

Notes on Archeological Activities Conducted During 2010

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Submitted to
Gunston Hall
Lorton, Virginia
2011

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Introduction

During calendar year 2010, three activities were conducted as part of the consultancy agreement with Gunston Hall: (1) extension of the Gunston Hall archeology grid system, (2) testing of the West Meadow, and (3) miscellaneous mapping. To facilitate ongoing archeological operations, reference points were established around Gunston Hall and at selected locations between Gunston Hall and Gunston Road. To assess the archeological po-

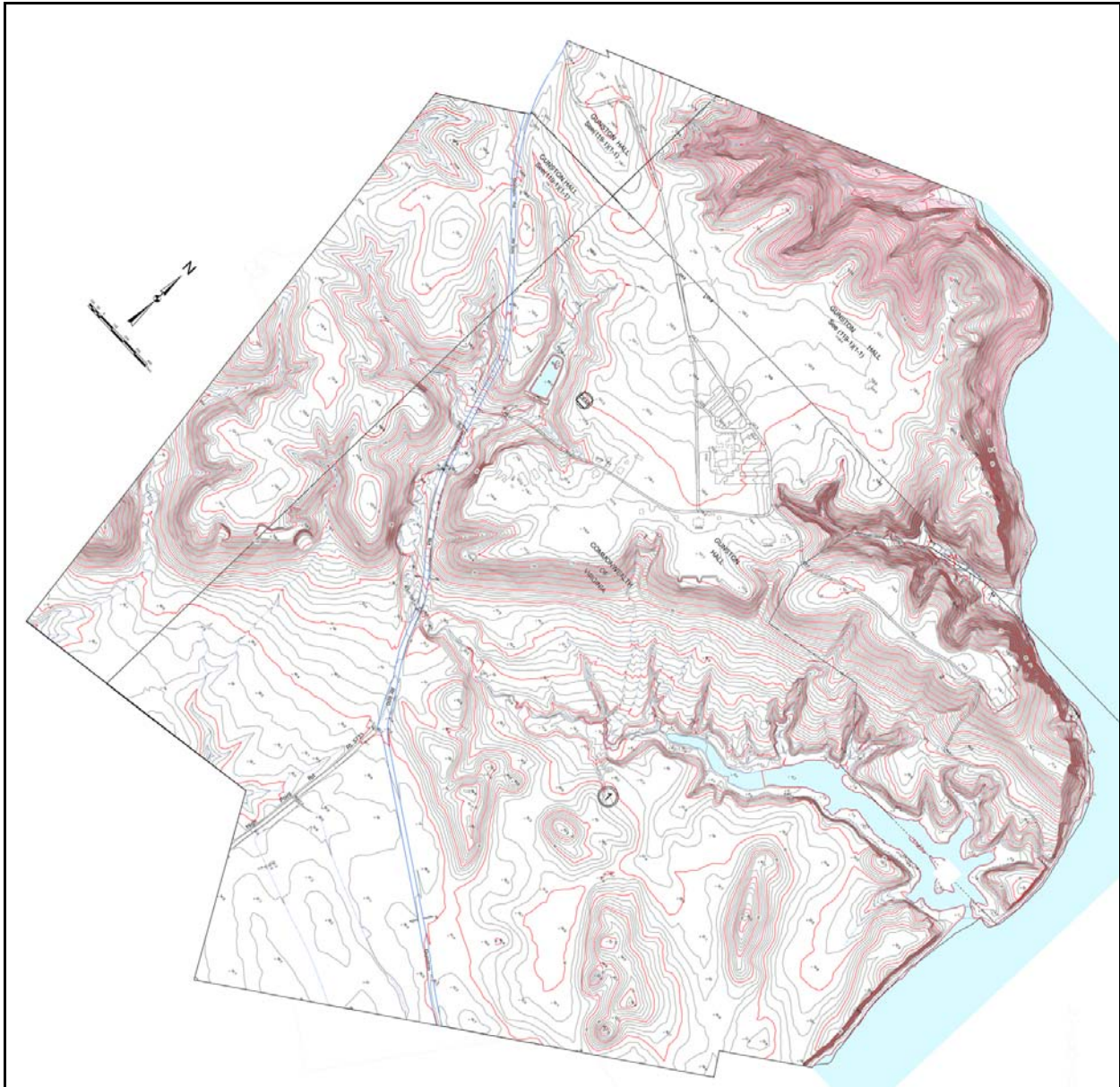


Figure 1. The Gunston Hall property, oriented to archeology grid north (Base data: Fairfax County Department of Information Technology 2011:Sheets 114-4,115-3, 118-2, and 119-1).

tential of the West Meadow and adjoining woods, limited subsurface testing and metal detector survey were performed. To assist other projects, miscellaneous survey mapping was conducted.

Extension of the Archeology Grid System

The current Gunston Hall grid system is based on the orientation of Gunston Hall. The N0E0 and Elevation 0 point is the top outside corner of the second stone above ground level in the southeast corner of Gunston Hall (Figure 2). Due to some erosion which has occurred at this spot on the stone, the reference mark is approximate rather than firmly fixed. The alignment mark is a large nail which had been set in the lawn at S40E0. Its relative elevation as determined during 2010 is -2.88 feet. The Virginia State Plane North deviates from Archeological Grid North by approximately 48.5° east of north. Within Fairfax County, current survey control is referenced to North American Datum 83 for horizontal control and to National Geodetic Vertical Datum 29 for elevation. Most other local jurisdictions are referenced to North American Vertical Datum 88. For orientation purposes, directions in the current discussion are referenced to archeological grid north.



Figure 2. The Gunston Hall archeological grid zero datum (Photo: DSCN-2679).

Extension of the archeology grid was conducted with the use of a Nikon NPR-352 electronic total station. This instrument has an angular resolution of 5". Its accuracy is $\pm(2 + 2 \text{ ppm} \times D)$ mm.

Six large gutter spikes or nails were set around Gunston Hall as reference marks: (1) S40.00W80.00, elevation -2.80 feet; (2) N0.01W80.00, elevation -2.42 feet; (3) N40.01W80.02, elevation -1.89 feet; (4) N60.00W80.01, elevation -1.57 feet; (5) N59.98W59.97, elevation -1.10 feet; and N60.02E0.01, elevation -1.51 feet.

A large gutter spike or nail was set along the edge of the woods north and west of Gunston Hall (Figure 3). This nail has coordinates and elevation of N870.80W593.96 and 0.23 foot, respectively. It lies approximately west of Benchmark WIG No. 2 1934.

Near the Visitor Center, an existing U.S. Coast and Geodetic Survey marker (Figures 3 and 4) was utilized as a permanent datum. WIG NO. 2 1934 is an azimuth mark for bench mark WIG 1934. The azimuth mark is a bronze disk set in concrete. It is located within the tree line which parallels the east side of the road leading to Gunston Hall. Its geodetic azimuth from WIG 1934 is 286°08'11.8". Neither National Geodetic Survey horizontal coordinates nor elevation have been determined for WIG NO. 2 1934. Its coordinates and elevation within the archeological grid

system are N826.39E16.75 and 6.43 feet, respectively.

Two large gutter spikes or nails and one permanent datum were set along the edge of the woods north and west of Gunston Hall (Figure 5). Nails were placed at (1) N1593.75W451.81, elevation 0.08 foot and (2) N1854.46W423.91, elevation 7.41 feet. A permanent datum consisting of a 2-foot long section of concrete filled

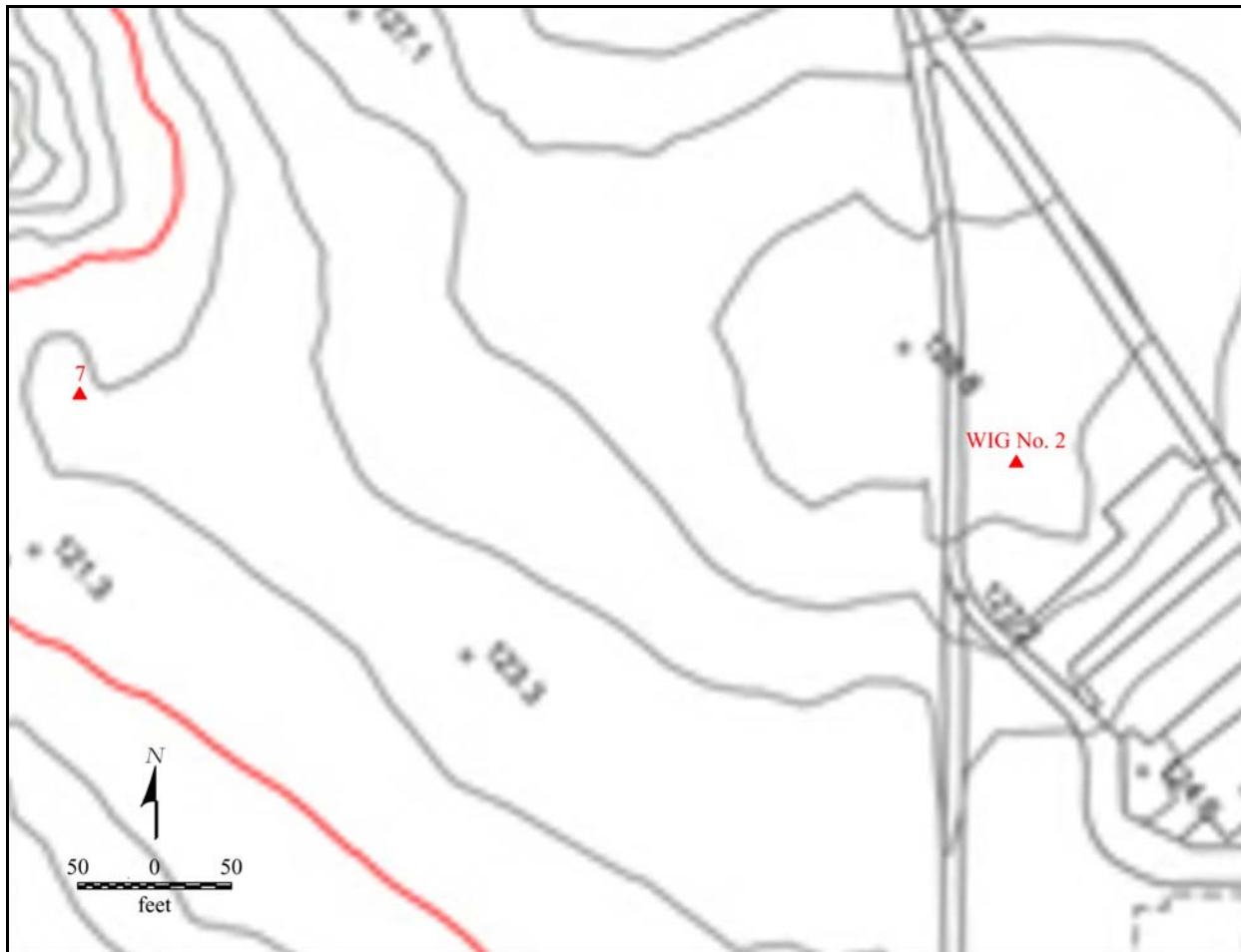


Figure 3. Locations of reference marks 7 and WIG No. 2.

1-1/2 inch O.D. PVC pipe with a surrounding 4 inch diameter concrete collar was installed at N1849.40W428.27, elevation 7.30 feet. Ferrous material was imbedded in the concrete to facilitate future recovery. A rust resistant Philips head screw was installed at the top of the mark to serve as the center point. Soils excavated during the installation of this datum were sifted through 1/4 inch mesh hardware cloth; no artifacts were recovered.

Two temporary wooden survey stakes were set within the woods bordering the west side of the west meadow: (1) N1854.51W589.75, top of stake elevation 4.33 feet and (2) N2048.88W506.82, top of stake elevation 10.39 feet.

Within the area of the archeological remains of the Gunston Hall Colored School, a gutter spike was set 2 feet away from the southeast corner fence post of the Shiloh Baptist Church Cemetery (Figure 6). This nail has coordinates and elevation of N2841.96W536.46 and 14.58 feet, respectively. An iron pipe



Figure 4. Reference mark WIG No. 2.

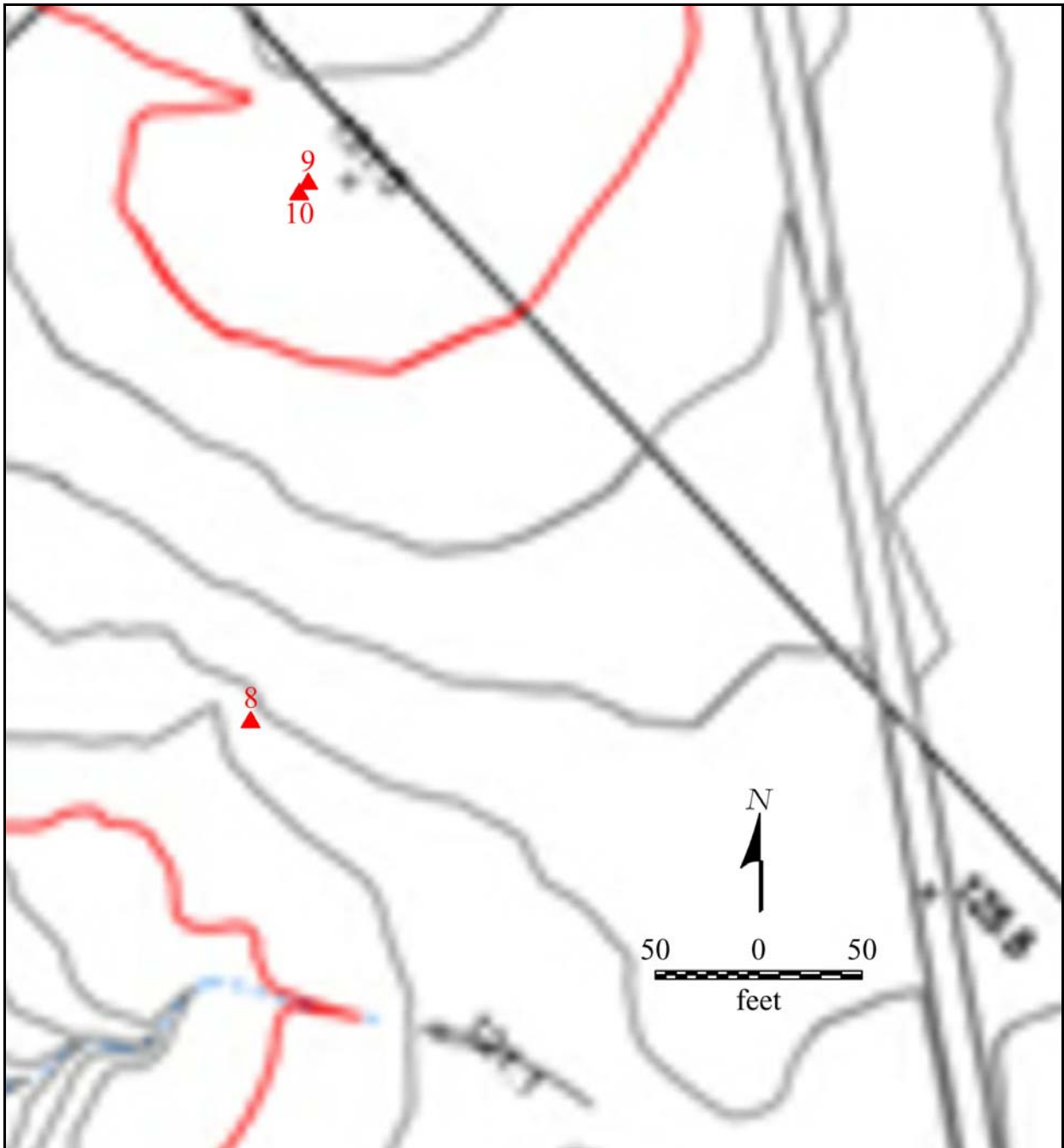


Figure 5. Locations of reference marks 8, 9, and 10.

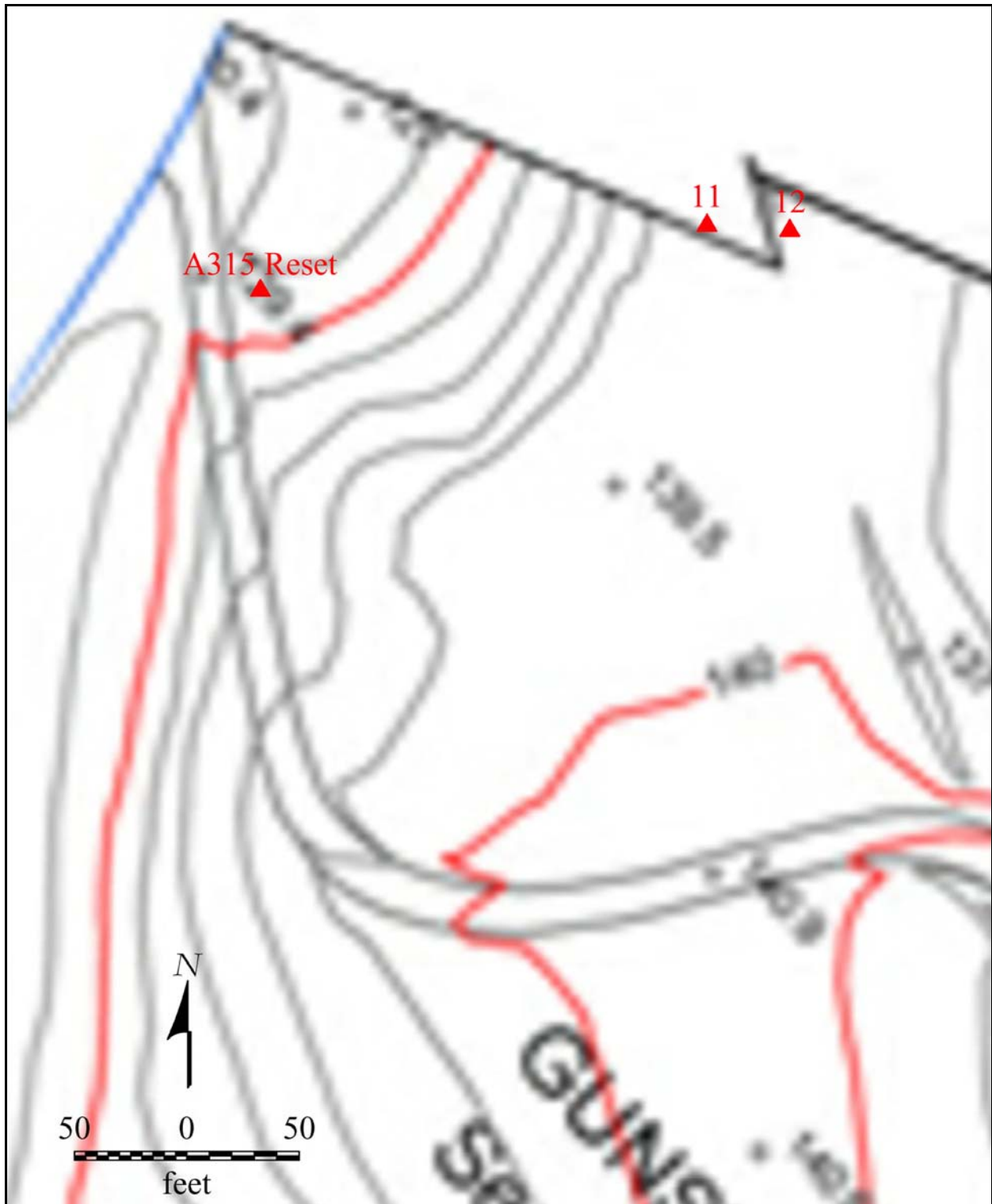


Figure 6. Locations of reference marks 11, 12, and A315 Reset.

Table 1. 2010 Gunston Hall Archeological Reference Points.

Designation	Mark	Coordinates	Elevation (ft)*		
			Gunston Grid	NGVD 29	NAVD 88
1	Nail	S40.00W80.00	-2.80	123.78	122.87
2	Nail	N0.01W80.00	-2.42	124.16	123.25
3	Nail	N40.01W80.02	-1.89	124.69	123.78
4	Nail	N60.00W80.01	-1.57	125.01	124.10
5	Nail	N59.98W59.97	-1.10	125.48	124.57
6	Nail	N60.02E0.01	-1.51	125.07	124.16
7	Nail	N870.80W593.96	0.23	126.81	125.90
8	Nail	N1593.75W451.81	0.08	126.66	125.75
9	Nail	N1854.46W423.91	7.41	133.99	133.08
10	PVC/Concrete	N1849.40W428.27	7.30	133.88	132.97
A315 Reset	Bronze Cap	N826.39E16.75	6.43	133.01	132.10
11	Nail	N2841.96W536.46	14.58	141.16	140.25
12	Iron Pipe	N2839.65W499.59	12.99	139.57	138.66
WIG No2	Bronze Cap	N2812.92W735.24	2.62	129.20	128.29
13	Hydrant Cap	N3017.37W719.46	-0.86	125.72	124.81

Note: *NGVD 29 and NAVD 88 elevation conversions are based on the elevation of A315 Reset.

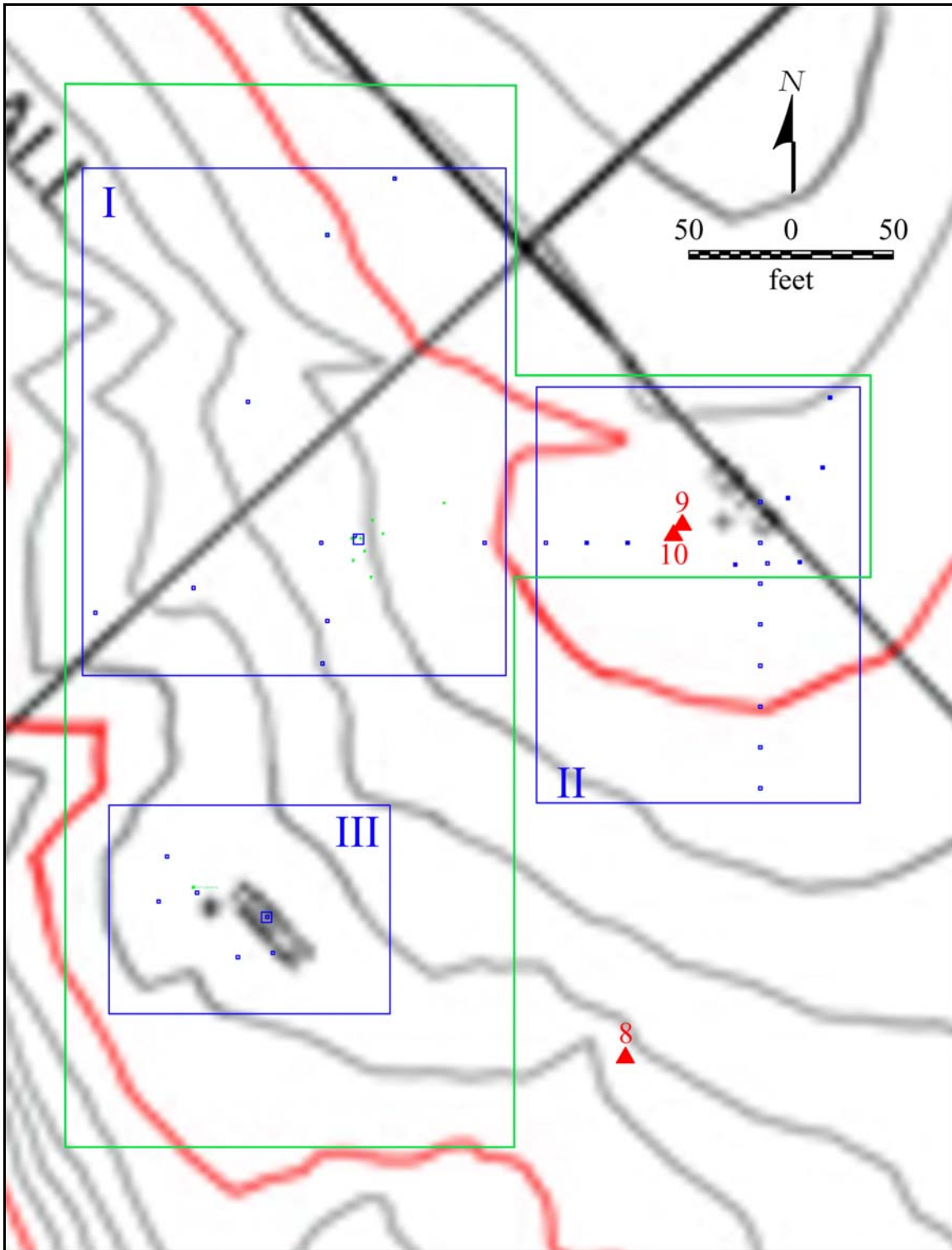


Figure 8. Archeological test areas within the West Meadow and adjoining woods.

The metal detector sweep was conducted by establishing smaller rectangular areas within the overall zone and by walking overlapping transects parallel to the long axis of each search area. Positive results were pin flagged and, later, mapped in by transit. Not all positive results were subsequently excavated, as several resided within concentrations of modern buried barbed wire.

Test Area I

Surface reconnaissance detected the presence of a ditch fence which paralleled the south side of the historic road trace (Figure 9). The ditch's eastern end terminated within the woods approximately 70 feet west of the current wood line. Its west portion extended through the woods and beyond the adjoining stream to Gunston Road. At one time, the fence continued across Gunston Road and extended towards Lexington, ending a short distance beyond the boundary between Gunston Hall and Mason Neck State Park (i.e., the 1796 partition line between George VI and William Eilbeck Mason). The section of the fence on the opposite side of Gunston Hall had previously been recorded by the author as 44FX3471.

The ditch fence consists of a ditch along the side closest to the road trace and a berm along the farthest side. The height of the berm and the depth of the ditch have been degraded over the years by erosion. Currently, the base of mouth of the ditch has a width of about 4 feet, as does the base of the berm. The maximum depth of the ditch relative to the ground surface along its north is 1 feet. The maximum height of the berm relative to the ground surface along its south is 0.5 feet. The corridor between the ditch and the road trace is about 35 feet.

In Virginia, ditch fences were used as early as the seventeenth century in lieu of zigzag or worm fences. In addition to the ditch fence noted here, others occur throughout the historic Mason estate. Given the spatial relationship of this fence to historic lease tracts and quarters, it is suspected that the ditch fence pre-dates 1758, the date of the construction of the new Neck Road. Most likely, its orientation was influenced by topographic considerations, running along or near the "spine" of the ridge between the later Gunston Hall and Lexington.

The eastern terminus of the ditch fence aligns with a rutted "cattle" path which runs generally north to south. Along part of its route, the path parallels the east side of a much later twentieth century barbed wire fence line (Figure 10). This line parallels the current wood line at a distance of approximately 70 feet. The abandoned fence line is marked by a combination of metal and wood posts and of tree attachments. As it runs towards the old road trace, the fence line bends northeast. The north-south portion of the barbed wire fence line likely follows the route of earlier ones, with the wooded corridor between it and the present wood line having formerly been part of the open meadow. The corridor exhibits evidence of past vehicular traffic as well as of other ground disturbances.

The soil profiles within the test units generally consisted of a 0.15 foot thick vegetation mat within 10YR3/1 silt loam, a 0.55 thick layer of 2.5Y7/4 clayey silt loam, and an underlying layer of 10YR7/3 clayey silt loam.

Of the ten 1.5 foot square test units excavated within Test Area I, three are of interest. N1810.7W710.6, overlooking the stream, yielded a quartz decortication flake. N1845W580 produced quartz shatter. N1995.8W597, along the top of the north shoulder of the road trace, contained a bi-notched quartzite netsinker or weight (Figure 11). The other units produced either negative results or items of modern origin. In concert with the findings in Test Areas II and III, the prehistoric artifacts suggest a light, but extensive prehistoric presence. More intensive testing likely would detect further evidence of this.

Test Area II

Test Area II included the western edge of the north portion of the West Meadow and part of the adjoining woods

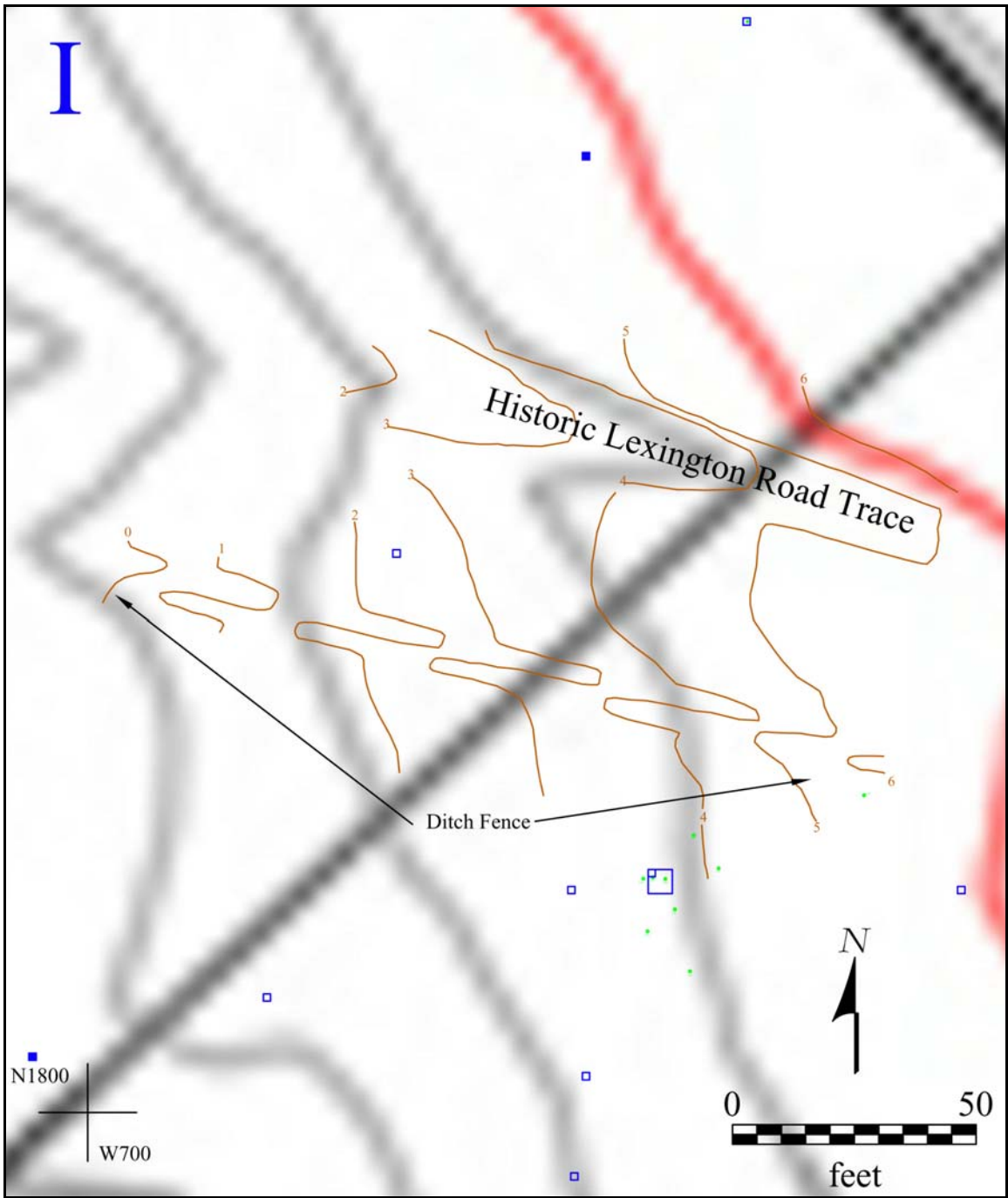


Figure 9. Test Area I.

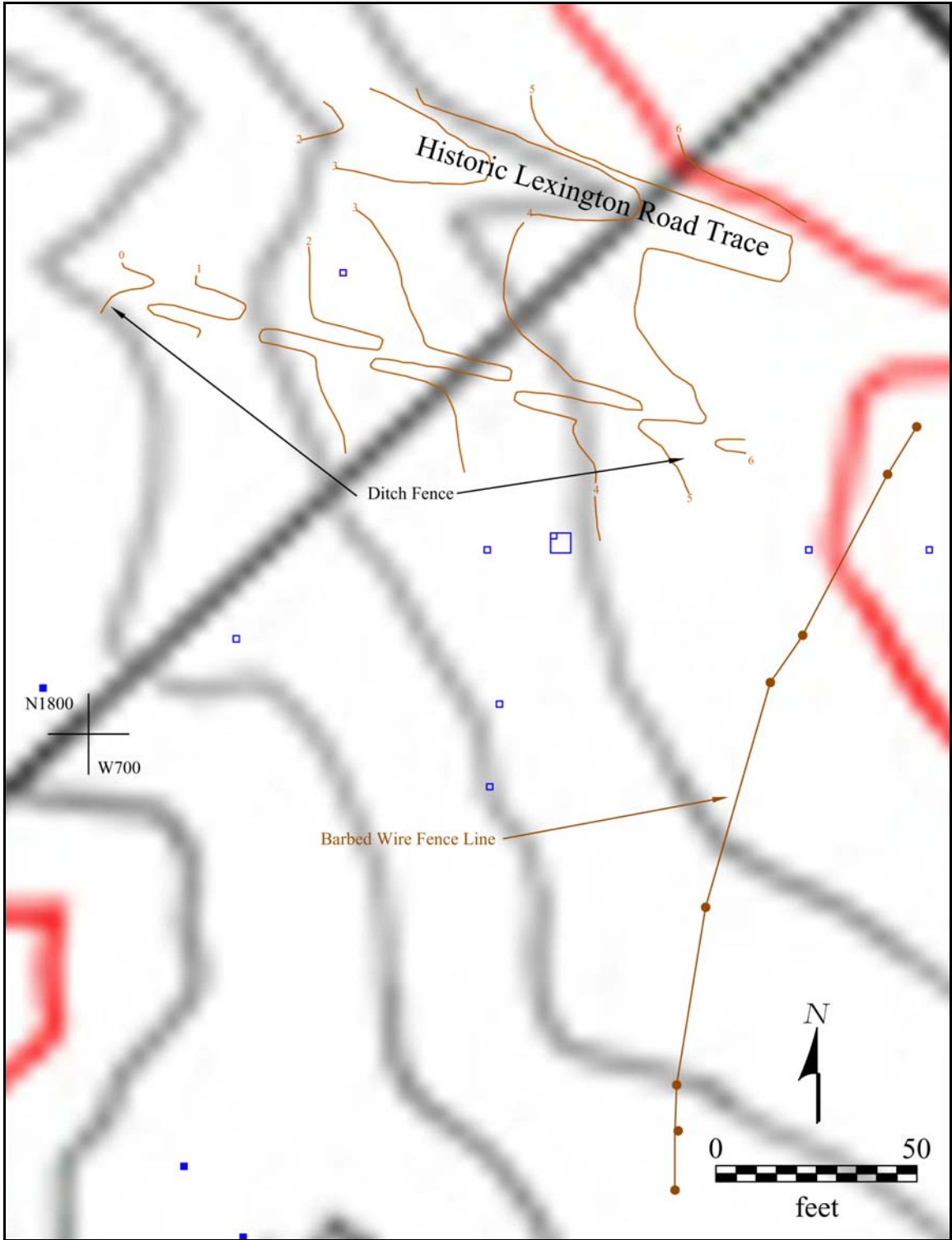


Figure 10. Abandoned barbed wire fence line.



Figure 11. Quartzite netsinkers or weights with pecked groove (left, N1845W470-1) and notches (right, N1995.8W597.0-1).

(Figures 12 and 13). A total of seventeen 1.5 foot square test units was excavated. Three units were set along a N1845 transect. Eight units were set along a W385 transect. Units along the transects were placed at intervals of 20 feet. Six units were set about positive metal detector readings.

The soil profile typically consisted of a surface cover of pasture grass set in a 0.7 foot thick layer of 10YR5/4 silt loam over an underlying soil of 7.5YR5/6 clayey silt loam.

Of the test units, fourteen contained cultural materials. Eight units yielded artifacts dating to the late eighteenth or early nineteenth century (Figures 14 and 15): N1725W385 (probable pearlware sherd), N1745W385 (wine bottle glass), N1785W385 (window glass), N1805W385 (creamware rimsherd), N1834.35W397.3 (pearlware sherd, creamware sherd, and glazed brick fragment), N1845W385 (wrought or cut nail fragment), N1845W450 (wrought or cut nail fragment), and N1916.16W350.88 (handmade brick fragment).

Of interest is the brick fragment recovered from N1916.16W350.88 for its large dimensions, 4 by 2-3/4 inches (Figure 15). Scrape marks are evident on the upper surface. Pitting from being set on a sand bed is present on the lower surface.

Of general note is the extensive degree of degradation of the early nails. For the most part, they could be discerned only as either wrought or cut (i.e., non-wire) nails by portions of the recognizable cross sections. This indicates that determination of relative absence or presence of ferrous objects in the past may be skewed by loss due to corrosion. Small ferrous objects may no longer exist or be unrecognizable due to corrosion. Metal detector identification may be precluded by the extent of metal degradation.

Ten units contained prehistoric items (Figures 11, 16, and 17): N1745W385 (quartz flake), N1785W385 (cherty and quartzite flakes), N1805W385 (quartz shatter), N1834.35W397.3 (slate flake), N1835.5W365.7 (quartz core), N1845W385 (cherty and quartz flakes), N1845W470 (netsinker), N1865W385 (quartz decortication flake, quartz

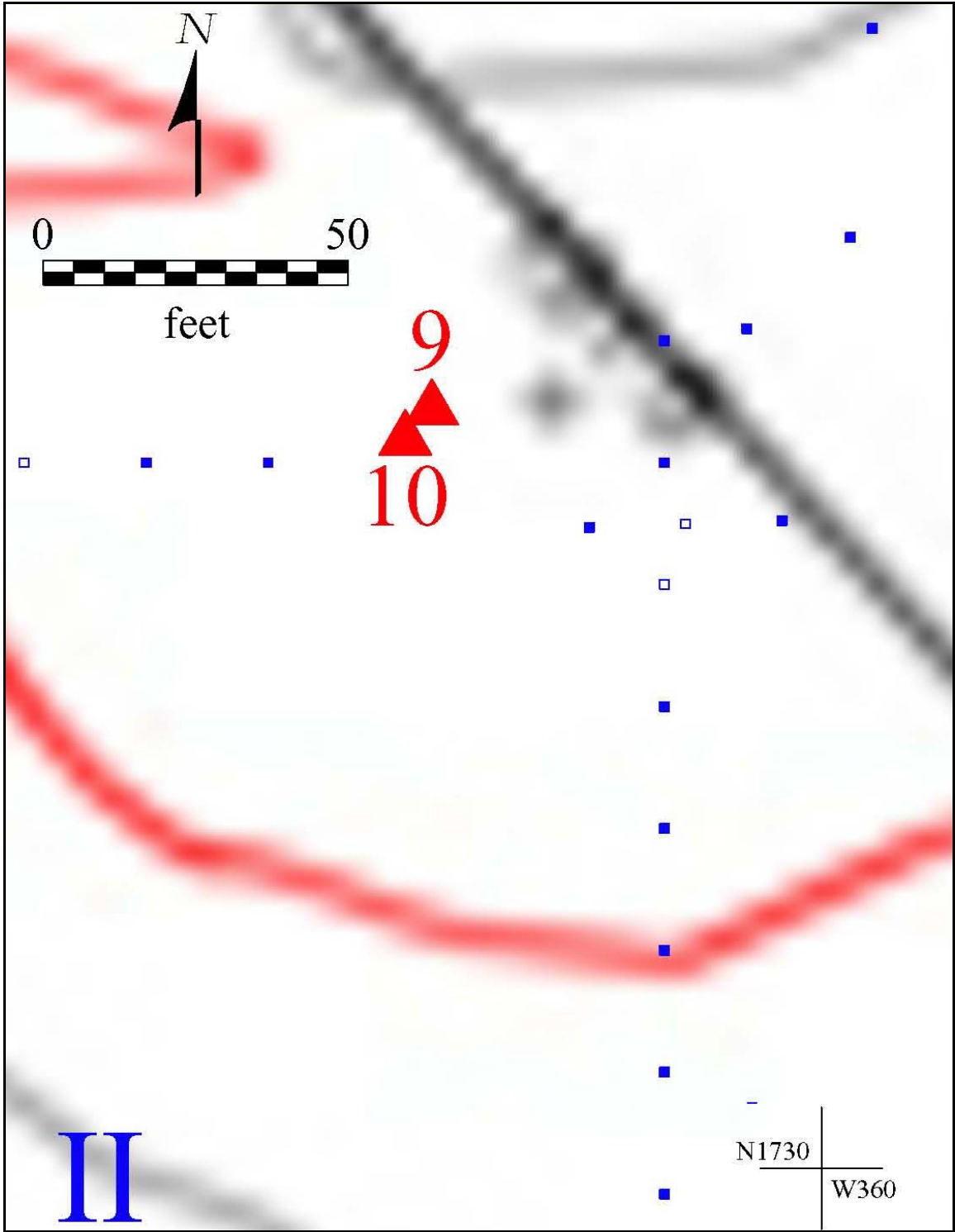


Figure 12. Test Area II.



Figure 13. Test Area II, north end of the West Meadow facing south (Photo: DSCN-2894).

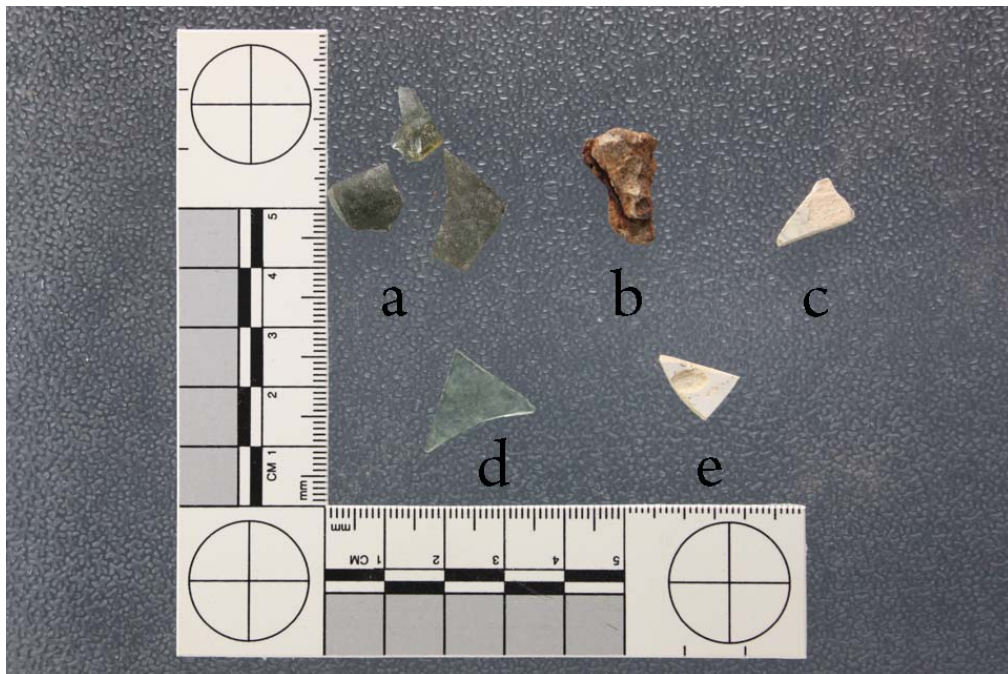


Figure 14. Historic artifacts: a, wine bottle glass (N1745W385-1); b, wrought or cut nail fragment (N1845W450-1); c, pearlware sherd (N1834.35W397.30-1); d, window glass (N1785W385-1); and e, creamware rimsherd (N1805W385-1).



Figure 15. Handmade brick fragment (N1916.16W350.88-3).



Figure 16. Quartzite pestle with pecked “finger” grip (N1865W385-3).

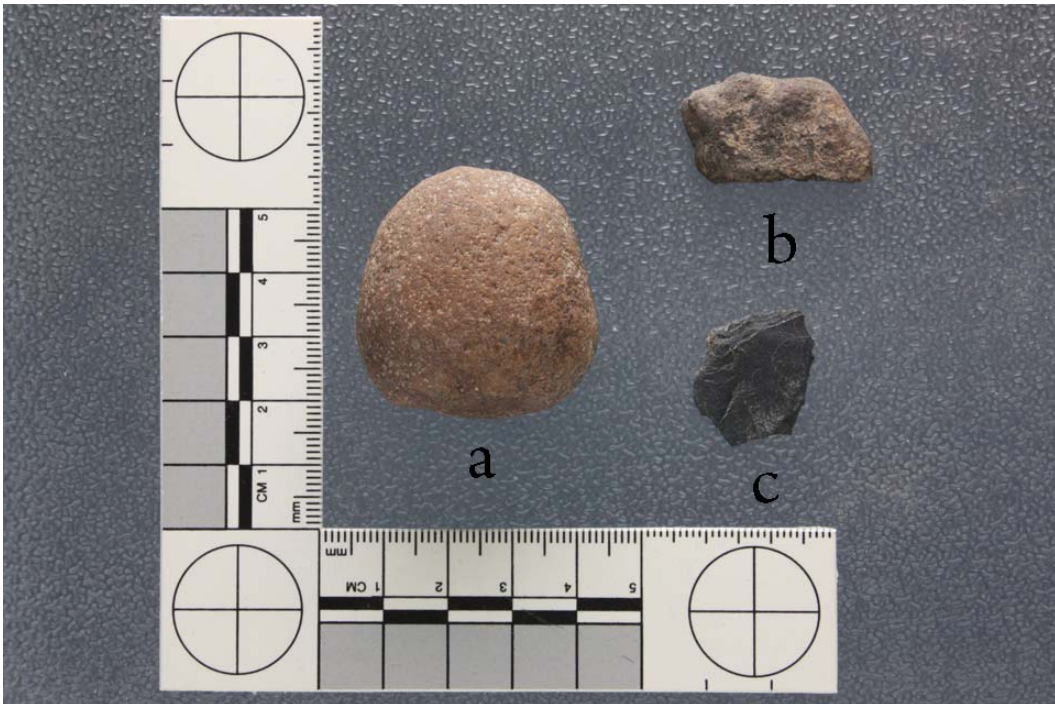


Figure 17. Miscellaneous prehistoric artifacts: a, small pestle with polished working surface (N1881.9W354.5-2); b, burnt sherd (N1660W625A-1); and c, slate flake (N1834.35W397.30-5).

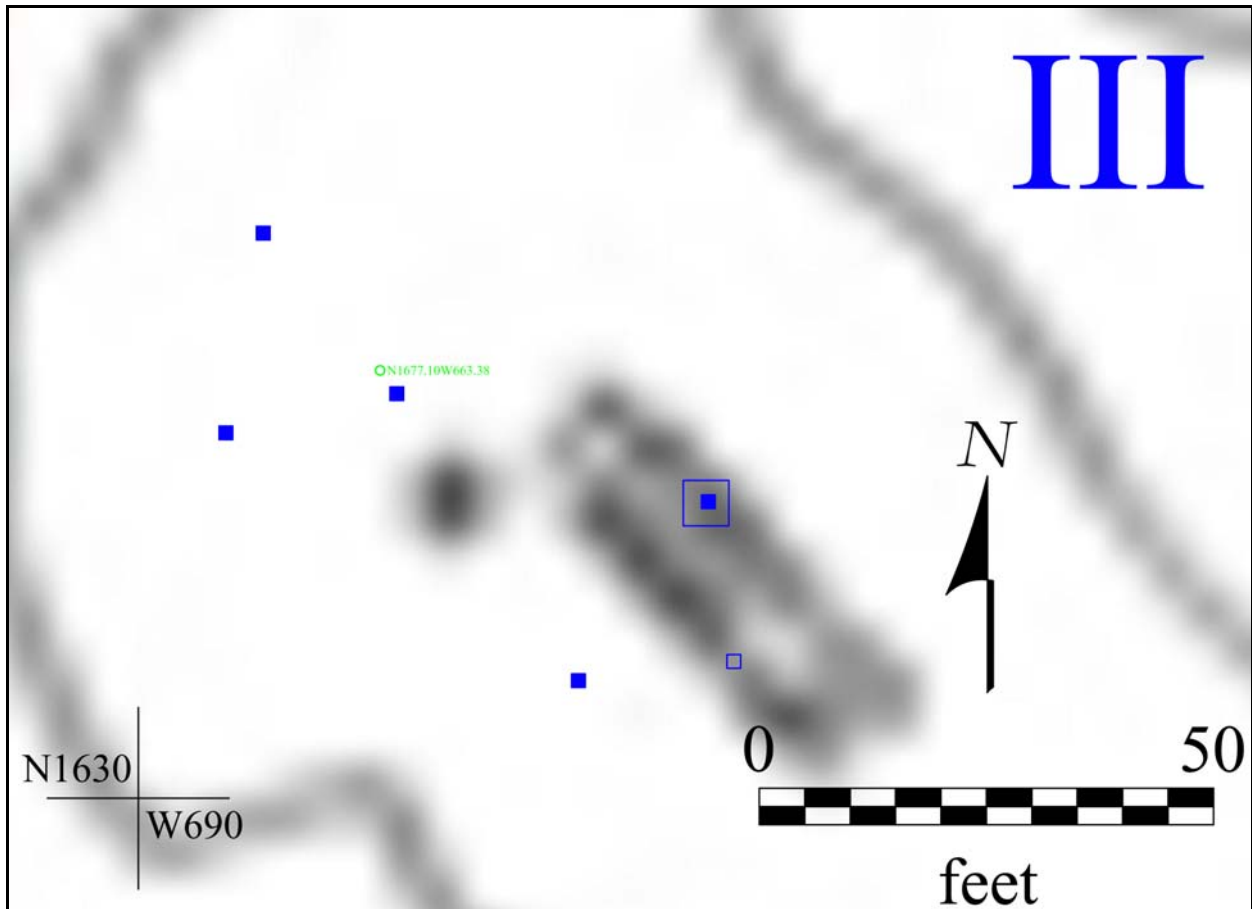


Figure 18. Test Area III.

flake, and quartzite pestle), N1881.9W354.5 (quartz decortication flake and quartzite pestle), and N1916.16W350.88 (quartzite flakes).

One positive unit, N1866.95W371.5, contained only items of modern age.

Test Area III

Within Test Area III (Figure 18), the metal detector sweep registered six positive readings. A 1.5 by 1.5 foot square test unit was centered around each of these locations and was excavated. In general, the natural soil profile excavated within the units consisted of 0.15 foot of vegetation mat and 10YR3/2 silt loam, 0.35 foot of 10YR5/4 silt loam, and an underlying layer of 10YR6/3 silt loam.

Cultural activity was found in five of the six units. Unit 1691.5W675.5 contained a brass cartridge case made by the Lake City Ordnance Plant of Independence, Missouri. Its headstamp, "LC 66 MATCH," indicates that it was manufactured for match competition in 1966 (Maketa 2010). Unit N1669.45W679.60 yielded charcoal, baked or low fired clay fragments, and a medium-sized quartzite pestle. Unit N1673.80W660.75 contained considerable charcoal and fire-reddened soils along its west wall, indicating a fire feature to its west. N1642.20W640.75 yielded a burnt, lightly sand tempered sherd and large quantities of charcoal and both baked and burnt clay fragments. Its profile indicated a fire feature to its north (Figures 19 and 20). Although the metal detector registered a positive



Figure 19. East wall of N1642.20W640.75 (Photo: DSCN-3107)

reading at N1644.3W623.7, the unit contained no cultural materials.

N1661.9W626.5 produced 20 burnt, lightly sand tempered sherds (Figure 21) and considerable quantities of charcoal and baked and burnt clay fragments. A sample of the charcoal was submitted to Beta Analytic, Inc. for radiocarbon assay to determine whether the feature was prehistoric or historic in age. The assay (Beta-287768) resulted in a calibrated (2 sigma) antiquity of 1230 to 960 years old or A.D. 720 to 990 (Appendix II). Similar sherds dating to this time have not reported elsewhere.

To discern the nature of the feature associated with the charcoal and fired clay, a 5 by 5 foot square area around N1661.9W626.5 was exposed to the interface between the vegetation mat and the underlying soils (Figures 22, 23, and 24). Based on the surface distribution of charcoal and fired clay within the larger unit and the profile within the initial test unit, the feature appears to be circular in form with a shallow basin shaped cross section. In turn, similarly shaped features are suggested in the area from N1642.20W640.75 north and in the area between N1669.45W679.60 and N1673.80W660.75. At this early stage of investigation, it cannot be posited with any certainty what these features represent although possibilities include (1) some sort of large earth ovens or (2) pottery making/firing activity areas.

Summary

Investigations within the West Meadow and the adjoining woods indicate an extensive distribution of prehistoric materials across Test Areas I, II, and III. Although light in density, multiple activity areas are suggested by the fire features in Test Area III, the pestles in all three areas, and the netsinkers or weights in Test Areas I and II. The density

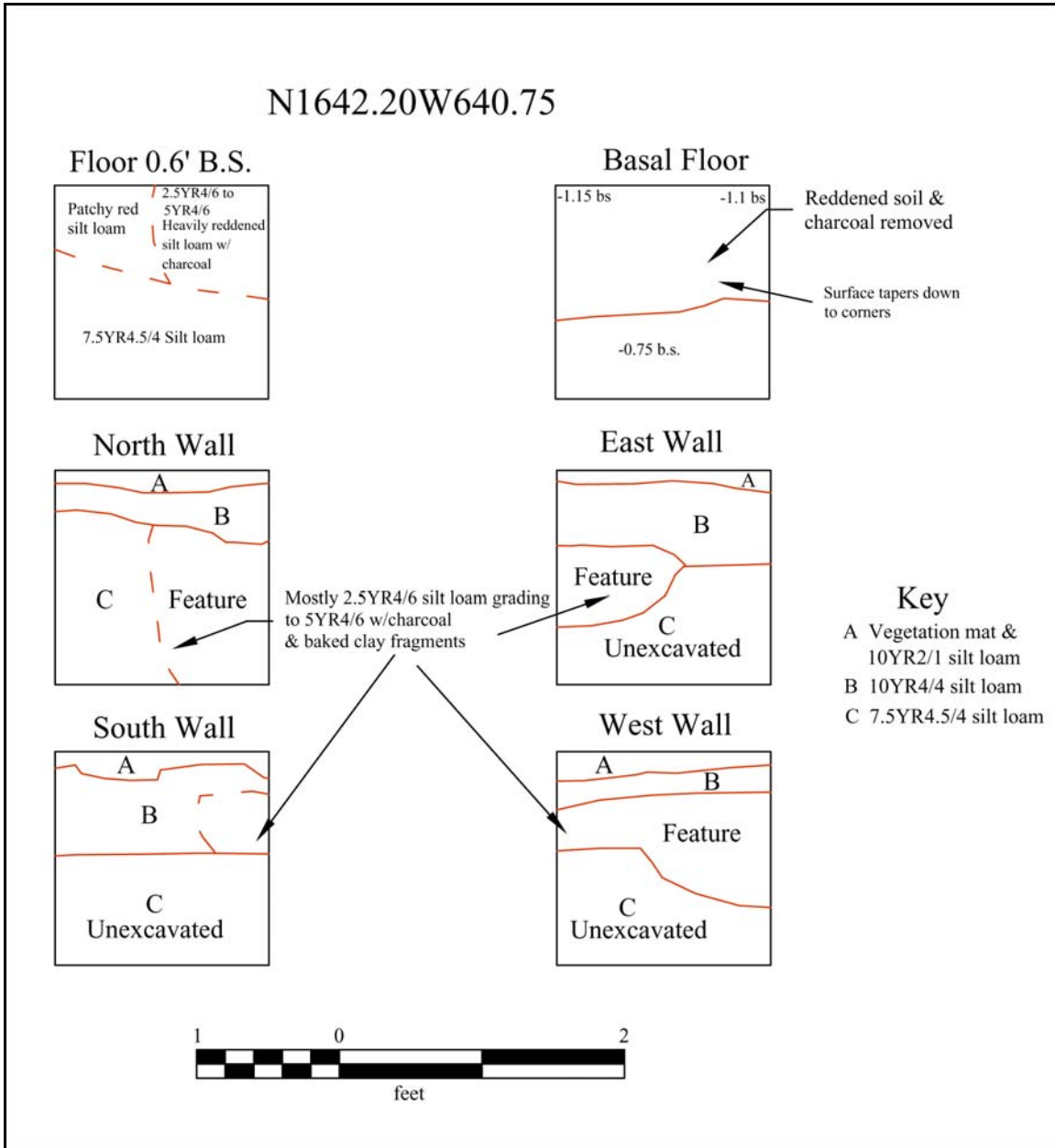


Figure 20. Plan and profile views of N1642.20W640.75.



Figure 21. Burnt sherds (N1661.9W626.5-3).

of materials increases slightly towards the higher and flatter elevations of the open meadow. One temporal component dating to 1230 to 960 years old or A.D. 720 to 990 (Beta-287768) has been identified by radiocarbon assay.

Materials dating to the eighteenth and early nineteenth centuries are constrained largely to the section at or near the open meadow within Test Area II. At this preliminary stage of study, it cannot be stated with certainty whether the items which were recovered represent agricultural field or domestic yard scatter. Nevertheless, despite the low density of artifacts, the range of artifact types suggests that the latter is a good possibility.

One landscape feature, an eighteenth century ditch fence (44FX3471), was detected paralleling the Lexington road trace.

Miscellaneous Mapping Activities

To support general operations at Gunston Hall, two small miscellaneous mapping projects were completed. First, mowing corridors parallel to the entrance road and centered on Gunston Hall were defined. Second, the locations for wing walls to be built at the entrance gate on Gunston Road were marked.

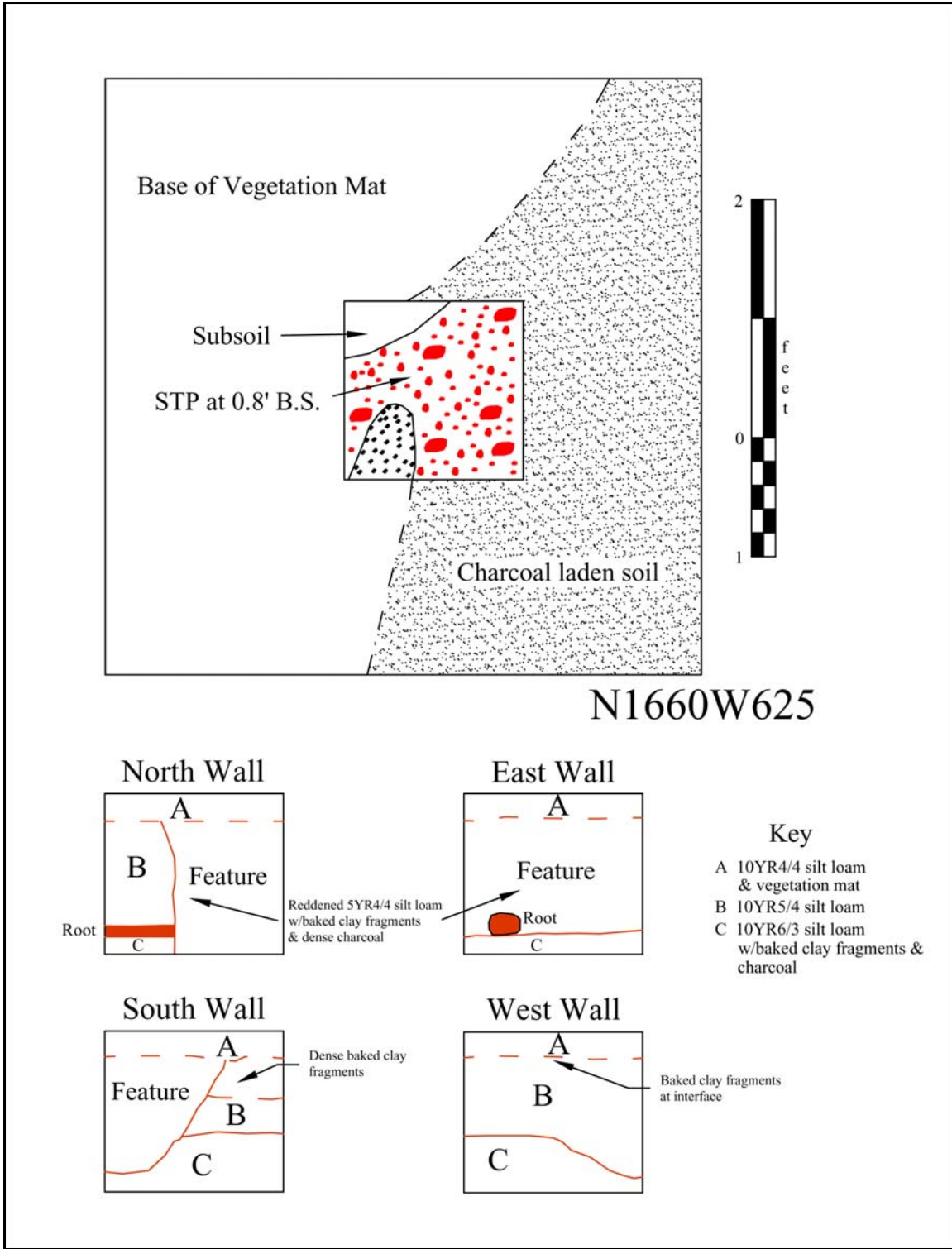


Figure 22. Plan and profile views of N1660W625 and N1661.9W626.5.



Figure 23. Feature stain exposed in N1660W625 after the removal of the vegetation mat, trowel points north (Photo: DSCN-3129).



Figure 24. Feature stain in the south wall of N1661.9W626.5 (Photo: DSCN-3118).

Conclusions

Archeological activities conducted as part of the consultancy agreement with Gunston Hall resulted in (1) the placement of archeological grid reference marks about Gunston Hall and between Gunston Hall north to Gunston Road, (2) preliminary archeological investigation of the north West Meadow area, and (3) miscellaneous mapping in support of general operations.

The archeological investigations identified both prehistoric and historic resources within the north West Meadow area. Three large, shallow, basin-shaped fire features were found within Test Area III and were radiocarbon dated to 1230 to 960 years old or A.D. 720 to 990 (Beta-287768). Low to moderate density archeological distributions were detected across Test Areas I, II, and III.

Historic artifacts were recovered within the open meadow area and adjoining woods which dated to the second half of the eighteenth and early nineteenth centuries. These artifacts ranged from architectural items such as window glass, nails, and brick to domestic items such as wine bottle glass and ceramic tableware sherds. The investigations, however, were not able to discern whether these materials were associated with primary deposition as yard waste or secondary deposition as field scatter.

An eighteenth century ditch fence paralleling the trace of the historic road to Lexington was recognized and mapped. The ditch fence was found to continue from near the edge of the West Meadow towards and across Gunston Road, connecting with a longer section which had previously been recorded by the author as 44FX3471. The fence is of importance as evidence of historic land management practices. Fences define both external (property) and internal (tenancy, quarter, field, etc.) boundaries. They provide a crucial source of information on earlier cultural landscapes in the absence of contemporary maps and descriptions and offer clues of where to search for more elusive archeological details such as gates, non-durable fence lines (e.g., zigzag and post-and-rail fences), orchards, etc.

References

Meketa , Ray

2010 U.S. National Match Rifle Ammunition. *The Rifleman's Journal*.

Appendix I

Artifact Catalog

Item No.	Material	Category	Qty	Wt (g)	Comments
N1642.20W640.75-1	Clay	Sherd	1	1.7	Burnt black with light, fine sand temper. 5.6± mm thick.
N1642.20W640.75-2	Clay	Indeterminate	100	92.6	Low fired or baked clay fragments.
N1642.20W640.75-3	Clay	Indeterminate	33	32.5	Burnt black or gray clay fragments.
N1642.20W640.75-4	Charcoal		2	0.1	Cleaned.
N1642.20W640.75-5	Charcoal	Sample	1	>467	Unprocessed.
N1660W625A-1	Clay	Sherd	1	4.3	Burnt black with light, fine sand temper. 7.0± mm thick. Possible rim.
N1660W625A-2	Clay	Indeterminate	160	116.7	Low fired or baked clay fragments.
N1660W625A-3	Clay	Indeterminate	75	60.2	Burnt black or gray clay fragments.
N1660W625A-4	Charcoal	Sample	1	1.8	Cleaned.
N1661.9W626.5-1	Clay	Indeterminate	1914	4478.8	Low fired or baked clay fragments.
N1661.9W626.5-2	Clay	Indeterminate	605	2028.3	Burnt black or gray clay fragments.
N1661.9W626.5-3	Clay	Sherd	20	48.9	Burnt black with light, fine sand temper. 8.7± mm thick.
N1661.9W626.5-4	Charcoal	Sample	1	7.5	Processed.
N1661.9W626.5-5	Charcoal	Sample	1	>796	Unprocessed.
N1669.45W679.60-1	Clay	Indeterminate	15	33.5	Low fired clay pieces.
N1669.45W679.60-1	Quartzite	Pestle	1	59.9	Battered end.
N1669.45W679.60-1	Charcoal	Sample	1	1.1	
N1673.80W660.75-1	Charcoal	Sample	1	>96	Unprocessed.

Item No.	Material	Category	Qty	Wt (g)	Comments
N1691.5W675.5-1 ^d	Brass	Cartridge case	1	11.3	7.62 mm centerfire cartridge case with the headstamp, "LC 66 MATCH." Made by the Lake City Ordnance Plant, Independence, Missouri for 1966 competition (Meketa 2010).
N1725W385-1	Clay	Sherd	1	0.1	White bodied earthenware.
N1745W385-1	Glass	Bottle	3	1.6	Olive green fragments.
N1745W385-2	Quartz	Flake	1	0.1	Partially crystal quartz.
N1765W385-1 ^d	Ferrous	Clump	1	0.9	Indeterminate corroded clump.
N1785W385-1	Glass	Window	1	0.1	Light green tinted fragment. 1.5 mm thick.
N1785W385-2	Quartzite	Flake	1	1.1	
N1785W385-3	Cherty	Flake	1	1.3	Gray.
N1805W385-1	Clay	Rimsherd	1	0.1	Creamware. 1.6 mm thick bowl or cup rim.
N1805W385-2	Quartz	Shatter	1	1.8	
N1810.7W710.6-1	Quartz	Decortication flake	1	5.7	
N1834.35W397.30-1	Clay	Sherd	1	0.1	Pearlware.
N1834.35W397.30-2	Clay	Sherd	1	0.1	Creamware.
N1834.35W397.30-3	Ferrous	Indeterminate	1	13.8	Corroded diamond-shaped, flat fragment. 4.3 by 2.2 cm.
N1834.35W397.30-4	Clay	Brick	1	46.5	Glazed fragment.
N1834.35W397.30-5	Slate	Flake	1	1.7	
N1835.5W365.7-1	Quartz	Core	1	209.1	Test core. Small cobble.
N1835.5W365.7-2	Ferrous	Plow blade	1	613.2	Plow blade fragment.

Item No.	Material	Category	Qty	Wt (g)	Comments
N1835.5W365.7-3 ^d	Ferrous	Nail	1	2.4	Wire nail fragment.
N1845W385-1	Quartz	Flake	1	0.8	
N1845W385-2	Cherty	Flake	1	0.1	Gray.
N1845W385-3 ^d	Ferrous	Nail	1	2.4	Corroded wrought or cut nail fragment.
N1845W450-1	Ferrous	Nail	1	2.2	Vertically split corroded wrought or cut nail fragment.
N1845W450-2	Clay	Brick	4	3.4	Fragments.
N1845W450-3 ^d	Glass	Bottle	1	0.7	Clear bottle flat panel fragment.
N1845W470-1	Quartzite	Netsinker	1	119.7	Large spheroid pebble with pecked groove.
N1845W470-2	Clay	Brick	4	12.0	Fragments.
N1845W470-3 ^d	Ferrous	Clump	1	0.1	Corroded fragment.
N1845W580-1	Quartz	Shatter	1	0.1	Partially crystal quartz.
N1845W580-2 ^d	Ferrous	Barbed wire	3	47.0	Twisted double strand barbed wire fragments. 15 cm spacing between 4-tip barbs.
N1845W600-1	Clay	Clump	5	1.9	Burnt clay clumps.
N1848.5W583.5-1 ^d	Ferrous	Barbed wire	8	89.7	Twisted double strand barbed wire fragments. 13 cm spacing between 4-tip barbs.
N1865W385-1	Quartz	Decortication flake	1	4.5	
N1865W385-2	Quartz	Flake	1	0.1	Partially crystal quartz.
N1865W385-3	Quartzite	Pestle	1	494.3	Pecked "thumb grip" on side. Battered and polished end.
N1865W385-4 ^d	Charcoal		3	3.2	Thin unburnt fiber layer. Modern.

Item No.	Material	Category	Qty	Wt (g)	Comments
N1866.95W371.50-1 ^d	Ferrous	Chain link	1	14.5	Flat, figure 8-shaped chain link with one connection pin.
N1881.9W354.5-1	Quartz	Decortication flake	1	1.1	Partially crystal quartz.
N1881.9W354.5-2	Quartzite	Pestle	1	50.0	Large pebble pestle with polished end.
N1881.9W354.5-3 ^d	Ferrous	Cotter pin	1	4.5	6 cm long.
N1916.16W350.88-1	Quartzite	Flake	2	14.1	
N1916.16W350.88-2	Clay	Brick	1	1212.6	Handmade brick fragment. 4 by 2-3/4 by ?? inches. Molded on sand bed.
N1916.16W350.88-3 ^d	Aluminum	Lid	1	8.3	Partially complete, crimped-edge seal lid. Circa 6.1 cm diameter.
N1995.8W597-1	Quartzite	Netsinker	1	88.9	Large bi-notched ovate pebble.
N1995.8W597-2 ^d	Glass	Bottle	65	133.4	Light green tinted, long neck bottle fragments with gold colored metal screw-on cap.
N2023.SW564-1 ^d	Glass	Bottle	1	0.1	Clear bottle flat panel fragment.

Note: ^d Item not retained in collection.

Appendix II

Radiocarbon Dating



*Consistent Accuracy . . .
... Delivered On-time*

Beta Analytic Inc.
4985 SW 74 Court
Miami, Florida 33155 USA
Tel: 305 667 5167
Fax: 305 663 0964
Beta@radiocarbon.com
www.radiocarbon.com

Darden Hood
President

Ronald Hatfield
Christopher Patrick
Deputy Directors

November 18, 2010

Dr. Paul Inashima
1910 Carters Grove Drive
Silver Spring, MD 20904
USA

RE: Radiocarbon Dating Result For Sample N1660

Dear Paul:

Enclosed is the radiocarbon dating result for one sample recently sent to us. It provided plenty of carbon for an accurate measurement and the analysis proceeded normally. As usual, the method of analysis is listed on the report sheet and calibration data is provided where applicable.

As always, no students or intern researchers who would necessarily be distracted with other obligations and priorities were used in the analysis. It was analyzed with the combined attention of our entire professional staff.

If you have specific questions about the analyses, please contact us. We are always available to answer your questions.

The cost of the analysis was charged to the American Express card provided. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,

Digital signature on file



REPORT OF RADIOCARBON DATING ANALYSES

Dr. Paul Inashima

Report Date: 11/18/2010

Material Received: 11/5/2010

Sample Data	Measured Radiocarbon Age	¹³ C/ ¹² C Ratio	Conventional Radiocarbon Age(*)
Beta - 287768 SAMPLE : N1660 ANALYSIS : Radiometric-Standard delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 720 to 740 (Cal BP 1230 to 1210) AND Cal AD 770 to 990 (Cal BP 1180 to 960)	1170 +/- 50 BP	-26.1 o/oo	1160 +/- 50 BP

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the ¹⁴C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby ¹⁴C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured ¹³C/¹²C ratios (delta ¹³C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta ¹³C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta ¹³C, the ratio and the Conventional Radiocarbon Age will be followed by "**". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-26.1:lab. mult=1)

Laboratory number: Beta-287768

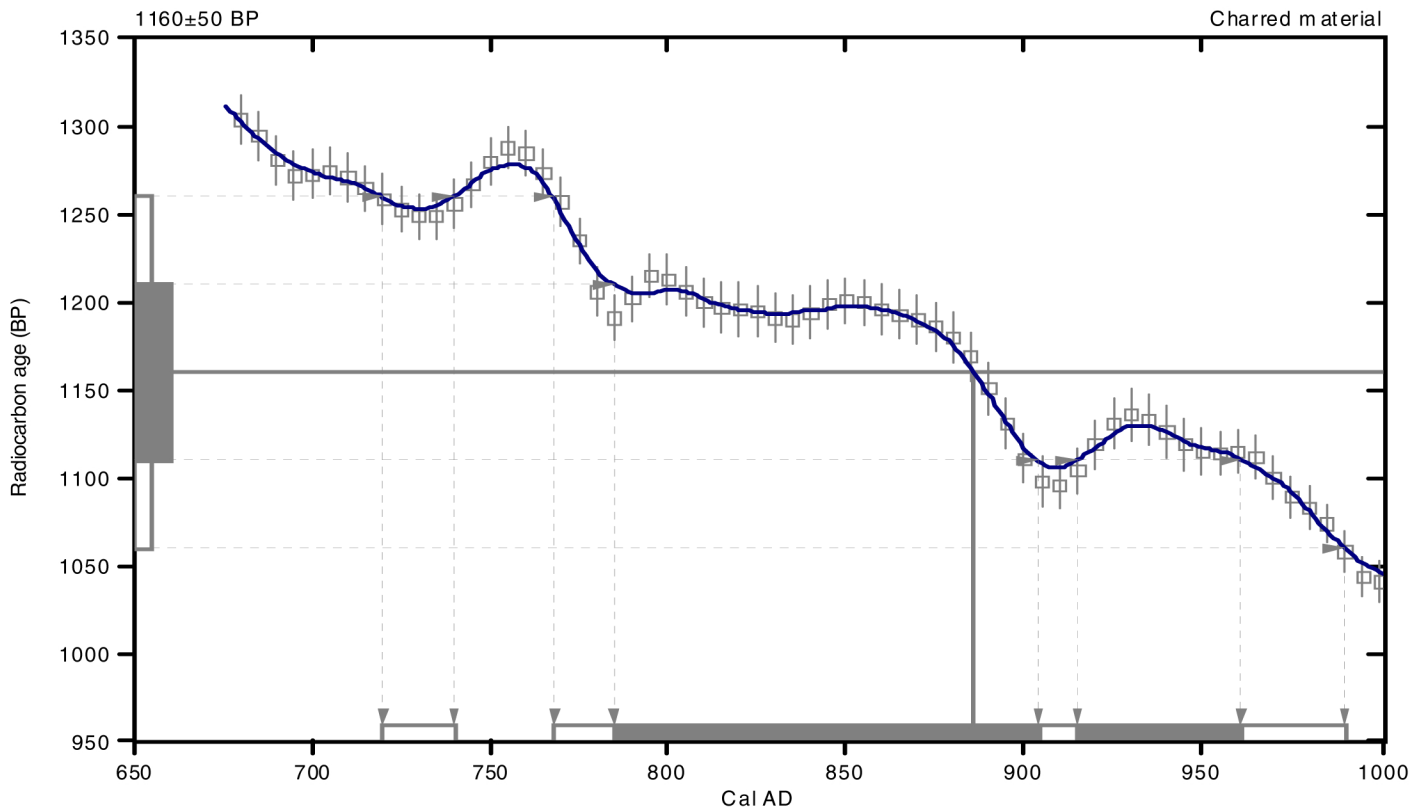
Conventional radiocarbon age: 1160±50 BP

**2 Sigma calibrated results: Cal AD 720 to 740 (Cal BP 1230 to 1210) and
(95% probability) Cal AD 770 to 990 (Cal BP 1180 to 960)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal AD 890 (Cal BP 1060)

**1 Sigma calibrated results: Cal AD 780 to 900 (Cal BP 1160 to 1050) and
(68% probability) Cal AD 920 to 960 (Cal BP 1040 to 990)**



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p317-322

Beta Analytic Radiocarbon Dating Laboratory

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