri*, Washington, D.C., United States Geological Survey, GQ-1161.

35 *Ibid.* See footnote 18.