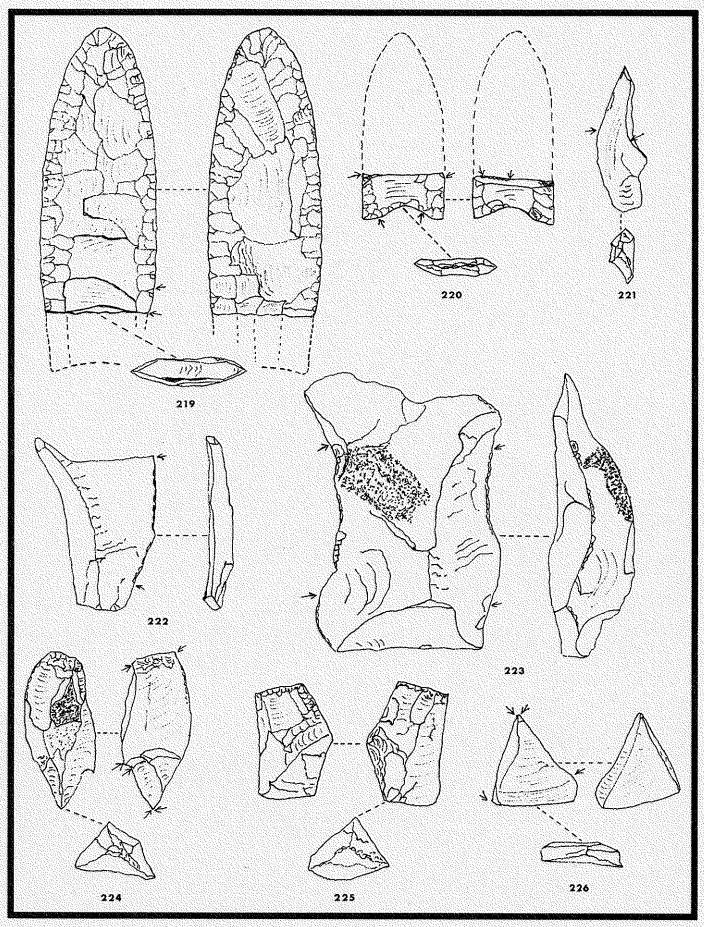
DW-87

The Williamson Clovis Site, 44DW1, Dinwiddie County, Virginia: An Analysis of Research Potential in Threatened Areas



Research Report Series No. 13

Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

2003

The Williamson Clovis Site, 44DW1, Dinwiddie County, Virginia: An Analysis of Research Potential in Threatened Areas

Research Report Series No. 13
2003

Prepared by:
Nottoway River Survey - Archaeological Research
5861 White Oak Road
Sandston, Virginia 23150

Prepared for:
Virginia Department of Historic Resources

Project Director:
Joseph M. McAvoy

Authors:
Joseph M. McAvoy
Lynn D. McAvoy

With Laboratory Work by:
Dr. Grace S. Brush, Department of Geography and Environmental Engineering, Johns Hopkins University; Dr. Cheryl A. Holt, private consultant; Dr. Larry R. Kimball, Department of Anthropology, Appalachian State University; Dr. Susan C. Mulholland, Archaeometry Laboratory, University of Minnesota; Dr. Margaret E. Newman, University of Calgary; Dr. Lucinda J. McWeeney, Yale University; Mr. James P. McAvoy, NRS; Mr. Robert L. Hodges and the Virginia Cooperative Extension Program Soils Laboratory at Virginia Tech; and Beta Analytic, Inc.

Nottoway River Survey Research Report No. 4

Copyright 2002 by Nottoway River Survey, and by the Virginia Department of Historic Resources

ACKNOWLEDGMENTS

The successful completion of this project would not have been possible without the help of many individuals and organizations. The Virginia Department of Historic Resources (VDHR) jointly funded the project with Nottoway River Survey (NRS). The VDHR Portsmouth Regional Office Director Dr. E. R. Turner, III, and the VDHR Threatened Sites Program Manager Mr. David K. Hazzard were instrumental in arranging much of the direct funding through the Threatened Sites Program. The remainder of the direct project funding and much of the indirect funding in the form of field and laboratory labor, which amounted to approximately one-half the total project cost, was provided by NRS.

The project was made possible because of the full support and cooperation of the Williamson family. The family members, particularly the late Sally L. Williamson who allowed the fieldwork to be done on her farm, were always friendly and helpful. Mr. A. D. "Buddy" Williamson, the only family member who was directly involved in the original 1949 field work, provided valuable information on artifact cluster locations, and some fascinating anecdotal information concerning the early field work.

The field and laboratory phases were accomplished with the help of several NRS members, and special thanks are due Lynn and James McAvoy. Without their help, on a continuing basis, there would have been no way that the field recovery work and the extensive laboratory analysis could have been completed.

I would like to thank the many outside researchers who helped with the laboratory phase of the project by providing professional services, because of their interest in this NRS project. These individuals include: Dr. Grace S. Brush, Department of Geography and Environmental Engineering, Johns Hopkins University; Dr. Cheryl A. Holt, private consultant; Dr. Larry R. Kimball, Department of Anthropology, Appalachian State University; Dr. Susan C. Mulholland, Archaeometry Laboratory, University of Minnesota; Dr. Margaret E. Newman, University of Calgary; and Dr. Lucinda J. McWeeney, Yale University. Beta Analytic, Inc., performed Carbon 14 dating, and Mr. Robert L. Hodges and the Virginia Cooperative Extension Program Soils Laboratory at Virginia Tech collectively did the soil analyses. Mr. Mike O. Keeler, and Mr. Peter P. Constanzer, environmental engineers with the Virginia Department of Transportation, provided the analysis of the wetland soils completely on their own time without compensation.

The review and approval cycle, as directed by the VDHR Threatened Sites Committee including the initial report preparation, has been comprehensive. I would like to thank the committee for its work, which was made possible by the participation of members of several groups within the archaeological community in Virginia. The groups represented on the Threatened Sites Committee include the VDHR, the Council of Virginia Archaeologists (COVA), and the Archeological Society of Virginia (ASV).

The NRS evaluation of the Williamson site was divided into four separate phases. In each phase of the project, the VDHR Threatened Sites Committee before the start of work approved a detailed proposal.

I would like to thank Dr. Turner and Mr. Hazzard of the VDHR for their help in developing the outline for the final report, which was phase 4 of the project. In addition to the normally reported research results from such a project, VDHR requested that the Williamson site report include: 1) a history of past research at the Williamson site; 2) the establishment of the Williamson site boundary; and 3) detailed descriptions of the preserved deposits of Clovis artifacts. The VDHR had specified that the report be prepared in an abbreviated format, and also considered the above information necessary and critical in defining the status and boundary of Clovis age deposits comprising the site.

Review and approval of the final report for project publication has been a rather involved process, and we would like to thank both the VDHR and COVA for their efforts in this regard. Dr. Turner of the VDHR provided technical and editorial reviews of the manuscript. He recommended report publication at the July 2002 VDHR Archaeology Board meeting. However, some concerns were raised at this meeting over potentially sensitive information in the report detailing locations of sites and artifact deposits.

To help reach a resolution, these concerns were brought to the attention of the COVA Executive Board at its August 2002 meeting. In January 2003, the COVA Executive Board informed the VDHR that it supported publication of the report as prepared. The COVA decision was based upon information received from the VDHR and NRS that the Williamson family was comfortable with the information being made public, and that the Williamson family intended to continue ownership of the property.

As a final evaluation of the Williamson site report, in late December 2002, and early January 2003, NRS submitted the draft to the Williamson family and to several of the leading, high-profile researchers in the field of early man studies in North America. No concerns or negative comments about this information were received from the Williamson family or any of the researchers, and we thank everyone involved in this phase of the review. Finally, I would like to thank Mrs. Deborah B. Woodward of the VDHR for her editorial comments and general suggestions on the final draft before publication.

The Williamson site was the first large Clovis site reported in the East. The work on this site was a central activity for many years of several avocational archaeologists, including the late Ben McCary and Floyd Painter. The location of the site on the Williamson's farm remains a matter of great pride to the family, and the Williamson's continuing good stewardship of the site over the years remains a model of such activity. The authors hope that this report will help in securing the well-deserved credit due the Williamson family for its long stewardship over the site, in recording the earlier work there, and in establishing a significant place for the Williamson site in the planning of future archaeological research in Virginia.

Joseph M. McAvoy

Table of Contents

Acknowledgments ii

Table of Contents iv

List of Figures v

List of Tables ix

Chapter 1. A Very Informal Introduction: Fifty Years of Surface Collecting 1

Chapter 2. Natural Setting 7

Chapter 3 Past Research 13

Chapter 4. Current Research 25

Chapter 5. Site Testing: Establishing Soil Horizons and Depths of Cultural Material 31

Chapter 6. Excavation Area 2 59

Chapter 7. Excavation Areas 3 and 1 95

Chapter 8. Excavation Area 6 127

Chapter 9. Excavation Area 7 147

Chapter 10 Laboratory Analyses 171

Chapter 11. Summary, Conclusions, and Recommendations 187

References Cited 197

Appendix A A1-A18

Appendix B B1-B64

Appendix C C1-C3

List of Figures

1.1 Location of the Williamson site in Dinwiddie County, Virginia. 1
1.2 General area of the Williamson site, aerial photograph 4
1.3 Typical Clovis period artifacts from the Williamson site 5
1.4 The first four Clovis points reported from the Williamson site 6

2.1 Williamson site location on USGS topographic map 7
2.2 Elevations on the Williamson site 9

3.1 Williamson site, 1949 map 13
3.2 Williamson site perpheral locations 14
3.3 Off-site survey locations 17
3.4 Artifacts from the old Lewis Farm 23
3.5 Artifacts from 44DW204 23

4.1 Williamson site artifact locations, 1975 map 27

5.1 NRS test locations 1 through 8, and NRS excavation locations 1, 2, 3, 6, and 7 on the Williamson site 32
5.2 NRS test location 1 34
5.3 NRS test location 2 37
5.4 NRS test location 3 39
5.5 Shovel test 4-13/ST 43
5.6 Shovel test 4-14/ST 43
5.7 NRS test locations 4 and 8 44
5.6 NRS test location 5 47
5.9 NRS test location 6 49
5.10 Shovel test location 6-7/ST 50
5.11 Shovel test 6-6/ST 51
5.12 Shovel test 6-7/ST 51
5.13 NRS test location 7 54
5.14 Sally Williamson Farm, test location 6 56
5.15 Ampy Farm, near test location 4 56
5.16 Test location 4 at Ampy fence line 57
5.17 Test locations 4 and 8, looking south 57
5.18 Test location 7, looking northwest 57

6.1 Williamson site excavation area 2 60
6.2 Williamson site excavation area 2, removing plowzone 61
6.3 Excavation units 2C and 2D 62
6.4 Excavation units 2A and 2B 63
6.5 Excavation area 2, completed, looking west 64
6.6 Excavation area 2, completed, looking north (composite photograph) 65
6.7 Generalized composite drawing of excavation area 2 68
6.8 Detailed composite plan view (and profile) of excavation area 2 69
6.9 Number of artifacts in, and below, plowzone 70
6.10 Percentage of artifacts in, and below, plowzone which are thermally modified (burned) 71
6.11 Number and percentage of plowzone artifacts not chert or crystal quartz 71
6.12 Number and percentage of below plowzone artifacts not chert or crystal quartz 72
6.13 Percentage of primary flakes and cortex flakes below plowzone 72
6.14 Number of thinning or trim flakes, levels 1 and 2 73
6.15 Percentage of thinning or trim flakes, levels 1 and 2 73
6.16 Number of flakes with ground striking platforms below plowzone 74
6.17 Percentage of volumn vs crystal quartz flakes below plowzone 75
6.18 Number of crystal quartz flakes by level 76

6.19 Crystal quartz flakes as a percentage of all artifacts 76
6.20 Percentage of crystal quartz flakes in all artifact categories 76
6.21 Unit 2A, level 1, plan view 78
6.22 Unit 2A, level 2, plan view 78
6.23 Artifacts from Unit 2A, levels 1 and 2 79
6.24 Artifacts from Unit 2A, levels 1 and 2 80
6.25 Artifacts from Unit 2A, level 2 81
6.26 Unit 2B, level 1, plan view 82
6.27 Unit 2B, level 2, plan view 82
6.28 Unit 2B (North), level 1, plan view 83
6.29 Unit 2B (North), level 2, plan view 83
6.30 Unit 2B (South), levels 1 and 2, plan view 83
6.31 Artifacts from units 2B, and 2B (North), levels 1 and 2 84
6.32 Artifacts from unit 2B, levels 1 and 2 85
6.33 Unit 2C, level 1, plan view 86
6.34 Unit 2C, level 2, plan view 86
6.35 Artifacts from unit 2C, levels 1 and 2 87
6.36 Unit 2D, level 1, plan view 88
6.37 Unit 2D, level 2, plan view 88
6.38 Artifacts from unit 2D, level 1 89
6.39 Artifacts from unit 2D, levels 1 and 2 90
6.40 Photograph of bifacial artifacts from units 2B, 2C, and 2D 91
6.41 Photograph of large Clovis point tip from unit 2B, level 2 91
6.42 Photograph of chisel-wedges from excavation area 2 92
6.43 Photograph of small tools from excavation area 2 92
6.44 Photograph of large tools from excavation area 2 93
6.45 Photograph of crystal quartz flakes from excavation area 2 94

7.1 Williamson site excavation area 3, looking north 96
7.2 Williamson site excavation area 3, looking south 97
7.3 Excavation unit 3B, level 1, artifacts in situ 98
7.4 Excavation units 3A and 3B, profiles 99
7.5 Generalized composite drawing of excavation area 3 102
7.6 Detailed composite plan view (and profile) of excavation area 3 103
7.7 Number of Artifacts in, and below, plowzone 105
7.8 Percentage of artifacts in, and below, plowzone which are thermally modified (burned) 105
7.9 Number and percentage of artifacts from the plowzone not chert 106
7.10 Number and percentage of artifacts from below the plowzone not chert 106
7.11 Number of primary flakes and cortex flakes from below the plowzone 107
7.12 Number of flakes with ground striking platforms from below the plowzone 107
7.13 Number and percentage of thinning and trim flakes from all levels 107
7.14 Unit 3A, level 1, plan view 108
7.15 Unit 3A, level 2, plan view 109
7.16 Unit 3A, level 3, plan view 109
7.17 Artifacts from unit 3A, levels 1, 2, and 3 110
7.18 Unit 3B, level 1, plan view 111
7.19 Unit 3B, level 2, plan view 111
7.20 Artifacts from unit 3B, level 1 112
7.21 Artifacts from unit 3B, level 1 112
7.22 Artifacts from unit 3B, level 2 114
7.23 Artifacts from unit 3B, level 2 115
7.24 Unit 3C, level 1, plan view 116
7.25 Unit 3C, level 2, plan view 116
7.26 Artifacts from unit 3C, level 1 117
7.27 Artifacts from unit 3C, level 2 118
7.28 Unit 3D, level 1, plan view, and photo of in situ charcoal 119

7.29 Artifacts from unit 3D, level 1 120
7.30 Photograph of tools from excavation area 3 121
7.31 Photograph of small tools from excavation area 3 121
7.32 Williamson site excavation area 1, unit 1A in-process, looking east 123
7.33 Excavation unit 1A, plan and profile views 124
7.34 Artifacts from unit 1A, at the plowzone to level 1 interface 125

8.1 Williamson site excavation area 6, general views 128
8.2 Williamson site excavation area 6, removing plowzone 129
8.3 Williamson site excavation area 6, in-process excavations 130
8.4 Excavation unit 6C, Feature 1 131
8.5 Generalized composite drawing of excavation area 6 134
8.6 Debitage and tools in Feature 1 135
8.7 Detailed composite plan view (and profile) of excavation area 6 136
8.8 Number of artifacts in, and below, plowzone 137
8.9 Percentage of artifacts in, and below, plowzone which are thermally modified (burned) 138
8.10 Number of primary flakes and cortex flakes from below the plowzone 139
8.11 Number of flakes with ground striking platforms from below the plowzone 139
8.12 Number and percentage of thinning or trim flakes from below the plowzone 139
8.13 Unit 6A, level 1, plan view 141
8.14 Unit 6B, plowzone to level 1 interface, plan view 141
8.15 Unit 6C, level 1, plan view 142
8.16 Unit 6D, level 1, plan view 142
8.17 Artifacts from units 6A, 6C, and 6D, level 1 143
8.18 Artifacts from unit 6C, level 1 144
8.19 Photograph of tools from excavation area 6 145

9.1 Williamson site excavation area 7, general viewa 149
9.2 Williamson site excavation area 7, in-process, and profile views 150
9.3 Excavation units 7C and 7E, in-process views with artifacts in situ 151
9.4 Excavation unit 7C profile, and drainage ditch 152
9.5 Generalized composite drawing of excavation area 7 155
9.6 Detailed composite plan view (and profile) of excavation area 7 156
9.7 Number of artifacts in, and below, the plowzone 157
9.8 Number and percentage of artifacts below the plowzone which are thermally modified (burned) 157
9.9 Number of primary and cortex flakes from below the plowzone 158
9.10 Number and percentage of thinning or trim flakes from level 1 158
9.11 Artifacts from the surface near excavation area 7 159
9.12 Unit 7A, plowzone and level 1, plan view 160
9.13 Unit 7A, level 2, plan view 160
9,14 Artifacts from unit 7A, plowzone, and levels 1 and 2 161
9.15 Artifacts from unit 7A, levels 1 and 2 162
9.16 Unit 7B, plowzone and level 1, plan view 163
9.17 Unit 7B, level 2, plan view 163
9.18 Artifacts from unit 7B, plowzone 164
9.19 Artifacts from unit 7B, level 1 165
9.20 Artifacts from unit 7B, level 2 166
9.21 Unit 7C, level 1, plan view 167
9.22 Unit 7C, level 2, plan view 162
9.23 Artifacts from unit 7C, plowzone, and levels 1 and 2 168
9.24 Unit 7E, plowzone, and levels 1 and 2, plan view 169
9.25 Unit 7D, plowzone, and level 1 and 2, plan view 169
9.26 Photograph of chisel-wedges from excavation area 7 170

10.1 Photomicrographs of wear surfaces and a deposit 177

11.1 Number of artifacts recovered in, and below, the plowzone in all excavation areas 188
11.2 Number of tools recovered in, and below, the plowzone in all excavation areas 188
11.3 Number of formal tools and used flakes below the plowzone in all excavation areas 188
11.4 Number of primary and cortex flakes below the plowzone in all excavation areas 190
11.5 Number of wedges and wedge spalls below the plowzone in all excavation areas 191
11.6 Number and percentage of biface reduction flakes below the plowzone in all excavation areas 191
11.7 Number of thinning or trim flakes below the plowzone in all excavation areas 191
11.8 Number of flakes with ground striking platforms below the plowzone in all excavation areas 192
11.9 Number and percentage of artifacts not chert or crystal quartz in, and below, the plowzone in excavation areas 2 and 3 194
11.10 Number and percentage of artifacts not chert in, and below, the plowzone in excavation areas 6 and 7 194

List of Tables

5.1 Soil Report, Test Location Number 1 33
5.2 Shovel Test Results, Location Number 1 33
5.3 Soil Report, Test Location Number 2 35
5.4 Shovel Test Results, Location Number 2 35
5.5 Soil Report, Test Location Number 3 38
5.6 Shovel Test Results, Location Number 3 38
5.7 Soil Report, Test Location Number 4 40
5.8 Shovel Test Results, Location Number 4 41
5.9 Soil Report, Test Location Number 5 45
5.10 Shovel Test Results, Location Number 5 46
5.11 Soil Report, Test Location Number 6 48
5.12 Shovel Test Results, Location Number 6 48
5.13 Soil Report, Test Location Number 7 52
5.14 Shovel Test Results, Location Number 7 54
5.15 Soil Report, Test Location Number 8 55
5.16 Shovel Test Results, Location Number 8 56

6.1 Volume Percent by Level of Excavation Area 2 65

7.1 Volume Percent by Level of Excavation Area 3 100
7.2 Volume Percent by Level of Excavation Area 1 122

8.1 Volume Percent by Level of Excavation Area 6 132

9.1 Volume Percent by Level of Excavation Area 7 148

10.1 Immunological Analysis of Twenty Selected Artifacts from the NRS Excavations on the Williamson Site, 44DW1 173
10.2 Wear Analysis Results for Twenty Selected Artifacts from the NRS Excavations on the Williamson Site, 44DW1 175
10.3 Williamson site, 44DW1, Charcoal Sample Identification 179
10.4 Radiocarbon Dates from the Williamson Site, 44DW1 182

CHAPTER 1

A VERY INFORMAL INTRODUCTION: 50 YEARS OF SURFACE COLLECTING

A Visit to the Williamson Site

This report on the Williamson site begins with an informal discussion of the manner of site discovery and the subsequent years of surface collecting. The intent is to introduce the reader to the site and to the people who were instrumental in the discovery, analysis, and reporting for the past half century.

The Williamson site, 44DW1 (figs. 1.1 and 1.2) located in Dinwiddie County, Virginia, is one of the largest and most significant Paleoindian localities in North America. The initial investigator of this site, Ben C. McCary, performed and reported upon his field work, with particular emphasis upon the artifacts (fig. 1.3) for over 40 years until his death in 1995. McCary first defined the site as a large [Clovis] camp or "workshop" centered around a local chert source, and he described the distinctive mix of multicolored chalcedony, chert, and jasper found there (McCary, Smith, and Gilliam 1949:2-9). The site is probably best known because of this abundant chert, a cryptocrystalline quartz known locally and quite generally as "Williamson Chert" or "Cattail Creek Chalcedony." This lithic material is unique in southeastern Virginia in its quantity, colors, and texture.

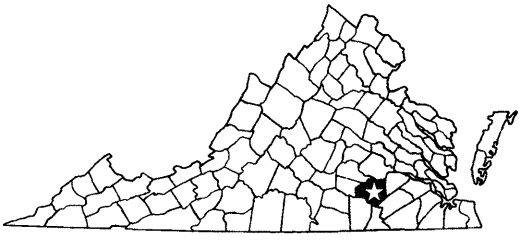


Figure 1.1. Location of the Williamson site in Dinwiddie County, Virginia.

Most of the early work on the Williamson site centered around two local collector-avocational archaeologist groups, one associated with McCary, who worked with other members of the Archeological Society of Virginia, and the other with the late Floyd Painter and members of his Chesopiean Archaeological Society. Both of these individuals worked very closely with the Williamson family. The senior author, like so many others, has maintained a similar interest in the Williamson site for many years (McAvoy 1992:38-62).

I first visited the farm in 1959, 10 years after the site had been discovered. A friend in Richmond had an invitation from one of the owners, John Williamson, to come down to Dinwiddie County and see the site, and he invited me to go along with him. It was one of those unusual October days which starts out with snow in the morning but clears up and turns warmer by mid-afternoon. I remember my visit to the site as fascinating. The harvested fields that afternoon were soggy from the melting snow, but they were fairly clear of stubble and littered with a heavy concentration of chips and cores of the most colorful chalcedony and chert.

After searching for half a day, we were disappointed that very little was found we could identify. In an effort to provide some much needed education on "Folsom" artifact typology, John and Joshua Williamson invited us to make an inspection of their collection. This was an often repeated ritual for visitors to the site. Two old cigar boxes were presented which contained the most extraordinary site collection of fluted projectile points I have ever seen.

As they discussed the collection, I could sense a great pride in the fact that the artifacts were from their farm, and the closeness they had with the land seemed to bridge the time gap between them and the first people. Looking back on the experience, I believe that it was not just the artifacts, but the circumstances of their discovery that made the site seem so exceptional. The Williamsons were friendly and open people, and they impressed me with their willingness to share their site and information with a total stranger. I believe that most people who visited the site left with the same favorable impression.

Two Friends and a Bet

Several lengthy, detailed accounts have been offered concerning the exact sequence of events leading to the discovery and general acceptance of the Williamson Farm as a major Paleoindian site (McCary, Smith, and Gilliam 1949; McCary 1951). While it is not necessary to repeat these accounts, it is acknowledged that the scholarly work leading to acceptance of the site in the scientific community is credited primarily to the efforts of Ben C. McCary, J. C. Smith, and C. E. Gilliam (McCary 1951:9). However, the initial recognition that a number of fluted points were being recovered on the Williamson Farm is credited, at least generally, to two friends, Joshua Williamson and John Adkins. Adkins was a local merchant who collected Indian artifacts around the small community of Dinwiddie, Virginia, in the 1940s. This most interesting story was recounted to McAvoy by Joshua Williamson (Joshua Williamson, personal communication, 1963), one of the owners of the site. A somewhat similar, detailed account has been related in at least one other publication, and a much more general account was related in the report of McCary, Smith, and Gilliam (1949:3).

It seems that on an afternoon in June of 1948, Joshua Williamson happened to be in John Adkins' store in Dinwiddie, Virginia, where he was shown a "rare Folsom arrowhead" which Adkins had recently acquired from a collector or farmer somewhere in the county. Adkins bet Joshua that he didn't have any like it from his farm over on Little Cattail Creek. Joshua looked at the point and indicated that he was sure that he had several just like it, and that he had found many different kinds on his farm. A friendly disagreement ensued, and Joshua returned home to look over the small collection of artifacts which was stored, with other things, in an old toolbox. Within a short time Joshua returned to Adkins' store, about three miles from his farm, and he laid out several artifacts (fig. 1.4) which were identical to Adkins' point in shape and lithic material.

Joshua recalled that Adkins was amazed, and that he easily won that argument with his friend. But, the word was out about the Williamson Farm. McCary learned two months later of the discoveries from a friend and artifact collector, Reverend J. R. McAllister, of Dinwiddie, who reported Williamson's points through McCary's survey (McCary 1949:13).

In the December 1949 issue of the *Quarterly Bulletin of the Archeological Society of Virginia*, McCary, Smith, and Gilliam reported the Williamson Farm as a "Folsom workshop" and noted that it was either the first or second such site discovered in the entire state of Virginia. McCary in July 1951 reported the discovery of the Williamson site in *American Antiquity*, which established the site's significance and firmly placed the discovery among the more significant events in the study of the Paleoindian in North America.

Surface Collecting

Assembling the Data Base

Long before this location was the subject of archaeological interest and research, the farm upon which most of the site is located had been owned by relatives of the present Williamson family. A smaller part of the site always has been recognized on the adjacent Ampy Farm to the east. A very significant part of the history of the Williamson site relates to the continuous 53 years of surface recovery of Clovis artifacts. The Williamsons cultivated the land and allowed

surface collecting in plowed fields for artifacts and samples of the chert. Because of this practice, much is known about the artifact types and the local stone material, but the artifacts are now fairly widely dispersed in various collections throughout the Middle Atlantic and Southeast. Most of the larger fragments of debitage, once common in the plowzone, have disappeared from the site as well due to the interest and activity of rock collectors. The largest collection from the site, representing about half of the better quality and most diagnostic Clovis artifacts, was that of the Williamson family. This collection was purchased some years ago as a philanthropic gesture through the efforts of a friend and former student of McCary's, and subsequently donated to the College of William and Mary, where Ben taught.

It was recognized by Ben McCary as early as 1947 that the general area of Amelia, Dinwiddie, Cumberland, and Prince Edward Counties in central and southeastern Virginia was producing fluted points, some of colorful flint and chert with no known source of similar lithic material in the area. Some of these points were among those in the collections of S. V. Morefield and J. R. McAllister, which are numbered points 45 through 72 in McCary's first survey report of Virginia fluted points (McCary 1947:14-15).

Many individuals were in the fields in this area of Virginia at the time collecting Indian artifacts and searching for fluted points as a result of the interest created by McCary's fluted point survey. This activity led directly to the discovery of the Williamson site as noted above. The individuals who were involved in the discovery of the site were artifact collectors and avocational archaeologists. This was true of Adkins, McAllister, Smith, Gilliam, McCary, and the Williamson brothers, John and Joshua. Surface collecting continued there with great enthusiasm throughout the 1950s. The Williamsons did not object to others collecting there as long as they dropped by the house to record their discoveries.

All of McCary's survey reports were made possible by such individuals reporting their discoveries. While many today rightfully admonish the unsystematic collecting by a variety of people that has taken place there over the years (Dent 1995:109), at the time it was not questioned, and such surface collecting was regarded by many as scientific field work.

McCary did take a very scholarly approach to his interest, and through many articles and papers he recorded much of the information gleaned from the site. His 1951 report in *American Antiquity* on the Williamson site preceded Witthoft's report on the Shoop site (Witthoft 1952:464-495) by nearly a year. What most do not realize is that McCary regarded the field work and subsequent publication of the first report on a large Paleoindian site in the East as something of a gentlemanly competition with his friend John Witthoft (Ben McCary, personal communication, 1971). There is no indication, however, that Witthoft shared this view.

Within the Virginia group there seems to have been a friendly but strong competitive spirit surrounding the work at the Williamson site, and the efforts of many collectors and avocational archaeologists contributed to the large number of man-hours involved in amassing the data base. In fact, the work at Shoop progressed in much the same manner as most of the artifact recovery was by collectors who ultimately shared their discoveries with Dr. Witthoft or his associates (Fogelman 1986:1-2).

Throughout the 1960s and beyond, the Williamson site has continued to produce a great variety of Clovis artifacts. Hundreds of individuals including collectors, avocational archaeologists, and professional archaeologists have visited the site, signed the Williamson's site log book, and spent many hours searching the fields along Little Cattail Creek. Most of them who were interested in Paleoindian research or teaching left the site with at least a small study

collection of the distinctive Williamson chert. Such collections were, and remain, valuable comparative research and teaching tools at many major universities, government agencies, and private companies offering services in research and cultural resource management.

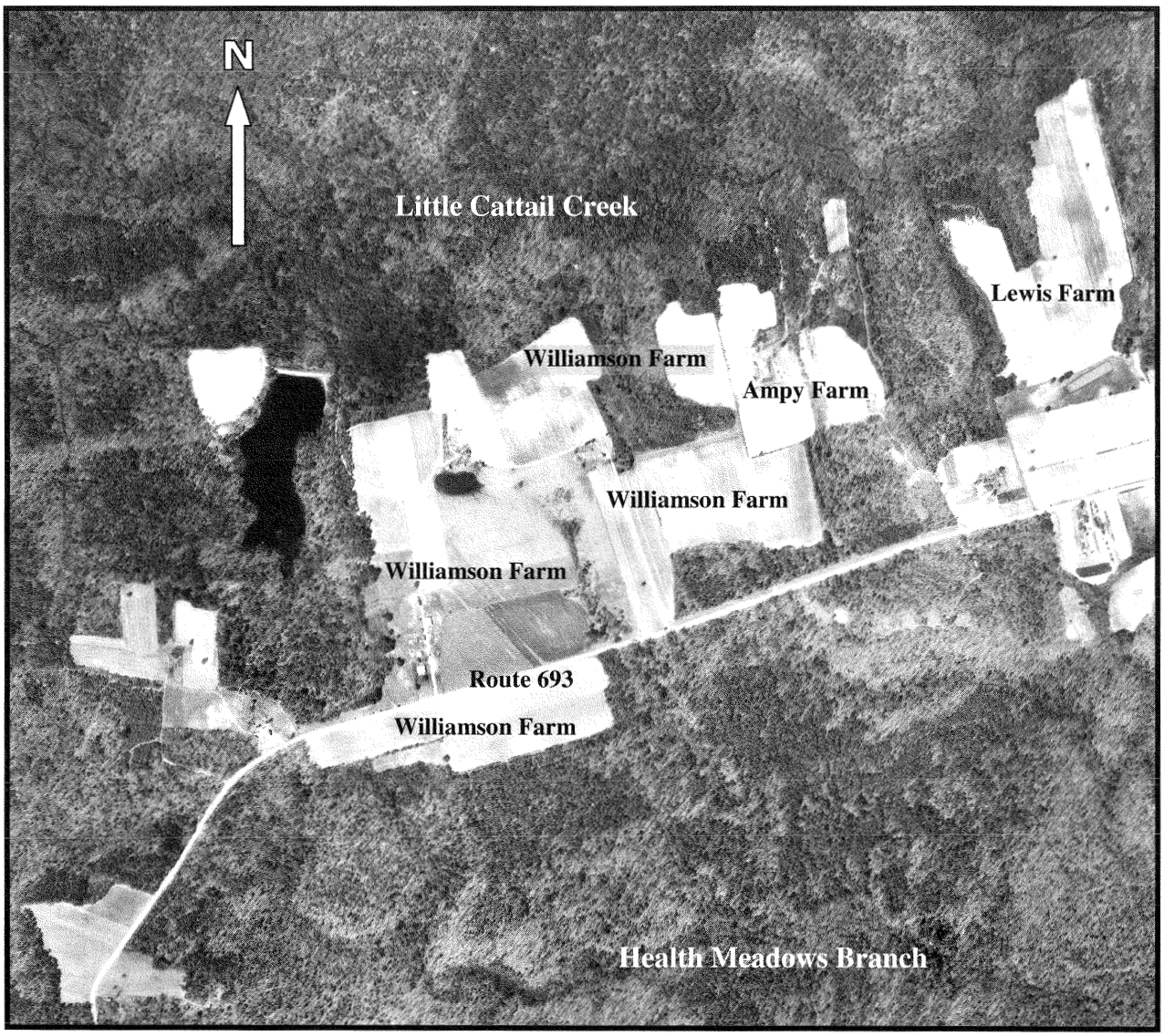


Figure 1.2. The general area of the Williamson site, located between route 693, shown to the south, and Little Cattail Creek to the north, in Dinwiddie County, Virginia. Aerial photograph taken April 1965; use of photograph courtesy of the Virginia Department of Transportation (VDOT).

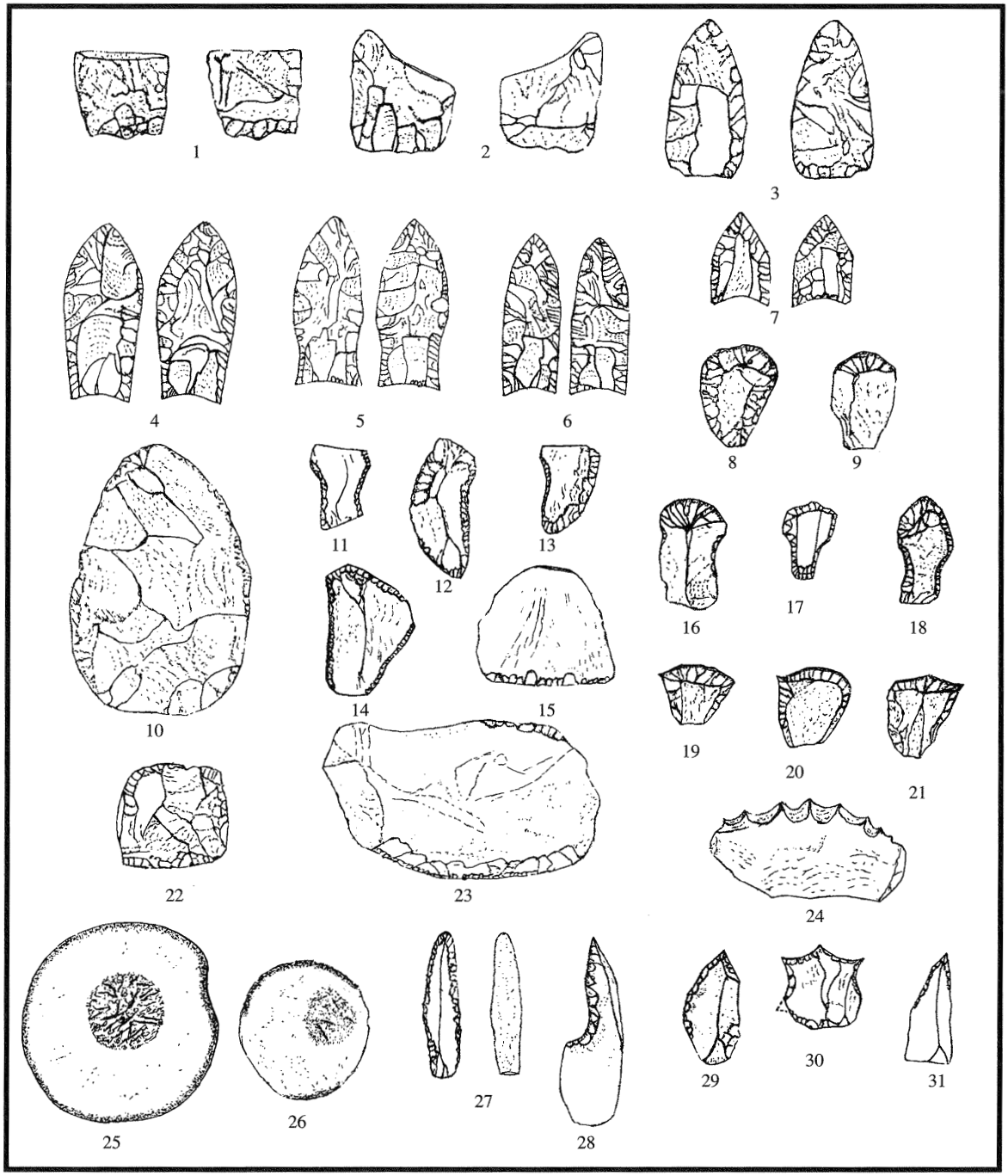


Figure 1.3. Typical Clovis period artifacts from the Williamson site as drawn by McCary (1983:47-65): 1-3, fluted point preforms; 4-7, completed fluted points; 8-9 and 16-21, unifacial end scrapers; 10, large thin biface or bifacial core; 11-15, unifacial side scrapers, spokeshaves and knives; 22, wedge or chisel-wedge; 23, large side scraper; 24, denticulate; 25-26, hammerstones; 27, limace; 28-31, awls and gravers. Artifacts are from the collection of the College of William and Mary (originally the Williamson family collection), and the McCary family collection. The drawings were made by McCary using sheet paper rubbings, a process which somewhat exaggerates or distorts some dimensions of some artifacts due to edge thickness.

An Anecdotal Collecting Story

Many of the collectors and avocational archaeologists who have worked on the Williamson site have fascinating anecdotal stories about their experiences. Perhaps the most humorous is the "hedgerow" story. It represents the competitive, enjoyable, and very human side of the early collecting work there. We are grateful to Mr. A. D. "Buddy" Williamson who related this story to the authors during our work on site (Buddy Williamson, personal communication, 1999).

In the early period of field work on the Williamson site, Buddy Williamson, John Williamson's youngest son, would often accompany and work with Ben McCary when he was there by himself surface collecting in the fields. One afternoon as they were walking along an old hedgerow in the Williamson's front field, Buddy found the basal end of a very nicely made fluted point. Buddy relates that Ben, who called him "hawkeye," apparently became a little annoyed with the youngster's constant presence, and possibly with his persistent luck. Ben told Buddy that if he tossed the fluted point over the hedgerow, wherever it landed would be the tip of the point or another fluted point. After some further discussion, apparently to clearly establish the rules, the point was appropriately and ceremoniously tossed over the hedgerow. Buddy, full of the enthusiasm that only a 12 year old on a quest can muster, followed after it. Ben's ploy apparently worked because Buddy was gone for quite a while. When he finally rejoined Ben later that afternoon, he remarked that Ben's understanding of the "point toss" was not correct. Buddy had found the broken point he tossed over the hedgerow but there was no fluted point at the spot where it had landed. No, the other fluted point that Ben had told him about was actually several feet away from that location! Ben apparently did not have any more suggestions. Such was surface collecting on the Williamson site ca. 1949.

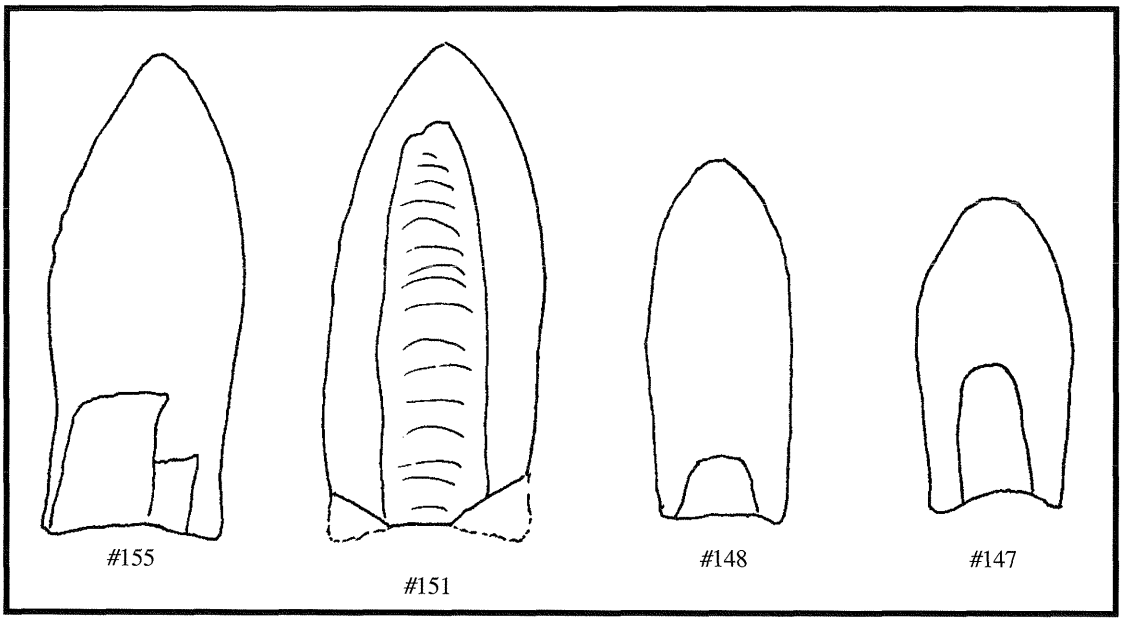


Figure 1.4. The first four Clovis points reported from the Williamson site as drawn by J. R. McAllister in 1948, and numbered as they appeared in McCary's September 1949 fluted point survey. Point #155 is artifact number 5 in fig. 1.3, where it is shown with exaggerated shouldering in McCary's drawing made from a rubbing. (shown here 92% natural size)

CHAPTER 2
NATURAL SETTING

Site Location

The Williamson site is located in central Dinwiddie County, Virginia, near the intersection of state routes 703 and 693 as shown on USGS 7.5 minute quadrangle map "Dinwiddie, VA" N3700-W7730, partly reproduced as fig. 2.1. The site location could be described as the eastern edge of the Fall Zone, an area which represents the junction of the western Coastal Plain Province and eastern Piedmont Province.

The Williamson site is adjacent to a very small upland stream, Little Cattail Creek. The creek rises just 4.5 miles west of the site and flows into Rowanty Creek 2.4 miles east of the site. Rowanty Creek then flows for 11 miles to the southeast to join the Nottoway River approximately two miles south of the apex of the large "north bend" at approximately channel mile 80 of 155 miles in this drainage. The Chowan River is formed at the junction of the Nottoway and the Blackwater Rivers, about 50 miles to the southeast of the site, on the Virginia-North Carolina line. The Chowan River then flows to Albemarle Sound in northeastern North Carolina, and Albemarle Sound drains to the Atlantic Ocean. The Williamson site, therefore, is located some 13 miles up small, shallow streams from the last moderately large river, the Nottoway.

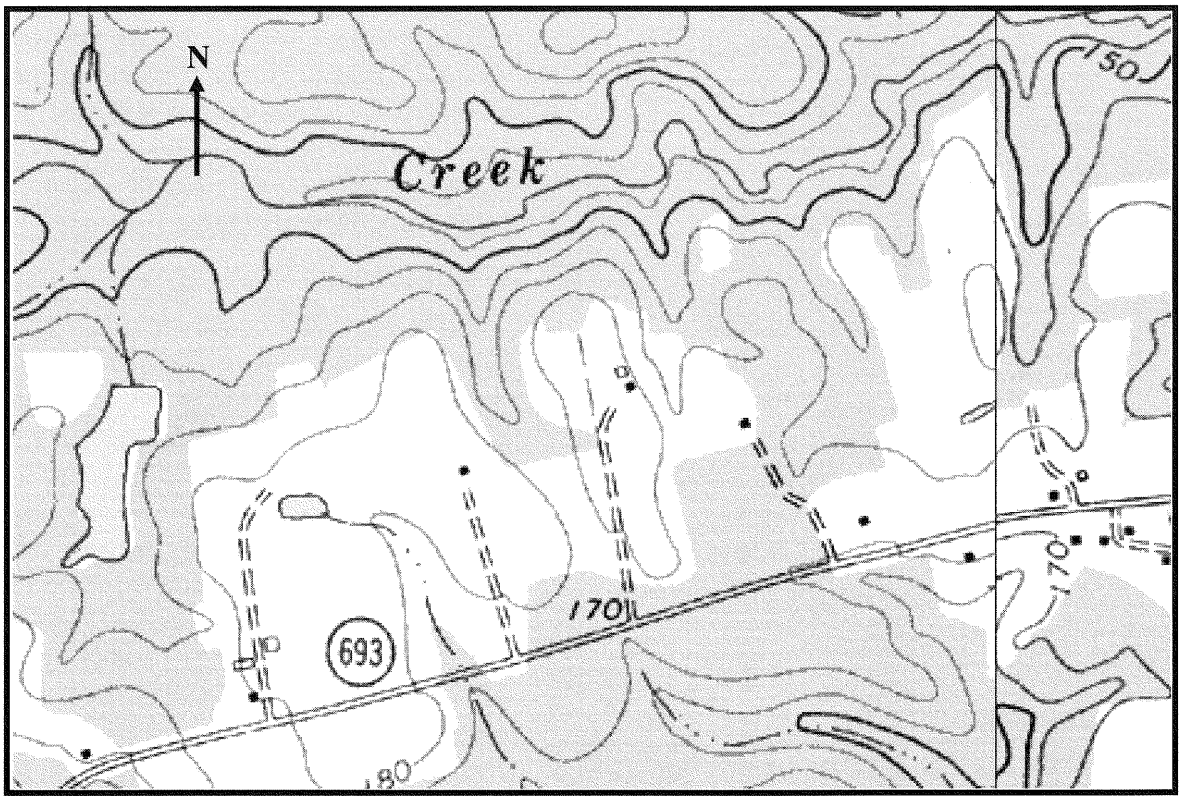


Figure 2.1. The Williamson site area as shown on USGS 7.5 minute quadrangle map "Dinwiddie, VA" N3700-W7730.

Site Geology

In the immediate area of the Williamson site, Little Cattail Creek, at elevation 145 to 150 feet above mean sea level (AMSL), has cut down to the Mississippian age Piedmont basement rock which is the Petersburg Granite Formation. This granite formation is characterized in the Virginia Division of Mineral Resources Geologic Map of Virginia, and Expanded Explanation of 1993 (Rader and Evans 1993) as: "fine to coarse-grained, uniformly textured to porphyritic, foliated to non-foliated granite, granoidiorite, and minor quartz monzonite; xenoliths of amphibolite and biotite gneiss common." Some of the upper terrace fields at Williamson are littered with weathered pieces of gneiss, a foliated metamorphic rock corresponding in composition to the granite. The chert recovered as artifacts on the site is locally known as "Williamson Chert" or "Cattail Creek Chalcedony." This material appears to be pseudomorphic relicts of metamorphic stone, some of it highly silicified (Haynes 1972:113). The chert is possibly silicified gneiss, associated with the Petersburg Granite Formation, and indigenous to the site.

Above the creek bed on Coastal Plain terraces at elevations of 155 to 180 feet AMSL are soils of the Pliocene age Bacons Castle Formation (type Tb1), which are composed of gravel grading upward into sand and sandy, clayey silt. This is as shown in the Virginia Division of Mineral Resources Geologic Map of Virginia, and Expanded Explanation of 1993 (Rader and Evans 1993). Along with the weathered gneiss and chert, some locations in fields of the upper terraces near the Williamson site contain gravel and small cobbles representing the Bacon's Castle Formation.

Site Pedology

The site pedological analysis was undertaken by Mr. Robert Hodges, a registered soils scientist residing in Williamsburg, Virginia. Mr. Hodges was assisted by the Virginia Tech Soils Laboratory, and their soils evaluations were carried out in the areas selected for archaeological evaluation by NRS. Detailed soil profile data representing areas of archaeological interest are presented in Chapter 5 which concerns the testing phase of site locations 1 through 8. These eight general areas represent a significant percentage of the entire farm, thus providing a rather complete picture of site pedology.

In the eight areas tested, soils of interest within an archaeological context ranged from fine sandy loam, to sandy clay loam, to loam. Across the site, soils varied from well drained to somewhat poorly drained, and seasonal high water tables in early spring varied from as little as 16 inches below surface, for some low ground loams, to greater than 64 inches below surface for upper terrace fine sandy loams. The soils were characterized as falling into groups defined as Mattaponi, Slagle, and Bourne fine sandy loams, and Yemassee loam. It is interesting that local farmers describe a large part of the land around the Williamson site and extending to the north and southeast as poorly drained with a number of small upland springs and wet areas.

Site Topography

Figure 2.2, the Williamson site elevations, is derived from USGS 7.5 minute quadrangle map "Dinwiddie, VA" N3700-W7730. The 180-foot AMSL contour line encompassing the primary part of the site has been slightly modified by NRS to reflect actual continuous elevations. All elevations are based upon the reference elevation of 170 feet, as shown on the USGS quadrangle map, at the intersection of the farm road leading to the old Roy Ampy Farm and route 693. Based totally on an elevation of exactly 170 feet at this junction, the remainder of the site produced elevations in areas of interest from 168 feet AMSL to 183 feet AMSL. The highest elevations, approximately 183 to 184 feet, were

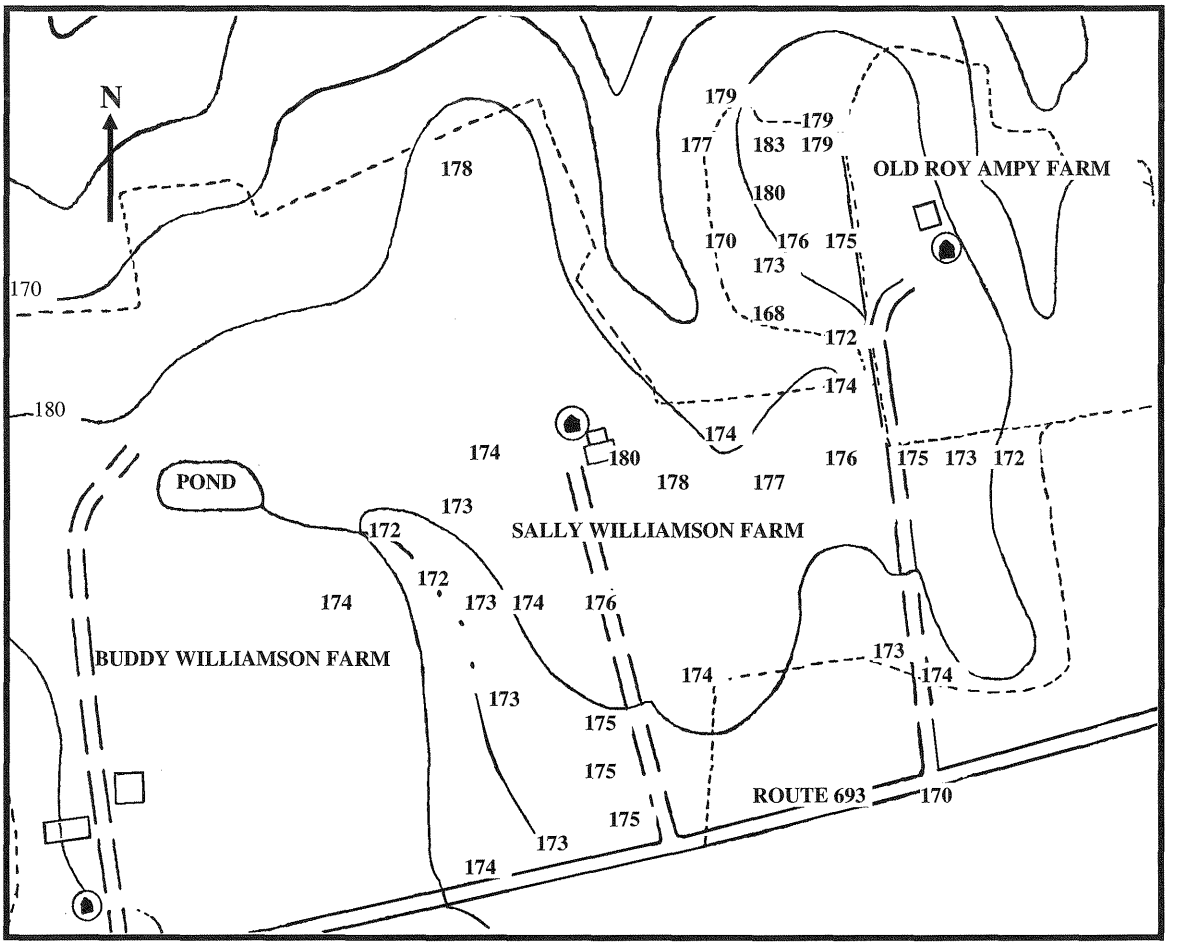


Figure 2.2. Elevations on the Sally L. Williamson Farm, the Williamson site, Dinwiddie County, Virginia.

recorded in the northeastern back field, or the "graveyard field" over Little Cattail Creek. The front field wetlands represented the lowest areas investigated during the study which contained significant cultural materials, and they surveyed at elevations of 172 to 174 feet. Some poorly drained terrace areas in the front field wetlands which were holding water were at elevation 172 feet, but adjacent low terraces with known artifact clusters were at an elevation of approximately 174 feet. Generally, the front field or main ridge of the site, as some call it, was found to be at elevations of 176 to 179 feet, but shown on the topographic map as an elevation of 180 feet or more. Obvious downslopes from the higher locations produced elevations of 175 to approximately 172 feet. The highest area of the ravine in the southern end of the graveyard field produced elevations of about 168 feet. Most of the significant areas of the Williamson site were found to be contained within extremes of elevation of no more than 7 feet. The fig. 2.2 elevations were generated by NRS in 1999.

Special Site Area Analysis: the Front Field Wetland

Background

Some of the first scientific pedological work done at the Williamson site was by C. Vance Haynes (Haynes 1972:107-114), which is discussed in Chapter 3. During his first visit to the Williamson site in 1964, Haynes speculated that a spring, or spring-fed lake, may have existed in an area of a depression at the western end of the farm that is the front field wetland

described here. During the time of Haynes' visit this depression seasonally held a foot or more of water. In August 1965, Haynes revisited the site and placed his Trench A in the desiccated wetland, or pond area, for a distance of over 100 feet (Haynes 1972:107-109). The trench, placed at orientation north 5 degrees west, was 10 feet deep at the deepest location, and it exposed numerous small sand-filled feeder conduits and water seepage. This confirmed the spring origin of the depression.

Haynes (1972:107-108) described in detail the stratigraphy of the pond area in the wetland as three soil horizons: 1) an upper horizon about 1 foot deep of light gray (10YR4/1 wet) clay with an irregular prismatic blocky structure and weak iron stains on some root molds; 2) an approximately 1 foot deep (?) mixed gray clay and pale gray sand with 1 inch diameter iron stains in the lower half and vertical holes filled with soft brown clay, with strong irregular angular structure and iron stains on root molds, some grit and pebbles, with colors of strong brown, reddish yellow and light gray (7.5YR5/8 to 2.5Y7/2, wet); and 3) the remainder of the depth very similar to 2, but with about 60 percent orange limonite clay and some gray clay which was almost white, with gray clay skins at joint surfaces in sand, with well sorted fine to medium sand in vertical irregular holes that narrow with depth from 4-inch diameter to 1 inch (spring feeder conduits).

This work clearly established that one area of the wetland was a spring-fed seasonal pond or vernal pool, although Haynes found no Clovis artifacts or animal bones in the wetland. Still, the presence of well-established, elevated vernal pools in the general site area would have been important to the Paleoindian, possibly providing plant foods and attracting animals which would help supply the food resources needed to support a large quarry-related base camp.

Current Wetland Inspection and Testing

As a result of the NRS interest in this area of the site, which is described in detail as test location 7 in Chapters 5 and 9, an analysis of the soil of a wetland area on the Williamson site was undertaken on May 4, 1999, by environmental engineers Mike O. Keeler, and Peter P. Constanzer, of the Virginia Department of Transportation. This work, done to supplement Haynes' earlier work, was donated by Mr. Keeler and Mr. Constanzer, on their own time, in support of the project. Their complete report (Keeler and Constanzer 1999) is on file at the Portsmouth Regional Office of the Virginia Department of Historic Resources, Portsmouth, Virginia. Due to the importance of their analysis of this area of the site a very detailed account of their findings will be presented.

The following information was taken from the report of Keeler and Constanzer, and is presented in a slightly condensed, generalized form, but it is their work:

The inspection and field test were made in a depressional area located approximately 500 feet south of, and draining, the front field pond location of Haynes' 1965 Trench A. This location was within an agricultural field in the general area of NRS test location #7 (Chapters 5 and 9) on the Sally L. Williamson Farm in the lowground to the southwest of her home. The depressional area was noted as having a swale about 1 foot deep that carried water from one side to the other. The widest part of the swale was judged by Keeler and Constanzer to be about 75 feet, and it exhibited signs of being seasonally saturated or inundated (see figs. 1.2 and 2.2). The area was considered too wet for planting during an average to wet spring, but during dryer weather the area could be planted. The objectives were first to determine if this depressional area contained hydric soils, and second, to determine if the morphological features of the soil could aid in determining the past and present processes or functions of the depressional area. To establish existing conditions a 6-foot-deep soil profile was hand augered in the lowest part of the depressional area.

Observations

The hand augered profile revealed the soil to be:

0 - 8 inches: Ap horizon, a loam.

8 - 48 inches: Bt horizon, a clay loam; reduced matrix with a high value, and low chroma color with common distinct redoximorphic features including iron masses, iron depletion, and pore linings.

48 - 54 inches: C horizon, clay; gray-colored reduced matrix with a few charcoal masses.

54 - 66 inches: C horizon, clay loam; reduced matrix with a high value, and low chroma color with common distinct redoximorphic features including iron masses, iron depletions.

66 - 72 inches: C horizon, clay; gray-colored reduced matrix.

What was noted by Keeler and Constanzer as particularly interesting about this soil profile was the morphological characteristics, and arrangement of the horizons for the full 72 inch depth. The Bt horizon from 8 to 48 inches and the C horizon from 54 to 66 inches were practically identical. The presence of the Bt horizon at 8 inches makes this soil profile a hydric soil based on the indicators detailed in the description above. Both of these horizons were found to contain a reduced matrix with multiple redoximorphic features, and these characteristics occur in soils that experience periods of saturation followed by periods in which they are unsaturated.

It was noted: 1) that the reduced matrix, which exhibits a high value and low chroma color, is a result of redox depletions; 2) that these redox depletions occur when the soil is saturated, and when the iron and manganese become chemically reduced by bacteria decomposing organic matter under anaerobic conditions; and 3) that iron and manganese in their reduced state lose their color, giving the matrix a gray appearance produced by the natural color of sand, silt, and clay. Keeler and Constanzer noted further that in their reduced state, iron and manganese dissolve in water and can be transported to other parts of the soil horizon, but that when they diffuse into the matrix of the soil where air is either entrapped or able to penetrate when drained, the iron and manganese become oxidized and form iron and manganese masses.

When iron and manganese oxides are reduced and removed producing the gray reduced matrix, this can cause the clay to disperse when wet, depositing gray clay coatings in a lower horizon (Vepraskas 1994). They note that this could explain, in part, the layers of gray clay from 48 to 54 inches, and from 66 to 72-inches. The layers appear to be permanently saturated, leaving the iron and manganese in a reduced state, and preventing their oxidation. This resulted in the consistent gray color of these layers.

Wetlands Analysis and Conclusions

It was observed by Keeler and Constanzer that upon analyzing the morphological characteristics of the four soil horizons from 8 to 72 inches, it was apparent that this soil profile contained two separate zones that were subjected to repeated saturation and drying (unsaturation). The two zones were the Bt horizon from 8 to 48 inches, and the C horizon from 54 to 66 inches. They noted that each zone contained a horizon of gray clay immediately below it that was permanently saturated. The horizon from 48 to 54 inches separated these two zones creating a "perched" system, and the horizon acted as a clay lens that prevented both groundwater above from seeping downward and groundwater from below from pushing further upward.

It is the opinion of Keeler and Constanzer that the presence of the clay lens, along with its different morphological characteristics, suggests that this horizon has been subjected to certain influences to which the two adjacent horizons have not been subjected, and that some of the clay in this horizon seeped down from the layer

above it and settled there. The clay lens was noted as being very compact which may be why it did not seep down any further. They conclude that the landscape position offers some clues as to why this horizon is so much more compact than the adjacent horizons, which are practically identical to each other. If the depressional area was at one time deeper, the clay lens could have at one time been the surface horizon, subject to the forces of nature and possibly trampling by animals. If in fact the depressional area were ponded, note Keeler and Constanzer, the surface horizon would experience settling of the fine soil and organic material. But, in either case this area could have filled in gradually or from a catastrophic event. The existing upper 48 inches of soil would have had ample time to develop the hydric characteristics it now has which resulted in the existing perched wetland system.

This analysis by Keeler and Constanzer clearly indicates the presence of well-established perched wetlands on the Williamson Farm. Their findings also show that the primary drainage area may have been quite a bit wider and deeper than at present with up to 48 inches of more recent wetland fill over an old clay bottom. Combined with Haynes' 1965 work, an extensive, mature wetland system resulting from spring-fed vernal pools on the Williamson site was identified.

Natural Setting and Site Selection

Based upon the above information, it is obvious that the selection of this location by the Clovis people as a large quarry and base camp was directly related to the natural setting in a number of ways. First, and by far the most significant, was the local bed rock geology which produced a deposit of good quality chert. Although no remnant, point source outcropping of the deposit has been located it was speculated by McCary (1975:53) that there may have been several locations where chert was found on hill slopes, and near the creek, at the northern end of the Williamson and Ampy Farms. As a matter of clarification, it should be noted that a number of other chert and jasper sources are known to the north and south of the Williamson site. Some of these other deposits, such as the Bonnifont jasper quarry in Powhatan County (McAvoy 1992:158-159), are quite large, produce a very high quality of chert or jasper, and were known to the Clovis people. But, in Virginia areas south of the James River appear to have been the most intensively occupied by the Clovis people, regardless of the availability of chert; and, most of the Paleoindian sites are located here (McCary 1976:169). Given the distribution of the Clovis population in Virginia, and the fact that south of the James River the Williamson quarry produced the largest known chert or jasper cores, the selection of this location seems quite natural.

In addition to the quarry location, a factor in the selection of the Williamson site as a large base camp was the favorable local topography, namely a terrace and ridges to the south of Little Cattail Creek at the 180-foot AMSL elevation. This area, unlike the north side of the creek, presented a topography of terraces and low ridges with good southern exposures protected in some areas of the site by windbreaks to the north (McAvoy 1992:48). Also, much of the south side of the creek on terraces is better drained than the lower topography north of the creek. And finally the presence of local wetlands which in the Pleistocene were possibly shallow, seasonal spring-fed lakes which helped to supply the food resources needed to support the quarry-related base camp.

CHAPTER 3
PAST RESEARCH

The 1949 Williamson Site Boundary Survey

When the site was discovered in 1949, one of the first tasks undertaken by McCary, Smith, Gilliam, and Joshua and A. D. "Buddy" Williamson was the determination of the boundaries of the site. This task was undertaken primarily by the Williamsons (McCary, Smith, and Gilliam 1949:7) with support from the others, and was accomplished in a very simple manner. As much of the land adjacent to the Williamson Farm was plowed, these individuals simply walked over (pedestrian surveyed) all of the fields in search of the distinctive "Williamson chert." This approach worked fairly well, but there were limitations. Areas just north of Little Cattail Creek, and just south of the Williamson Farm at route 693 and above Health Meadows Branch, were forested and could not be investigated to any extent by surface surveys. Also, based upon the surface surveys, several areas just east of the old Roy Ampy Farm on the Lewis Farm appeared to contain a rather large quantity of chert debitage but produced only Archaic period artifacts. No fluted points or end scrapers were recovered by the Williamsons from these fields during their brief surveys. Fields to the west of the Williamson Farm had produced some chert debitage, and possibly one of the four original fluted points in the Williamson collection, but not much else. The Williamson site map (fig. 3.1) showing the known boundary of "surface material" as published by McCary, Smith, and Gilliam in 1949, remained essentially unchallenged for 20 years. Then, more intense logging activity starting in the late 1960s in the outlying areas provided enough surface visibility to fill in some of the gaps, near and far (figs. 3.2 and 3.3). These new surveys were conducted by a large number of individuals either directly doing archaeological surveys or searching for Civil War relics and other artifacts. In the cases discussed here, most individuals were unaware of the activities of others.

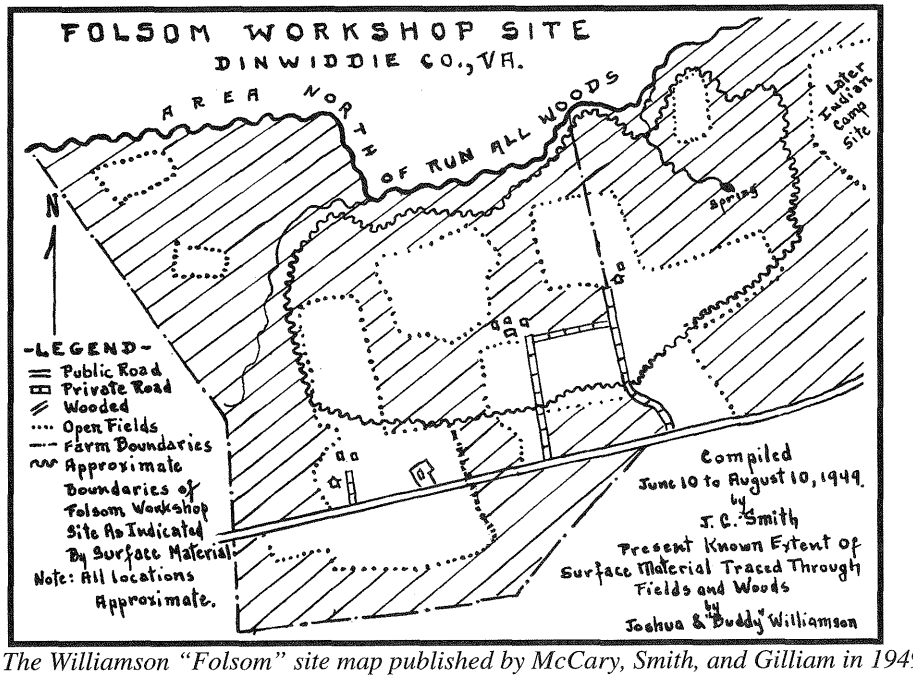


Figure 3.1. The Williamson "Folsom" site map published by McCary, Smith, and Gilliam in 1949.

Later Peripheral Location Surveys

Peripheral Locations to the West and South

The September 1949 Quarterly Bulletin of the Archeological Society of Virginia contained McCary's fifth survey report on Virginia fluted points. This survey reported the first four points from the Williamson site as numbers 147, 148, 151, and 155, (fig. 1.4). But, the Williamsons were fairly sure that point number 155 was from location A (fig. 3.2) to the west of the primary concentration (Joshua Williamson, personal communication, 1963). Surface surveys in the 1960s by McAvoy of the cultivated fields in this location revealed several concentrations of the local chert, and this area should be included within the outer periphery of small chert concentrations marking the boundary of the Williamson site as shown in fig. 3.2 .

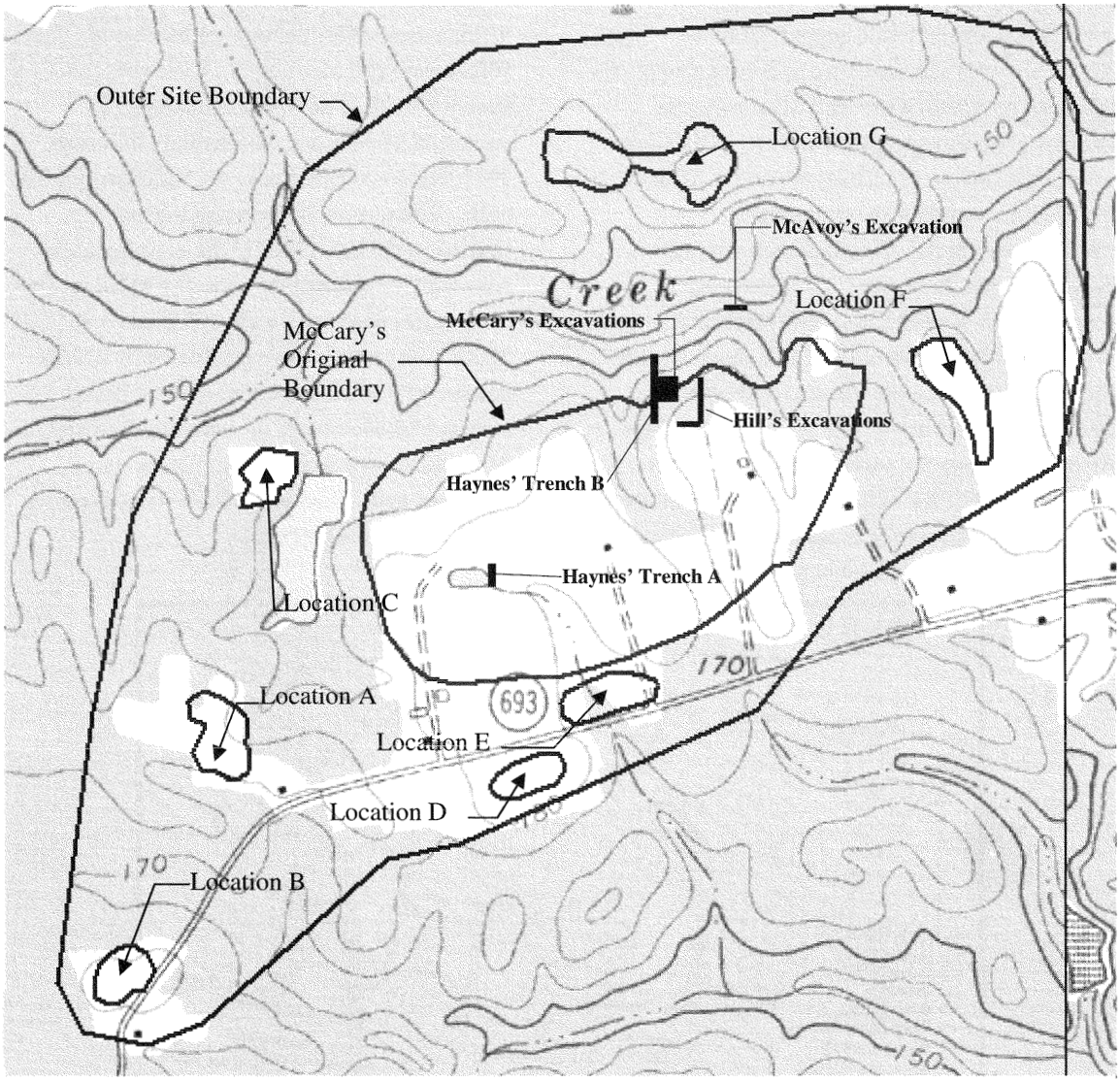


Figure 3.2. Peripheral Williamson site locations A through G, as shown relative to the McCary, Smith, and Gilliam 1949 site boundary presented in fig. 3.1.

Also, in the 1960s a small cultivated field along route 693 to the south of the main chert concentration was surveyed on several occasions. This locality, shown as B in fig. 3.2, produced a scatter of Williamson chert of the weathered gray-blue-white variety frequently associated with the Clovis knappers. Although no formal tools were recovered, the area likely is an outer periphery location of the main site.

The small cultivated field to the northwest of the pond on Buddy Williamson's Farm has produced chert debitage and at least one fluted point. Buddy Williamson considers this locality, location C of fig. 3.2, to be part of the site (Buddy Williamson, personal communication, 1999), and Mr. George Stanford an avocational archaeologist from Richmond, Virginia, reported finding a Clovis point, one of several just east of this location, to McCary and the authors in 1980. The point is number 628 in the McCary survey of fluted points (McCary 1981:192).

Location D of fig. 3.2 is on the south side of route 693 directly across the road from Buddy Williamson's home. This field has produced some chert debitage and one of the large quartzite fluted points, and it is shown as part of the primary concentration on some maps of the Williamson site. The first site map published by McCary, Smith, and Gilliam (1949:7), and reproduced here as fig. 3.1, did not show this location, nor did it show the locations designated E just north of route 693 on the east and west side of the wetland draining the Williamson site front fields. Based upon the chert debitage recovered there and records indicating several fluted points (McCary 1975:52), both of these areas are clearly part of the primary concentration.

Peripheral Locations to the East

In 1983, fairly extensive bulldozing and logging activity on a high knoll south of Little Cattail Creek, on the old Lewis Farm east of the Roy Ampy Farm portion of the Williamson site, location F of fig. 3.2, produced a concentration of chert flakes and Clovis artifacts (McAvoy 1992:38). This material was observed to be extending beyond the artifact concentration already visible at the western edge of the cultivated field in the general area surveyed by Joshua and Buddy Williamson in 1949. Intermixed with the chert Clovis material, including a fluted point, was a large quantity of Archaic period artifacts (fig. 3.4) of quartzite and a few of the local chert and jasper. The presence of the Archaic period artifacts of quartzite and chert may have led the Williamsons to conclude that all of the chert at this location was related to later site use (McCary, Smith, and Gilliam 1949:7). Surveys by the authors throughout the 1980s of approximately 15 acres of the old Lewis Farm have identified five hill caps and ridges in this large field as producing Clovis age artifacts including fluted point preforms, Clovis style end scrapers, and other formal tools. This location is considered a Clovis period use area peripheral to the main use area of the Williamson site.

Peripheral Locations to the North

Perhaps the most interesting observations in the last 10 years concerning newly found locations of artifact clusters on the Williamson site were made by two avocational archaeologists working independently on the north side of Little Cattail Creek in the area shown as G in fig. 3.2. James A. Livesey, Sr., of Richmond, Virginia, and Don Lauter, of Prince George County, Virginia, each surface collected from the north side of the creek. They worked directly north of the Williamson and Ampy Farms during major logging and reforesting activity in the early 1990s. Both of these individuals independently approached the authors concerning their discoveries. Neither appeared to know of the other's activity, and both offered remarkably similar descriptions of the heavy concentrations of chert debitage on the north side of the creek.

James Livesey, Sr., and his son James Livesey, Jr., extensively surface collected in logged areas on the north side of Little Cattail Creek, and later filed a site inventory form on

this location, 44DW204, with the Virginia Department of Historic Resources. They found several areas 100 to 300 yards north of the creek which produced concentrations of Williamson chert debitage, and excavated small test units in some of these areas which were later revealed to the authors (Jim Livesey, Sr., personal communication, 1993).

While most of their excavated material appeared to be very colorful thermally altered chert and chalcedony probably related to later Archaic periods (several Perkiomen points were recovered in the area of the chert debitage), one isolated concentration of chert debitage appeared to be of Clovis age. This area was not excavated, but while surface collecting here they recovered the basal end of a nearly completed Clovis fluted point of weathered, blue Williamson chalcedony, and heavily weathered chert cores and flakes. This concentration of Clovis material did appear to be an exception to most of the artifact concentrations observed on the north side of the creek, but it conclusively showed the presence of some Clovis activity. Some of their artifacts are shown as fig. 3.5, and the authors wish to thank them for allowing use of the photograph.

Don Lauter's account of the chert debitage on the north side of the creek was perhaps even more striking (Don Lauter, personal communication, 1990). Don apparently had discovered the logged areas immediately after or during the period in which the soil was being disturbed. His finds apparently included hundreds of pounds of the local chert and chalcedony debitage, as well as chert tools and the basal end of a large completed fluted point which he showed to the authors. He also had done some digging on a hill top directly north of Little Cattail Creek, and recovered chert debitage and a very colorful chalcedony Perkiomen projectile point.

Most of what we know about the archaeological resources on the north side of Little Cattail Creek is due to the independent accounts of Jim Livesey, Sr., and Don Lauter. We are indebted to these two individuals for sharing this knowledge with us under circumstances where others might have been less forthcoming.

Off-Site Survey Results

For this report, the Williamson site boundary is set where there is a zone at least one mile wide between the peripheral on-site locations (fig. 3.2) and the next known cluster of Williamson chert debitage, or rarely Clovis artifacts. The archaeological surveys producing negative results actually establish the limits of the Williamson site. The central core of the site is considered to be centered around the Sally Williamson Farm and for a distance of about one-half mile to the north, east, and west. Heavy concentrations of artifacts disappear beyond this. Off-site surveys are presented in fig. 3.3, as areas, or special interest locations, 1 through 22. Surveys of these areas represent field work conducted by the authors from the 1960s through the 1990s.

Off-Site Surveys to the South

Between 1969 and 1985, the authors surveyed much of the land south and southwest of the Williamson Farm during several episodes of logging activity. Survey area 1 (fig. 3.3) to the south of the site produced no Paleoindian artifacts when this large tract of several hundred acres was logged and replanted in the early 1980s. This is the distance from route 703 south almost to Stony Creek. There was very good visibility here and the soil was disturbed in many areas to a depth of 6 inches to 12 inches, but only a few isolated pieces of chert debitage and a few Archaic period projectile points of white quartz and quartzite were encountered. The southeastern boundary of the Williamson site was established naturally by the location of Health Meadows Branch. No Paleoindian artifacts were recovered in survey area 2, a logged tract of approximately 25 acres just south of the Williamson Farm but north of Health Meadows Branch. This area was surveyed

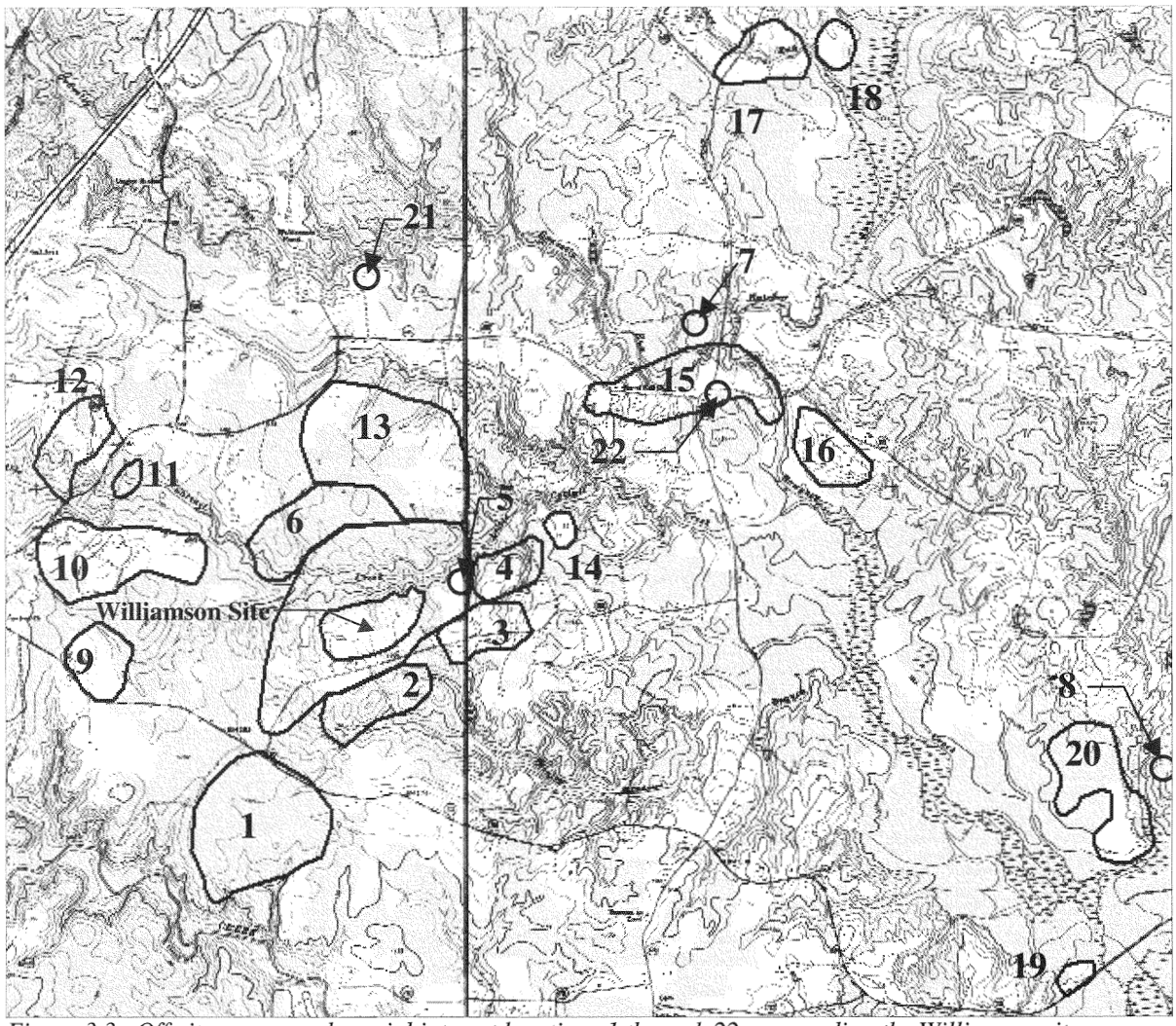


Figure 3.3. Off-site survey and special interest locations 1 through 22 surrounding the Williamson site outer and inner boundaries, which are located at center left.

around 1969, and there was extremely good surface visibility. Less than a dozen chert fragments were recovered along with two Middle Archaic period projectile points. It was concluded from this survey that the site did not extend far beyond the Williamson's cultivated fields south of route 693.

Survey area 3 as shown in fig 3.3 represents small cultivated fields to the southeast of the site. Surveys here in the 1970s when the fields were recently plowed or cleared of woods along edges revealed no clusters of Paleoindian artifacts or chert. A few Middle Archaic and Late Archaic period projectile points of white quartz and quartzite were recovered.

Off-Site Surveys to the East

Survey areas 4 and 5 to the east of the Clovis artifact concentrations on old Lewis Farm portion of the site were logged along the slope to Little Cattail Creek in the early 1980s. The land here is steep on both sides of the creek and ravine-like in appearance. In the logged area to the south, a plateau above the creek appeared to represent a good location for an archaeological site. But, survey results were completely negative although there was very good surface visibility, and the land surface was disturbed by the logging activity for the entire distance to the creek. Thus, a very clear picture emerged as to the eastern boundary of the Williamson site.

To the northeast of the site several cultivated fields marked as survey areas 14, 15, and 16 produced no Paleoindian artifacts during our surveys, but all three produced Archaic period artifacts. Survey area 15 produced some very scattered chert debitage, and an isolated fluted point was found in this area (location 22) by a local farm boy (Ben C. McCary, personal communication, 1972). The point, number 231 in McCary's survey of Virginia fluted points (1954:16), is of a weathering amber chalcedony which is a material foreign to the Little Cattail Creek quarries but known as finished tools on the Williamson site (McAvoy 1992:30). Survey areas 14 and 16 produced no chert artifacts or debitage during our visits.

Survey location 7, more than a mile northeast of the Williamson site, produced a large concentration of Williamson chert debitage, in the middle 1980s. This location was brought to our attention by Mr. Bruce H. Deem of Chesterfield County, Virginia, who discovered chert flakes while searching for Civil War relics (Bruce H. Deem, personal communication, 1982).

Mr. Deem's description of the artifacts and the location of their discovery was accurate. The artifacts were on a terrace between Gravelly Run to the west and Hatcher Run to the east. The terrace to the west of route 670 recently had been logged providing good surface exposure. We recovered over 300 flakes and cores of Williamson chert in several small clusters, and generally spread across a ridge on the terrace just northeast of Gravelly Run. No Clovis points or unifacial tools were recovered. Some of the chert was thermally altered and appeared similar to that later recovered from the north side of Little Cattail Creek above the Williamson site. After several visits it was concluded that this was an Archaic period site, and no additional field work was undertaken.

Site locations 8, 19, and 20 along Rowanty Creek several miles to the east and southeast of the Williamson site were surveyed in the 1960s through the 1980s. These areas produced fairly large amounts of Williamson chert debitage, but only Perkiomen projectile points of this material. Survey location 19 was a Woodland, Middle Archaic, and Late Archaic period site. Site locations 8 and 20, east of a small branch, contained mostly Perkiomen Tradition artifacts of thermally altered Williamson chert, and a few soapstone bowl fragments. In high ground to the west of the branch only Late and Middle Archaic period artifacts were recovered. No artifacts of the Paleoindian period were recovered at either location although there was a fairly large amount of the local chert.

Off-Site Surveys to the North

Although the cultivated fields and logged wooded areas making up survey areas 6 and 13 to the north of the Williamson site were investigated on numerous occasions with good surface visibility, only a few scattered pieces of local chert were recovered. No large clusters of Paleoindian material or Williamson chert debitage are known from this area, and it marks the northern boundary zone above the Williamson site. At least two Clovis points have been reported as isolated finds near Gravelly Run further to the north or northwest of Little Cattail Creek, and from approximately 1.5 to 2.5 miles from the Williamson site. Point number 523 from McCary's (1979:102) survey was found at location 21, in the 1950s directly north of the Williamson site in an area described as poorly drained. The point, made of multicolored Williamson chalcedony, was reported as found while placing agricultural drainage tile in a cultivated field. It is lightly weathered and heavily worn on the flute surfaces as if used as a knife. The other point is from the Reese Farm to the northwest of the Williamson site, but the exact location of the discovery on the farm was not reported. This artifact, number 534 in the McCary survey (McCary 1979:105), is made of the nonlocal green metavolcanic material, probably a metarhyolite, which occurs only as finished artifacts on the Williamson site.

Cultivated field survey locations 17 and 18, of fig. 3.3, several miles north of the site were investigated in the 1960s and produced no concentrations of local chert. One small fluted point of orthoquartzite, number 336 in McCary's survey (McCary 1965:59), was recovered as an isolated find in 1961 from the Valenta Farm in this area on Hatcher Run by Mr. H. B. Brooks of Richmond, Virginia. Numerous Archaic period artifacts were found on many of the sites here.

Off-Site Surveys to the West

Surveys to the west of the Williamson site were initiated by McAvoy in the 1960s. Survey location 9 was investigated in 1961 with recovery of only Archaic period artifacts. The property owner had made a collection of artifacts picked up on the farm over a period of about 25 years when the land was plowed for agricultural use. There was a wide variety of quartzite, quartz, and rhyolite artifacts of Archaic period age, but no Paleoindian artifacts or chert artifacts of any age were observed.

Survey location 10 was investigated from 1960 through 1963. During this period, hill tops and ridges on the farm were planted in tobacco, resulting in a significant amount of soil erosion and very good surface visibility. This location produced numerous Archaic period and Middle Woodland period artifacts on the high ground to the south of Little Cattail Creek. A few isolated pieces of chert debitage were recovered but no formal tools. No artifacts of Paleoindian age were observed. Directly across the creek to the north, a small cultivated field existed at this time at survey location 11, fig. 3.3. The field was only an acre or so in size and was really a large garden, but it produced a significant number of Archaic period projectile points. One Palmer point was recovered of greatly weathered yellow-white chert or jasper with pyrite inclusions, but the material was not similar to any known from the Little Cattail Creek quarries. No Williamson chert was recovered and there were no Paleoindian artifacts.

Location 12 is made up of three fields separated by farm roads and wooded areas. In the 1960s and 1970s, all of these fields produced Archaic period artifacts and isolated flakes of Williamson chert, but a high ridge in the most southern field above the creek produced a concentration of Williamson chert and several Clovis-like chert tools. Most of the chert was the better grade of blue from the Little Cattail Creek quarry area about two miles downstream. No Clovis points were recovered but the collection included several broken bifaces, an end scraper, a graver, a side scraper, and many flakes of chert. This appeared to be a small satellite activity area for a group associated with the Williamson site.

Previous Excavations on the Williamson Site

The Haynes Trenches

By December 1963, approximately 76 fluted points had been reported from the Williamson site by McCary in his fluted point surveys. This continued significant production of artifacts at Williamson generated interest from C. Vance Haynes, in the possibility that the Williamson site might produce significant geoarchaeological information as well. Haynes visited the site in 1964 with McCary, and returned in August 1965 to place trenches (fig. 3.2) across the site in search of: "...bones, artifacts, and charcoal..." (Haynes 1972:107).

Although the search for bones and charcoal of Paleoindian age was unsuccessful, Trench B, one of two trenches placed across the site, revealed what appeared to be buried, in situ chert artifacts of Paleoindian age. Haynes (1972:108-109) noted that: "...the abundance of debitage from Trench B and especially the concentration of material in the buried depression suggests that relatively undisturbed concentrations of stone tools, debitage, and charcoal might be found by careful archaeological testing in the wooded areas along Little Cattail Creek on the Williamson Farm."

Haynes' other trench, A, was placed across a dry pond in the lowground in the main fields east

of the Williamson Farm house. This location produced no artifacts and received little attention after Haynes left the site. This location is discussed in much more detail in Chapter 2 as it relates to the analysis and potential of the wetlands.

The McCary Excavations

Based upon the discoveries made by Haynes in Trench B in 1965, Joseph L. Benthall and McCary decided in March 1972: "...to conduct limited testing for possible features and to determine if stratigraphic possibilities existed..." (Benthall and McCary 1973:127). This work was undertaken in a wooded area just east of Haynes' Trench B, south of Little Cattail Creek and on the north slope of the hill near the graveyard field, fig. 3.2. This location is near the northeast corner of the Williamson Farm. A bit more than 200 square feet was excavated, and Benthall and McCary concluded: "The testing conducted thus far has indicated the existence of Paleo-Indian artifacts and features in comparatively undisturbed contexts at the Williamson site, particularly in localities which have been subjected to soil build-up..." (Benthall and McCary 1973:132). A review of their 1973 report reveals Benthall and McCary found no hearths and very few formal tools. Also, insufficient charcoal was recovered for radiocarbon dating.

Although Benthall accepted a position out-of-state and was no longer directly associated with the work at Williamson after 1972, McCary continued to excavate the site with the aid of volunteers and an assistant, Glen R. Bittner, until summer 1975 (McCary and Bittner 1978:45-60). A total of 1,200 square feet had been excavated in the same general area of the site when McCary and Bittner completed the project. A review of the 1978 report reveals that one or two chipping clusters were recovered along with one very small unfluted Clovis-like point of chert, and 15 formal tools. In all of the area excavated, only two late-stage biface fragments were recovered, and apparently there were no definite hearth features or charcoal clusters suitable for dating.

However, McCary's excavations on the Williamson site were significant in several regards. First, McCary and Bittner were able to show conclusively that there were buried, undisturbed deposits of Clovis age artifacts remaining in at least one of the wooded areas above Little Cattail Creek. But, the burial mechanism was unclear, and the area of McCary's discoveries appears to have been a depression in which a substantial amount of charcoal occurred.

McCary and Bittner (1978:50) reported a 1-foot-thick plowzone of light gray sandy loam above a darker lens of charcoal bearing gray sandy soil about 2 to 3 inches thick. Below this, McCary encountered a light yellow sandy loam about 1 foot in thickness which contained the greatest concentration of artifacts; all of thc artifacts apparently were of Clovis age. Below the artifact bearing level was a yellowish-red coarse, clayey arkosic sand about 1 foot thick resting on a basal red clay.

A second significant observation made by McCary and Bittner (1978:58-59) was that the cluster of flakes, cores, and a few formal tools encountered in the excavation represented a localized or isolated feature. McCary noted that this was the same type of localized artifact clustering he had observed in some areas of the plowed fields on the site. The excavation thus provided some verification of McCary's earlier observations through surface collecting, and showed the value of carefully observing artifact patterning in the cultivated areas on the Williamson site.

One significant limitation of McCary's excavation and laboratory work was the lack of any detailed analysis of the debitage (McCary and Bittner 1978:58) from these artifact clusters. Such an analysis would have provided much-needed information concerning the activities at the cluster area, given the paucity of formal tools reported by McCary from this area of the site. Also, a detailed analysis of each piece of

debitage could have revealed the more obvious use-wear on artifacts and added considerably to the interpretation of activities at this location.

Still, the McCary excavations in combination with Haynes' trenches were the first scientific excavations on the Williamson site, and they clearly revealed the potential of such work there. All of us who have excavated upon the Williamson site after Haynes and McCary owe much to them for their efforts.

The McAvoy Excavation

In 1979, the authors secured permission from Mrs. Roy Ampy to conduct a small test excavation on a low terrace just south of Little Cattail Creek (fig. 3.2) on the Ampy Farm portion of the Williamson site (McAvoy 1992:44). This excavation was several hundred yards to the northeast of Haynes' trench B and McCary's excavation. The purpose of the excavation was to investigate the quarry-related nature of this area of the site, which was just above the creek bank on the first elevated terrace over the Little Cattail.

The excavation was 5 feet by 10 feet with a maximum depth of 2 feet. Below a 10-inch-deep plowzone, an area filled with charcoal about 2 inches thick was encountered. This was almost identical to McCary's findings, and was interpreted as the remnants of a very old forest fire or even the initial clearing of the land by early settlers.

Although a large quantity of chert debitage was encountered from the surface through the entire depth of the excavation, the heaviest concentrations were encountered in the B horizon in an undisturbed zone of yellowish-red sandy loam 12 to 16 inches below surface. This small excavation produced approximately 1,500 fragments of chert representing a total weight of 13.5 pounds, approximately 85% of which was primary quarry-related cortical and decortication material. Throughout the excavation were numerous cortex flakes, shatter, and cores of poor quality Williamson chert. Two of the larger flakes retained ground striking platforms, but there was no significant indication of final-stage tool manufacture or trimming. Also, much of the chert debris higher in the deposit was of a dark red and brown color from exposure to heat. No formal tools were recovered except for a single small chisel-wedge, and thus there was no way to judge the cultural period(s) with which the other artifacts were associated. It was observed, however, that much of this collection of debitage was primary quarry related, and different from that recovered in most of the upland areas (cultivated fields) on the site associated with typical Clovis artifacts. In retrospect, a much more detailed analysis of the debitage would have been helpful in this present work.

In later years, while conducting field surveys on the old Lewis Farm, it became evident that clusters of thermally altered chert flakes were often associated with several later Archaic period traditions, usually Morrow Mountain I or Perkiomen (fig. 3.4). Also, some of the thermally altered chert and jasper appears to be associated with the Early Archaic Palmer Tradition, and one thermally altered Palmer point of local jasper was recovered on the old Lewis Farm portion of the site. It was concluded that much of the thermal alteration of the local chert debitage was due to use in the Archaic period, but based upon the amount of charcoal in the soil over a wide area of the site, natural thermal alteration of some of the chert due to forest fires was possible.

The Hill Excavations

Phillip J. Hill (1997:105-124) has published an account of his excavations on the Williamson site, conducted between 1992 and 1994, as research associated with his doctoral dissertation. Hill's stated goal of the 1997 paper was to: "...present a plausible interpretation of the lithic technology employed at the Williamson site based on the artifact evidence recovered from recent excavations..." (Hill 1997:123). While a detailed discussion of Hill's dissertation and 1997 paper is beyond the scope of this general review, some of Hill's more general conclusions are directly relevant to this discussion.

According to Hill's account of his work, he excavated 13 five-foot squares in a wooded area on the hill top and slope at the far northeast corner of the Sally Williamson Farm in, or near, the old graveyard just above Little Cattail Creek (fig. 3.2). Hill's work area was within a few hundred feet of the area excavated by McCary from 1972 to 1975 and produced similar evidence supporting stratified deposits of Paleoindian artifacts. Hill concluded from his analysis (Hill 1997:108) of the data from all of the excavations conducted upon the Williamson site that: "...the hillside contains superimposed occupations suggesting that Williamson is a stratified site." He goes on to indicate: "However, where present they are overlapping or poorly separated because of soil deflation and the effects of bioturbation. The isolation of culturally stratified levels is further impeded by the paucity of diagnostic artifacts recovered and the noncontiguous method of excavation employed during testing. It can be stated, however, that the hillside portion of the Williamson site is multi-component since a Clovis-like basal fragment...and Kirk Stemmed projectile point...have been recovered below the plow-zone. For obvious reasons, the hillside recovery is, therefore, generally assigned to the Paleoindian/Early Archaic time frame…" (Hill 1997:108).

In the 1997 publication, Hill concentrated primarily on technical issues of bifacial and unifacial lithic technology. As for the artifacts, Hill notes that about 7% of the 4,551 lithic artifacts, or 314 items, he recovered from his excavations were nondebitage including tools, unfinished bifaces, and cores. Of the 314 items, 24 artifacts, or 7%, are identified as bifaces and biface fragments of which eight were half or whole specimens.

Hill's work is significant in that he evaluated the debitage. He found that: "Of the 4,237 debitage artifacts recovered, approximately 48% are identified as primary waste consisting of cortical debris, edge preparation flakes, and angular waste." Hill makes the assumption: "...significant portion of the primary waste is assumed to be related to the first two stages of Callahan's sequence given the obvious importance of biface technology at Paleoindian/Early Archaic quarry sites..." (Hill 1997:112). Hill also noted that 43% of the debitage was secondary waste and: "...thought to contain mostly thinning and shaping flakes associated with stage 3 through 5 biface reduction..." (Hill 1997:112). He noted that tertiary waste was biasly collected (under-represented) due to field procedures, but that its' presence indicated that projectile points may have been completed on the hillside.

Of all the prior work conducted at the Williamson site, only Hill's work there from 1992 through 1994 was completed, analyzed, and reported in enough detail to be of use for comparison purposes. This work also represents an interesting data base for comparison in that it was conducted in a wooded, unplowed (in the 20th century) area of the site.

The NRS excavations of 1998 and 1999, which are the subject of this work, were conducted in areas of the site currently under cultivation and directly threatened by such activity. However, a few of the NRS shovel and core tests (Chapter 5) were conducted in unthreatened wooded areas of the site as was Hill's work.

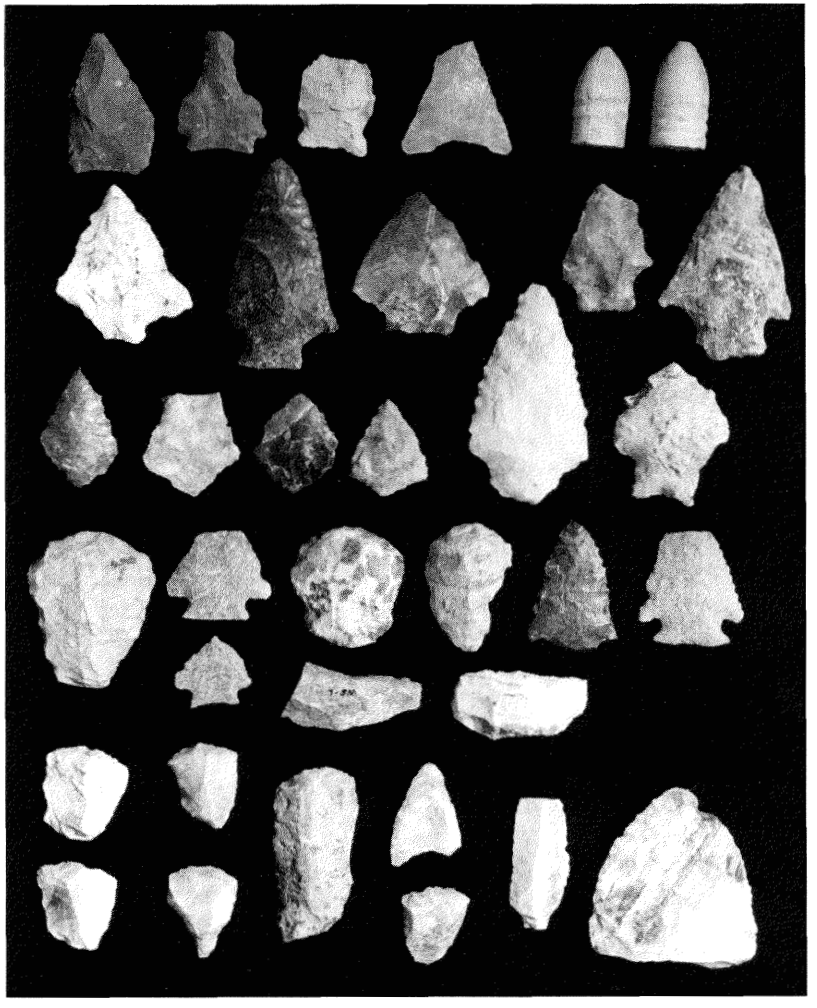


Figure 3.4. Artifacts from the old Lewis Farm portion of the Williamson site, peripheral location F of fig. 3.2, showing a progression from Clovis age artifacts (Williamson chert) in the bottom two rows to the latest Woodland period lithic artifacts of metavolcanics and quartz in the top row; also included are 19th-century Civil War lead bullets. (NRS collection; 52% natural size)

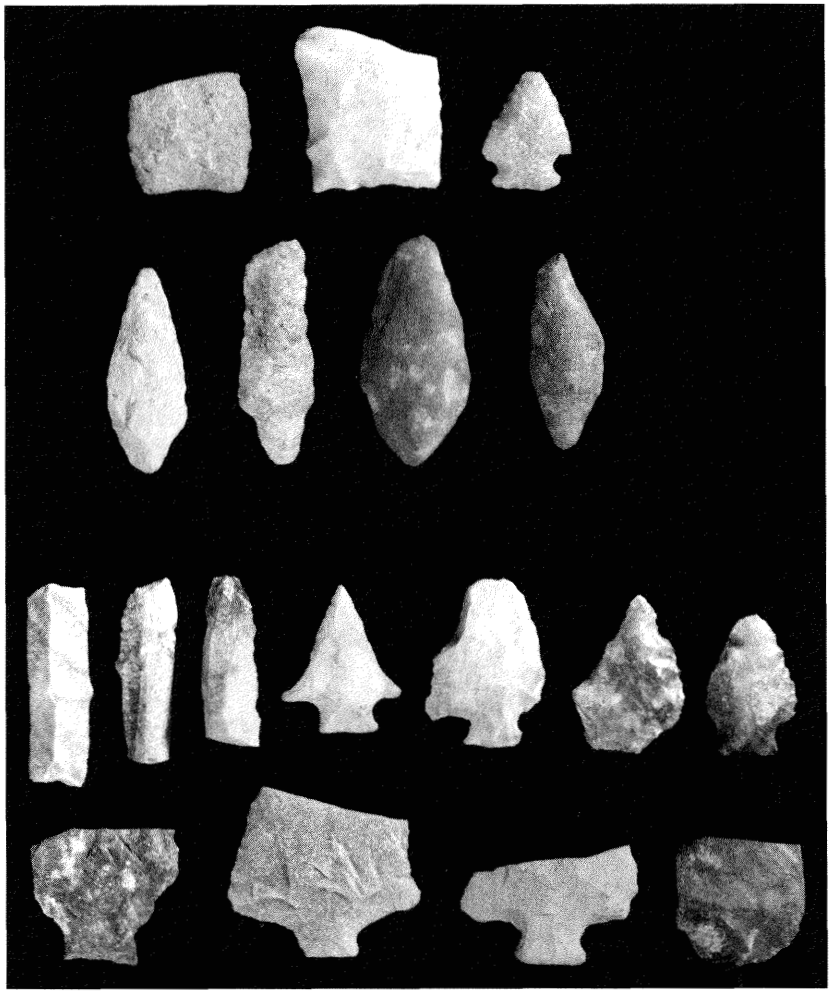


Figure 3.5 Artifacts from site 44DW204 portion of the Williamson site, north of Little Cattail Creek, peripheral location G of fig. 3.2, showing a progression from the earliest artifacts in the top row, including a Clovis preform base, to Late Transitional Archaic age artifacts in the bottom two rows. (Collection of James A. Livesay, Sr., and James A. Livesay, Jr. Photo by K. T. Egloff, VDHR; 57% natural size)

CHAPTER 4
CURRENT RESEARCH

Objective

From October 1998 through June 1999, Nottoway River Survey-Archaeological Research (NRS) performed a field assessment of the remaining archaeological research potential in threatened (cultivated) areas of the Williamson site. Since the primary areas of the site had been under cultivation intermittently for approximately 250 years, and intensively surface collected for 50 years, there has been an interest within the archaeological community in determining if undisturbed deposits of cultural material remained in the most intensively utilized areas of the site. From the previous research excavations described in Chapter 3 conducted in the 1960s, 1970s, and early 1990s, in two areas of the site, it was known that at least some undisturbed deposits of artifacts remained in one wooded area on the north slope and top of the so-called "graveyard hill" over Little Cattail Creek. But, this wooded area was only a small part of the original site, and from the paucity of formal tools recovered there in the earlier excavations some question remained as to the research potential of the larger site area.

Therefore, as stated in VDHR purchase order A990072, December 16, 1998, the primary research objective of Nottoway River Survey in conducting this project, including the three years of multidisciplinary laboratory work and report preparation, was to determine whether there remained subsurface (below plowzone) integrity in threatened (cultivated) areas of the Williamson site. If such integrity could be demonstrated, it was to be carefully documented through the field and laboratory work, and an attempt was to be made to secure and process enough charcoal (carbon) samples from the Paleoindian levels for radiocarbon dating. At the time NRS was asked to undertake this work for the Department of Historic Resources, we were working at the Cactus Hill site, 44SX202, just 12 miles to the southeast. During this work, we had excavated features of the Clovis tradition and dated one Clovis hearth containing Williamson chert tools (McAvoy and McAvoy 1997:169). At the time we undertook the Williamson project, the Clovis hearth at Cactus Hill site was the only clearly dated feature of this tradition in the Southeast.

Site Access

Most of the areas of interest on the "old" Williamson Farm, owned by John and Joshua Williamson at the time of site discovery, were known to be on land owned by Mrs. Sally L. Williamson, and the NRS field work was directed primarily to cultivated fields on that farm. Permission to conduct the research on the Sally Williamson Farm was obtained through the VDHR. During the last phases of the project, in September 2001, Sally Williamson died, and the property then passed to a grandson of Mr. A. D. "Buddy" Williamson, the only living son of John Williamson.

Adjacent to and just to the east of the parcel previously owned by Sally was the other area of interest on the Williamson Farm owned by Mr. A. Llewellyn Williamson, who granted permission to do archaeological survey work. Unfortunately, permission was not obtained to conduct work on the Ampy Farm portion of the site to the east. This part of the site, the "old" Roy Ampy Farm, is now jointly owned by a large number of individuals who could not all be contacted. One Ampy Family member who owns and lives on part of the general area of the old Roy Ampy Farm was contacted in 1998, but he was adamant that no archaeological work be undertaken on his land, nor would he allow elevations to be taken across the ridge on his property. Therefore, this investigation represents

a major part of the most productive areas of the Williamson site, but not all of the site.

Methodology

The approach to the Williamson site project, which was mutually agreed upon between NRS and VDHR, was quite straightforward. First, the literature was reviewed for references to heavy concentrations of artifacts and specific artifact clusters in the various areas of the site. This was a starting point in determining which areas of the farm should be given attention. The best site map showing artifact clusters was prepared by McCary and Painter (McCary 1975:52) presented here as fig. 4.1. This was used as a reference and starting point for selection of all the test and excavation areas on the Williamson site.

After this, Williamson family members and some collectors who were familiar with the site were contacted for their recommendations. Of the original group involved in the discovery of the Williamson site, only A. D. "Buddy" Williamson was still living. Buddy, now retired, was about 12 when the site was discovered and he recalled finding many of the fluted points once in the Williamson family collection (Buddy Williamson, personal communication, 1998). Buddy had spent many hours walking the fields with Ben C. McCary in those early days of fieldwork in 1949 and 1950. One area that was investigated by NRS, and subsequently excavated, was selected based upon general recommendations provided by Buddy Williamson.

After review of the literature and discussions with informed individuals, including the farmer currently renting the property, eight areas were selected for initial testing rather than four areas as recommended by the VDHR purchase order. The additional cost was absorbed by NRS, with no additional charge to the VDHR, as it was felt that a larger test base would be required to locate four areas suitable for eventual small-scale excavations.

The testing phase of the eight selected areas was accomplished by: 1) pedestrian surveys, 2) shovel tests, and 3) core samples. An important aspect of each subsurface test was determining and recording the depth of all soil horizons (Chapter 5). Seven of the eight areas tested were identified as having cultural deposits below the plowzone. Of the eight areas tested, test locations 2, 3, 6, and 7 were selected as the best for larger excavations based primarily upon the quantity of artifacts recovered. Also of considerable importance in selecting areas to be excavated was soil type, depth of the deposit of cultural material below the modern surface, and the diversity of Clovis artifacts from each location. Chapters 5 through 9 describe in great detail the manner of selection of the areas tested and the areas excavated.

Excavations were of approximately 100 square feet, and each excavation was tailored to the location based upon depth, soil type, slope, and the number of features encountered. Much of the work was specified as excavation by flat shovel and screening, but this form of excavation often reverted to hand troweling where soil conditions warranted, or where significant features required very careful treatment. Larger artifacts were piece plotted as required by the VDHR purchase order. All soil was processed through 1/4-inch mesh hardware cloth, and all material recovered was retained and analyzed. Chapters 6 through 9 describe in detail the placement and orientation of the excavation grid, how the plowzone was handled, and how each excavation unit and level progressed.

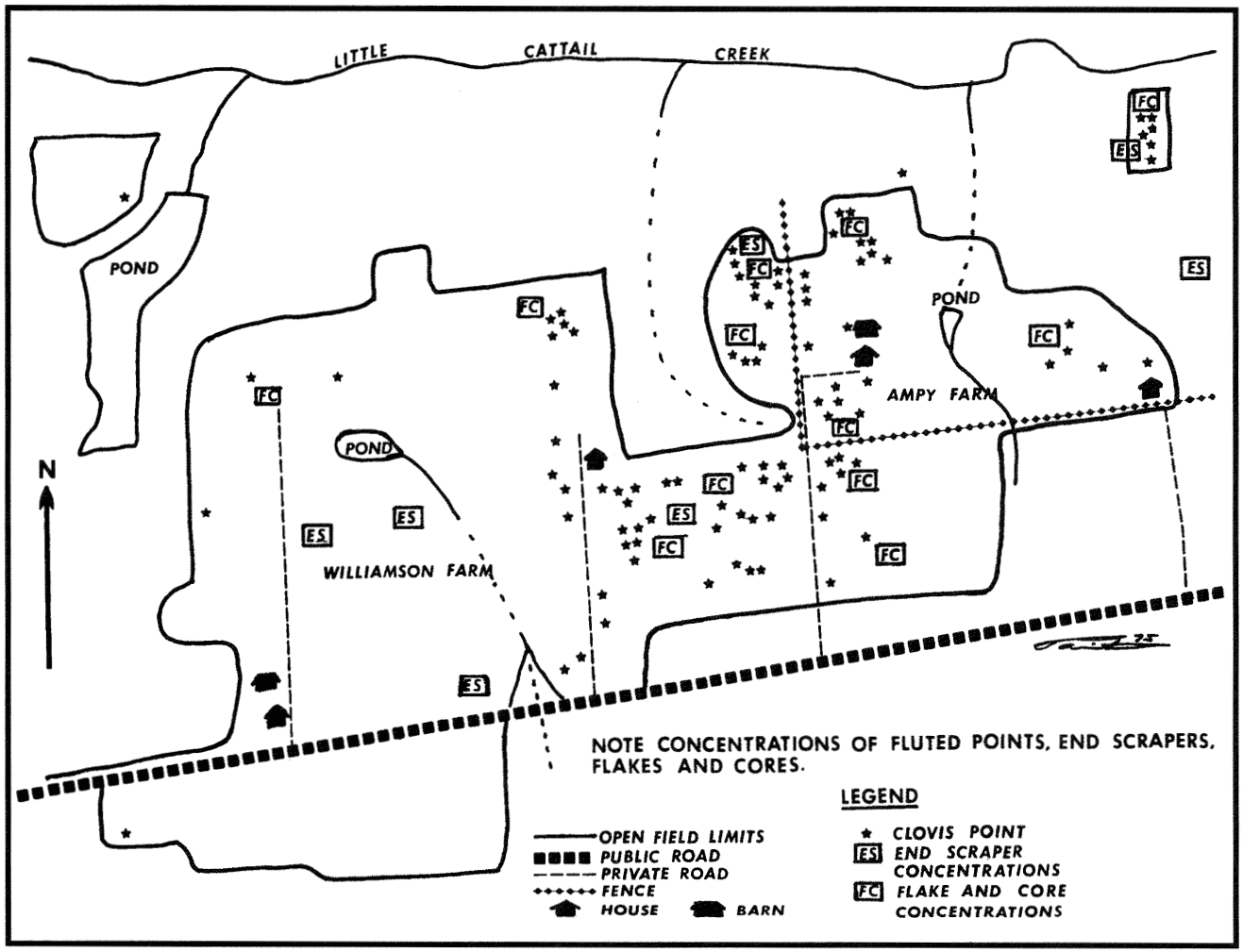


Figure 4.1. The Williamson site map showing artifact clusters as published by McCary and Painter in the Chesopiean Journal in 1975.

All artifacts were removed to the laboratory and selectively washed and dried prior to analysis. Artifacts to be analyzed for deposits or wear were excluded from laboratory washing and analysis until all tests were completed. It was agreed that plowzone artifacts, and in situ (below plowzone) artifacts, were to be handled differently in that artifacts recovered below the plowzone were evaluated individually and plowzone artifacts were evaluated as a group. Laboratory work was to include charcoal identification, identification of seeds or spores, carbon 14 dating by the AMS process of a representative sample of charcoal from the deposit, wear analysis and residual protein deposit analysis of a select group of artifacts, pollen analysis and phytolith analysis of soil samples, lithic analysis, and analysis of any historic period artifacts recovered in the excavations. A final report would be prepared addressing all of the above areas.

Records

Special NRS field survey forms (FSF) were used for all shovel and core tests (see Chapter 5 and Appendix C). A field notebook was maintained for all excavation work and in-process photographs and drawings. Special tabular laboratory analysis forms were used to record all data as the artifacts were analyzed. Where outside consultants worked with excavated materials or artifacts for identification or analysis, such as charcoal identification or wear analysis, copies of the consultants' forms and laboratory records were submitted to NRS. Much of this information was transmitted to the Portsmouth Regional Office of the Virginia Department of Historic Resources on an annual basis as the project developed.

Lithic Artifact Categories, Abbreviations, and Symbols

Standard and long accepted Paleoindian artifact categories were employed for the laboratory analysis of lithics recovered below the plowzone in all excavations. These categories are based in part upon the following primary sources:

For point preforms, end scrapers, side scrapers, bend break tools, primary flakes, channel flake tools, flake knives, notches, typical burins, atypical burins, gravers, and discoidal cores, information used was that published by Frison and Bradley in 1980 concerning Folsom tools and technology at the Hanson site in Wyoming.

For unmodified flakes, utilized flakes, and tools falling into the category distal edge tools, double-edge tools, notches, tips, resharpened end scrapers by burin-like blows, the *limace* tool form, burin-like tools, channel flakes, bifaces, projectile point preforms, projectile points, cores, sandstone abraders and grinders, grooved sandstone tools, sandstone rubbing tools, and ground hematite, information used was that published by Wilmsen and Roberts in 1984 concerning investigations at the Lindenmeier site.

For projectile points, spokeshaves, perforators, unilateral/dihedral/polyhedral-dihedral burins, end scrapers, end scrapers with graver spurs, side scrapers, gravers, true blades and blade-like flakes, flake knives, *pieces esquillees* (chisel-wedges), bipolar flaked pebbles, and abraders, information used was that published by Goodyear in 1974 concerning a techno-functional study of the Brand (Dalton) site in northeast Arkansas.

For Clovis blades and blade cores, the information used was that from *Clovis Blade Technology,* published by Collins in 1999. The definition of a core blade used in this work is that presented on page 9 of this reference (Collins 1999:9).

For all artifacts from the Williamson site, including hoof cores, polyhedral cores, chopper cores, projectile points, point preforms, knives on flakes, bifaces, drills,

pointed expanding drills, twist drills, reamers, wedges, end scrapers (types 1 through 4) end scrapers with spokeshaves, end scrapers with twist drill, side scrapers, *limace*-like objects, spokeshaves, gravers, awl-like tools, chisel graver-like tools, and hammerstones, the information used was that from: (1) a study of the Williamson site in Dinwiddie County, Virginia, published by McCary in 1975; (2) a study of the Paleoindian in Virginia published by McCary in 1983; and (3) a study of Clovis settlement patterns in southeastern Virginia published by McAvoy in 1992.

Based upon the above noted sources, the following categories of artifacts were used, and appear in the introduction/definition section in Appendix B with the artifact abbreviations, and the artifact symbols used in all drawings. Appendix B contains a description of each artifact excavated below the plowzone (number 1 to number 2447) indexed by the following abbreviations with reference to excavation area, unit, and level. (Appendix A contains descriptions of the plowzone artifacts analyzed by more general categories which are spelled out for each excavation unit in Appendix A. Appendix C contains a list of artifacts recovered in shovel tests and archaeological core samples.)

Appendix B Category Abbreviations (or Names) for Tools

1) Clovis point fragments, **CP**; Clovis point channel flake, **CP Channel F**; Biface fragments, **B(F)**; Bifacial cores, **BC**; Bipolar cores, **BPC**; Edge used core fragments, **CF/EU**;

2) End scrapers, **ES**; Side scrapers, **SS**; Edge-worked flakes, **EWF**; Edge-used flakes, **EUF**; **Limaces**; **Lancets**;

3) Snapped-flakes, **SF**; Snapped-flakes, edge-used, **SF/EU**; Snapped-flake gravers, **SFG**;

4) Perforators (or drills), **P**;

5) Burinized flakes used as gravers, **BG**; Burin spalls, **BS**; Gravers, **G**;

6) Wedges or chisel-wedges, **W**; Wedge or chisel-wedge fragments, **W(F)**; Wedges or chisel-wedges, edge-used, **W/EU**; Wedge spalls, edge-used, **WS/EU**; Wedge or chisel-wedge blanks, **WB**; **Chisel tips**;

7) **Abraders**; Polishing stones, **Polish. stone**;

8) **Choppers**; Beak-gouges, **Beak/gouge**; **Beaks**;

9) Archaic point tip fragments, **PP/T-A**.

Appendix B Category Abbreviations for Debitage

1) Large primary core flakes, **F/LPC**; Large primary core flakes with cortex, **F/LPC/Cx**; Primary core flakes, **F/PC**; Primary core flakes with cortex, **F/PC/Cx**; Primary core flakes (probable)/shatter, **F/PC/S**; Primary core flakes (probable)/shatter with cortex, **F/PC/Cx/S**; Unspecified larger flakes with significant cortex, **F/Cx**; Unspecified larger flakes (probable)/shatter with significant cortex, **F/Cx/S**; Unspecified lithic fragments with significant cortex, **LF/Cx**;

2) General shatter, **F/S**; Unspecified lithic fragments, **LF**; Unspecified lithic fragments (probable)/shatter, **LF/S**; Thermally fractured chert fragment, **TFF**;

3) General trim or thinning flakes, secondary or tertiary, **F/T**; Biface reduction flakes, **F/BR**; Biface reduction flakes or secondary/tertiary biface trim flakes with a strong platform, type unclear, **F/BR/T**; Biface reduction flakes with significant cortex, **F/BR/Cx**; Biface reduction flakes (probable)/shatter, **F/BR/S**;

4) Blade flakes (core-blades), **F/B**; Probable blade flakes (core-blade fragments or broken core-blades), **F/PBL**;

5) Hard percussion spalls (from chisel-wedges or bipolar cores), **HPS**; Soft percussion spalls (from chisel wedges or bipolar cores), **SPS**;

6) Platform preparation flakes, crescent shaped, **F/PP**;

7) Fire-cracked hearth stones, likely from Archaic period site use, **FCR**.

CHAPTER 5

SITE TESTING: ESTABLISHING SOIL HORIZONS AND DEPTHS OF CULTURAL MATERIAL

Introduction

The initial testing phase of the NRS evaluation of threatened (cultivated) areas of the Williamson site was perhaps the most significant part of the entire work. The eight areas of the site selected for shovel testing and core sampling (fig. 5.1) were chosen for the reasons enumerated below, under the individual sections headings designated test location numbers 1 through 8. The testing of this site was handled quite differently than would have been required for a location of unknown potential. The years of surface collecting and previous excavations on this site had established clearly certain basic information such as the type of site, the extent or boundary of the cultural material on the Williamson Farm, areas of heavy artifact concentration, and in some wooded areas the depth of cultural deposits. What was needed at Williamson was a simple, area-wide approach to testing the site for remaining undisturbed deposits. Since the artifact density was well known, for most areas of the plowed fields, and there was little variation in plowzone depth across local areas except at the periphery of fields and where there were obstructions to plowing, specific area testing was not needed on a standard grid pattern.

The area-wide approach selected was to establish the soil horizons (below plowzone) and to correlate these horizons with artifact bearing depths in the deposit. From initial testing it was determined that undisturbed cultural materials were present at depths of 1 to 7 inches below the plowzone in the E, EB, or BE horizon fine sandy loams, or very sandy upper clay loams but above the Bt, Bt1, or Btg horizons. In other words, below the plowzone but above the "clay." At no location on the Williamson site were large artifacts observed in the hard, red, yellowish-red, or yellowish-red-gray mottled sandy clay loam.

After establishing such correlations, the potential for producing undisturbed deposits of cultural material in many of the test areas was evaluated by use of 4-inch diameter hand-augered geological core samples (GS). Soil from geological core samples was not sifted for artifacts, but only examined for horizon characteristics. The research potential as determined, based upon geological core sampling, is indicated in the appropriate tables in this chapter.

Archaeological core samples (CS), which were taken in the same manner and with the same equipment as geological cores (4-inch diameter or 12 square inches), were sifted for artifacts in the same manner as soil from shovel tests. Often archaeological cores were used in areas of high cultural material density.

Shovel tests (ST), which were of a minimum size of 12 by 12 inches (144 square inches), were used in areas of lower cultural material density, and to verify locations chosen for excavations. Soil from shovel tests was sifted for artifacts through 1/4-inch mesh hardware cloth. Shovel tests and archaeological cores were used to verify the conclusions reached using geological cores.

All artifacts recovered in the testing phase of the project were washed and recorded (listed by level of recovery on the FSF form for each CS and ST), and such artifacts are documented through a finds list which is summarized as Appendix C. Copies of the field survey forms

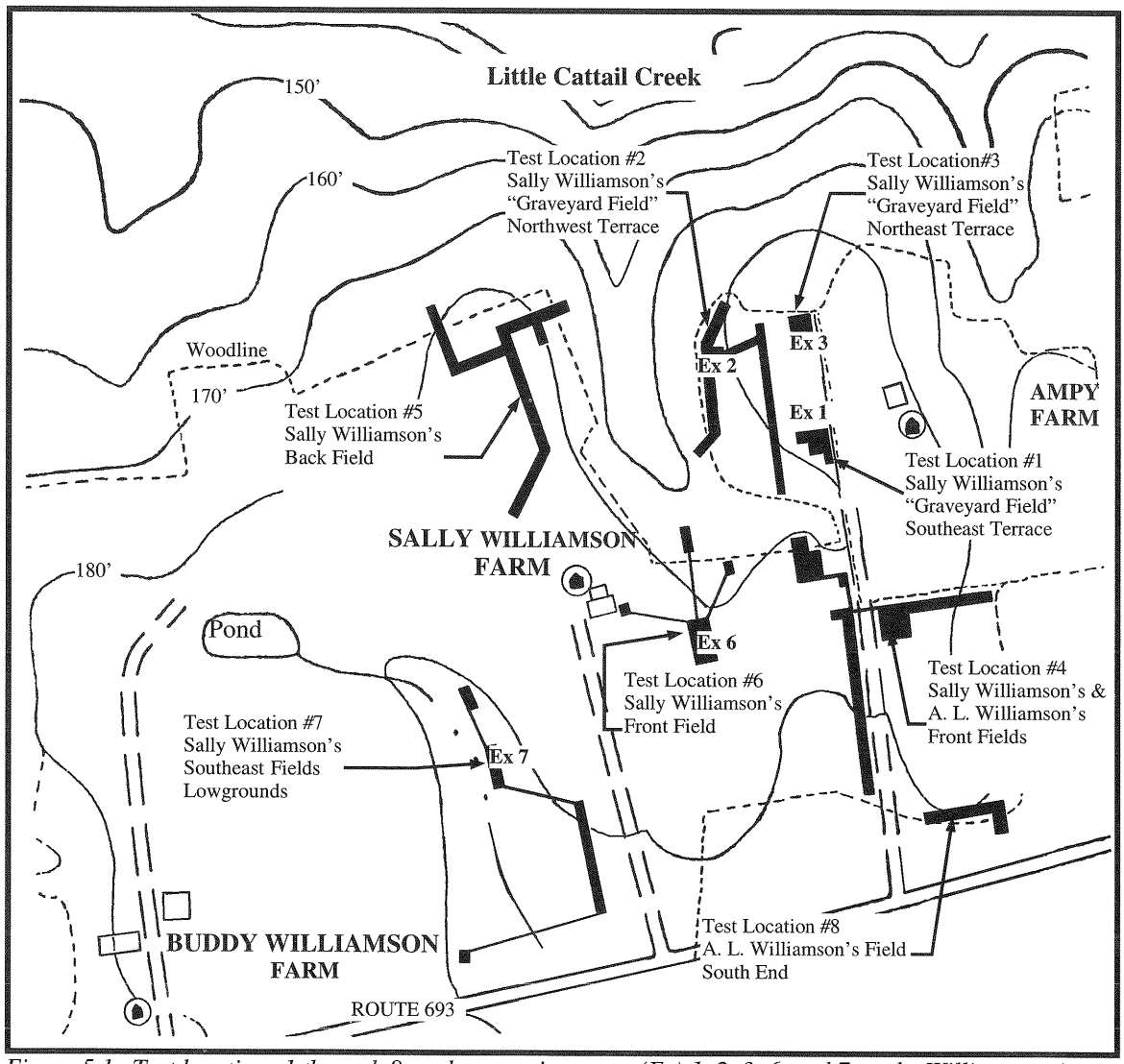


Figure 5.1. Test locations 1 through 8, and excavation areas (Ex) 1, 2, 3, 6, and 7 on the Williamson site.

(FSF #1 through #112) used to document the tests are on file with the VDHR at the Portsmouth Regional Office. The field survey forms indicate the specific location of each test. Figures 5.1 through 5.13 indicate relative locations of placement of tests.

Figures 5.14 through 5.18 at the end of the chapter are photographs of some of the important locations on the Sally L. Williamson, and A. Llewellyn Williamson Farms. These figures include test areas 4, 6, 7 and 8, and there is one photograph of the Roy Ampy Farm (not tested).

Test Location Number 1

Site test location number 1 (fig. 5.1) is on the northeast perimeter of the Sally L. Williamson Farm adjacent to the old Roy Ampy Farm just south of Little Cattail Creek on the middle elevation (lower) terrace going south in the back field. This field is known as the "graveyard field." This location was selected for testing because of: 1) the high flake and fluted point (five points) concentration shown there by McCary (1975:52); 2) the information received from one collector and avocational archaeologist, Mr. George Stanford, of Richmond, concerning artifacts he had recovered there (George Stanford, personal communication, 1979); and 3) the concentration of artifacts observed by the authors in the 1980s on the same terrace, across

the fence, on the adjacent Ampy Farm.

Soils Tests

Test location 1 is composed of soil typed as Mattaponi, which is characterized as a fine sandy loam at depths of archaeological interest (Table 5.1). At approximately 19 inches below surface the soil is sandy clay loam. This area of the site is characterized as moderately well drained to well drained (MWD/WD) with a seasonal high water table (SHWT) of about 40 inches below surface. Thus, on slopes, the ground is soggy in late winter and early spring, but on the terrace the soil is fairly dry even in the plowed field.

Archaeological Tests

The locations of the shovel tests, and archaeological core samples, are shown in detail in fig. 5.2. The results of the tests designated #1-1 through #1-12 are shown in Table 5.2. One area of this locality, at test numbers 7, 9, 10, and 12, produced a few chert flakes in undisturbed context below the plowzone. Test #12 produced a few chert flakes and one end scraper in the fine sandy loam, but primarily at the plowzone interface. Test location 1 was designated a marginal selection for further excavation. A small 25-square-foot excavation was undertaken here at the location of test #12 in June 1999 as the last of the NRS work on the Williamson site.

Table 5.1: Soil Evaluation Report for Williamson Site Test Location Number 1

Location: Sally Williamson Farm, northeast perimeter adjacent to old Roy Ampy Farm, just south of Little Cattail Creek: "graveyard field", middle terrace going south (at the edge of the plowed field, 8' north of test 1-12/ST)

Soil Horizon	Depth inches	Soil Description Descriptions/soils tests by Robert Hodges, and Virginia Tech Soils Laboratory	Remarks
Ap1	0-8	dark grayish brown (10YR4/2) fine sandy loam	1) Mattaponi soil type
Ap2	8-12	grayish brown (10YR5/2) fine sandy loam	2) SHWT 40"
EB	12-19	light yellowish brown (10YR6/4) fine sandy loam; pH 4.9	3) MWD/WD
Bt1	19-38	yellowish brown (10YR5/6) sandy clay loam	
Bt2	38->52	yellowish red (5YR5/6) sandy clay with gray and yellowish brown mottles	

Table 5.2: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location Number 1

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments (FSF = Field Survey Form)
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
1	1-1/CS	0-9"/pz 9-18" Bt >18" Bt		x x x							FSF #1 (>9" is sandy clay, no artifacts likely)
1	1-2/CS	0-9"/pz 9-13" Bt 13->24" Bt	x	 x x		3					FSF #2 (>9" is sandy clay, no artifacts likely)
1	1-3/CS	0-9"/pz 9-14" Bt 14->24" Bt	x x	 x		1 1					FSF #3 (>9" is sandy clay, few artifacts likely)
1	1-4/CS	0-7"/pz 7-13" Bt 13->24" Bt		x x x							FSF #4 (>7" is sandy clay, no artifacts likely)
1	1-5/CS	0-10"/pz 10-12" Bt 12->24" Bt	x	 x x		7					FSF #5 (>10" is sandy clay, no artifacts likely)
1	1-6/ST	0-4"/pz1 -7"/pz2? 7-13" EB 13->24" Bt	 x x	x x 		 4 1					FSF #6 (possibility of cultural materials in upper EB horizon)

Table 5.2: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location Number 1

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments (FSF = Field Survey Form)
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
1	1-7/ST	0-8"/pz 8-19" EB 19->24"Bt	x x	 x		3 6		1			FSF #7 (high probability for cultural materials in upper EB horizon)
1	1-8/ST	0-9"/pz 9-18" EB 18->24"Bt	x	 x x		13					FSF #8 (some possibility of cultural materials in upper EB horizon)
1	1-9/ST	0-10"/pz 10-13" EB 13-16" Bt 16->24" Bt	x x x	 x		12 6 1					FSF #9 (high probability for cultural materials in shallow EB horizon)
1	1-10/ST	0-10"/pz 10-13" Bt? 13->24" Bt	x x	 x		12 1					FSF #10 (some possibility for cultural materials in upper Bt? horizon at plowzone interface)
1	1-11/ST	0-11"/pz 11-12" EB 12->16" Bt	x	 x x		18					FSF #11 (high probability for cultural materials in shallow EB horizon)
1	1-12/ST	0-11"/pz 11-21?" EB 21?->24"Bt	x x	 x		8 1					FSF #12 (high probability for cultural materials in upper EB horizon at plowzone interface)

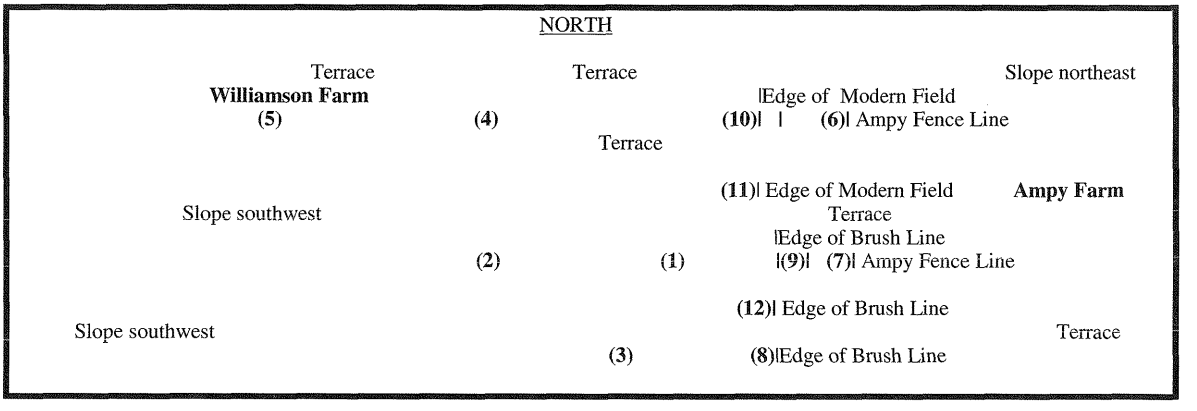


Figure 5.2. Williamson site test location number 1, east side of graveyard field on the middle terrace, relative position of shovel tests and core samples #1 through #12. Drawing not to scale (maximum distance shown tested east-to-west is 80 feet, and north-to-south is 50 feet).

Test Location Number 2

Site test location number 2 (fig. 5.1) is the northeast section of the Sally L. Williamson Farm, south of Little Cattail Creek and on the western terrace over a deep ravine, just west of, and below, the hill top. This is the western corner of the field known as the "graveyard field" which is adjacent to the old Roy Ampy Farm. This location was selected for testing because of: 1) the high concentration of flakes, end scrapers, and fluted points (six points) shown just up slope, to the east of this area, by McCary (1975:52); and 2) the topography, a wide terrace located just below the crest of the hill, which appeared to be a good location for in situ cultural deposits to have been buried under colluvium washed from the hillside.

Soils Tests

Test location number 2 is composed of soil typed as Mattaponi, which is characterized as a fine sandy loam at depths of archaeological interest (Table 5.3). At approximately 24 inches below surface the soil is a sandy clay loam. This area of the site is characterized as well drained with a seasonal high water table more than 60 inches below surface. The area appears to be sandy and well drained even in the wetter periods of late winter and early spring.

Archaeological Tests

The locations of the shovel tests, archaeological core samples, and geological core samples are shown in detail in fig. 5.3. The results of the tests designated #2-1 through #2-17 are shown in Table 5.4. One area of this locality, at test numbers 1, 10, 11, 12, and 13, consistently produced chert and crystal quartz flakes in the fine sandy loam in undisturbed context below the plowzone. This indicated that one area of test location 2 should be selected for a 100-square-foot test excavation.

Table 5.3: Soil Evaluation Report for Williamson Site Test Location Number 2.

Location: Sally Williamson Farm, northeast section, just south of Little Cattail Creek: "graveyard field", western terrace over deep ravine and just west of, and below, hill top (in the plowed field, 5 feet north of test #2-10/ST)

Soil Horizon	Depth inches	Soil Description Descriptions/soils tests by Robert Hodges, and Virginia Tech Soils Laboratory	Remarks
Ap1	0-8	dark grayish brown (10YR4/2) fine sandy loam	1) Mattaponi soil type
Ap2	8-14	pale brown (10YR6/3) fine sandy loam	2) 3% slope from east
BE	14-24	light yellowish brown (10YR6/4) fine sandy loam; pH 6.2	3) WD
Bt1	24-32	yellowish brown (10YR5/6) sandy clay loam	4) no observed SHWT
Bt2	32-45	strong brown (7.5YR5/6) sandy clay loam with yellowish red mottles	5) Top soil thickened/ colluvial-eolian mtls.
BC	45->60	strong brown (7.5YR5/4) sandy clay with yellowish red and gray mottles	

Table 5.4: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location Number 2

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
2	2-1/ST	0-4"/pz1 -10"/pz2 10-17" BE 17->28" Bt	x x x x?			11 14 6 1?	1		2 2 1	1	FSF #13 (high probability for cultural materials in BE horizon)
2	2-2/CS	0-8"/pz 8-9"/pz2, or BE? 9-12" BE 12->17" Bt	x x	 x x		1 1			 1		FSF #14 (some possibility of cultural materials in shallow BE horizon)
2	2-3/CS	0-10"/pz 10->19"Bt	x x			4 1					FSF #15 (>10" is sandy clay, no artifacts likely)
2	2-4/CS	0-8"/pz 8->13" Bt	x	 x		9					FSF #16 (>8" is sandy clay, no artifacts likely)
2	2-5/CS	0-4"/pz1 -10"/pz2 10-20" BE 20-24" Bt 24->28" Bt		x x x x x							FSF #17 (some possibility of cultural materials in deep BE horizon)

Table 5.4: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location Number 2

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
2	2-6/CS	0-9"/pz 9-14" Bt? 14->19"Bt	x x x			7 2 2					FSF #18 (>9" is sandy clay, a few very small flakes likely in the Bt horizon)
2	2-7/ST	0-4"/pz -7"/pz2? 7->28"Bt	x x	 x		6 1					FSF #19 (>7" is sandy clay, no artifacts likely)
2	2-7A/GC	0-8"/pz 8->15"Bt			x x						FSF #20 (>8" is sandy clay, no artifacts likely)
2	2-8/ST	0-6"/Ah? 6-14" BE 14->17" Bt	x	 x x		4					FSF #21 (some possibility for cultural materials in upper BE horizon)
2	2-9/ST	0-5"/Ah? 5-8" BE? 8-14" BE 14->17" Bt	x	 x x x		2					FSF #22 (some possibility for cultural materials in upper BE horizon)
2	2-10/ST	0-5"/pz1 5-16"/pz2? 16-28"BE 28->33"Bt	x x x?	 x		6 17	 1 1?		 1		FSF #23 (some possibility for cultural materials in upper BE horizon)
2	2-11/ST	0-4"/pz1 -11"/pz2 11->23"BE	x x x			8 16 2	 1				FSF #24 (high probability for cultural materials in BE horizon)
2	2-12/ST	0-11"/pz 11-22" BE 22->28"Bt	x x	 x		40 11	1		3 3	1	FSF #25 (high probability for cultural materials in BE horizon)
2	2-13/ST	0-8"/pz 8-12" BE 12->27"Bt	x x	 x		46 22	1		1		FSF #26 (high probability for cultural materials in shallow BE horizon)
2	2-14/GC	0-7"/pz 7->12" Bt			x x						FSF #27 (>7" is red clay, no artifacts likely)
2	2-15/GC	0-9"/pz 9-11" BE? 11-17" Bt 17->20" Bt			x x x x						FSF #28 (9-11" may be artifact bearing soil, some possibility for cultural materials in upper BE horizon but slope is too steep)
2	2-16/GC	0-10"/pz 10->17" Bt			x x						FSF #29 (>10" sandy clay, no artifacts likely)
2	2-17/GC	0-10"/pz 10-30" BE >30" Bt			x x x						FSF #30 (at >10" is colluvium, any artifacts are likely redeposited by wash; area is too low for a camp site)

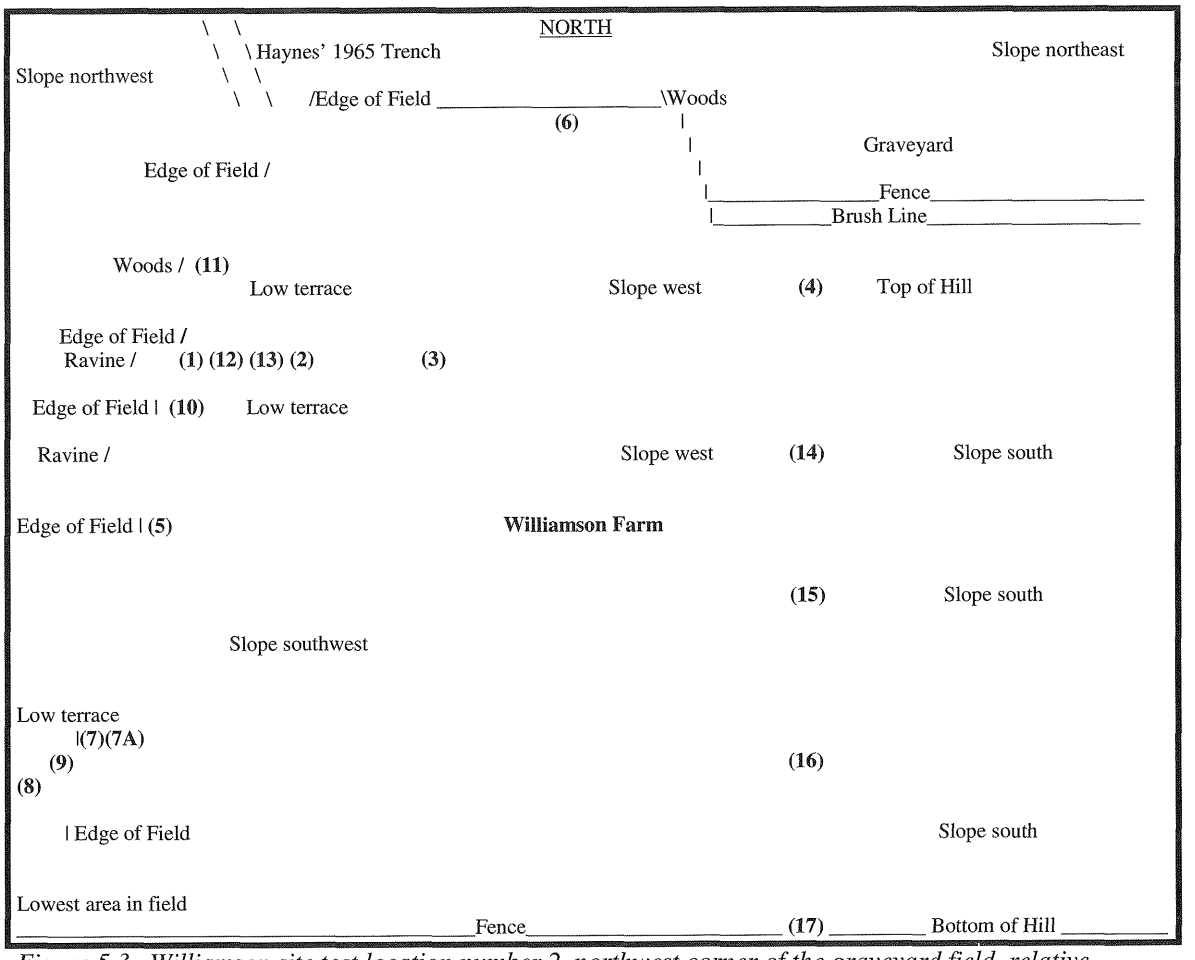


Figure 5.3. Williamson site test location number 2, northwest corner of the graveyard field, relative position of shovel tests and core samples #1 through #17. Drawing not to scale (maximum distance shown tested east-to-west is 200 feet, and north-to-south [compressed in drawing] is 500 feet).

Test Location Number 3

Site test location number 3 (fig. 5.1) is the northeast corner of the Sally L. Williamson Farm adjacent to the old Roy Ampy Farm, south of Little Cattail Creek and on the eastern terrace just below, and east, of the hill top. This is the northeastern corner of the field known as the "graveyard field." This location was selected for testing because of: 1) the high concentration of flakes, end scrapers, and fluted points (five points) shown here and just up slope to the west of this area by McCary (1975:52); 2) the concentration of artifacts observed by the authors in the 1980s on the same terrace across the fence on the adjacent Ampy Farm; and 3) the topography, a wide terrace located just below the crest of the hill which appeared to be a good location for in situ cultural deposits to have been buried under colluvium washed from the hillside.

Soils Tests

Test location number 3 is composed of soil typed as Mattaponi, similar to an Orangeburg soil, and is characterized as a fine sandy loam grading into sandy clay loam at depths of archaeological interest (Table 5.5). The transition into a very sandy clay loam occurs at >14 inches below surface. This area of the site is characterized as well drained with a seasonal high water table more than 64 inches below surface. The area appears to be sandy and well drained even in the wetter periods of late winter and early spring.

Archaeological Tests

The locations of the shovel tests, and archaeological core samples, are shown in detail in fig. 5.4. The results of the tests designated #3-1 through #3-13 are shown in Table 5.6. Much of the northeastern part of the area tested, especially at test numbers 3, 4, 5, 6, 7, 8, 9, 10, and 12, and generally at the edge of the plowed field adjacent to the fence separating the Williamson and Ampy properties, consistently produced chert flakes in the fine sandy loam/sandy clay loam in undisturbed context below the plowzone. This indicated that one or more areas of test location 3 should be selected for 100-square-foot test excavations.

Table 5.5: Soil Evaluation Report for Williamson Site Test Location Number 3

Location: Sally Williamson Farm, northeast corner adjacent to old Roy Ampy Farm, just south of Little Cattail Creek: "graveyard field"; eastern terrace, just east and below hill top (at the edge of the plowed field, 10 feet north of test #3-5/ST)

Soil Horizon	Depth inches	Soil Description Descriptions/soils tests by Robert Hodges, and Virginia Tech Soils Laboratory	Remarks
Ap1	0-9	dark grayish brown (10YR4/2) fine sandy loam	1) Mattaponi soil type
Ap2, and BE	9-14	pale brown (10YR6/3) fine sandy loam (some areas of this horizon similar to a BE soil horizon - boundary indistinct)	2) soil type also very similar to Orangeburg
BE, and Bt1	14-28	yellowish brown (10YR5/6) sandy clay loam; pH 5.0	3) WD
Bt2	28-58	yellowish red (5YR5/8) sandy clay loam with few light yellowish brown mottles	4) no observed SHWT
BC	58->64	Strong brown (7.5YR5/6) sandy clay loam with few yellowish brown and yellowish red mottles	

Table 5.6: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location Number 3

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
3	3-1/CS	0-11"/pz 11-17" BE 17-22" Bt 22->28" Bt	x x x	 x		4 2 1					FSF #31 (high probability for cultural materials in BE horizon)
3	3-2/CS	0-12"/pz 12-23" Bt 23->24" Bt	x x	 x		3 1					FSF #32 (>12" is sandy clay, no large artifacts likely)
3	3-3/ST	0-4"/pz1 -10"/pz2 10-14" BE 14-18" BE, and Bt >18" Bt	x x x x	 x		5 25 13 5					FSF #33 (high probability for cultural materials in BE horizon; only small flakes in Bt horizon)
3	3-4/ST	0-12"/pz 12-18"BE 18->24"Bt	x x	 x		11 1					FSF #34 (high probability for cultural materials in BE horizon)
3	3-5/ST	0-12"/pz1 12-17"pz2, and BE 17->26" BE, and Bt	x x x			39 24 10			 1		FSF #35 (high probability for cultural materials in BE horizon, no flakes below 24")
3	3-6/ST/ GC	0-11"/pz 11-17"/pz2, and BE 17-19" BE 19->40"Bt	x x x		 x	69 123 6	1			1 FCR	FSF #36 (high probability for cultural materials in BE horizon, no flakes likely below 18"; 19-40" augered by geological core)

Table 5.6: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location Number 3

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
3	3-7/ST	0-10"/pz 10-13" BE 13->20" Bt	x x	 x		47 5					FSF #37 (high probability for cultural materials in BE horizon)
3	3-8/ST	0-17"/pz, 2 17-24" BE, and Bt >24" Bt	x x	 x		26 6					FSF #38 (two plow zones present?: Ap1 and Ap2; high probability for cultural materials in BE horizon; deep colluvium at edge of field)
3	3-9/ST	0-12"/pz 12-20" BE 20->25" Bt	x x	 x		73 50	2	1		1 FCR	FSF #39 (high probability for cultural materials in BE horizon)
3	3-10/ST	0-11"/pz 11-15"/pz and BE 15->19"BE and Bt	x x x			63 24 5	2				FSF #40 (high probability for cultural materials in BE horizon; no flakes below 18", all small in Bt horizon)
3	3-11/ST	0-12"/pz >12"Bt? or tree throw	x	 x		36	1	1		1 FCR	FSF #41 (hard clay >12", disturbed? -no artifacts)
3	3-12/ST	0-9"/pz 9-16" BE >16" Bt	x x	 x		88 26	1				FSF #42 (few flakes below 12"; very little of the site remains below 12" here)
3	3-13/ST	0-4"/pz1 -11"/pz2 11-17" BE >17" Bt	x x x	 x		11 12 7		 1			FSF #43 (high probability for cultural materials in BE horizon)

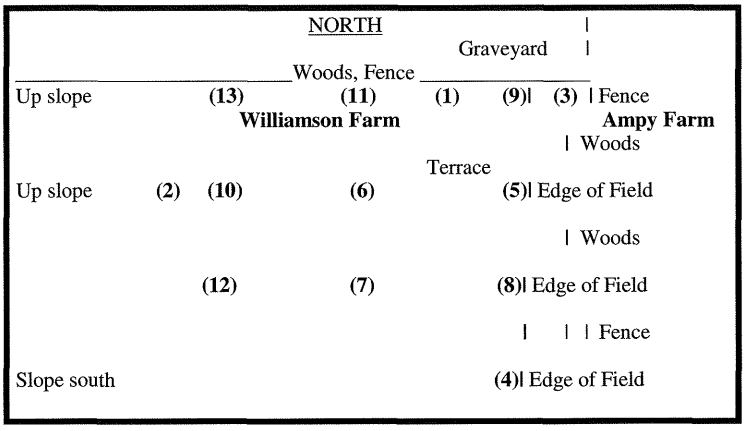


Figure 5.4. Williamson site test location number 3, northeast corner of the graveyard field, relative position of shovel tests and core samples #1 through #13. Drawing not to scale (maximum distance shown tested east-to-west is 38 feet, and north-to-south is 31 feet).

Test Location Number 4

Site test location number 4 (fig. 5.1) is composed of parts of the eastern fields of the Sally L. Williamson Farm, and the north end of the A. L. Williamson property. These are the large front cultivated fields bounded by the old Roy Ampy Farm to the east and northeast, and the tree line toward route 693 to the south. The northwestern boundary is approximately 150 feet west of the Ampy Farm property line. This location was selected for testing because of: 1)

the high concentration of chert flakes and fluted points (15 points) shown here by McCary (1975:52); and 2) the possibly that some areas along the periphery of the cultivated fields may have escaped complete destruction from plowing as this area represented the junction of several property lines, and there had been reports from the Williamson and Ampy family members of farm roads, fences, and bush lines which would have obstructed plowing. Even so, there was no indication based upon the immediate topography that cultural material would have been buried by any mechanism other than bioturbation.

Soils Tests

Test location number 4 is composed of soil typed as Slagle, and is characterized as a fine sandy loam at depths of archaeological interest (Table 5.7). The transition into a sandy clay loam occurs at approximately 14 inches below surface. This area of the site is characterized as only moderately well drained with a seasonal high water table at 24 inches below surface. The area appears to be loamy and a little soggy in the wetter periods of late winter and early spring.

Archaeological Tests

The locations of the shovel tests (examples figs. 5.5 and 5.6), archaeological core samples, and geological core samples are shown in detail in fig. 5.7. The results of the tests designated #4-1 through #4-32 are shown in Table 5.8. Some of the northern locations at test numbers 2, 7, 10, 11, 15, 16, and 32 of this area along old road beds and brush lines at the edge of the cultivated fields consistently produced chert flakes in the fine sandy loam below the plowzone. These areas of test location 4 were identified as suitable for a 100-square-foot test excavation, but none was selected due to similarities in many regards to test location number 6. Location 6, which was selected for excavation, is 400 feet to the west and on the same ridge. In much of test location 4, particularly to the south of the site datum, all of the cultural material was found to be in the plowzone. In this area, the soil below the plowzone is characterized as of low potential in producing buried deposits either because it is clay, or because there are only 1 or 2 inches remaining of possible artifact bearing E or BE horizons.

Table 5.7: Soil Evaluation Report for Williamson Site Test Location Number 4

Location: Sally Williamson Farm, and A. L. Williamson's cultivated field (east side of field), in the large front field adjacent to the old Roy Ampy Farm to north and east, and north of route 693 (at the site datum, near Williamson-Ampy property line/post adjacent to the farm road leading to old Roy Ampy Farmhouse)			
Soil Horizon	Depth inches	Soil Description Descriptions/soils tests by Robert Hodges, and Virginia Tech Soils Laboratory	Remarks
Ap	0-7	grayish brown (10YR5/2) fine sandy loam	1) Slagle soil type
E	7-14	pale brown (10YR6/3) fine sandy loam; pH 4.9	2) MWD
Bt1	14-24	light yellowish brown (10YR6/4) sandy clay loam	3) SHWT 24"
Bt2	24->36	yellowish brown (10YR5/6) sandy clay loam with pale brown (10YR6/3) and yellowish red (5YR4/6) mottles	

Table 5.8: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location Number 4

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
4	4-1/CS	0-9"/pz 9-12" E 12->20" Bt	x	 x x		1					FSF #44 (high probability for cultural materials in E horizon)
4	4-2/ST	0-7"/pz? 7-12" E 12-20" Bt 20->24" Bt	x x x	 x		12 14 2					FSF #45 (high probability for cultural materials in E horizon)
4	4-3/ST	0-9"/pz 9-12" E 12-16" BE? 16->24 Bt	x x x	 x		28 5 5					FSF #46 (high probability for cultural materials in E horizon)
4	4-4/CS	0-10"/pz 10-11"E or BE? 11-14" Bt 14-19" Bt 19->24" Bt		x x x x x							FSF #47 (some possibility of cultural materials in E horizon; most of this very shallow horizon destroyed by plowing)
4	4-5/ST	0-10"/pz 10-20" Bt >20" Bt	x	 x x		24					FSF #48 (>10" is yellowish -red clay, no artifacts likely)
4	4-6/CS	0-8"/pz 8-10" E 10-13" Bt 13->20" Bt	x	 x x x		3					FSF #49 (some possibility of cultural materials in E horizon; most of this very shallow horizon destroyed by plowing)
4	4-7/ST	0-8"/pz 8-9" E 9-13" Bt 13->20" Bt	x x x	 x		13 3 1	1				FSF #50 (some possibility of cultural materials in E horizon; most of this very shallow horizon destroyed by plowing)
4	4-8/ST	0-11"/pz 11-15" Bt 15->24" Bt	x	 x x		14					FSF #51 (>10" is yellowish -red clay, no artifacts likely)
4	4-9/ST	0-2"/Rmt 2-8"/road? 8-12" BE or Bt1? 12-15"Bt2 >15" Bt3?	 x x x	x x		 4 4 1					FSF #52 (likely road bed has destroyed most of the cultural level; edge of road may have deposits in E or BE horizon?)
4	4-10/ST	0-5"/Rmt 5-9"/road? 9-12" BE or Bt1? 12->30" Bt	x x x	 x		15 19 8		1		1	FSF #53 (likely edge of road bed, most of the cultural level destroyed, but this edge of road area may have deposits?)
4	4-11/ST	0-8"/pz? 8-9" E 9-12" BE? 12-16" Bt 16->24" Bt	x x x x	 x		12 10 3 1					FSF #54 (high probability for cultural materials in E, and BE horizons)
4	4-12/CS	0-9"/pz 9-11" E 11-13" BE? 13->24" Bt	x x	 x x		3 1					FSF #55 (some possibility of cultural materials in E horizon; most of this shallow horizon destroyed by plowing)
4	4-13/ST	0-8"/pz 8-14" E or BE? 14-20"Bt 20->24" Bt	x	 x x x		10					FSF #56 (some possibility of a low density of cultural materials in E horizon, but slope is steep here)

Table 5.8: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location Number 4

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
4	4-14/ST	0-12"/pz 12-16" E 16-20" Bt 20->22" Bt	x x	 x x		4 1					FSF #57 (some possibility of a low density of cultural materials in E horizon)
4	4-15/ST	0-13"/pz 13-19" E 19->21" Bt	x x	 x		18 11				1	FSF #58 (high probability for cultural materials in E horizon)
4	4-16/CS	0-8"/pz 8-19" E 19->23" Bt	x x	 x		3 2					FSF #59 (high probability for cultural materials in E horizon)
4	4-17/CS	0-10"/pz 10-19" E 19->26" Bt		x x x							FSF #60 (some possibility of cultural materials in E horizon)
4	4-18/ST	0-11"/pz 11-20" E 20->26" Bt	x x	 x		12 1	1				FSF #61 (high probability for cultural materials in E horizon)
4	4-19/CS	0-12"/pz 12-20" E 20"->26"Bt	x	 x x		1					FSF #62 (some possibility for cultural materials in E horizon)
4	4-20/GC	0-12"/pz 12-14" E 14->16" Bt			x x x						FSF #63 (12-14" is artifact bearing soil; some possibility of cultural materials in E horizon but most of this very shallow horizon destroyed by plowing)
4	4-21/GC	0-3"/Rmt 3-8" A? 8-15" E >15" Bt			x x x						FSF #64 (3-8" is artifact bearing soil; low density of artifacts likely)
4	4-22/GC	0-3"/Rmt 3-8" A? 8-15" E >15" Bt			x x x x						FSF #65 (3-8" is artifact bearing soil; low density of artifacts likely - as 64)
4	4-23/GC	0-7"/pz 7-9" E 9-17" Bt			x x x						FSF #66 (7-9" is artifact bearing soil; some possibility of cultural materials in E horizon but most of this shallow horizon destroyed by plowing)
4	4-24/GC	0-8"/pz 8-9" BE 9->15" Bt			x x x						FSF #67 (8-9" is low density artifact bearing soil, but most of this shallow horizon destroyed by plowing)
4	4-25/GC	0-9"/pz 9->14" Bt			x x						FSF #68 (>9" is yellowish -red sandy clay, no artifacts likely)
4	4-26/GC	0-8"/pz 8-12" BE >12" Bt			x x x						FSF #69 (8-12" could contain a low density of artifacts, but slope is steep here)
4	4-27/GC	0-8"/pz 8-12" E 12->25" Bt			x x x						FSF #70 (8-12" is low density artifact bearing soil)
4	4-28/GC	0-9"/pz 9-11" Bt 11->15" Bt			x x x						FSF #71 (sandy clay at 9" - no artifacts likely)

Table 5.8: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location Number 4

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
4	4-29/GC	0-2"/pz1 -9"/pz2 9-13" BE or Bt? 13->16" Bt			x x x x						FSF #72 (sandy loam to sandy clay loam at >9" - no artifacts likely below 9 to 10")
4	4-30/GC	0-9"/pz 9-10" BE or Bt? 10->14" Bt			x x x						FSF #73 (sandy loam to sandy clay loam at >9" - no artifacts likely below 9 to 10")
4	4-31/GC	0-7"/pz 7-8" BE or Bt? 8->16" Bt			x x x						FSF #74 (sandy loam to sandy clay loam at >7" - no artifacts likely below 7 to 8")
4	4-32/ST	0-2"/Rmt 2-12"/road? 12-20" BE or Bt? 20->24" Bt	x x x 	 x		1 7 2 					FSF #75 (likely road bed has destroyed most of the cultural level, edge of road may have deposits)

Figure 5.5. Shovel test 4-13/ST, note two soil horizons marked below the plowzone.

Figure 5.6. Shovel test 4-14/ST, note deep plowzone composed of colluvium.

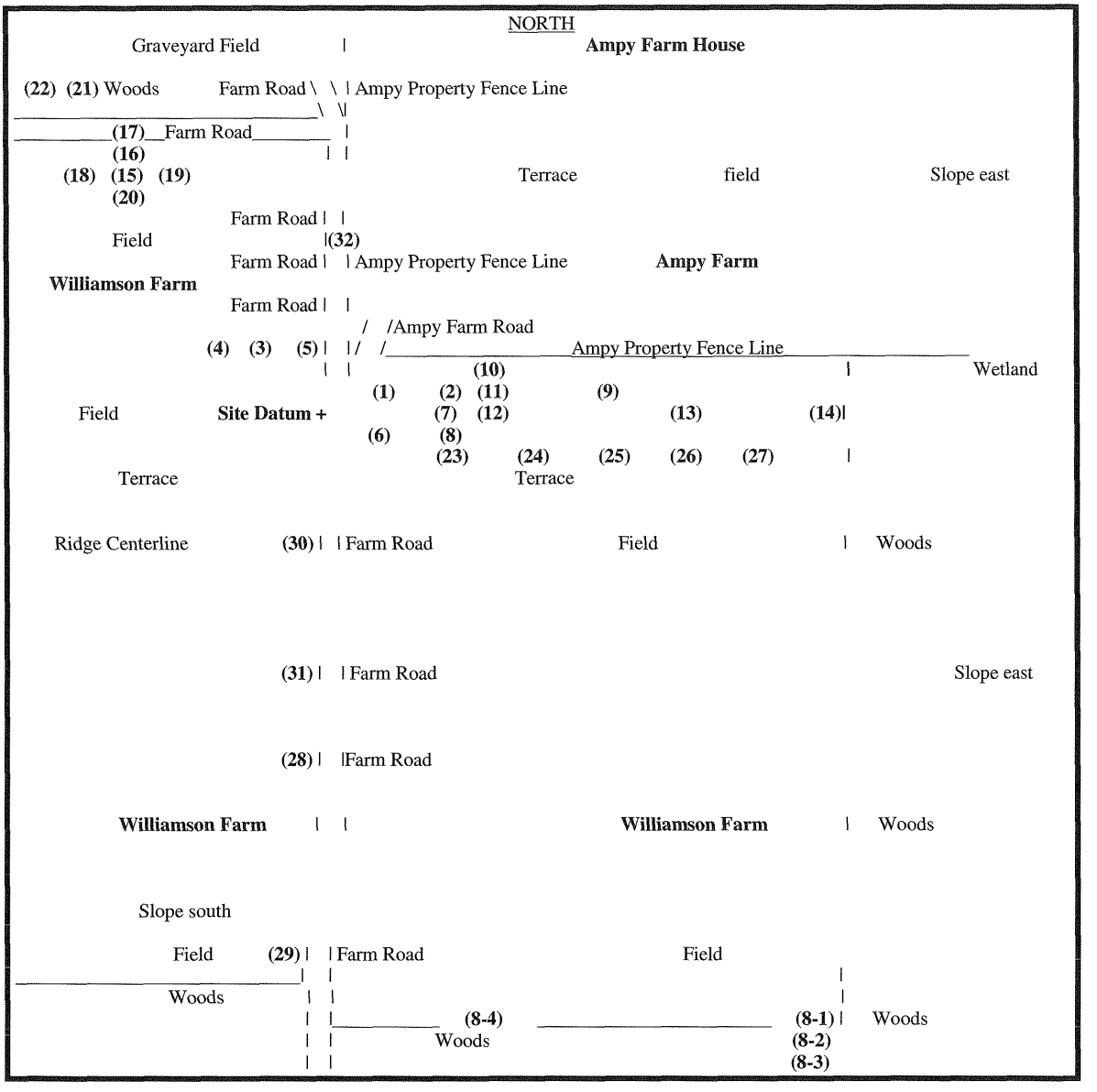


Figure 5.7. Williamson site test locations number 4 and number 8, relative position of shovel tests and core samples #1 through #32 for test location number 4; and, #8-1 through #8-4 for test location number 8, the Williamson front field near the driveway leading to the Ampy property. Drawing not to scale (maximum distance shown tested east-to-west is 500 feet, and north-to-south is 650 feet).

Test Location Number 5

Site test location number 5 (fig. 5.1) is composed of that portion of the Sally L. Williamson Farm located directly behind Sally Williamson's home in the large back field on the high terrace south of Little Cattail Creek. This location was selected for testing because of: 1) a moderately high concentration of flakes and fluted points (five points) shown here by McCary (1975:52); and 2) at the time of selection of the test locations, this area was considered the most likely within the Williamson site boundary to contain a stratum of buried artifacts under an eolian cap. The field is high above the creek, and the top soil is a fine white sand which suggests a possible eolian origin.

Soils Tests

Test location 5 is composed of soil typed as Bourne and is characterized as a fine sandy loam at depths of archaeological interest (Table 5.9). In the area of the plowed field selected for the soils test, the transition into a sandy clay loam occurs at approximately 12 inches below surface. Test location 5 is characterized as well drained to moderately well drained with a seasonal high water table deeper than 64 inches below surface. The ridge top on the terrace is sandy and dry in even the wetter periods of late winter and early spring.

This was the only area tested on the Williamson site which appeared to contain an old buried surface horizon or paleosol. This horizon, located at 18 to 24 inches below surface, is designated Bx in Table 5.9, and it is possibly a buried surface of late Pleistocene age. The most likely burial mechanism for the old surface is eolian, given the elevation of the field and the lack of a source area for colluvium. Four shovel tests revealed no artifacts in the Bx soil horizon, but future work at the Williamson site could reasonably include a more detailed evaluation of this old surface.

Archaeological Tests

The locations of the shovel tests, archaeological core samples, and geological core samples are shown in detail in fig. 5.8. The results of the tests, designated #5-1 through #5-13, are shown in Table 5.10. This area produced a very low density of chert flakes, and the few that were recovered were in the plowzone or just below root mats. No areas were identified as suitable for larger test excavations. Many areas tested revealed a deep BE soil horizon which could contain artifacts. The primary problem with this area of the site is the very low density of cultural material across the high sandy terrace. It can be speculated that site location 5 was only lightly used because: 1) it was not near the chert outcrops, as were locations 2 and 3 to the east; and 2) the absence of immediate (north) windbreaks.

Table 5.9: Soil Evaluation Report for Williamson Site Test Location Number 5

Location: Sally Williamson Farm, directly behind the brick house in the large back field on the high terrace south of Little Cattail Creek (on the highest contour in the cultivated back field, approximately 100 feet west of test 5-1/ST)			
Soil Horizon	Depth inches	Soil Description Descriptions/soils tests by Robert Hodges, and Virginia Tech Soils Laboratory	Remarks
Ap	0-8	grayish brown (10YR4/2) fine sandy loam	1) Bourne soil type
BE	8-12	pale brown (10YR6/3) fine sandy loam; pH 5.3	2) over Mattaponi soil
Bt1	12-18	yellowish brown (10YR5/4) sandy clay loam	3) no observed SHWT
Bx	18-24	light yellowish brown (10YR6/4) fine sandy loam with pale brown (10YR6/3) mottles (compact in place)	4) Bx=old buried soil horizon or paleosol
2Bt	24-44	yellowish brown (10YR5/6) sandy clay loam and sandy clay with yellowish red and strong brown mottles	5) WD/MWD
2BC	44-60	strong brown (7.5YR5/8) clay with yellowish red, yellowish brown and gray mottles	
2C	60->64	mottled weak red, strong brown and gray gravely sandy clay	

Table 5.10: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location Number 5

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
5	5-1/ST	0-2"/Rmt 2-8"/pz 8-14" BE 14->19" Bt		x x x x							FSF #76 (8-14" is artifact bearing soil; very low density of artifacts likely)
5	5-2/ST	0-10"/pz 10-13" BE 13-15" Bt 15->24" Bx	x	 x x x		1					FSF #77 (10-13" is artifact bearing soil; very low density of artifacts likely)
5	5-3/ST	0-9"/pz 9-10" BE 10->23" Bt and Bx	x	 x x		1	1?				FSF #78 (9-10" is artifact bearing soil; very low density of artifacts likely)
5	5-4/ST	0-4"/Rmt 4-14" E/BE 14->20" Bt	 x	x x		 1?					FSF #79 (4-14" is artifact bearing soil; very low density of artifacts likely)
5	5-5/GC	0-10"/pz 10-20" BE 20-25" Bt >25" Bx?			x x x x						FSF #80 (>10" is artifact bearing soil; very low density of artifacts likely)
5	5-6/GC	0-11"/pz 11-20" E? 20-25" BE 25->29" Bt			x x x x						FSF #81 (>11" is artifact bearing soil; very low density of artifacts likely)
5	5-7/GC	0-10"/pz 10-12" BE 12->16" Bt			x x x						FSF #82 (10-12" is artifact bearing soil; very low density of artifacts likely; >12" sandy clay, no artifacts likely)
5	5-8/GC	0-10"/pz 10-12" BE 12->16"BT			x x x						FSF #83 (10-12" is artifact bearing soil; very low density of artifacts likely; >12" sandy clay, no artifacts likely)
5	5-9/GC	0-10"/pz 10-24" BE >24" Bt			x x x						FSF #84 (artifacts possible at 10 to about 13", very low density of artifacts likely)
5	5-10/GC	0-2"/pz1 -12"/pz2 or BE? 12-16"BE >16 Bt			x x x x						FSF #85 (this location is 5-1/ST above)
5	5-11/GC	0-11"/pz 11-18" BE 18->22" Bt >22" Bx?			x x x x						FSF #86 (artifacts possible at 11 to about 17", very low density of artifacts likely)
5	5-12/GC	0-5"/Rmt 5-24" E/BE >24" Bt			x x x						FSF #87 (artifacts possible 5-24", deep sand, very low density of artifacts likely)
5	5-13/GC	0-10"/pz 10-13" BE 13->20" Bt			x x x						FSF #88 (10-13" is artifact bearing soil; very low density of artifacts likely; >13" sandy clay, no artifacts likely)

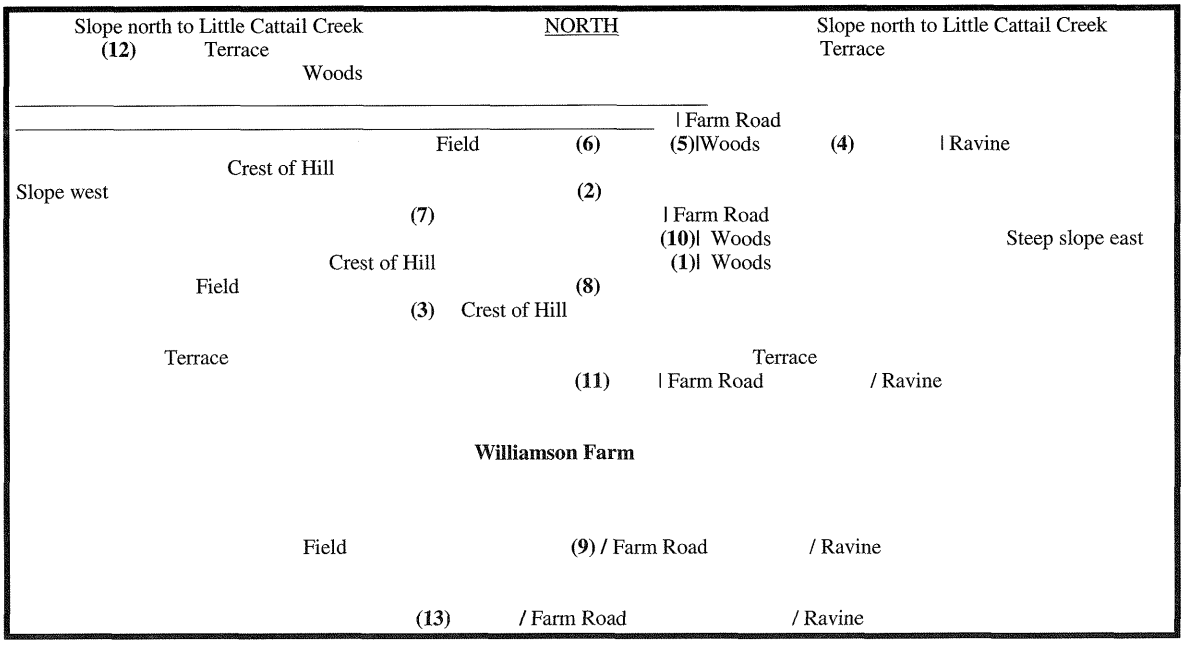


Figure 5.8. Williamson site test location number 5, relative position of shovel tests and core samples #1 through #13, high terrace over Little Cattail Creek directly behind Sally Williamson's house. Drawing not to scale (maximum distance shown tested east-to-west is 400 feet, and north-to-south is 400 feet).

Test Location Number 6

Site test location number 6 (fig. 5.1) is composed of that portion of the Sally L. Williamson Farm located on the 180-foot contour in the large front field to the east, and in front of, the brick house and north of route 693. It is bounded to the west by a gravel driveway. This location was selected for testing because of: 1) the high concentration of flakes, end scrapers, and fluted points (12 points) shown here by McCary (1975:52); and 2) information provided by Buddy Williamson concerning the large number of the fluted points he had found at this area of the field, near the location of an old hedge row (Buddy Williamson, personal communication, 1998). Since this area of the front field is the ridge centerline, at the site maximum elevation contour of 180 feet, no artifact burial mechanism other than bioturbation was suspected. Still, the old hedge row known to have been present near this location into the 1960s was thought possibly to have protected some of the deposit from long term plowing and deep soil erosion.

Soils Tests

Test location number 6 is composed of a soil typed as Mattaponi, and is characterized as a fine sandy loam at depths of archaeological interest (Table 5.11). The transition into a sandy clay loam occurs at approximately 14 inches below surface at the location tested. This area of the site is characterized as only moderately well drained with a seasonal high water table 50 inches below surface. In the periods of late winter and early spring this area is wet and a little soggy except on the centerline of the ridge.

Archaeological Tests

The locations of the shovel tests are shown in detail in fig. 5.9. The results of the tests, designated #6-1 through #6-9, are shown in Table 5.12 One shovel test location, number 6-6, produced a high density of chert flakes below

the plowzone. Other locations, test numbers 3, 8 and 9, indicated a fairly high concentration of artifacts in the plowzone but a low density of artifacts remaining below the plowzone. Only a single area was identified as suitable for a larger test excavation. Shovel tests in site test location 6 are shown as figs. 5.10 through 5.12

Table 5.11: Soil Evaluation Report for Williamson Site Test Location Number 6

Location: Sally Williamson Farm, on the 180-foot contour at the ridge centerline, in the large front field to the east, and in front of the brick house and north of Route 693 (in field, approximately 10 feet west of test #6-6/ST)

Soil Horizon	Depth inches	Soil Description Descriptions/soils tests by Robert Hodges, and Virginia Tech Soils Laboratory	Remarks
Ap	0-9	grayish brown (10YR5/2) fine sandy loam	1) Mattaponi soil type
E	9-14	light yellowish brown (10YR6/4) fine sandy loam; pH 6.8	2) SHWT 50"
BE	14-20	pale brown (10YR6/3) sandy clay loam with yellowish brown mottles	3) MWD
Bt	20->50	yellowish brown (10YR5/8) sandy clay loam with yellowish red and strong brown mottles	

Table 5.12: Williamson Site, 44DW1, Summary of Shovel Test Results, Test Location Number 6

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
6	6-1/ST	0-12"/fill 12-18" E, and BE 18->24" Bt	x x x			4	1				FSF #89 (artifacts possible at 12-18", but most will be at approximately 12-13")
6	6-2/ST	0-6"/pz 6-24" BE and Bt 24->26" Bt	x x	x x		1					FSF #90 (artifacts possible at 6-approximately 12"; most will be <12")
6	6-3/ST	0-8"/pz 8-10" E 10-11" BE 11->15" Bt	x x 	 x x		44 2					FSF #91 (most of the artifact bearing deposit was destroyed by plowing; artifacts possible at 8-13", but most will be at approximately 8-11")
6	6-4/ST	0-3"/Rmt 3-12" E, and BE 12->23 Bt	 x 	x x						1	FSF #92 (wooded area; very low density of artifacts possible at 3-12", but most will be located< 12")
6	6-5/ST	0-2"/Rmt 2-8" E 8->11" BE	 x 	x x		 1					FSF #93 (wooded area; very low density of artifacts possible at 2-11", but most will be located< 11")
6	6-6/ST	0-8"/pz -12"/pcut 8-12" E, and BE 12->25"Bt	x x x x			- 50 15 3					FSF #94 (most of the artifact bearing deposit was destroyed by plowing; some deep plow cuts between 8-12", plowzone ends at 8", no artifacts >13")

Table 5.12: Williamson Site, 44DW1, Summary of Shovel Test Results, Test Location Number 6

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
6	6-7/ST	0-7"/pz -10"/pcut 7-13" E, and BE 13->25" Bt	x x x	 x x		- 6					FSF #95 (most of the artifact bearing deposit was destroyed by plowing; some deep plow cuts between 7-10", PZ ends at 7")
6	6-8/ST	0-8"/pz -10"/pcut 8-11" E, or BE? 11->12" Bt	x x x 	 x		- 27 1					FSF #96 (most of the artifact bearing deposit was destroyed by plowing; some deep plow cuts between 8-10", PZ ends at 8")
6	6-9/ST	0-11"/pz -13"/pcut 11-13" BE 13->24" Bt	x x x 	 x		- 58 1					FSF #97 (most of the artifact bearing deposit was destroyed by plowing; some deep plow cuts between 11-13", PZ ends 11")

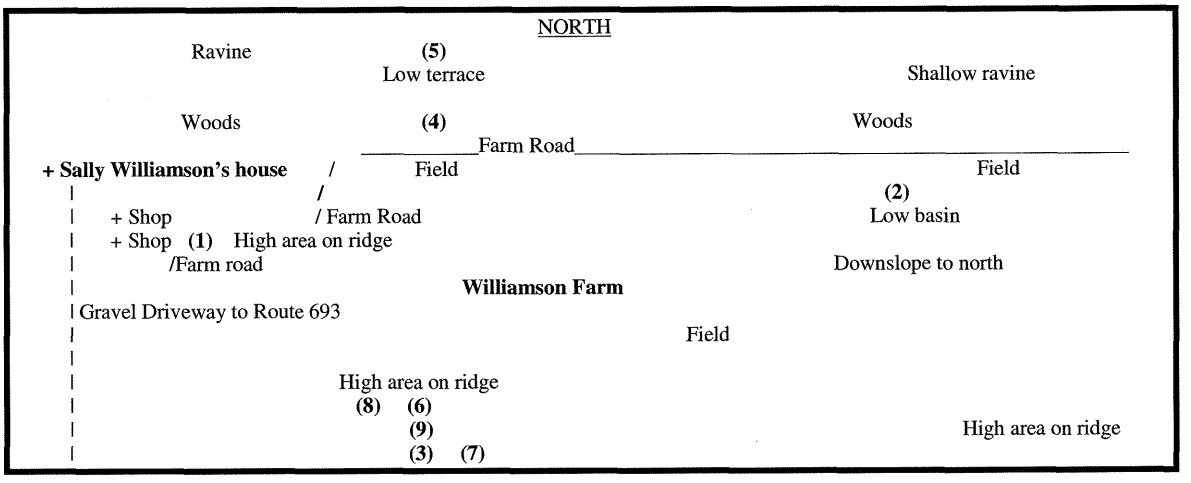


Figure 5.9. Williamson site test location number 6, relative position of shovel tests #1 through #9, front field east of Sally Williamson's House. Drawing not to scale (maximum distance shown tested east-to-west is 300 feet, and north-to-south is 200 feet).

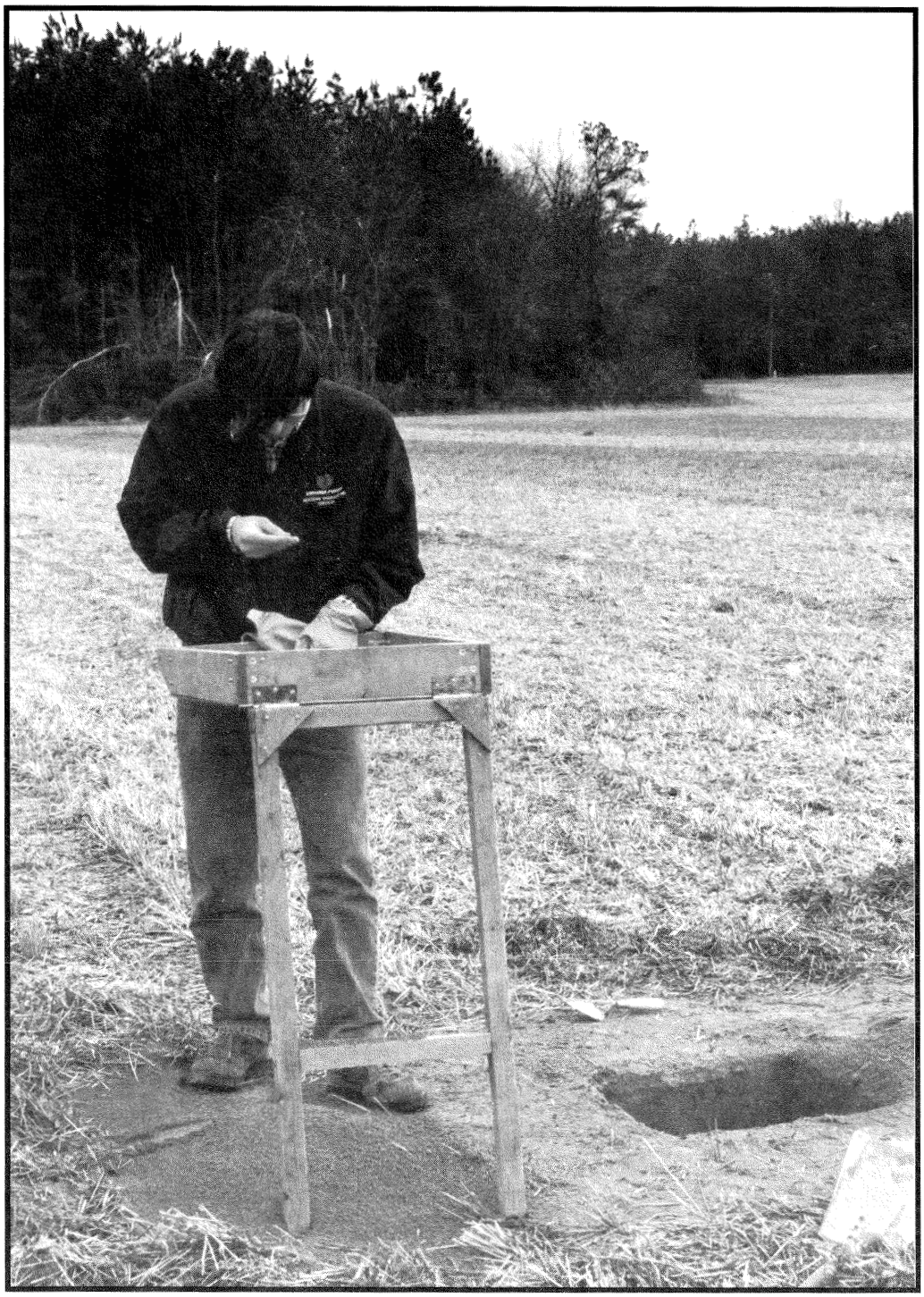


Figure 5.10. Shovel test 6-7/ST being excavated by NRS team member James P. McAvoy at test location 6 on the Williamson site looking southwest.

Figure 5.11. Artifacts in situ in upper part of soil horizon E, in shovel test 6-6/ST.

Figure 5.12. Soil horizon E exposed in shovel test 6-7/ST, with disturbed soil zones removed.

Test location Number 7

Site test location number 7 (fig. 5.1) is composed of that portion of the Sally Williamson Farm located in the low ground (wetland) in the large front field to the southwest, and in front of, the brick house. This area is directly adjacent to the Buddy Williamson Farm, on a southward drainage from the small front pond at the location of a spring. The area is north of state route 693, and bounded to the west by Sally Williamson's gravel driveway. This location was selected for testing because of: 1) the occurrence of a light scatter of chert flakes and chisel-wedges on the surface that were exposed in the bank of a new drainage ditch cut into the low ground by the farmer leasing the Williamson property; and 2) the two concentrations of end scrapers noted by McCary (1975:52) on low terraces just to the west of this area on the Buddy Williamson Farm. It seems significant to note that the only fluted points from test location 7 are the four reported by McCary (1975:52) on higher terraces 500 feet south of this test area, and just to the east and west of the drainage ditch. Since much of this area of the front field is low and wet, no artifact burial mechanism other than bioturbation was suspected. Still, this area of the front field was forested (reforested) in the 20th century until the 1980s, and it was thought that some of the deposit may have been protected from long-term plowing and soil erosion.

Soils Tests

Test location number 7 is composed of soil typed as Yemassee, and is characterized as loam at depths of archaeological interest (Table 5.13). The transition into a sandy clay loam occurs at approximately 10 inches below surface. This area of the site is characterized as somewhat poorly drained with a seasonal high water table only 16 inches below surface. In late winter and early spring the ground here is wet and soggy.

Archaeological Tests

The locations of the tests are shown in detail in fig. 5.13. The results of the shovel tests, archaeological core samples, and geological core samples, designated #7-1 through #7-12, are shown in Table 5.14. One shovel test, location number 7-5, produced a moderate density of artifacts in and below the plowzone which included chert flakes and three chisel-wedges, and this location was identified as suitable for a larger test excavation. This area is a low rise just to the east of the drainage ditch in a very wet area with a high seasonal water table. One other nearby shovel test (number 7-6) produced a single chert flake which was recovered in the plowzone. From other artifacts observed during an inspection of the entire length of the drainage ditch, it appears there are several high-density concentrations in this low ground area. One such area is near the location of shovel test number 7-8, although this test was negative.

Table 5.13: Soil Evaluation Report for Williamson Site Test Location Number 7

Location: Sally Williamson Farm, in the low ground (wetland) in the large front field to the west, and in front of, the brick house; also, directly adjacent to the Buddy Williamson Farm and south of his pond, and north of route 693 (at edge of drainage ditch, 5 feet north of test #7-5/ST)

Soil Horizon	Depth inches	Soil Description Descriptions/soils tests by Robert Hodges, and Virginia Tech Soils Laboratory	Remarks
Ap1	0-8	very dark grayish brown (10YR3/2) loam	1) soil, Yemassee loam
Ap2	8-10	grayish brown (10YR5/2) loam	2) SHWT 16"
BE	10-18	pale brown (10YR6/3) sandy clay loam; pH 4.5	3) SWPD
Btg	18->30	gray (10YR6/1) clay loam with strong brown and yellowish red mottles	

Table 5.14: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location number 7

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
7	7-1/CS	0-4"/fill? 4-12"/pz? 12->17"BE		x x x							FSF #98 (most of the artifact bearing deposit was destroyed by plowing; a low density of artifacts is possible at approximately 12")
7	7-2/GC	0-5"/fill? 5-11"/pz 11->14" BE, and Bt			x x x						FSF #99 (most of the artifact bearing deposit was destroyed by plowing; sandy-clay at 11", no artifacts likely)
7	7-3/GC	0-6"/pz 6-9" E 9->14" BE, and Bt			x x x						FSF #100 (most of the artifact bearing deposit was destroyed by plowing; a low density of artifacts may be present at 6-9" in this area of the site)
7	7-4/CS	0-6"/pz 6-10" E 10->18" BE, and Bt	x	x x						x*	FSF #101 (most of the artifact bearing deposit was destroyed by plowing; low density of artifacts may be present at 6-10"; 19th-20th century artifacts* in plowzone)
7	7-5/ST	0-8"/pz1 8-12"/ pz2, and BE 12->17" BE and Btg	x x x			6 6 4					FSF #102 (moderate density of artifacts in and below the plowzones; no artifacts >14"; three chisel-wedges at approximately 12")
7	7-6/ST	0-7"/pz1 -9"/pz2 9-16" BE 16->24" Btg	 x	x x x		 1					FSF #103 (low density of artifacts probable in and below the plowzones; no artifacts likely >14")
7	7-7/GC	0-9"/pz 9-16" pz2? and BE 16->23" Btg			x x x						FSF #104 (low density of artifacts probable in and below the plowzones; no artifacts likely >14")
7	7-8/ST	0-8"/pz1 -10"/pz2 10-16" BE >16" Btg		x x x x							FSF #105 (low density of artifacts probable in and below the plowzones; no artifacts likely >14")
7	7-9/GC	0-8"/pz 8-13" BE 13->24" Btg			x x x						FSF #106 (low density of artifacts probable in and below the plowzone; no artifacts likely >13")
7	7-10/GC	0-4"/pz 4-17" BE 17->24" Btg			x x x						FSF #107 (low density of artifacts probable in and below the plowzone; no artifacts likely >14")
7	7-11/GC	0-6"/pz1 -8"/pz2 8-18" BE 18->24" Btg			x x x x						FSF #108 (low density of artifacts probable in and below the plowzones; no artifacts likely >14")

Table 5.14: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location number 7

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
7	7-12/GC	0-4"/pz1 -12"/pz? 12->24" BE, and Btg			x x x						FSF #109 (low density of artifacts probable in and below the plowzones; no artifacts likely >14")

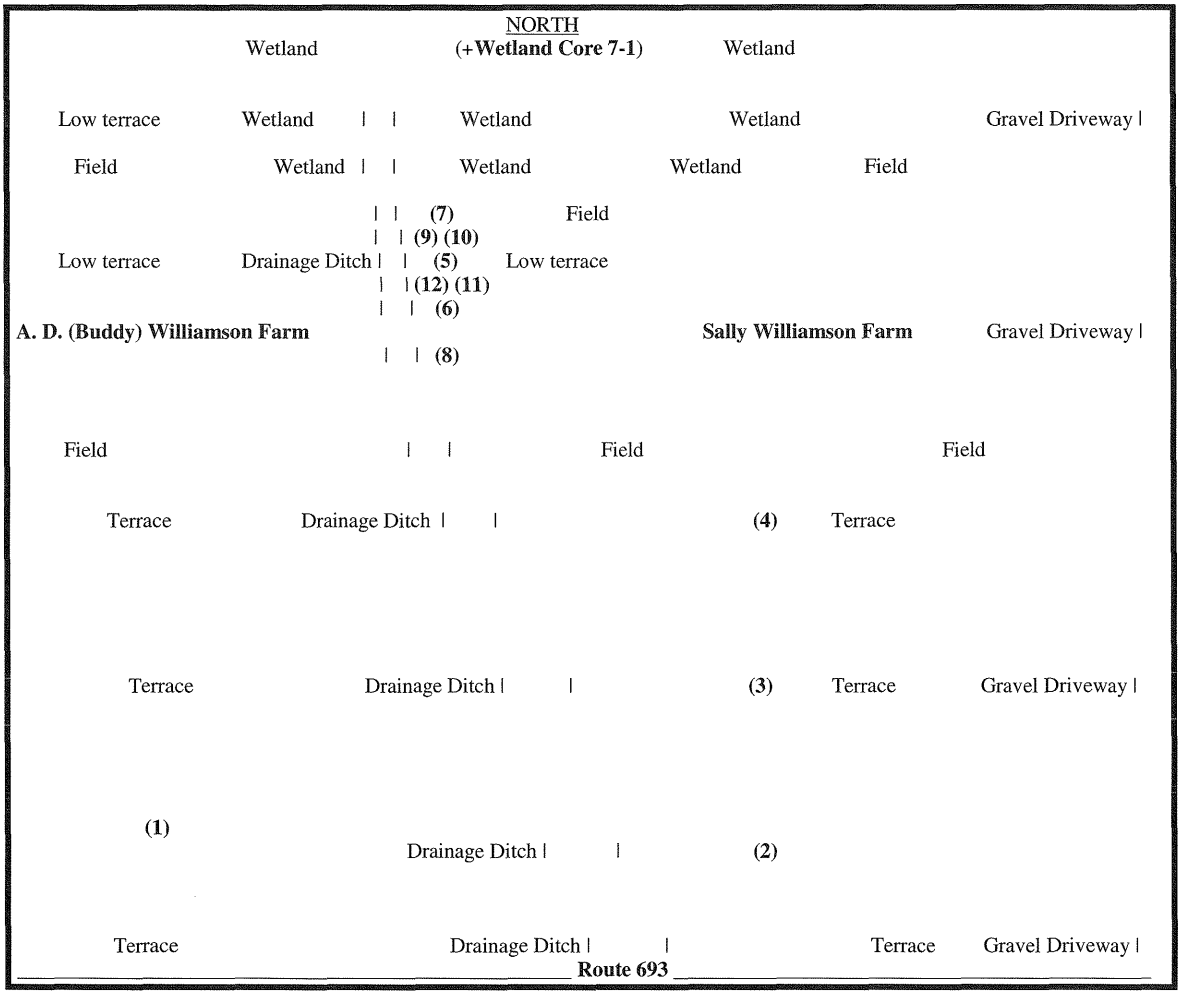


Figure 5.13. Williamson site test location number 7, relative position of shovel tests and core samples #1 through #12, low ground in front field southwest of Sally Williamson's House. Drawing not to scale (maximum distance shown tested east-to-west is 225 feet, and north-to-south [compressed in drawing] is 600 feet).

Test Location Number 8

Site test location number 8 (fig. 5.1) is the far southeast end of A. L. Williamson's portion of the large front field, south of the old Roy Ampy Farm, and directly north of route 693. The western boundary is approximately at the farm road leading to the old Roy Ampy Farm which extends north across the Williamson's property. This location was selected for testing because of: 1) the moderately high concentration of chert flakes shown here by McCary (1975:52); and, 2) the possibility that some areas along the periphery of the cultivated fields, and just into reforested pine woods, may have escaped complete destruction from modern plowing. There was no indication based upon topography that location number 8 would have cultural deposits in undisturbed context below the plowzone, but much of this area of the site has been forested for most of the 20th century, and the area to be tested was located near a small active spring draining into Health Meadows Branch to the south.

Soil Tests

Test location number 8 is composed of soil typed as Slagle and is characterized as a fine sandy loam at depths of archaeological interest (Table 5.15). In the cultivated field the transition into a clay loam occurs at approximately 8 inches below surface. This area of the site is characterized as only moderately well drained with a seasonal high water table at 20 inches below surface. The area appears to be loamy and is soggy in the wetter periods of late winter and early spring.

Archaeological Tests

The location number 8 shovel tests and the single core sample are shown in fig. 5.5 with the location number 4 tests. The results of the shovel tests, designated #8-1, #8-3, and #8-4 in Figure 5.5, are shown in Table 5.16. One shovel test location, number 8-3 (and core sample location 8-2), produced a high density of chert artifacts in and below an old plowzone. The two other test locations produced somewhat lower numbers of artifacts below the plowzone. Most of the chert flakes recovered from all of the tests (and observed on the surface) appeared lightly weathered, and some appeared thermally altered as do Late Archaic Perkiomen points from the Little Cattail Creek area. The only fragment of pottery recovered during the field work on the Williamson site, a single small Stony Creek cord marked sherd, was recovered in 8-4/ST. The test number 8-3 area would be of interest in the evaluation of the Archaic period use of the Williamson site, but no part of test location 8 was judged suitable (free of Archaic period artifact contamination) for evaluation of the Clovis use of the site.

Table 5.15: Soil Evaluation Report for Williamson Site Test Location Number 8

Location: A. L. Williamson field, at the far southeast end of the large field in front and just south of the old Roy Ampy Farm, and directly north of route 693 (in plowed field, 12 feet northeast of test #8-1/ST)			
Soil Horizon	Depth inches	Soil Description* Descriptions/soils tests by Robert Hodges, and Virginia Tech Soils Laboratory	Remarks
Ap	0-8	dark grayish brown (10YR4/2) fine sandy loam	1) Slagle soil type
Bt	8->20	yellowish brown (10YR5/6) clay loam; pH 4.5	2) SHWT 20" 3) MWD

*Test location #8 could be sampled no deeper than 20 inches due to water level in core hole

Table 5.16: Williamson Site, 44DW1, Summary of Shovel Test and Core Sample Results, Test Location Number 8

General Test Area	Test Number	Soil Horizons	Artifacts			Artifact Materials					Comments
			Yes	No	N/A	Chert	Qtze	Qtz	C. Qtz	Other	
8	8-1/ST	0-4"/pz 4-22" BE, and Bt 22->24" Bt	x x	 x		10 5					FSF #110 (most of the artifact bearing deposit was destroyed by plowing; no flakes deeper than 6", and all from Late Archaic period site use?)
8	8-2/CS and 8-3/ST (same location for both tests)	0-4"/Rmt 4-13" BE 13->20" Bt	x x x			11 46 2					FSF #111 (wooded area; a shovel test was placed directly over a core sample - one field report, #111) (no flakes deeper than 14"; Late Archaic period site use?)
8	8-4/ST	0-4"/pz 4-14" BE >14" Bt	x x	 x		5 12	2			1*	FSF #112 (some of the artifact bearing deposit was destroyed by plowing; no artifacts >8"; *one Middle Woodland shard)

Figure 5.14. Looking north to the Sally L. Williamson home, in the area of test location 6.

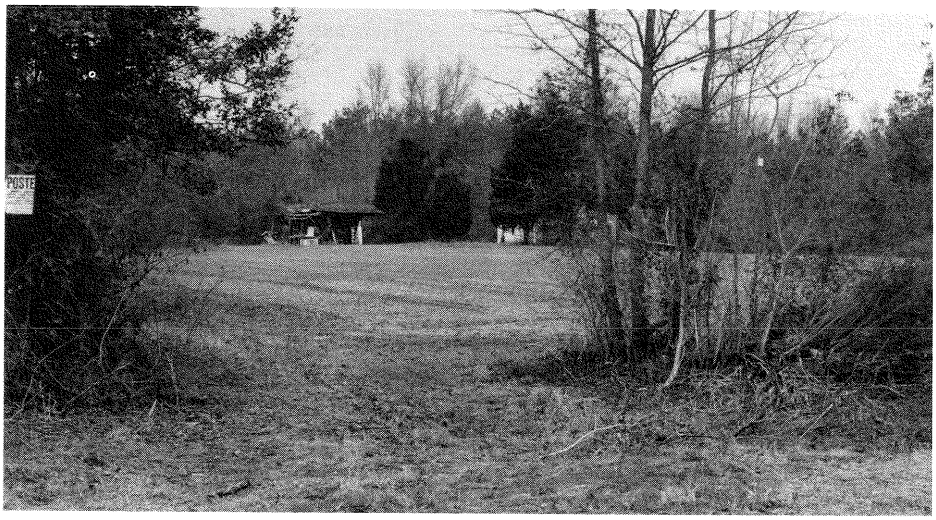


Figure 5.15. Looking north to the old Roy Ampy Farm from the site datum area, test location 4.

Figure 5.16. Looking east at site test location 4 along the Ampy property fence line (heavy brush) to left; truck in background is near location of shovel tests 4-13/ST, and 4-14/ST.

Figure 5.17. Looking south, along the farm road (left), with site test location 4 to the right and front left, and test location 8 in the background to the far left.

Figure 5.18. Looking west-northwest across the low ground just north of test location 7 (far left), to the small front field pond (spring area) near the tree at the extreme right (composite photograph).

CHAPTER 6
EXCAVATION AREA 2

Excavation Location

Excavation 2 was positioned in the northwest corner of the graveyard field over Little Cattail Creek (fig. 6.1). This general location is the northeast corner of the Sally L. Williamson Farm in the back field adjacent to the old Roy Ampy Farm. Excavation area 2 was positioned about 250 to 300 feet south of the area of McCary's 1972 through 1975 excavations which were adjacent to Haynes' Trench B. This location, on the western slope of the graveyard hill, levels out onto a gentle 3-degree slope terrace (fig. 6.1) approximately 30 to 40 feet east of the large drainage ravine. The ravine is fairly deep and wide, separating test area 2 from test area 5 on the Williamson site.

Although excavation area 2 was positioned at the extreme western edge of the cultivated field, all of the excavation was in an area of the field which had been plowed, i.e., not any of the excavation area was without a readily visible, deep plowzone. The excavation was positioned approximately 20 feet southeast of a large, prominent oak tree which establishes and dominates the woodline in this area of the site (fig. 6.1). The work was carried out here in April 1999, adjacent to, and just north of shovel tests 2-1/ST, 2-12/ST, and 2-13/ST defined in Chapter 5. Shovel tests in this area were positive for chert and crystal quartz flakes over a depth of several inches below the plowzone. Some of the artifacts recovered in the shovel tests were fairly large and many were observed to be in a single soil stratum with the larger dimensions of the artifacts parallel to the surface. This suggested possible buried working surfaces.

Excavation Layout and Method

The excavation was laid out as four in-line, contiguous 5-foot squares, with the long axis 40 degrees west of north, fig. 6.2. From northwest to southeast the units were numbered 2A, 2B, 2C, and 2D. As the excavation progressed two smaller contiguous units were excavated to the north and to the south of unit 2B, designated 2BN and 2BS. This north and south extension was an attempt to identify a hearth thought possibly near features recovered in units 2A and 2B.

The plowzone at excavation area 2 was hand shoveled and sifted through 1/4-inch mesh hardware cloth with all artifacts retained by unit, except for sub-sized, supplemental units 2BN and 2BS where plowzone artifacts were not recovered. Deep plow cuts were then cleaned by troweling until all disturbed soil was removed from the profile of all units (figs. 6.2 and 6.3). The undisturbed portion of the archaeological deposit of each excavation unit was excavated in two levels. These levels varied in thickness depending upon the ground slope, and total thickness of the deposit as determined by localized tests. Each unit was excavated by a combination of flat shoveling and troweling (figs. 6.3 and 6.4) based upon the density of artifacts, number of features encountered, and degree and method of charcoal recovery. The final excavation is shown as figs. 6.5 and 6.6.

Plowzone Soil Horizons Ap1 and Ap2: Artifacts

The plowzone Ap1 and Ap2 soil horizons (figs. 6.3 and 6.4) in excavation area 2 represented from approximately 60 to 68 % of the total thickness of the artifact bearing deposit. Table 6.1 presents the percentage by excavation unit and level. The 1,653 prehistoric artifacts recovered in the plowzone of units 2A through 2D are summarized in Appendix A. Artifact typology is as presented and as defined

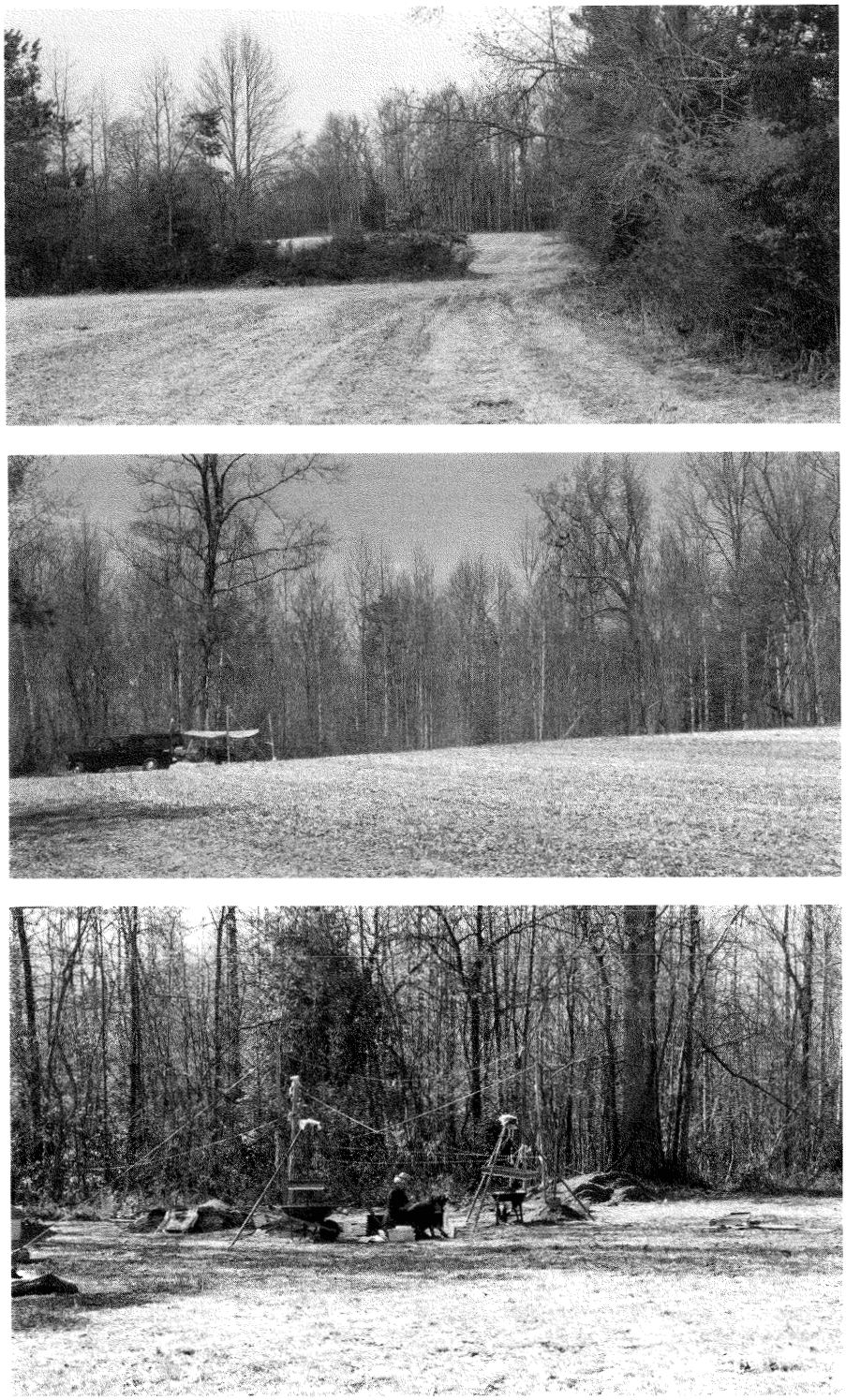


Figure 6.1. Top, Williamson site looking north from the site datum in the front field into the back or graveyard field at the northeastern end of the Williamson Farm; middle, looking north across the western terrace in the graveyard field showing the angle of slope to the west, with excavation area 2 at left; bottom, looking west toward the large drainage ravine, and excavation area 2 in process in April 1999.

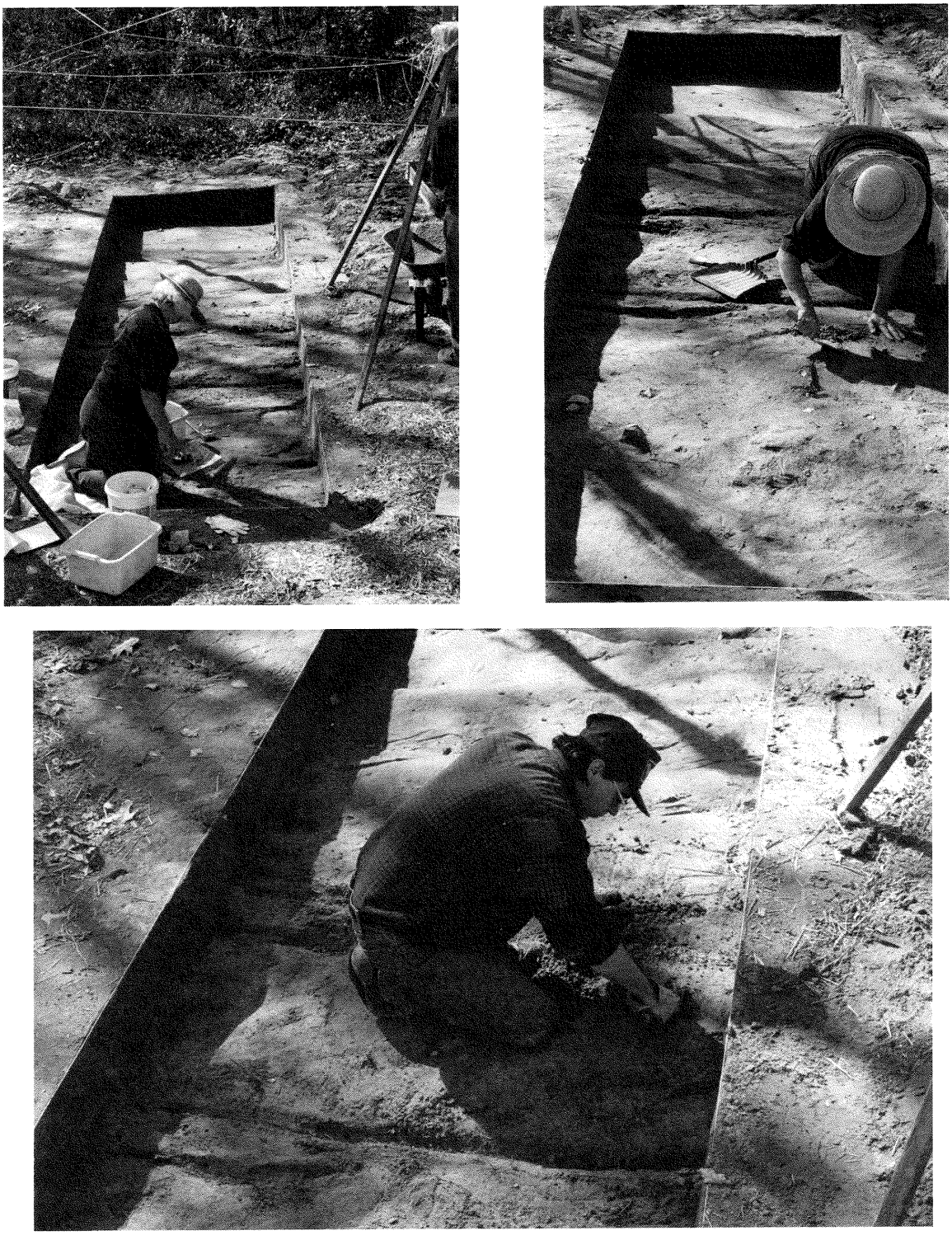


Figure 6.2. Williamson site excavation area 2 with NRS personnel removing the plowzone and working in upper levels of all units, April 1999.

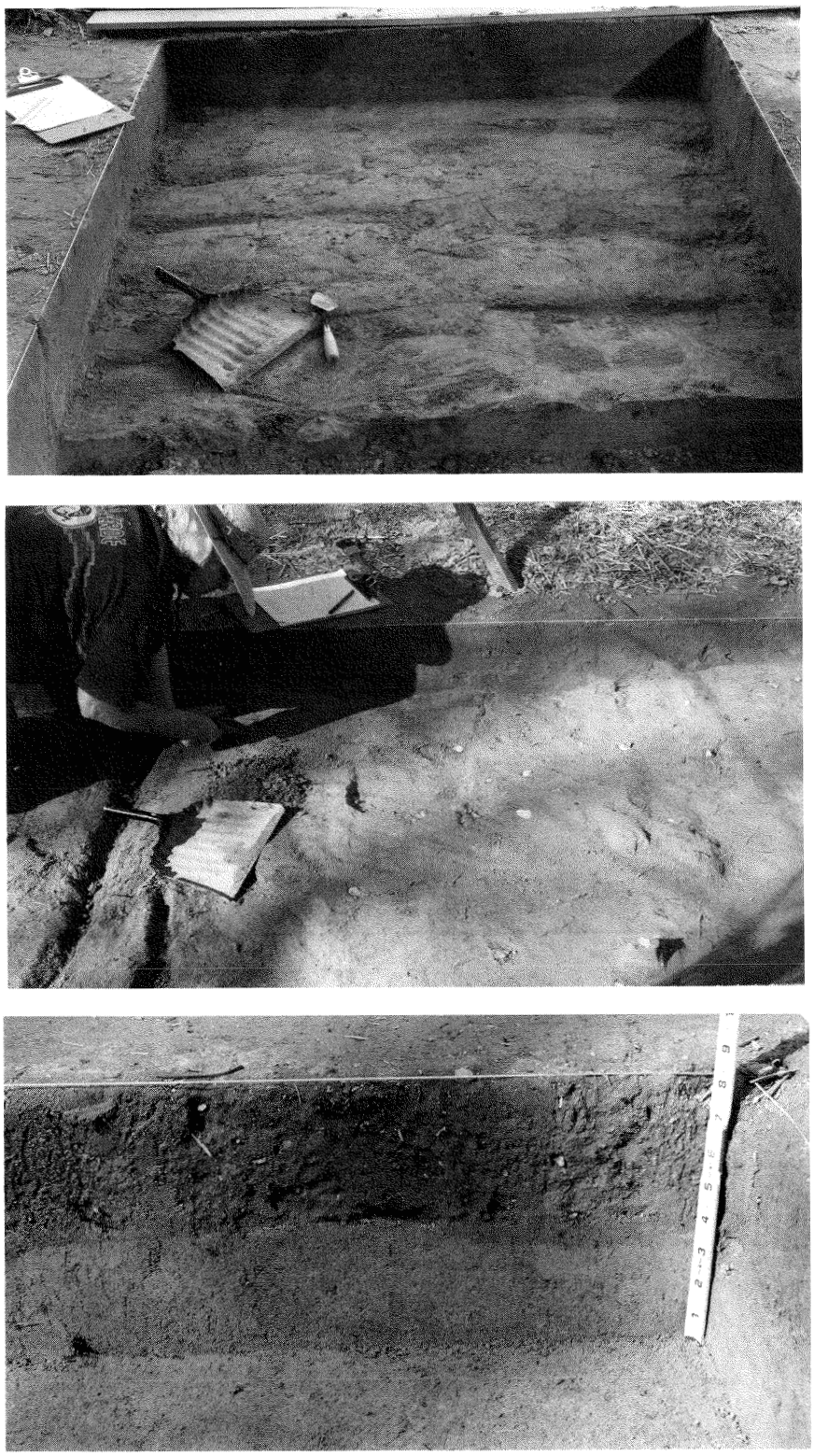


Figure 6.3. Top, Williamson site excavation area 2 with plowzone cleaned in unit 2D; middle, working in upper levels of units 2C and 2D, Feature 3; bottom, soil profile showing Ap2 and BE soil horizons looking north in unit 2D, April 1999.

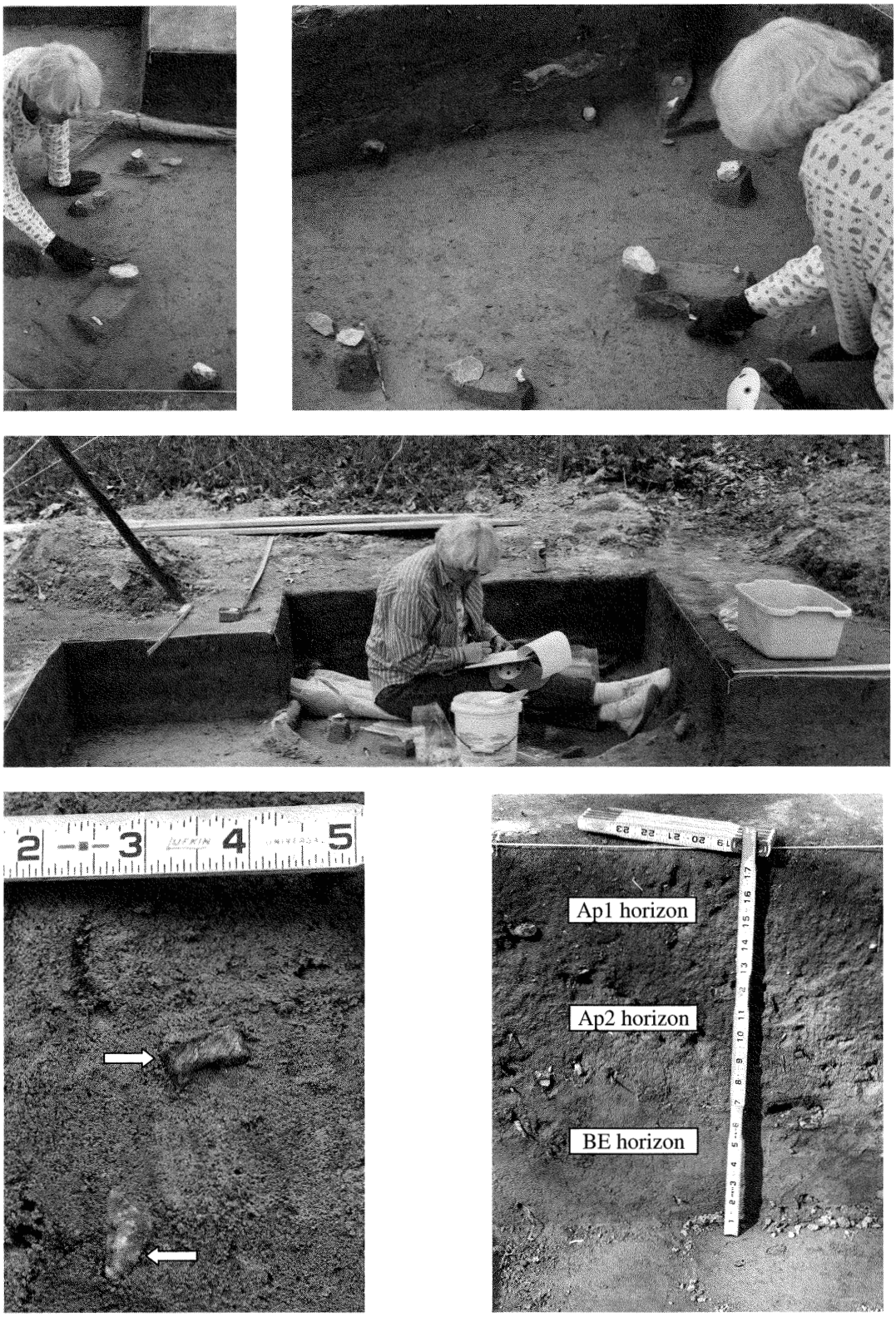


Figure 6.4. Top, left and right, Williamson site excavation area 2, unit 2A, level 2, with Feature 1 being excavated; middle, Feature 1 being mapped by Lynn D. McAvoy; bottom left, fluted point base and flake (arrows) exposed in Feature 2, unit 2B; bottom right, soil profile showing Ap1, Ap2, and BE soil horizons looking west in unit 2A, April 1999.

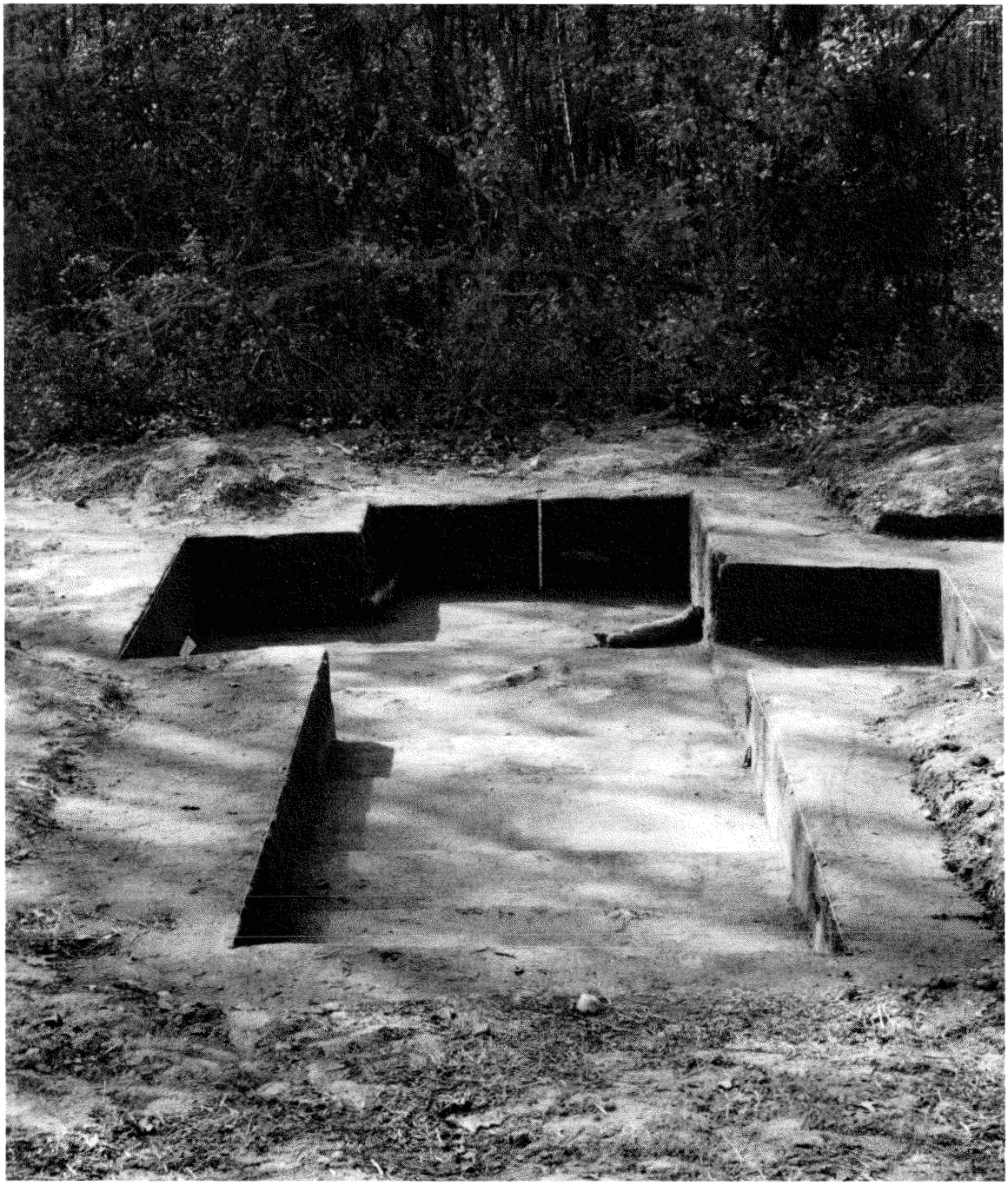


Figure 6.5. Williamson site, excavation area 2 looking west across completed excavation units 2A, 2B, 2C, and 2D, April 1999 .

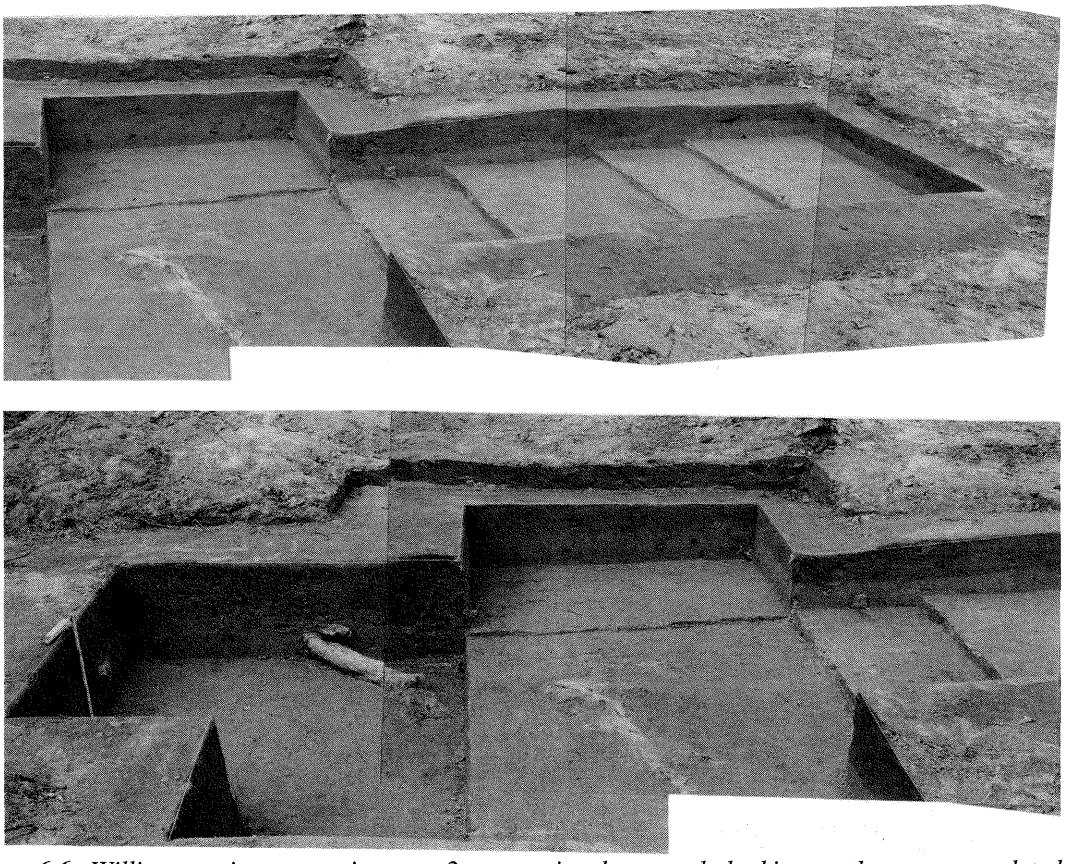


Figure 6.6. Williamson site, excavation area 2, composite photograph, looking north across completed excavation units 2A, 2B, 2C, and 2D, April 1999.

in Chapters 4 and 10, and Appendix B to this report. The most common prehistoric artifacts were flakes, mostly chert, which ranged in number from approximately 250 in Unit 2A to approximately 700 in Unit 2D. Of significance was the presence of over 70 crystal (clear) quartz, and partly crystal quartz, flakes in the plowzone of these units. At other excavation areas on site, no more than one crystal quartz flake was found in any unit. The plowzone also produced a very small number of 19th- and 20th-century artifacts which are listed and defined as to type and probable age in Appendix A.

Table 6.1: Volume Percent by Level of Excavation Units

Unit	Plowzone		Level 1		Level 2		Total unit	
	Thick-ness*	Vol. %	Thick-ness*	Vol. %	Thick-ness*	Vol. %	Thick-ness*	Vol. %
2A	13.5	66	3	15	4	19	20.5	100
2B	11.5	64	3	17	3.5	19	18	100
2C	9	60	3	20	3	20	15	100
2D	8.5	68	2.5	20	1.5	12	12.5	100

*All thickness values are inches; depths are maximums for the units

Subsurface Soil Horizon BE: Artifacts and Features

Artifacts

The subsurface (below plowzone) soil horizon BE (figs. 6.3, 6.4, and 6.6) of excavation area 2 produced 66 formal tools, cores, and edge-worked or used flakes, as well as 841 pieces of debitage. Artifact typology is as defined in Chapters 4 and 10, and Appendix B to this report, and all of the artifacts recovered below the plowzone in excavation area 2 are given sequential numbers from 7 through 914 in Appendix B. The 66 formal tools, cores, and used flakes are given unique drawing numbers in figs. 6.21 through 6.39 at the end of this chapter, and these drawing numbers are indexed to the Appendix B sequential numbers under the "comments" heading for individual artifacts in that appendix. Photographs of selected artifacts from excavation area 2 are shown as figs. 6.40 through 6.45.

The formal tool types recovered in excavation area 2 include: fluted points, fluted point preforms, an end scraper, numerous snapped-flake or bend break tools including gravers and planes, chisel-wedges and fragments of chisel-wedges, smoothing/abrading stones, perforators, gravers, worked and used flakes including core blades, cores and core fragments, a large notch. Lithic technology observed included bifacial, bipolar, and core-and-blade flake. Debitage varied from large primary core flakes with cortex to small (<5 mm) trim flakes from sharpening tools or finishing projectile points.

Six artifacts from excavation area 2 were subjected to CIEP immunological analysis for potential identification of animal protein residues, and then wear analysis. The results of these tests are presented in Chapter 10.

Subsurface Features

General

The undisturbed, subsurface (below plowzone) soil horizon BE portion of the artifact bearing deposit in excavation area 2 represented from approximately 32 to 40% of total deposit thickness. Table 6.1 presents the percentage by excavation unit and level. The undisturbed deposit thickness is of special interest in excavation area 2 because the unique mix of lithic materials found there helped determine the original, before plowing, deposit thickness. This is discussed in detail later in this chapter under the heading "General Observations Based Upon Artifact Recovery."

The drawing of generalized features (fig. 6.7) shows features 1, 2 and 3 in plan and profile views. Feature 1 was the deepest with most artifacts encountered in level 2 of unit 2A. Feature 2 was split between levels 1 and 2 in unit 2B, and feature 3 was similarly split between levels in units 2C and 2D.

Most formal or edge-used flake tools, and charcoal clusters, are numbered and positioned by unit and level in figs. 6.21 through 6.39 at the end of this chapter, which also show the location of recovery of the larger debitage fragments and the position of disturbances. The composite drawing of excavation area 2, with the location of all plotted artifacts, features, and charcoal clusters, with levels 1 and 2 superimposed, is shown as fig. 6.8. The matching excavation area 2 profile also is shown in fig. 6.8. The numbered charcoal samples are indexed to the sample numbers in Table 10.3 of Chapter 10.

Feature 1

Feature 1, as encountered in unit 2A and shown in more detail in figs. 6.4, 6.7, and 6.8, was a semicircle about 5 feet in diameter, but only part of feature 1 was excavated. The total feature may have been circular. The tools recovered in Feature 1 were large, likely represent a single period of site use, and they appear to have been related to cutting, scraping, planing, and grinding/smoothing objects of wood and/or bone. A large core fragment was carefully notched (5 mm deep by 20 mm wide) to form a sturdy semicircular scraping or planing surface as if for forming cylindrical shafts. The

artifacts were displaced vertically over a depth of about 4 inches, probably from bioturbation. There were visible signs of bioturbation as several large oak roots were encountered during excavation in both level 1 and level 2 of unit 2A. At least two clusters of charcoal were recovered in unit 2A, and five charcoal samples (6, 7, 38, 39, and 40) were submitted for analysis as tabulated in Chapter 10.

Feature 1 was also the location of removal of a soil sample for a quick scan analysis of phytoliths from sediment. The soil (sediment) sample was taken 15 inches below surface, in the Clovis level. A control sample was taken from the upper plowzone over a depth of 0 to 12 inches. The results of the phytolith quick scan are presented in Chapter 10. Feature 1 was also the location of removal of sediment samples for pollen analysis. One sample was removed from the upper plowzone at 0 to 12 inches below surface, and one from the Clovis level 18 inches below surface. The results of this work are presented in Chapter 10.

Feature 2

Feature 2 was encountered in unit 2B and is shown in more detail in figs. 6.7 and 6.8. This feature was approximately two feet in diameter, smaller than Feature 1, but it represented the unique occurrence of two metavolcanic fluted point fragments. The points were finished and apparently had been broken in the shaft during use. This feature is likely related to Feature 1, which contained a highly curated end scraper of unusual metavolcanic stone similar to the two fluted point fragments. In the hope that a hearth might be near the two features, smaller units 2BN and 2BS were opened to the north and south of parts of units 2A and 2B. However, artifacts and charcoal clusters were found to be minimal as shown in figs. 6.7 and 6.8. Unit 2B produced charcoal samples 2, 5, and 41 from two clusters; and, unit 2BN produced charcoal sample 60 from a single cluster. Sample 41, dated as a single lump of oak charcoal from level 2 of unit 2B, is described in Table 4 of Chapter 10.

The larger of the two projectile point fragments was recovered laying flat, and was noted as having a thick, tightly adhering soil layer on the underside. The artifact was carefully excavated and immediately placed in an airtight plastic bag. The soil layer was removed in the laboratory, and the soil was submitted for pollen analysis with the samples removed from excavation unit 2A, Feature 1 referenced above. Results of the analysis are presented in Chapter 10.

Feature 3

Feature 3 was located at the eastern end of unit 2C and the western end of unit 2D (figs. 6.3, 6.7, and 6.8). This was a general accumulation of small tools and tool fragments from cutting, piercing, drilling, and graving activity, as well as debitage from biface manufacture. The feature contained a large number of flakes of chert and crystal quartz. The chert debitage in these units was identified as derived from several cores of very distinctive color patterns and textures. In Appendix B, under "comments," artifacts often are identified as derived from one of these distinctive, individual cores.

The large amount of crystal quartz debitage suggests that biface manufacture was a major activity in Feature 3. Crystal quartz is common only as fluted points on the Williamson site. Other tool types of crystal are very rare, and indeed except for an occasional used, lightly worked or more likely edge-damaged flake, none of the crystal represented a formal tool.

Several charcoal clusters associated with feature 3 produced charcoal samples 1, 3, 4, 42, 43, 44, 45, 46, and 61. Charcoal from three clusters representing samples 44 and 45 combined, 61, and 46 was radiocarbon dated, and the results appear in Chapter 10. One cluster producing samples 44 and 45 may have represented the bottom of a Middle Archaic period pit hearth partly obscured by the plowzone.

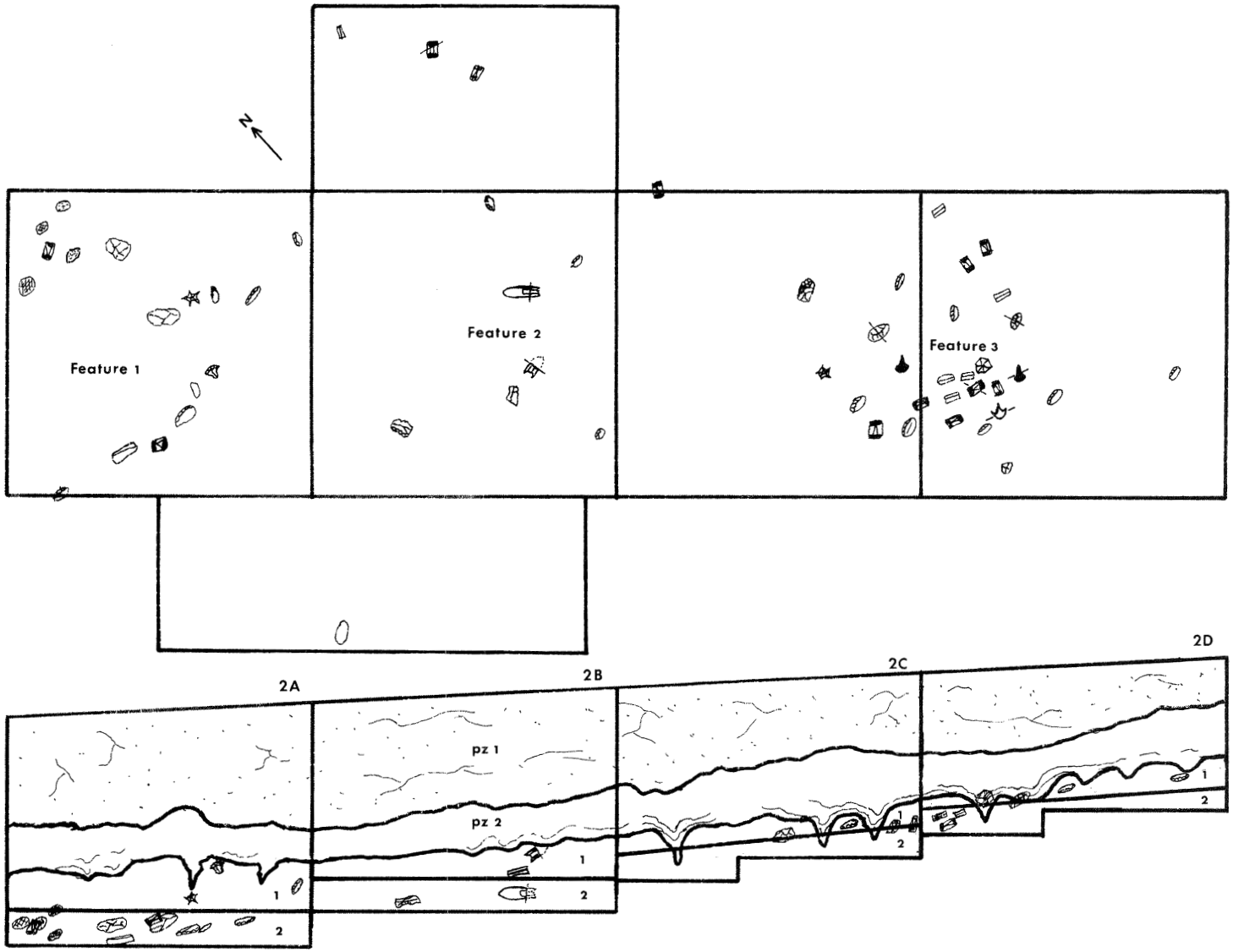


Figure 6.7. Generalized composite drawing of superimposed levels 1 and 2, in all units in excavation area 2, with features 1, 2, and 3 in plan and profile views; only the tools excavated in each cluster are shown. The vertical dimension in the profile view, compared to the horizontal dimension, is 2.3 times actual size to allow for relative placement of artifacts in the vertical position as excavated. A profile view drawn to scale is shown in fig. 6.8.

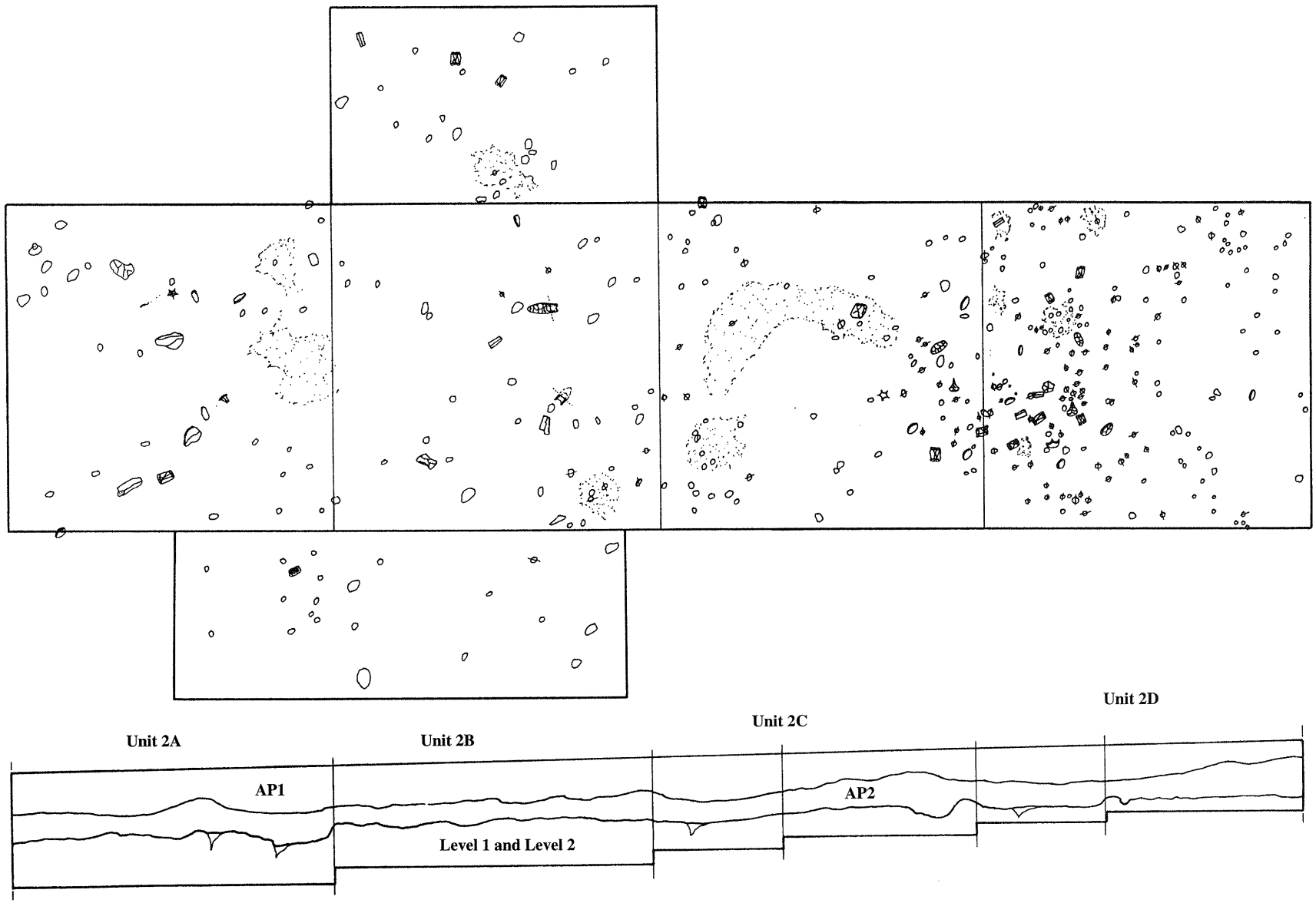


Figure 6.8. Detailed composite plan view, (and profile) of all units in excavation area 2, with artifacts, and charcoal clusters, from levels 1 and 2 superimposed. The drawing shows the location of recovery of large pieces of chert debitage, crystal quartz debitage (open circles with a cross-line), tools (symbols as defined in Appendix B), and charcoal clusters (areas of small dark spots). Long (SE-NW) axis of excavation is 20 feet.

These units had a few deep chisel plow cuts which were cleaned by troweling before excavation. There was obvious bioturbation in unit 2C represented by a large charcoal concentration in levels 1 and 2 identified as a burned-out tree. Also, the numerous, smaller charcoal concentrations encountered in both unit 2C and 2D suggested contamination from several other sources, such as the possible pit hearth identified above.

General Observations Based Upon Artifact Recovery

Slope Wash

The total number of artifacts recovered in the plowzone, and subsurface (below plowzone), of each excavation unit is shown in fig. 6.9. There was a steady increase in the total number of artifacts produced in and below the plowzone in the units proceeding up slope to the east over a 20-foot distance from unit 2A to 2D. But, the ratios of plowzone to subsurface artifacts decreased proceeding up slope from 4-to-1 in unit 2A to 1.9-to-1 in unit 2D. Given this fact, and the fact that most of the larger artifacts recovered in unit 2A were in level 2 below the plowzone, it appears that a large number of the plowzone artifacts represent wash from the hillside up slope. The issue of slope wash is discussed in more detail below under the heading "Crystal Quartz Debitage."

Burned Artifacts

Careful attention was paid to the presence, and number, of burned artifacts in the individual excavations on the Williamson site in the hope that this observation would lead to the recognition of hearths.

As shown in fig. 6.10, approximately 5 to 10% of the artifacts recovered in the plowzone were observed to be burned. Below plowzone the percentages were a little higher for three of the units, but unit 2A was much higher with 28% burned. Still this was a comparatively low number of artifacts based upon the overall low number recovered below plowzone in unit 2A. Also, very few of the artifacts in deeply buried feature 1 of unit 2A were burned, an observation which seems to diminish the significance of the rather high overall percentage. No clear hearths were recognized based upon burned lithics in excavation area 2.

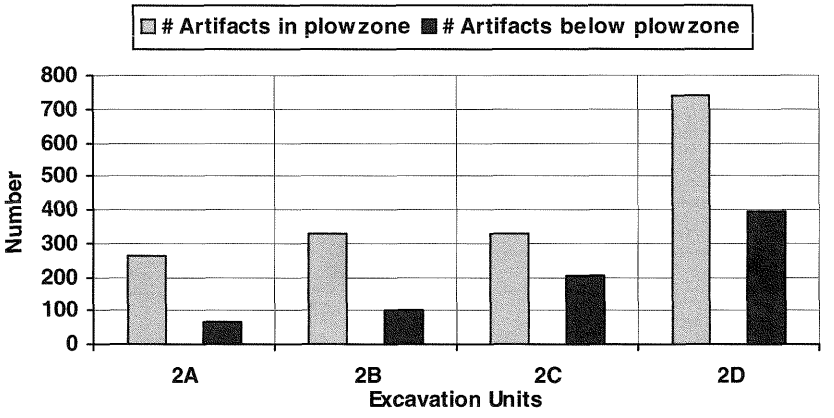


Figure 6.9. Excavation area 2, total number of artifacts recovered in the plowzone versus below the plowzone by unit.

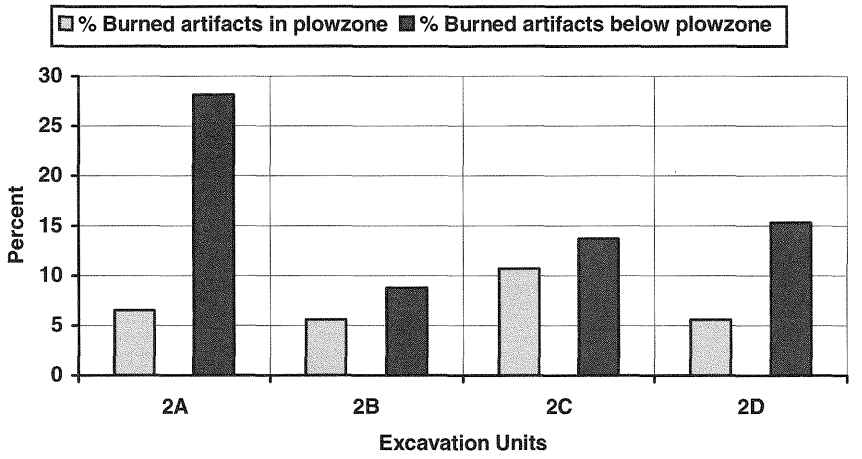


Figure 6.10. Excavation area 2, percentage of artifacts (chert flakes only) recovered in the plowzone, and below below the plowzone, which are burned, or thermally modified, in each unit.

Archaic Period Artifacts

It is significant to review the numbers and percentages of artifacts recovered in and below the plowzone which may not be of Clovis origin, i.e., not of Williamson chert or crystal quartz (figs. 6.11 and 6.12). The actual numbers are probably more significant here than percentages, and the unit 2D plowzone stands out with 23 possible non-Clovis artifacts (flakes) although the deposit below the plowzone produced only 3. Appendix A shows for the plowzone that 16 of these are quartzite and six are white quartz which strongly suggests an Archaic period use of the upper level (now the plowzone) of unit 2D. This may explain the presence of a possible Archaic period pit hearth bottom identified in level 2 of unit 2D, feature 3, which is discussed above.

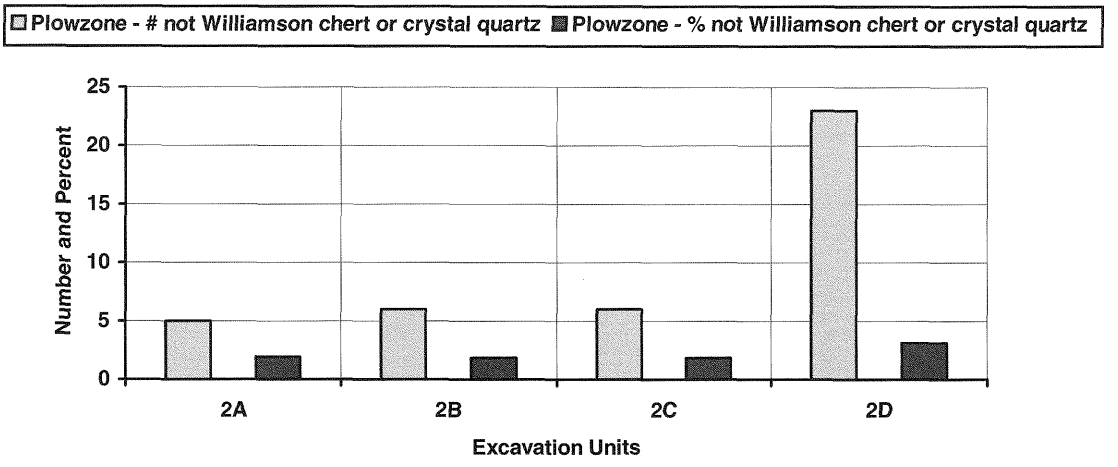


Figure 6.11. Excavation area 2, number and percentage of artifacts not of Williamson chert or crystal quartz recovered in the plowzone in each unit.

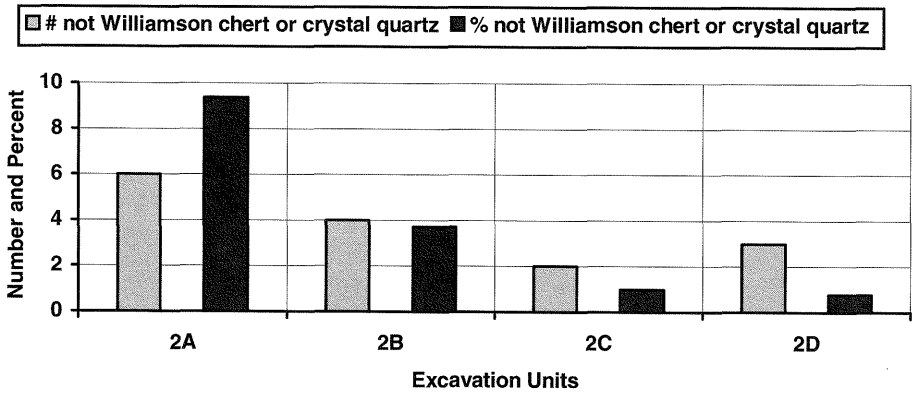


Figure 6.12. Excavation area 2, number and percent of artifacts not of Williamson chert or crystal quartz recovered below the plowzone in each unit.

Work Division by Area

Figure 6.13 presents the excavation area 2 units based upon the amount of primary core and decortication stage flakes recovered there. The results show that this work, or the deposit of such debitage, occurred where the fewest formal artifacts occur in the excavation, units 2B and 2C. However, figs. 6.14 and 6.15 do not show an exact reverse correlation when we only look at trim flakes. The unit producing the largest number of formal tools, 2D, did produce the largest number of trim flakes, but only the second highest percentage of these artifacts. Unit 2B, where the two broken fluted points were recovered, represented the highest percentage of trim flakes while also producing a high percentage of coarse debitage. But, when we look at the number of biface reduction and thinning flakes with refined, ground platforms (fig. 6.16) the same two units, 2B and 2D, have the higher percentages. This could represent some minor work division by area such as biface manufacture, based not only upon formal tools, but also the associated debitage.

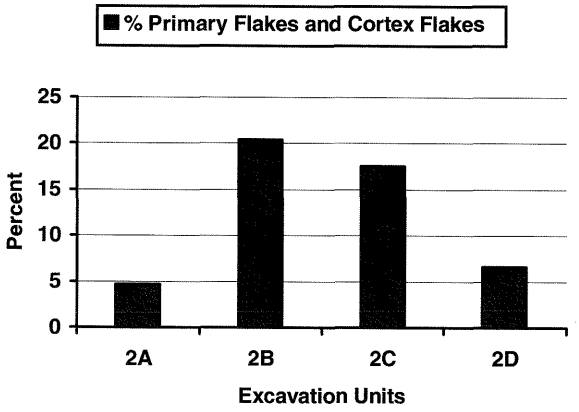


Figure 6.13. Excavation area 2, primary flakes and cortex flakes recovered by unit below the plowzone as a percentage of the total number of artifacts recovered by unit below the plowzone.

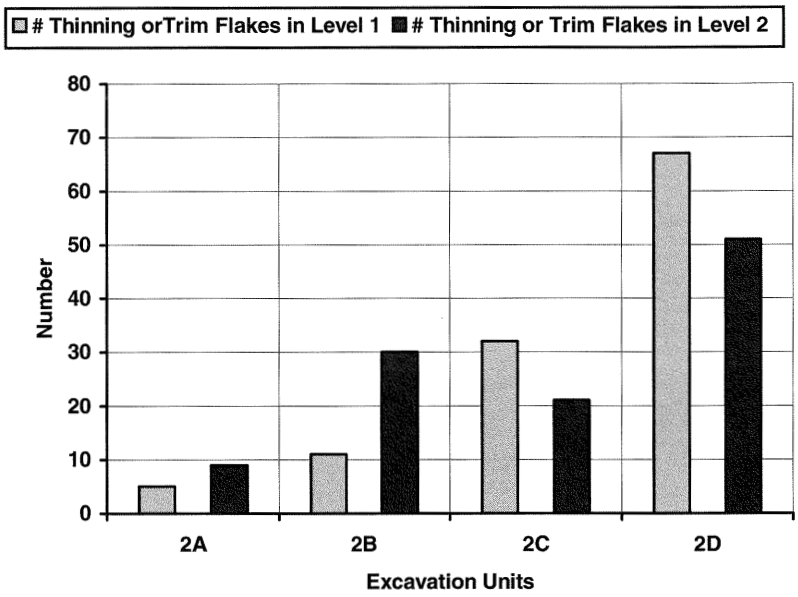


Figure 6.14. Excavation area 2, number of thinning or trim flakes recovered in Level 1, and in Level 2, of all units.

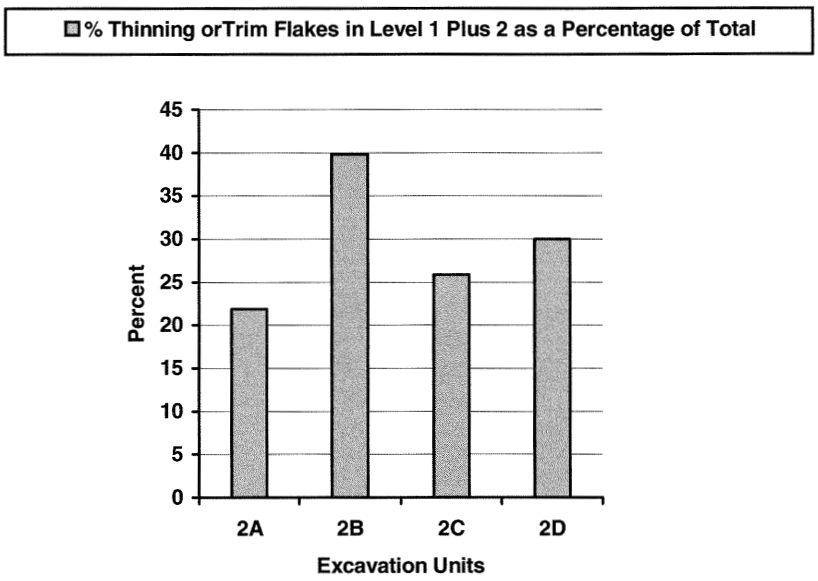


Figure 6.15. Excavation area 2, thinning or trim flakes from level 1, plus level 2, as a percentage of total artifacts from these levels for each unit.

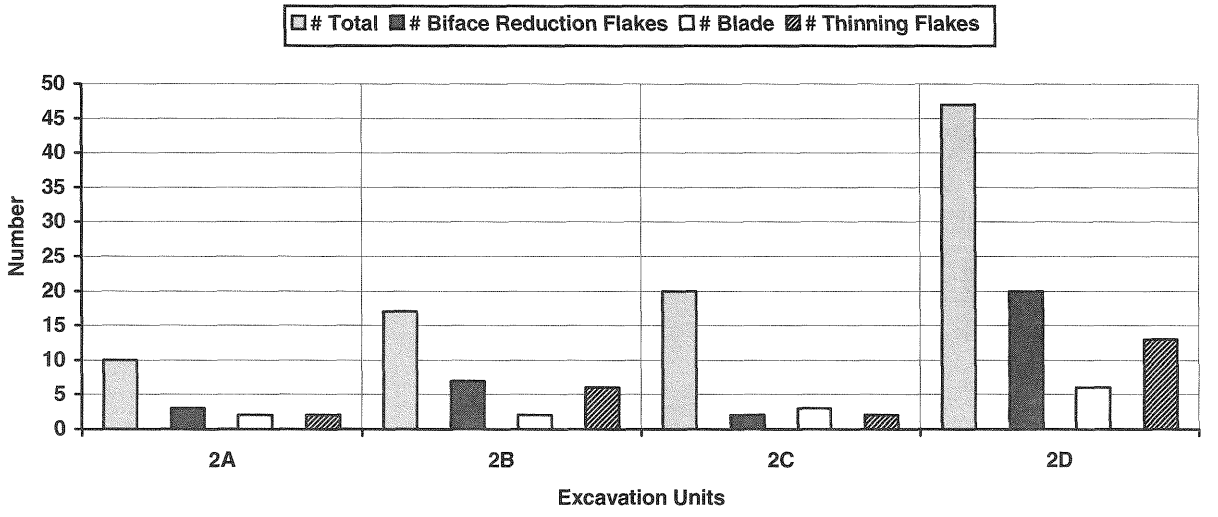


Figure 6.16. Excavation area 2, total number of flakes recovered below plowzone with ground striking platforms (GSP) compared with the total number of biface reduction flakes (F/BR), blade flakes (F/B) and thinning or trim flakes (F/T) with ground striking platforms recovered below plowzone for each unit.

Crystal Quartz Debitage

Of particular interest is the issue of the large number of crystal quartz flakes recovered in excavation area 2 (see fig. 6.45, crystal debitage). They represent a lithic material obviously used during the Clovis period, since no artifacts of the Archaic period of this material have been reported from the Williamson site. In contrast, 14 Clovis points or fragments of Clovis points of crystal have been found there, but no more than four or five other highly curated, formal tools of this material have been reported from the site by collectors.

From the shovel test records, crystal quartz flakes were determined to be distributed over a small area in test location 2. The placement of excavation units 2A through 2D was in part to allow a more detailed look at the crystal quartz chipping cluster. The slope of the land surface at excavation area 2 is approximately 3%, but just uphill to the east the slope rises to about 6%. The slope in this area can be roughly judged from fig. 6.1.

The crystal flakes presented the opportunity to judge the amount of slope wash which had covered the original land surface from Clovis time. It was known from other test and excavation areas on the Williamson site that bioturbation generally accounted for 6 to 8 inches of vertical displacement of chert artifacts from the surface. But, chert is ubiquitous on the upper terrace or hillside in the graveyard field and would wash down with the up slope soil. Thus, the chert would be of little value in making a quantitative assessment of the amount of fill over the original surface. Crystal, however, occurred primarily at the location of the excavation, and such flakes in the plowzone were considered a good representation of the amount of material displaced upward directly from the deposit. This being the case, the ratio of crystal flakes in the plowzone to crystal flakes remaining in the undisturbed deposit should be a direct correlation to the amount of the deposit disturbed by plowing. This analysis operates on two reasonable assumptions: 1) that there was the normal 8-inch bioturbation-related downward displacement of flakes from the surface in this area; and 2) that, statistically, crystal flakes move down into the deposit the same depth as do chert flakes.

Figure 6.17 shows the percent of the crystal flakes below the plowzones (Ap1 plus Ap2) compared to the percent of the artifact bearing deposit below the plowzones. These ratios range from 50-to-34, to 77-to-32. This clearly demonstrates that a substantial amount of the original deposit had not been disturbed by plowing, and that, given the Table 6.1 plowzone depths in excavation area 2 of 8.5 to 13.5 inches, much of the modern plowzone depth represented slope wash or colluvium.

Figures 6.18 and 6.19, show the actual numbers of crystal artifacts found in each excavation level of each unit, and the percentages represented by crystal compared to all lithic materials, respectively. Crystal flakes never represent more than 5% of the artifact total in the plowzone, while they represent as much as 36 to 39% of the total in some levels below plowzones. This is perhaps an even clearer indication that very little of the original excavation area 2 soil is in the plowzone, and that most chert artifacts in the plowzone were brought there by slope wash from the hillside to the east.

One other observation of interest is clear from fig. 6.20. Crystal artifacts are primary core flakes, trim flakes, shatter and biface reduction flakes, but very few have been used or further worked in any way. This observation is consistent with the use of crystal by the Clovis people for projectile points but for no other highly curated formal tool category.

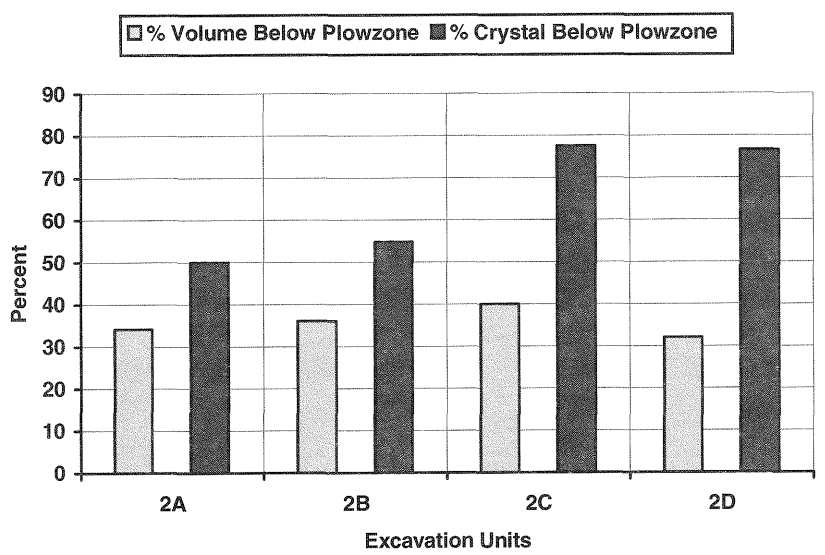


Figure 6.17. Excavation area 2, percentage of the volume of the excavation below the plowzone in each unit compared to the percentage of crystal flakes in each unit recovered below the plowzone.

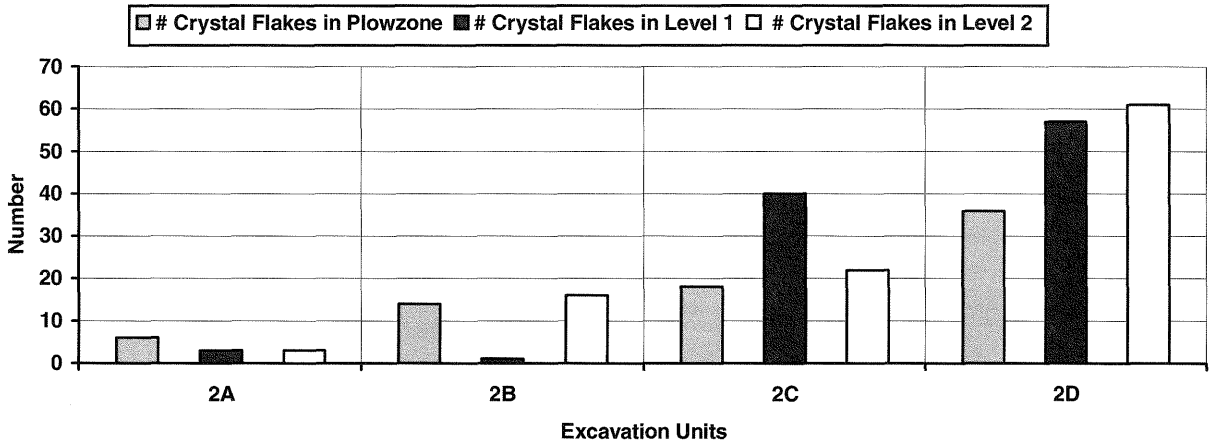


Figure 6.18. Excavation area 2, number of crystal flakes recovered by unit and level.

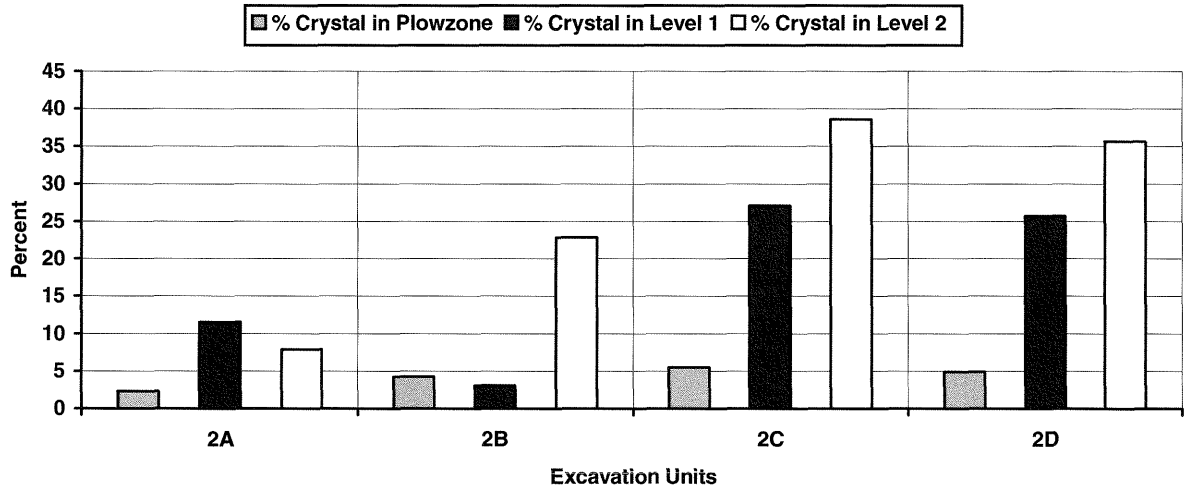


Figure 6.19. Excavation area 2, crystal quartz flakes as percentage of total artifacts in each level of each unit.

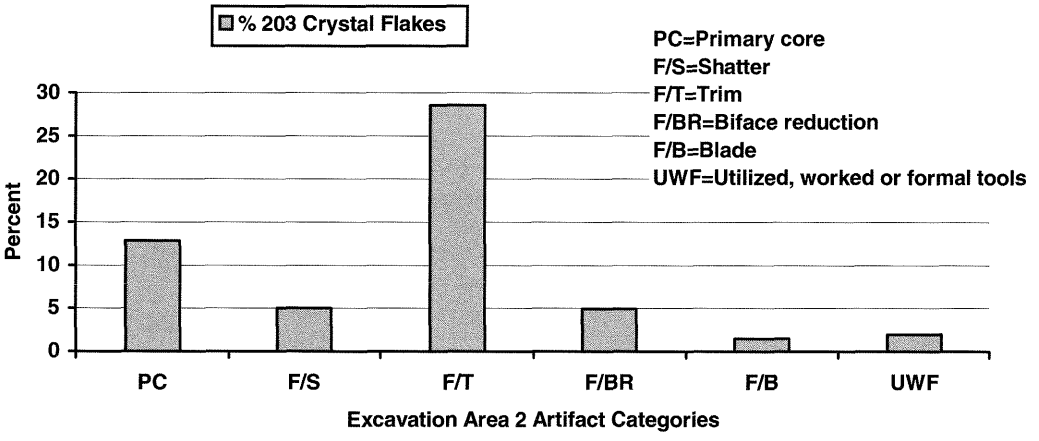


Figure 6.20. Excavation area 2, percentage of 203 crystal flakes in all applicable artifact categories from below the plowzone of all units.

Inferred Activities at Excavation Area 2

Several inferences can be made concerning the activities of the Clovis people in the location of excavation area 2. These are based upon the artifact assemblage (see figs. 6.40 through 6.45) or the general excavation details. First, the only finished projectile points found during the entire investigation were recovered here. These two fragmentary completed points, and two fragmentary in-process point preforms, provide strong evidence that some of the debitage in this area of the site represents projectile point maintenance and manufacture. Also, as there is a very high percentage of crystal quartz in the debitage, all of which is considered indicative of projectile point manufacture, it can be concluded that the overall percentage of debitage in this area related to projectile point manufacture is very high.

Second, the greatest overall diversity in artifact types, i.e., formal tools, cores, and used flakes observed in all of the work on the Williamson site was here. This would seem to suggest a lot of different activities, or some very complex activity. Feature 1 produced planing, scraping, cutting, smoothing, and polishing tools, and it seems to represent an area where woodworking, perhaps making spear shafts, took place. Feature 2 produced the discarded projectile point fragments and a high percentage of trim flakes. Feature 3, produced a lot of small tools for fine cutting, planing, engraving, piercing, and drilling, as well as two broken in-process point preforms.

And third, we can connect the three features as they all contain artifacts of the same mix of distinctively colored, patterned, and textured chert, probably from a small number of cores. Given the connection of the features, and the fact that the excavation units seem to have largely escaped the plow, i.e., most of the artifacts are still there, it is possible to infer activities. Based upon the artifacts presented in figs. 6.21 through 6.38, this entire excavation area seems to be a location where hunting equipment was being made and refurbished. Old spear points were discarded as new points were made and trimmed to completion. Wooden spear shafts were cut, scraped, and critical areas brought to correct diameter. Parts of the shaft, perhaps bone or tusk, were drilled or redrilled to fit new components and perhaps engraved. It is reasonable that old binding was cut from foreshafts and new binding wrapped, tied, and cut. If this analysis is accurate excavation area 2 likely represents a gender specific, male, work area where hunters gathered to perform certain critical tasks related to preparation of equipment for hunting.

Figure 6.21. Excavation area 2, unit 2A, level 1, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), and modern root disturbances (lightly shaded).

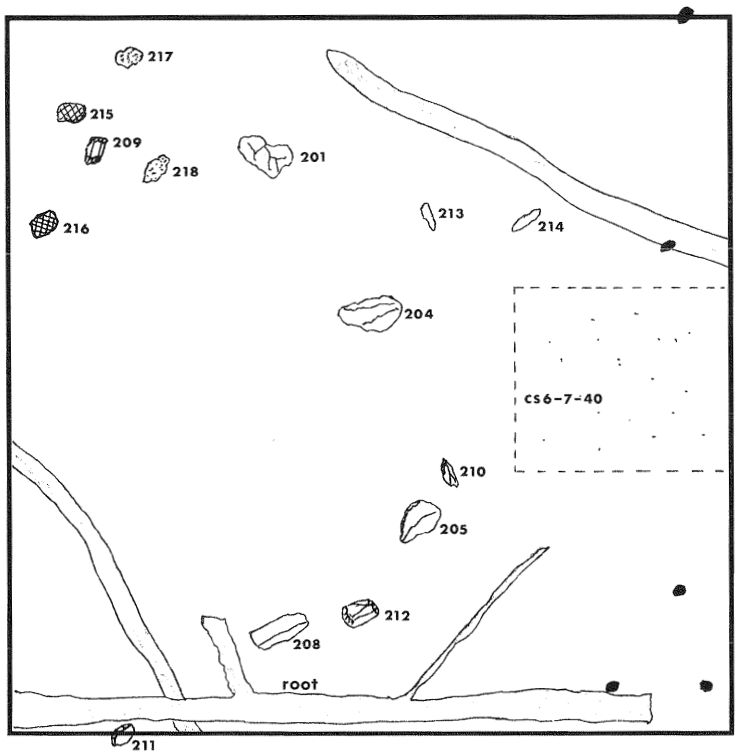


Figure 6.22. Excavation area 2, unit 2A, level 2, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), and modern root disturbances (lightly shaded).

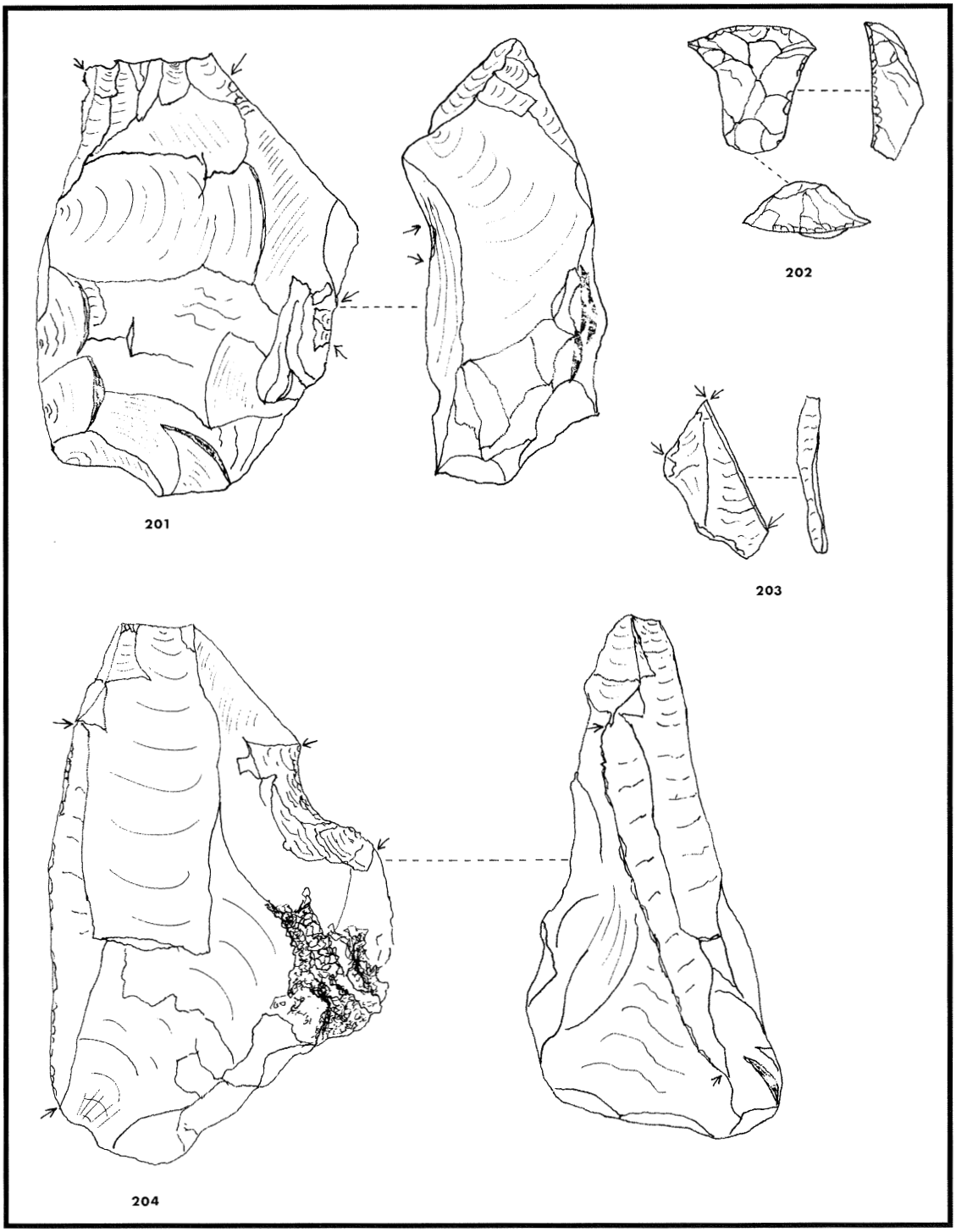


Figure 6.23. Artifacts from excavation area 2, unit 2A, levels 1 and 2: gouge (hafted?), 201; end scraper, 202 (metavolcanic tuff); snapped-flake edge-used tool, 203; edge-used core fragment chopper and shaft notch, 204. (85% natural size) (Arrows indicate extent of edge-use or wear, same for all other drawings)

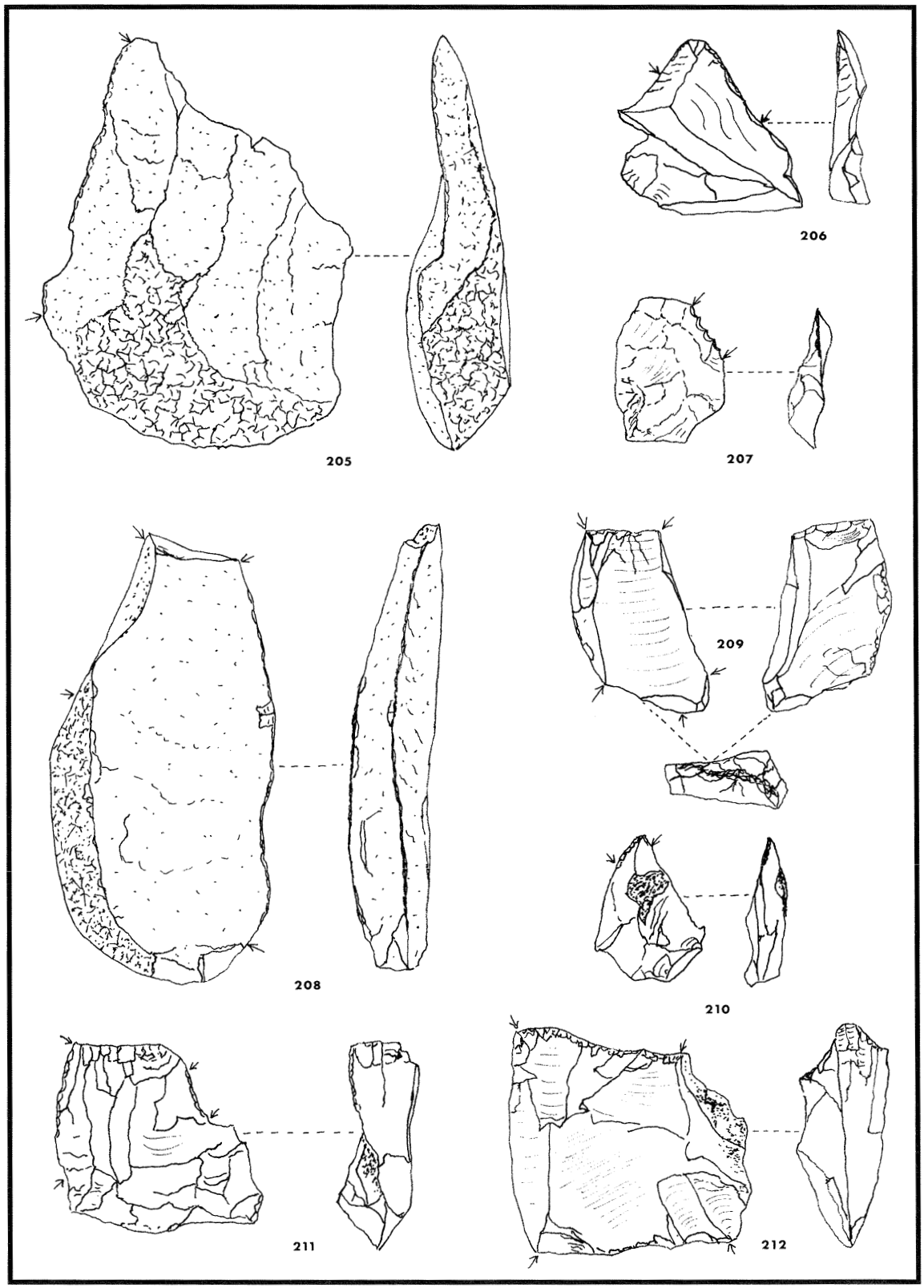


Figure 6.24. Artifacts from excavation area 2, unit 2A, levels 1 and 2: edge-used flakes, 205, 206, 208, 210, and 211 (205 and 208 are quartzite); edge-worked (serrated) flake, 207; chisel-wedges, 209 and 212. (85% natural size)

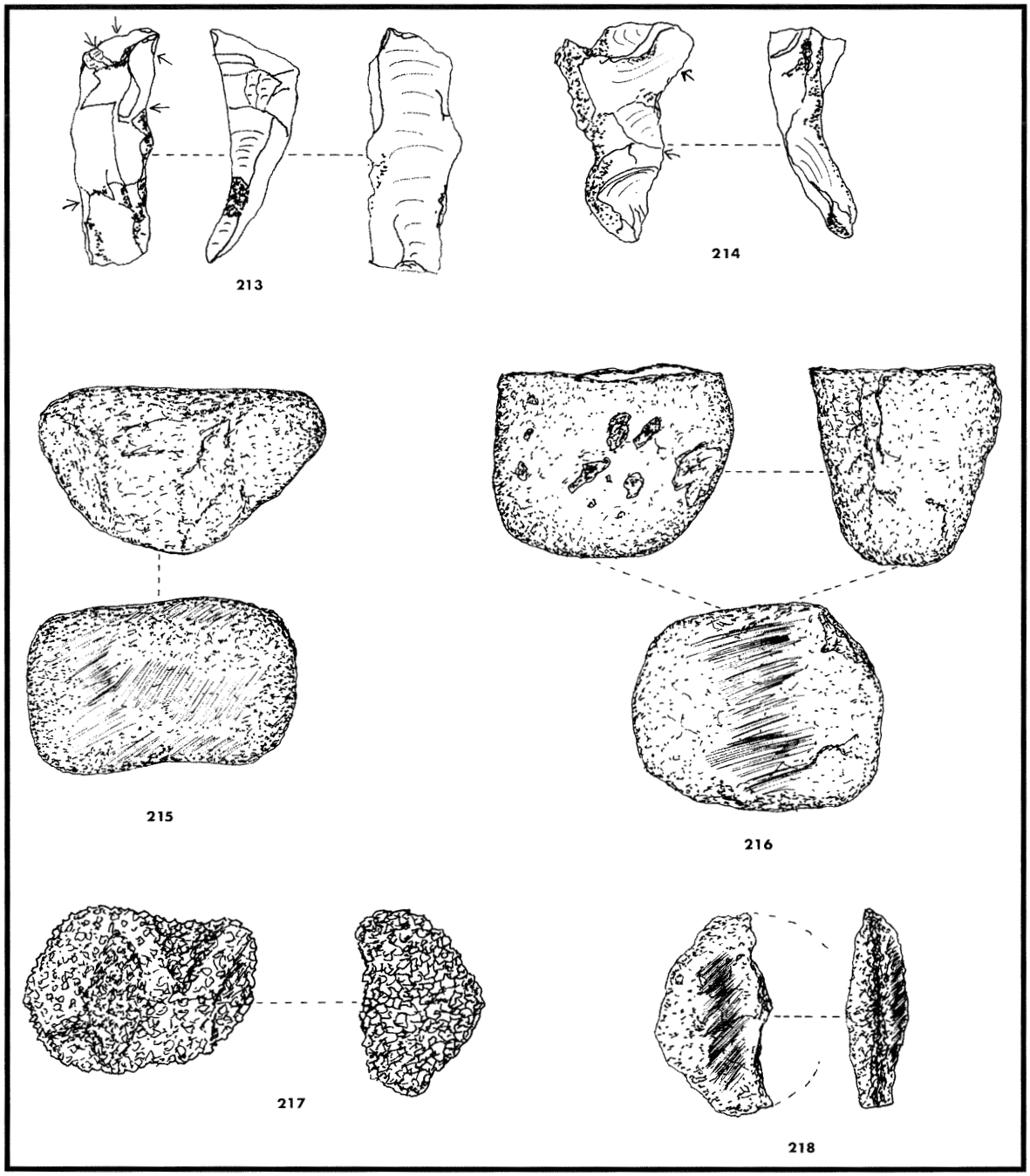


Figure 6.25. Artifacts from excavation area 2, unit 2A, level 2: edge-used flakes (chisel-wedge spalls?), 213 and 214; polishing or smoothing stones, 215 and 216; abrader fragments, 217 and 218 (iron stone). (90% natural size)

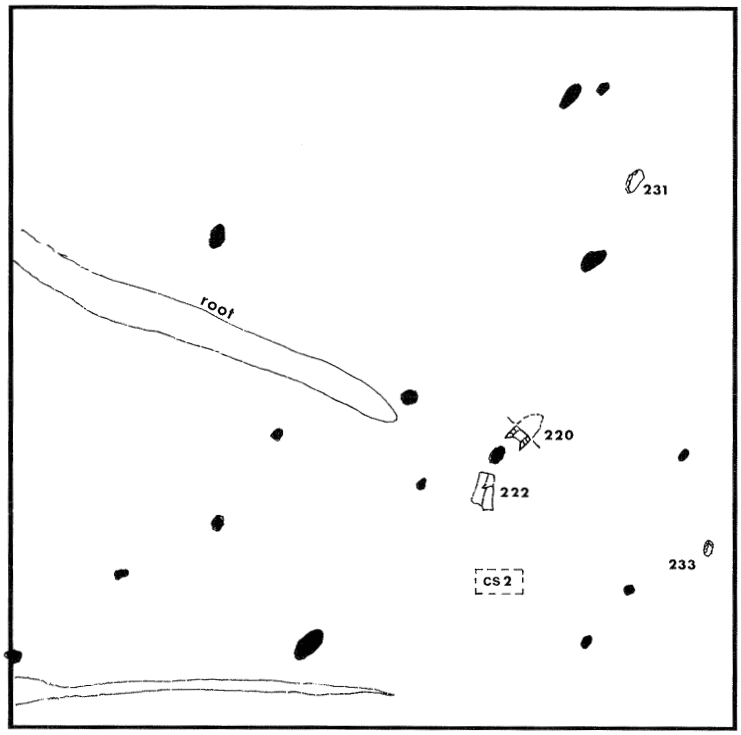


Figure 6.26. Excavation area 2, unit 2B, level 1, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal samples "cs-" (enclosed by dashed lines), and modern root disturbances (lightly shaded).

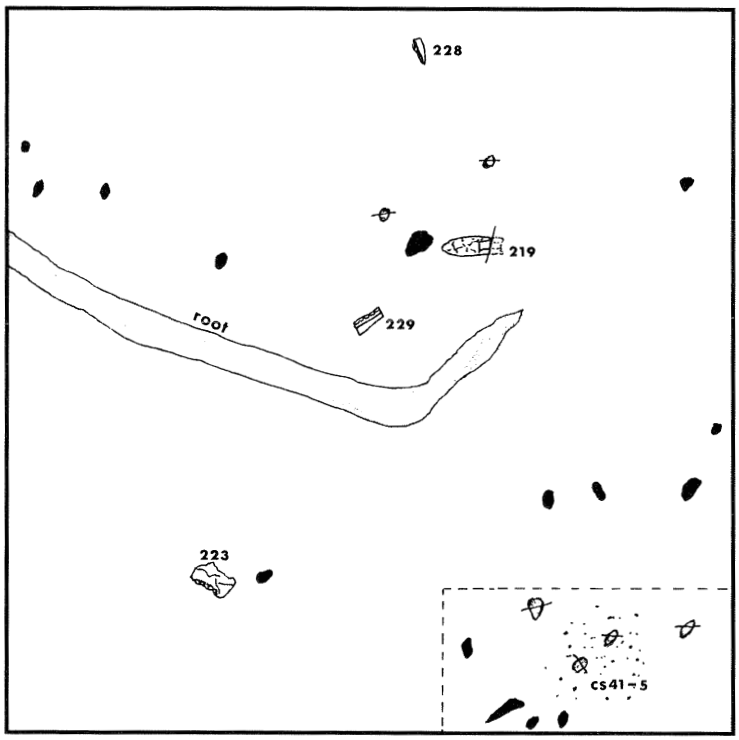


Figure 6.27. Excavation area 2, unit 2B, level 2, showing the location of recovery of large pieces of debitage (darkly shaded), crystal quartz debitage (open circles with a cross-line), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), and modern root disturbances (lightly shaded).

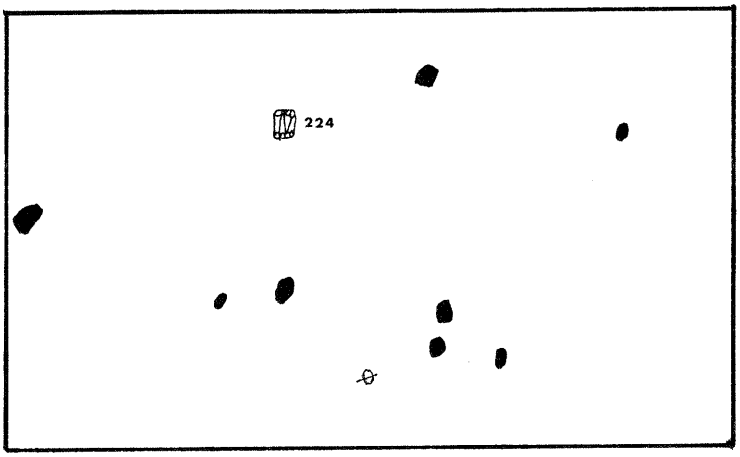


Figure 6.28. Excavation area 2, unit 2B(N), level 1, showing the location of recovery of large pieces of debitage (darkly shaded), crystal quartz debitage (open circles with a cross-line), and numbered tools (symbols as defined in Appendix B).

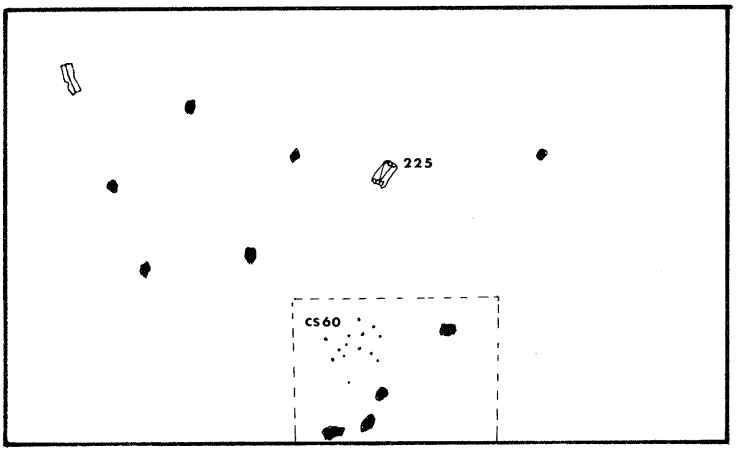
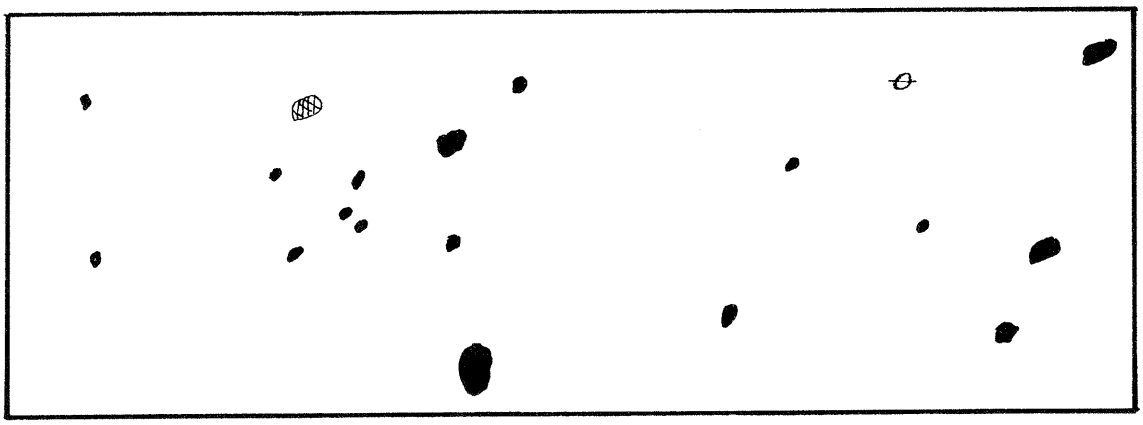


Figure 6.29. Excavation area 2, unit 2B(N), level 2, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), and charcoal samples "cs-" (enclosed by dashed lines).



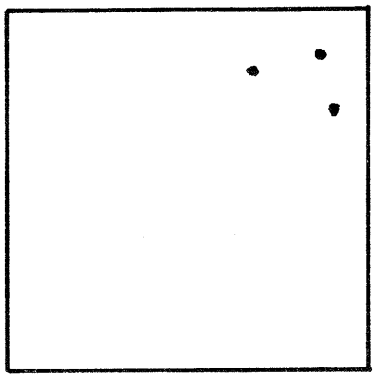


Figure 6.30. Excavation area 2, unit 2B(S), levels 1(above) and 2/partial unit (left), showing the location of recovery of large pieces of debitage (darkly shaded), crystal quartz debitage (open circle with a cross-line), and a cobble (crosshatched).

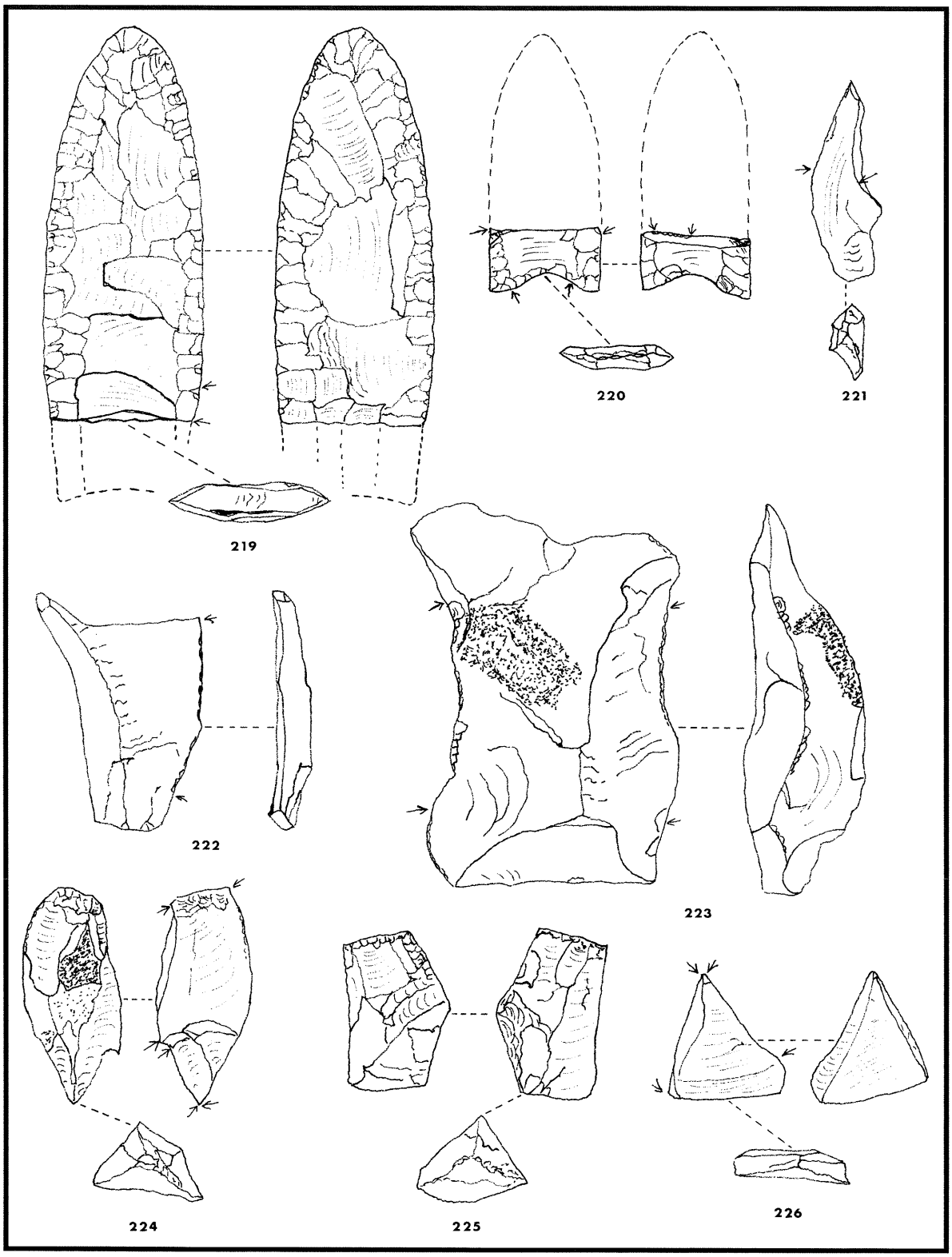


Figure 6.31. Artifacts from excavation area 2, units 2B and 2B(N), levels 1 and 2: Clovis point fragments, 219 and 220 (both metavolcanic); burin-graver, 221; edge-used flakes, 222 and 223; chisel-wedges, 224 and 225; snapped-flake graver, 226. (89% natural size)

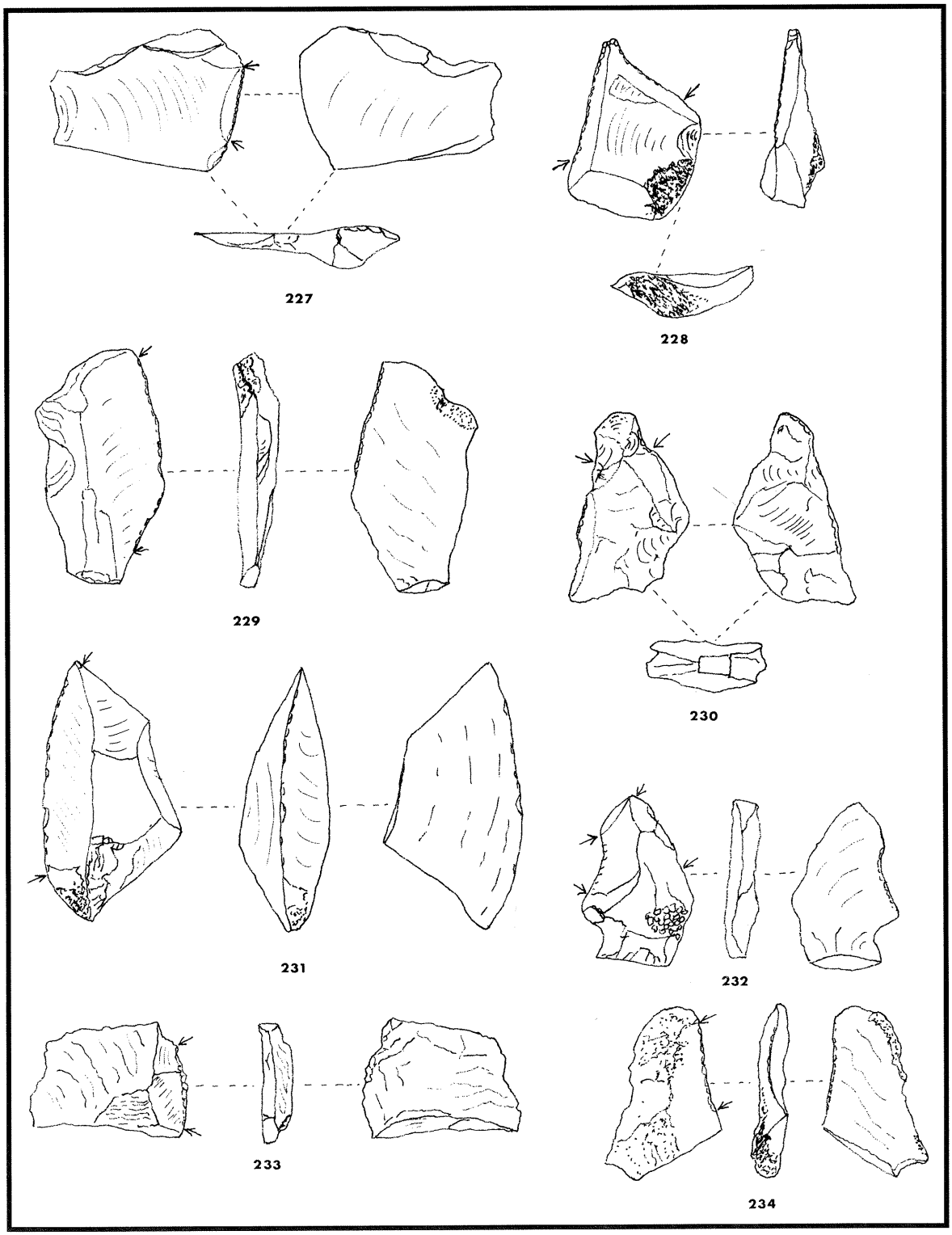


Figure 6.32. Artifacts from excavation area 2, unit 2B, levels 1 and 2: edge-used flakes, 227 through 234 (233 is crystal quartz). (93% natural size)

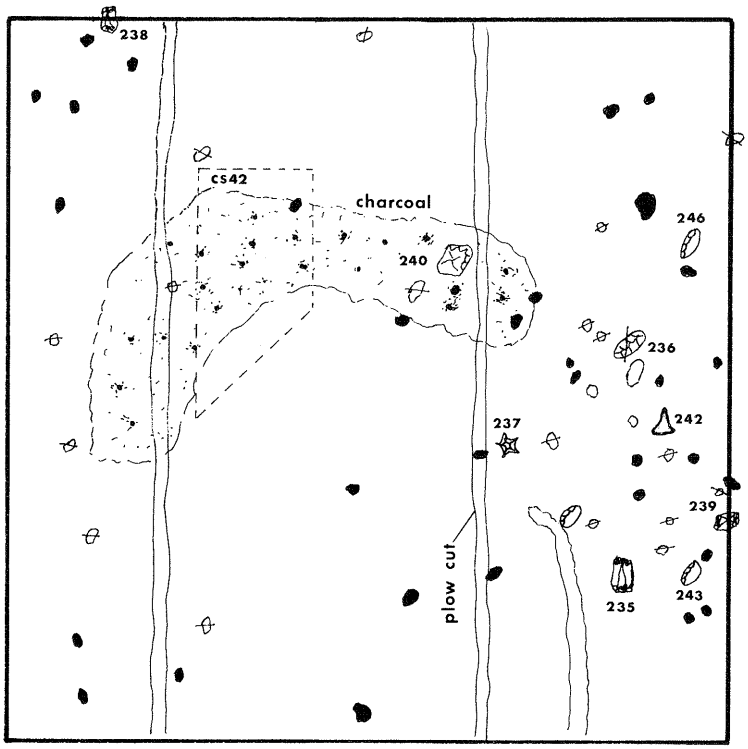


Figure 6.33. Excavation area 2, unit 2C, level 1, showing the location of recovery of large pieces of debitage (darkly shaded), crystal quartz debitage (open circles with a cross-line), numbered tools (symbols as defined in Appendix B), a large charcoal cluster or scatter (large enclosed area of small dark spots), charcoal sample "cs-" (enclosed by dashed lines), and deep plow cuts (lightly shaded, elongated).

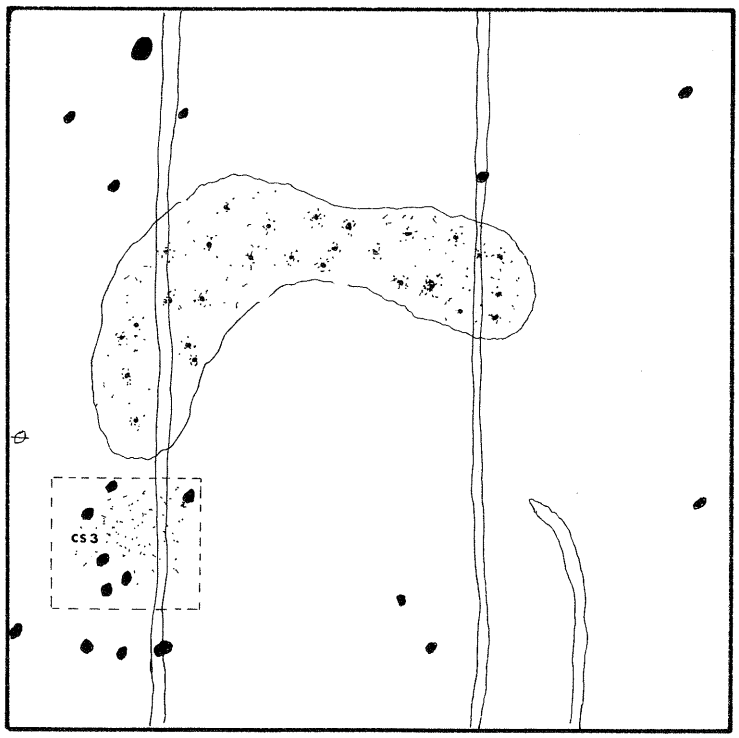


Figure 6.34. Excavation area 2, unit 2C, level 2, showing the location of recovery of large pieces of debitage (darkly shaded), crystal quartz debitage (open circle with a cross-line), a large charcoal cluster or scatter (large enclosed area of small dark spots), charcoal sample "cs-" (enclosed by dashed lines), and deep plow cuts (lightly shaded, elongated).

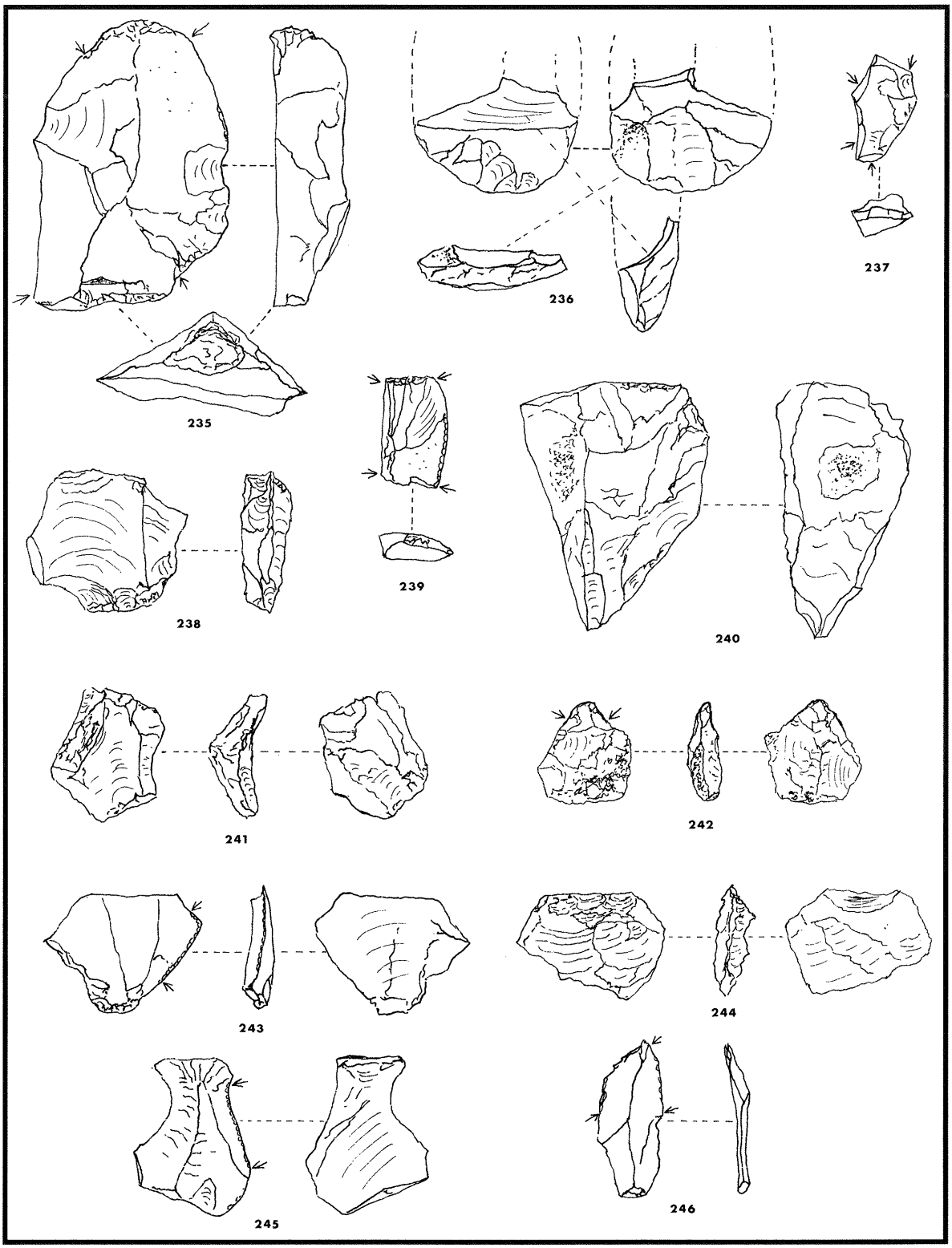


Figure 6.35. Artifacts from excavation area 2, unit 2C, levels 1 and 2: wedges, 235, 238, and 240; wedge fragment, 241; wedge spall, 244; edge-used flake on a wedge spall, 239; biface fragment (projectile point preform basal end, bend-break failure during a fluting attempt), 236; snapped-flake graver, 237; perforator, 242; edge-used flakes, 243, 245, and 246 (246 was used as a graver). (80% natural size)

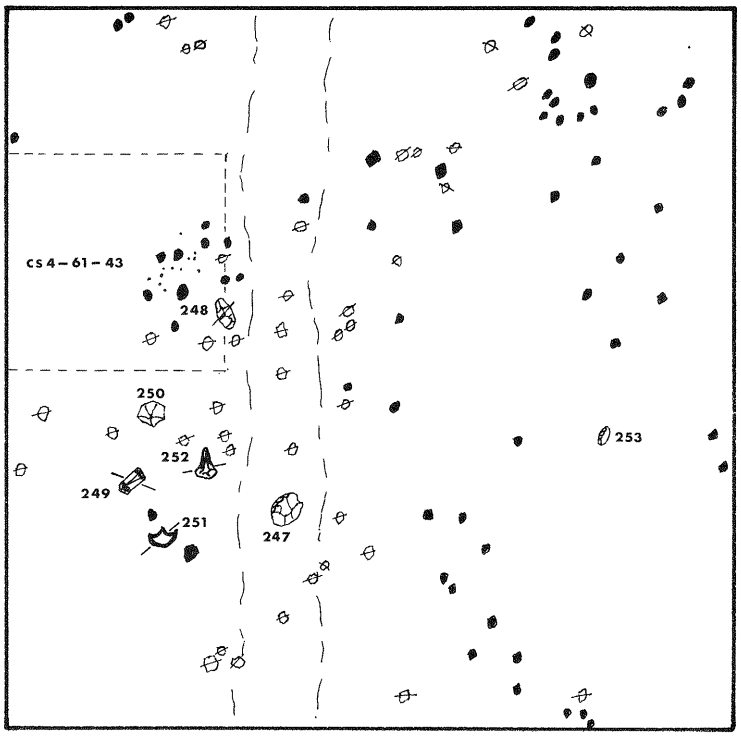


Figure 6.36. Excavation area 2, unit 2D, level 1, showing the location of recovery of large pieces of debitage (darkly shaded), crystal quartz debitage (open circles with a cross-line), numbered tools (symbols as defined in Appendix B), charcoal cluster (area of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), and shallow plow cuts (lightly shaded, dashed lines).

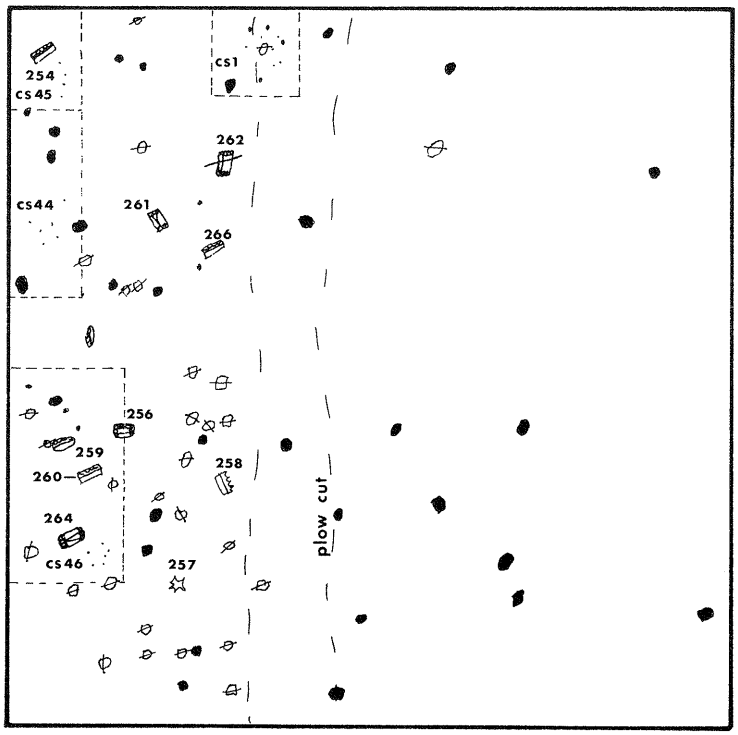


Figure 6.37. Excavation area 2, unit 2D, level 2, showing the location of recovery of large pieces of debitage (darkly shaded), crystal quartz debitage (open circles with a cross-line), numbered tools (symbols as defined in Appendix B), charcoal cluster (area of small dark spots), charcoal sample "cs-" (enclosed by dashed lines), and very shallow plow cuts (lightly shaded, dashed lines).

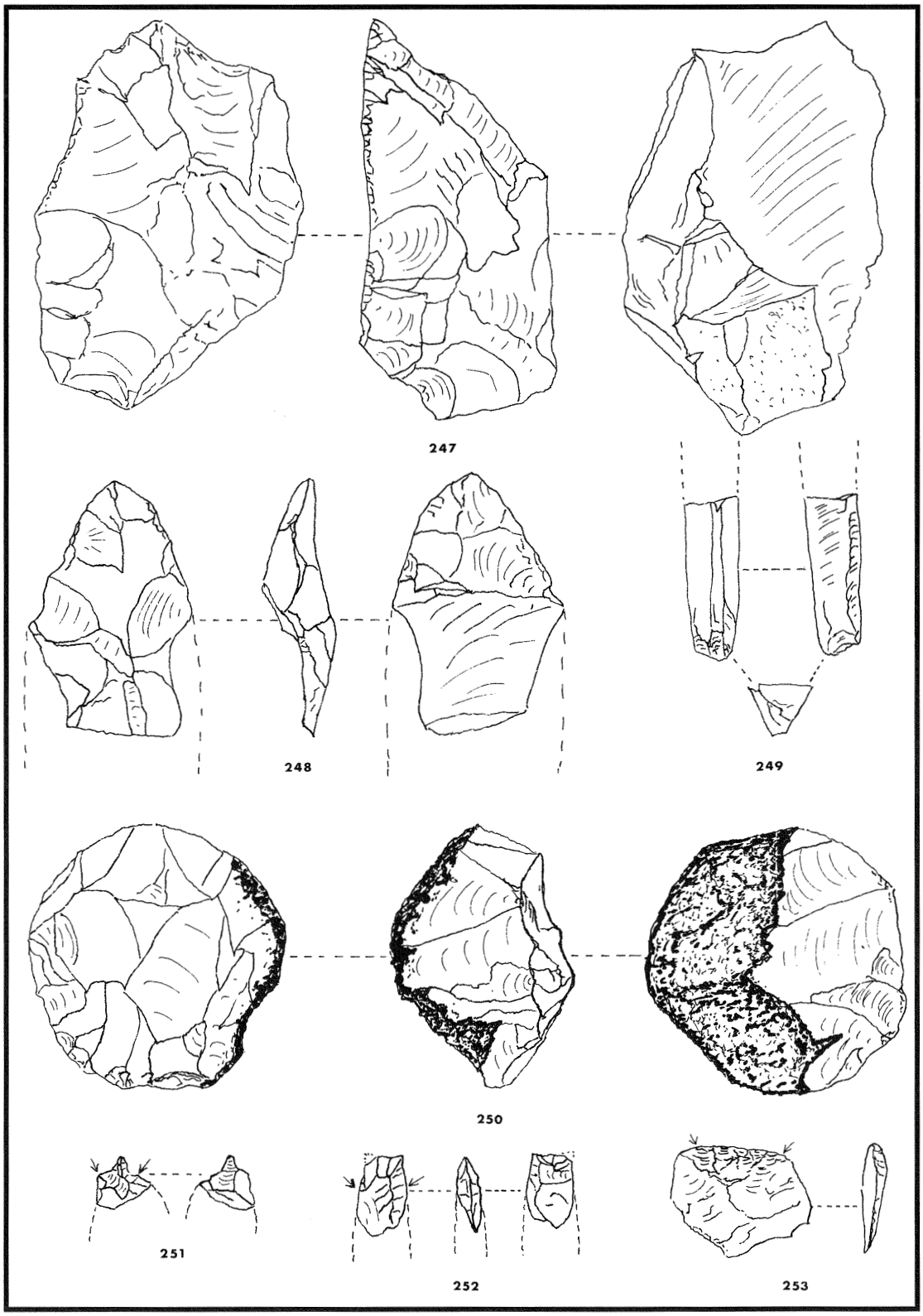


Figure 6.38. Artifacts from excavation area 2, unit 2D, level 1: beak, 247; biface fragment (projectile point preform, flute overshoot failure), 248; chisel or chisel-wedge tip fragment, 249; disc-shaped bifacial platform core, 250; graver tip fragment, 251; drill tip (broken), 252; chisel-wedge spall used as a knife, 253. (85% natural size)

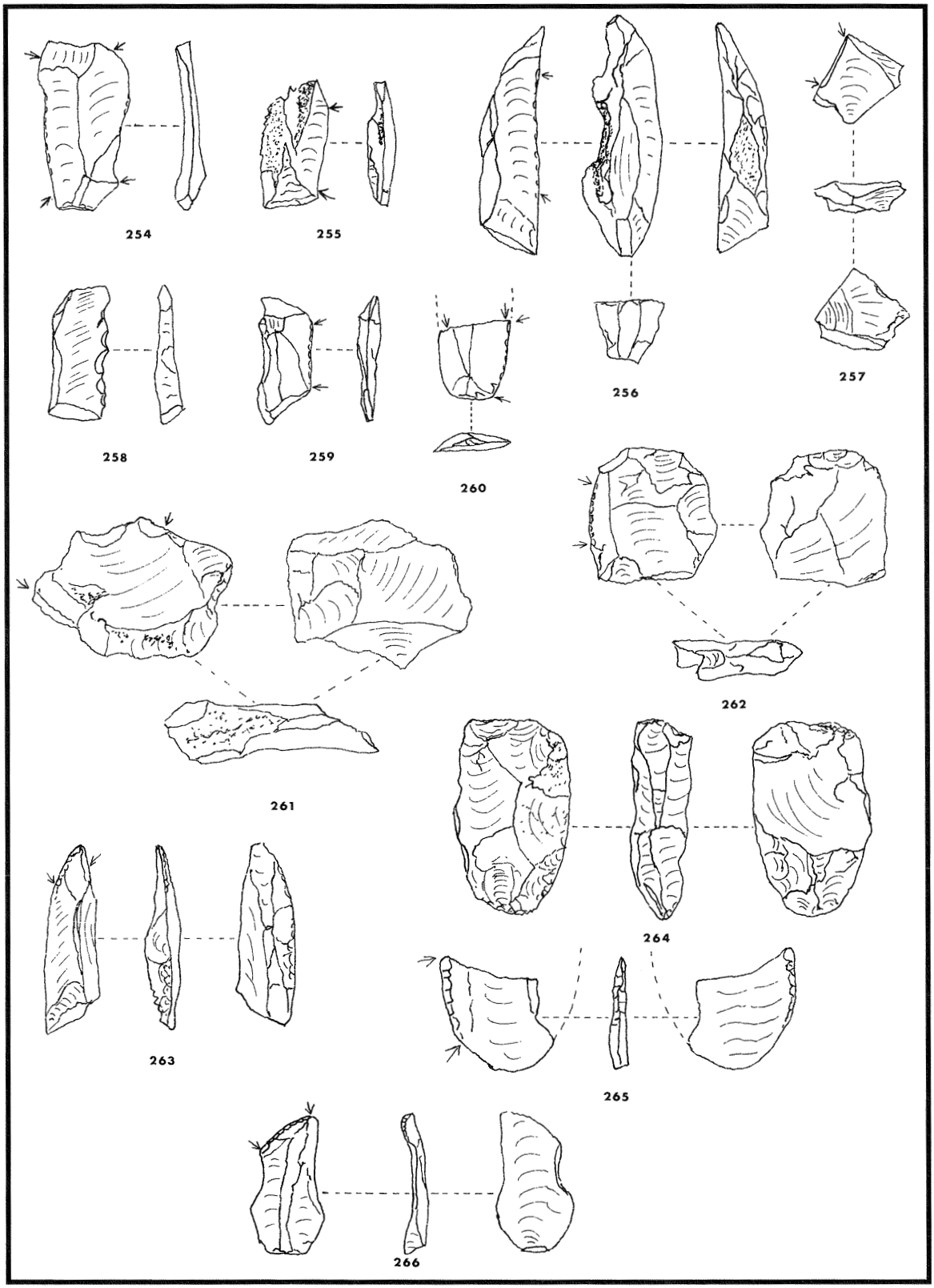


Figure 6.39. Artifacts from excavation area 2, unit 2D, levels 1 and 2: edge-used flakes, 254, 255, 259, 260, 261, 262, and 263 (254 and 260 are a core blades; 263 is crystal quartz); snapped-flake graver, 257; wedge spall, 256; wedge, 264; worked (serrated) flake, 258; bifacially edge-worked flake (pressure flaked crystal quartz projectile point preform fragment?), 265; lancet on a blade flake, 266. (84% natural size)

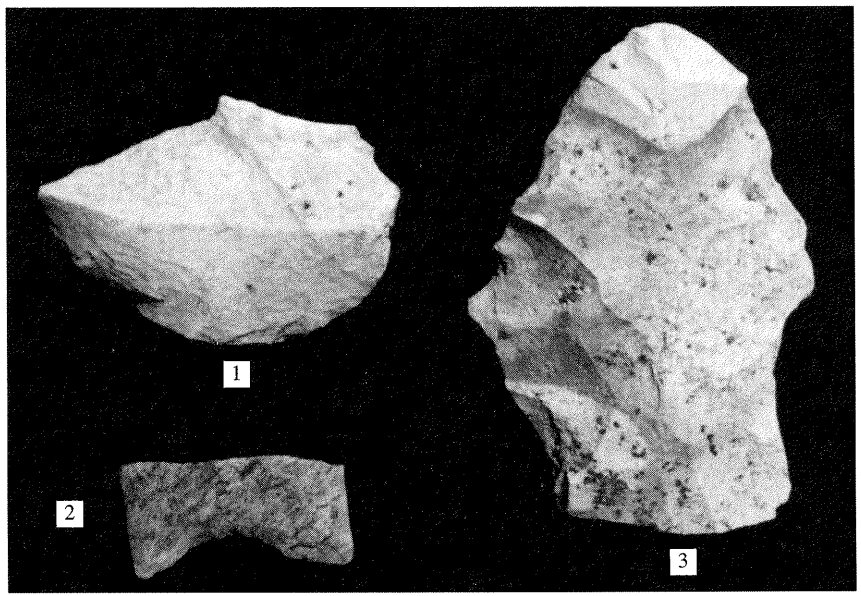


Figure 6.40. Excavation area 2: 1, fluted point preform basal end, bend-break fracture (fluting failure), Williamson chert, unit 2C, level 1, Feature 3; 2, rhyolite fluted point basal fragment, unit 2B, level 1, Feature 2; 3, fluted point preform distal end, over-shoot or reverse hinge fracture (fluting failure), Williamson chert, unit 2D, level 1, Feature 3 (all 150% natural size)

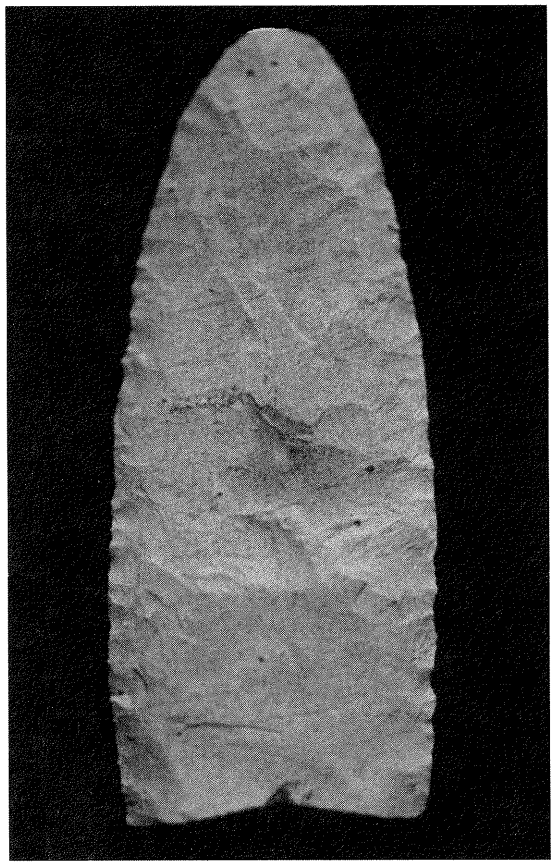


Figure 6.41. Excavation area 2, large metarhyolite fluted point fragment (missing approximately 15-35 mm of the basal end, point originally 90 to 110 mm in length) from unit 2B, level 2, Feature 2. (142% natural size)

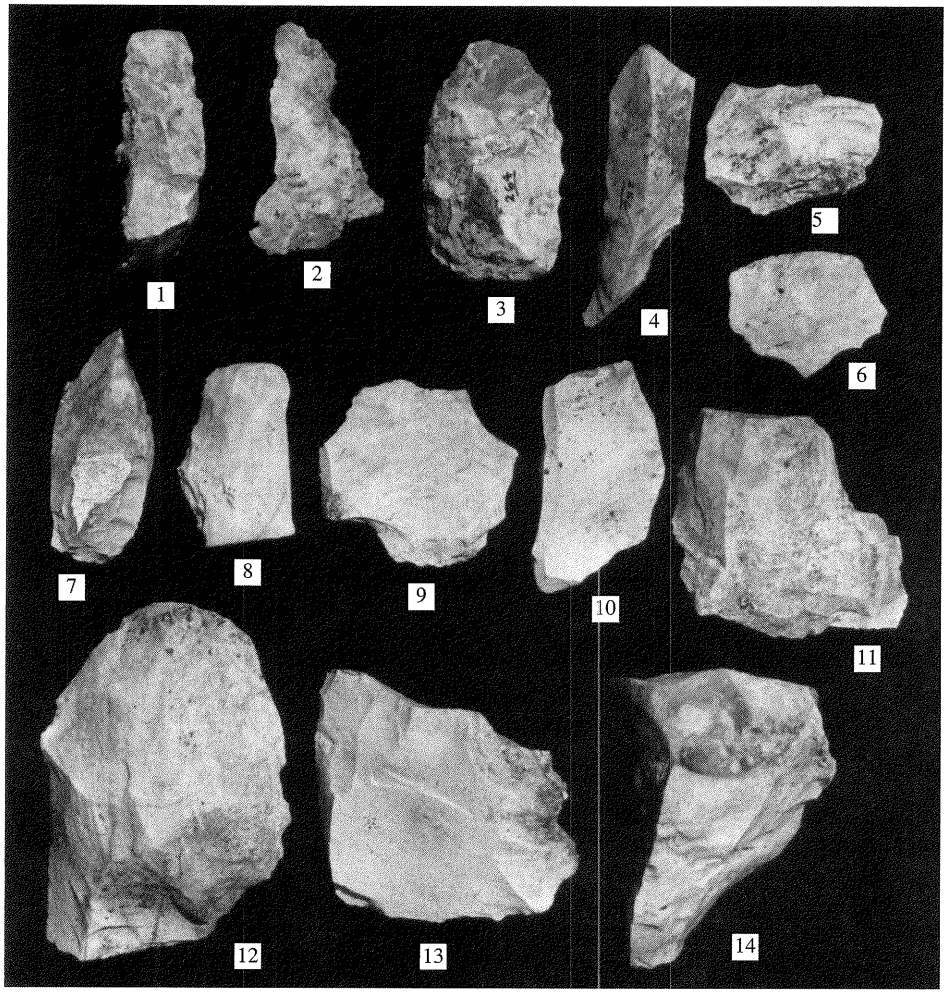


Figure 6.42. Excavation area 2: 1, 2, 5, 6, and 11, chisel-wedge spalls, some edge-used; 3, 7, 8, 9, 10, 12, 13, and 14, chisel-wedges. (79% natural size)

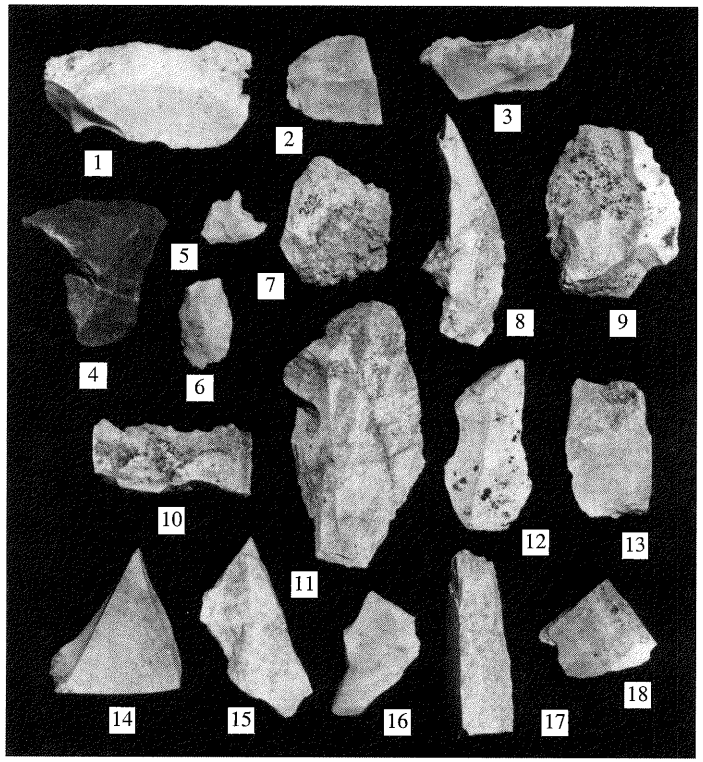


Figure 6.43. Excavation area 2: 1, 2, 3, and 11, small core blades, and fragments; 4, end scraper (metavolcanic tuff); 5, graver fragment; 6 and 7, perforator fragment and perforator; 8, burin-graver; 9 and 10, serrated flakes; 12, lancet; 13, worked flake; 14, 15, 16, and 18, bend break (snapped-flake) tools; and 17, chisel or chisel-wedge tip. (79% natural size)

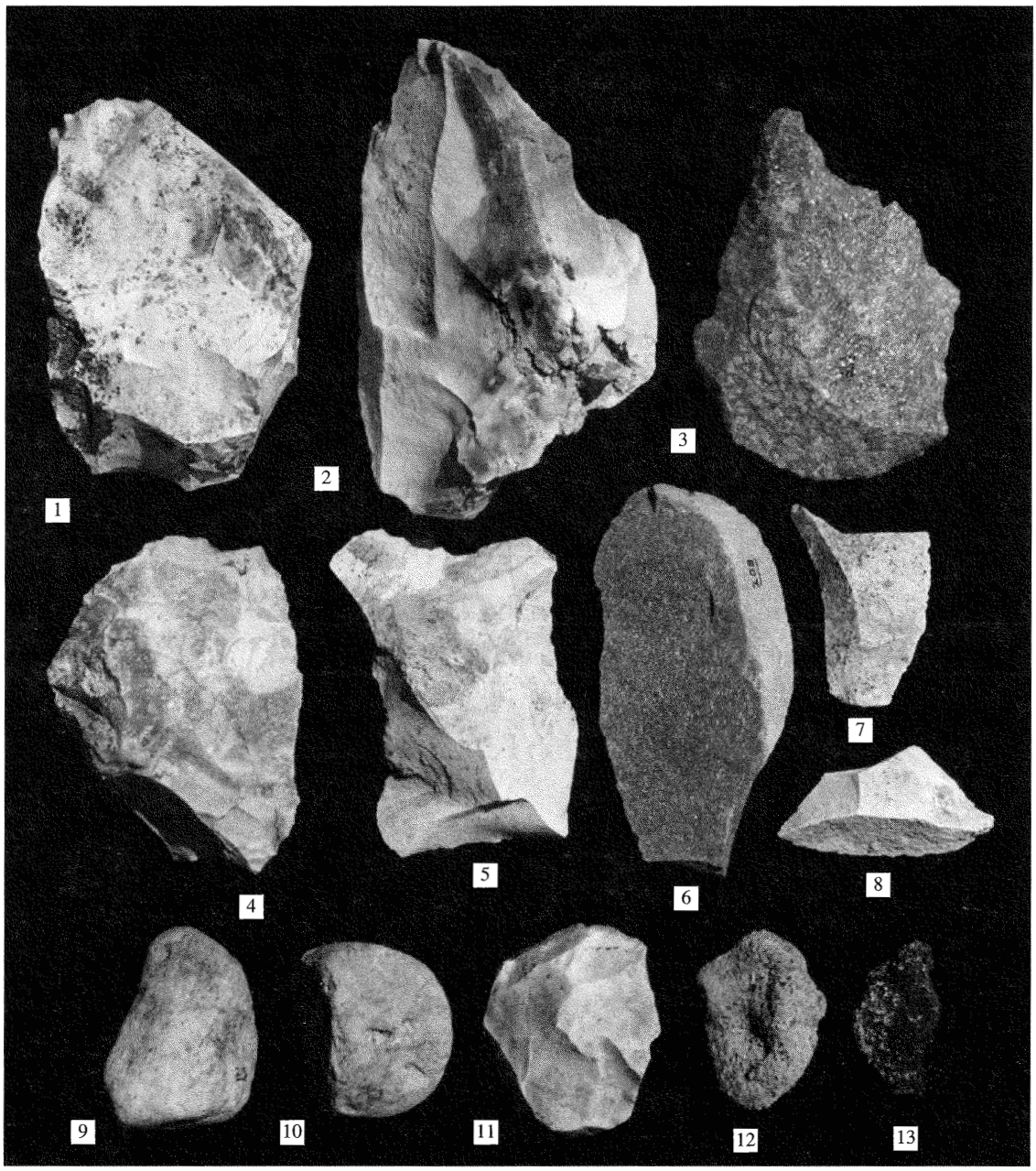


Figure 6.44. Excavation area 2: 1, gouge (hafted?); 2, core chopper with large circular notch (shaft sizing tool?); 3, edge-used quartzite flake; 4, beak; 5, edge-used flake; 6, edge-used quartzite blade-like flake (used as a wood saw and plane); 7, core blade; 8, edge-used flake; 9 and 10, polishing stones; 11, bifacial core; and 12 and 13, grooved and/or rubbed abrading stone (iron stone) fragments. (71% natural size)

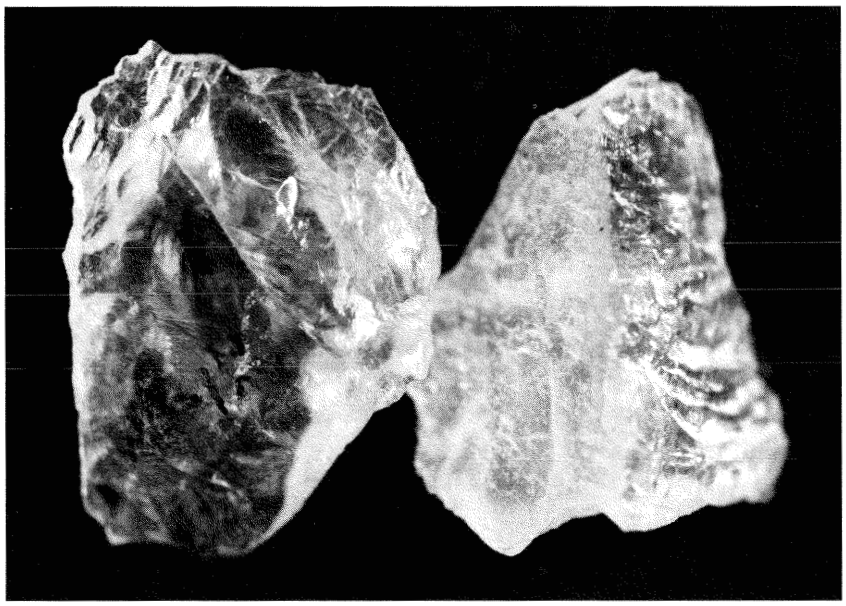


Figure 6.45. Top, selection of crystal quartz flakes from excavation area 2, all units (natural size); bottom, flake at left is a typical crystal flake, flake at right shows the dull water-worn natural crystal facet surface, or cortex, of the quartz crystal (240% natural size). Quartz crystals, and vein-quartz fragments containing some crystal areas, are found in streams to the west of the Williamson site in Amelia County, Virginia.

CHAPTER 7

EXCAVATION AREAS 3 AND 1

Excavation Area 3 Location

Excavation 3 (fig. 7.1) was positioned in the northeast corner of the graveyard field over Little Cattail Creek. This general location is the northeast corner of the Sally L. Williamson Farm, in the back field adjacent to the old Roy Ampy Farm. Excavation area 3 was positioned about 350 feet southeast of the area of Haynes' 1965 Trench B. This location, east of the top of the graveyard field hill, levels out onto a flat terrace near the fence line with the old Roy Ampy Farm.

Although excavation area 3 was positioned at the extreme northeastern edge of the cultivated field, all of the excavation was in an area of the field which had been plowed, i.e., not any of the excavation area was without a readily visible, deep plowzone. The excavation was positioned approximately 30 feet south of the graveyard fence and 12 feet west of the fence line marking the property line of the old Roy Ampy Farm. The work was carried out here in May and June of 1999, adjacent to, and just west of shovel tests 3-5/ST and 3-8/ST, as defined in Chapter 5. Shovel tests in this area were positive for chert flakes, and some of the artifacts recovered in the shovel tests were burned. Many of these artifacts were observed to be in a single soil stratum about 5 inches thick below the plowzone which suggested that hearths might be associated with buried working surfaces.

Excavation Layout and Method

The excavation was laid out as four in-line, contiguous 5-foot squares, with the long axis at magnetic north, fig. 7.1. From north to south the units were numbered 3A, 3B, 3C, and 3D. The plowzone at excavation area 3 was hand shoveled and sifted through 1/4-inch hardware cloth with all artifacts retained by unit. Plow cuts in all units were then cleaned by troweling until all disturbed soil was removed from the profile (fig. 7.2). The undisturbed portion of the archaeological deposit in units 3B and 3C (fig. 7.3) was excavated as two levels. The undisturbed portion of the archaeological deposit in unit 3A was excavated in three levels, and in unit 3D it was excavated as one level. These levels varied in thickness depending upon the thickness of the undisturbed deposit as determined by core samples in and near the units. Units 3A and 3D were excavated by a combination of flat shoveling and troweling based upon the density of artifacts, number of features encountered, and degree and method of charcoal recovery. The concentration of artifacts was so heavy in units 3B and 3C that these units were excavated totally by troweling. The excavation is shown in figs. 7.1, 7.2, and 7.3.

Plowzone Soil Horizons Ap1 and Ap2: Artifacts

The plowzone Ap1 and Ap2 soil horizons (fig. 7.4) in excavation area 3 represented from approximately 70 to 80% of the total thickness of the artifact bearing deposit. Table 7.1 presents the percentage by excavation unit and level. The 1,675 prehistoric artifacts recovered in the plowzone of units 3A through 3D are summarized in Appendix A. Artifact typology is as defined in Chapter 4 and Appendix B to this report. The most common prehistoric artifacts were flakes, mostly chert, which ranged in number from approximately 300 in Unit 3C to approximately 550 in Unit 3B. Of significance was the presence of approximately 40 formal tools and blade flakes in the plowzones of these units. Excavation area 2, previously reported, produced almost no formal tools in the plowzones.

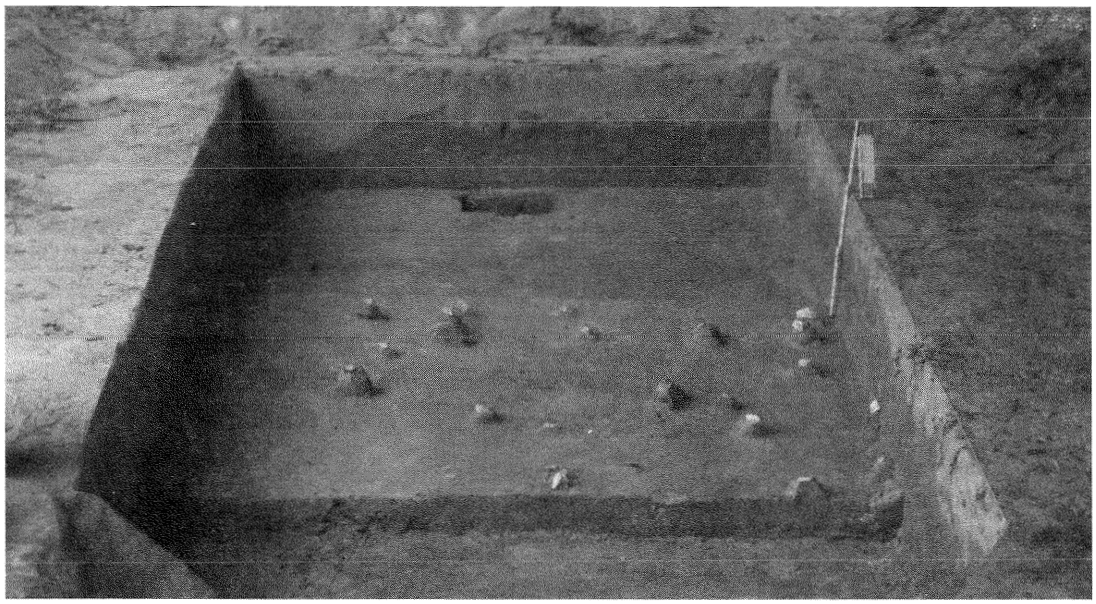


Figure 7.1. Top, Williamson site excavation area 3 in the graveyard field at the northeast corner of the Williamson Farm with all units in-process looking north; bottom, in situ artifacts in excavation unit 3B, level 1. Note that the top photograph shows unit 3B with only the plowzone removed. Photograph taken May 1999.

Figure 7.2. Williamson site excavation area 3, all units in process, looking south with only the plowzone removed from unit 3B showing cleaned plow cuts. Note charcoal sample location CS 25 (fig. 7.16) excavated into level 2 of unit 3A in foreground.

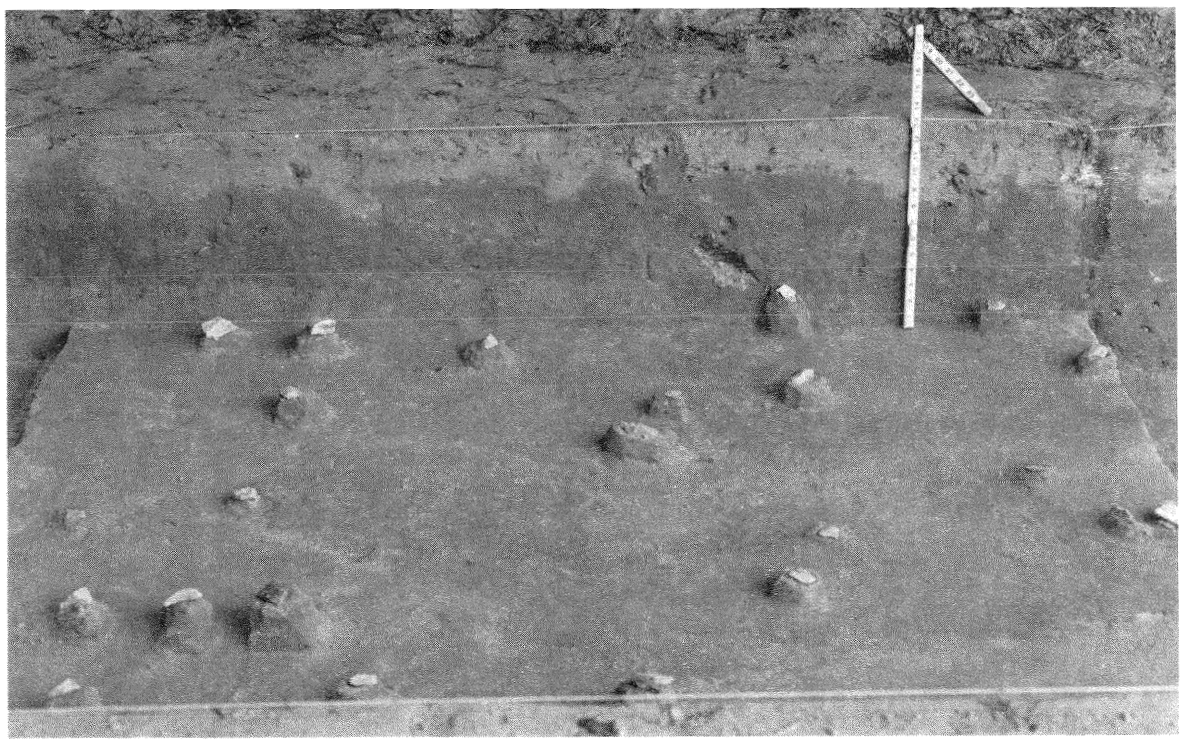
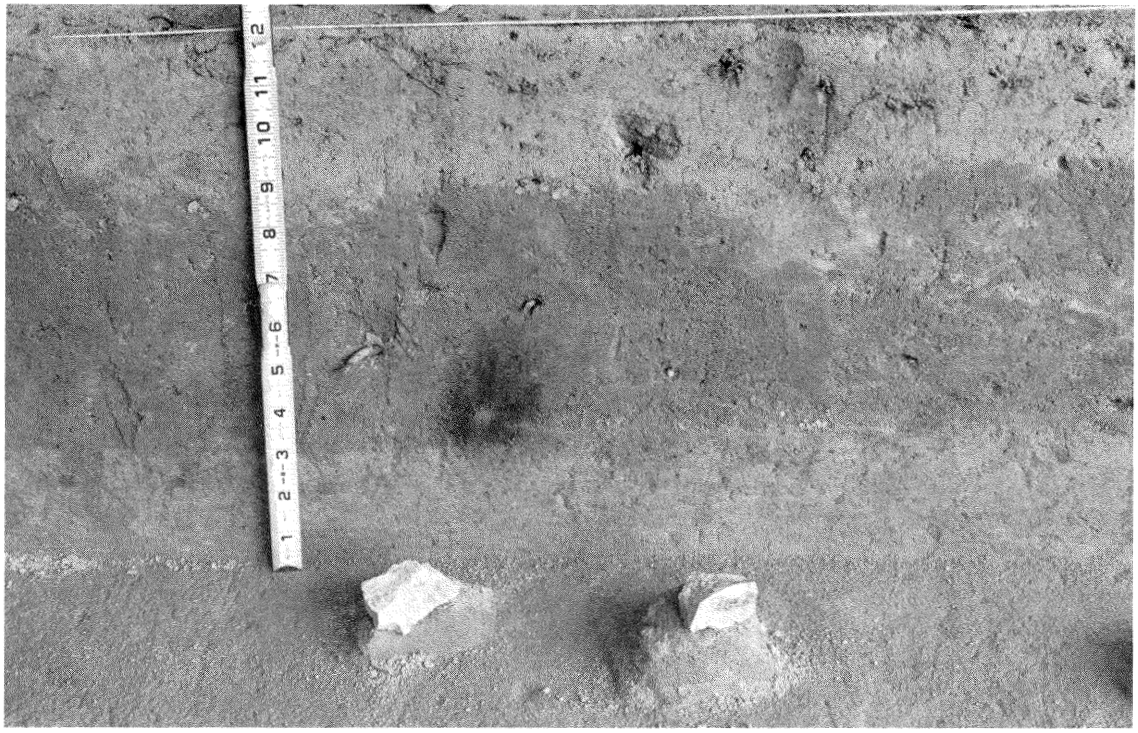


Fig. 7.3. Top, Williamson site excavation area 3, unit 3B, level 1 completed, looking southeast with artifacts in situ in Feature 1; bottom, unit 3B level 1 looking east showing the excavation wall profile with much of the upper plowzone (Ap1) removed prior to excavation.



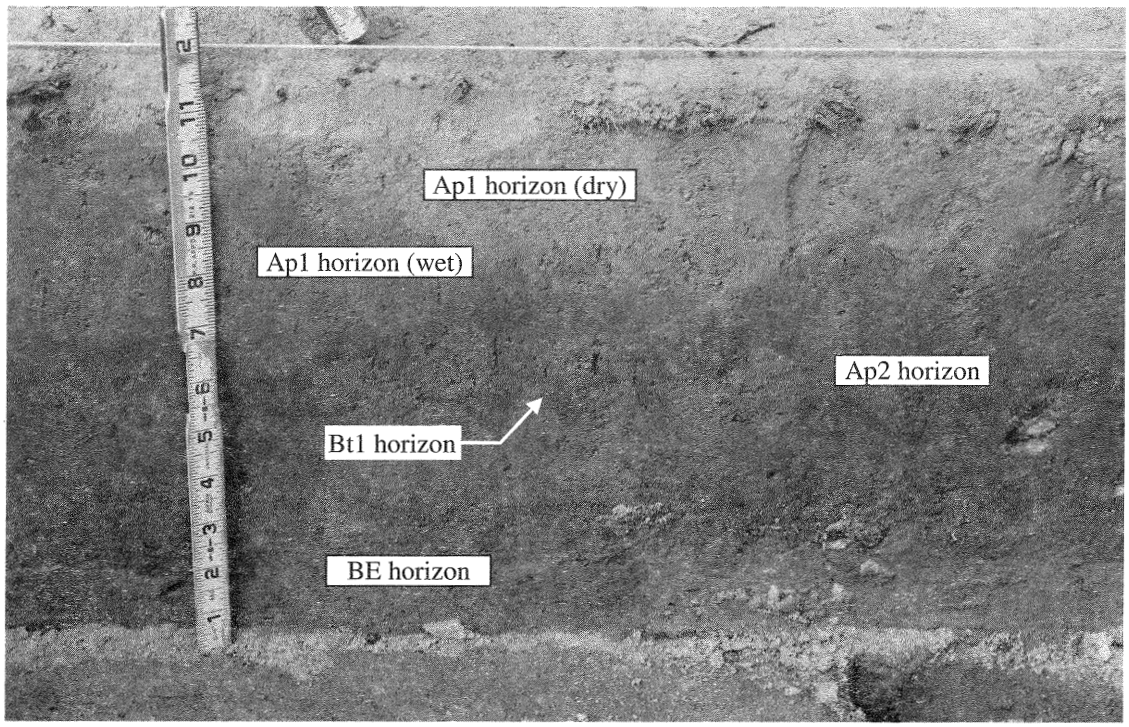


Fig. 7.4. Top, Williamson site excavation area 3, unit 3B, level 1 looking east showing details of soil horizons Ap1, Ap2, and BE; bottom, unit 3A, level 1 in process, looking north showing soil horizons Ap1, Ap2, and a tree throw disturbance exposing fragments of lower soil horizons (inverted and slanted) BE and Bt1.

Table 7.1: Volume Percentage of Plowzone and Each Level of Each Excavation Unit

Unit	Plowzone		Level 1		Level 2		Level 3		Total unit	
	Thick-ness*	Vol. %	Thick-ness*	Vol. %	Thick-ness*	Vol. %	Thick-ness*	Vol. %	Thick-ness*	Vol. %
3A	13.5	69	2	10	1.5	8	2.5	13	19.5	100
3B	13.5	69	2	10	4	21	N/A	N/A	19.5	100
3C	13.5	69	2.5	13	3.5	18	N/A	N/A	19.5	100
3D	15.5	79	4	21	N/A	N/A	N/A	N/A	19.5	100

*All thickness values are inches; depths are maximums for the units; N/A=not applicable

The plowzone of excavation area 3 produced the largest number of 19th- and 20th-century artifacts recovered upon the Williamson site, and they are listed in Appendix A. While the number of such artifacts is still relatively small, the brick fragments, fragments of kitchenware, glass, iron oxide (rust), and coal suggest that a middle 19th-century house, or a refuse dump of the period, was located close to the excavation.

Subsurface Soil Horizon BE: Artifacts and Features

The subsurface (below plowzone) soil horizon BE (fig. 7.4) of excavation area 3, produced 94 formal tools, cores, blades, and edge-worked or used flakes, as well as 865 pieces of debitage. Artifact typology is as defined in Chapter 4 and Appendix B to this report, and all of the artifacts recovered below the plowzone in excavation area 3 are given sequential numbers from 915 through 1,874 in Appendix B. The 94 formal tools, cores, blades, and used flakes are given unique drawing numbers in figs. 7.14 through 7.29 of this chapter, and these drawing numbers are indexed to the Appendix B sequential numbers under the "comments" heading for individual artifacts in that appendix. Photographs of selected artifacts from excavation area 3 are shown as figs. 7.30 and 7.31.

The formal tool types recovered in excavation area 3 include: numerous snapped-flake or bend break tools including gravers, and planes; chisel-wedges and fragments of chisel-wedges; numerous edge-worked and edge-used flakes; numerous core blades, some worked and used; cores and core fragments; gravers, some flaked and some snapped; end scrapers, and other end-trimmed flakes; and, a well-made side scraper. Lithic technology observed included bifacial, bipolar, and core-and-blade flake. Debitage varied from large primary core flakes with cortex to small (<5 mm) trim flakes from sharpening tools, or possibly for finishing projectile points although none was found here. The only direct indication of projectile point manufacture in this area was a point preform fragment from the plowzone of unit 3B, and a channel flake from late stage fluted point manufacture recovered in unit 3D.

Five artifacts from excavation area 3, an end scraper and four edge-worked or edge-used flakes, were subjected to CIEP immunological analysis for potential identification of animal protein residues, and then wear analysis. The results of these tests are presented in Chapter 10, and the significance of the wear analysis for the edge-used flakes is also discussed in Chapter 11. The end scraper produced a rare hafting stain.

Subsurface Features

General

The undisturbed, subsurface (below plowzone) soil horizon BE portion of the artifact bearing deposit in excavation area 3 represented from approximately 20 to 30% of total deposit thickness. Table 7.1 presents the percentage by excavation unit and level. The undisturbed deposit, a sandy clay loam, was about 5 inches deep. During shovel testing the lower Ap2 plowzone was observed to be a very fine leached sandy loam which appeared to be part of the undisturbed BE horizon. As the excavation progressed it became clear, from iron-stained plow strikes on artifacts, that this was actually a very old plowzone. Most of the 40 formal tools

recovered in the plowzone were found in the old Ap2 horizon.

The drawing of generalized features (fig. 7.5) shows features 1 and 2 in plan and profile views with only tools. Feature 1 in units 3A and 3B produced the most artifacts. The large number of artifacts and charcoal clusters led to the decision to excavate unit 3A in three levels. This was an attempt to determine if there was any stratigraphic significance to the artifact typology or to the depth of charcoal clusters. Unfortunately, it was determined that the same types of artifacts were recovered in each level, and that the charcoal clusters were deep and extended through the entire thickness of the deposit. The remainder of Feature 1 as encountered in unit 3B was excavated as only two levels which was the method employed for all of the units in excavation area 2. Features 2 was located primarily in unit 3C, but a small amount of Feature 2 was in the southern end of unit 3B. This feature also was excavated as two levels.

Most formal or edge-used flake tools, and charcoal clusters, are numbered and positioned by unit and level in figs. 7.14 through 7.29, which also show the location of recovery of the larger debitage fragments and the position of disturbances. The composite drawing of excavation area 3 with the location of all plotted artifacts, features, and charcoal clusters, and with levels 1, 2, and 3 superimposed is shown as fig. 7.6. The matching excavation area 3 profile is also shown in fig. 7.6. The numbered charcoal samples are indexed to the sample numbers in Table 10.3 of Chapter 10.

Feature 1

Feature 1, as encountered in units 3A and 3B, and shown in detail in figs. 7.3, 7.5, and 7.6, was an amorphous scatter of small delicate tools, and used flakes, for fine cutting, planing, sawing, engraving, and scraping. Many of the tools were small blades, and a possible small, fire-fractured blade core was recovered here. There is a very homogenous quality to this assemblage of tools. The artifacts, below the plowzone, were displaced vertically over a depth of about 5 inches, probably from bioturbation. There were visible signs of bioturbation in the form of a deep root, and two clay lenses from tree throws in the north end of the unit 3A and in the southwest end of unit 3B. Other disturbances included a few shallow plow cuts in units 3A and 3B which were cleaned by troweling before excavation.

At least three clusters of charcoal were recovered in unit 3A producing charcoal samples 25, 26, and 27; and, 14 charcoal clusters in unit 3B producing charcoal samples 8, 9, 10, 11, 28, 29, 30, 31, and 32. The 12 charcoal samples recovered from the general area of Feature 1 were submitted for analysis as tabulated in Chapter 10. One charcoal lump collected under a large chert artifact as sample 28 in level 1 of unit 3B was submitted for dating as described in Table 10.4 of Chapter 10.

Feature 1, in unit 3B, was the location of removal of a soil sample for a quick scan analysis of phytoliths from sediment. The sediment sample was taken 16 inches below surface, in the Clovis level. A control sample was taken from the two plowzones over a depth of 0 to 13 inches. The results of the phytolith quick scan are presented in Chapter 10. Feature 1 also was the location of removal of sediment samples for pollen analysis. One sample was removed from the two plowzones at 0 to 13 inches below surface, and one from the Clovis level 17 inches below surface. These results results are presented in Chapter 10.

Feature 2

Feature 2 was encountered primarily in unit 3C. This feature was smaller than Feature 1, but it represented an identical amorphous scatter of small delicate formal tools, and used flakes, for fine cutting, planing, sawing, engraving, and scraping. As in Feature 1, many of the tools were made upon small core blades. These artifacts were displaced vertically over the same distance as found in Feature 1, about 5 inches,

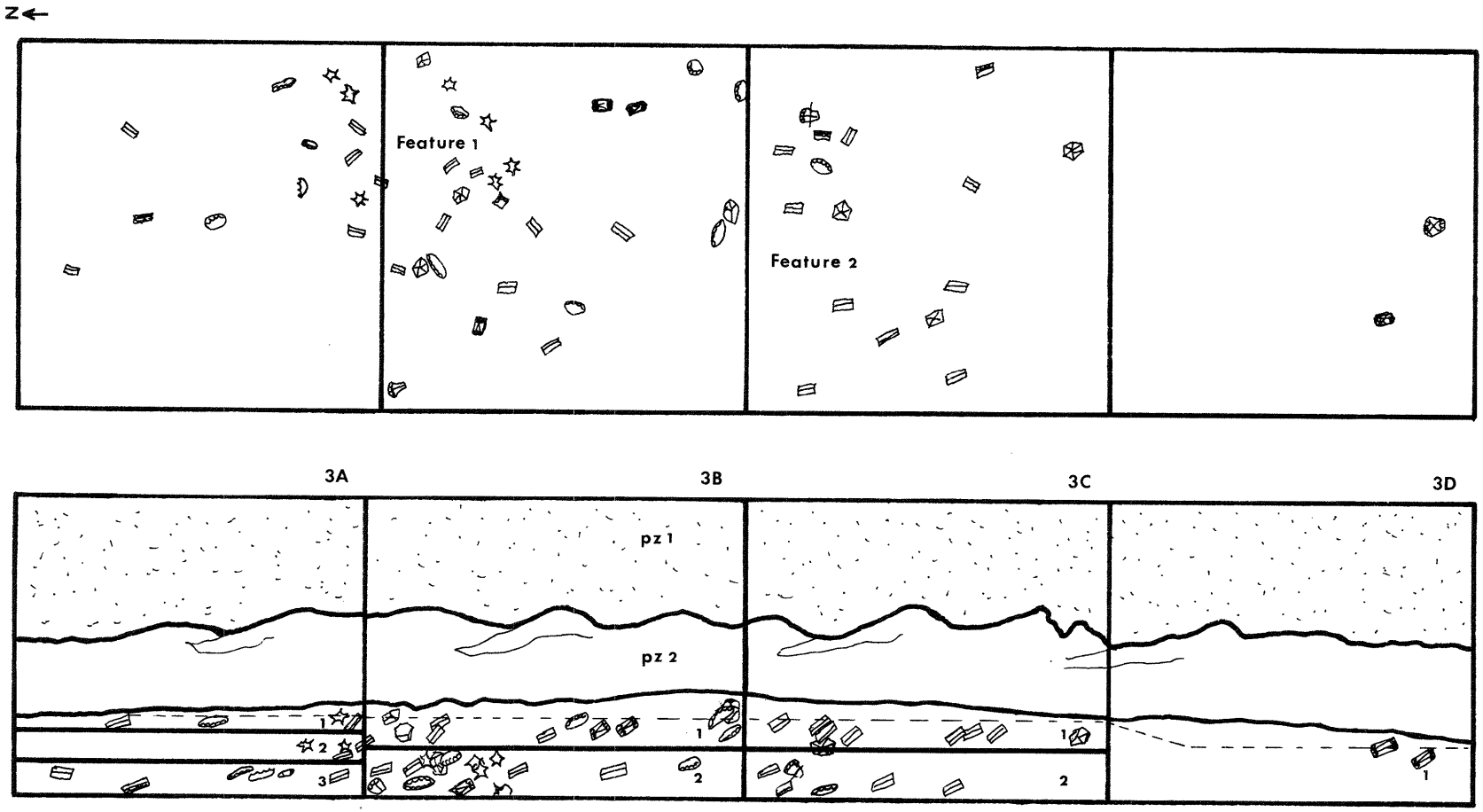


Figure 7.5. Generalized composite drawing of superimposed levels 1, 2, and 3 in all units in excavation area 3, with features 1 and 2 in plan and profile views; only the tools excavated in each cluster are shown. The vertical dimension in the profile view, compared to the horizontal dimension, is 2.8 times actual size to allow for relative placement of artifacts in the vertical position as excavated. A profile view drawn to scale is shown in fig. 7.6

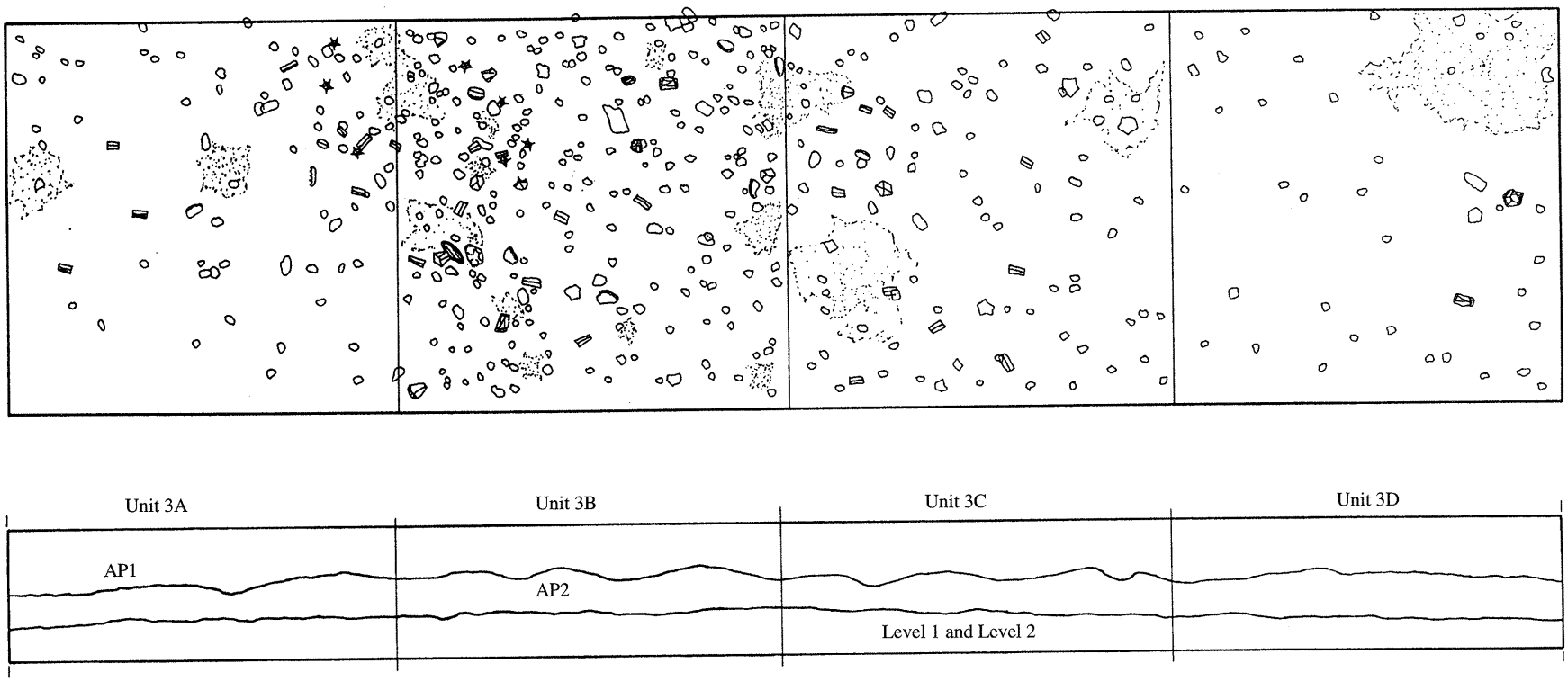


Figure 7.6. Detailed composite plan view (and profile) of all units in excavation area 3 with artifacts and charcoal clusters from levels 1, 2, and 3 superimposed. The drawing shows the location of recovery of large pieces of chert debitage, tools (symbols as defined in Appendix B), and charcoal clusters (areas of small dark spots). The excavation is orientated with north to the left, and the long (N-S) axis of the excavation is 20 feet.

as a result of the normally observed bioturbation occuring on the Williamson site. There were visible signs of bioturbation in the form of a deep root, and a single clay lens from a tree throw in the northwest end of the unit 3C which corresponded to the same disturbance in the southwest end of unit 3B. Also, there were a few shallow plow cuts in unit 3C which were cleaned by troweling before excavation.

Feature 2 in unit 3C produced three charcoal clusters, two of which were fairly deep, and charcoal samples 33, 34, 35, 36, and 59. Charcoal sample 34, a collection of fine conifer particles was identified as a likely Clovis hearth and was dated as described in Table 10.4 of Chapter 10.

General Observations Based Upon Artifact Recovery

Slope Wash

The total number of artifacts recovered in the plowzone, and subsurface (below plowzone), of each excavation unit is shown in fig. 7.7. All of these units were orientated perpendicular to the direction of slope wash from the hillside. No variation was observed in or below the plowzone in the distribution of artifacts across the five foot width of the units. Still, given the 13 inches total depth of the two plowzones in this area of the site, compared to a normal plowzone depth of 6 inches to 8 inches in areas not on or below slopes, slope wash appears to be the only explanation for the extra thickness.

Slope wash is probably the explanation for the higher ratio of plowzone artifacts to subsoil artifacts in unit 3A, 2.6-to-1, than in 3B or 3C, about 1.3-to-1. Unit 3D is not considered in this analysis as more of the overall thickness of 3D was interpreted as lost to deep plowing. This high ratio for unit 3A seems to mirror the slight drop in surface elevation of unit 3A. The lower surface elevation at this location appears to have resulted in more plowzone depth from slope wash which also brought in more small artifacts.

Burned Artifacts

Careful attention was paid to the presence, and number, of burned artifacts in the individual excavations on the Williamson site in the hope that this observation would lead to the recognition of hearths.

As shown in fig. 7.8, a very uniform 11 to 12% of the artifacts recovered in the plowzone were observed to be burned. Below the plowzone the percentages were quite a bit higher at 25 to 36%, except for unit 3B which was still high at about 19%. The lower percentage of burned artifacts below the plowzone for unit 3B was inconsistent with the number of charcoal clusters recovered there which was the highest in excavation area 3. This lead to the conclusion that much of the charcoal in unit 3B, was unrelated to the artifacts. But, some of the most curated of the formal tools in features 1 and 2 were burned, an observation which seemed to suggest the possibility of hearths, especially in units 3A and 3C. One likely hearth was identified in unit 3C, based upon burned lithics in association with a scatter of greatly weathered conifer charcoal. None of the individual flecks of carbonized wood in the hearth was large enough to date as a single lump, and a charcoal sample, number 34, containing many small pieces was submitted for dating as described in Table 10.4 of Chapter 10.

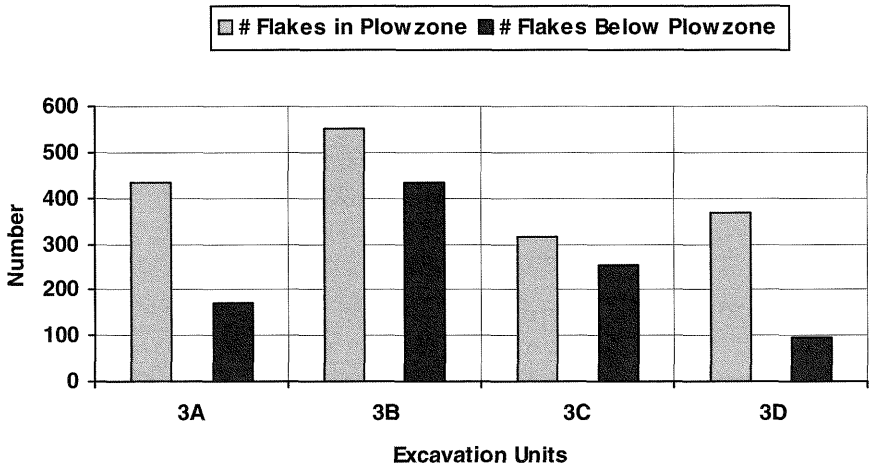


Figure 7.7. Excavation area 3, total number of artifacts recovered in plowzone, and below plowzone, in all units.

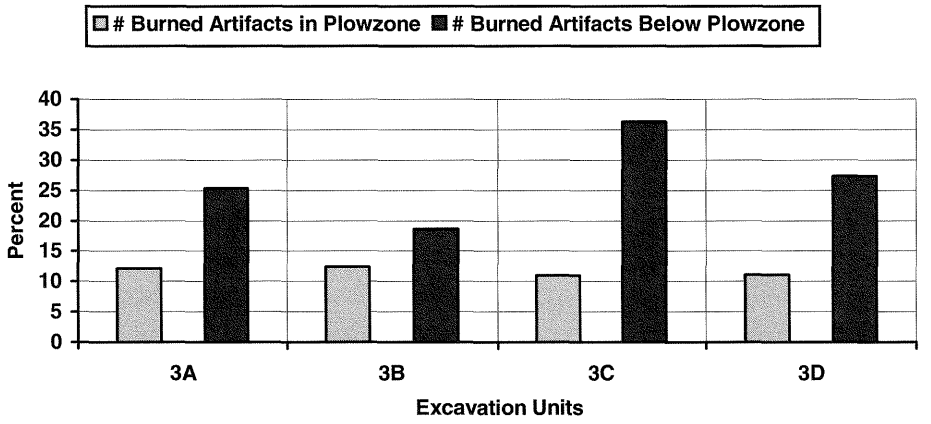


Figure 7.8. Excavation area 3, percentage of artifacts recovered in plowzone, and below plowzone, which are burned, or thermally modified (based on chert flakes only), in all units.

Archaic Period Artifacts

It is significant to review the numbers and percentages of artifacts recovered in and below the plowzone which may not be of Clovis origin, i.e., not of Williamson chert (figs. 7.9 and 7.10). From Appendix A, it is apparent that there are approximately three quartzite flakes for each quartz flake, and that only one quartz crystal flake was recovered in the plowzone. The number of quartzite and white quartz flakes recovered in excavation area 3 is approximately twice the number recovered across the field on the west slope of the hill in excavation area 2. But unlike excavation area 2 where most of the flakes were recovered in a single unit, in excavation area 3 the flakes are well distributed among all units. The ratio of plowzone finds to below plowzone recovery varies from approximately 2-to-1 to 3-to-1, except for unit 3D which produced almost no such flakes below the plowzone. The number of quartzite and quartz flakes may represent a very light, general Archaic period use of excavation area 3, or given the rather uniform number distributed across the excavation it may represent Clovis period use. One tool of quartzite, an edge-used flake (drawing No. 335), was recovered in level 1 of unit 3B, which could have been associated with either period of site use.

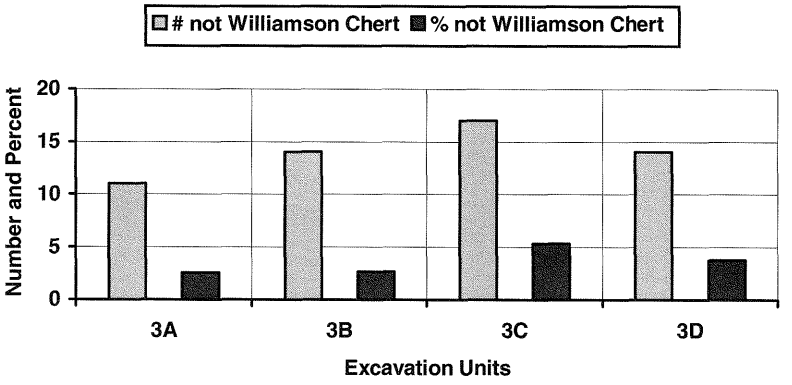


Figure 7.9. Excavation area 3, number and percentage of artifacts not of Williamson chert recovered in the plowzone, in all units.

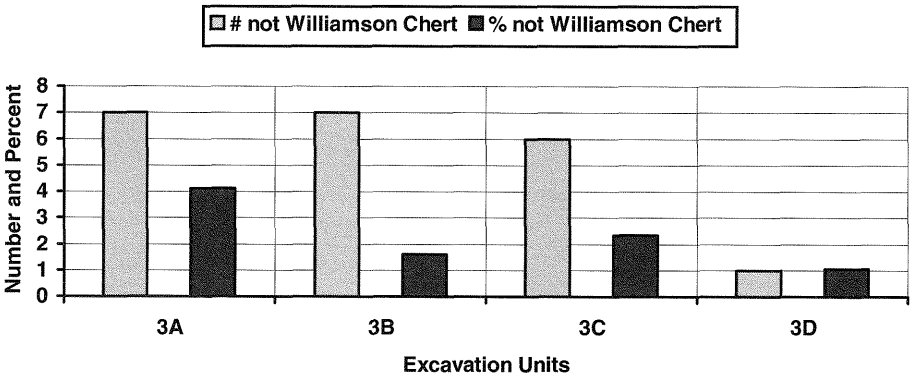


Figure 7.10. Excavation area 3, number and percentage of artifacts not of Williamson chert recovered below the plowzone, in all units.

Work Division by Area

Figure 7.11 presents the units based upon the amount of primary core and decortication stage flakes recovered there. The results show that this work, or the deposit of such debitage, occurred where the largest number of all artifacts including formal tools occur in the excavation, units 3B and 3C. Also, fig. 7.12 shows units 3B and 3C as producing the largest numbers of flakes with refined, ground platforms. These two units again produced the largest number of thinning or trim flakes; however, only one of these units produced the highest percentage of trim flakes as shown in fig. 7.13. The unit producing the largest number of formal tools, 3B, produced the largest number and percentage of trim flakes, but the second-largest percentage was recovered in unit 3D. There was nothing unique about the artifact types found in unit 3D except for a single fluted point channel flake. In contrast, unit 3D produced no large biface reduction flakes. Based upon debitage and formal tool types, these is no significant indication of variation in work from unit to unit. Rather, based upon tool types, it appears that this area was dedicated to the same group of tasks.

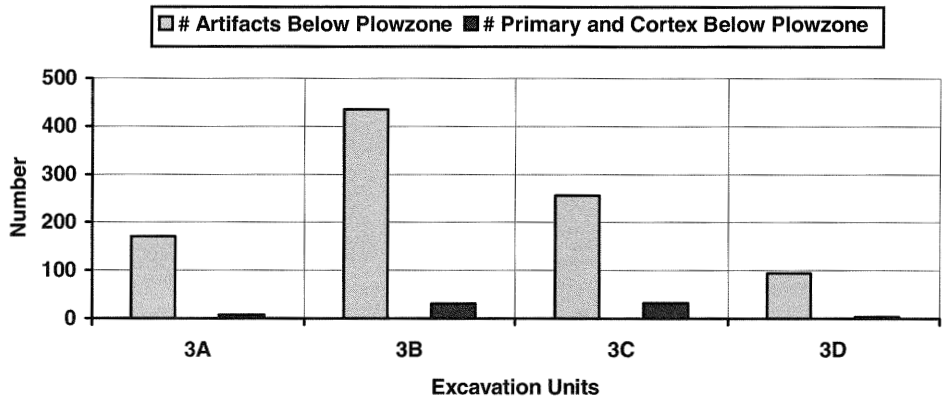


Figure 7.11. Excavation area 3, primary flakes and cortex flakes recovered below the plowzone, compared to the total umber of artifacts recovered below plowzone, in all units.

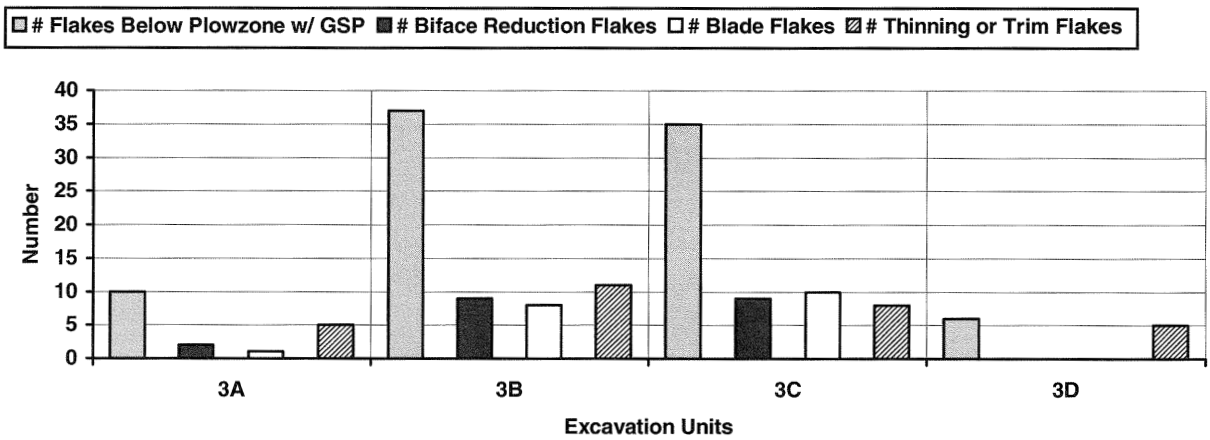


Figure 7.12. Excavation area 3, total number of flakes recovered below the plowzone with ground striking platforms (GSP), compared with the total number of biface reduction flakes (F/BR), blade flakes (F/B), and thinning or trim flakes (F/T) with GSP recovered below the plowzone, in all units.

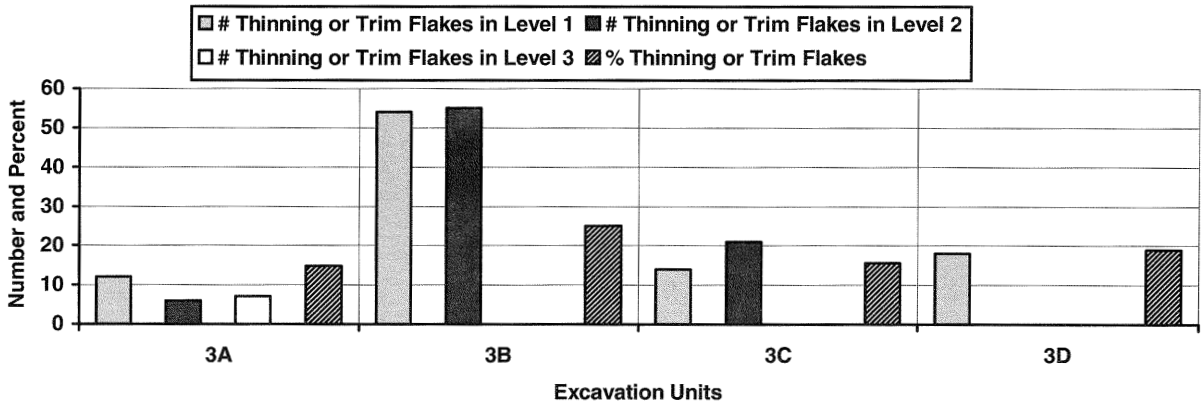


Figure 7.13. Excavation area 3, number of thinning or trim flakes from Levels 1, 2, and 3, compared with the total percentage of thinning or trim flakes from these levels, in all units.

Inferred Activities at Excavation Area 3

Several inferences can be made concerning the activities of the Clovis people in excavation area 3 based upon the artifact assemblage. First, it should be noted that it appears at least half the thickness of the artifact bearing deposit in area 3 escaped the plow. Therefore, the artifacts recovered below the plowzone (see figs. 7.30 and 7.31) are probably a reasonable representation of what was left in this location of the site by the Clovis people.

The formal tool assemblage in features 1 and 2 was very homogenous, composed mostly of small, delicate core blades, snapped-flake or bend break tools, and edge-worked or edge-used flakes. Many of the snapped-flake tools were apparently used as small planes, but some also were used at sharp points as gravers. This excavation area produced a few chisel-wedges and fragments, two end scrapers, and a very delicate knife or side scraper of a non-local jasper. There were very few large tools as recovered in excavation area 2, and no projectile points or preforms were found. Only the single channel flake, recovered at the far (south) end of unit 3D, provided any direct indication that projectile points were made here. The area did produce biface reduction flakes and trim or thinning flakes which indicates that bifacial technology was important to some activities in excavation area 3. It also must be considered that area 3 could have been occupied on multiple occasions with some over-printing of tasks from occupation to occupation.

The activities indicated by the assemblage of small tools are cutting, scraping, planing, and engraving. Such activities could reasonably be interpreted as those of a small group of people seated within a structure, or by a group seated outside closely together. Given the fact that a high percentage of below plowzone debitage was burned, it seems likely that the activities in this area occurred around hearths. If this analysis is accurate, excavation area 3 likely represents a group work area where light tasks were performed around hearths and perhaps in structures.

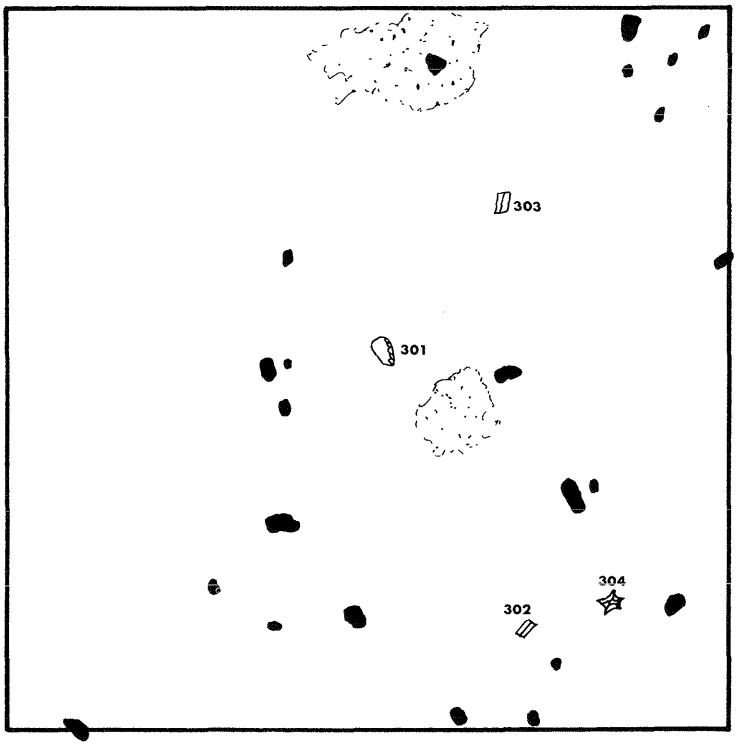


Figure 7.14. Excavation area 3, unit 3A, level 1, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), and charcoal clusters (areas of small dark spots).

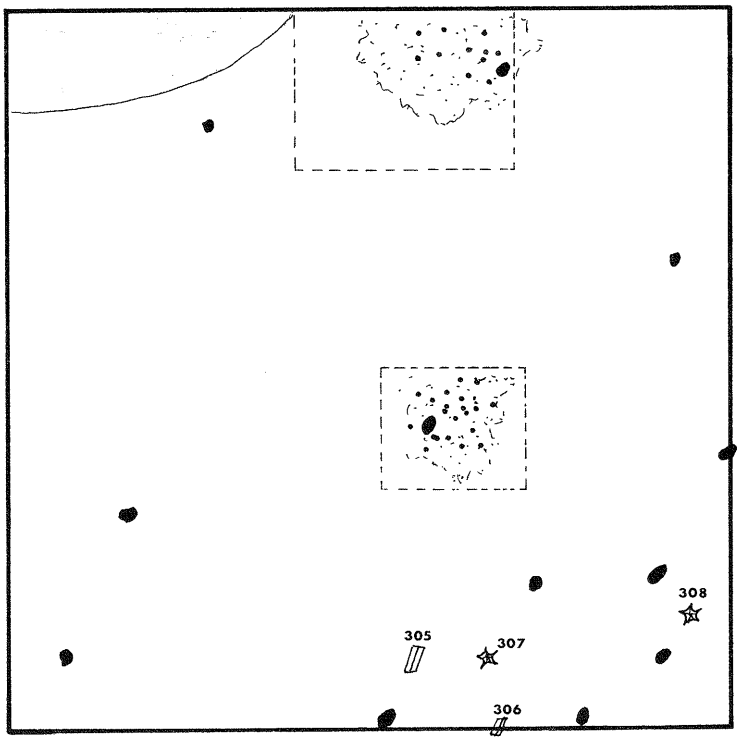


Figure 7.15. Excavation area 3, unit 3A, level 2, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples (enclosed by dashed lines), and a clay lens from a tree throw disturbance (lightly shaded).

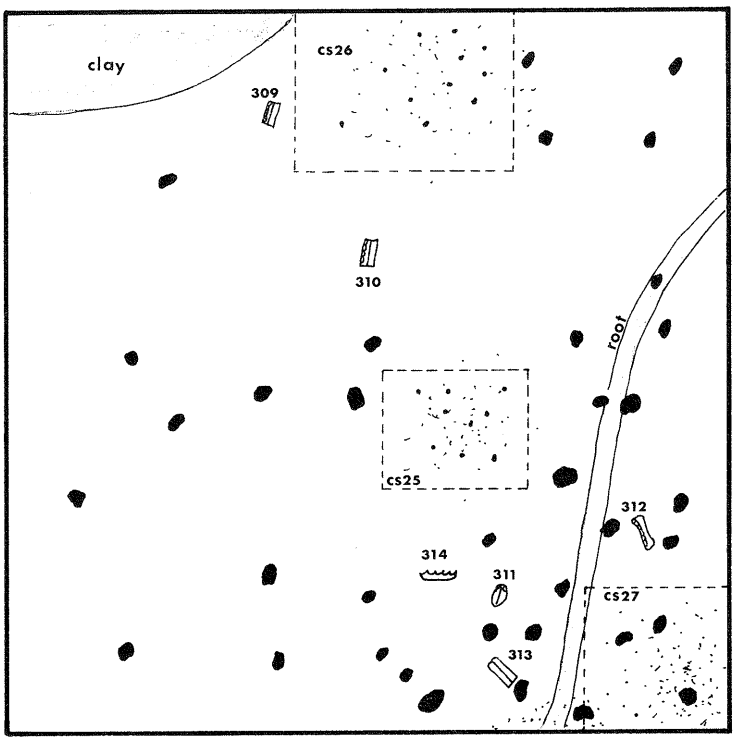


Figure 7.16. Excavation area 3, unit 3A, level 3, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), a modern root, and a clay lens from a tree throw disturbance (both marked, and lightly shaded).

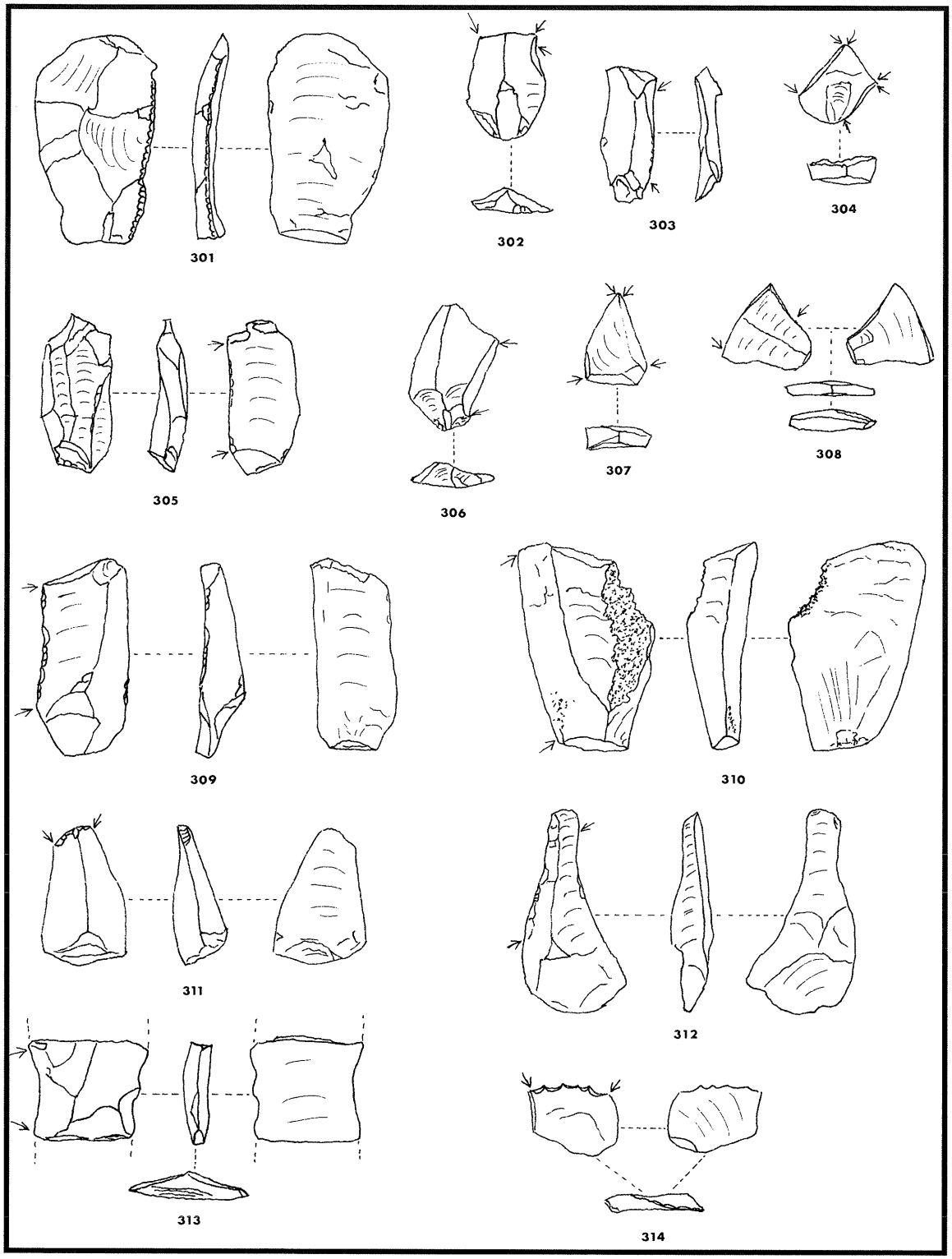


Figure 7.17. Artifacts from excavation area 3, unit 3A, levels 1, 2, and 3: edge-worked flakes, 301 and 309 (301 is from the level 1/plowzone interface, and 309 is a core blade); edge-used flakes, 302, 303, 305, 306, 310, and 313 (313 is from the level 1/plowzone interface); snapped-flake edge-used tools, 304, 307, and 308; end-worked flake with narrow tip (not an end scraper?), 311; edge-worked flake used as a flaring tip drill, 312; serrated flake, 314. (83% natural size)

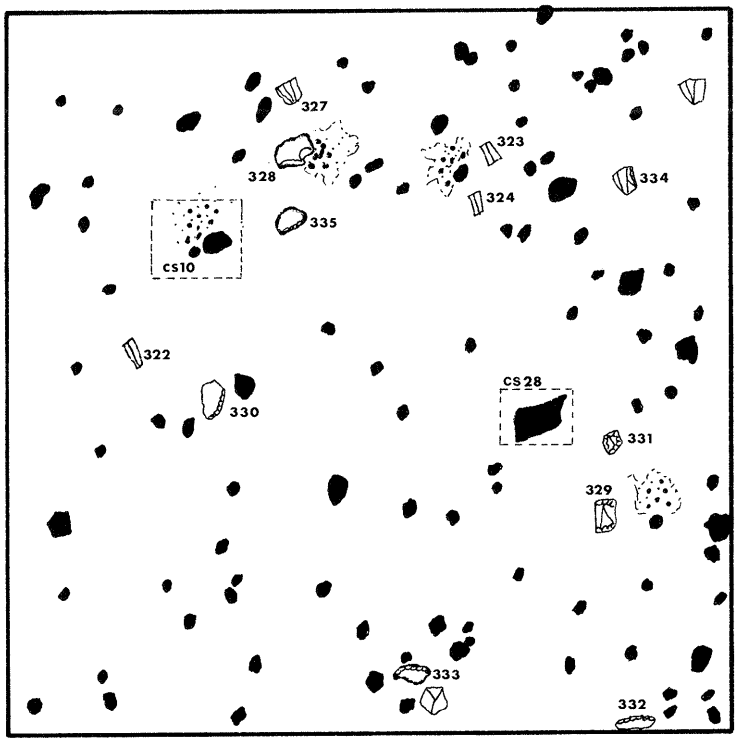


Figure 7.18. Excavation area 3, unit 3B, level 1, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), and charcoal samples "cs-" (enclosed by dashed lines).

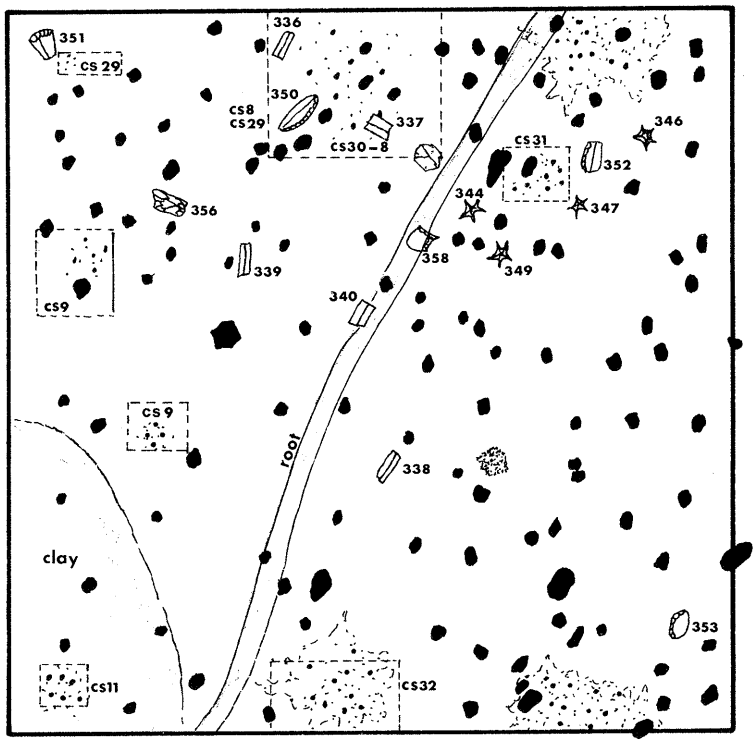


Figure 7.19. Excavation area 3, unit 3B, level 2, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), a modern root, and a clay lens from a tree throw disturbance (both marked, and lightly shaded).

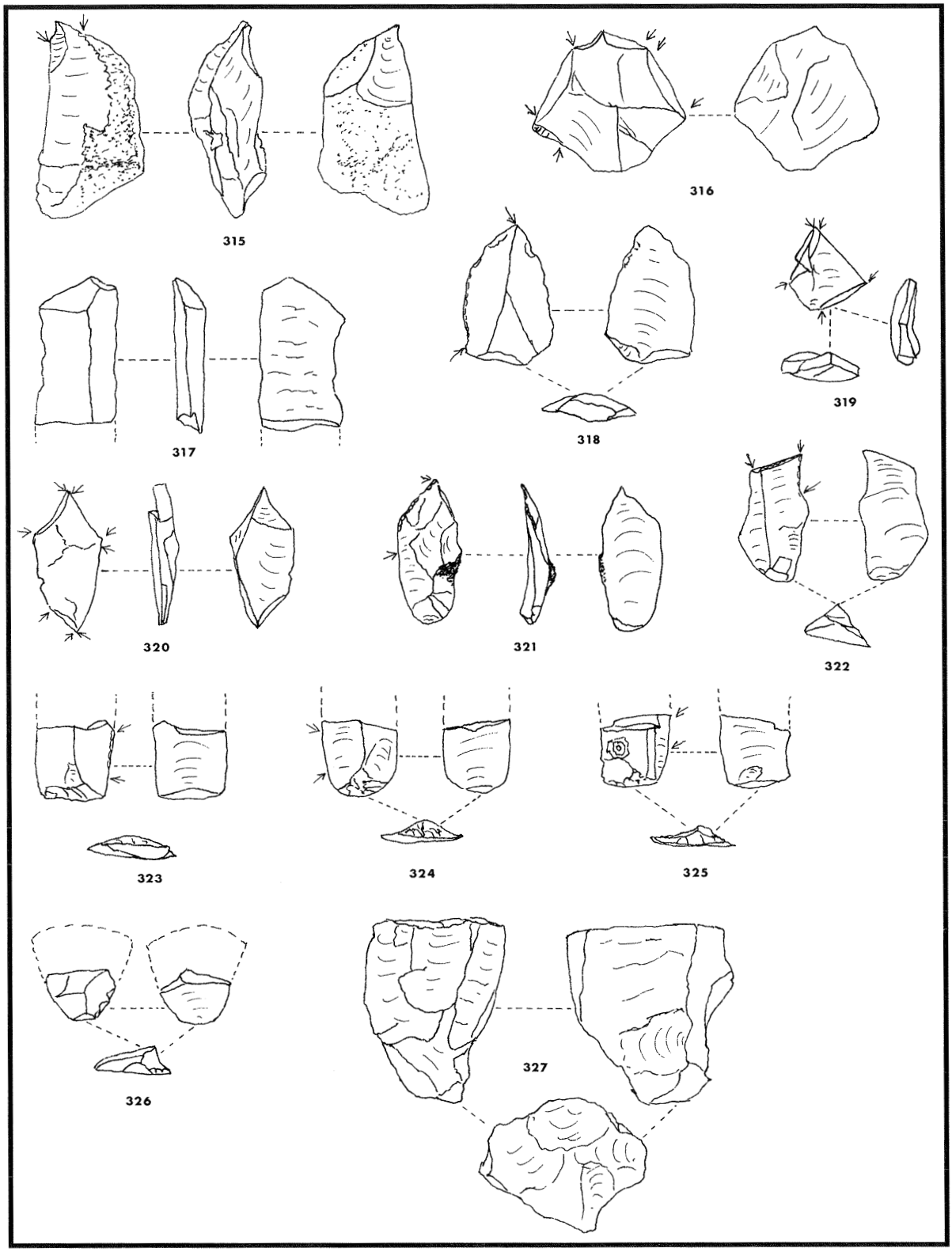


Figure 7.20. Artifacts from excavation area 3, unit 3B, level 1: burin/graver, 315; snapped-flake graver, 316; edge-used flakes, 317, 318, 321, 322, 323, 324, and 325 (317, 322, 324, and 325 are core blades); snapped-flakes, edge-used, 319 and 320; end scraper fragment(?), 326; blade core (?), fire fractured, 327. (85% natural size)

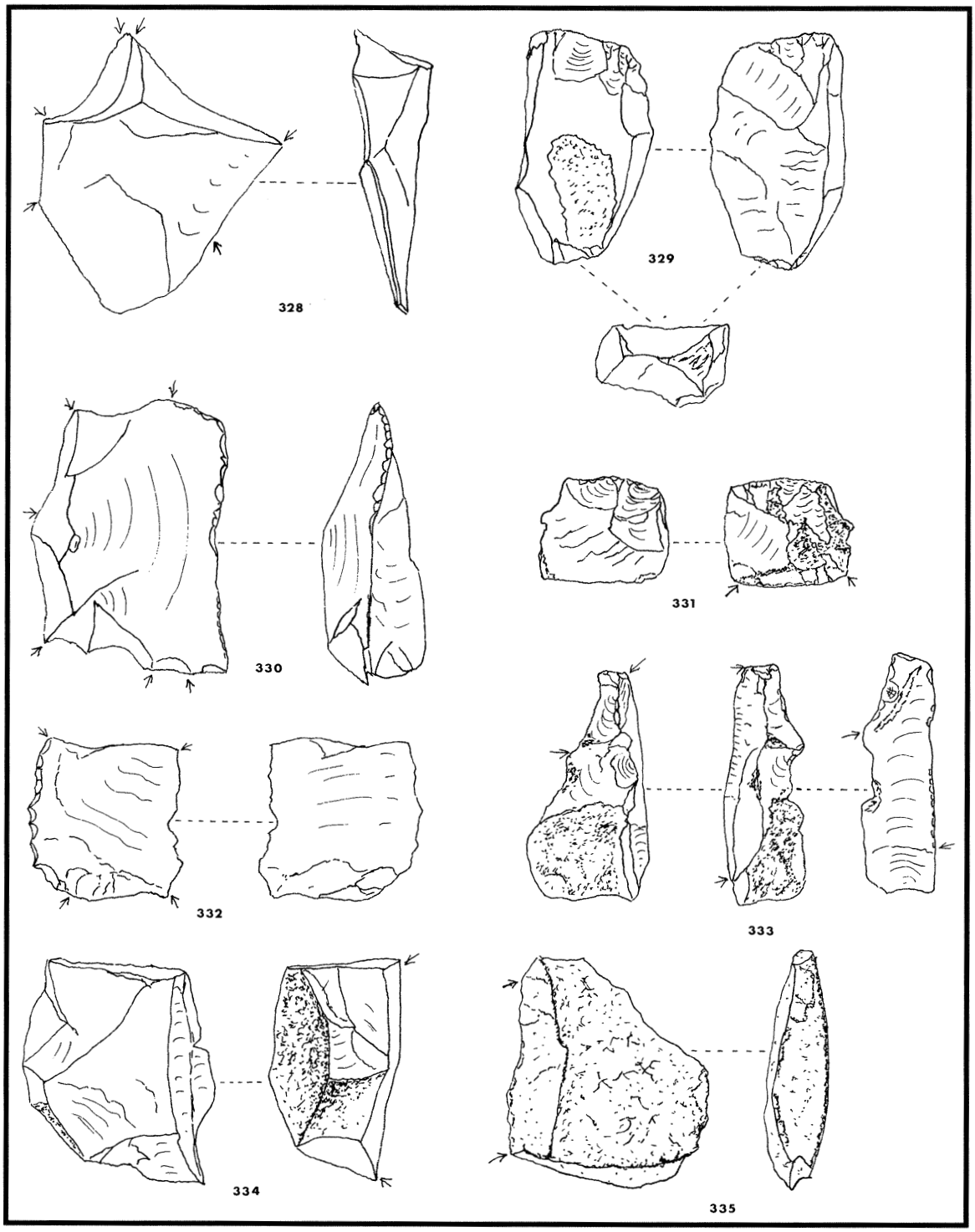


Figure 7.21. Artifacts from excavation area 3, unit 3B, level 1: snapped-flake, edge-used, 328; chisel-wedge or wedge blank, 329 (this was a primary core flake lightly modified and used, or to be used, as a wedge); edge-worked flakes, 330, 331, and 332 (331 is a recycled chisel-wedge, modified into a scraper at the break); edge-used flakes, 333, 334, and 335 (334 was probably used as a plane, and 335 is quartzite). (82% natural size)

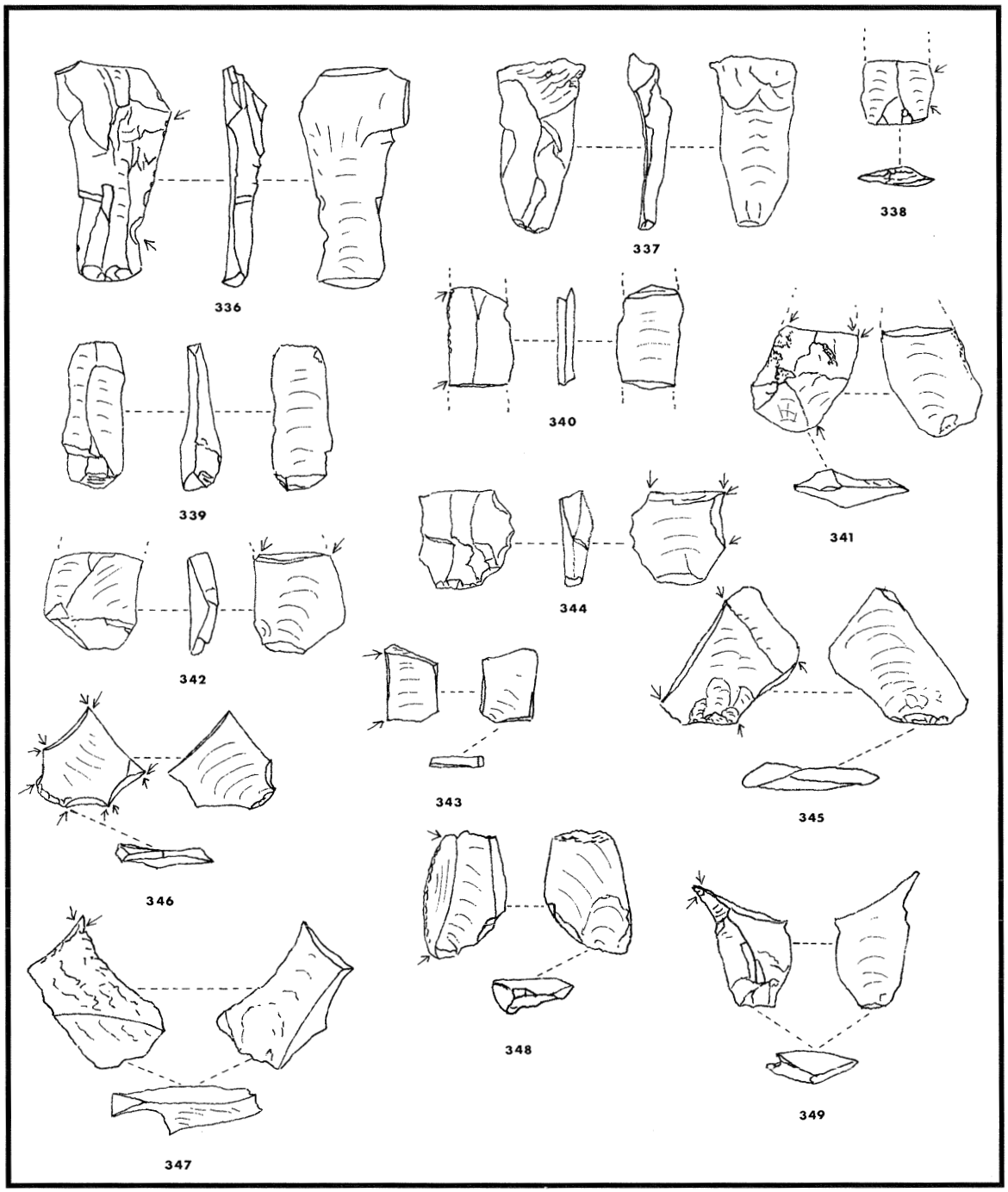


Figure 7.22. Artifacts from excavation area 3, unit 3B, level 2: edge-used flakes, 336, 337, 338, 339, 340, and 341; snapped-flakes, edge-used, 342, 343, 344, 345, and 348; snapped-flake gravers, 346, 347, and 349. (80% natural size)

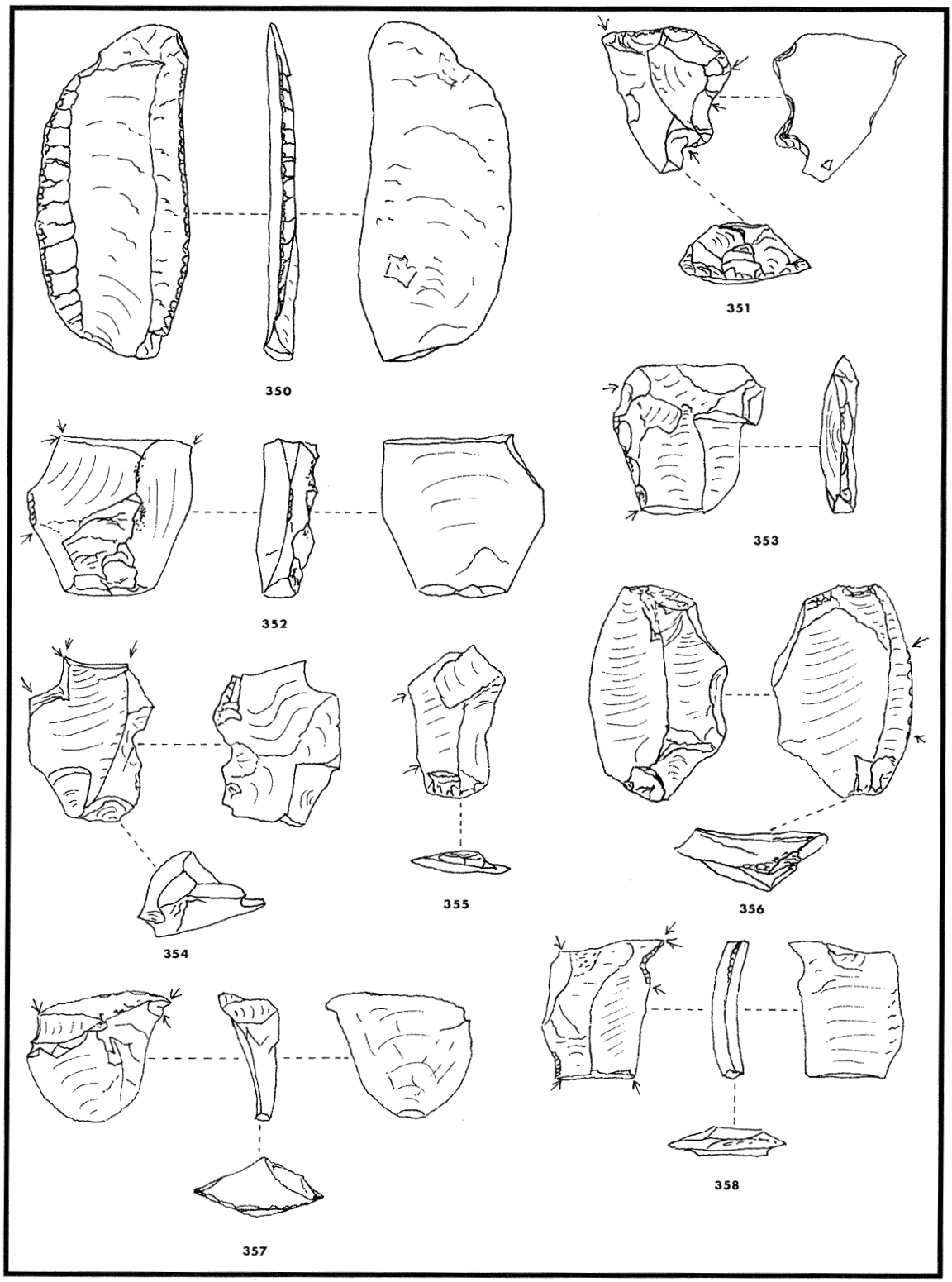


Figure 7.23. Artifacts from excavation area 3, unit 3B, level 2: side scraper on a large core blade, 350 (jasper, foreign to Williamson site); end scraper with a large, partly broken lateral graver spur, 351; snapped-flake, edge-used, 352; edge-worked flake, 353; burin/graver on a snapped-flake, 354; edge-used flake, 355; chisel-wedge, edge-used, 356; edge (end)-used flake with a notched graver spur (natural end scraper), 357; graver (made by notching a core blade), 358. (83% natural size)

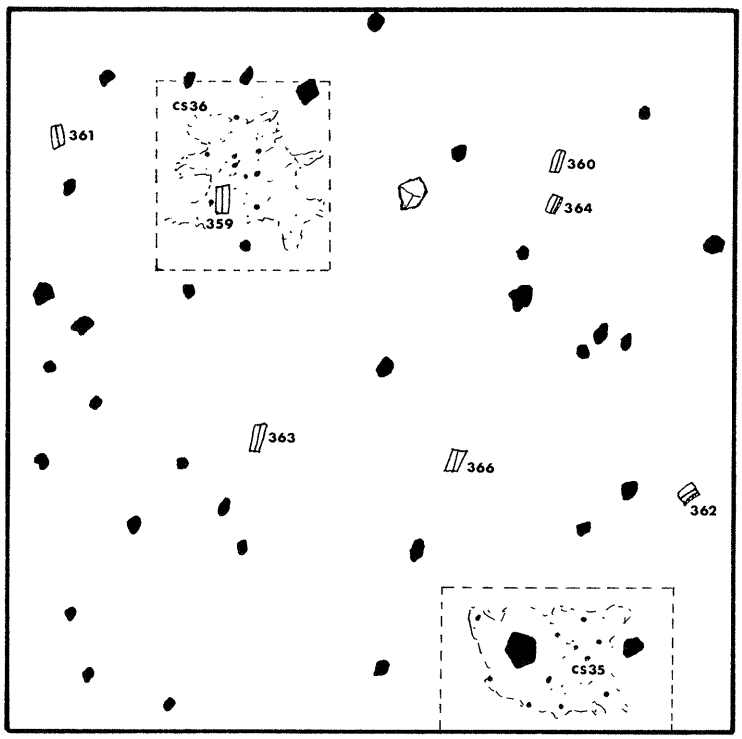


Figure 7.24. Excavation area 3, unit 3C, level 1, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), and charcoal samples "cs-" (enclosed by dashed lines).

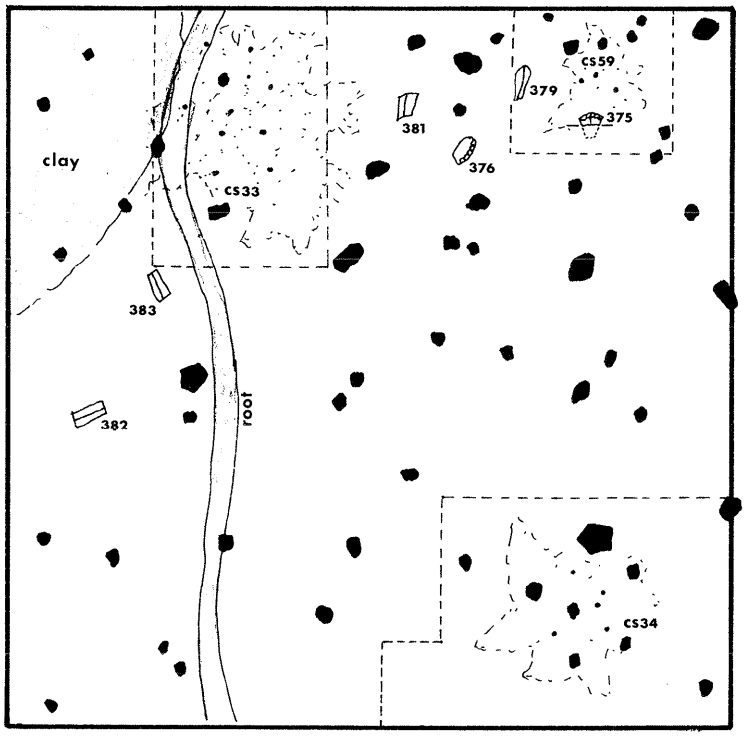


Figure 7.25. Excavation area 3, unit 3C, level 2, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), a modern root, and a clay lens from a tree throw disturbance (both marked, and lightly shaded).

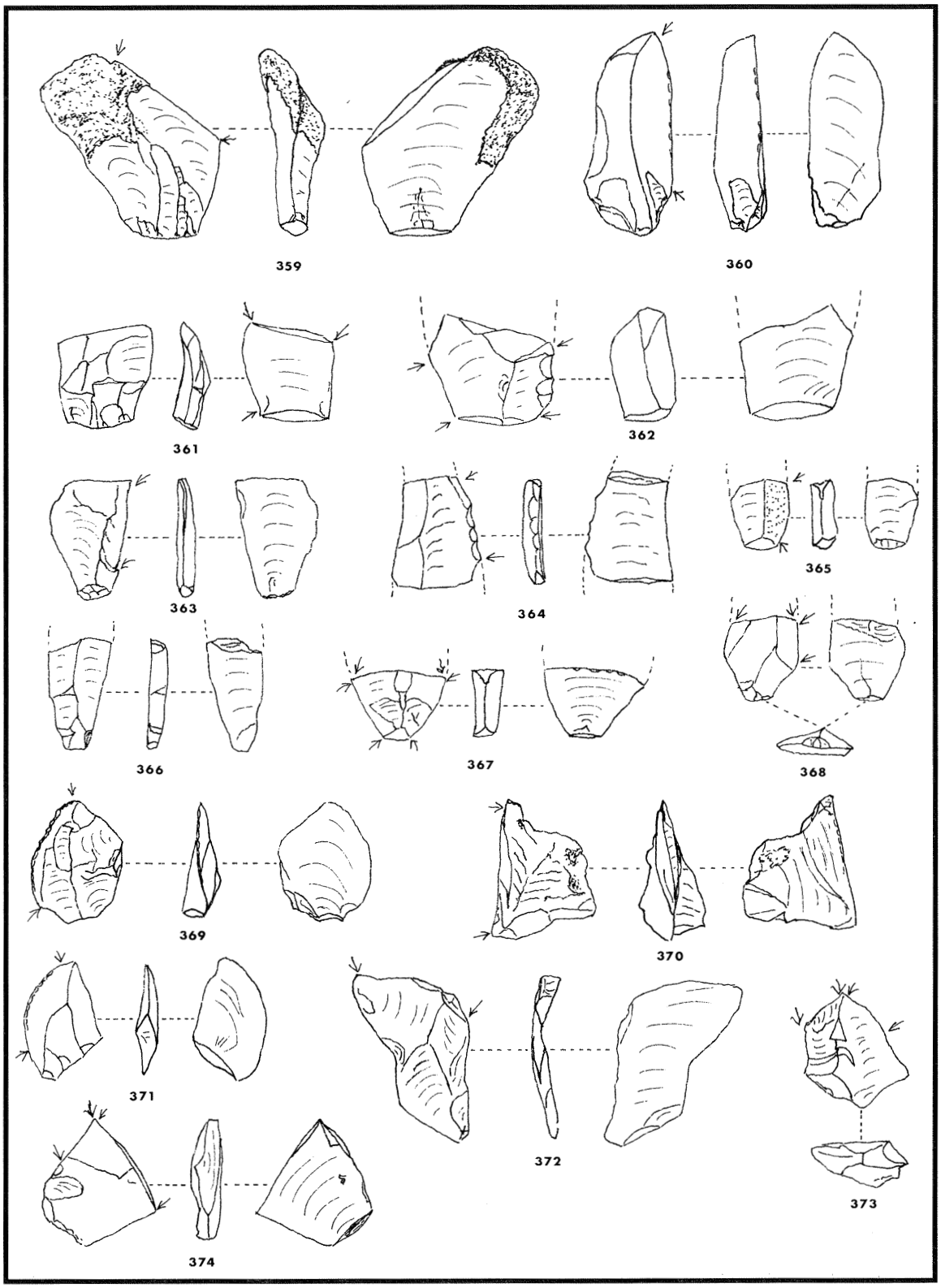


Figure 7.26. Artifacts from excavation area 3, unit 3C, level 1: edge-used flakes, 359, 360, 361, 362, 363, 365, 366, 367, 369, 370, 371, and 372 (360, 361, 362, 365, 366, and 367 appear to be core blades); edge-worked flake, 364; snapped-flakes, edge-used, 368 and 373 (368 is probably a core blade); snapped-flake graver, edge-used, 374. (85% natural size)

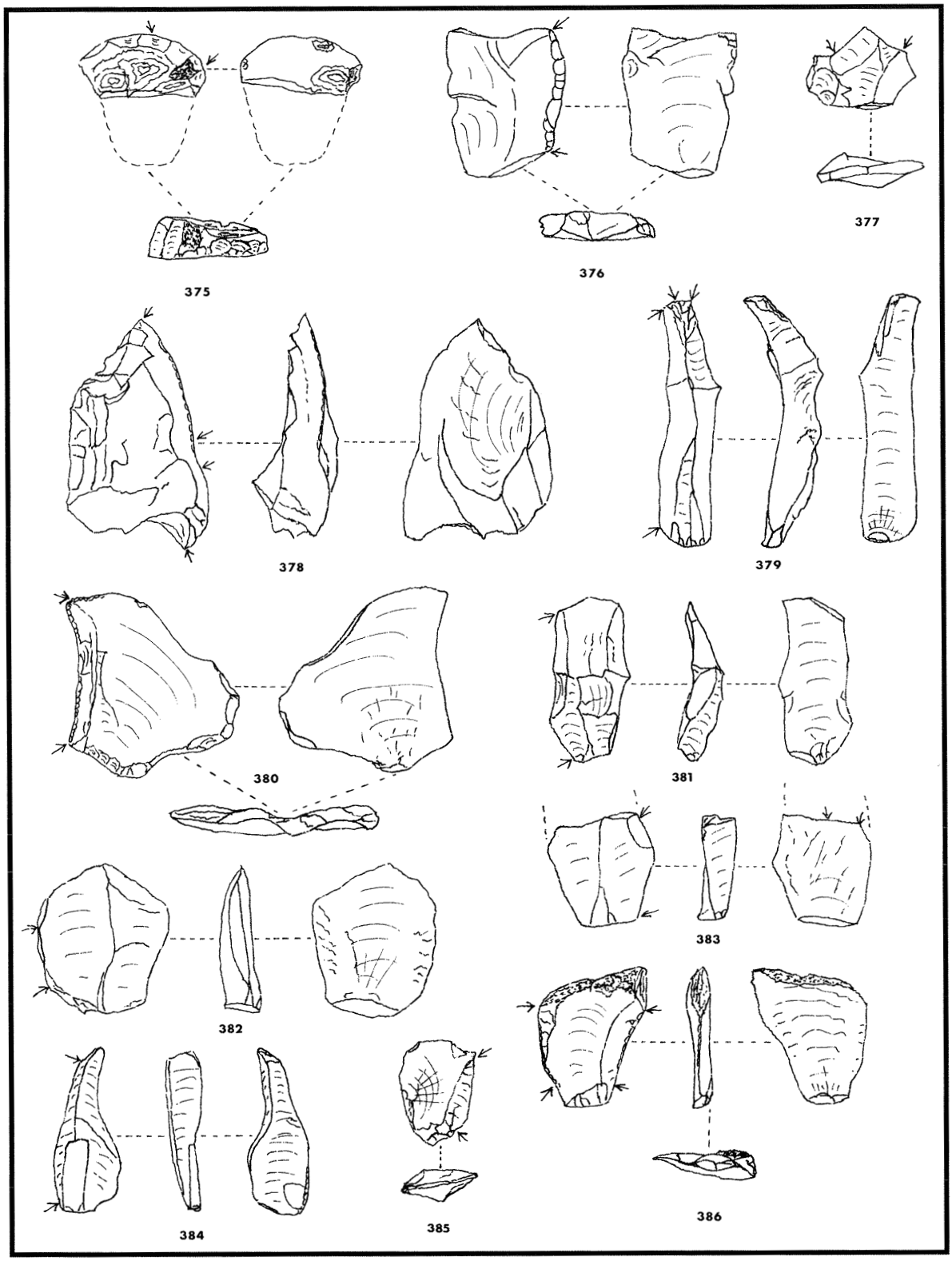
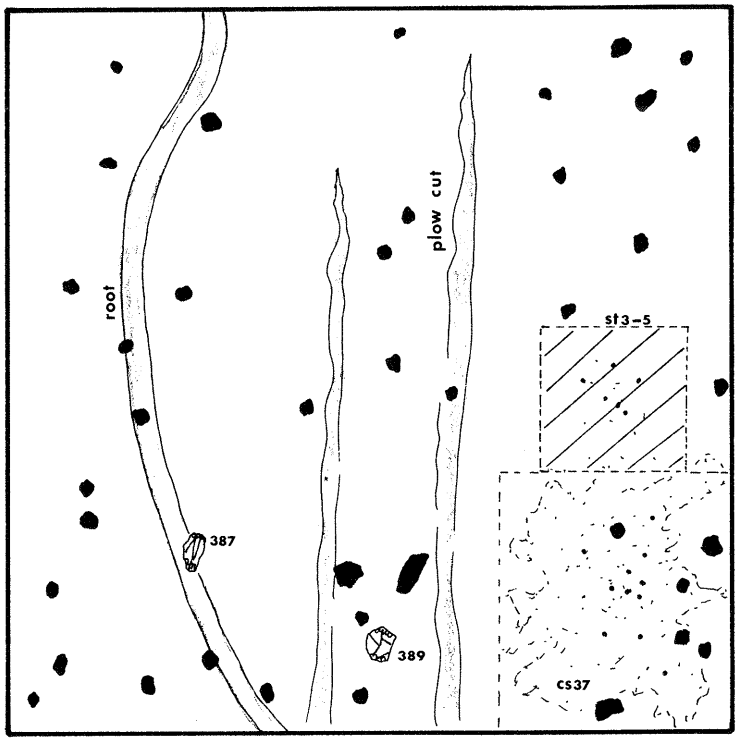


Figure 7.27. Artifacts from excavation area 3, unit 3C, level 2: end scraper, fire-damaged fragment, 375; edge-worked flake, 376 (core blade); snapped-flake, edge-used, 377; edge-used flakes, 378, 379, 380, 381, 382, 383, 384, 385, and 386 (379 is a core blade; 381, 382, and 383 are probably core blades). (85% natural size)



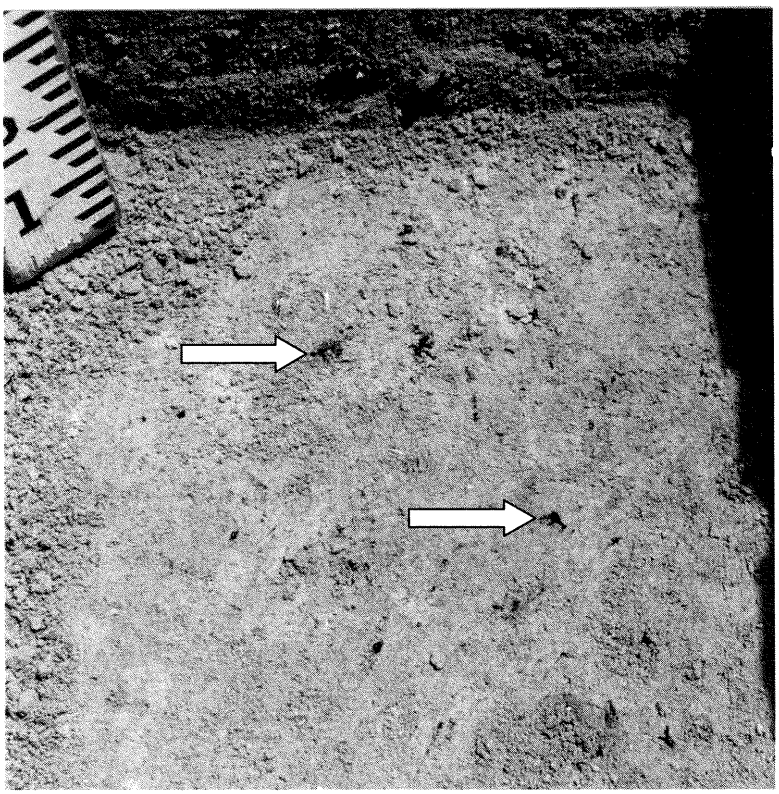


Figure 7.28. Top, excavation area 3, unit 3D, level 1, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), a modern root, and two deep plow cuts terminating in this unit (disturbances are marked, and lightly shaded), and St3-8 (shovel test number 8 in location test area 3); bottom, charcoal fragments in situ at charcoal sample 37 (CS 37) location shown above.

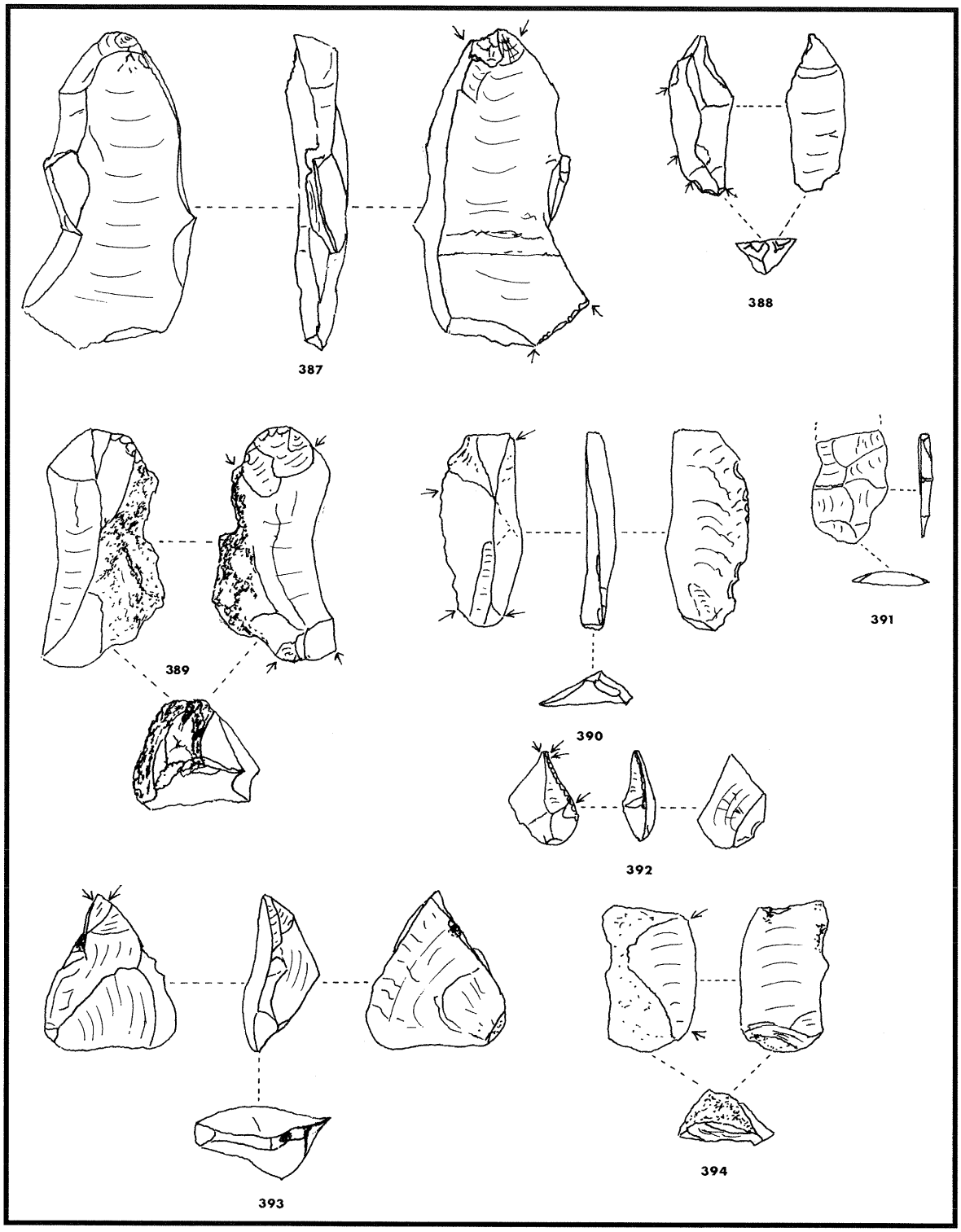


Figure 7.29. Artifacts from excavation area 3, unit 3D, level 1: chisel-wedge blank, 387; chisel-wedge, 389; edge-used flakes, 388, 390, and 394 (388 is a wedge spall, and 390 and 394 are core blades; 390 was found at the level 1/plowzone interface); channel flake fragment from a fluted point, 391 (found at the level 1/plowzone interface); graver (edge-worked flake-micro tool?), 392; burin-graver, 393. (85% natural size)

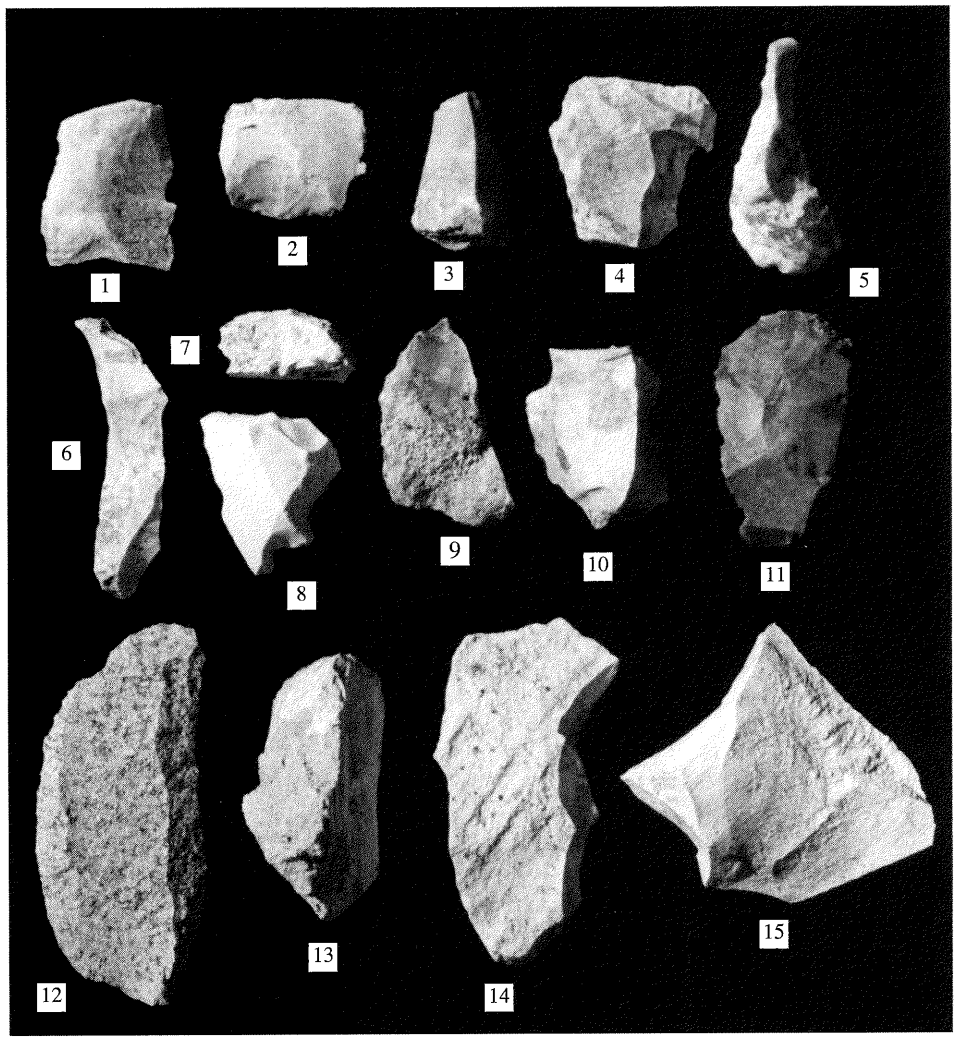


Figure 7.30. Excavation area 3: 1, 4, and 11, edge-worked flakes (11 is a longitudinal thinning flake); 2, snapped/broken end-worked chisel-wedge fragment; 3, end-worked blade; 5, edge-worked flake used as a drill; 6, narrow edge-used core blade; 7 and 8, end scraper fragment and end scraper; 9 and 10, burins; 12, large side scraper on a core blade; 13, chisel-wedge; 14, chisel-wedge blank; and 15, large bend break tool. (77% natural size)

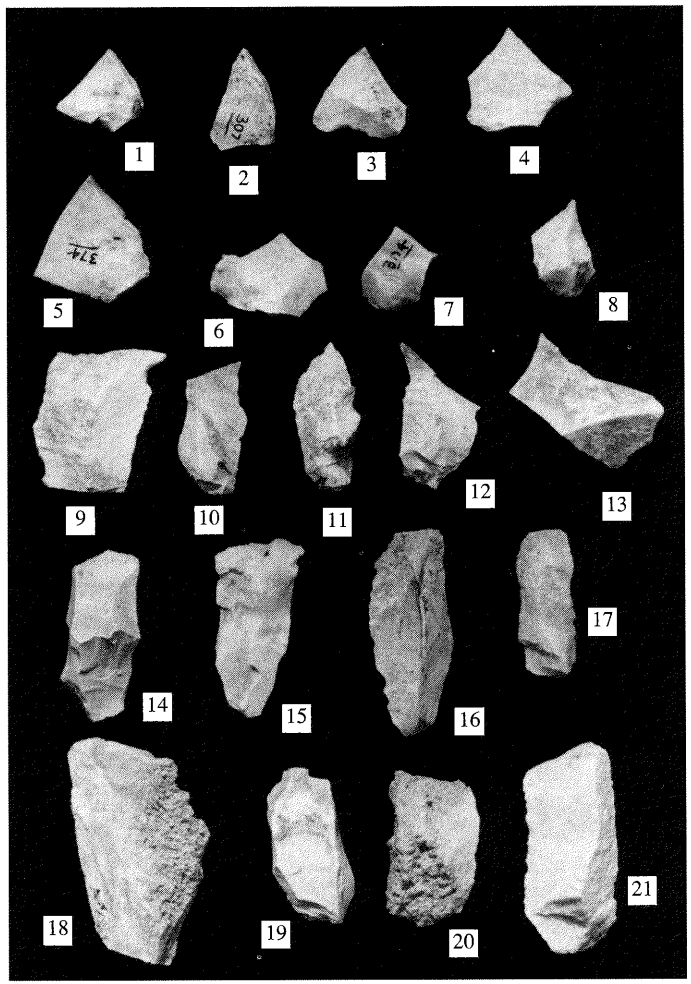


Figure 7.31. Excavation area 3: 1, 2, 3, 4, 5, 6, 7, 10, 12, and 13, snapped-flake or bend break gravers; 8, 9, and 11, gravers; and, 14, 15, 16, 17, 18, 19, 20, and 21, small edge-used, and edge-worked core blades. (75% natural size)

Excavation Area 1

Excavation 1, a small 25-square-foot (5 feet by 5 feet) test excavation centered on shovel test 1-12/ST, was placed approximately 300 feet south of test location 3, in the test location 1 area. This is along the northeast perimeter of the Sally L. Williamson Farm, south of Little Cattail Creek, and on the middle elevation (lower) terrace going south in the back or graveyard field. It is located along the fence line with the old Roy Ampy Farm. This middle terrace location is visible in the top photograph of fig. 6.1 in Chapter 6.

Shovel test 1-12/ST produced a few chert flakes and one end scraper in the fine sandy loam primarily at the plowzone interface. Since test location 1 had been designated as only a marginal selection for further excavation based upon shovel testing, the excavation 1A unit was undertaken to verify those results. It was hoped that some undisturbed deposits might remain below the plowzone. This work was done in a very dry period in mid-June 1999, and it was the last of the NRS excavation work on the Williamson site. This phase of the project was outside the VDHR work scope and was funded completely by NRS.

Excavation unit 1A was laid out with the north axis at magnetic north. The plowzone in unit 1A was hand shoveled until undisturbed soil was encountered, and the unit was completed as two levels below the plowzone by troweling, fig. 7.32. All soil from all levels was sifted through 1/4-inch mesh hardware cloth with all artifacts retained by level.

The plowzone, an Ap1 horizon and a very shallow Ap2 horizon (fig. 7.32) in excavation unit 1A represented approximately 74% of the total thickness excavated. Table 7.2 presents the percentage by excavation level. It was quickly determined that there were no undisturbed artifact bearing strata remaining below the plowzone. A few artifacts were encountered at the plowzone-level 1 interface, but most of these artifacts had iron staining from plow strikes on at least one face. The plowzone artifacts are presented in Appendix A, and the six formal tools from the plowzone-level 1 interface are included in Appendix B, primarily as comparative data, designated artifact numbers 1 through 6.

A generalized drawing (fig. 7.33) shows the plan and profile views of this unit with the artifacts. The plan view shows the location of artifacts, charcoal clusters, and charcoal sample numbers, which are further identified in Table 10.3 of Chapter 10. Figure 7.34 is a detailed drawing of the few formal tools and a single used flake. As there is only a small collection of artifacts, which are all plowzone interface related, no significant observations can be made concerning the Clovis age use of this location.

Table 7.2: Volume Percentage of Plowzone and Each Level

Unit	Plowzone		Level 1		Level 2		Total unit	
	Thickness*	Vol. %	Thickness*	Vol. %	Thickness*	Vol. %	Thickness*	Vol. %
1A	10	74	2	15	1.5	11	13.5	100

*All thickness values are inches; depths are maximums for the units

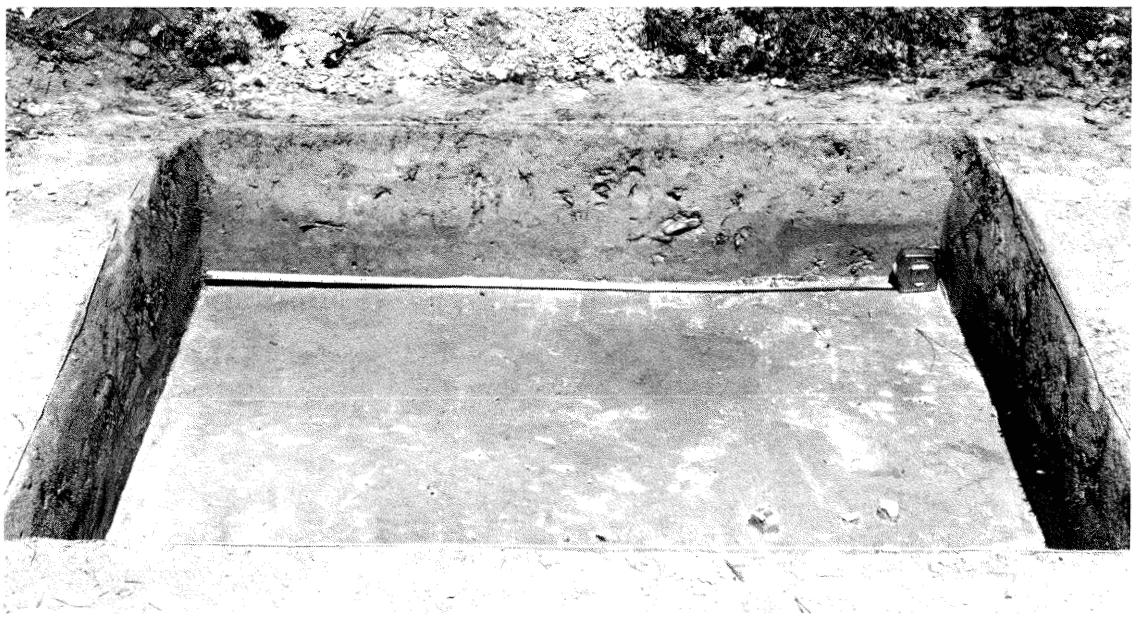


Figure 7.32. Top, Williamson site excavation area 1, a 5-foot square, unit 1A, level 1 under excavation in June 1999; bottom, excavation unit 1A, level 1, with plowzone-level 1 artifacts in situ, looking east showing soil horizons Ap1, Ap2 (minor), and EB. (metal tape scale is extended to 5')

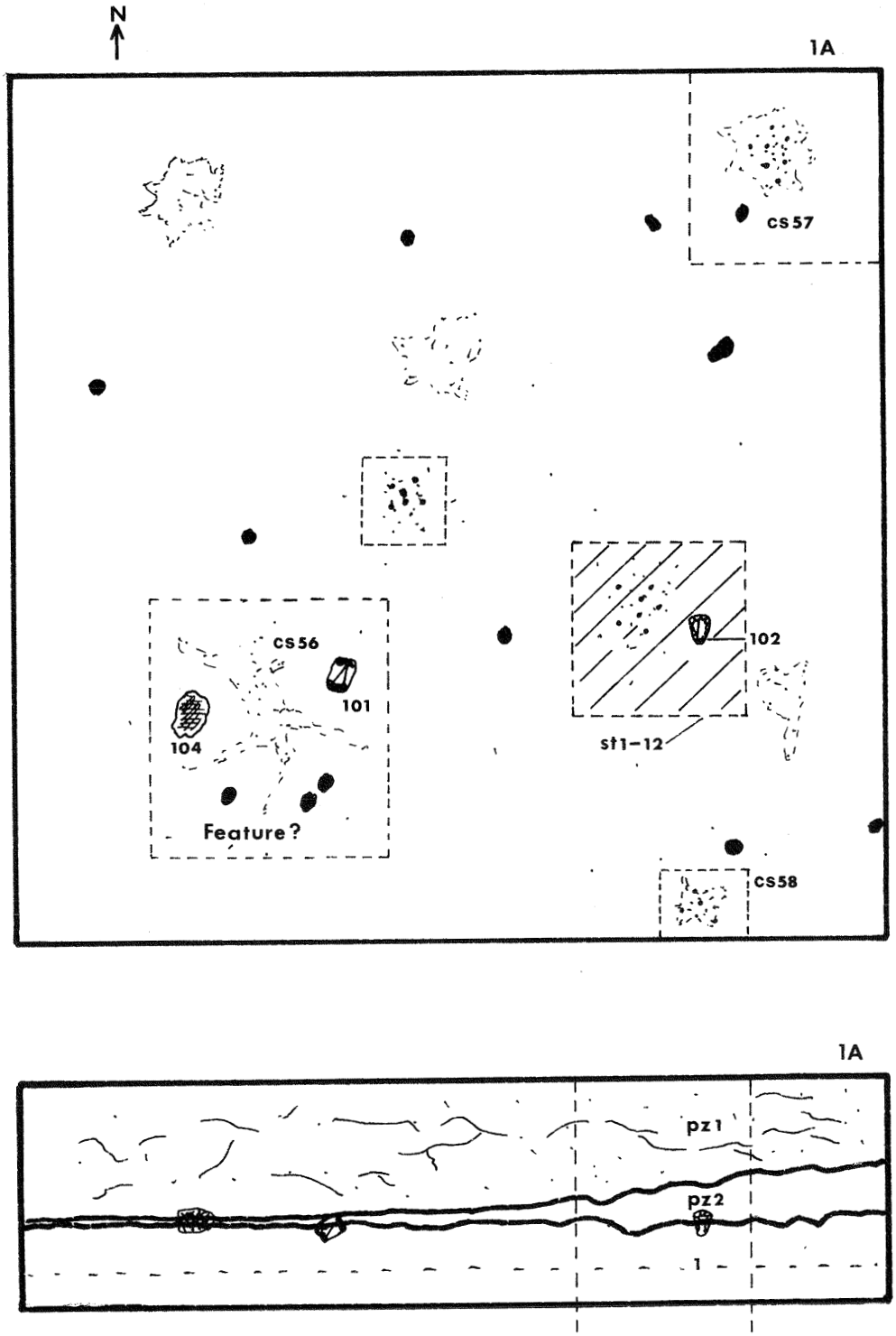


Figure 7.33. Excavation area 1, unit 1A, level 1, plan and profile views showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), and St1-12 (shovel test number 12 in location test area 1).

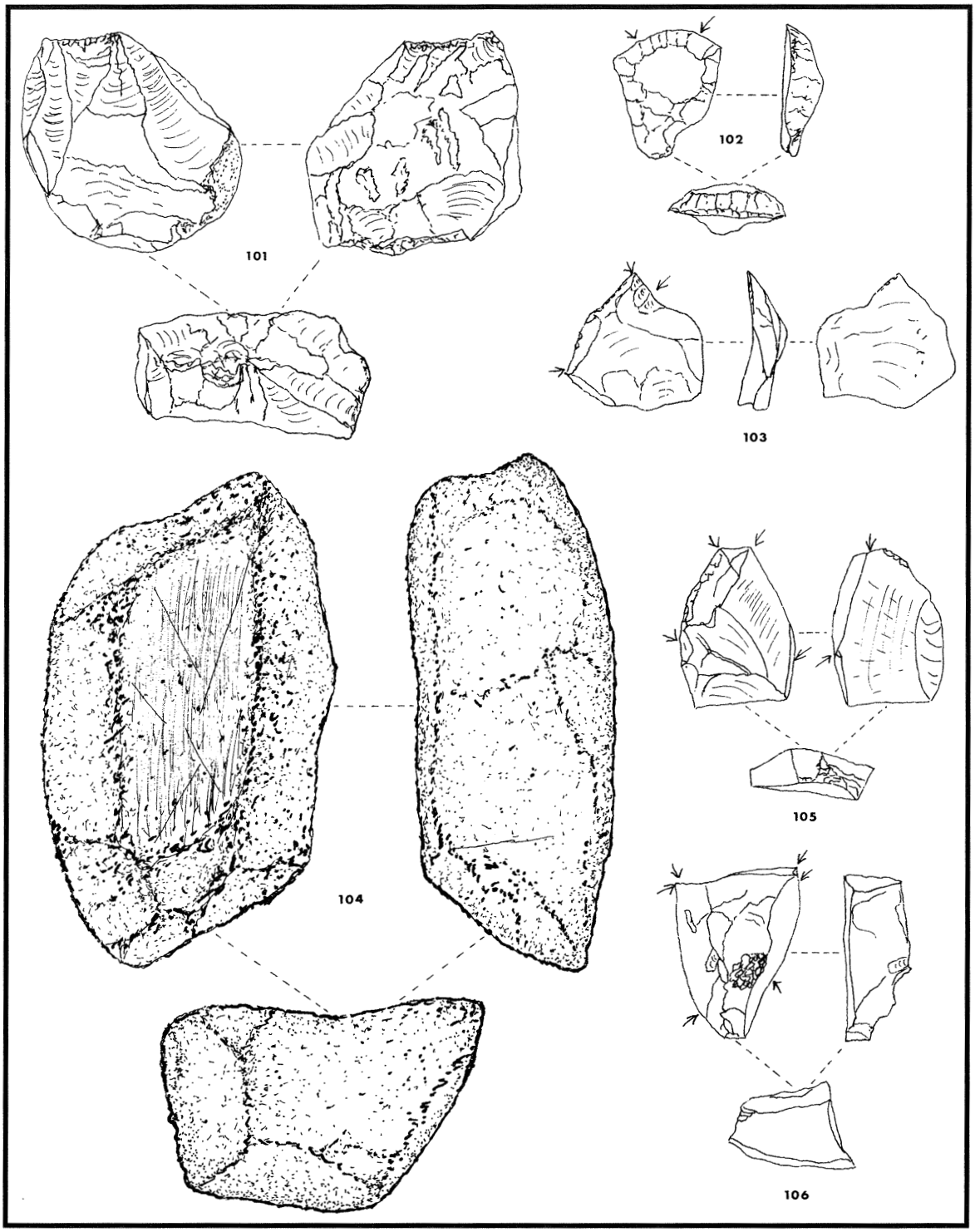


Figure 7.34. Artifacts from excavation area 1, unit 1A, plowzone/level 1 interface: chisel-wedge, 101 ; end scraper, 102; graver, 103; abrading stone, 104; edge-worked flake, 105; edge-used flake, 106. (83% natural size)

CHAPTER 8

EXCAVATION AREA 6

Excavation Location

Excavation 6 was positioned on the Sally L. Williamson Farm on the high 180-foot contour in the large front field to the southeast of her brick house and north of route 693. It is closely bounded to the west by the gravel driveway leading from the house to route 693. Excavation unit 6A was positioned 160 feet south of the farm road at the woodline, and 426 feet west of the site datum which was positioned at the southwestern corner boundary of the old Roy Ampy Farm with the Sally Williamson Farm. This general location is the front center portion of the site, fig. 8.1. All of excavation area 6 was in an area of the field that had been plowed, and it contained a readily visible plowzone.

Unit 6D of excavation area 6 was positioned at and just south of shovel test 6-6/ST, described in Chapter 5. Shovel tests in this area were positive for chert flakes, and some of the artifacts recovered in the shovel tests were burned which suggested possible hearths. Most of the artifacts were observed to be in a single soil stratum about 3 inches thick below the plowzone, but in many areas of the excavation deep chisel-plow scars in a north-south orientation dissected the undisturbed artifact bearing strata into narrow strips.

The work at excavation area 6 was carried out in late March of 1999, and the work required completion before March 30, to allow the farmer leasing the land adequate time to plant a peanut crop. This necessitated a rapid decision as to the exact placement of a unit in the front field. Had more time been available a different area may have been excavated nearer the location of an old front field hedgerow. It had been observed earlier by Ben McCary that the hedgerow had for many years separated two fields, and protected a narrow strip of the very productive front field from plowing damage until the 1960s when it was removed. But, there simply was not enough time to locate the exact area where the hedgerow had existed.

Excavation Layout and Method

The excavation was laid out as a 10 foot square (figs. 8.1 and 8.2) subdivided as 5 foot by 5 foot units, and excavated in segments of 5 feet by 5 feet, or 2.5 feet by 10 feet, with the north axis at magnetic north. From the northeast position clockwise the units were numbered 6D, 6B, 6A, and 6C. The plowzone at excavation location 6 was hand shoveled until undisturbed material was encountered at isolated areas, and thereafter the numerous, deep plow cuts in all units were cleaned by troweling until all disturbed soil was removed from the profile (figs. 8.2 and 8.3). All plowzone and plow cut soil was sifted through 1/4-inch mesh hardware cloth with all artifacts retained by unit. The undisturbed portion of the archaeological deposit in each unit was excavated as a single level. Units 6A, 6C, and 6D were excavated by troweling as there were only narrow strips of undisturbed artifact bearing strata remaining below the plowzone (figs. 8.2 and 8.3). The units were excavated fairly quickly as the remaining concentration of artifacts varied from very light in unit 6A to light in unit 6C. The single feature encountered in unit 6C was excavated as shown in fig. 8.4.

Plowzone Soil Horizon Ap: Artifacts

The plowzone Ap soil horizon (fig. 8.4) in excavation area 6 represented approximately 77% of the total thickness of the artifact bearing deposit. Table 8.1 presents the percentage by excavation unit and level. The 1,615 prehistoric artifacts recovered in the plowzone of units 6A through 6D are summarized in Appendix A

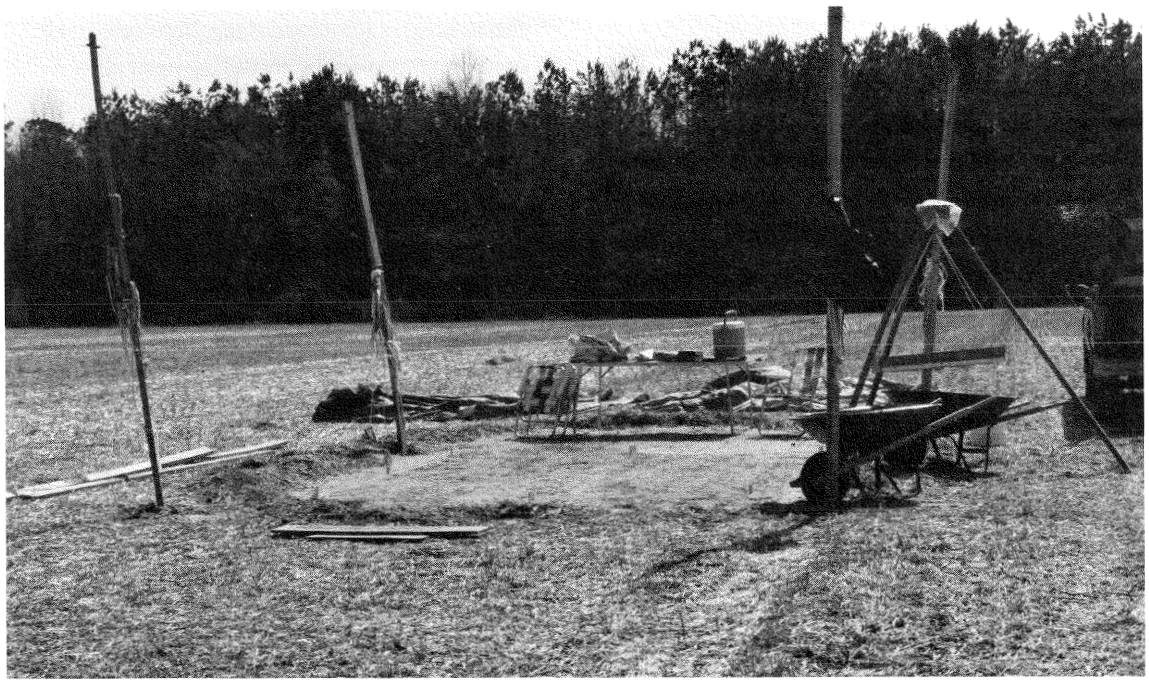


Figure 8.1. Top, Williamson site excavation area 6 (at the truck) looking west across the large front field toward the Buddy Williamson Farm at the tree line in the background; bottom, excavation area 6 cleared for plowzone removal, and with tarp poles erected, looking south across the front field to the woods in the background adjacent to route 693. Photograph taken in early March 1999.

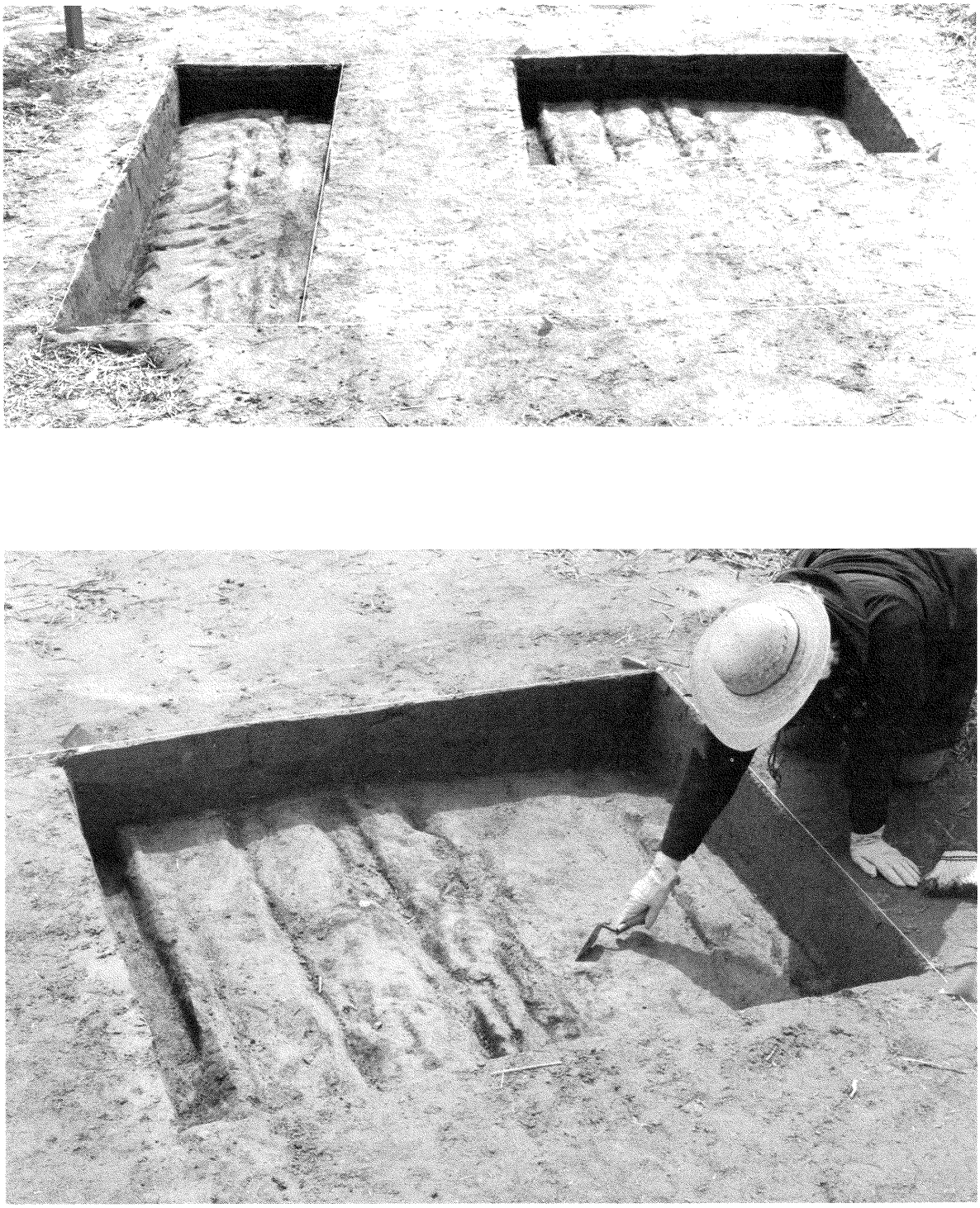
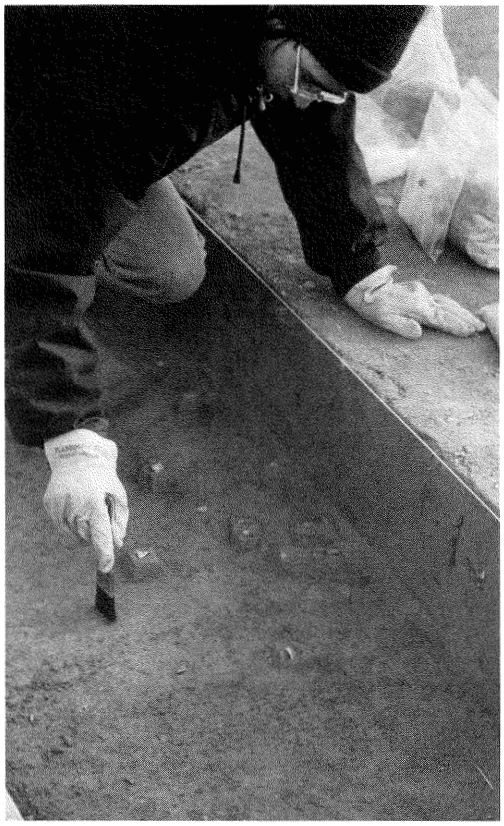


Figure 8.2. Top, the plowzone in excavation area 6 removed from excavation unit 6A (right) and parts of excavation units 6B and 6D (left); bottom, plowzone cleaned from excavation unit 6A, showing deep plow cuts in the subsoil.



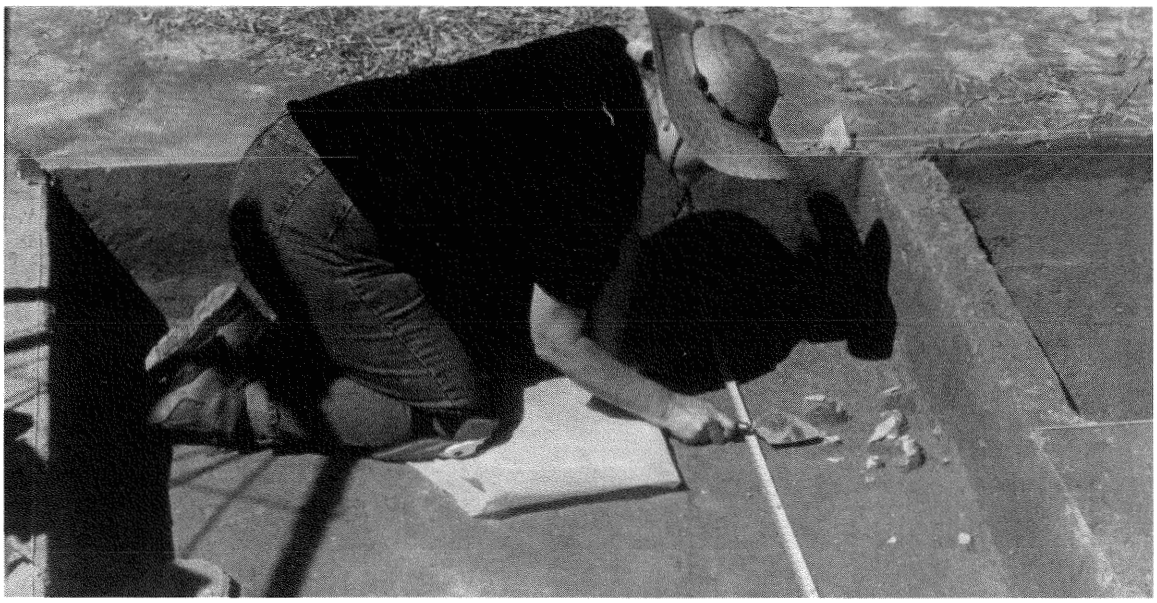


Figure 8.3. Top left, plowzone in excavation area 6 removed from parts of units 6B and 6D; top right, excavating level 1 in unit 6D; bottom, excavating Feature 1 in unit 6C, level 1.

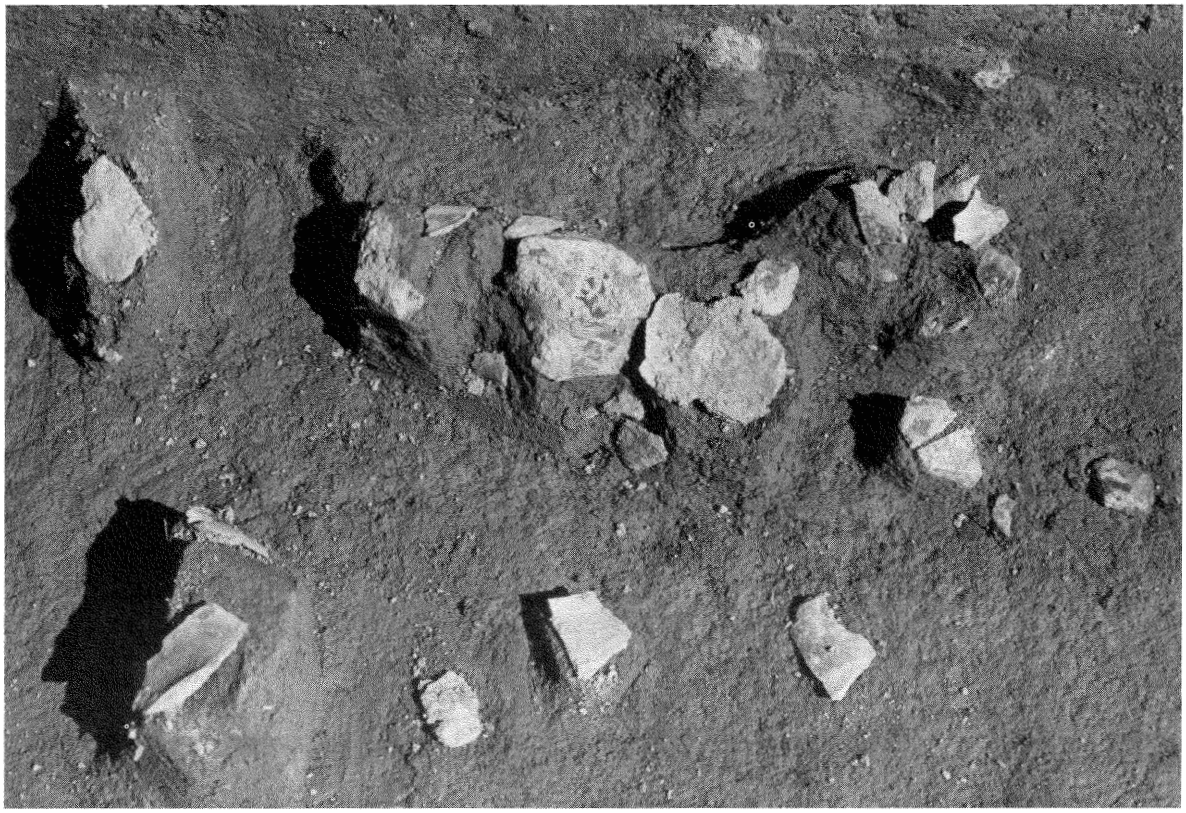


Figure 8.4. Top, excavation area 6, unit 6C, level 1, Feature 1, looking east to wall of unit 6D, wide area view showing soil horizons Ap and E; bottom, closer view of Feature 1, March 1999.

Table 8.1: Volume Percentage of Plowzone and Each Level of Each Excavation Unit

Unit	Plowzone		Level 1		Total unit	
	Thickness*	Vol. %	Thickness*	Vol. %	Thickness*	Vol. %
6A	8.5	77	2.5	23	11	100
6B	8.5	77	N/A	N/A	8.5	77%
6C	8.5	77	2.5	23	11	100
6D	8.5	77	2.5	23	11	100

*All thickness values are inches; depths are maximums for the units; N/A=not applicable

(note that about 1,350 plowzone artifacts were produced if unit 6B is excluded from the total because the subsurface of unit 6B was not excavated). Artifact typology is as defined in Chapter 4 and Appendix B to this report. The most common prehistoric artifacts were flakes, mostly chert, which consistently averaged around 450 in all units except 6B. Unit 6B produced 271 flakes, but only 50% of the plowzone was excavated. Of significance was the presence of approximately 10 formal tools and blade flakes in the plowzone of these units even though this area of the site had been extensively surface collected upon for 50 years. The assemblage of formal tools in the plowzone at this location was consistent, being composed of small fragments of unifacial tools, or tools for engraving, piercing, and fine cutting.

The plowzone of excavation area 3 produced very few 19th- and 20th-century artifacts, and those few appeared to relate to the 20th century. They are listed in Appendix A.

Subsurface Soil Horizon E: Artifacts and Features

Artifacts

The subsurface (below plowzone) soil horizon E (fig. 8.4) of excavation area 6 produced only 19 formal tools, blades, and edge-worked or used flakes, as well as 240 pieces of debitage. Artifact typology is as defined in chapter 4 and Appendix B to this report, and all of the artifacts recovered below the plowzone in excavation area 6 are given sequential numbers from 1875 through 2135 in Appendix B. The 19 formal tools, blades, and worked or used flakes are given unique drawing numbers in figs. 8.13 through 8.18 at the end of this chapter, and these drawing numbers are indexed to the Appendix B sequential numbers under the "comments" heading for individual artifacts in that appendix. A photograph of some selected artifacts from excavation area 6 is shown as fig. 8.19.

The formal tool types recovered in excavation area 6 include: snapped-flake or bend break tools; a possible burin; several edge-used flakes; two gravers; a limace; and a lancet. Lithic technology observed included bifacial and bipolar. Debitage was primarily trim or thinning flakes from sharpening tools, or possibly for finishing projectile points although none was found here, not even a preform fragment in the plowzone. The plowzone had been heavily collected upon, and it was thought that the larger artifacts had been removed thus accounting for the residual, atypical collection of tool fragments and small tools for piercing, engraving, and delicate cutting. But, this was not the case as the same types of delicate piercing, engraving, and cutting tools were found below the plowzone as in the plowzone. This finding was not expected, and supports protecting the remaining deposits in the cultivated fields.

Four artifacts from excavation area 6, a limace, a graver, a burin, and an edge-used flake were subjected to CIEP immunological analysis for potential identification of animal protein residues, and then wear analysis. The results of these tests are presented in Chapter 10.

Subsurface Features

General

The undisturbed, subsurface (below plowzone) soil horizon E portion of the artifact

bearing deposit in excavation area 6 represented approximately 23% of total deposit thickness. Table 8.1 presents the percentage by excavation unit and level. The undisturbed deposit was a fine sandy loam about 3 inches thick but cut as indicated by deep plow scars.

The drawings of generalized Feature 1 (fig. 8.5) shows the plan and profile views. A plan view showing the detailed placement of recovered artifacts as distributed in this feature is fig. 8.6. Feature 1 in unit 6C produced a fairly large number of closely associated artifacts, which were mostly in unit 6C or along the edge of unit 6D.

Most formal or edge-used flake tools, and charcoal clusters, are numbered and positioned by unit and level in figs. 8.13 through 8.18, which also show the location of recovery of the larger debitage fragments, and the position of disturbances. Disturbances were frequently found in this excavation area and included burned tree roots, lenses of clay representing tree throws, and deep plow cuts in a north-south orientation. The composite drawing of excavation area 6, with the location of all plotted artifacts, the feature, and charcoal clusters, is shown as fig. 8.7. The matching excavation area 6 profile is also shown in fig. 8.7.

Approximately 11 charcoal clusters were identified in excavation area 6. At least 20 charcoal samples were recovered from excavation area 6 representing 4 clusters from unit 6A, 6 from 6C, and 10 from 6D. The numbered charcoal samples are indexed to the sample numbers in Table 10.3 of Chapter 10. One charcoal lump collected with a large soil sample in unit 6D was submitted for dating as described in Table 10.4 of Chapter 10.

Feature 1

Feature 1 was encountered in unit 6C, and a small amount of this feature was in unit 6D. The part of the feature in unit 6C shown by photo and drawing in figs. 8.4 and 8.6 was, for the depth in the deposit, a dense to moderately dense concentration of approximately 36 artifacts including 10 used flakes, a graver, and a wedge/burin-like tool. There is an extremely homogenous quality to coloration and texture of the chert forming this assemblage. At most three or four chert cores produced 90% of the flakes and tools. Appendix B identifies all of the artifacts from this feature and describes the chert coloration on an artifact-by-artifact basis. The artifacts were clustered in what appeared to be a shallow basin pit. One used flake had been broken by the Clovis people in use, and both of the pieces were recovered in the pit. The weathered fragments were refit to form artifact number 609, a chert blade-flake, shown in figs. 8.17 and 8.19. There were 2 or 3 inches of undisturbed soil remaining of the flake-filled pit. The plowzone also contained some distinctive chert flakes identical to those in the pit so it is likely that the pit was 6 to 12 inches deep originally. There were no visible signs of bioturbation in the form of roots or clay lenses from tree throws in the pit, but a major disturbance was a deep plow cut just to the west of the pit in unit 6C.

Given the dense cluster and the similarity of the artifacts, it is very unlikely that this feature resulted from bioturbation. It is possible, however, that the entire mass of flakes in the shallow pit may have moved further downward in the deposit over time, to their present depth, by bioturbation processes.

Feature 1 in unit 6C was the location of removal of a soil sample for flotation. It was thought that if this feature was a pit there might have been some charred material of Clovis age trapped there when the pit was filled with debitage. Several liters of soil were recovered by troweling, and the soil was processed by flotation in the NRS facility in Sandston, Virginia. The resulting organic sample was sent to a consultant specializing in charred materials including seeds, spores, and fruits. The results of the analysis of the flotation sample are most interesting, and are presented in Chapter 10.

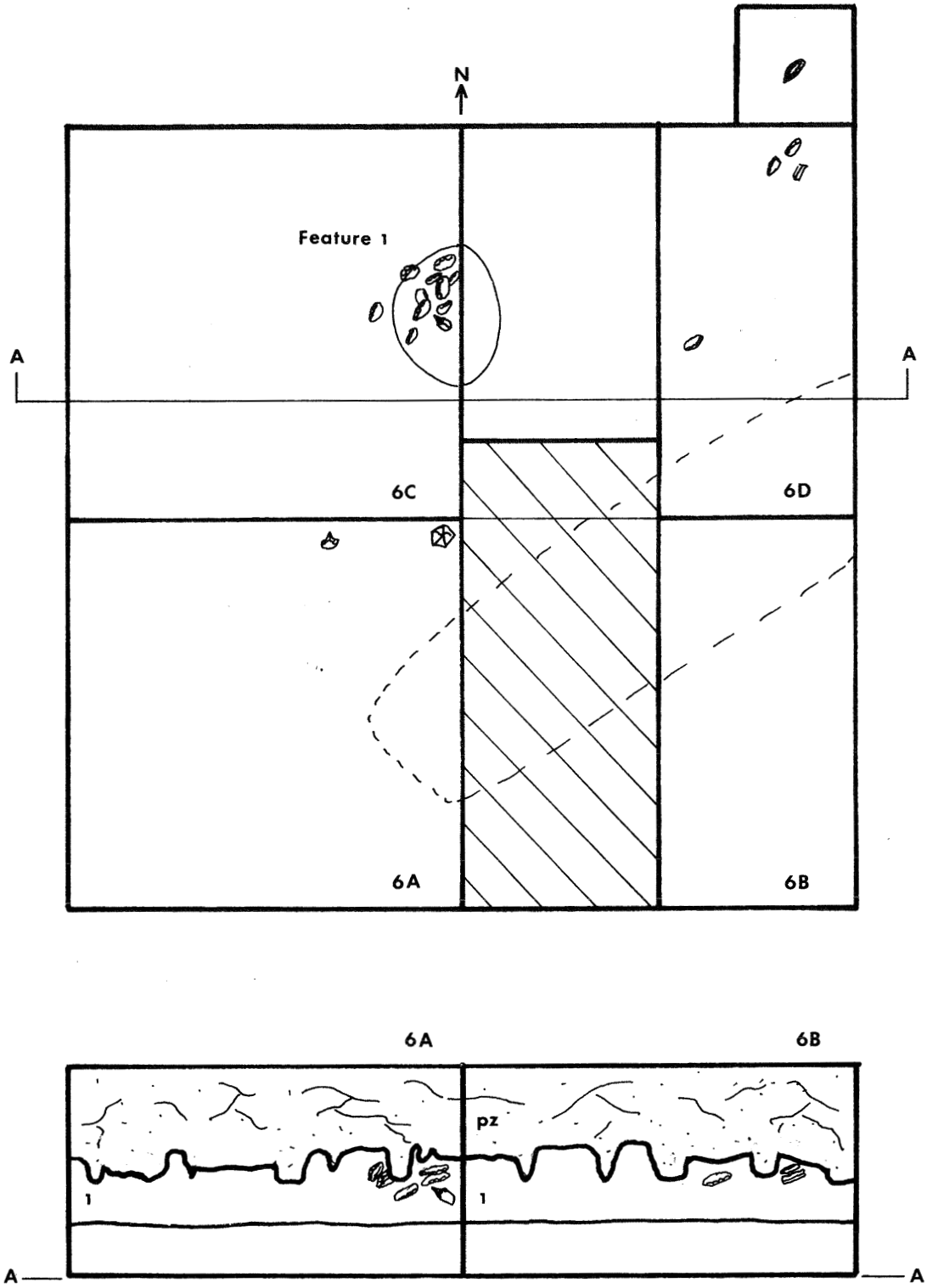


Figure 8.5. Generalized composite drawing of level 1 in all units in excavation area 6, with Feature 1, plan and profile views; only the tools are shown. The vertical dimension in the profile view, compared to the horizontal dimension, is 2.3 times actual size to allow for relative placement of artifacts in the vertical position as excavated. A profile view drawn to scale is shown in fig. 8.7.

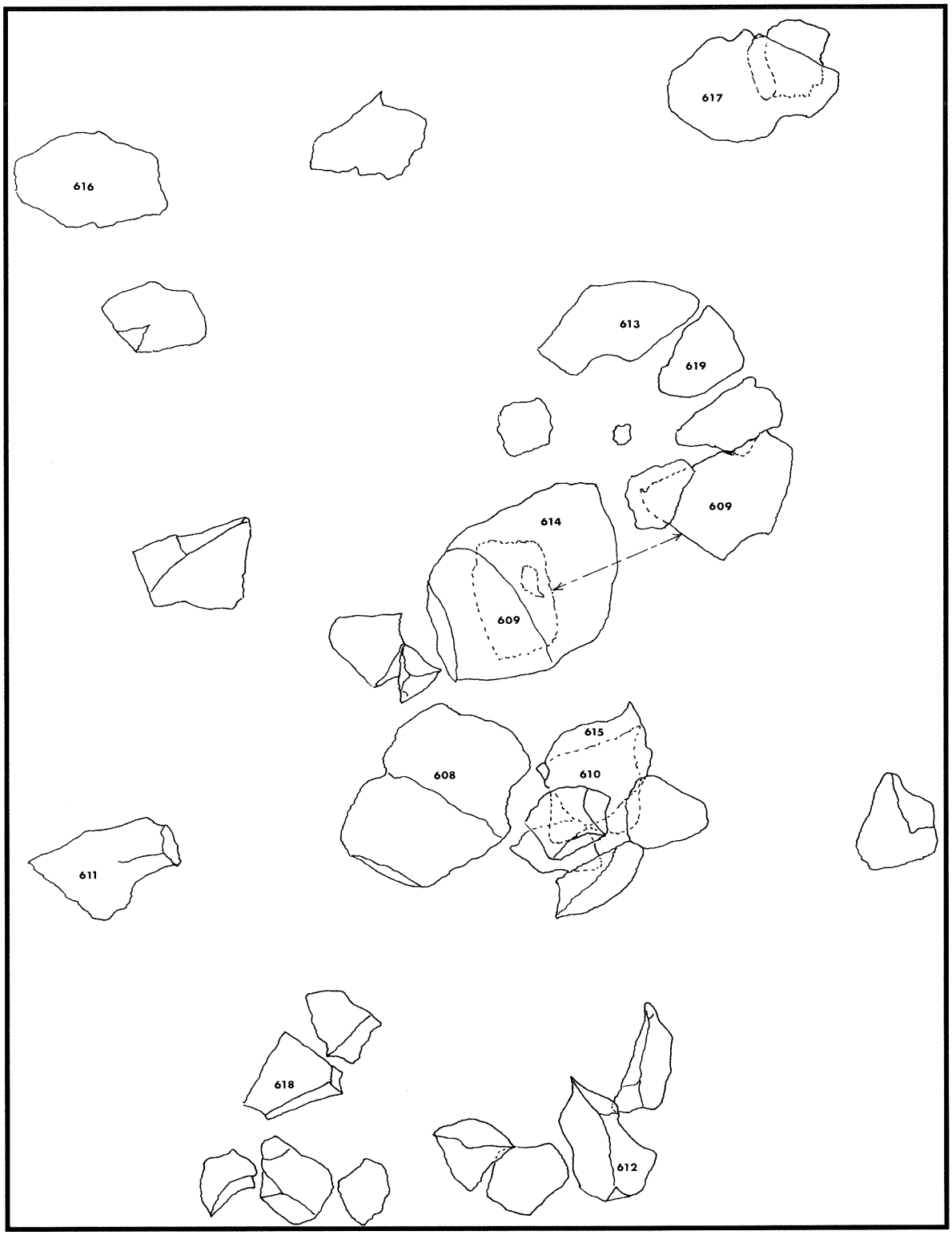


Figure 8.6. Placement of debitage and numbered tools as excavated in unit 6C, level 1, Feature 1. North is to the top. (73% natural size)

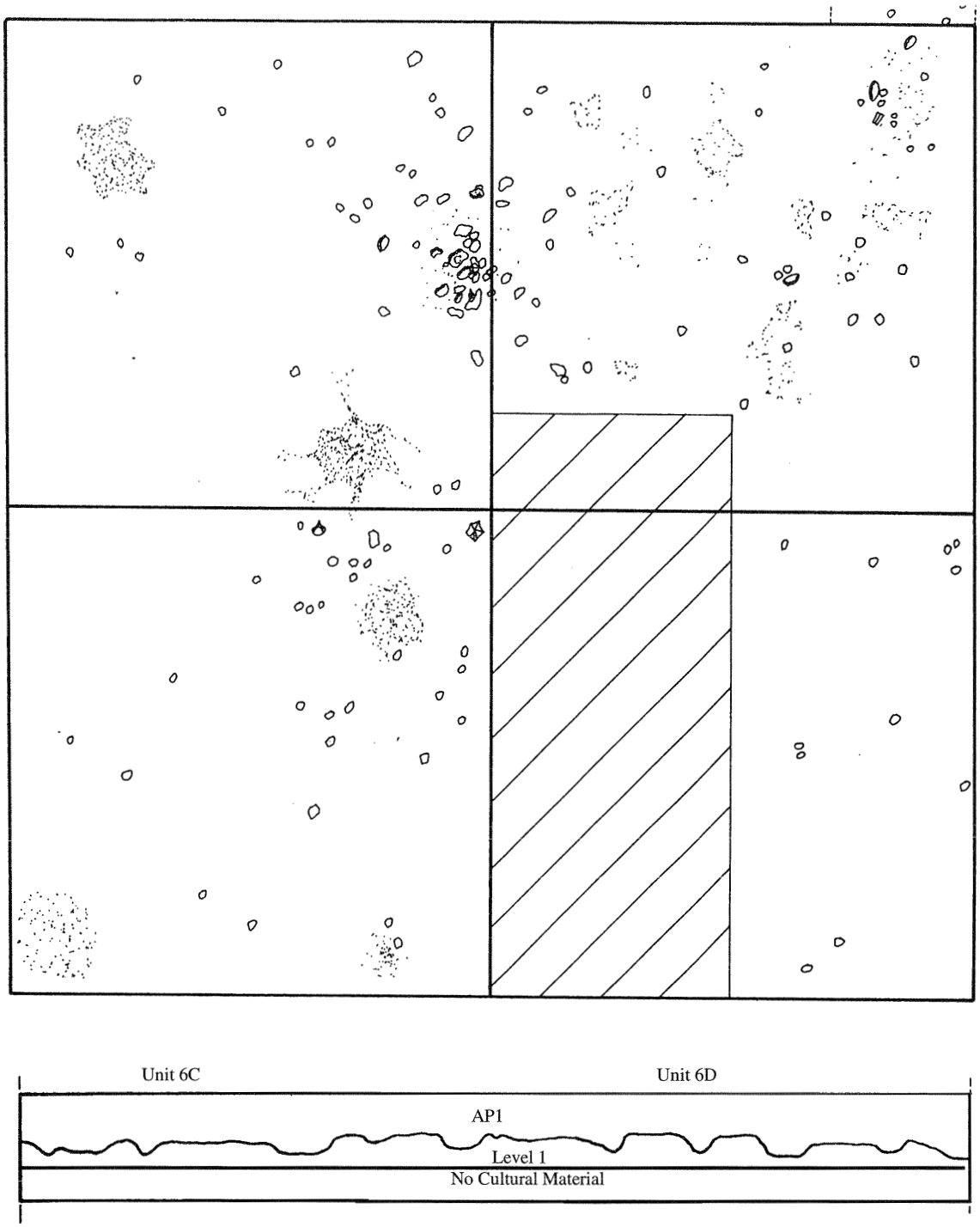


Figure 8.7. Detailed composite plan view (and profile) of all units in excavation area 6, with artifacts, and charcoal clusters, from level 1. The drawing shows the location of recovery of large pieces of chert debitage, tools (symbols as defined in Appendix B), and charcoal clusters (areas of small dark spots). Cross-lined area was not excavated. The part of the excavation associated with shovel test 6-6/ST is not drawn. Long (N-S) axis of excavation is 11.5 feet, including shovel test 6-6/ST, as shown in fig. 8.5.

General Observations Based Upon Artifact Recovery

Bioturbation

The total number of artifacts recovered in the plowzone, and subsurface (below plowzone) of each excavation unit is shown in fig. 8.8. Only half of unit 6B was excavated in the plowzone, and none was excavated below the plowzone. The vertical distribution of artifacts to a depth as great as 13 inches across these units is due to bioturbation. Most of the artifacts are in the plowzone, which here is 7 to 10 inches in depth. Due to the ridge top nature of this area of the site, any slope wash would have occurred away from this area to the north or south. No variation was observed in the density of artifacts recovered in plowzones of the four units. But, below the plowzone significant variation was observed. This variation is generally thought due to local small scale bioturbation due to tree roots, and in one instance it is thought due to the pit in Units 6C and 6D. Unit 6A which did not contain a feature is thought to best represent the density of artifacts below the plowzone in this area of the site. On average, 23% of the artifact bearing depth of the units was below the plowzone, but only 7% of the artifacts in unit 6A were recovered below the plowzone. For units 6C and 6D containing the artifact cluster in the feature plowzone was 21% and 19% respectively.

Burned Artifacts

Careful attention was paid to the presence, and number, of burned artifacts in the individual excavations on the Williamson site in the hope that this observation would lead to the recognition of hearths. As shown in fig. 8.9, a very uniform 7 to 10% of the artifacts recovered in the plowzone were observed to be burned.

Below the plowzone the percentages were about the same except for unit 6D at 16 %. The higher percentage of burned artifacts below the plowzone for unit 6D was consistent with the higher number of charcoal clusters observed there. This led to the conclusion that much of the charcoal in unit 6D could be related to the artifacts. But, only one of the formal tools or edge-used flakes in all of excavation area 6 was observed to be burned, and even this example was questionable. This observation does not support the presence of hearths, but rather random natural fires. Also, as described in Chapter 10, Table 10.4, the single carbon 14 date from this unit on a lump of conifer charcoal was much later than the estimated time range for Clovis use of the site.

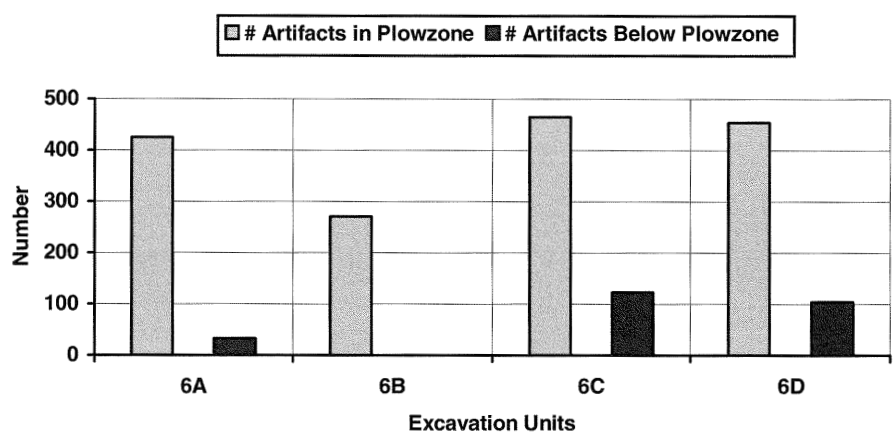


Figure 8.8: Excavation area 6, total number of artifacts recovered in the plowzone, and below the plowzone, in all units.

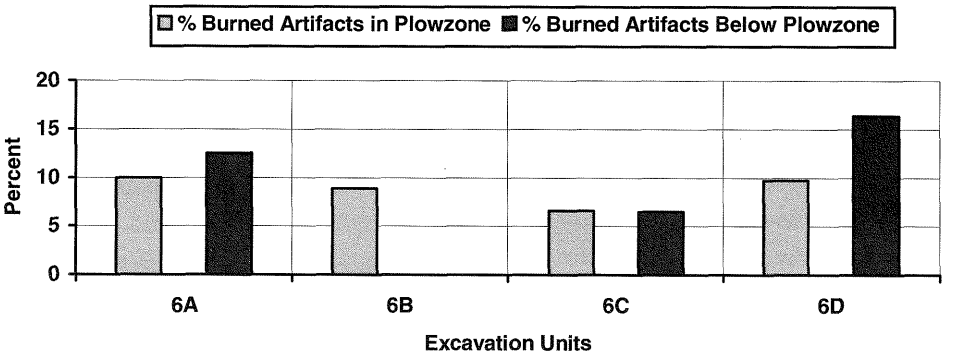


Figure 8.9. Excavation area 6, percentage of artifacts recovered in and below the plowzone which are burned or thermally modified based upon chert flakes only, in all units.

Archaic Period Artifacts

It is significant to review the numbers of artifacts recovered in and below the plowzone which may not be of Clovis origin, i.e., not of Williamson chert. From Appendix A there is a total of only five quartzite and two quartz flakes from the plowzone of excavation area 6. From Appendix B the number of quartzite flakes recovered below the plowzone is two, and no quartz artifacts were recovered. The very small number of quartzite and quartz flakes is insignificant compared to the number of Williamson chert flakes. If these artifacts represent an Archaic period use of excavation area 6, then such use was extremely light and insignificant compared to the Clovis period use.

Work Division by Area

Figure 8.10 presents the units of excavation area 6 based upon the number of primary core and decortication stage flakes recovered there, approximately 5 to 15% of the total artifact inventory. These percentages show that primary reduction work, or the deposit of such debitage, occurred in units 6C and 6D where the largest number of all artifacts including formal tools occurred. Also, fig. 8.11 shows units 6C and 6D as producing the largest numbers of flakes with refined, ground platforms. These two units produced the largest number of trim or thinning flakes; however, only one of these units produced the highest percentage of trim flakes (fig. 8.12). The unit producing the fewest artifacts, 6A, produced the highest percentage of trim flakes, but the second highest percentage was recovered in unit 6D. There was nothing unique about the artifacts found in unit 6A except that many of them were small, and it appears that the high percentage of trim flakes represents movement by bioturbation of the smallest artifacts deeper into the deposit. In contrast, larger artifacts were found deep into the deposit in units 6C and 6D because of the pit. Based upon the nature of the debitage and the narrow range of formal tool types recovered in all of these units, there is no indication of any variation in work from unit-to-unit.

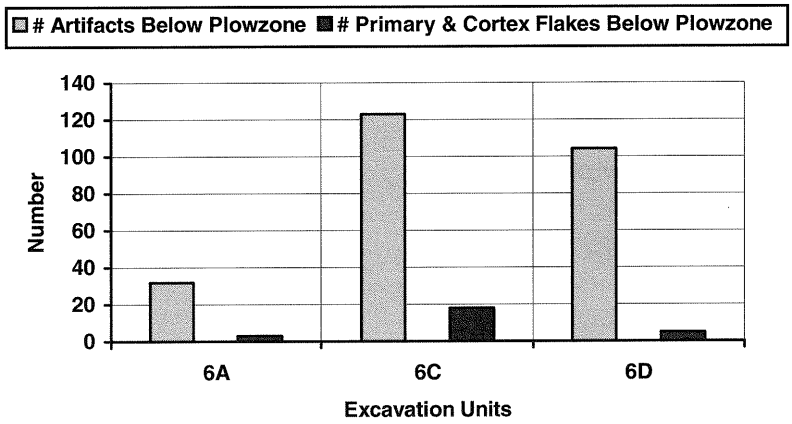


Figure 8.10. Excavation area 6, primary and cortex flakes excavated below the plowzone, compared to the total number of artifacts excavated below plowzone, for each unit shown.

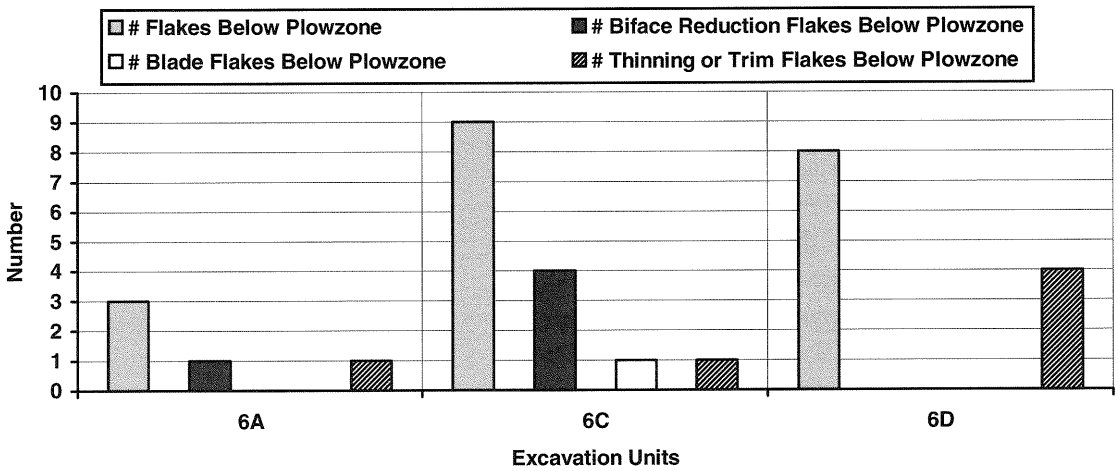


Figure 8.11. Excavation area 6, total number of flakes with ground striking platforms (GSP) excavated below the plowzone, compared with total number of biface reduction flakes (F/Br), blade flakes (F/B), and thinning or trim flakes (F/T) with GSP excavated below the plowzone, for each unit shown.

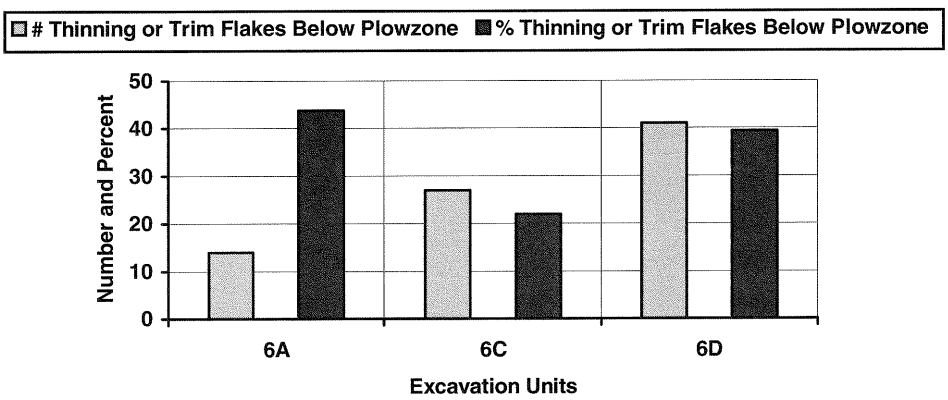


Figure 8.12. Excavation area 6, number of thinning or trim flakes excavated below the plowzone, compared with the percentage of thinning or trim flakes below the plowzone, for each unit shown.

Inferred Activities at Excavation Area 6

Several inferences can be made concerning the activities of the Clovis people in excavation area 6 based upon the artifact assemblage. First, it should be noted that 75 to 80% of the artifact bearing deposit in area 6 has been destroyed by plowing, and artifacts have been removed from the plowzone for over 50 years. Under normal circumstances, the small number of artifacts recovered below the plowzone could not be considered a reasonable indicator of what the Clovis people left in this location. However, the presence of the pit filled with artifacts, plus those few artifacts in the lower 20% of the deposit not destroyed by the plow, together provide a more reasonable picture. As noted earlier, the plowzone produced an atypical collection of tool fragments and small tools for piercing, engraving, scraping, and delicate cutting, but these were the same types of tools found in the pit and generally below the plowzone (see fig. 8.19). The formal tool assemblage in Feature 1, the general excavation, and the plowzone include: snapped-flake or bend break tools, edge-used flakes, gravers, a limace, a lancet, a possible burin, a side scraper, and a small chisel-wedge. There were very few large tools, as recovered in excavation area 2.

Debitage was primarily trim or thinning flakes from sharpening tools, or possibly for finishing projectile points although none was found here, not even a preform fragment in the plowzone. The area did produce biface reduction flakes and trim or thinning flakes which indicates that bifacial technology was important to some activities in excavation area 6. Lithic technology observed includes bipolar, bifacial, and possibly core-and-blade flake.

The activities indicated by the assemblage of small tools are cutting, piercing, engraving, scraping, and planing. Such activities could reasonably be interpreted as those of a small group of people accomplishing a specific, limited task. The shallow pit may represent optimum utilization of space within a structure. Given the fact that except for unit 6D a low percentage of the formal tools recovered below plowzone were burned, it seems unlikely that the activities in this area occurred around hearths. Excavation area 6 likely represents a group work area, perhaps in a structure, where light tasks were performed related to sewing, or other processing of soft materials or animal products. But, to reliably draw such conclusions more artifacts would be needed.

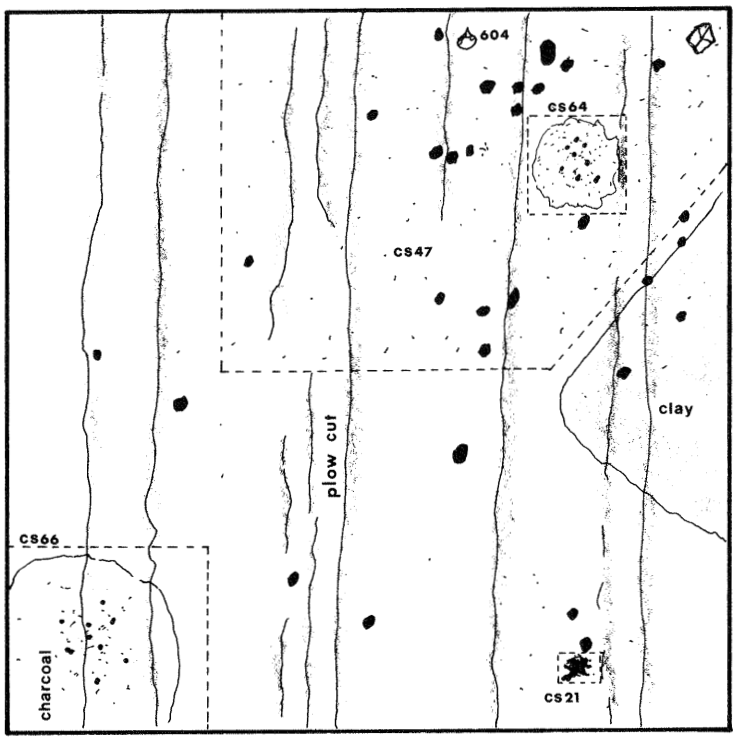


Figure 8.13. Excavation area 6, unit 6A, level 1, showing the location of recovery of large pieces of debitage (darkly shaded),a numbered tool (symbol as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), burned tree roots, deep plow cuts, and a clay lens from a tree throw disturbance (all marked, and lightly shaded).

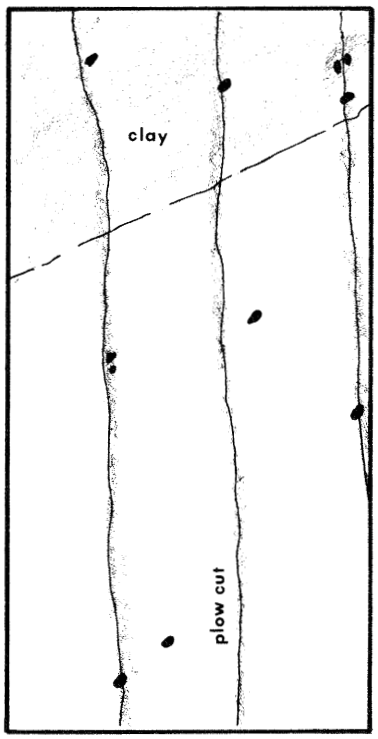


Figure 8.14. Excavation area 6, unit 6B plowzone/level 1 1interface, showing the location of recovery of large pieces of debitage (darkly shaded), and deep plow cuts and a clay lens from a tree throw disturbance (both marked, and lightly shaded).

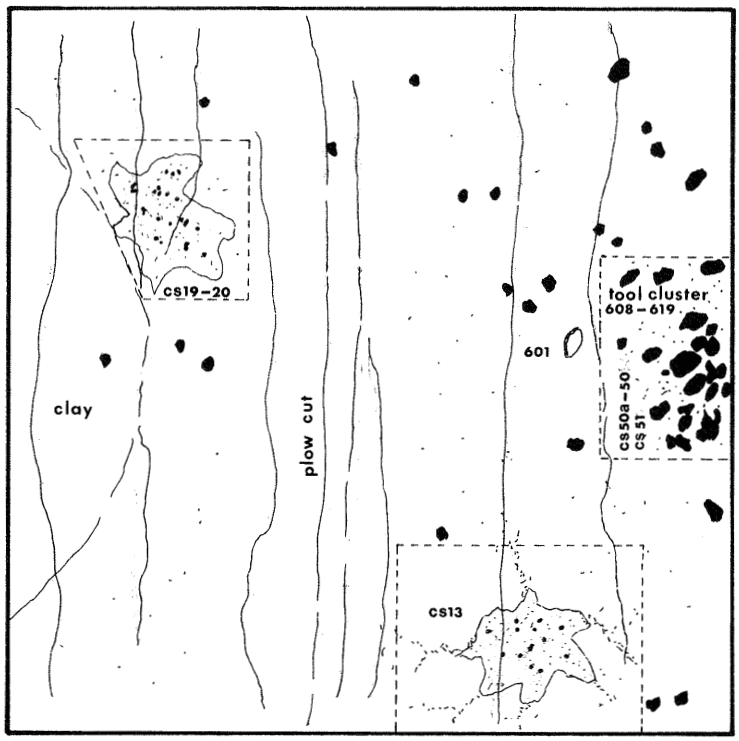


Figure 8.15. Excavation area 6, unit 6C, level 1, showing the location of recovery of large pieces of debitage (darkly shaded), Feature 1 tool cluster (marked, with tools and debitage darkly shaded), numbered tool found away from the feature (symbol as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), burned tree roots, deep plow cuts, and a clay lens from a tree throw disturbance (all marked, and lightly shaded).

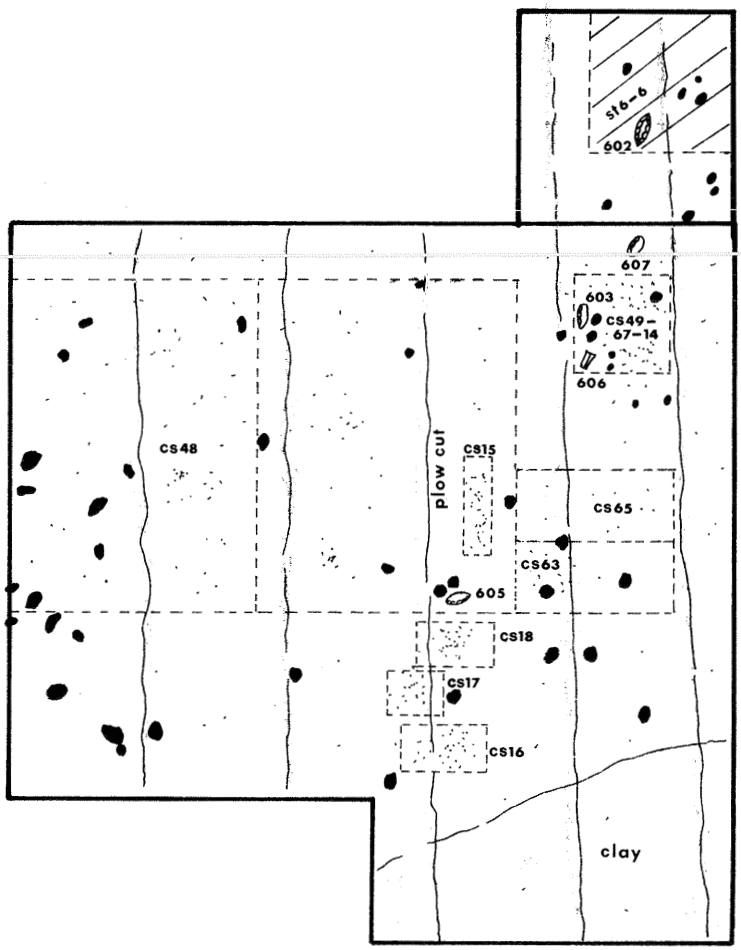


Figure 8.16. Excavation area 6, unit 6D, level 1, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools found away from the features (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), deep plow cuts, and a clay lens from a tree throw disturbance (both marked, and lightly shaded) and St6-6 (shovel test number 6 in location test area 6).

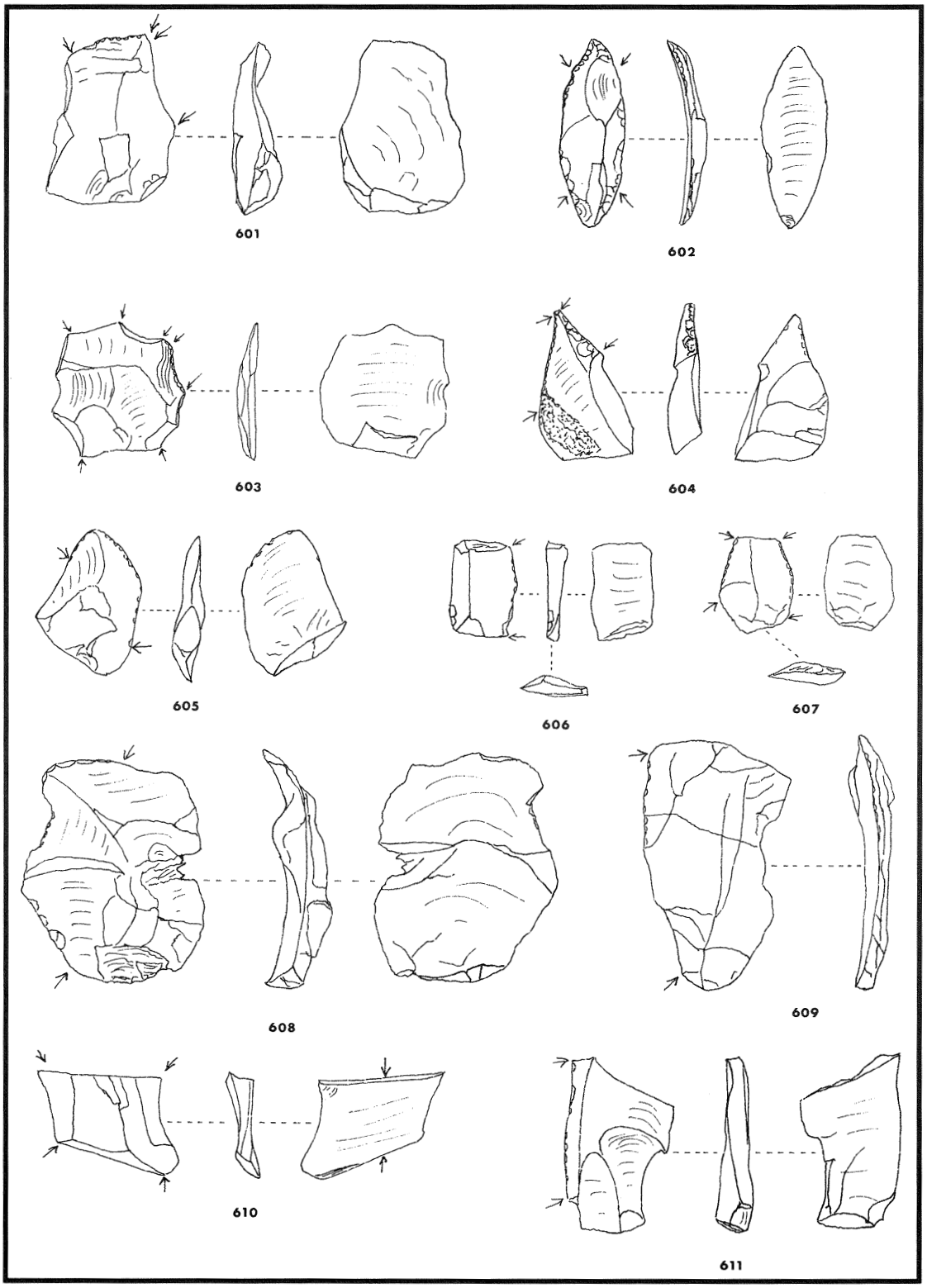


Figure 8.17. Artifacts from excavation area 6, units 6A, 6C (including Feature 1), and 6D, level 1: edge-used flakes, 601, 605, 606, 607, 608, 609, 610, and 611 (606, 609, and 611 are core blades); small limace-like tool, 602; snapped-flake, edge-used, 603; graver, 604. (85% natural size)

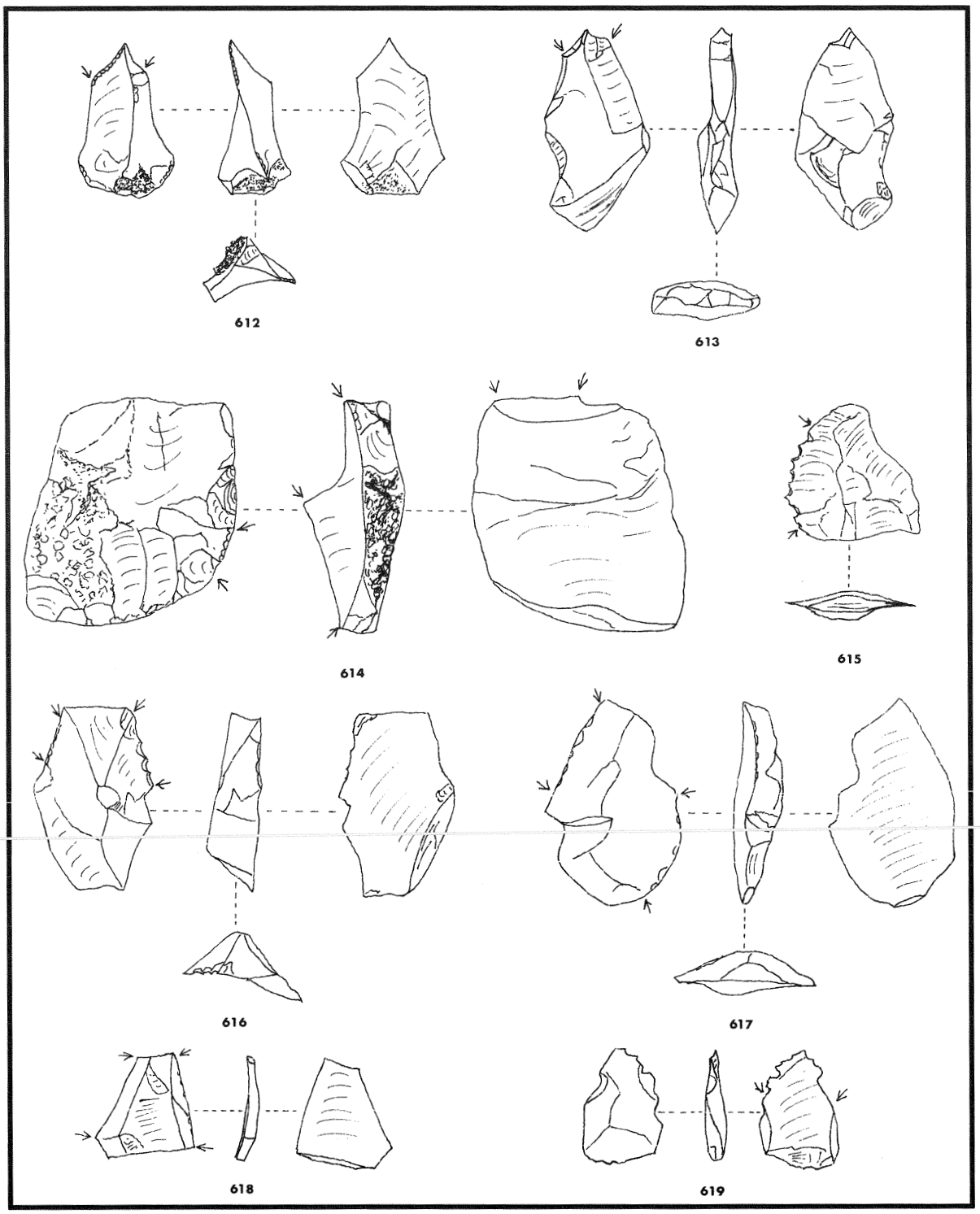


Figure 8.18. Artifacts from excavation area 6, unit 6C (all Feature 1, continuation), level 1: graver, 612; wedge/burin, 613; edge-used flakes, 614, 617, and 618; serrated or edge-used(?) flakes, 615 and 616. (85% natural size)

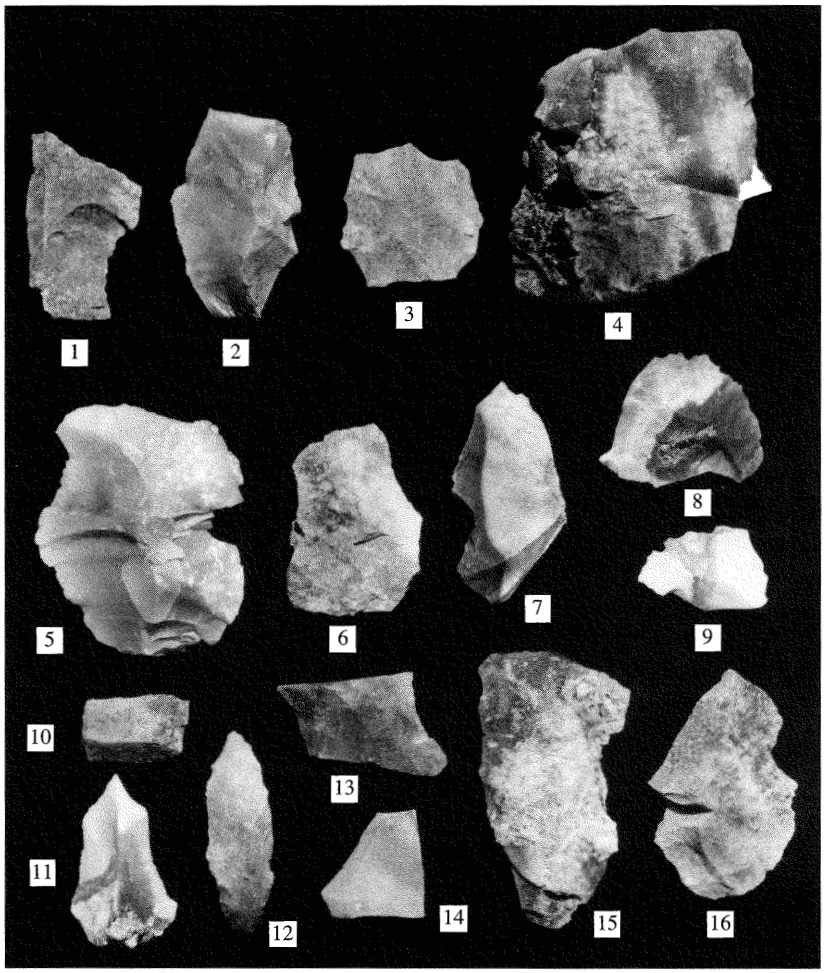


Figure 8.19. Excavation area 6: 1, 2, 4, 5, 6, and 16, edge-used flakes; 3, snapped-flake tool; 7, wedge-burin; 8 and 9, serrated flakes; 10, 13, and 14, edge-used blade flakes (slot tools?); 11, graver; 12, small limace-like tool; and 15, edge-used blade flake. (80% natural size)

CHAPTER 9
EXCAVATION AREA 7

Location

Excavation 7 was positioned on the Sally L. Williamson Farm in the low ground in the large front field to the southwest of the brick house, and adjacent to the A. D. "Buddy" Williamson Farm (fig. 9.1). This location is 320 feet directly west of the utility pole along the gravel driveway in the front field. The utility pole is south of the brick house about midway down to route 693. The excavation is east of and directly adjacent to the drainage ditch leading from the small pond in Buddy Williamson's front field (figs. 1.1 and 9.1). This pond, once a vernal pool (Chapter 2), was deepened and stabilized at about the same time in 1965 that Vance Haynes' trench A was cut in the low ground.

Excavation area 7 is best explained as a small rise or terrace in generally soggy, wet low ground. Although excavation area 7 was positioned at the extreme western edge of the cultivated front field in the low ground, all of the excavation was in an area of the field that was currently under cultivation by shallow plowing techniques. The plowzone was readily visible over the excavation area except for the very western edge intersecting the drainage ditch.

The work was carried out here in late March and early April 1999, with unit 7A centered on shovel test 7-5/ST defined in Chapter 5. Shovel test 7-5/ST was positive for chert flakes and three formal tools. Some of the artifacts recovered in this shovel test were fairly large and they were observed to be in and below the plowzone.

Excavation Layout and Method

The excavation was laid out as five in-line units with the long axis of the excavation in an east-west direction. The short axis of each excavation unit was to magnetic north (fig. 9.2). From east-to-west the units were numbered 7D, 7C, 7B, 7A, and 7E. Unit 7A, a five-by-five foot square, was the first excavated. Due to the success of unit 7A, units 7B and 7C were positioned relative to 7A to follow the artifact cluster. Unit 7B was 21 square feet, and unit 7C was 26.5 square feet. Units 7D and 7E were placed in peripheral locations to establish the east-west limits of the artifact cluster, and these units were 13.7 square feet and 30 square feet respectively. With all adjustments and corrections to unit dimensions, excavation area 7 totaled 117 square feet.

The plowzone at excavation location 7 was hand shoveled and sifted through 1/4-inch mesh hardware cloth to the maximum extent possible, and all artifacts were retained by unit. Due to the very gummy, wet nature of the clay loam in excavation area 7, not all of the plowzone could be flat shoveled and sifted, and in some units much of the plowzone was troweled, fig. 9.3. Disturbances such as deep plow cuts and root molds which could be clearly observed were then cleaned by troweling. But, this area contained zones of deeply stained yellowish-red soil without obvious disturbances which were found to exceed the artifact bearing deposits in depth. These stains were not identified or removed as disturbances. In some units, a large percentage of the entire deposit would have been removed if the stains were removed prior to excavation.

The appearance of the excavated area is as shown in figs. 9.2 and 9.3. The portion of the archaeological deposit below the plowzone in each excavation unit was excavated in two levels. These levels were fairly uniform with level 1 generally set at a thickness of 3 inches, and level 2 set at a thickness of 2 inches. Each unit was excavated by a combination of flat shoveling and troweling.

Table 9.1: Volume Percentage of Plowzone and Each Level of Each Excavation Unit

Unit	Plowzone		Level 1		Level 2		Total unit	
	Thickness*	Vol. %	Thickness*	Vol. %	Thickness*	Vol. %	Thickness*	Vol. %
7A	6	55	3	27	2	18	11	100
7B	6	55	3	27	2	18	11	100
7C	6	55	3	27	2	18	11	100
7D	6	55	3	27	2	18	11	100
7E	6	55	3	27	2	18	11	100

**All thickness values are inches; depths are maximums for the units*

Due to the high seasonal water table (16 inches BS) resulting in a gummy, wet soil, most of the subsoil could only be processed by troweling. The in-process excavation, near final dimensions, is shown in fig. 9.2.

Plowzone Soil Horizons Ap1 and Ap2: Artifacts

The plowzone Ap1 and Ap2 soil horizons (figs. 9.2 and 9.4) in excavation area 7 represented approximately 55% of the total thickness of the artifact bearing deposit. Table 9.1 presents the percentage by excavation unit and level. The 78 prehistoric artifacts recovered in the plowzone of units 7A through 7D are summarized in Appendix A. Also, eight artifacts found on the surface around excavation area 7 are show by drawings in fig. 9.11. Artifact typology is as defined in Chapter 4 and Appendix B to this report. The most common prehistoric artifacts were flakes, almost all of which were chert, but chisel-wedges and obvious spalls from such artifacts were very numerous as well. Artifacts in the plowzone ranged in number from 2 in Unit 7D, to 31 in unit 7A. Unit 7E produced no artifacts in the plowzone.

The plowzone in this area produced no fire-cracked rock, which strongly suggests that there was little or no Late or Middle Archaic period use. The artifacts in excavation area 7 were judged to be entirely of Clovis age. It is also significant that the plowzone produced no artifacts of 19th- or 20th-century age. However, test location 7 just north and south of the excavation area contained scattered debris from a 20th-century house which had been bulldozed and used for fill in some areas of the low ground.

Subsurface Soil Horizon BE: Artifacts and Features

Artifacts

The subsurface (below plowzone) soil horizon BE (fig. 9.4) of excavation area 7 produced 51 chisel-wedges, fragments of chisel-wedges, and edge-worn spalls of chisel-wedges of sufficient size and shape to identify. Other tools recovered include a snapped flake, a notch, and a few edge-used spalls. Many of the remaining artifacts are spalls or splinters from chisel-wedges, and these artifacts and general debitage account for the remaining 250 items. Artifact typology is as defined in Chapter 4 and Appendix B to this report, and all of the artifacts recovered below the plowzone in excavation area 7 are numbered sequentially from 2136 through 2447 in Appendix B. Fifty-two of the formal tools, and fragments of tools, are given unique drawing numbers in figs. 9.12 through 9.25 at the end of this chapter, and these drawing numbers are indexed to the Appendix B sequential numbers under the "comments" heading for individual artifacts in that appendix. A photograph of some selected artifacts from excavation area 7 is shown as fig. 9.26.

The formal tool types recovered in excavation area 2 include: chisel-wedges (often referred to simply as wedges), wedge spalls, edge-worn or edge-used wedge spalls, a snapped-flake or bend break tool, a notch, edge-used flakes, and a core blade. Lithic technology observed was primarily bipolar, but there were a few biface reduction flakes, and possibly one end-thinning or channel flake. Debitage varied from a few primary core flakes with cortex to small shatter fragments, but there were few trim

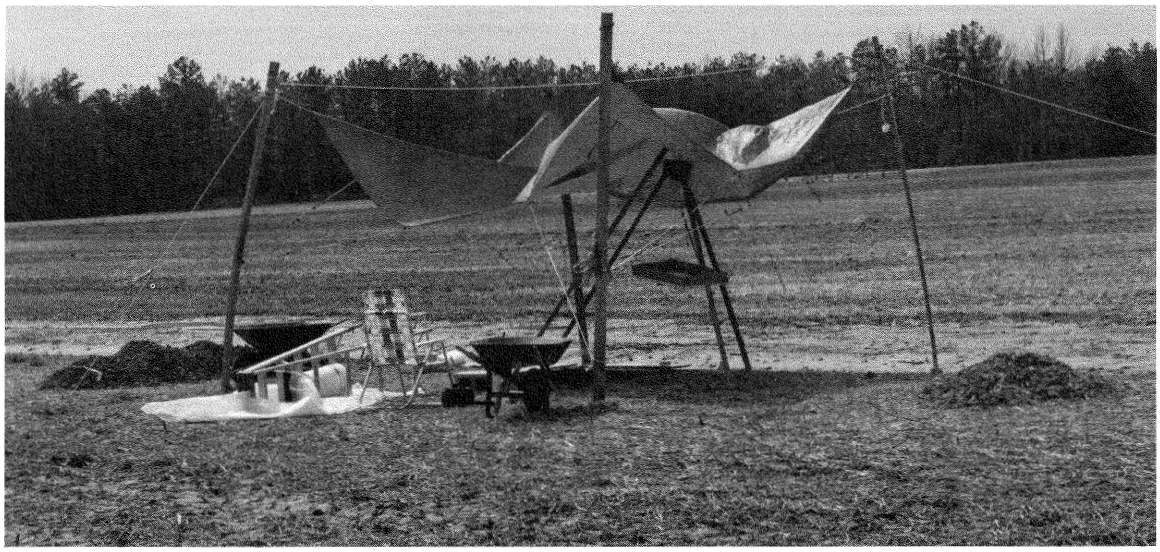
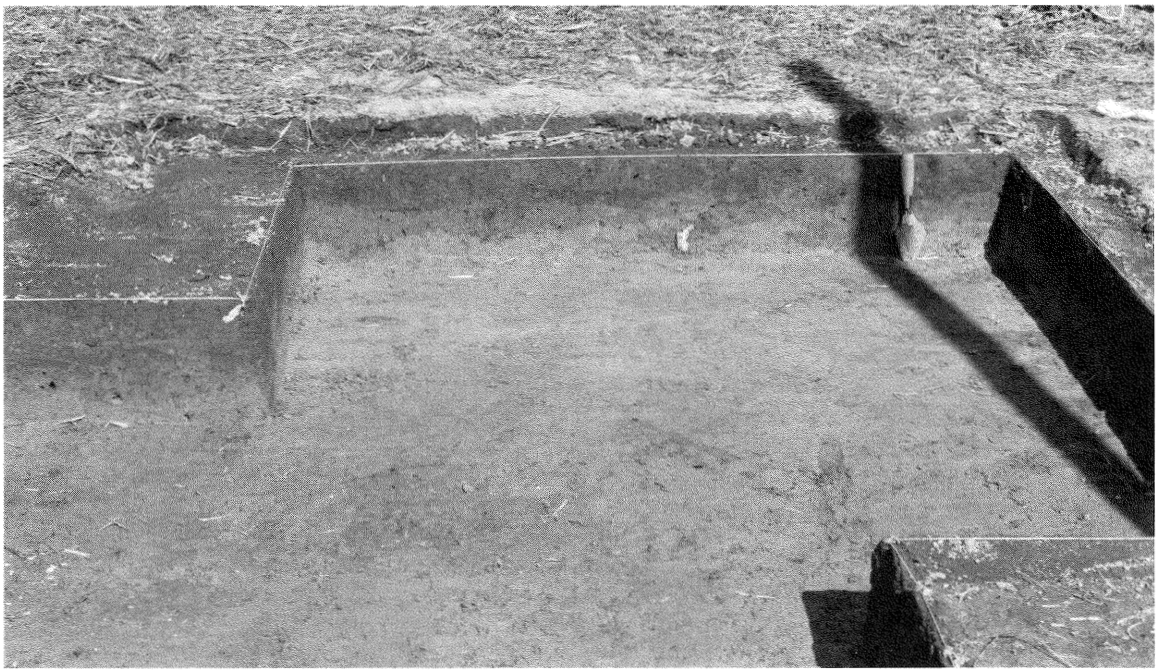


Figure 9.1. Top, the Williamson site excavation area 7 (center background) in the front field low ground of the Williamson site looking to the southwest toward the Buddy Williamson Farm; middle, excavation area 7 in-process looking southwest; bottom, excavation area 7 looking north along the drainage ditch. Photographs taken on a windy afternoon in late March 1999.



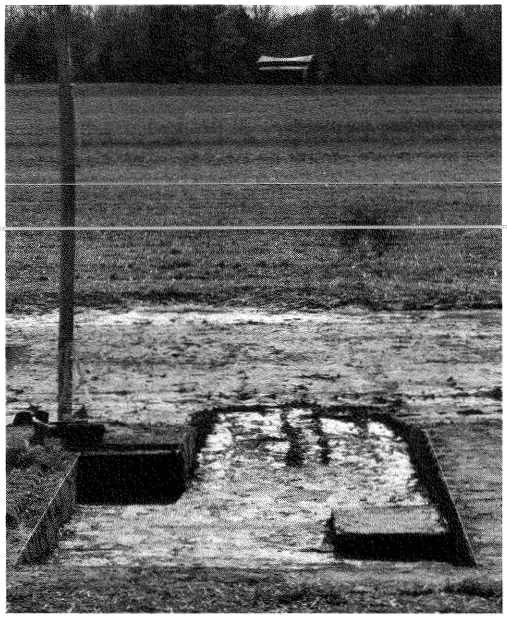


Figure 9.2. Top, excavation area 7, units 7A and 7B in-process looking east, showing soil horizons Ap1, Ap2, and BE; bottom left, excavation area 7 with all units near completion looking west across the drainage ditch toward the Buddy Williamson Farm; bottom right, same location, but looking east from the drainage ditch toward the front field high ground (truck is on gravel driveway near the utility pole), early April 1999.

Figure 9.3. Top, excavation area 7, unit 7D under excavation removing soil (mud) in buckets for sifting with the unit's lower surface at six inches above seasonal high water table; bottom, excavation unit 7C with some of the artifacts in situ.

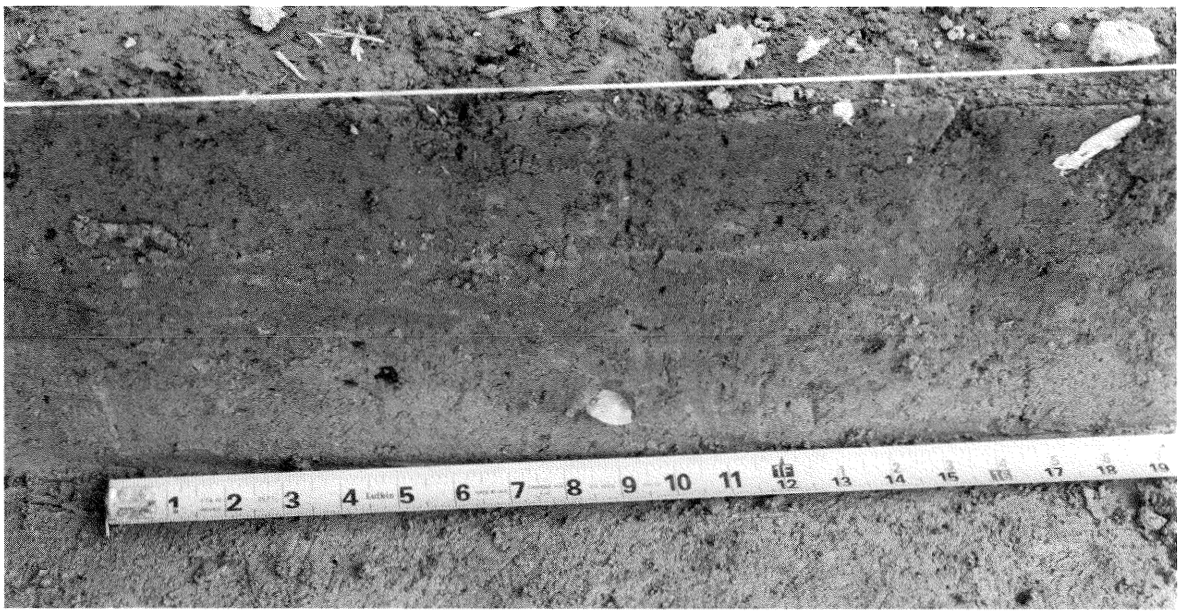


Figure 9.4. Top, excavation area 7, unit 7C wall with artifact (above 9-inch location on scale) at interface between the Ap2 and BE soil horizons, note charcoal to left of artifact (4 to 5 inches on scale) in Ap2 horizon; bottom, crayfish hole with ejected Clovis age chert artifact, just north of excavation area 7 at the edge of the drainage ditch, note water level in hole.

flakes from sharpening tools, or finishing projectile points. Five chisel-wedges from excavation area 7 were subjected to CIEP immunological analysis for potential identification of animal protein residues, and then wear analysis. The results of these tests are presented in Chapter 10.

Subsurface Features

General

The subsurface (below plowzone), or "undisturbed" soil horizon BE portion of the artifact bearing deposit in excavation area 7 represented approximately 45% of total deposit thickness. Table 9.1 presents the percentage by excavation unit and level. The drawing of generalized Feature 1, fig. 9.5, shows the plan and profile views. Most formal tools, tool fragments, and charcoal clusters, are numbered and positioned by unit and level in figs. 9.12 through 9.25, which also show the location of recovery of the larger debitage fragments, and the position of disturbances. The composite drawing of excavation area 7, with the location of all plotted artifacts, features, and charcoal clusters is shown as fig. 9.6. This drawing differs from drawings for the other three excavation areas in that the plowzone artifacts are superimposed over the artifacts from level 1 and level 2. The matching excavation area 7 profile is also shown in fig. 9.6. The numbered charcoal samples are indexed to the sample numbers in Table 10.3 of Chapter 10.

Feature 1

Feature 1, as encountered primarily in units 7A, 7B, and 7C and shown in more detail in figs. 9.3, 9.5, and 9.6 was an oval shaped cluster of chisel-wedges about 10 feet east-west by 6 feet north-south. It appeared that most of the feature was recovered based upon the artifact density observed across the excavation, and the lack of artifacts in adjacent shovel tests and core samples. The chisel-wedges and wedge spalls recovered in Feature 1 are of consistent size, shape, and materials, likely represent a single period of site use, and they appear to have been related to cutting and splitting with perhaps some minor use for scraping, sawing and planing. Based upon the wear analysis presented in Chapter 10 of five typical items from this feature, it appears that only bone (or tusk?) was processed.

Feature 1 produced a single refit of a large spall to a chisel-wedge, artifact drawing numbers 701 and 702 of fig. 9.14. Many of the chisel-wedges were of unique coloration, and often spalls were recovered from the same unit of identical material. Unfortunately, the nature of the chisel-wedge is such that refit is almost impossible unless the spall was the last or nearly the last battered off the tool.

The artifacts were displaced vertically over a depth of 11 inches, but most of the larger artifacts were recovered from the lower plowzone through level 1, representing a total depth of about 7 to 9 inches. The artifacts appear to have been displaced downward by bioturbation. There were visible signs of bioturbation in the form of several large roots and a few deep plow cuts. The patches of yellowish-red staining across the entire excavation area may be related to the past presence of tree roots in the wetland soil. Much of the deposit contained broadly dispersed charcoal, and the lower plowzone, Ap2, was "saturated" with charcoal. Roots penetrating through the Ap2 soil horizon carried charcoal downward into the BE soil horizon. At least five distinctive charcoal clusters in the excavation appeared to be burned tree roots. These five clusters produced nine charcoal samples (i.e., 22, 23, 24, 52, 53, 54, 55, 62, and 62a) which were submitted for analysis as tabulated in Table 10.3 of Chapter 10. Most of these samples appeared to be of very recent age and none was submitted for carbon 14 dating. A charcoal sample from 154 feet north of the excavation cored at 48 inches below surface in wetland soil (wetland core 7-1) produced a carbon 14 date of 370±40 rcbp. This charcoal probably resulted from land clearing in the low ground by the early European settlers around AD 1750.

General Observations Based Upon Artifact Recovery

Bioturbation and Slope Wash

The total number of artifacts recovered in the plowzone, and subsurface (below plowzone), in each excavation unit is shown in fig. 9.7. On average, 55% of the artifact bearing depth of these units is the plowzone, but only 20% of the artifacts were recovered in the plowzone. The combined thickness of both plowzones in this area is 6 to 9 inches and most of the plowzone artifacts are in the lower Ap2 soil horizon. This observation is further confirmed by our surface collection from this area, which produced only a few artifacts although large areas were relatively clear of stubble. Those recovered are mostly chisel-wedges and wedge spalls (fig. 9.11).

It would appear that due to the low ground nature of this area of the site some wash may have occurred from the slope to the east, adding to the thickness of the plowzone but without adding artifacts. It also appears that the early land clearing activity may have added fill soil with stump debris in some deeper areas of the low ground to the north, but none was identified in excavation area 7. Charcoal from burning stump debris deposited in the low ground may account for the sample recovered 4 feet deep, 154 feet north of the excavation, which dated 370±40 rcbp.

Based upon the above, the vertical distribution of artifacts to a depth as great as 12 inches is likely due to bioturbation. This was followed possibly by a thin cap of slope wash. over the original surface.

Burned Artifacts

Careful attention was paid to the presence, and number, of burned artifacts in the individual excavations on the Williamson site in the hope that this observation would lead to the recognition of hearths.

As shown in fig. 9.8, approximately 6 to 20% of the artifacts in the plowzone were observed to be burned, and 4 to 17% of the artifacts recovered below the plowzone were burned. While the below plowzone percentage burned for unit 7C is high, from Appendix B it is observed that only two of 50 chisel-wedges and wedge spalls from the entire excavation are burned, and only one of those is from unit 7C. Thus, the artifacts making up the primary elements of Feature 1 do not indicate any significant exposure to fire. Given this fact, and the very large quantity of very modern appearing charcoal in the excavation area, it is concluded that there is no reasonable indication of hearths in excavation area 7.

Archaic Period Artifacts

It is significant to review the numbers and percentages of artifacts recovered in and below the plowzone which may not be of Clovis origin, i.e., not of Williamson chert or crystal quartz. From Appendix A and Appendix B, it is observed that in the plowzone there is one artifact of quartzite, and below the plowzone there are five artifacts of white quartz. One of the white quartz artifacts is a chisel-wedge, and two are flakes of identical glossy white quartz which are probably from that chisel-wedge. The quartzite artifact is a bipolar spall, probably from a wedge. It appears that the 2% or so of artifacts not of Williamson chert are functionally the same as the artifacts of Williamson chert and are judged to be of Clovis age.

Work Division by Area

From the inventory of artifacts, it is clear that only one primary activity was taking place in excavation area 7, and that was cutting and splitting bone or tusk. But, it is interesting to review for comparison some other indicators.

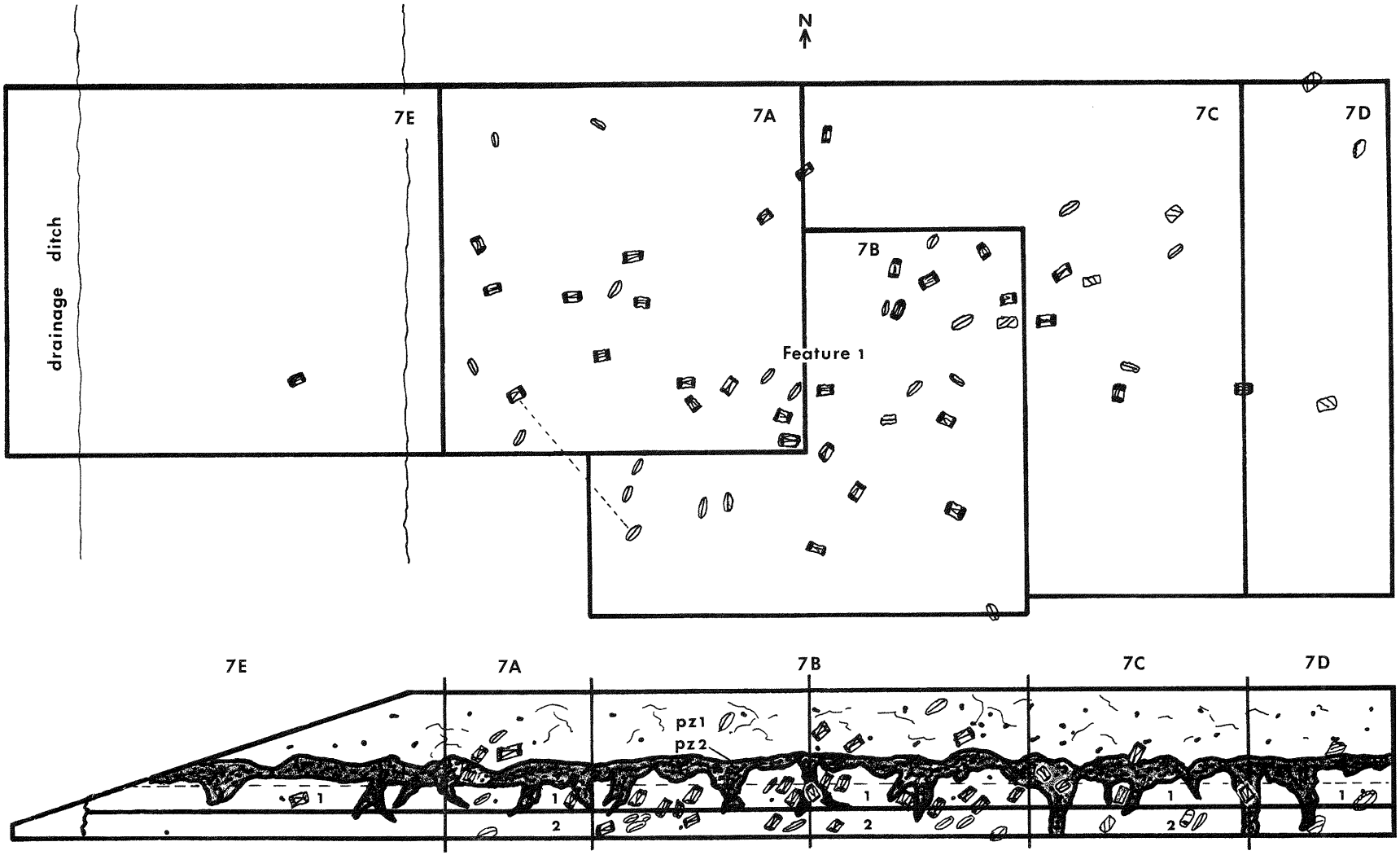


Figure 9.5. Generalized composite drawing of superimposed levels plowzone Ap2, level 1, and 2, in all units in excavation area 7, with Feature 1 of levels 1 and 2 in plan and profile views; only the tools (and wedge spalls) are shown. The vertical dimension in the profile view, compared to the horizontal dimension, is 2.0 times actual size to allow for relative placement of artifacts in the vertical position as excavated. A profile view drawn to scale is shown in fig. 9.6

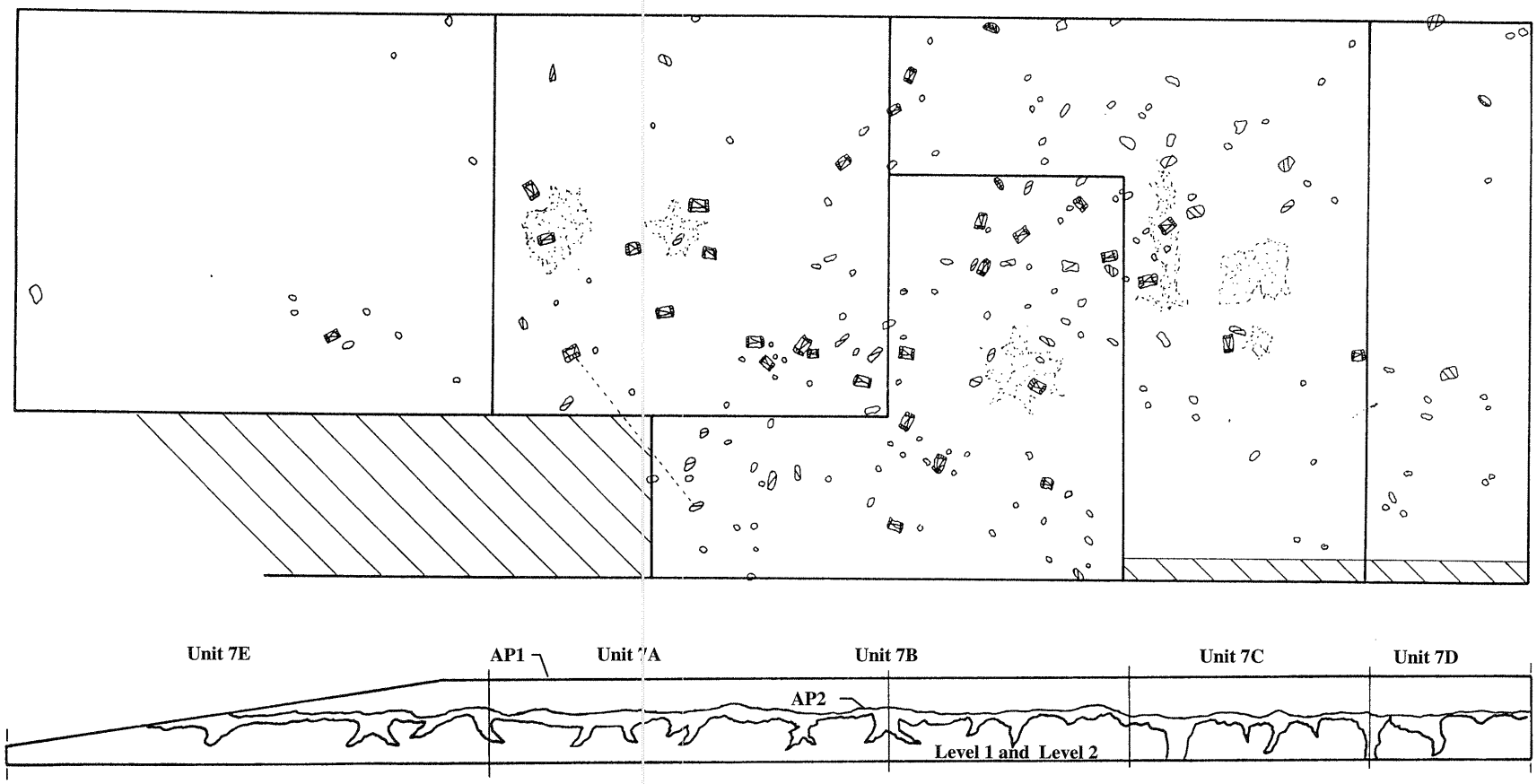


Figure 9.6. Detailed composite plan view (and profile) of all units in excavation area 7, with artifacts, and charcoal clusters, from levels plowzone Ap2, level 1, and level 2 superimposed. The drawing shows the location of recovery of large pieces of chert debitage, tools (symbols as defined in Appendix B), and charcoal clusters (areas of small dark spots). Cross-lined areas were not excavated. The long (E-W) axis of the excavation is 19 feet.

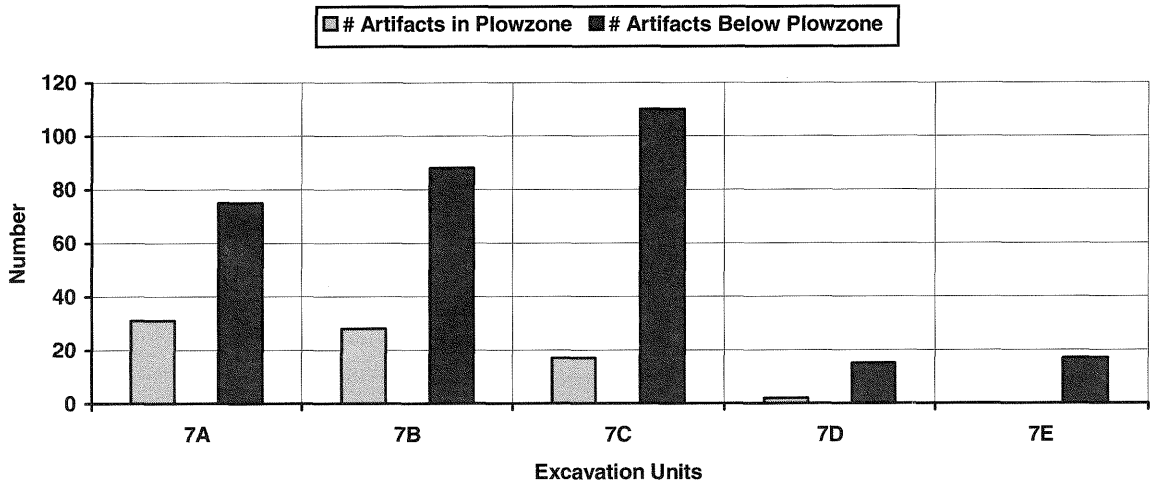


Figure 9.7. Excavation area 7, total number of artifacts recovered in the plowzone and below the plowzone, in all units.

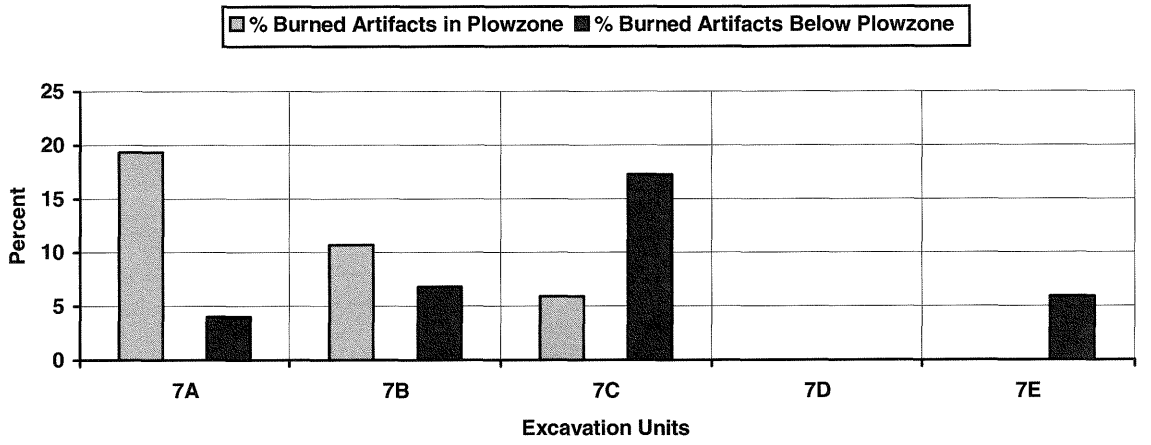


Figure 9.8. Excavation area 7, percentage of artifacts recovered in the plowzone and below the plowzone which were burned or thermally modified based on chert flakes and formal chert artifacts, in all units.

Figure 9.9 presents the units based upon the number of primary core and decortication stage flakes recovered there. The results show that this work, or the deposit of such debitage, was insignificant in excavation area 7. The same observation is made relative to thinning or trim flakes (fig. 9.10) where there are no trim flakes in units 7A and 7D. The percentage of thinning or trim flakes in unit 7B is very low, and in 7C and 7E the percentage is higher, but it is still rated as low for the Williamson site in general at approximately 11%.

.

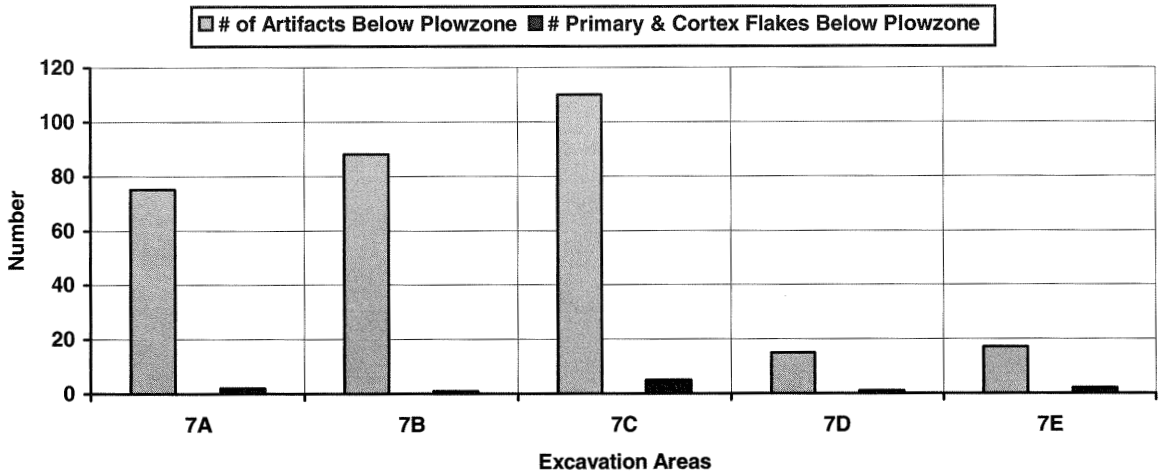


Figure 9.9. Excavation area 7, primary and cortex flakes recovered below the plowzone, compared to total numbers of artifacts below the plowzone, in all units.

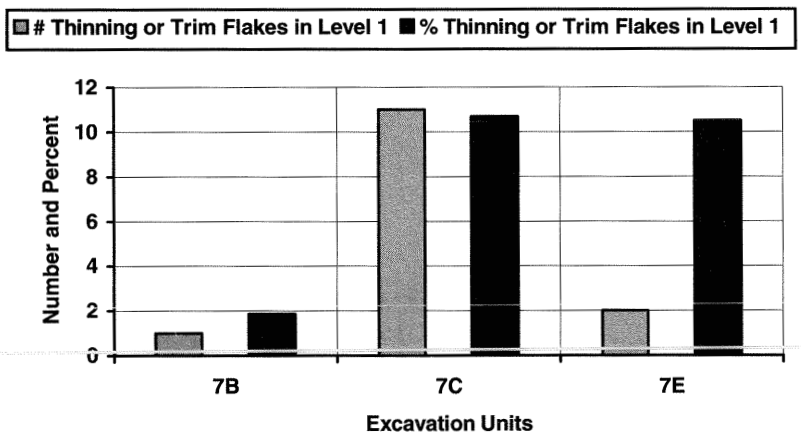


Figure 9.10. Excavation area 7, number of thinning or trim flakes from level 1, compared with the percentage of thinning or trim flakes from the same level, for the three units producing these artifacts.

Inferred Activities at Excavation Area 7

The activities in excavation area 7 can be inferred based upon several observations. First, only chisel-wedges, broken chisel-wedges, spalls from use of such artifacts, and apparent blanks for new chisel-wedges occur here in any number (see fig. 9.26). This excavation, of the four major excavations on the Williamson site, produced the lowest number of specific artifact types. Also there is a very low percentage of debitage related to initial procurement, biface reduction, and finishing or resharpening any type of formal tools. Second, from the wear analysis the chisel-wedges seemed to be used for splitting and cutting bone (or tusk). But, there are few tools for planing, drilling, or engraving the split pieces. This suggests that only one material was worked here, and that the activity related to that material was initial procurement. Third, if the poorly drained condition of this area of the site was similar in the time of Clovis use, it would not have been a convenient area in which to

work. The choice of this area as a work location seems to relate to the presence of the bone (or tusk) resource which apparently was not easily transportable even a few hundred feet east or west to higher, better-drained locations. All of this strongly suggests a kill site work location where initial procurement of bone or tusk was the principal activity. If so, the prey likely was large and difficult to move. Animals falling into this category might include some large member of the deer family, bison, mammoth, or mastodon. No bone or tusk has been recovered at any location on the Williamson site.

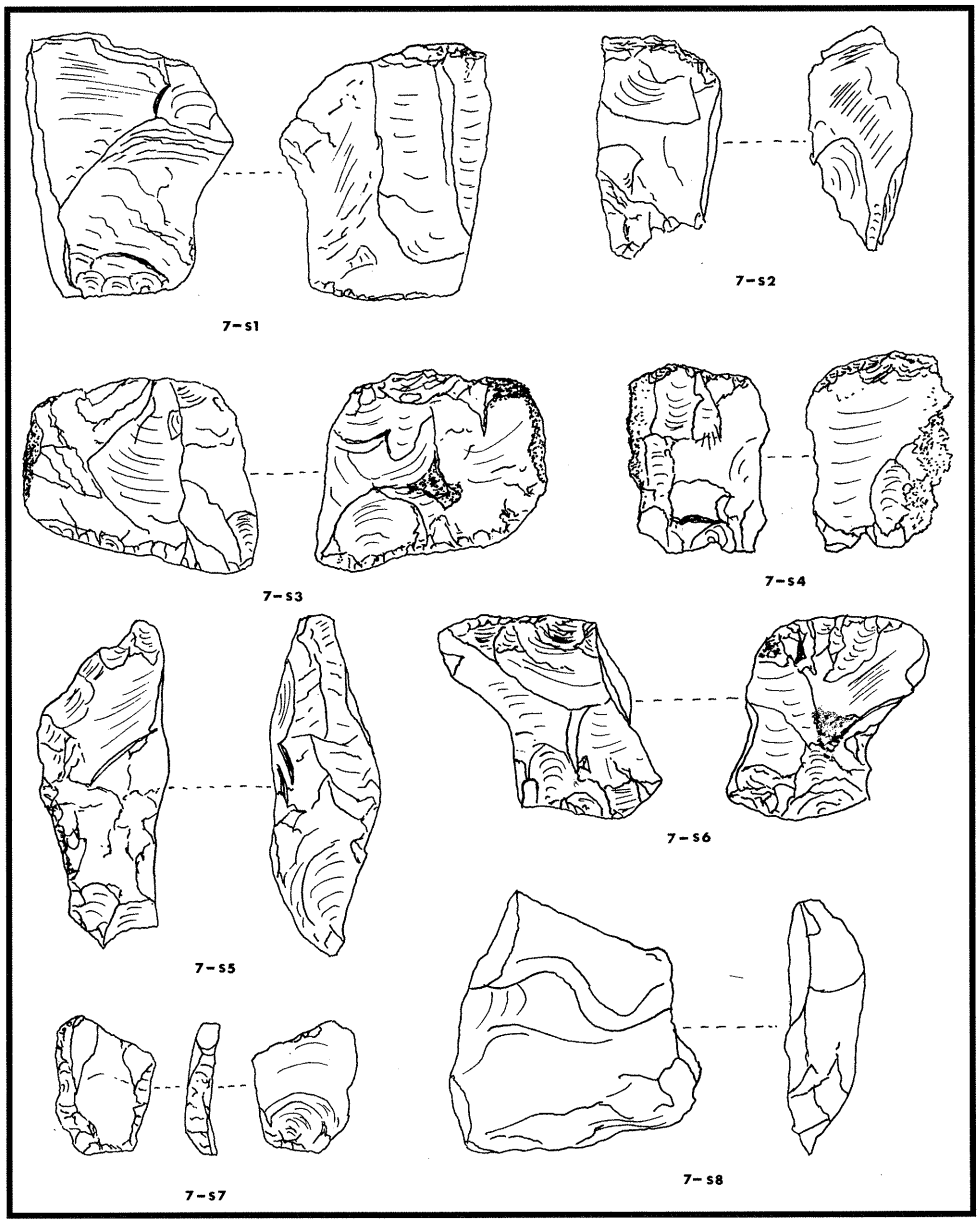


Figure 9.11. Artifacts from the surface of test location 7, near excavation area 7: chisel-wedges, 7-S1, 7-S2, 7-S3, 7-S4, 7-S5, and 7-S6; Clovis end scraper recycled into a chisel-wedge, 7-S7; chisel-wedge blank, 7-S8. (75% natural size)

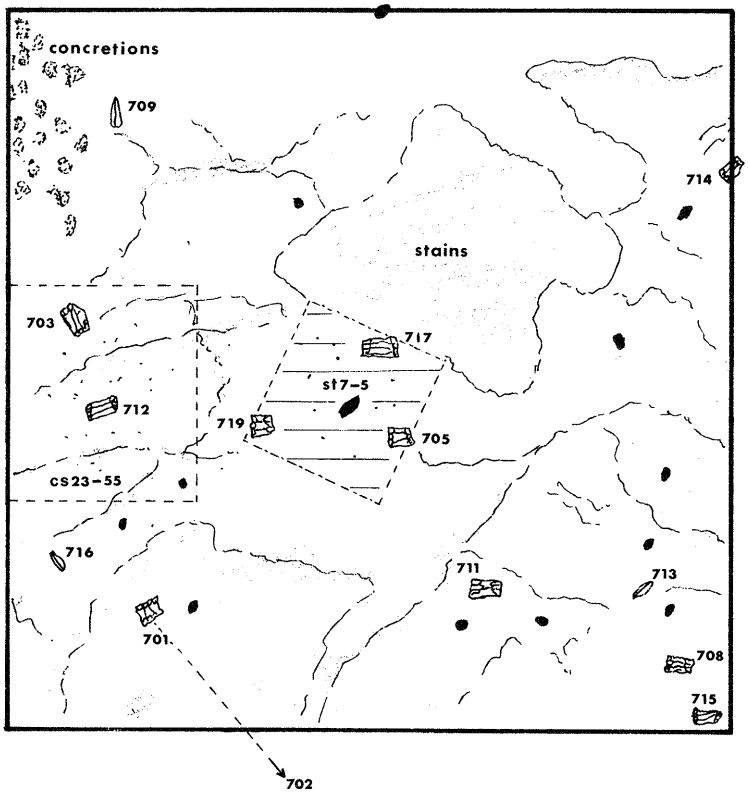


Figure 9.12. Excavation area 7, unit 7A, plowzone Ap2 and level 1, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), concretions (marked), yellowish-red stains (marked and lightly shaded), and St7-5 (shovel test number 5 in location test area 7). Dashed line (701-702) is a refit.

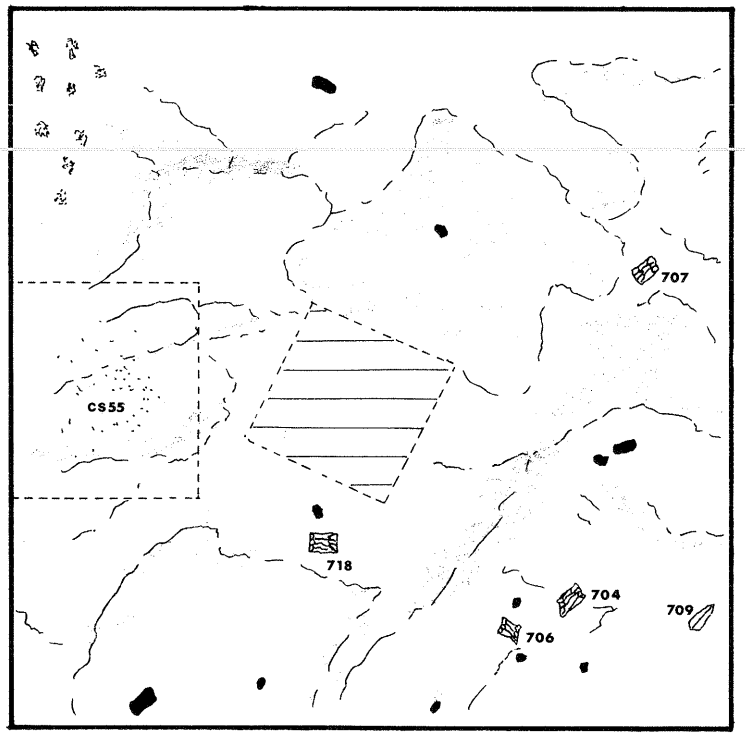


Figure 9.13. Excavation area 7, unit 7A, level 2, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), concretions (marked above), yellowish-red stains (lightly shaded), and St7-5 (shovel test number 5 in location test area 7, marked above).

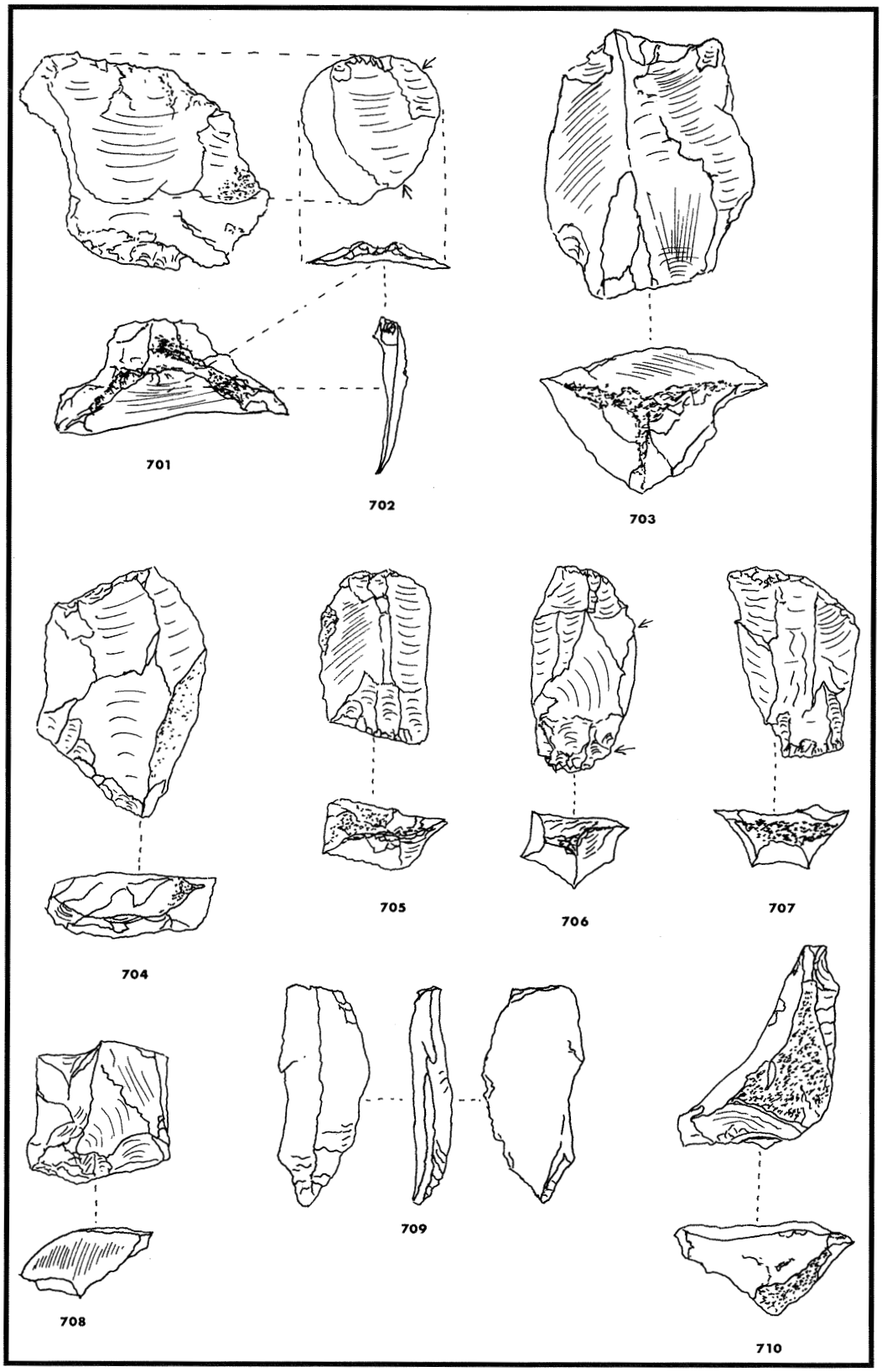


Figure 9.14. Artifacts from excavation area 7, unit 7A, plowzone Ap2, level 1, and level 2: chisel-wedges, 701, 703, 704, 705, 706, 707, and 708; chisel-wedge spalls, 702, 709, and 710. (83% natural size)

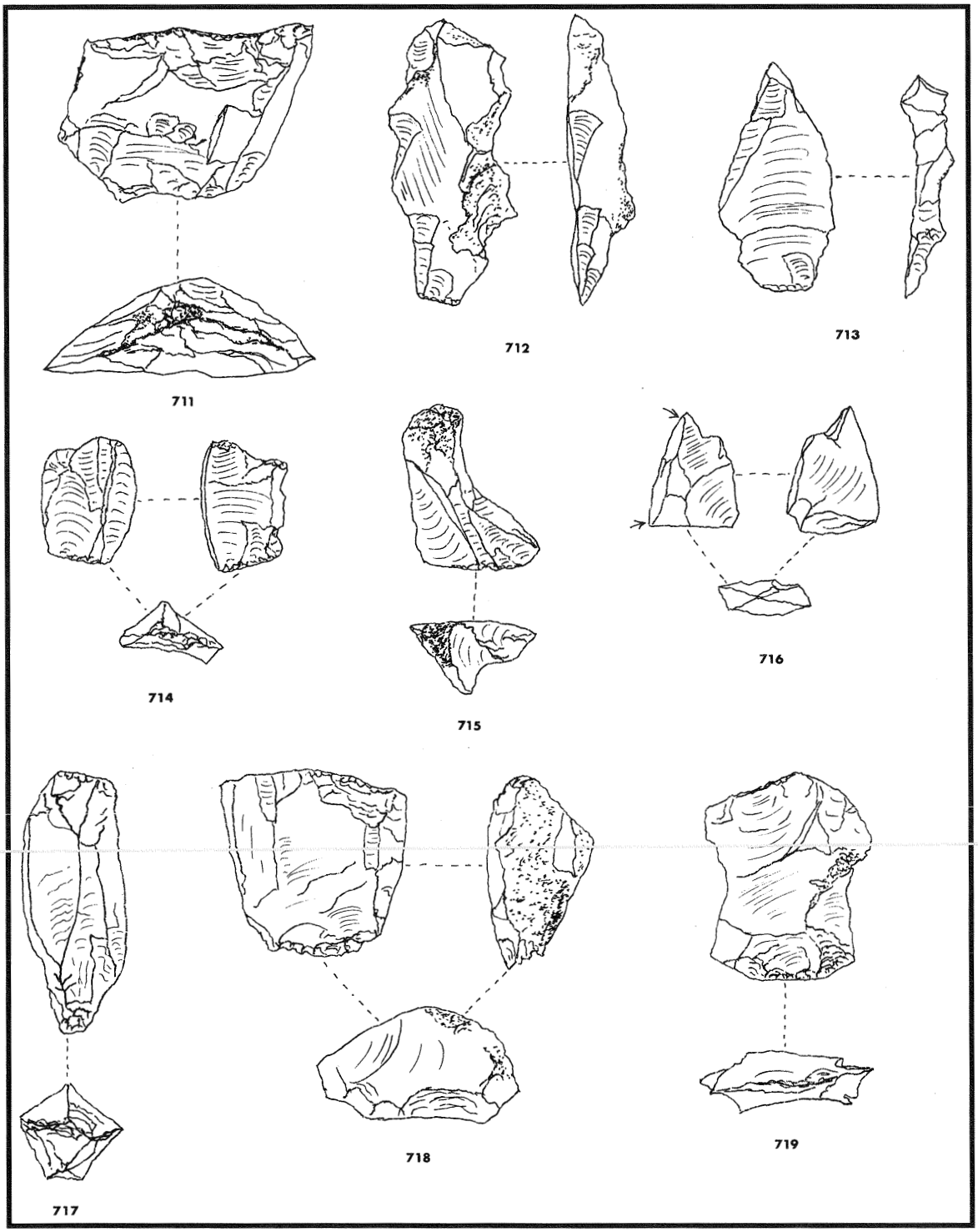


Figure 9.15. Artifacts from excavation area 7, unit 7A, level 1 and level 2: chisel-wedges, 711, 714, 717, 718, and 719; chisel-wedge spalls, 712, 713, 715, and 716 (possibly a burin?). (85 % natural size)

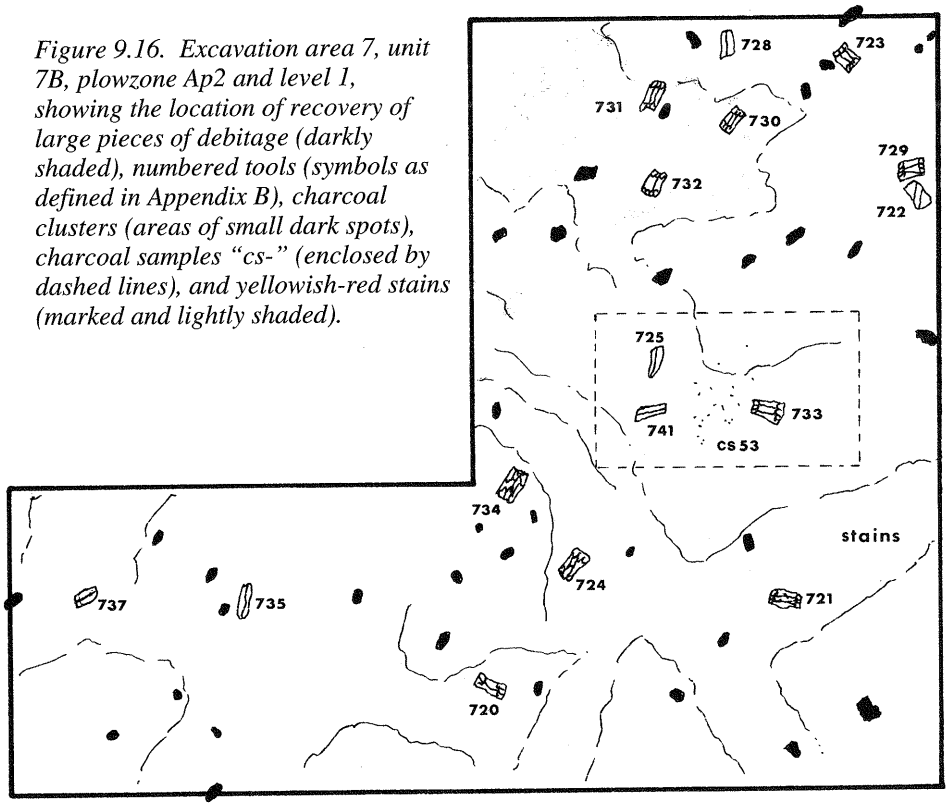


Figure 9.16. Excavation area 7, unit 7B, plowzone Ap2 and level 1, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), and yellowish-red stains (marked and lightly shaded).

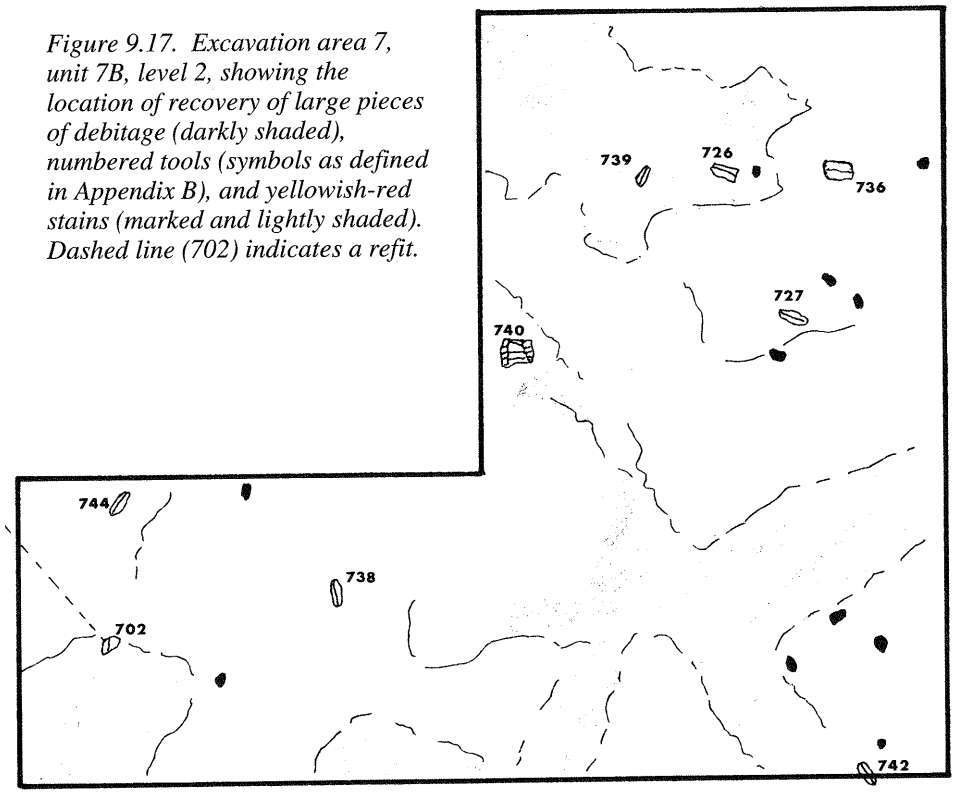


Figure 9.17. Excavation area 7, unit 7B, level 2, showing the location of recovery of large pieces of debitage (darkly shaded), numbered tools (symbols as defined in Appendix B), and yellowish-red stains (marked and lightly shaded). Dashed line (702) indicates a refit.

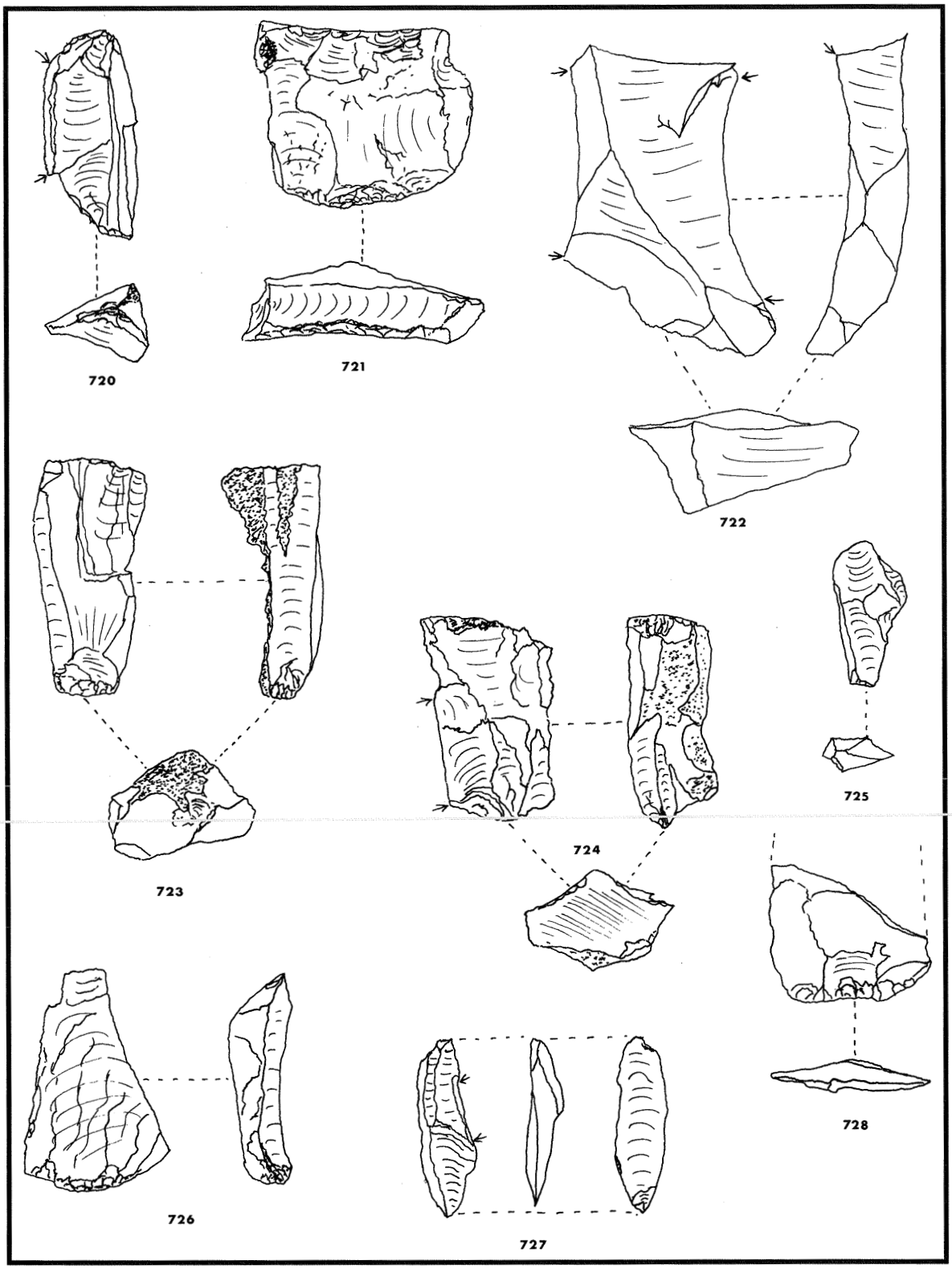


Figure 9.18. Artifacts from excavation area 7, unit 7B, plowzone Ap2: chisel-wedges, 720, 721, 723, 724, and 725 (725 is a chisel-wedge core remnant); chisel-wedge blank, 722; chisel-wedge spalls, 726, 727, and 728. (85 % natural size)

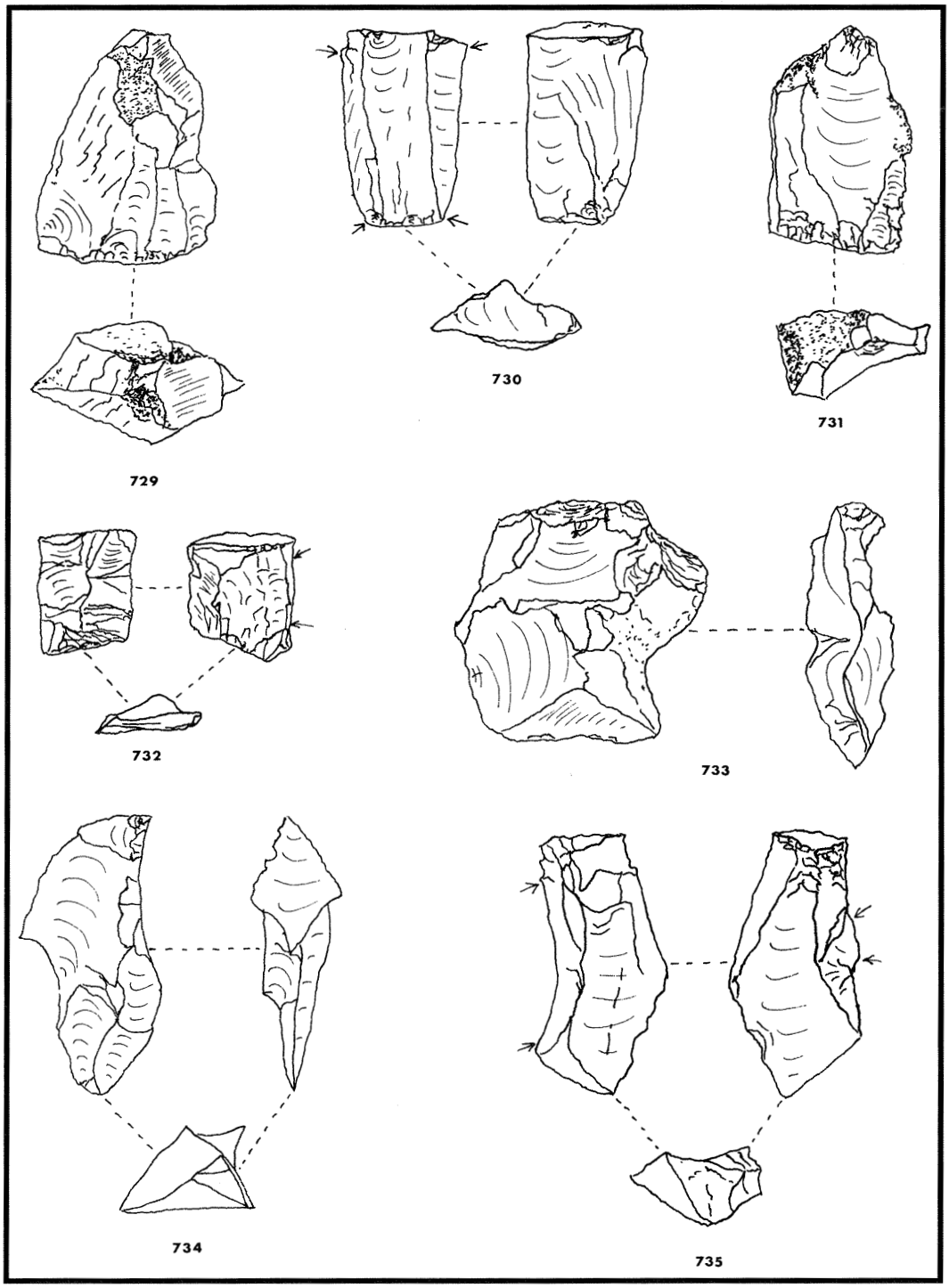


Figure 9.19. Artifacts from excavation area 7, unit 7B, level 1: chisel-wedges, 729, 730, 731, 732 (732 is white quartz), and 733; chisel-wedge spalls, 734 and 735. (85 % natural size)

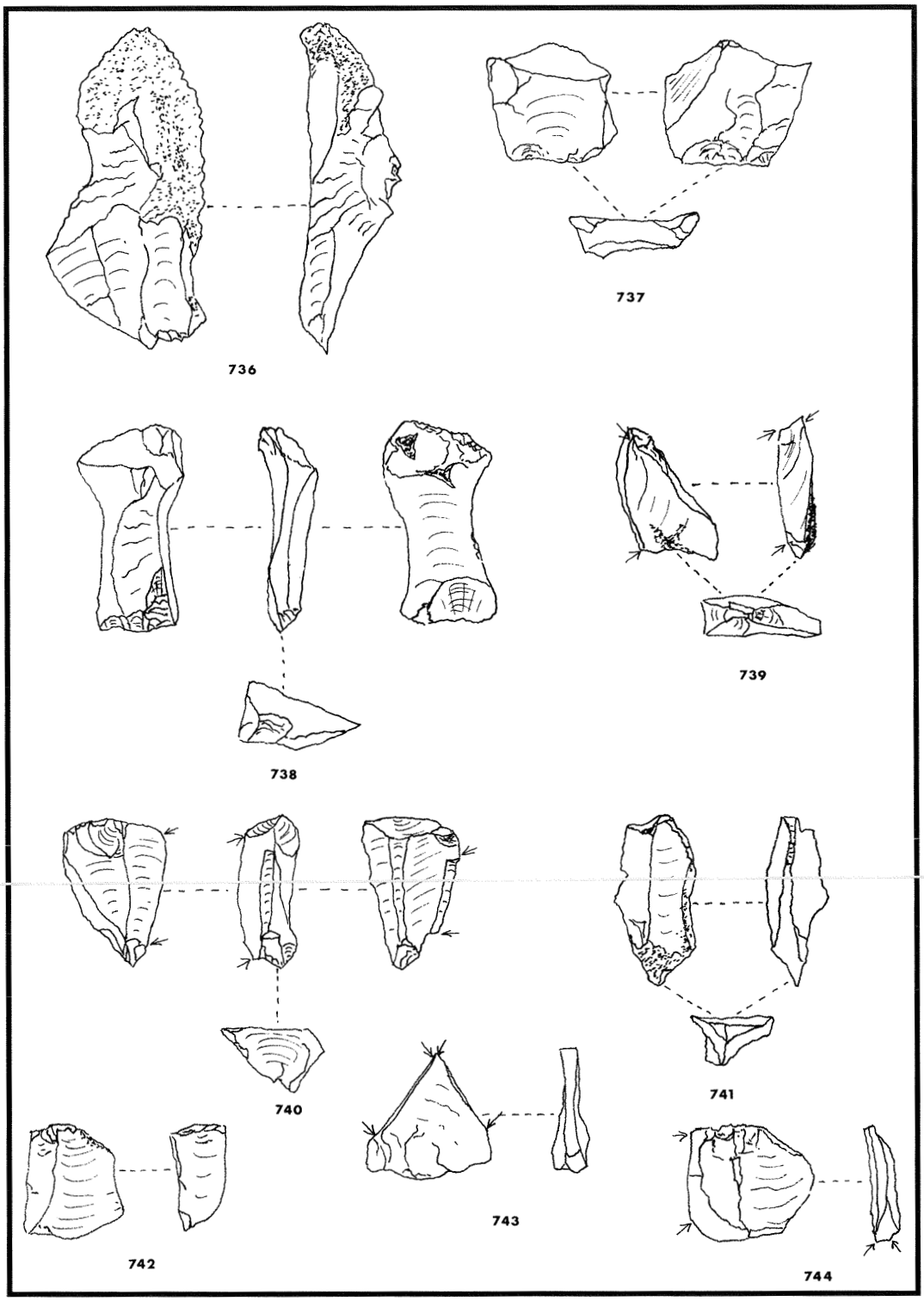


Figure 9.20. Artifacts from excavation area 7, unit 7B, level 2: chisel-wedge spalls, 736, 737, 738, 739, 741, 742, and 744 (744 is possibly edge-used?); chisel-wedge, 740; snapped-flake graver (also edge-used), 743. (85 % natural size)

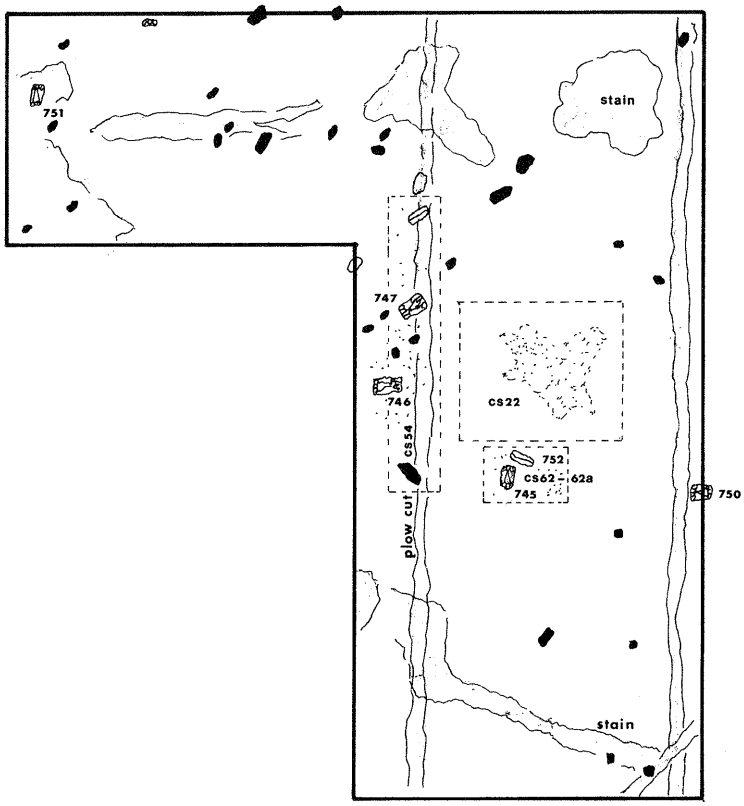


Figure 9.21. Excavation area 7, unit 7C, level 1, showing the location of recovery of large pieces of debitage (darkly shaded), numbered and unnumbered tools (symbols as defined in Appendix B), charcoal clusters (areas of small dark spots), charcoal samples "cs-" (enclosed by dashed lines), yellowish-red stains (marked and lightly shaded), and deep plow cuts and modern root (plow cuts marked and lightly shaded, single root shaded and marked in adjacent unit 7E).

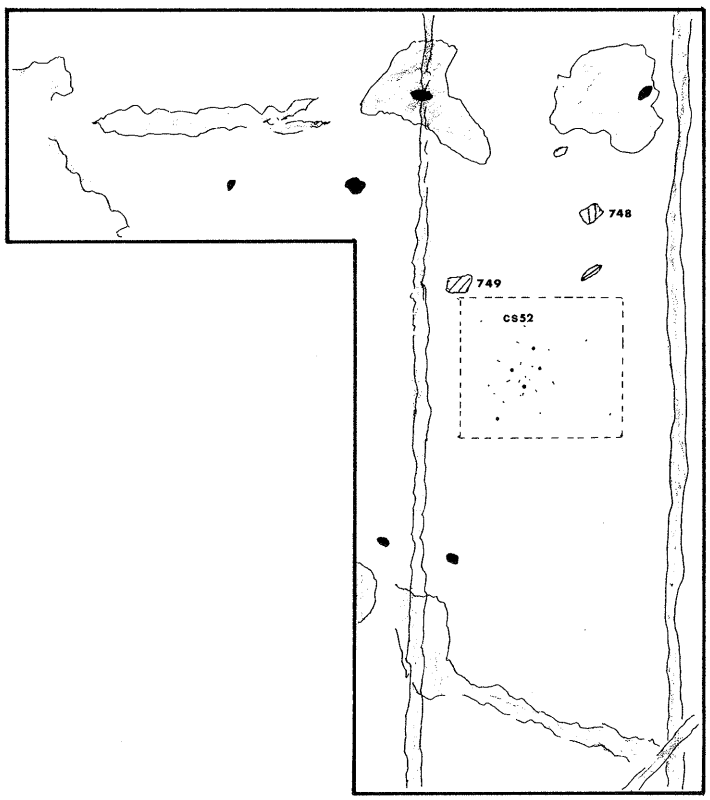


Figure 9.22. Excavation area 7, unit 7C, level 2, showing the location of recovery of large pieces of debitage (darkly shaded), numbered and unnumbered tools (symbols as defined in Appendix B), charcoal cluster (areas of small dark spots), charcoal sample "cs-" (enclosed by dashed lines), yellowish-red stains (lightly shaded), and deep plow cuts and modern root (plow cuts and single root shaded).

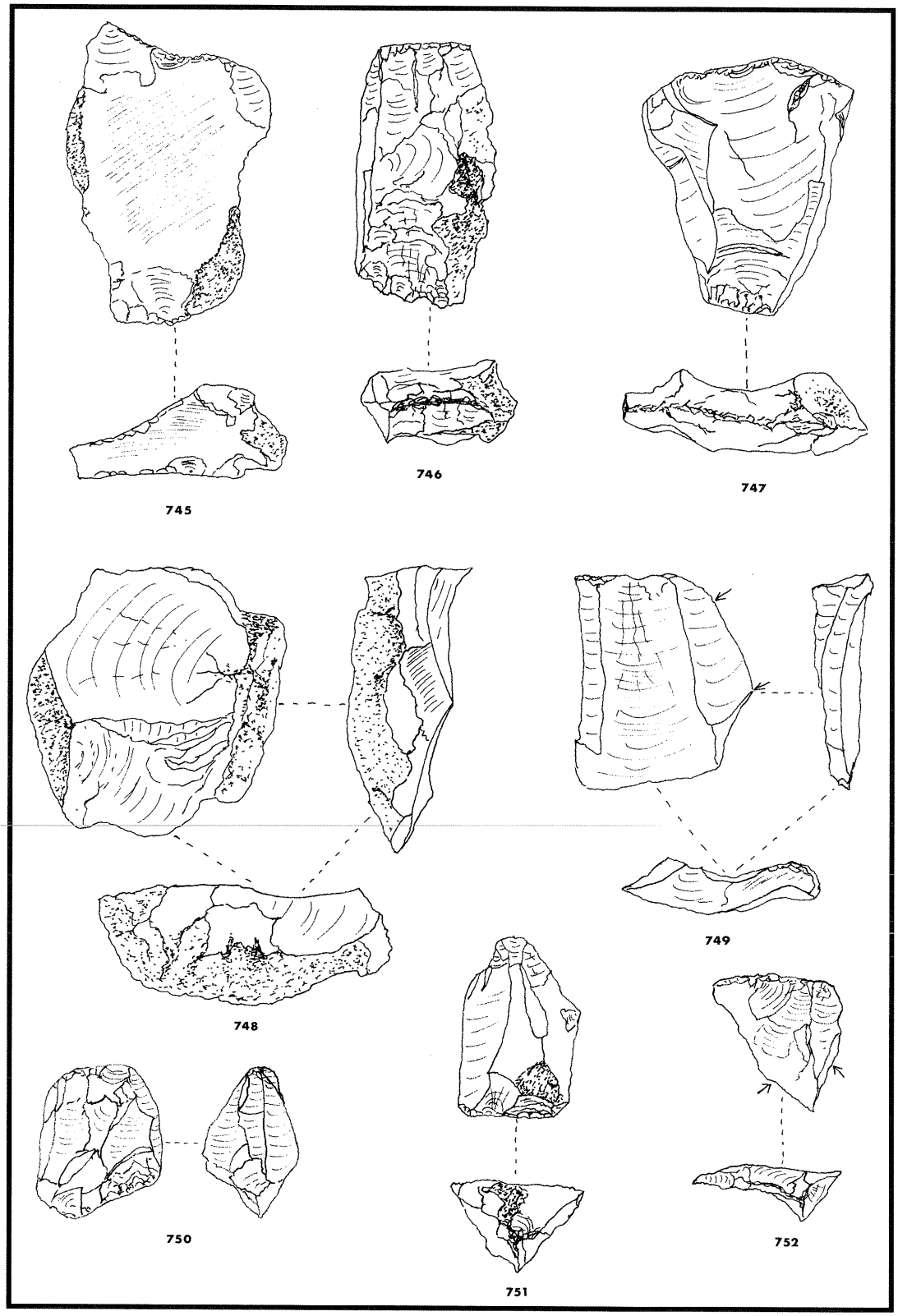


Figure 9.23. Artifacts from excavation area 7, unit 7C, plowzone Ap2, level 1, and level 2: chisel-wedges, 745, 746, 747, 750, and 751; chisel-wedge blanks, 748 and 749; chisel-wedge spall, and snapped-flake edge-used spall, 752. (79% natural size)

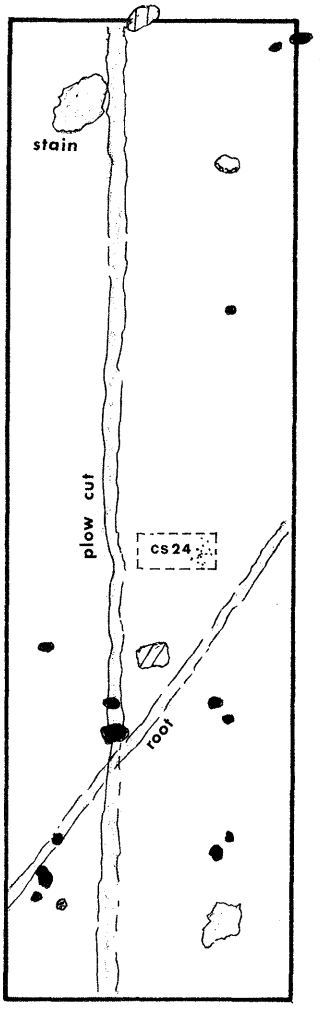
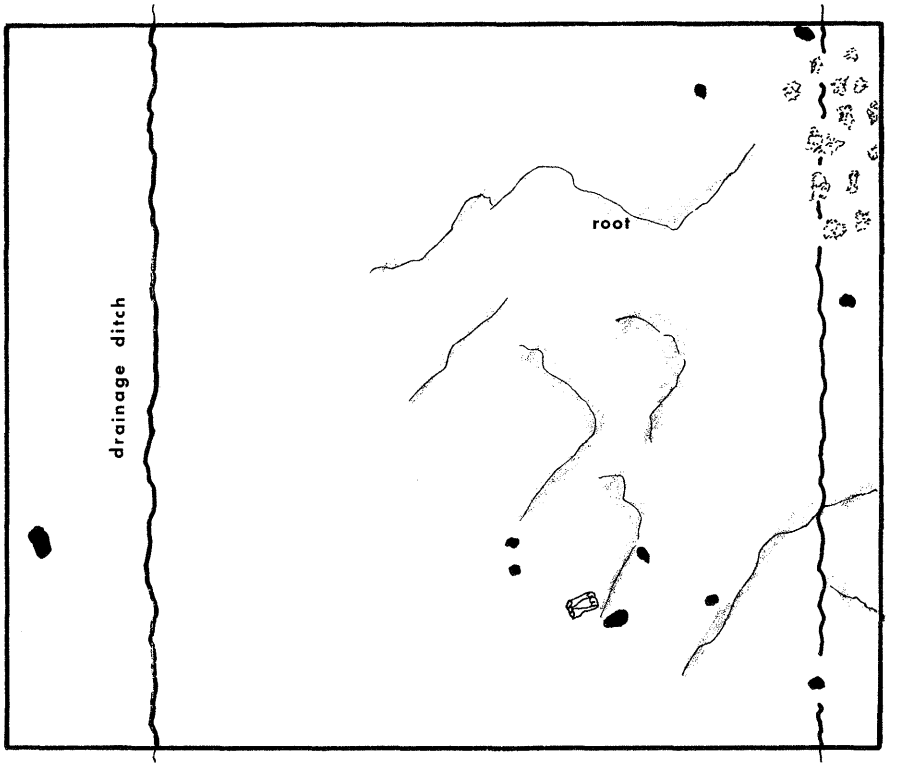


Figure 9.24. Below, excavation area 7, unit 7E, plowzone Ap2, level 1, and level 2, showing the location of recovery of large pieces of debitage (darkly shaded), tools (symbols as defined in Appendix B), concretions (marked in adjacent unit 7A), small modern roots (marked and lightly shaded), and vertical lines marking the locations of the drainage ditch (marked at left) and the start of the cut slope to the drainage ditch (at right). There are no artifact drawings for the few tools recovered in unit 7D.

Figure 9.25. Left, excavation area 7, unit 7D, plowzone Ap2, level 1, and level 2, showing the location of recovery of large pieces of debitage (darkly shaded), tools (symbols as defined in Appendix B), charcoal cluster (areas of small dark spots), charcoal sample "cs-" (enclosed by dashed lines), yellowish-red stain (marked and lightly shaded), and modern root and plow cut (marked and lightly shaded). There are no artifact drawings for the few tools recovered in unit 7D.



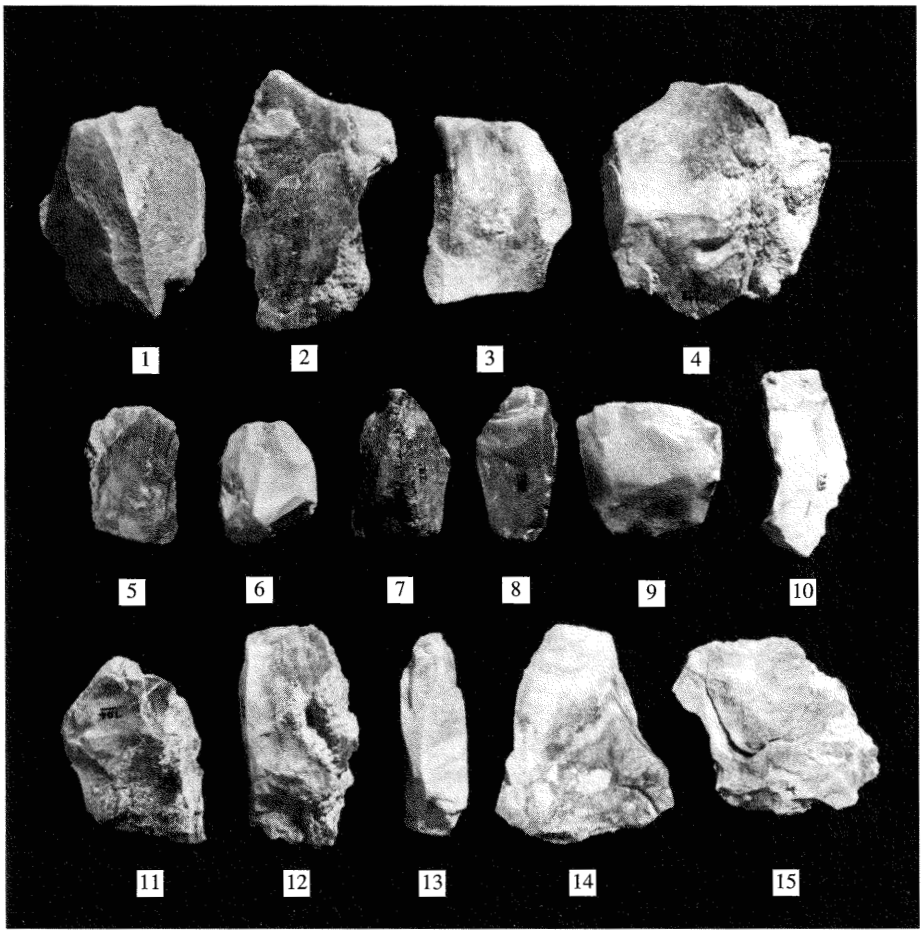


Figure 9.26. Excavation area 7: 1, 2, 5, 6, 7, 8, 9, 11, 12, 13, 14, and 15, chisel-wedges (with one refit spall shown on wedge number 15); 3 and 4, chisel-wedge blanks; 10, large spall from a chisel-wedge. (57% natural size)

CHAPTER 10
LABORATORY ANALYSES

Introduction

Chapter 10 will address the results of the various laboratory investigations and scientific tests associated with material recovered during the NRS investigation of the Williamson site. Laboratory work was undertaken over a two-year period between July 1999 and July 2001. We were fortunate that so many high profile researchers were willing to help with the laboratory phase of this project. It should be mentioned that many of these individuals provided their professional services at a reduced rate because of their interest in the project.

These individuals include: Dr. Grace S. Brush, of the Department of Geography and Environmental Engineering, Johns Hopkins University, who did the pollen identification from soil samples taken in excavation areas 2 and 3; Dr. Cheryl Holt, private consultant, who did the analysis of seeds, fruits, and spores from the flotation sample from the pit, Feature 1, in excavation area 6, and two water-screened samples; Dr. Larry R. Kimball, of the Department of Anthropology, Appalachian State University, who did the wear analysis of 20 lithic artifacts; Dr. Susan C. Mulholland of the Archaeometry Laboratory, University of Minnesota, Duluth, who did the quick scan phytolith analysis from soil samples taken in excavation areas 2 and 3; Dr. Margaret E. Newman, at the University of Calgary, who did the immunological analysis of 20 lithic artifacts; and Dr. Lucinda J. McWeeney, then at Harvard Forest, who did the massive charcoal analysis.

Beta Analytic of Miami, Florida did the carbon 14 dating of eight charcoal samples identified by Dr. McWeeney, and selected for dating by NRS. Soils samples from test locations 1 through 8 were tested to determine chemistry and pH under the direction of Mr. Robert Hodges, and the Virginia Cooperative Extension Program Soils Laboratory at Virginia Tech, Blacksburg.

Typological Analysis of Lithic Artifacts

The analysis of lithic artifacts was undertaken by Nottoway River Survey at our facility in Sandston, Virginia. Some verification of the artifact typology (categories) was provided by Dr. Kimball who independently reviewed a sample of artifacts in the major formal tool categories at his laboratory at Appalachian State University in Boone, North Carolina. The assemblage of lithic artifacts was analyzed according to the typological categories presented in Chapter 4, including: several core forms, initial primary decortication flakes, large primary core flakes, later stage debitage including secondary and tertiary thinning and trim flakes referred to only as thinning or trim, lithic shatter, unspecified lithic fragments, thermally fractured chert, hard and soft percussion bipolar spalls often found with chisel-wedges or bipolar cores, unique crescent platform preparation flakes, core blades, a variety of previously unrecognized tools manufactured by bend breaks on flakes and referred to in this report as "snapped-flake" tools or bend breaks, biface reduction flakes, in-process bifaces and projectile point preforms, numerous flake types with used edges, and the great variety of highly curated formal tools such as end scrapers, side scrapers, and projectile points often reported by researchers and collectors from the Williamson site.

As the artifacts were evaluated, each artifact excavated in undisturbed context below the plowzone was described in Appendix B as to category, principal measurements (except for shatter and thermal fractures where only the greatest dimension was recorded), thermal modification, and color or color patterning.

The lithic artifact categories recognized include: 1) all artifacts categorized as tools; and 2) all other artifacts which are categorized as debitage. Each artifact type within a category was given a unique code or abbreviation as presented in Chapter 4, and as presented with the associated artifact symbol (used to designate the artifact type in drawings) in Appendix B.

Laboratory Quantification of Artifacts: An Example, Excavation Area 2

Once the artifacts were described and compiled under the categories and type abbreviations described in Chapter 4, as noted above, the information presented in Appendix B was used to construct the charts in Chapters 6, 7, 8, 9, and 11. Excavation area 2 will be used as an example to demonstrate the process followed in generating the data base used to construct the charts as it produced the greatest variety of artifact types as presented in Appendix B. (Note that excavation area 2 units 2B(N) and 2B(S) are included in the following tabulations for explanation purposes, but only the primary excavation units 2A, 2B, 2C, and 2D are included in the Chapter 6 excavation area 2 totals, and in the associated excavation area 2 charts in Chapter 6 and Chapter 11. This is because only units 2A, 2B, 2C, and 2D had comparison plowzone artifact recovery.)

Excavation Area 2 Tools (all Units Analyzed)

Using the Chapter 4, and Appendix B, artifact categories during the laboratory phase of the analysis the following tools were identified from all units in excavation area 2 of the Williamson site:

Clovis point fragments: n =2; Biface fragments: n =4; Bifacial cores: n = 1; End scrapers: n = 1; Edge-worked flakes: n = 4; Edge-used flakes: n = 27; Snapped-flakes, edge-used: n = 4 (3 as gravers); Perforators: n = 2; Burinized flakes used as gravers: n = 1; Gravers: n = 1; Wedges or chisel-wedges: n = 8; Wedge fragments: n = 1; Wedge spalls, edge-used: n = 1; Abraders: n = 2; Polishing stones: n = 2; Choppers: n = 1; Gouge: n = 1; Beaks: n = 1; Lancets: n = 1; Chisel tips: n = 1; and, Archaic projectile point tip fragments: n =1.

In terms of largest-to-smallest quantity of tools present, the numerical breakdown by general types, where there are at least two of each item, is as follows: 28 edge-used flakes; 8 wedges; 4 snapped-flake tools; 4 edge-worked flakes, 4 biface fragments; 4 items used for abrading/polishing; and 2 each of perforators and Clovis point fragments. Most of these artifacts are shown in Chapter 6 by detailed drawings, and some are shown in photographs.

Excavation Area 2 Debitage (all Units Analyzed)

Using the Chapter 4, Appendix B, artifact categories during the laboratory phase of the analysis the following debitage was identified from the units in excavation area 2 of the Williamson site:

Large primary core flakes: n = 1; Large primary core flakes with cortex: n = 3; Primary core flakes: n = 61; Primary core flakes with cortex: n = 13; Primary core flakes (probable)/shatter: n = 8; Primary core flakes (probable)/shatter with cortex: n = 1; Unspecified larger flakes with significant cortex: n = 9; Unspecified larger flakes (probable)/shatter with significant cortex: n = 15; General small shatter: n =331; General trim or thinning flakes, secondary or tertiary: n = 273; Biface reduction flakes: n = 60; Biface reduction flakes with significant cortex: n =1; Biface reduction flakes (probable)/shatter: n = 2; Blade flakes: n = 6; Probable blade flakes: n = 15; Hard percussion spalls (from chisel-wedges or bipolar cores): n = 7; Unspecified lithic fragments: n = 8; Unspecified lithic fragments (probable)/shatter: n = 12; Unspecified lithic fragments with significant cortex: n = 3.

In terms of largest-to-smallest quantity of debitage present, the numerical breakdown by general types is as follows: 331 pieces of small shatter; 273 small secondary and tertiary trim and thinning flakes from final stage work on

bifaces and edge working tools; 77 primary core flakes; 63 examples of biface reduction flakes with good platforms; 23 unspecified lithic fragments; 21 core blades and blade fragments; 20 unspecified cortex flakes; and, 7 bipolar flakes clearly derived as spalls from wedges, or spalls from bipolar cores.

To summarize the major debitage as to process: 97 flakes are associated with removing cortex and producing primary core flakes; as many as 336 flakes are associated directly with manufacturing bifacial tools, and making and edging bifacial and unifacial tools; 21 flakes may be core-blades made very specifically for direct use as knives or to quickly modify into unifacial tool forms; only 7 items could be identified clearly as bipolar flakes; and, 331 items are small shatter, mostly small remnants of thin, unspecified flakes lacking platforms.

Immunological Analysis of Lithic Artifacts (Organic Residues)

Twenty artifacts were selected by NRS from the four primary excavation areas on the Williamson site and submitted to Dr. Margaret E. Newman, University of Calgary, for immunological analysis. The method of analysis was cross-over electrophoresis (CIEP), and the species specific antisera used in the analysis were bear, bovine, cat, chicken, deer, dog, guinea-pig, horse, rabbit, rat, camel, caribou, elephant, and moose. Dr. Newman's report (Newman 1999) to NRS, submitted November 26, 1999, is on file at the Portsmouth Regional Office of the Virginia Department of Historic Resources in Portsmouth, Virginia.

A summary of Dr. Newman's findings is presented below in Table 10.1. Dr. Newman noted in her report that: 1) the positive reactions to bovine antiserum on a wedge, a Clovis point, and an edged-flake could be caused by bison or cow, but that unless the area was recently used as a pasture, the most likely species was bison; 2) the single artifact that tested positive to dog antiserum, a jasper knife or side scraper, could represent any member of the Canidae family, but that cross-reactions with other unrelated families do not occur with the antiserum; and 3) the positive reactions to deer antiserum for a wedge, a limace, and a edge-used flake were not associated with caribou or moose as negative reactions were obtained for such species-specific antisera. Dr. Newman further noted that while no other positive reactions were found the absence may be due to poor preservation of protein or use of the tool for animal species other than those encompassed by the antisera.

Table 10.1: Immunological Analysis of 20 Selected Artifacts from the NRS Excavations on the Williamson Site, 44DW1

Excavation Area, Unit, Level, Feature and Artifact Drawing Number	Artifact Type	Lithic Material	Immunological Analysis Results (Summation of the observations of Dr. Margaret E. Newman, UC)
Area 2, unit 2B, level 2, Feature 2, artifact drawing number 219	Clovis point	Meta-Rhy-olite	Bovine (bison or cow)
Area 2, unit 2B, level 1, Feature 2, artifact drawing number 220	Clovis point	Rhyolite	Negative
Area 2, unit 2A, level 1, Feature 1, artifact drawing number 202	End scraper with graver	Meta-Rhy-olite or tuff	Negative
Area 2, unit 2A, level 2, Feature 1, artifact drawing number 204	Chopper with large notch	Williamson chert	Negative
Area 2, unit 2A, level 2, Feature 1, artifact drawing number 208	Blade-like flake/edge used	Quartzite	Negative
Area 2, unit 2A, level 2, Feature 1, artifact drawing number 212	Chisel-wedge/ bipolar wedge	Williamson chert	Negative

Table 10.1: Immunological Analysis of 20 Selected Artifacts from the NRS Excavations on the Williamson Site, 44DW1

Excavation Area, Unit, Level, Feature and Artifact Drawing Number	Artifact Type	Lithic Material	Immunological Analysis Results (Summation of the observations of Dr. Margaret E. Newman, UC)
Area 3, unit 3C, level 2, Feature 2, artifact drawing number 376	Blade segment/ edge worked	Williamson chert	Bovine (bison or cow)
Area 3, unit 3A, level 3, Feature 1, artifact drawing number 310	Edge used flake	Williamson chert	Negative
Area 3, unit 3B, level 2, Feature 1, artifact drawing number 351	End scraper with graver	Williamson chert	Negative
Area 3, unit 3A, level 3, Feature 1, artifact drawing number 309	Blade flake/ edge worked	Williamson chert	Negative
Area 3, unit 3A, plow zone - level 1 interface, Feature 1 (?), artifact drawing number 301	longitudinal, or bifacial thinning flake/ edge worked	Williamson jasper/chert	Dog (any member of the Canidae family)
Area 6, unit 6D extension, level 1, no feature number recorded, artifact drawing number 602	Limace/double piercer	Williamson chert	Deer (negative reactions to caribou and moose - not these)
Area 6, unit 6C, level 1, Feature 1, artifact drawing number 612	Graver/piercer	Williamson chert	Negative
Area 6, unit 6C, level 1, Feature 1, artifact drawing number 608	Flake/edge used	Williamson chert	Deer (negative reactions to caribou and moose - not these)
Area 6, unit 6C, level 1, Feature 1, artifact drawing number 613	bipolar worked flake/wedge or burin graver ?	Williamson chert	Negative
Area 7, unit 7C, level 1, Feature 1, artifact drawing number 747	Chisel-wedge/ bipolar wedge	Williamson chert	Negative
Area 7, unit 7A, level 2, Feature 1, artifact drawing number 717	Chisel-wedge/ bipolar wedge	Williamson chert	Negative
Area 7, unit 7A, level 2, Feature 1, artifact drawing number 718	Chisel-wedge/ bipolar wedge	Williamson chert	Bovine (bison or cow)
Area 7, unit 7C, level 1, Feature 1, artifact drawing number 750	Chisel-wedge/ bipolar wedge	Williamson chert	Deer (negative reactions to caribou and moose - not these)
Area 7, unit 7A, level 2, Feature 1, artifact drawing number 719	Chisel-wedge/ bipolar wedge	Williamson chert	Negative

Lithic Artifact Wear Analysis

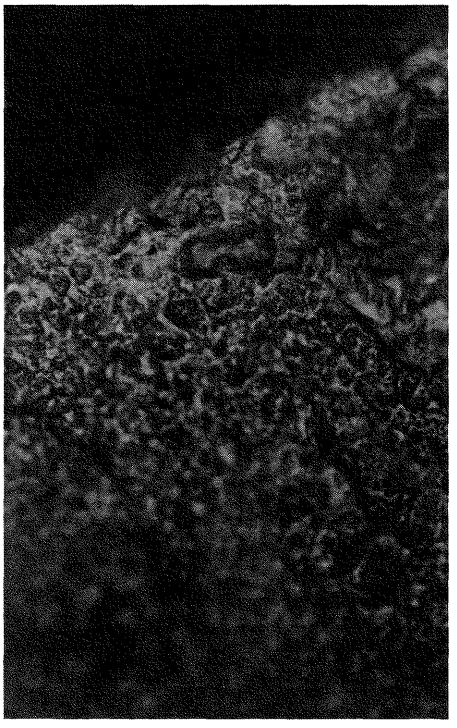
The 20 artifacts submitted to Dr. Newman for immunological analysis were, upon their return, submitted to Dr. Larry R. Kimball, Appalachian State University, for wear analysis. The method of analysis used by Dr. Kimball was that patterned after the work of L. H. Keeley. Dr. Kimball commented on the wear type or pattern, striations, etc. resulting from tool use, and on the wear polish brightness which in the Keeley technique is regarded as the prime indicator of the contact material. It also should be noted that in accordance with the Keeley technique extensive chemical cleaning was performed by Dr. Kimball before microscopy to ensure that inorganic and organic deposits were removed completely from the surface of the 20 artifacts. Dr. Kimball's laboratory notes, and photocopies of his photomicrographs (Kimball 2000) submitted to NRS May 31, 2000, are on file at the Portsmouth Regional Office of the Virginia Department of Historic Resources. Dr. Kimball's findings are summarized as "wear" in Table 10.2.

Table 10.2: Wear Analysis Results for 20 Selected Artifacts from the NRS Excavations on the Williamson Site, 44DW1

Excavation Area, Unit, Level, Feature and Artifact Drawing Number	Artifact Type	Lithic Material; color; source (McAvoy)	Wear Type and Location (Summation of the observations of Dr. Larry R. Kimball, Department of Anthropology, ASU)
Area 2, unit 2B, level 2, Feature 2, artifact drawing number 219	Clovis point; large for this artifact category from the Williamson site	Meta-Rhyolite or possibly siliceous tuff; light green with fine red spots, faintly striped	This artifact shows possible hafting wear traces, and shows possible use wear traces near the distal end (tip). [This was a finished fluted point broken in the haft and with an impact fracture at the tip-McAvoy]
Area 2, unit 2B, level 1, Feature 2, artifact drawing number 220	Clovis point; small for this artifact category	Rhyolite; blue-gray, striped; likely from a locally obtained stream cobble	This artifact shows wear from hide scraping along the distal break on the ventral side, and the artifact was hafted as a projectile point.
Area 2, unit 2A, level 1, Feature 1, artifact drawing number 202	End scraper with graver	Siliceous tuff, or highly silicified Meta-Rhyolite, dark green	The distal edge of this artifact shows traces of wear from fresh hide scraping, and shows hafting wear traces on the dorsal face.
Area 2, unit 2A, level 2, Feature 1, artifact drawing number 204	Chopper with large notch/ retouched core fragment	Williamson chert; yellow	The most pronounced wear on this artifact is from dry hide scraping on the longest edge.
Area 2, unit 2A, level 2, Feature 1, artifact drawing number 208	Blade-like flake/edge used	Quartzite/ fine grain; dark brown; from a stream cobble	This artifact shows wear from hard wood planing at the modified end, and wear from hard wood sawing along the longest edge. The artifact was hafted.
Area 2, unit 2A, level 2, Feature 1, artifact drawing number 212	Chisel-wedge	Williamson chert; yellow	This artifact shows wear from bone wedging.
Area 3, unit 3C, level 2, Feature 2, artifact drawing number 376	Blade segment proximal end/ edge worked	Williamson chert; blue-white-brown	This artifact shows wear traces from fresh hide scraping or cleaning. The distal end may have been created by bipolarization to intentionally snap the blade.
Area 3, unit 3A, level 3, Feature 1, artifact drawing number 310	Edge-used flake	Williamson chert; white and gray	This artifact shows wear traces from fresh hide cutting or cleaning. The artifact was hafted.

Table 10.2: Wear Analysis Results for 20 Selected Artifacts from the NRS Excavations on the Williamson Site, 44DW1

Excavation Area, Unit, Level, Feature and Artifact Drawing Number	Artifact Type	Lithic Material; color; source (McAvoy)	Wear Type and Location (Summation of the observations of Dr. Larry R. Kimball, Department of Anthropology, ASU)
Area 3, unit 3B, level 2, Feature 1, artifact drawing number 351	End scraper with graver	Williamson chert; white	This artifact shows wear from dry hide scraping, and possibly residues of pitch/tar/asphaltum from hafting on the dorsal surface along superior scars from retouch.
Area 3, unit 3A, level 3, Feature 1, artifact drawing number 309	Blade flake/ edge worked	Williamson chert; blue-white	This artifact shows wear from fresh hide scraping along the retouched lateral left edge.
Area 3, unit 3A, plow zone - level 1 interface, Feature 1 (?), artifact drawing number 301	longitudinal/ bifacial thinning flake/ edge worked	Williamson jasper; brown	This artifact appears to show wear from light butchery? The artifact was hafted. [It may be an early stage flute, or channel, flake-McAvoy]
Area 6, unit 6D extension, level 1, no feature number recorded, artifact drawing number 602	Small limace–like tool, used as a double piercer	Williamson chert; brown and white	Dry hide piercing, both ends show wear from such use. This tool was hafted.
Area 6, unit 6C, level 1, Feature 1, artifact drawing number 612	Graver/piercer	Williamson chert; blue-white	Tip shows wear from dry hide piercing - this was probably a left-hander's tool. This tool was hafted.
Area 6, unit 6C, level 1, Feature 1, artifact drawing number 608	edge-used flake	Williamson chert; brown-tan	This artifact shows wear from light butchery on the lateral right and distal edges.
Area 6, unit 6C, level 1, Feature 1, artifact drawing number 613	bipolar worked flake/wedge/or burin graver	Williamson chert; blue and brown	This artifact shows wear from bone or antler wedging.
Area 7, unit 7C, level 1, Feature 1, artifact drawing number 747	Chisel-wedge/ bipolar wedge	Williamson chert; blue and gray	This artifact shows wear from bone wedging, and bone sawing on the lateral right edge.
Area 7, unit 7A, level 2, Feature 1, artifact drawing number 717	Chisel-wedge/ bipolar wedge	Williamson chert; blue and pink	This artifact shows wear from bone wedging.
Area 7, unit 7A, level 2, Feature 1, artifact drawing number 718	Chisel-wedge/ bipolar wedge	Williamson chert; blue	This artifact shows wear from bone wedging.
Area 7, unit 7C, level 1, Feature 1, artifact drawing number 750	Chisel-wedge/ bipolar wedge	Williamson chert; blue-white and tan	This artifact shows wear from bone wedging, and bone sawing on the lateral left edge.
Area 7, unit 7A, level 2, Feature 1, artifact drawing number 719	Chisel-wedge/ bipolar wedge	Williamson chert; gray	This artifact shows wear from bone wedging.



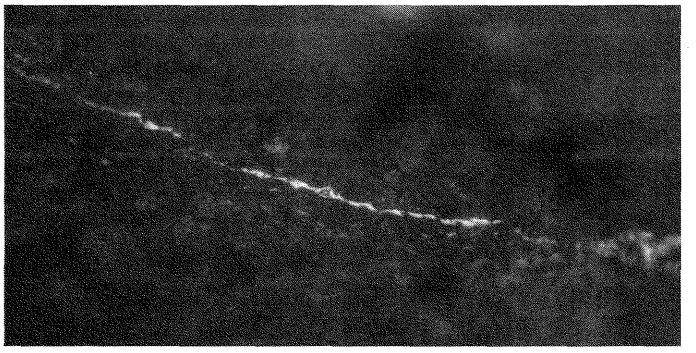
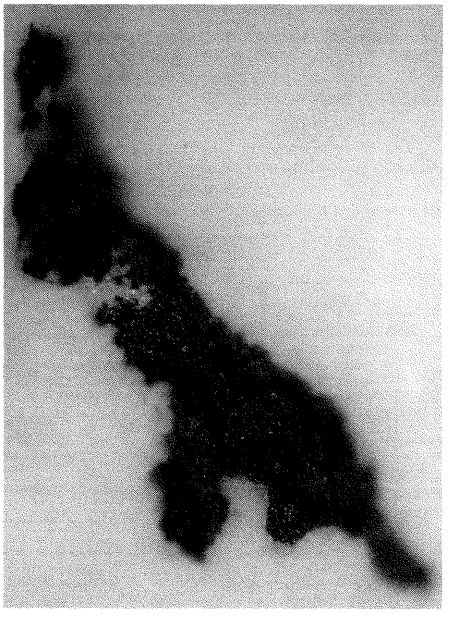
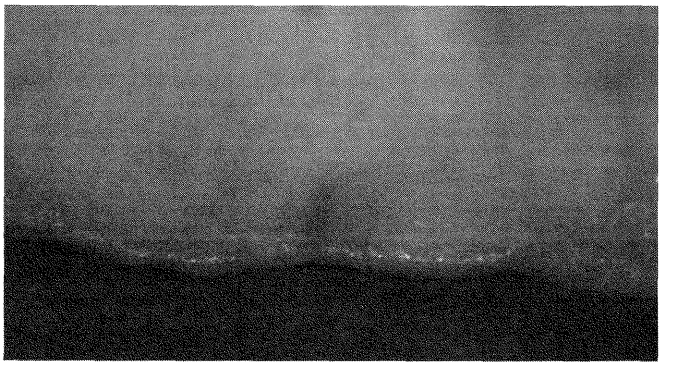


Figure 10.1. Photomicrographs: top left, 200x, artifact drawing number 613, multicolored Williamson chert, bipolar worked flake/wedge/burin, wear from bone or antler contact; top, 100x, artifact drawing number 301, yellowish-brown Williamson jasper, edge-worked flake, wear from light butchery(?); bottom, 50x, artifact drawing number 351, white Williamson chert, end scraper, wear from dry hide scraping; bottom left, 100x, same artifact (drawing number 351), end scraper showing possible pitch, tar, or asphaltum hafting residue on dorsal surface along superior flake scars. Work of Dr. Larry R. Kimball, ASU.





Charcoal Recovery, Identification, and Dating

Recovery and Identification

One of the primary objectives of the NRS work at the Williamson site was the recovery, identification, and dating of charcoal in the excavations. The sediment making up the Williamson site was observed to be literally "saturated" with charcoal. This presented extreme limitations in isolating charcoal which might be related to the Clovis occupation of the site.

The approach taken by NRS in the charcoal recovery and identification was: 1) on-site preferential selection and excavation of charcoal in association with burned artifacts and/or in cluster areas; 2) careful mapping and documentation of the selected charcoal clusters; 3) field recovery, storage, and shipment of the samples consistent with the recommendations of the radiocarbon dating laboratory; 4) laboratory identification of the charcoal by a well-qualified paleobotanist to eliminate obvious contaminants and aid in the selection of high-potential samples for dating; and, 5) a detailed final selection process for all candidates for dating which would assure that all areas of the excavation would be represented, and that a reasonable cross-section of plant species (wood types) known to exist in the Pleistocene-to-Holocene transition would be dated. Often the charcoal samples were processed in the laboratory from soil samples recovered in the field as a means of retaining the charcoal. Numbers were reassigned in the laboratory based upon the order in which the samples were processed, and the numbering sequence for samples from the same general location often is not consecutive.

Table 10.3 contains the charcoal identifications made over a period of approximately nine months, from October 1999 through July 2000, by paleobotanist Dr. Lucinda J. McWeeney, then at Harvard Forest. Dr. McWeeney's laboratory results (McWeeney 2000) are on file at the Portsmouth Regional Office of the Virginia Department of Historic Resources.

In Table 10.3, under the heading "Comments", both comments from field notes (in parenthesis), and comments from the laboratory analysis are presented where applicable. Samples are clearly indicated which were selected for carbon 14 dating.

Table 10.3: Williamson Site, 44DW1, Charcoal Sample Identification

CS #	Unit/ Level	Charcoal Analysis (Summation of the observations of Dr. Lucinda J. McWeeney, Harvard Forest) (Wood charcoal unless indicated otherwise)	Comments From field notes (-); or lab analysis (Field notes by NRS)
1	2D/2	1-oak/NCC	
2	2B/1	2-southern hard pine	(modern?)
3	2C/2	2-possibly oak root?/NCC	
4	2D/1	1-oak root?	
5	2B/2	2-southern hard pine	(modern?)
6	2A/2	1-possibly *Ostrya Carpinus*	modern
7	2A/2	1-oak root, very deteriorated	(possibly old?, near tool cluster)
8	3B/2	2-conifer	
9	3B/2	2-nut shell; 1-dicotyledon root	
10	3B/1	1-wood, NA	
11	3B/2	1-wood, NA	(modern?)
12	3C/2	1-wood, NA	
13	6C/1	1-Hop Hornbeam, *Ostrya virginiana*	(modern?)
14	6D/1	1-southern hard pine	(possibly old, hearth?)
15	6D/1	1-oak, cf. White Oak group	(possibly old, hearth?)

Table 10.3: Williamson Site, 44DW1, Charcoal Sample Identification

CS #	Unit/ Level	Charcoal Analysis (Summation of the observations of Dr. Lucinda J. McWeeney, Harvard Forest) (Wood charcoal unless indicated otherwise)	Comments From field notes (-); or lab analysis (Field notes by NRS)
16	6D/1	3-southern hard pine	(possibly old, hearth?)
17	6D/1	2-*Pinaceae*-conifer with resin canals	(possibly old, hearth?)
18	6D/1	1-cf. pine	(possibly old, hearth?)
19	6C/1	1-*Pinaceae* family	(modern?)
20	6C/1	1-southern hard pine	(modern?)
21	6A/1	2-ligninized, no ID	
22	7C/1	1-southern hard pine	(modern?)
23	7A/1	1-southern hard pine	(modern?)
24	7E/1	1-wood, NA	(modern?)
25	3A/3	1-hickory; 1-angiosperm; 4 cf. oak, NCC; 4 ligninized, no ID	
26	3A/3	1-wood, NA	
27	3A/3	numerous small pieces, wood, NA	
28	3B/1	1-southern hard pine (C14); 1-cf. hickory, 1-cf. oak; 2-angiosperm, NCC; 1-ligninized, no ID	1-southern hard pine C14 dated (1-southern hard pine recovered under an artifact, possibly old?)
29	3B/2	1-angiosperm, ligninized; 3-ligninized, no ID	
30	3B/2	1-hickory; 2-nut shell-like; 1-possible nut meat; 1-angiosperm; 1-no ID	
31	3B/2	1-conifer; 1-angiosperm; 1-possible nutlet; 3-ligninized, no ID	
32	3B/2	1-angiosperm; 1-cf. maple; 4-hickory; 1-hickory, NCC; 1-NCC, no ID; 1-oak, NCC	(modern?)
33	3C/>2	numerous large pieces, wood, NA	(modern?)
34	3C/2	Sample 1: 2-conifer; 2 conifer, pine family (C14), 2-angiosperm; 1-hickory; 1-oak. Sample 2: 1-cf. oak; 1-hickory; 3-angiosperm; 2-ring porous angiosperm. Sample 3: 1-hard pine; 2-oak; 1- hickory; 4-angiosperm; 2-ligninized, no ID.	4-conifer C14 dated (3 separate samples were recovered under a possible feature)
35	3C/1	3-oak; 1-angiosperm, NCC; 2-nut shell, no ID; 2-conifer; 1-*Pinaceae*, pine family	(possible hearth?)
36	3C/1	numerous medium/small pieces, wood, NA	(possible hearth?)
37	3D/1	numerous large pieces, wood, NA	(modern?)
38	2A/1	10-conifer; 2-southern hard pine; 2-angiosperm; 4-oak; 7-ligninized, no ID	
39	2A/1	1-possible oak, late wood; 2-angiosperm; 3-unknown; 9-ligninized, no ID	
40	2A/2	3-possibly oak; 5-ligninized, no ID	
41	2B/2	3-oak (C14); 1-Fagaceae; 8-ligninized, no ID	1-oak C14 dated
42	2C/1	1-angiosperm; 1-conifer, possibly hemlock(?); 6-oak; 15-ligninized, no ID	
43	2D/1	5-cf. oak, possibly root; 14-ligninized, no ID	
44	2D/2	2-fragments of secondary roots of herbaceous plant; 1-angiosperm; 2-hickory; 1-oak; 1-pine family (C14); 7-ligninized, possibly leaf galls(?); 18- ligninized, no ID	C14 dated, with the conifer sample from #45, recovered under possible pit hearth in level 1 of this unit
45	2D/2	1-conifer (C14), may be hard pine; 1-angiosperm; 3-oak; 1-possible acorn fragment	C14 dated: see #44 above, combined sample date
46	2D/2	1-oak, possibly root (C14)	1-oak C14 dated

Table 10.3: Williamson Site, 44DW1, Charcoal Sample Identification

CS #	Unit/ Level	**Charcoal Analysis** (Summation of the observations of Dr. Lucinda J. McWeeney, Harvard Forest) (Wood charcoal unless indicated otherwise)	**Comments** From field notes (-); or lab analysis (Field notes by NRS)
47	6A/1	wood and unknown charred material, NA	
48	6D/1	19-conifer, most show exploded fusiform rays, 1 possibly White Pine (C14)	1-possible White Pine C14 dated. White Pine would indicate a cooler climate(?)
49	6D/>1	wood and ligninized material, NA	
50	6C/1	ligninized material, NA	
50A	6C/1	charred fern spore, numerous; fern spore analyzed by Dr. Cheryl A. Holt	(pit feature) from a flotation sample
51	6C/2	numerous, very small wood fragments, NA	(recovered below the pit in 50A)
52	7C/2	5-oak; 1-*Pinaceae*-conifer with resin canals NCC; 1- aerenchyma or parenchyma, can't ID	(possibly modern?)
53	7B/1	wood, NA	(modern)
54	7C/1	wood and fern spore, wood NA, fern spore analyzed by Dr. Cheryl A. Holt	(wood, possibly modern?) fern spore from water screening
55	7A/1	wood, NA	(modern)
56	1A/1	1-angiosperm, ligninized	(possible feature?)
57	1A/1	2-conifer; 1-angiosperm; 1-possibly oak; 1-possibly nut shell, numerous small pieces of charred root	
58	1A/1	1-angiosperm	
59	3C/2	2-possibly *Carpinus caroliniana*; 1-*Juglandaceae*-walnut/hickory; 2-cf. hickory	(modern?)
60	2B/2	numerous small pieces of wood, NA	
61	2D/1	2-conifer (C14); 2-no ID; 1-cf. oak; 6-ligninized, no ID; 1-unknown	1-conifer C14 dated
62	7C/1	wood, NA	Modern ?, (recovered near artifact)
62A	7C/1	2-southern hard pine	Modern ?, (recovered near artifact)
63	6D/1	wood and ligninized material, NA	
64	6A/1	wood and fern spore, wood NA, fern spore analyzed by Dr. Cheryl A. Holt	(wood, possibly modern?) fern spore from water screening
65	6D/1	wood, NA	
66	6A/1	1-pine; 1-pine family; 1-southern hard pine; 1-unknown; 1-angiosperm, too ligninized to ID	(possibly modern?)
67	6D/1	wood, numerous small pieces, NA	

Symbols: NCC = not completely carbonized; NA = not analyzed; ID = identified; C14 = carbon 14 dated.
Note: One dated charcoal sample is not in this table as it was not recovered from an excavation, but recovered by a core sample from wetland in area 7 of the site.

Radiocarbon Dating

After identification the charcoal referenced from Table 10.3, which was selected for dating as described below in Table 10.4, was submitted to the Beta Analytic dating laboratory in Miami, Florida. All radiocarbon dating reports from Beta are on file at the Portsmouth Regional Office of the Virginia Department of Historic Resources.

The radiocarbon dates ranged from 370±40 rcbp to 19,080±120 rcbp. Although the charcoal ranged in geological age from modern to the late Pleistocene, at about the Last Glacial Maximum, no charcoal was identified as associated with the Clovis occupation of the Williamson site. Still there is no problem at the Williamson site with preservation of very old charcoal. Also, there

are significant findings from dating the natural charcoal, namely: 1) that White Pine possibly occurs on-site as late as AD 300 (1720±40 rcbp); and 2) that oak occurs as early as 16,000 BC (15,080±100 rcbp).

All of the radiocarbon dates reveal the extent of bioturbation in the deposit at the Williamson site. For example, in excavation area 2, unit 2D produced a total of three dates on charcoal from level 1 and level 2. The charcoal, which in each case was associated with debitage, produced dates of 4530±40, 6770±40, and 19,080±120. Interestingly, the earliest date was from charcoal in level 1 of the deposit, and the later two dates were from level 2. The latest date of 4530 seems to be from oak root which burned in a massive fashion underground throughout the deposit in excavation units 2C and 2D.

As related to dating the site, there are two areas of particular concern in all of the excavation areas: 1) the extremely large quantity of charcoal in the soil, and 2) the shallow deposit. Natural forest fires, as apparently occurred in units 2C and 2D, appear to have been frequent on the higher elevations of the Williamson site. Also, over the past 250 years clearing the land and burning off vegetation literally saturated the soil with charcoal. In many areas such as excavation areas 2 and 3 "pseudo-hearths" were produced which are composed of mixtures of natural charcoal and burned flakes. These resemble true hearths and confuse the archaeological record. These pseudo-hearths were created when natural forest fires or land clearing activities occurred and roots burned underground and thermally modified the debitage in the shallow deposits. Also, pine tree taproots appear to have burned out completely in some areas such as excavation area 3, and deep holes about one-foot in diameter were created into which debitage and burned soil collapsed. Where such natural fires burned thousands of years ago, they thermally cracked the chert debitage, which now has weathered, resulting in even more confusion when trying to identify anthropogenic features.

Any true Clovis hearth in excavation areas 2 or 3 will have been vertically transposed, or disturbed, by bioturbation processes over a likely depth of 4 to 8 inches, and the hearth contents may be mixed with some more recent charcoal. This is probably what happened in the case of charcoal sample 34 in Table 10.4, which was likely, a true Clovis hearth but produced an unacceptable date of 8570±60 on multiple small fragments of conifer charcoal. One small piece of more recent charcoal would contaminate the sample enough to produce erroneous results.

The likely diameter of a true Clovis hearth based upon the Clovis hearth recovered at Cactus Hill, and considering horizontal displacement from bioturbation, should be about 15 to 30 inches. While such a feature would require careful excavation and recovery techniques to differentiate charcoal possibly of different ages, there should be adequate charcoal in a large feature for several AMS dates. Given our present database, it is likely that the charred wood in a Clovis age hearth will be predominantly spruce, southern hard pine, or oak.

This research has revealed that the most likely place on the Williamson site to find a datable Clovis hearth is test location 2 on the western terrace of the graveyard field. As noted above, this area produced the two late Pleistocene radiocarbon dates in subsoil with artifacts covered by fine, sandy colluvium in the form of sheet wash from the hillside to the east.

Table. 10.4: Radiocarbon Dates from the Williamson Site, 44DW1

Excavation Area, Unit, Level, Charcoal Sample Number, and Feature.	C14 Date rcbp*/Lab #	Charcoal Type	Comments
Charcoal Sample #41, Table 10.3: Area 2, unit 2B, level 2, charcoal sample #41, south of Feature 2. Concentration of charcoal mixed with, and below, a flake cluster of Clovis-like debitage of Williamson chert and crystal quartz.	15,080±100; Beta-156563	Oak, single piece; heavily weathered and clay impreg.	This date is too early for the Paleoindian (Clovis) period, and no artifacts were present which would indicate a pre-Clovis cultural association. It was concluded that the charcoal resulted from a forest fire and was later mixed with the artifacts by bioturbation.
Charcoal Sample #61, Table 10.3: Area 2, unit 2D, level 1, charcoal sample #61, center of Feature 3. Concentration of charcoal mixed with a flake cluster of Clovis-like debitage of Williamson chert and crystal quartz.	19,080± 120; Beta-152796	Conifer, no further ID; single piece; heavily weathered and clay impreg.	This date is much too early for the Paleoindian (Clovis) period or the Cactus Hill pre-Clovis period. It was concluded that the charcoal resulted from a forest fire and was later mixed with the artifacts by bioturbation.
Charcoal Samples #44 and #45, Table 10.3: Area 2, unit 2D, level 2 at eastern edge of unit, adjacent charcoal samples #44 and #45 combined, center of Feature 3. Concentrations of charcoal below possible hearth-like charcoal scatter in level 1. Charcoal samples #44 and #45 possibly represent a pit-hearth bottom.	6770±40; Beta-148853	Conifer, no further ID; several very small frags.; weathered and stained	Units 2A through 2D produced a fragment of a Middle Archaic period projectile point and numerous quartzite flakes. The charcoal is possibly a pit-hearth bottom, from that period, which originated from a depth consistent with the current plow zone.
Charcoal Sample #46, Table 10.3: Area 2, unit 2D, level 2 at southeastern edge of unit, charcoal sample #46, center of Feature 3. This charcoal is typical of much recovered in units 2C and 2D.	4530±40; Beta-156564	Oak, likely the tree root; single piece; some staining	Much similar, possibly oak root charcoal was recovered in excavation area 2, units 2C and 2D. This charcoal, centered around feature 3, is all likely the result of a forest fire.
Charcoal Sample #28, Table 10.3: Area 3, unit 3B middle of unit, level 1, charcoal sample #28 (1UA), south edge of Feature 1. Charcoal under a large flake.	1260±40; Beta-143427	Southern hard pine; single piece; red clay stained	This date likely represents forest fire charcoal intermixed with artifacts by bioturbation processes.
Charcoal Sample #34, Table 10.3: Area 3, unit 3C, level 2 at southeastern edge of unit, charcoal sample #34 just below charcoal sample #35, south of Feature 2. This charcoal represented the best possibility for a hearth found during the excavation. Charcoal was intermixed with fire cracked and weathered Williamson chert flakes.	8570±60; Beta-150348	Conifer, no further ID; a number of very small pieces; heavily weathered and stained	This sample may represent a Clovis hearth later subjected to some degree of contamination with more recent charcoal, which was mixed through bioturbation; or, the sample may be no more than natural (forest fire) charcoal. No single lump of charcoal in the sample was large enough to date.
Charcoal Sample #48 Table 10.3: Area 6, unit 6D, level 1 in western part of unit, charcoal sample #48, just east of Feature 1 in unit 6C. Numerous small pieces of charcoal were recovered in a large water screened soil sample mixed with small Williamson chert trim flakes, some burned.	1720±40; Beta-148854	Conifer, possibly White Pine; single piece; clay impreg. but very solid	This date likely represents forest fire charcoal intermixed with trim flakes through bioturbation. If the identification as White Pine is correct, this may indicate a cooler climate just before AD 300.

Table. 10.4: Radiocarbon Dates from the Williamson Site, 44DW1

Excavation Area, Unit, Level, Charcoal Sample Number, and Feature.	C14 Date rcbp*/Lab #	Charcoal Type	Comments
Core sample 7-1, not listed in Table 10.3: Area 7, sample taken in the wetland 154' north of the area 7 excavation units from soil in core sample #7-1, at 48 inches below surface in a lens of gray clay between upper and lower wetland soils. The sample was recovered 30 inches below the seasonal water table. No artifacts were found in the core with the charcoal.	370±40; Beta-130622	Oak, several pieces about 1/4 inch size; no weathering or staining	This date likely represents the initial clearing of the land in the mid-18th century, with burning, and subsequent filling, of the low wetland area.

*rcbp = radiocarbon years before present

Analysis of Seed/Spore Samples

Charcoal samples number 50A, 54, and 64 were recovered by NRS through flotation, or water screening, of soil samples from the excavation unit and level indicated in Table 10.3 above. These were the only three charcoal samples which produced round, seed, or spore-like objects. The charred materials recovered from processing were submitted for analysis to paleobotanist Dr. Cheryl A. Holt, private consultant in Alexandria, Virginia. The samples submitted to Dr. Holt were identified as follows:

Sample 50A: a very large flotation sample from a shallow pit-like feature containing used flakes and a graver from excavation unit 6C, level 1, Feature 1. The carbonized material, containing some seed-like (carbonized) objects, was found with the lithic contents and may be from the Clovis period, or a result of bioturbation mixing of the charred material from massive burning of the forest ca. AD 1750 by the early European settlers.

Sample 54: a water-screened sample of carbonized material containing at least one charred seed-like object from damp soil directly under chisel-wedges and wedge spalls in wetland soil at test location #7, excavation unit 7C, Level 1.

Sample 64: a large water-screened sample from a flake cluster in excavation unit 6A, level 1. This sample was collected about 8 feet south of sample 50A, and it had the same type of charred seed-like objects.

Dr. Holt's report of March 8, 2000, revealed that the round seed or spore-like objects were: "...charred fern macrospores in all three samples. They were the most plentiful in Sample 50A. Ethnographically there is evidence for use of the leaves, and tuberous rootstock for food, medicine and lining for storage pits. Fern was also prominent at Cactus Hill (Archaic area D of the site)." Dr. Holt also mentioned that a high frequency of fern had been detected previously at an Archaic period site (Indian Creek V) on the Coastal Plain of Maryland, and that this and other work supported the argument that charred fern macrospores are cultural manifestations.

In addition to the fern spore, one charred clover seed, the only other potentially utilized specimen, was detected in sample 50A. Small flecks of charcoal were detected as well in all three samples according to Dr. Holt's analysis. Dr. Holt's complete report (Holt 2000) is on file at the Portsmouth Regional Office of the Virginia Department of Historic Resources.

Pollen Analysis

A total of five soil samples from excavation areas 2 and 3 on the Williamson site were recovered by NRS and were submitted to Dr. Grace S. Brush, Johns Hopkins University, to be evaluated for pollen. These samples were identified as follows:

Sample 1, Williamson test location #3, unit 3B: a plowzone control sample containing soil from the modern surface to approximately 13-inch depth.

Sample 2, Williamson test location #3, unit 3B: a subsurface soil sample from a possible Clovis living surface at depth of 17 inches below the modern surface.

Sample 3, Williamson test location #2, unit 2A: a plowzone control sample containing soil from the modern surface to approximately 12-inch depth.

Sample 4, Williamson test location #2, unit 2A: a subsurface soil sample from a possible Clovis living surface from a depth of 18 inches below the modern surface.

Sample 5, Williamson test location #2: a subsurface sample from soil/weathering products tightly adhering to the underside of the tip of a large Clovis point recovered in a flat position, *in situ,* in excavation unit 2B, level 2, Feature 2, 15.50 inches below the modern surface and 17.50 inches depth by line level below the excavation area 2 datum.

Dr. Brush responded by letter report of February 7, 2000 that: "I have processed the 5 samples which you submitted from the Williamson Clovis site. There are no pollen grains or spores in any of the samples, except for one pine grain in the sample from site 5. The samples are very sandy, and pollen grains are generally not preserved in that material, but we usually are able to retrieve a few grains." Dr. Brush's letter report (Brush 2000) is on file at the Portsmouth Regional Office of the Virginia Department of Historic Resources.

As a follow-up to the letter, Dr. Brush indicated by phone on February 14, 2000 (Grace Brush, personal communication, 2000), that the single pollen grain recovered in soil adhering to the underside of the Clovis point was an old grain, not a recently buried specimen, which probably originated from very close to the site although not necessarily directly at the site.

It is probable that the artifact was deposited in the soil directly over the pollen grain, which was protected from deterioration by the artifact. Unfortunately, single pollen grains are too small to carbon 14 date by the AMS technique with current technology. But, it is interesting that the Clovis Hearth, dating 10,920±250, from the Cactus Hill site 12 miles to the southeast of the Williamson site was composed of a southern hard pine charcoal (McAvoy and McAvoy 1997:169).

Phytolith Analysis

A total of four soil samples from excavation areas 2 and 3 on the Williamson site were recovered by NRS and submitted to Dr. Susan C. Mulholland, University of Minnesota, Duluth, to be evaluated for phytoliths by quick-scan analysis. The samples submitted to Dr. Mulholland were identified as follows:

Sample 1, from Williamson test location #2, unit 2A: a subsurface soil sample from a possible Clovis living surface at depth of 15 inches below the modern surface.

Sample 2, from Williamson test location #2, unit 2A: a plowzone control soil sample from the modern surface to approximately 12-inch depth.

Sample 3, from Williamson test location #3, unit 3B: a subsurface soil sample from a possible Clovis living surface at depth of 16 inches below the modern surface.

Sample 4, from Williamson test location #3, unit 3B: a plowzone control soil sample from the modern surface to approximately 13-inch depth.

Dr. Mulholland responded by report to NRS dated April 10, 2000, that: "The abundance of silica phytoliths was poor in both samples from the Clovis living surfaces (15 to 16 inches below surface). They yielded only rare to scattered phytoliths; most of the slides were lacking much plant material or charcoal. Neither sample

contained enough phytoliths for a basic scan. Both plowzone control samples had greater amounts of phytoliths, distributed in patches of common abundance. Both grass silica-bodies and other types of phytoliths were observed. Black particles were also more abundant, probably representing charcoal bits. These samples could be counted."

Dr. Mulholland also noted that in the Clovis living surface samples lesser numbers of grass phytoliths and dark particles (charcoal) were observed, but that they were there. Dr. Mulholland's entire report (Mulholland 2000) is on file at the Portsmouth Regional Office of the Virginia Department of Historic Resources.

CHAPTER 11

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Subsurface Integrity

Summary and Conclusions

The primary objective of this project was to determine if there remained subsurface (below plowzone) integrity and thus research potential in threatened areas of the Williamson site. Based upon the previous chapters concerning the shovel tests, core samples, and 100-square-foot excavations, artifacts of the Clovis Tradition are clearly preserved below the plowzone in some areas of the site through burial by bioturbation, and/or sandy colluvium (hillside slope wash).

Such preservation of artifact bearing subsurface deposits is indicated directly in fig. 11.1. This figure, based upon data presented in previous chapters, shows total numbers of artifacts from the plowzone and below the plowzone for each of the major excavation areas. The heavily utilized excavation areas 2, 3, and 6 of the site are seen to produce approximately 250 to 950 artifacts below the plowzone per 100 square feet. The quantity from excavation area 6 was minimal due to deep plowing the shallow deposit and subsequent artifact collecting. In contrast to the heavily utilized areas of the site, lightly used task-specific area 7 produced 300 artifacts below plowzone in a little more than 100 square feet. However, the recovery of even 300 artifacts was a result of light agricultural use and shallow plowing in this area. By contrast, the plowzone produced only 80 artifacts.

By comparing the total quantity of tools verses total artifacts recovered (figs. 11.1, 11.2 and 11.3) it can be shown that low artifact counts such as in areas 6 and 7 do not necessarily reflect low research potentials. This is because 50% or more of the tools recovered in each of these excavation units was below the plowzone, which allowed a comparison of plowzone and below plowzone artifacts. As presented in Chapter 8 for area 6, and Chapter 9 for area 7, this comparison of artifacts from the two zones showed similar typology. Such a finding suggests that conclusions as to specific tasks, based upon remaining subsurface deposits, are reasonably accurate.

Many of the areas on the Williamson site retaining at least some subsurface deposit integrity are at peripheral locations in the cultivated fields. Generally, the locations shown in the figures are: 1) where cultivation of the land has been infrequent such as the low-elevation edges of wetland areas (area 7); 2) where the plow did not cut as deeply, such as turn-arounds at the end or edge of a field (area 3); 3) where slope wash resulted in a thick accumulation of colluvium, protecting the deposit at the edge of a field or on a terrace below a hillside (area 2); and 4) where there previously was a roadbed, hedgerow or some other feature which protected the location in recent time from the use of deeper penetrating, modern agricultural equipment (possibly area 6). At least two areas of the site with subsurface integrity were found to be extremely threatened (areas 6 and 7).

Recommendation

There is a need to modify the method of plowing over the entire Williamson site, but especially in the front field near excavation areas 6 and 7. Here the remaining deposit of archaeological material is very shallow and there is a great potential for damage or total loss. There is still time to save some of the threatened areas of importance on the Williamson site, but this will require a major change in current agricultural methods.

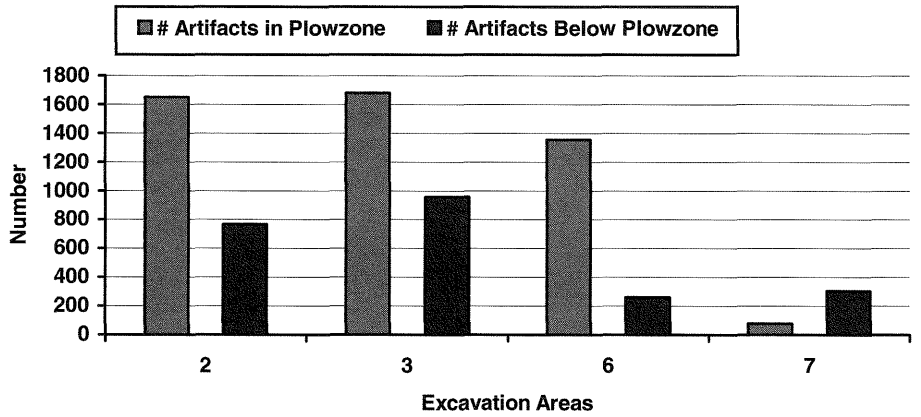


Figure 11.1. Total number of artifacts recovered in and below the plowzone for all major excavation areas on the Williamson site.

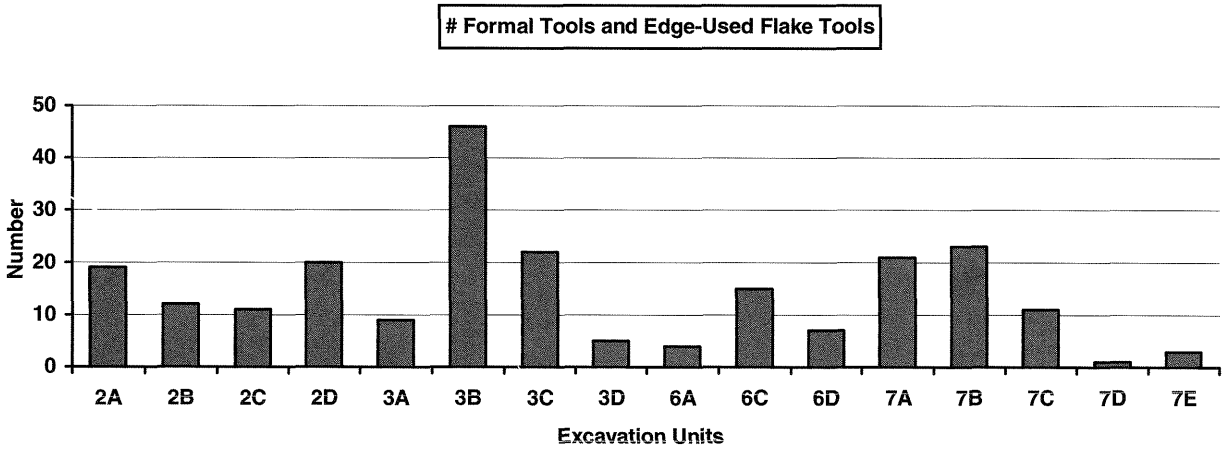


Figure 11.2. Total number of formal tools, and edge-used flake-tools recovered in and below the plowzone of each unit excavated during the NRS Williamson site project.

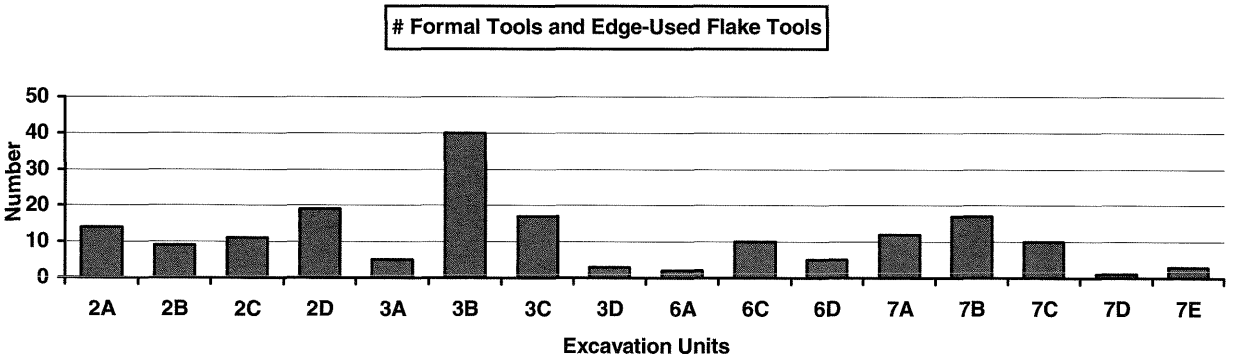


Figure 11.3. Number of formal tools, and edge-used flake-tools recovered below the plowzone in each excavation unit in the NRS Williamson site project.

Cluster Data: Method of Site Use

Summary and Conclusions

One of the most significant findings in the NRS evaluation of the Williamson site is that good remaining Clovis period cluster data can be derived from the deposits. As shown in chapters 6 through 9, the artifacts recovered during this investigation represent a large variety of tool types leading to the conclusion that there is high research potential in select remaining deposits in threatened areas. Based upon this observation, it is concluded that the remaining deposits are sufficient to determine how the Clovis people used each area of the site.

Figures 11.2 and 11.3 were constructed to show the quantity of certain tools recovered in and below the plowzone for each unit excavated. There is significant variability in formal tool production from unit-to-unit even in the same excavation area as shown in figs. 11.2 and 11.3, where certain tool types are clearly clustered. These data support McCary's observed "hot spots" of tools on the site. An unexpected finding of this work is that there may be entire areas of the Williamson site where particular activities predominated.

From McCary's early 1970s excavations, the author's 1979 excavation, and Hill's early 1990s excavations, which were placed in the same general site area, it would appear that the areas near Little Cattail Creek were primary quarry locations. The closer one excavates to the creek on the north slope, the more rough quarry material and decortication debitage is recovered. The authors' excavation in 1979 directly adjacent to the creek produced an estimated 85% primary quarry debitage (Chapter 3). Hill suggested that up to 48% of the artifacts he recovered on the hilltop and north slope was "primary waste." However, like all of the Williamson site, this area also produces some heavily curated, task-specific tools suggesting some minor task overprinting.

Areas on the Williamson site removed from the north slope to the creek, such as back field south slope excavation areas 2, 3, and 6, produced only about 10% primary core flakes and decortication debitage (fig. 11.4). But, task-specific excavation area 7 produced even less at 3.6%. As shown in fig. 11.5, the use of chisel-wedges in task-specific area 7, which is reflected as well in the presence of bipolar spalls, was of primary importance. As discussed above, this observation is very significant given the low overall number of artifacts produced in excavation area 7 compared to the other three excavation areas.

On a finer scale than excavation area 7, areas where certain tasks were important although perhaps not of singular importance can be identified by comparison of certain artifact types and technology traits as shown in figs. 11.6, 11.7, and 11.8. If we examine the number of biface reduction flakes recovered as a percentage of the total artifact production in all major excavation areas (fig. 11.6) areas 2 and 6 produced the larger percentages, about 5.5% to 6%; and, areas 3 and 7 produced fewer biface reduction flakes at about 3.7% and 2.9% respectively. However, this same conclusion can be reached by examining only the trim or thinning flakes from each excavation area. From fig. 11.7 it is observed that excavation areas 2 and 6 produced almost equal percentages of thinning or trim flakes, about 30%, many probably associated with biface production. In contrast, for excavation area 3 only about 19% of the total artifacts were thinning or trim flakes, and for area 7 the amount was much lower at only 4%.

Lithic technology, as reflected in heavily prepared flake removal platforms, is viewed also as critical in judging use areas. Figure 11.8 shows that excavation area 2 differs significantly from area 7 in the activities requiring careful platform preparation. The percentages from areas 3 and 6 are similar and lower than area 2, but they are higher than seen in area 7. The prepared platform percentages closely mirror the percentages of biface reduction flakes, and the

trim or thinning flakes by area. In support of this analysis, more highly curated tools such as end scrapers, discard stage fluted points, and unfinished points have been recovered (historically) in the backfield at, and south of, the ridge top excavation areas 2 and 3, and in the front field within the high 180-foot-elevation contour, e.g., area 6.

Thus, differences in the activities of the Clovis people on the Williamson site can be interpreted in the remaining below plowzone lithic assemblages. From this work, it also would be concluded that certain use areas were based not only upon resource location, but to a degree upon topography. Areas selected for activities based upon topography, such as the graveyard field on the south slope at clusters of flakes, tools, and projectile points, appear to have good southern exposures and north windbreaks. The eastern and western terrace locations in the graveyard field that were investigated during this work both have some protection from a north wind.

In the front fields, areas of very heavy concentrations of projectile points, various tool types, and flake clusters are on the ridge centerline away from the high hilltop over the creek. Again the selection of this area appears to be based in part upon a favorable topography offering a good southern exposure and a windbreak to the north.

Recommendation

It is recommended that future research on the Williamson site consider and explore the significance of artifact clustering. This should be based not only upon likely resource locations such as the primary quarry areas and the wetlands, but also upon topography. Areas of topographic interest are especially locations offering southern exposures behind ridges which are good windbreaks. The backfield terraces are good locations to conduct such studies.

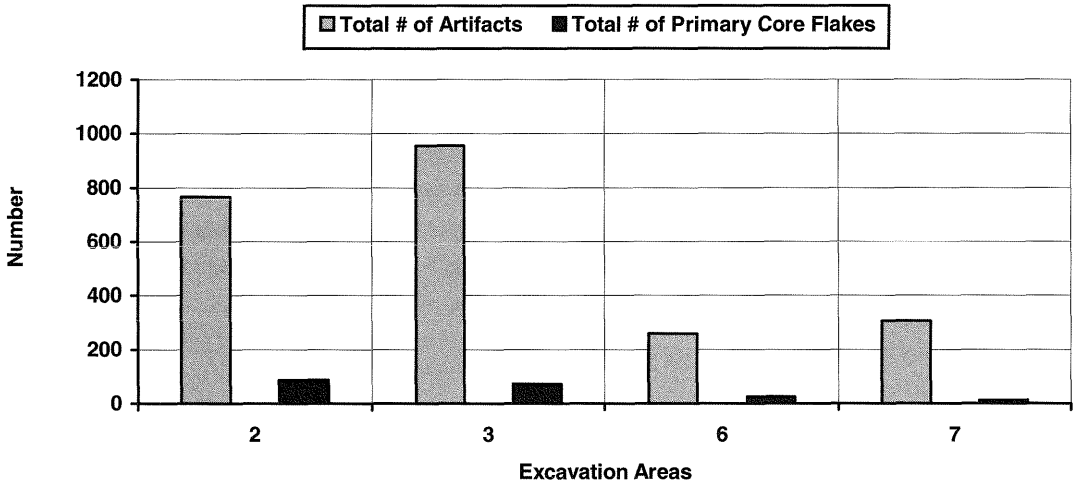


Figure 11.4. Number of primary core flakes and flakes with significant cortex, compared to total number of artifacts in each excavation area, recovered below plowzone.

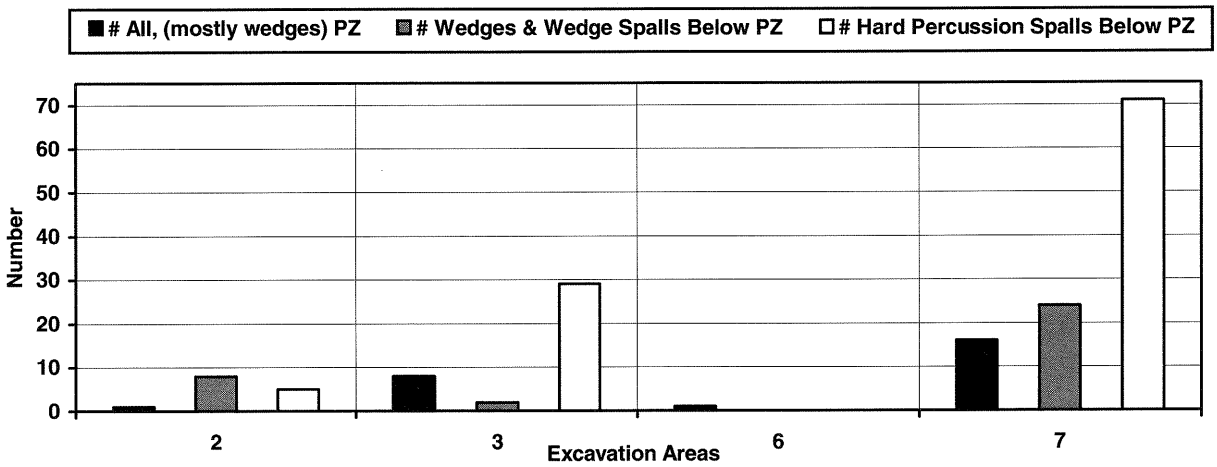


Figure 11.5 . Number of wedges, wedge spalls, and hard percussion spalls found in each excavation area.

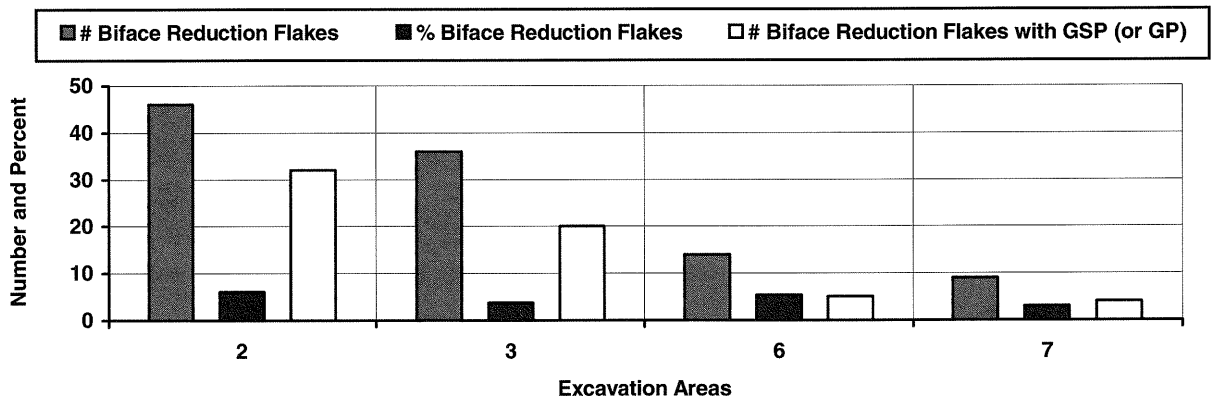


Figure 11.6. Number of biface reduction flakes (F/BR), and F/BR as a percentage of the total artifacts from the area, compared with the number of biface reduction flakes with ground striking platforms (GSP) in each excavation area, all recovered below the plowzone.

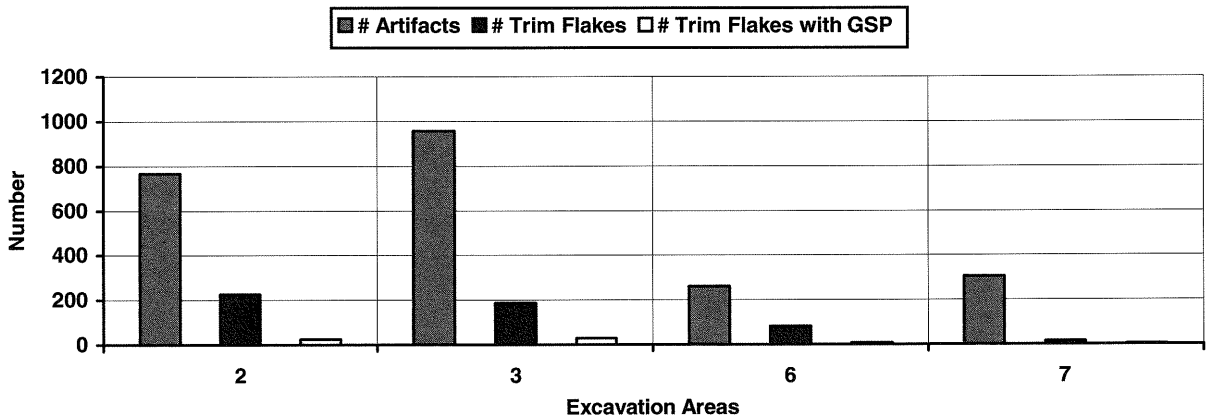


Figure 11.7. Total number of artifacts compared with number of thinning or trim flakes, and number of such artifacts with ground striking platforms (GSP), recovered below plowzone in each excavation area.

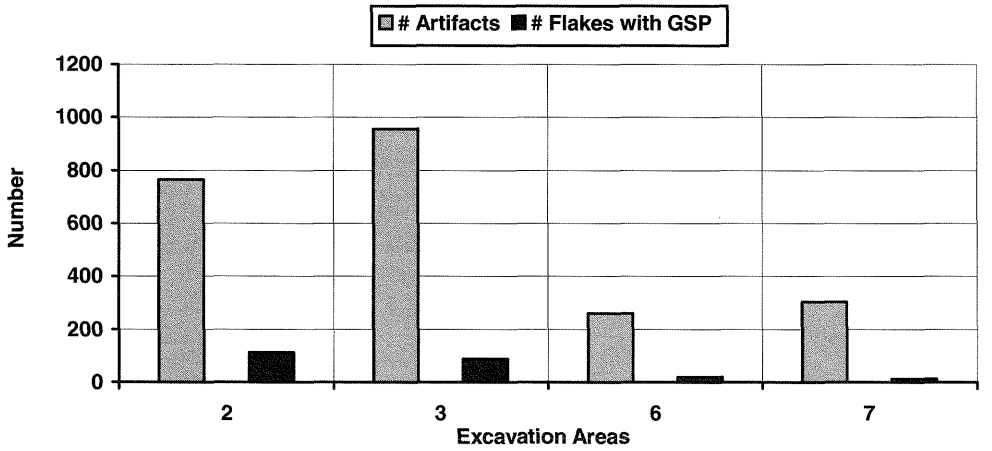


Figure 11.8. Number of flakes with ground striking platforms (GSP) compared with total number of artifacts recovered below plowzone from each excavation area.

Dating the Site

Summary and Conclusions

Thirty years ago, C. Vance Haynes made an unsuccessful attempt to date the Clovis period use of the Williamson site (Haynes 1972:109). A great deal of effort was put into the current attempts by NRS to date the site by the AMS technique. Charcoal clusters were carefully excavated, individual charcoal fragments were identified as to wood species, and eight samples were dated by Beta Analytic. No dates representing the Clovis period were obtained.

The major problem that was encountered in the current attempt to date the Williamson site was the extremely large quantity of charcoal in the soil combined with the shallow deposit. Natural forest fires appear to have been a persistent problem on the higher locations at the 180-foot contour. Also, over the past 250 years clearing the land and burning off vegetation as well as ash and charcoal from habitation have created locations on site literally saturated with charcoal.

In many areas there are "pseudo-hearths" composed of mixtures of such charcoal and burned flakes which resemble true hearths and confuse the archaeological record. These pseudo-hearths were created when the natural forest fires or land clearing activities occurred and roots burned underground and thermally modified the debitage in the shallow deposits. Where natural fires burned thousands of years ago, they thermally modified and cracked the chert debitage, which now has weathered, resulting in even more confusion when trying to identify anthropogenic features.

Taken in total the research potential for dating the site might appear poor, but two dates from one area of the site do suggest some hope. On the western terrace of the back field a single lump of oak charcoal, and a single lump of conifer charcoal, were recovered under a foot of colluvial, fine sandy loam in excavation area 2. These charcoal lumps produced late Pleistocene dates of ca. 15,000 and 19,000 rcbp respectively (Chapter 10). Therefore, there is no problem in this area of the Williamson site with preservation of very old charcoal. The problem is that less than 150 square feet were excavated which was not enough area to clearly expose an unquestionable hearth feature in this part of the site.

It is concluded that there likely are some hearths near excavation area 2, but it is probable that any hearth will have been vertically transposed, or disturbed, over a depth of 4 to 8 inches and perhaps mixed with some more recent charcoal. The likely diameter of such a feature,

based upon the Cactus Hill Clovis hearth, and considering horizontal displacement from bioturbation would be about 15 to 30 inches. While such a feature will require careful excavation and recovery techniques, using the services of a paleobotanist to differentiate charcoal possibly of different ages, there should be adequate charcoal in a large feature for several AMS dates. Given our present database, it is likely that the charred wood in a Clovis age hearth will be predominantly spruce, southern hard pine, or oak.

Recommendation

Future research should incorporate further attempts at radiocarbon dating the site. In future research work where dating is the objective, it would likely be most successful near excavation area 2 in the back field on the western terrace. However, based upon this work the excavation of 500 square feet or more may be required to locate a good candidate hearth.

Archaic Period Site Use

Summary and Conclusions

Several hundred diagnostic Archaic period and Woodland period artifacts have been recovered upon the Williamson site over the past 50 years, and McCary (1978:59) reported upon 149 he had recovered. The authors have located sites of post-Clovis age all along both sides of the Little Cattail Creek (Chapter 3). In the extended area of the Williamson site, most of the Archaic age artifacts have been found on the Ampy Farm and the old Lewis Farm to the east of the Williamson Farm. From the NRS work on the old Lewis Farm it was determined that Archaic period use areas along Little Cattail Creek were small and often isolated with predominately one projectile point type found in a particular artifact cluster. Generally these areas were restricted to the higher knoll tops over the creek and small tributary spring drainages.

Only the Morrow Mountain I and Perkiomen people made significant use of the chert (Chapter 3), but a few Palmer, Kirk Serrated, and Savannah River points are known of Williamson chert from the site area. During this work on the Williamson site only a single fragment of an Archaic period point was recovered below the plowzone in an excavation. However, flakes of white quartz and quartzite, often associated with the Archaic period, were recovered in small numbers in each excavation area (figs. 11.9 and 11.10). These figures, indicating the presence of 2% to 3% white quartz and quartzite debitage, suggest some minor Archaic period use in the back field over the creek in excavation areas 2 and 3.

Any significant Archaic period use of front field areas 6 and 7 seems much less likely, and in fact in task-specific excavation area 7 some Clovis age use of white quartz and quartzite, about 1.5%, was documented. Archaic period artifact contamination of the archaeological deposits in major use areas of the Williamson site was determined not to be a serious problem.

Recommendation

Future research work need not be curtailed for concern over major contamination problems from Archaic period use in most areas of the Williamson site. There are areas of such use, but they should be detectable based upon larger quantities of white quartz and quartzite debitage, or use areas where all of the chert debitage has a glossy, thermally altered (heat treated) appearance with little weathering. Some small amount of white quartz, quartzite, and metavolcanic materials should be expected at the Williamson site associated with Clovis use. Also, there will be excavations which produce large amounts of crystal quartz debitage which is foreign to this site and clearly of Clovis age.

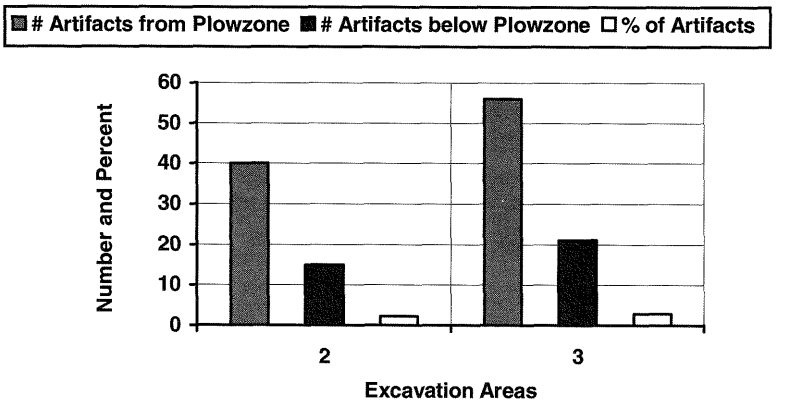


Figure 11.9. Number of artifacts not of Williamson chert (or crystal quartz from Area 2) in plowzone and below plowzone in excavation areas 2 and 3; also, total percentage of these artifacts from these excavation areas.

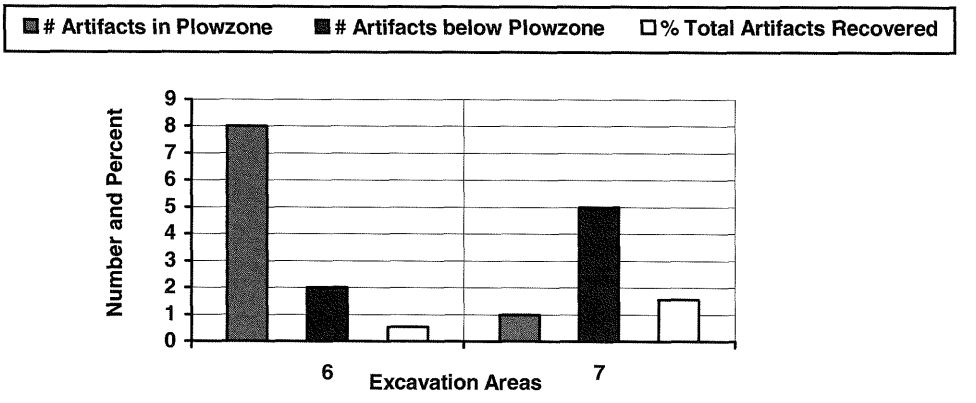


Figure 11.10. Number of artifacts not of Williamson chert in plowzone and below plowzone in excavation areas 6 and 7; also, total percentage of these artifacts from these excavation areas.

Excavations in the Wetland

Summary and Conclusions

Excavation area 7 clearly has shown the research potential of work in the front field wetland. This was the general area in which Haynes placed his Trench A in 1965 (Chapter 2) because of his feeling that there could be preservation here of artifacts and animal bones. Haynes' early work, and the analysis of Keeler and Constanzer presented in Chapter 2, suggests a high potential for locations where at least lithic artifact clusters may be preserved in once deeper areas now under the perched wetland. There may be some potential for bone preservation, but deep and very extensive trenching probably would be required to resolve this possibility.

The excavation area 7 wedge cluster strongly suggests a Clovis age kill site very close to that spot, and this is further confirmed by Kimball's wear analysis of the chisel-wedges, all of which show bone wear. McCary (1975:52) shows two concentrations of end scrapers on terraces just to the west of the location 7 wedge cluster (figure 4.1). This might further indicate activities associated with processing animal products near a kill site.

Recommendation

The front field wetland has a very high research potential and should be placed high in the order of areas on the Williamson site to be

preserved and investigated in the future. The agricultural activity in this area must cease as soon as possible, before the shallow deposits of cultural material are completely destroyed.

Wear Analysis

Summary and Conclusions

One of the most promising, high-potential research tools identified during the current study is wear analysis. Kimball commented on the excellent preservation of the wear traces on the Williamson chert artifacts when involved in that phase of this investigation (Larry Kimball, personal communication, 2000). This form of analysis is especially attractive at cluster locations where there is good evidence of localized area task-specific activity. The chisel-wedge cluster wear data from five artifacts, from excavation area 7, is a very good example of the information which may be derived from such an analysis.

Recommendations

Many tool types within the Paleoindian tool kit never have been analyzed for wear, and it is recommended that other items from this collection of artifacts be submitted for wear analysis. Several techniques exist for such analysis, and Dr. Kimball's methods and results could be supplemented by a data set on similar tools from one or more other researchers using different techniques. But, the artifacts used should come from an excavated, undisturbed context. Wear analysis should be part of any future research at the Williamson site.

The Clovis Tool Kit

Summary and Conclusions

The very careful examination of the debitage recovered in this research revealed the presence of "snapped-flake" or bend break tool types not previously recognized on the Williamson site, and confirmed the use of large numbers of unmodified flakes as simple cutting tools.

Over the years, the primary interest in the Clovis tool kit rightfully has been in the easy to recognize, highly curated, delicately made formal tools such as fluted points, end scrapers, side scrapers, perforators, and large bifaces. But, this study has shown that the most common tools are simple, unmodified edge-used flakes, flakes with multiple, intentional bend breaks, and percussion cutters or chisel-wedges. The latter are created simply by battering a sharp flake or "blank" with the correct starting dimensions. Excavation area 2, for example, produced 40 items in the above three categories but only two fluted point fragments, one end scraper, and four edge-worked flakes. The Clovis age feature in excavation area 6 produced only one curated tool, a graver, but at least 10 edge-used flakes and a burin/chisel-wedge all with edge damage which can be analyzed through wear analysis.

In this research seven chisel-wedges and three edge-used flakes were analyzed for wear as presented in Table 10.2. Each chisel-wedge showed the same type of wear, and each edge-used flake showed a different type of wear and revealed a different site activity. Thus, the research potential through recovery of these common tools appears to be unlimited.

Recommendation

It is recommended that future excavations on this site take into consideration the research potential in common, simple flake tools and chisel-wedges. Also, the two previous, extensive excavations conducted at the Williamson site, by McCary and Hill, probably resulted in collections of artifacts stored at universities which could be reanalyzed to reveal the number of such tools. Wear analysis of some of these items where the location of recovery is well documented might be helpful.

Defining Research Potential in Unthreatened Areas

Summary and Conclusions

Based upon the information concerning past research presented in Chapter 3, any of the areas to north of the graveyard field, above the Little Cattail Creek and near the junction of the

Williamson Farm and the old Roy Ampy Farm have high research potential and are currently classified as "unthreatened." Of course, this classification could change at any time depending upon the future use of the property.

From the notes of McCary, and the field observations of NRS over many years, one unthreatened area with high research potential is in the wooded area south of the so-called "Little Cattail field," on the Ampy Farm and directly north of Thomas Ampy's home. McCary (Ben McCary, personal communication, 1971) noted a very heavy concentration of chert there, and he recovered a number of finished, highly curated tools such as end scrapers eroding on, and from the edge of, the farm road south of the field.

Also, there is a high potential for yet to be discovered areas in the outer boundary of the site, beyond McCary's boundary. Some wooded areas just south of the Little Cattail Creek on the A. D. "Buddy" Williamson Farm may have research potential as camps or kill sites.

Recommendation

It is recommended that as a future research project, a second evaluation of the general Williamson site area be undertaken to systematically shovel test areas in the woods south of Little Cattail Creek. Such tests should be conducted on the old Roy Ampy Farm property, the Thomas Ampy Farm property, and the Buddy Williamson Farm property. Along with the current analysis, this second phase will define the extent of high-density artifact areas representing high research potential in "unthreatened" wooded areas of the site.

References Cited

Benthall, Joseph L., and Ben C. McCary

1973 The Williamson Site: A New Approach. *Archaeology of Eastern North America* 1(1):127-132.

Brush, Grace S.

2000 Letter report, February 7 [analysis of the Williamson site soil samples for pollen]. Submitted to Nottoway River Survey - Archaeological Research, Sandston, Virginia; letter on file at the Virginia Department of Historic Resources, Portsmouth Regional Office, Portsmouth, Virginia.

Collins, M. B.

1999 *Clovis Blade Technology*. University of Texas Press, Austin.

Dent, Richard J.

1995 *Chesapeake Prehistory*: Old Traditions, New Directions. Plenum Press, New York.

Frison, George C., and Bruce A. Bradley

1980 *Folsom Tools and Technology at the Hanson Site, Wyoming*. University of New Mexico Press, Albuquerque.

Fogelman, Gary L.

1986 *Shoop: Pennsylvania's Famous Paleo Site: A Popular Version*. Fogelman Publishing Company, Bloomsburg, Pennsylvania.

Goodyear, Albert C.

1974 *The Brand Site: A Techno-Functional Study of a Dalton Site in Northeast Arkansas.* Arkansas Archaeological Survey Research Series No. 7. Arkansas Archaeological Survey, Fayetteville.

Haynes, C. Vance

1972 Stratigraphic Investigations at the Williamson Site, Virginia. *The Chesopiean: A Journal of North American Archaeology* 10(4): 107-114.

Hill, Phillip J.

1997 The Williamson Site: An Interpretation of the Lithic Technology Employed at a Paleoindian/Early Archaic Site in Dinwiddie County, Virginia. *Journal of Middle Atlantic Archaeology* 13: 105-124.

Holt, Cheryl A.

2000 *Floral Analysis of the Williamson Site, 44DW1*. Submitted to Nottoway River Survey - Archaeological Research, Sandston, Virginia; manuscript on file at the Virginia Department of Historic Resources, Portsmouth Regional Office, Portsmouth, Virginia.

Keeler, Mike O., and Peter P. Constanzer

1999 *Wetland Investigation at Test Location Number 7 on the Williamson Site.* Submitted to Nottoway River Survey - Archaeological Research, Sandston, Virginia; manuscript on file at the Virginia Department of Historic Resources, Portsmouth Regional Office, Portsmouth, Virginia.

Kimball, Larry R.

2000 Letter report, May 31 [laboratory notes and photomicrographs of wear traces on 20 Williamson site Clovis tools]. Submitted to Nottoway River Survey - Archaeological Research, Sandston,

Virginia; summary, notes and photomicrographs on file at the Virginia Department of Historic Resources, Portsmouth Regional Office, Portsmouth, Virginia.

McAvoy, J. M.

1992 *Nottoway River Survey, Part I: Clovis Settlement Patterns: The 30 year Study of a Late Ice Age Hunting Culture on the Interior Coastal Plain of Virginia.* Archeological Society of Virginia Special Publication Number 28. Dietz Press, Richmond.

McAvoy, J. M., and Lynn D. McAvoy

1997 *Archaeological Investigations of Site 44SX202, Cactus Hill, Sussex County, Virginia.* Virginia Department of Historic Resources, Research Report Series No. 8, Richmond.

McCary, Ben C.

1947 Survey and Study of Folsom-Like Points found in Virginia [Nos. 1-131]. *Quarterly Bulletin of the Archeological Society of Virginia* 2(1):4-34.

1949 Survey of Virginia Folsom Points, Nos. 142-161. *Quarterly Bulletin of the Archeological Society of Virginia* 4(1):13-15.

1951 A Workshop Site of Early Man in Dinwiddie County, Virginia. *American Antiquity* 17(1):9-17.

1954 Survey of Virginia Fluted Points, Nos. 226-231. *Quarterly Bulletin of the Archeological Society of Virginia* 8(3):14-16.

1963 Survey of Virginia Fluted Points, Nos. 294-314. *Quarterly Bulletin of the Archeological Society of Virginia* 18(2):25-29.

1965 Survey of Virginia Fluted Points, Nos. 315-347. *Quarterly Bulletin of the Archeological Society of Virginia 20*(2):53-60.

1975 The Williamson Paleo-Indian Site, Dinwiddie County, Virginia. *The Chesopiean: A Journal of North American Archaeology* 13(3-4):48-131

1976 Survey of Virginia Fluted Points, Nos. 469-507. *Quarterly Bulletin of the Archeological Society of Virginia* 30(4):169-185.

1979 Survey of Virginia Fluted Points, Nos. 508-536. *Quarterly Bulletin of the Archeological Society of Virginia* 33(3):98-108.

1981 Survey of Virginia Fluted Points, Nos. 604-640. *Quarterly Bulletin of the Archeological Society of Virginia* 35(4):186-199.

1983 The Paleo-Indian in Virginia. *Quarterly Bulletin of the Archeological Society of Virginia* 38(1):43-70.

McCary, Ben C., J. C. Smith, and C. E. Gilliam

1949 A Folsom Workshop on the Williamson Farm, Dinwiddie County, Virginia. *Quarterly Bulletin of the Archeological Society of Virginia* 4(2):1-9.

McCary, Ben C., and Glen R. Bittner

1978 Excavation at the Williamson Site, Dinwiddie County, Virginia. *Quarterly Bulletin of the Archeological Society of Virginia* 33(2):45-60.

McWeeney, Lucinda J.

2000 Letter report, June 1 [laboratory notes submitted as: Williamson Site, 44DW1, NRS Excavation Charcoal Recovery and Analysis Form]. Submitted to Nottoway River Survey - Archaeological Research, Sandston, Virginia; form on file at the Virginia Department of Historic Resources, Portsmouth Regional Office, Portsmouth, Virginia.

Mulholland, Susan C.

2000 *Quick-Scan Analysis of Phytoliths from Sediments, Williamson Site (44DW1), Dinwiddie County, Virginia.* Submitted to Nottoway River Survey - Archaeological Research, Sandston, Virginia; manuscript on file at the Virginia Department of Historic Resources, Portsmouth Regional Office, Portsmouth, Virginia.

Newman, Margaret E.

1999 *Immunological Analysis of Artifacts from the Williamson Clovis Site, 44DW1, Virginia.* Submitted to Nottoway River Survey - Archaeological Research, Sandston, Virginia; manuscript on file at the Virginia Department of Historic Resources, Portsmouth Regional Office, Portsmouth, Virginia.

Rader, E. K., and N. H. Evans, editors

1993 *Geologic Map of Virginia, and Expanded Explanation*: Virginia Division of Mineral Resources, Charlottesville.

Vepraskas, M. J.

1994 *Redoximorphic Features for Identifying Aquic Condition.* Technical Bulletin No. 301. North Carolina Agricultural Research Service at North Carolina State University, Raleigh.

Wilmsen, E. N., and F. H. H. Roberts Jr.

1978 *Lindenmeier, 1934-1974.* Smithsonian Contributions to Anthropology, No. 24. Smithsonian Institution Press, Washington.

Witthoft, John

1952 A Paleo-Indian Site in Eastern Pennsylvania: An Early Hunting Culture. *Proceedings of the American Philosophical Society* 96(4):464-495. Philadelphia.

Appendix A
NRS Williamson Site Investigation
44DW1
Plowzone Analysis
Excavation Areas 1, 2, 3, 6, and 7

Williamson Site, 44DW1, Excavation Area 1, Plow Zone Analysis

(Note: nothing was found below the plow zone in this unit. Some artifacts were recovered at the plow zone to level 1 interface, but are included in the plow zone totals due to plow strikes on one face of all of the artifacts)

Location and Pedology

Test Location: 1
Test Unit: 1A (5'X5' size)
Plow Zone Depth: 10.5"
Plow Zone Soil Type: Ap1, Dark grayish brown (10YR4/2) fine sandy loam; and, Ap2, grayish brown (10YR5/2) fine sandy loam.

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 80; Burned, (Total): 7 (minimum)
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 18; Burned, (Total): 2
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 3; Burned, (Total): 0

Quartzite Flakes/Shatter, (Total): 0; Burned, (Total): 0
White Quartz Flakes/Shatter, (Total): 1; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 1; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): 1; Burned, (Total): 1? (small, thin green flake)

Other Foreign Materials: none; Flakes/Shatter, (Total): 0

Formal Lithic Artifacts (Total):

1) 1 Williamson chert edge-worked flake
2) 1 large sandstone abrader (?), hit by plow and marked by plow strikes
3) 1 Williamson chert end scraper (found in shovel test 1/12 in the center of the area of this excavation at the level 1 interface)
4) 1 Williamson chert chisel-wedge

Fire-Cracked Rock, (Total) :

2 very small pieces

18th-, 19th-, and 20th-Century Artifacts, (Total):

1) 2 small solarized bottle glass fragments
2) 1 small piece of thin greenish window glass
3) 1 iron nail, unknown technology
4) 1 small red brick fragment
5) 2 very small white ware sherds (>1820?)
6) 1 flat iron fragment

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): none retained
Irregular Rock Fragments, (Total): 1 piece greenstone-like fragment (stone hammer fragment?)
Others, (Total): 2 pieces red paint stone, iron ore burned red

Williamson Site, 44DW1, Excavation Area 2, Plow Zone Analysis

Location and Pedology

Test Location: 2
Test Unit: 2A (5'X5' size)
Plow Zone Depth: 13" to 14"
Plow Zone Soil Type: Ap1, Dark grayish brown (10YR4/2) fine sandy loam; Ap2, pale brown (10YR6/3) fine sandy loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 218; Burned, (Total): 15
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 26; Burned, (Total): 1?
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 3; Burned, (Total): 0

Quartzite Flakes/Shatter, (Total): 2; Burned, (Total): 0
White Quartz Flakes/Shatter, (Total): 2; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 6; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): 0; Burned, (Total): 0

Other Foreign Materials: none; Flakes/Shatter, (Total): 0

Formal Lithic Artifacts (Total):

1) Biface fragments, 4 small pieces, 1 large piece: all Williamson chert, Clovis-like
Others, (Total): 1 light green metavolcanic Middle Archaic point tip (Morrow Mt. I or II?)

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

1) 2 wire nail fragments
2) 1 blue transfer printed white ware shard
3) 1 green glass wine bottle fragment
4) 1 piece of coal - very small

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): 351 grams (sample only)
Irregular Rock Fragments, (Total): 141 grams (sample only)
Others, (Total): 2 schist fragments

Williamson Site, 44DW1, Excavation Area 2, Plow Zone Analysis

Location and Pedology

Test Location: 2
Test Unit: 2B (5'X5' size)
Plow Zone Depth: 13" to 14"
Plow Zone Soil Type: Ap1, Dark grayish brown (10YR4/2) fine sandy loam; Ap2, pale brown (10YR6/3) fine sandy loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 256; Burned, (Total): 13 minimum
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 46; Burned, (Total): 4 minimum
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 3; Burned, (Total): 0

Quartzite Flakes/Shatter, (Total): 3; Burned, (Total): 1?
White Quartz Flakes/Shatter, (Total): 1; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 14; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): 0; Burned, (Total): 0

Other Foreign Materials: silicified wood; Flakes/Shatter, (Total): 1

Formal Lithic Artifacts (Total):

1) 1 wedge, Williamson chert
2) 1 side scraper fragment, quartzite
3) 1 biface or bifacial core?, 71 by 31 by 17 mm, Williamson chert

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

1) 2 window glass fragments
2) 2 iron nail fragments
3) 1 small flat iron fragment
4) 1 blue transfer printed whiteware rim shard (>1820?)

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): 597 grams (sample only)
Irregular Rock Fragments, (Total): 4 fragments (sample only)

Williamson Site, 44DW1, Excavation Area 2, Plow Zone Analysis

Location and Pedology

Test Location: 2
Test Unit: 2C (5'X5' size)
Plow Zone Depth: 8" to 10.5"
Plow Zone Soil Type: Ap1, Dark grayish brown (10YR4/2) fine sandy loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 236; Burned, (Total): 23 minimum
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 54; Burned, (Total): 9
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 10; Burned, (Total): 0

Quartzite Flakes/Shatter, (Total): 6; Burned, (Total): 0
White Quartz Flakes/Shatter, (Total): 0; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 18; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): 0; Burned, (Total): 0

Other Foreign Materials: none; Flakes/Shatter, (Total): 0

Formal Lithic Artifacts (Total):

None

Fire-Cracked Rock, (Total):

1 small fragment

18th-, 19th-, and 20th-Century Artifacts, (Total):

1) 8 small red brick fragments
2) 2 motar fragments
3) 1 black-glazed redware shard (1600's through 20th century)
4) 2 iron nail fragments
5) 1 small chunk of rust
6) 1 window glass fragment
7) 1 whiteware/ironstone mug rim shard (>1820?)
8) 2 small flat iron fragments

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): 699 grams (sample only)
Irregular Rock Fragments, (Total): 4 fragments (sample only)
Others, (Total): sandstone-like or concretion? fragments (Total): 79 grams

Williamson Site, 44DW1, Excavation Area 2, Plow Zone Analysis

Location and Pedology

Test Location: 2
Test Unit: 2D (5'X5' size)
Plow Zone Depth: 7.5" to 9.5"
Plow Zone Soil Type: Ap1, Dark grayish brown (10YR4/2) fine sandy loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 616; Burned, (Total): 28 minimum
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 57; Burned, (Total): 9
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 6; Burned, (Total): 1

Quartzite Flakes/Shatter, (Total): 16; Burned, (Total): 3?
White Quartz Flakes/Shatter, (Total): 6; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 36; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): 0; Burned, (Total): 0

Other Foreign Materials: silicified wood; Flakes/Shatter, (Total): 1 (burned or heavily weathered?)

Formal Lithic Artifacts (Total):

1) 1 smoothing stone, 55 by 53 by 40 mm (fractured quartzite cobble - fractured surface used to abrade chert core edges?, Clovis age)

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

1) 2 small red brick fragments
2) 2 window glass fragments
3) 1 lead glass fragment, bottle?
4) 5 iron nail fragments
5) 1 small piece of slag
6) 2 flat iron pieces
7) 4 small whiteware(?) sherds, 1 burned
8) 1 very small kaolin pipe fragment
9) 1 brass lacing hook

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): 2,385 grams (all recovered)
Irregular Rock Fragments, (Total): 6 fragments (all recovered)
Others, (Total): 2 old (?) pieces of wood charcoal, possibly Clovis age

Williamson Site, 44DW1, Excavation Area 3, Plow Zone Analysis

Location and Pedology

Test Location: 3
Test Unit: 3A (5'X5' size)
Plow Zone Depth: to 14"
Plow Zone Soil Type: Ap1, Dark grayish brown (10YR4/2) fine sandy loam; Ap2, pale brown (10YR6/3) fine sandy loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 347; Burned, (Total): 42 minimum
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 57; Burned, (Total): 8 minimum
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 7; Burned, (Total): 0

Quartzite Flakes/Shatter, (Total): 6; Burned, (Total): 1
White Quartz Flakes/Shatter, (Total): 3; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 1; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): 1; Burned, (Total): 0 (very high quality translucent gray)

Other Foreign Materials: none; Flakes/Shatter, (Total): 0

Formal Lithic Artifacts (Total):

1) 1 very small wedge, Williamson chert
2) 1 bifacial core fragment, 72 by 45 by 23 mm, Williamson chert
3) 10 blade-flakes, and blade-like flakes, all Williamson chert
4) 1 jasper channel flake at level 1 interface
5) 1 wedge spall, Williamson chert

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

1) 7 small fragments of red brick
2) 3 hand painted pearlware sherds (>1795 to ca. 1820?)
3) 2 small chunks of coal
4) 2 flat iron fragments

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): 184 grams (sample)
Irregular Rock Fragments, (Total): 298 grams (sample)

Williamson Site, 44DW1, Excavation Area 3, Plow Zone Analysis

Location and Pedology

Test Location: 3
Test Unit: 3B (5'X5' size)
Plow Zone Depth: to 14"
Plow Zone Soil Type: Ap1, Dark grayish brown (10YR4/2) fine sandy loam; Ap2, pale brown (10YR6/3) fine sandy loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 445; Burned, (Total): 55 minimum
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 82; Burned, (Total): 10 minimum
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 7; Burned, (Total): 1 modern burned

Quartzite Flakes/Shatter, (Total): 13; Burned, (Total): 1
White Quartz Flakes/Shatter, (Total): 0; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 0; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): none; Burned, (Total): 0

Other Foreign Materials: shale; Flakes/Shatter, (Total): 1 (very small green flake)

Formal Lithic Artifacts (Total):

1) 1 small wedge or cutter, Williamson chert, 18 by 18 mm
2) 1 bifacial Clovis preform, broken, 70 by 40 by 18 mm, Williamson chert
3) 1 blade-flake, jasper-chert mixture, Williamson chert, broken
4) 1 snapped-flake tool, brown weathered Williamson jasper/chert, 41 by 21 by 5.5 mm
5) 1 wedge, white Williamson chert, 37 by 19 by 16 mm
6) 1 small heavily weathered jasper biface, 31 by 24, by 6 mm
7) 1 biface edge fragment, blue Williamson chert, 13 by 34 by 9 mm

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

1) 5 small fragments of red brick
2) 1 pearlware shard (>1795 to ca. 1820?)
3) 2 small chunks of coal
4) 1 clear glass fragment
5) 1 green wine bottle glass fragment
6) 1 partly carbonized wood chunk

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): 374 grams (sample)
Irregular Rock Fragments, (Total): 21 pieces (sample)

Williamson Site, 44DW1, Excavation Area 3, Plow Zone Analysis

Location and Pedology

Test Location: 3
Test Unit: 3C (5'X5' size)
Plow Zone Depth: to 14"
Plow Zone Soil Type: Ap1, Dark grayish brown (10YR4/2) fine sandy loam; Ap2, pale brown (10YR6/3) fine sandy loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 240; Burned, (Total): 21 minimum, possibly recently burned?
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 43; Burned, (Total): 9 minimum
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 7; Burned, (Total): 2

Quartzite Flakes/Shatter, (Total): 10; Burned, (Total): 4? (one very large quartzite flake for the Williamson site, 75 by 45 mm)
White Quartz Flakes/Shatter, (Total): 4; Burned, (Total): 1?
Quartz Crystal Flakes/Shatter, (Total): 0; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): none; Burned, (Total): 0

Other Foreign Materials: fibrous chert; Flakes/Shatter, (Total): 1 (Brunswick County quarry?)
Other Foreign Materials: waxy brown chalcedony; Flakes/Shatter, (Total): 1 (unknown quarry)

Formal Lithic Artifacts (Total):

1) 5 blade flakes, all Williamson chert, 22 to 46 mm in length
2) 1 biface reduction flake, blade-like flake, Williamson chert, brown and blue
3) 1 edge-worked flake, 38 by 23 by 5 mm, Williamson chert, tan and blue
4) 1 denticulate, brown Williamson chert, 45 by 22 by 16 mm
5) 1 biface fragment, burned, Williamson chert, pink and white, 35 by 33 by 11 mm
6) 3 hard percussion spalls from wedges?, Williamson chert
7) 1 green metavolcanic flake possibly used?, same material as the Clovis tip from Excavation 2B, 37 mm in length

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

1) 7 small fragments of red brick
2) 1 annular ware shard (>1795 to ca. 1820?)
3) 1 stoneware jug shard
4) 1 creamwear shard (>1754 to ca. 1815?)
5) 1 small iron fragment
6) 2 small whiteware(?) sherds, burned (>1820)

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): 220 grams (sample)
Irregular Rock Fragments, (Total): 14 pieces (sample)
Others, (Total): 1 piece of soapstone (talc), small green; 4 water-worn chert pebbles - Williamson chert, possibly from flakes exposed to the surface water/erosion

Williamson Site, 44DW1, Excavation Area 3, Plow Zone Analysis

Location and Pedology

Test Location: 3
Test Unit: 3D (5'X5' size)
Plow Zone Depth: to 14"
Plow Zone Soil Type: Ap1, Dark grayish brown (10YR4/2) fine sandy loam; Ap2, pale brown (10YR6/3) fine sandy loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 301; Burned, (Total): 32 minimum, possibly recently burned?
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 41; Burned, (Total): 7 minimum
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 9; Burned, (Total): 0?

Quartzite Flakes/Shatter, (Total): 8; Burned, (Total): 3
White Quartz Flakes/Shatter, (Total): 5; Burned, (Total): 2?
Quartz Crystal Flakes/Shatter, (Total): 0; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): none; Burned, (Total): 0

Other Foreign Materials: weathering amber chalcedony; Flakes/Shatter, (Total): 1

Formal Lithic Artifacts (Total):

1) 1 biface-like core fragment
2) 1 small wedge, Williamson chert
3) 2 blade flakes, Williamson chert, 24 and 33 mm in length
4) 1 channel flake, 19 by 12 by 1.5 mm, Williamson chert

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

1) 9 small fragments of red brick
2) 4 small whiteware(?) sherds (>1820)
3) 2 very small chunks of coal
4) 1 light green bottle glass fragment
5) 1 aquamarine bottle glass fragment
6) 4 nail fragments
7) 1 complete hand-wrought iron nail (before 1820)
8) 1 flat iron fragment

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): 528 grams (sample)
Irregular Rock Fragments, (Total): 17 pieces (sample)
Others, (Total): 6 water-worn chert pebbles (about 10 mm size)- Williamson chert, possibly from flakes exposed to the surface water/erosion

Williamson Site, 44DW1, Excavation Area 6, Plow Zone Analysis

Location and Pedology

Test Location: 6
Test Unit: 6A (5'X5' size)
Plow Zone Depth: 8.5"
Plow Zone Soil Type: Ap, Grayish brown (10YR4/2) fine sandy loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 354; Burned, (Total): 36 (Note: 12 separate cores were recognized from the flakes in this size range; this excavation unit was chosen as a control unit to estimate total number of different cores which could be recognized in a Williamson site 5' by 5' square)
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 57; Burned, (Total): 6
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 9; Burned, (Total): 0?

Quartzite Flakes/Shatter, (Total): 3; Burned, (Total): 0
White Quartz Flakes/Shatter, (Total): 0; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 0; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): none; Burned, (Total): 0

Other Foreign Materials: none; Flakes/Shatter, (Total): 0

Formal Lithic Artifacts (Total):

1) 1 Williamson chert wedge, 25 by 30 mm
2) 1 Williamson chert side scraper, broken, 33 by 27 mm (about 1/2 of the artifact length)

Fire-Cracked Rock, (Total):

One piece of burned metavolcanic rock, FCR?

18th-, 19th-, and 20th-Century Artifacts, (Total):

None

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): 114 grams (sample, estimated 1/50th of the total)
Irregular Rock Fragments, (Total): 71 grams (sample)
Others, (Total): Burned clay fragments

Williamson Site, 44DW1, Excavation Area 6, Plow Zone Analysis

Location and Pedology

Test Location: 6
Test Unit: 6B (12.5 square feet of the plow zone was excavated) Note: no material was retained below the plow zone from this unit
Plow Zone Depth: 8.5"
Plow Zone Soil Type: Ap, Grayish brown (10YR4/2) fine sandy loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 242; Burned, (Total): 22
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 24; Burned, (Total): 0
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 5; Burned, (Total): 2

Quartzite Flakes/Shatter, (Total): 0; Burned, (Total): 0
White Quartz Flakes/Shatter, (Total): 0; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 0; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): none; Burned, (Total): 0

Other Foreign Materials: none; Flakes/Shatter, (Total): 0

Formal Lithic Artifacts (Total):

None

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

1) 1 piece of modern glass bottle

Geological Materials:

None retained

Williamson Site, 44DW1, Excavation Area 6, Plow Zone Analysis

Location and Pedology

Test Location: 6
Test Unit: 6C (5'X5' size)
Plow Zone Depth: 8.5"
Plow Zone Soil Type: Ap, Grayish brown (10YR4/2) fine sandy loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 386; Burned, (Total): 25
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 58; Burned, (Total): 5
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 11; Burned, (Total): 0?

Quartzite Flakes/Shatter, (Total): 2; Burned, (Total): 1
White Quartz Flakes/Shatter, (Total): 2; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 0; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): none; Burned, (Total): 0

Other Foreign Materials: none; Flakes/Shatter, (Total): 0

Formal Lithic Artifacts (Total):

1) 1 small Williamson chert tool fragment, 12 mm
2) 1 small tool fragment, Williamson chert/jasper, 16 mm
3) 1 tool fragment, Williamson chert, white, 25 by 14 by 6.5 mm
4) 1 lancet, Williamson chert, brown and white, 25 by 12.5 by 5 mm
5) 1 biface fragment or bifacial core fragment, Williamson chert, 66 by 38 by 21 mm
6) 1 core blade, Williamson chert, yellow-white, 22 by 12 by 4.5 mm

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

None

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): 717 grams (sample)
Irregular Rock Fragments, (Total): 0 grams (none present)
Others, (Total): 3 burned clay fragments; 1 small fragment of iron stone (iron cemented gravel)

Williamson Site, 44DW1, Excavation Area 6, Plow Zone Analysis

Location and Pedology

Test Location: 6
Test Unit: 6D (23.5 square feet, with shovel test 6/6 included)
Plow Zone Depth: 8.5"
Plow Zone Soil Type: Ap, Grayish brown (10YR4/2) fine sandy loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 408; Burned, (Total): 40
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 41; Burned, (Total): 4
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 2; Burned, (Total): 0

Quartzite Flakes/Shatter, (Total): 0; Burned, (Total): 0
White Quartz Flakes/Shatter, (Total): 0; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 0; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): none; Burned, (Total): 0

Other Foreign Materials: fine grained layered quartzite "near chert"; Flakes/Shatter, (Total): 1

Formal Lithic Artifacts (Total):

1) 1 white Williamson chert, awl-like tool
2) 1 limace, Williamson chert, brown, recovered in shovel test 6/6 touching the northeast part of this excavation unit

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

1) 1 iron nail, unknown technology
2) 1 flat iron fragment
3) 2 brown bottle glass fragments
4) 1 small chunk of coal

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): 693 grams (sample)
Irregular Rock Fragments, (Total): 0 grams (none present)
Others, (Total): 1 piece of hickory nut shell charcoal

Williamson Site, 44DW1, Excavation Area 7, Plow Zone Analysis

Location and Pedology

Test Location: 7
Test Unit: 7A (5'X5' size)
Plow Zone Depth: to 8"; to 10" in isolated areas
Plow Zone Soil Type: Ap1, Very dark grayish brown (10YR3/2) loam; and, Ap2, grayish brown (10YR5/2) loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 9; Burned, (Total): 3
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 9; Burned, (Total): 3
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 2; Burned, (Total): 0?

Quartzite Flakes/Shatter, (Total): 0; Burned, (Total): 0
White Quartz Flakes/Shatter, (Total): 0; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 0; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): none; Burned, (Total): 0

Other Foreign Materials: none; Flakes/Shatter, (Total): 0

Formal Lithic Artifacts (Total):

1) 1 wedge, Williamson chert, 48 by 39 by 25 mm
2) 2 biface reduction flakes with GSP, Williamson chert, both white and blue (same biface)
3) 1 wedge fragment, Williamson chert, 43 by 16 by 17 mm
4) 1 wedge, Williamson chert, 38 by 18 by 12 mm
5) 1 wedge, Williamson chert, blue, 37 by 50 by 19 mm, cross-mend with a spall from unit 7B level 1
6) 1 wedge, Williamson chert, 43 by 30 by 12 mm
7) 1 wedge fragment, compression failure, Williamson chert, 27 by 25 by 12 mm
8) 1 wedge, Williamson chert, 32 by 19 by 12 mm
9) 1 wedge, Williamson chert, 33 by 22 by 11 mm
10) 1 wedge spall, Williamson chert, 40 by 16 by 16 mm

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

None

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): none retained
Irregular Rock Fragments, (Total): none retained
Others, (Total): 1 greenstone fragment (from stone hammer?)

Williamson Site, 44DW1, Excavation Area 7, Plow Zone Analysis

Location and Pedology

Test Location: 7
Test Unit: 7B (21 square feet)
Plow Zone Depth: to 8"; to 10" in isolated areas
Plow Zone Soil Type: Ap1, Very dark grayish brown (10YR3/2) loam; and, Ap2, grayish brown (10YR5/2) loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 6; Burned, (Total): 0
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 13; Burned, (Total): 2
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 3; Burned, (Total): 1

Quartzite Flakes/Shatter, (Total): 0; Burned, (Total): 0
White Quartz Flakes/Shatter, (Total): 0; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 0; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): none; Burned, (Total): 0

Other Foreign Materials: none; Flakes/Shatter, (Total): 0

Formal Lithic Artifacts (Total):

1) 1 thin wedge fragment, Williamson chert
2) 1 wedge, Williamson chert, 32 by 40 by 13 mm
3) 1 wedge, Williamson chert, 43 by 22 by 17 mm
4) 1 wedge, Williamson chert, 35 by 24 by 15 mm
5) 1 wedge, Williamson chert, 39 by 17 by 13 mm
6) 1 wedge spall, Williamson chert, 32 by 10 by 6 mm

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

None

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): none retained
Irregular Rock Fragments, (Total): none retained

Williamson Site, 44DW1, Excavation Area 7, Plow Zone Analysis

Location and Pedology

Test Location: 7
Test Unit: 7C (26.5 square feet)
Plow Zone Depth: to 8"; to 10" in isolated areas
Plow Zone Soil Type: Ap1, Very dark grayish brown (10YR3/2) loam; and, Ap2, grayish brown (10YR5/2) loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 6; Burned, (Total): 1
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 10; Burned, (Total): 0?
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 0; Burned, (Total): 0

Quartzite Flakes/Shatter, (Total): 1; Burned, (Total): 0 (the single flake is a large bipolar spall)
White Quartz Flakes/Shatter, (Total): 0; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 0; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): none; Burned, (Total): 0

Other Foreign Materials: none; Flakes/Shatter, (Total): 0

Formal Lithic Artifacts (Total):

1) 1 wedge, Williamson chert, tan, 55 by 37 by 16 mm

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

None

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): none retained
Irregular Rock Fragments, (Total): none retained

Williamson Site, 44DW1, Excavation Area 7, Plow Zone Analysis

Location and Pedology

Test Location: 7
Test Unit: 7D (30 square feet)
Plow Zone Depth: to 8"; to 10" in isolated areas
Plow Zone Soil Type: Ap1, Very dark grayish brown (10YR3/2) loam; and, Ap2, grayish brown (10YR5/2) loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 0; Burned, (Total): 0
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 1; Burned, (Total): 1
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 1; Burned, (Total): 1

Quartzite Flakes/Shatter, (Total): 0; Burned, (Total): 0
White Quartz Flakes/Shatter, (Total): 0; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 0; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): none; Burned, (Total): 0

Other Foreign Materials: none; Flakes/Shatter, (Total): 0

Formal Lithic Artifacts (Total):

None

Fire-Cracked Rock, (Total):

None

18th-, 19th-, and 20th-Century Artifacts, (Total):

None

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): none retained
Irregular Rock Fragments, (Total): none retained

Williamson Site, 44DW1, Excavation Area 7, Plow Zone Analysis

(Note: nothing was recovered in the plow zone of this unit, all artifacts were recovered in the plow zone to level 1 interface, or levels 1 and 2. This form is included for documentation of unit 7E)

Location and Pedology

Test Location: 7
Test Unit: 7E (13.7 square feet)
Plow Zone Depth: to 8"; to 10" in isolated areas
Plow Zone Soil Type: Ap1, Very dark grayish brown (10YR3/2) loam; and, Ap2, grayish brown (10YR5/2) loam

Artifacts:

Flakes/Shatter

W/Chert Flakes/Shatter, >1/4 Inch To < 1/2 Inch, (Total): 0; Burned, (Total): 0
W/Chert Flakes/Shatter, 1/2 Inch To < 1 Inch, (Total): 0; Burned, (Total): 0
W/Chert Flakes/Shatter, 1 Inch And Larger, (Total): 0; Burned, (Total): 0

Quartzite Flakes/Shatter, (Total): 0; Burned, (Total): 0
White Quartz Flakes/Shatter, (Total): 0; Burned, (Total): 0
Quartz Crystal Flakes/Shatter, (Total): 0; Burned, (Total): 0
Metavolcanic Matls. Flakes/Shatter, (Total): none; Burned, (Total): 0

Other Foreign Materials: none; Flakes/Shatter, (Total): 0

Formal Lithic Artifacts (Total):

none

Fire-Cracked Rock, (Total):

none

18th-, 19th-, and 20th-Century Artifacts, (Total):

none

Geological Materials:

Gravel, Pebbles, And Cobbles, (Total): none retained
Irregular Rock Fragments, (Total): none retained

Appendix B
NRS Williamson Site Investigation
44DW1
Undisturbed Deposit (Below Plowzone) Analysis
Excavation Areas 1*, 2, 3, 6, and 7

*** Plowzone/Level 1 interface only**

DESCRIPTION OF EXCAVATED ARTIFACTS

Site Name: Williamson site

Location: Dinwiddie County, Virginia, on Little Cattail Creek, at the junction of the Fall Zone and Western Coastal Plain

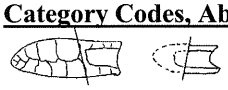
Site Designations: 44DW1

Clarifications For Users Of This Tabulation Of Artifact:

1) Under column ID is the computer assigned sequential artifact number, 1 through 2447.
2) Under the heading of Level, the reference to PZ for a few excavation units is plowzone.
3) Under the measurements columns marked Width, and Thickness, where 0 appears as the recorded value (for the badly broken shatter and thermal fracture artifact types F/S, or TFF), this indicates that only a maximum dimension across the artifact was recorded, and under the heading marked Length.
4) Under the Comments column where a numbers is in parenthesis, e.g. (309), this is a reference to the artifact drawing number for excavation areas 1, 2, 3, 6, and 7. For example, drawing number (309) can be found as artifact number 309, Fig. 7.17, page 107 under excavation area 3 (Chapter 7) in the main text.
5) Under the Comments column where the term in parenthesis is (wear analysis) this means that the artifact was evaluated for specific utilization by microscopic analysis of the wear pattern(s). Chapter 10, Table 10.2 contains these results.
6) Under the Comments column where a "core #" is given, this refers to one, of several, uniquely colored/patterned chert cores identified in that excavation unit. On the Williamson site some excavation units were determined to contain many flakes from the same uniquely patterned core.
7) All measurements are in millimeters

Category Codes, Abbreviations and Symbols Used in this Report

Category Codes, Abbreviations and Symbols for Tools



CP = Clovis point fragment

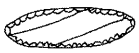
CP Channel F = Clovis point flute or channel flake

B(F) = Biface fragment

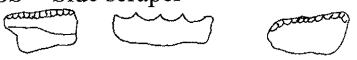
BC = Bifacial core
BPC = Bipolar cores

CF/EU = Edge-used core fragment

ES = End scrapers
ESF = End scraper fragment



SS = Side scraper



EWF = Edge-worked flakes
EUF = Edge-used flakes
Notch or spokeshave = circular or "u" shaped indention on the edge of a flake, blade, or core fragment

SF = snapped-flake (a flake intentionally snapped to create a sharp strong usable edge, often at a 90-degree angle)
SF/EU = Snapped-flake, edge-used
SFG = Snapped-flake graver

P = Perforator

BG = Burinized flakes used as gravers
BS = burin spall

G = graver

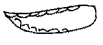
W= Wedges or chisel-wedges (bipolar wedge)
W(F) = Wedge or chisel-wedge fragments
W/EU = Wedges or chisel-wedges, edge-used (a wedge recycled into another use showing clear edge use)
Chisel tip, a long, narrow, almost cylindrical object with a sharp flat tip (very narrow chisel-wedge)

WB = wedge or chisel-wedge blank

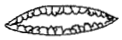
WS = Wedge spalls (with enough of the wedge still present to identify)
WS/EU = Wedge spalls, edge-used

Abraders
Polish. stone = Polishing stones

Choppers
Beak/gouge = Beak-gouge, combination tool with a beak and a gouge
Beak



Lancet



Limace

Category Codes, Abbreviations and Symbols for Debitage

CF = Core fragment
CF/Cx= Core fragment with cortex
F = flake
F/LPC = Large primary core flakes
F/LPC/Cx = Large primary core flakes with cortex
F/PC = Primary core flakes
F/PC/Cx = Primary core flakes with cortex
F/PC/S = Primary core flakes/probable shatter
F/PC/Cx/S = Primary core flakes/probable shatter with cortex
F/Cx = Unspecified larger flakes with significant cortex
F/Cx/S = Unspecified larger flakes/probable shatter with significant cortex
F/S = General shatter, usually small pieces of flat flakes without platforms
F/T = General trim or thinning flakes, secondary or tertiary
F/BR = Biface reduction flakes,
F/BR/T = Biface reduction flakes or secondary/tertiary biface trim flakes with a strong platform, but type unclear
F/BR/Cx = Biface reduction flakes with significant cortex
F/BR/S = Biface reduction flakes/probable shatter,
LF = Unspecified lithic fragments, may be derived from a flake or any other source
F/LF = A large flake broken into a lithic fragment
LF/S = Unspecified lithic fragments/probable shatter
LF/Cx = Unspecified lithic fragments with significant cortex
TFF = Thermally fractured chert fragment
F/PP = Platform preparation flakes, crescent shaped
FCR = Fire cracked hearth stones, likely from Archaic period site use
PP/T-A = Archaic projectile point tip fragment

F/B = Blade flakes (core-blades)
F/PBL = Probable blade flakes (core-blade fragments or broken core-blades)

HPS = Hard percussion spalls (from chisel wedges or bipolar cores)
SPS = Soft percussion spalls (from chisel wedges or bipolar cores)

Other abbreviations used in Appendix B Tables
GSP = ground striking platform
J = jasper
CU = unknown chert from a unknown, probably local, Fall Zone quarry. It is also possible that the unknown chert is from Mitchell or Bolster's Store but is a rare color and/or texture and unrecognized
MV = any one of a number of metavolcanic lithic materials such as tuff, rhyolite, silicified rhyolite, silicified "slate",

silicified sediment, or argillite.
MV/HS = a highly silicified metavolcanic material, usually translucent on thin edges and of gray, black or green color but occasionally blue-green, blue-gray, yellow or white
R = one of many types of rhyolite, all foreign to the area except as river cobbles
SS = silicified slate or silicified sediment, probably siliceous tuff, foreign to the area
A = argillite, foreign to the area
B = basalt, or basalt like; a local material found near the Mitchell complex of sites
Qe = local quartzite, often glassy and translucent, known as Nottoway River quartzite
CQz = quartz crystal; probably unavailable locally as a river cobble, but may have occurred as vein quartz or as a small quartz crystals in counties further to the west
WQz = white quartz, probably found locally as a water worn cobble
Sands. = sandstone, local as cobbles
GS = greenstone, may be a local variant of a greenstone-like igneous rock
I = an unidentified igneous stone

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1	1A	PZ/1	W	WC	40	42	21	blue	No	No	(101)
2	1A	PZ/1	ES	WC	26	21	8	cream	No	No	deposits, (102)
3	1A	PZ/1	G	WC	26	23	5	blue and white	No	No	(103)
4	1A	PZ/1	Abrader	Sandstone	93	56	36	brown	No	No	(104)
5	1A	PZ/1	SS	WC	20	33	10.5	cream	No	No	(105)
6	1A	PZ/1	EUF	WC	31	23	14	white	No	Yes	(106)
7	2A	1	F/PC	WC	59	29	10.5	white-gray	No	No	
8	2A	1	F/PC/CX	WC	27	26	8	white-gray	No	Yes	
9	2A	1	F/PC	WC	22	20	3.5	blue-yellow-white striped	No	No	
10	2A	1	F/PBL	WC	20	20	4	yellow-white	No	No	
11	2A	1	F/S	WC	21	0	0	yellow-white	No	No	
12	2A	1	F/BR	WC	14	15	1.5	blue-white	No	No	
13	2A	1	F/S	WC	14	0	0	white	No	No	
14	2A	1	F/PBL	WC	11	11	3.5	yellow-white	No	Yes	
15	2A	1	F/PBL	WC	14	8	2.5	yellow-blue	No	Yes	
16	2A	1	F/T	WC	8	12	2	yellow-white	No	No	
17	2A	1	F/PC	WC	24	15	4	blue-gray-yellow	Yes	Yes	
18	2A	1	F/S	WC	22	16	6	white	Yes	No	
19	2A	1	F/PC?	WC	19	17	4	pink-white	Yes	No	
20	2A	1	F/S	WC	24	12	4	white-gray	Yes	No	
21	2A	1	F/S	WC	13.5	0	0	pink	Yes	No	
22	2A	1	F/S	WC	12	0	0	yellow-tan	Yes	No	
23	2A	1	F/S	WC	10	0	0	gray-pink	Yes	No	
24	2A	1	F/S	WC	12	0	0	gray-pink	Yes	No	
25	2A	1	F/T	WC	8	9	1	white	Yes	No	
26	2A	1	LF	Qe	20	22	8	gray-pink	Yes	No	
27	2A	1	F/T	CQz	14	8	3	clear	No	No	
28	2A	1	F/T	CQz	14	8	1	clear	No	No	
29	2A	1	F/T	CQz	11	12	1	clear	No	No	
30	2A	1	ES	MV	23.5	23	8.5	green	No	No	highly silicified MV (wear analysis), (202)
31	2A	1	EUF	WC	31	37	8	white-blue	No	Yes	F/PC, (206)
32	2A	1	SF/EU	WC	30	12.5	3	yellow-white	No	No	F/S, snap-flake, thick, sharp, (203)
33	2A	2	F/BR	WC	21	30	4	blue-white	No	Yes	EUF
34	2A	2	F/BR	WC	13	18	3	white	No	Yes	EUF?
35	2A	2	F/T	WC	11	10	2	yellow-white	No	No	
36	2A	2	F/T	WC	13	12	2.5	yellow-white	No	Yes	
37	2A	2	F/T	WC	9	11	1	yellow	No	Yes	
38	2A	2	F/T	WC	11	10	1.5	yellow-blue	No	No	
39	2A	2	F/T	WC	12	5.5	2.5	yellow-blue	No	No	
40	2A	2	F/T	WC	12	8	2	white	No	No	
41	2A	2	F/T	WC	7	9	1.5	yellow-white	No	No	
42	2A	2	F/S	WC	16	0	0	yellow-white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
43	2A	2	F/S	WC	14	0	0	yellow-white	No	No	
44	2A	2	F/S	WC	13	0	0	blue-white	No	No	
45	2A	2	F/S	WC	16	0	0	cream and brown	No	No	
46	2A	2	F/S	WC	15	0	0	cream-blue	No	No	
47	2A	2	F/S	WC	12	0	0	white	No	No	
48	2A	2	F/S	WC	20	0	0	red-blue-gray	Yes	No	
49	2A	2	F/S	WC	12	0	0	gray-white	Yes	No	
50	2A	2	F/S	WC	10	0	0	pink-white	Yes	No	
51	2A	2	F/S	WC	13	0	0	pink-white	Yes	No	
52	2A	2	F/S	WC	11	0	0	pink-white	Yes	No	
53	2A	2	F/S	WC	8	0	0	gray-white	Yes	No	
54	2A	2	F/T	WC	7	8	1	gray-white	Yes	No	
55	2A	2	F/T	CQz	7	8	1.5	clear	No	No	
56	2A	2	F/S	CQz	13	0	0	clear	No	No	
57	2A	2	F/S	CQz	10	0	0	clear	No	No	
58	2A	2	F/PC/CX	WC	36	18	8	blue-white	No	No	F1, (214)
59	2A	2	EUF	WC	28	18	8	blue-white	No	No	F/PC, F1, (210)
60	2A	2	Polish. stone	chert pebble	36	31	28	gray	No	No	cobble chert, F1, (216)
61	2A	2	Abrader	Iron stone	33	18	9	dark brown	No	No	Fragment, rough, F1, (218)
62	2A	2	EUF	Qe	52	79	11	brown	No	No	PC flake, cortex, F1, (205)
63	2A	2	EUF	WC	38	12	12	blue-white	No	No	wedge fragment?, F1, (213)
64	2A	2	W	WC	34	20	11	white-blue	No	No	F1, (209)
65	2A	2	EUF	WC	34	38	12	cream-blue	Yes	No	F/PC, F1, (211)
66	2A	2	Beak/gouge	WC	76	52	34	yellow	No	No	core, F1, (201)
67	2A	2	W	WC	42	46	17	yellow and brown	No	No	F1 (wear analysis), (212)
68	2A	2	F/B	Qe	87	42	13	brown	No	No	cortex, F1 (wear analysis), (208)
69	2A	2	Chopper	WC	102	66	36	yellow-white-brown	No	No	core, F1 (wear analysis), (204)
70	2A	2	EWF	WC	23	27	5	cream and brown	No	Yes	serrated flake, F/BR?, (207)
71	2A	2	Polish. stone	Qe pebble	44	28	28	yellow-white	No	No	F1, (215)
72	2A	2	Abrader	Iron stone	41	27	21	brown	No	No	F1, very rough, (217)
73	2B	1	EUF	WC	36	26	7	cream	No	No	F/BR, (227)
74	2B	1	EUF	WC	33	18	4	cream-yellow-blue	No	No	F/PC, (234)
75	2B	1	EUF	WC	21	30	8	blue-white	No	No	F/PC, (228)
76	2B	1	EUF	WC	23	47	12	cream-yellow	No	No	F/PC, (231)
77	2B	1	F/PC	WC	17	35	8	blue and tan	No	No	
78	2B	1	LF	WC	29	15	13	white	No	No	
79	2B	1	F/PC/CX	WC	31	22	7	blue-white	No	No	
80	2B	1	F/PC	WC	17	22	4	blue	No	Yes	
81	2B	1	EUF	WC	30	19	7	blue-white	No	No	F/PC, (232)
82	2B	1	F/BR	WC	18	17	2.5	white	No	No	
83	2B	1	F/PC	WC	15	20	5	gray-white	No	No	
84	2B	1	F/PC	WC	13	15	1.5	gray-white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
85	2B	1	LF/S	WC	16	9	3	white	No	No	
86	2B	1	LF/S	WC	18	10	6	blue & white	No	No	
87	2B	1	LF/S	WC	13	7	2	cream	No	No	angular breaks
88	2B	1	LF/S	WC	10	13	2	cream	No	No	modern break
89	2B	1	LF/S	WC	9	9	2.5	blue-white	No	No	
90	2B	1	LF/CX	WC	10	16	4	pink-white	Yes	No	
91	2B	1	F/T	WC	12	10	1	cream	No	No	
92	2B	1	F/T	WC	12	8	1	cream	No	No	
93	2B	1	F/T	WC	19	10	1	blue	No	Yes	
94	2B	1	F/T	WC	9	8	1	cream	No	Yes	
95	2B	1	F/T	WC	8	17	1	gray-white	No	No	
96	2B	1	F/T	WC	6	10	0.5	yellow	No	No	
97	2B	1	F/T	WC	6	8	1.5	white	No	No	
98	2B	1	F/T	WC	10	6	1	tan	No	No	
99	2B	1	F/T	WC	8	6	1	blue	No	No	
100	2B	1	F/T	WC	9	6	1	yellow	No	No	
101	2B	1	EUF	WC	32	19	8	blue	No	No	wear, flat surface, (230)
102	2B	1	LF	WQz	20	17	5	white	Yes	No	burned?
103	2B	1	F/T	CQz	8	14	2.5	striped clear	No	No	
104	2B	1	EUF	WC	37	27	6	blue-tan-brown	Yes	Yes	F/BR, (222)
105	2B	1	CP	MV	11.5	20	4.5	striped gray	No	No	rhyolite, basal end (wear analysis), (220)
106	2B	1	EUF	CQz	27	19	8	clear	No	No	(233)
107	2B	2	F/PC	WC	37	35	10	blue-white	No	No	
108	2B	2	F/PC	WC	27	19	5	tan-white	No	No	
109	2B	2	F/PC	WC	25	25	7	tan-white	No	No	deposits
110	2B	2	F/PC	WC	31	21	6	tan-white	No	No	
111	2B	2	F/PC	WC	17	12	3	cream	No	No	
112	2B	2	F/BR	WC	28	23	4	tan	No	Yes	
113	2B	2	F/BR	WC	30	18	20	cream	No	Yes	
114	2B	2	F/BR	WC	20	25	5	blue-white	No	Yes	
115	2B	2	F/BR	WC	15	15	3	white	No	Yes	
116	2B	2	F/BR	WC	18	13	3	cream	No	Yes	
117	2B	2	F/BR	WC	12	11	1.5	cream	No	Yes	
118	2B	2	F/BR	WC	8	12	2	white	No	Yes	
119	2B	2	F/LPC/Cx	WC	42	25	8	blue-white	No	No	
120	2B	2	LF/Cx	WC	20	10	9	white	No	No	
121	2B	2	F/PBL	WC	20	17	3.5	blue-white	No	Yes	
122	2B	2	F/PBL	WC	18	7	4	white-gray	No	Yes	
123	2B	2	LF/S	WC	18	0	0	white	No	No	
124	2B	2	LF/S	WC	24	0	0	white	No	No	
125	2B	2	LF/S	WC	8	0	0	cream	No	No	
126	2B	2	F/Cx	WC	8	0	0	gray-white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
127	2B	2	F/S	WC	16	0	0	blue-white	No	No	
128	2B	2	F/S	WC	15	0	0	white	No	No	
129	2B	2	F/S	WC	13	0	0	yellow-white	No	No	
130	2B	2	F/S	WC	11	0	0	white	No	No	
131	2B	2	F/S	WC	19	0	0	blue-white	No	No	
132	2B	2	F/S	WC	11	0	0	blue-gray	No	No	
133	2B	2	F/S	WC	11	0	0	blue-white	No	No	
134	2B	2	F/S	WC	9	0	0	white	No	No	
135	2B	2	F/T	WC	17	14	2	cream-blue	No	No	
136	2B	2	F/T	WC	12	17	2	cream	No	No	
137	2B	2	F/T	WC	15	13	2	gray-white	No	No	
138	2B	2	F/T	WC	9	18	2.5	cream	No	No	
139	2B	2	F/T	WC	13	14	1	cream-yellow	No	No	
140	2B	2	F/T	WC	16	7.5	2	white	No	No	
141	2B	2	F/T	WC	8	16	2	cream	No	No	
142	2B	2	F/T	WC	13	8	1.5	tan	No	No	
143	2B	2	F/T	WC	15	9	3	tan	No	No	
144	2B	2	F/T	WC	10	10	1	white-yellow	No	No	
145	2B	2	F/T	WC	12	11	1	gray-white	No	No	
146	2B	2	F/T	WC	9	12	1	yellow-gray	No	No	
147	2B	2	F/T	WC	5	15	1	blue-white	No	No	
148	2B	2	F/T	WC	10	12	1	tan	No	No	
149	2B	2	F/T	WC	10	7.5	1.5	tan	No	No	
150	2B	2	F/T	WC	9	10	1	tan	No	No	
151	2B	2	F/T	WC	6	13	1	yellow-white	No	No	
152	2B	2	F/T	WC	9	11	1	yellow-white	No	No	
153	2B	2	F/T	WC	8	10	1	blue-white	No	No	
154	2B	2	F/T	WC	9	10	1	tan	No	No	
155	2B	2	F/T	WC	10	6	1	white	No	No	
156	2B	2	F/T	WC	8	10	1	gray-white	No	No	
157	2B	2	F/T	WC	10	7	1	black and brown	No	No	
158	2B	2	F/T	WC	30	22	8	blue-white	Yes	No	
159	2B	2	F/PC	WC	25	10	5	white	Yes	No	
160	2B	2	F/S	WC	18	0	0	white	Yes	No	
161	2B	2	LF	WC	12	0	0	dark-brown	Yes	No	
162	2B	2	F/T	WC	10	10	2	blue-white	Yes	No	
163	2B	2	F/T	WC	8	8	4	white	Yes	No	
164	2B	2	EUF	WC	39	20	5	white and brown	No	No	awl like, modern damage?
165	2B	2	F/PC	CQz	28	17	6	clear	No	No	with cortex-like surface
166	2B	2	F/PC	CQz	26	14	4	clear	No	No	
167	2B	2	F/S	CQz	17	0	0	clear	No	No	
168	2B	2	F/S	CQz	12	0	0	clear	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
169	2B	2	F/S	CQz	19	0	0	clear	No	No	
170	2B	2	F/S	CQz	20	0	0	clear	No	No	
171	2B	2	F/S	CQz	15	0	0	clear	No	No	
172	2B	2	F/S	CQz	9	0	0	clear	No	No	
173	2B	2	F/S	CQz	18	0	0	clear	No	No	
174	2B	2	F/S	CQz	14	0	0	clear	No	No	
175	2B	2	F/S	CQz	15	0	0	clear	No	No	
176	2B	2	F/S	CQz	10	0	0	clear	No	No	
177	2B	2	F/S	CQz	11	0	0	clear	No	No	
178	2B	2	F/T	CQz	10	11	2	clear	No	Yes	
179	2B	2	F/T	CQz	9	15	1.5	clear	No	Yes	
180	2B	2	F/T	CQz	8	11	1	clear	No	Yes	
181	2B	2	F/T	WQz	10	10	1.5	white	No	Yes	
182	2B	2	CP	MV	74	29	6	green striped, with red spots	No	No	tip, worn/used edge (wear analysis), (219)
183	2B	2	EUF	WC	71	41	20	white-blue	No	No	F/PC, worn notch, (223)
184	2B	2	EUF	WC	41	21	7	white-gray	No	No	F/PC or F/BL, (229)
185	2B	2	BG	WC	37	12	5	yellow-white-blue	No	No	(221)
186	2B	2	SFG	WC	23	20	5	blue-tan	No	No	worn edges, (226)
187	2B/S	1	F/LPC/Cx	WC	83	46	16	blue-white-tan-black	No	No	
188	2B/S	1	F/PC	WC	44	24	16	blue-white	No	No	
189	2B/S	1	F/LPC/Cx	WC	25	27	16	blue-white	No	No	
190	2B/S	1	LF/S	WC	24	0	0	cream	No	No	
191	2B/S	1	F/PC	WC	26	16	6	cream-blue	No	No	
192	2B/S	1	LF/S	WC	22	0	0	cream-blue	No	No	
193	2B/S	1	F/PC	WC	13	23	6	cream	No	Yes	
194	2B/S	1	F/PC	WC	26	27	7	cream-tan	No	No	
195	2B/S	1	F/S	WC	36	29	8	cream-tan	No	No	
196	2B/S	1	F/S	WC	14	12	7	blue	No	No	
197	2B/S	1	F/S	WC	27	9	8	blue	No	No	
198	2B/S	1	F/S	WC	17	0	0	yellow	No	No	
199	2B/S	1	F/T	WC	12	21	6	tan	Yes	No	burned?
200	2B/S	1	F/T	WC	15	20	3	white	No	No	
201	2B/S	1	F/T	WC	13	17	2	tan-white	No	No	
202	2B/S	1	F/BR	WC	28	29	3	white	No	Yes	
203	2B/S	1	F/BR	WC	25	16	3	yellow-cream	No	Yes	
204	2B/S	1	F/BR	WC	17	18	1.5	cream	No	Yes	
205	2B/S	1	F/BR	WC	18	14	3	blue and white	No	No	
206	2B/S	1	F/BR	WC	16	14	2	yellow	No	Yes	
207	2B/S	1	F/BR	WC	11	18	2	cream	No	No	curved flake (no platform)
208	2B/S	1	F/BR	WC	16	12	1.5	cream	No	Yes	
209	2B/S	1	F/BR	WC	20	12	3	cream	No	Yes	
210	2B/S	1	F/BR	WC	10	15	1.5	white	No	Yes	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
211	2B/S	1	F/BR	WC	10	15	1	cream	No	Yes	
212	2B/S	1	F/BR	WC	10	17	1.5	white	No	Yes	
213	2B/S	1	F/BR	WC	14	12	2	white and blue	No	Yes	
214	2B/S	1	F/BR	WC	12	10	2	white and gray	No	Yes	
215	2B/S	1	F/BR	WC	9	10	1	white	No	Yes	
216	2B/S	1	F/S	WC	15	0	0	cream	No	No	
217	2B/S	1	F/S	WC	17	0	0	cream	No	No	
218	2B/S	1	F/S	WC	10	0	0	cream	No	No	
219	2B/S	1	F/T	WC	18	16	3	cream-brown	No	No	
220	2B/S	1	F/T	WC	7	19	1.5	white	No	No	
221	2B/S	1	F/T	WC	13	12	3	gray-white	No	No	
222	2B/S	1	F/T	WC	10	13	2	cream	No	No	
223	2B/S	1	F/T	WC	11	9	1.5	blue	No	No	
224	2B/S	1	F/T	WC	8	8	1	black	No	No	
225	2B/S	1	F/T	WC	12	10	1	cream-brown	No	No	
226	2B/S	1	F/T	WC	11	8	2	white	No	No	
227	2B/S	1	F/T	WC	12	14	1.5	white	No	No	
228	2B/S	1	F/T	WC	14	9	2	gray-white	No	Yes	
229	2B/S	1	F/T	WC	12	11	1	blue-brown	No	No	
230	2B/S	1	F/T	WC	9	12	3	blue-white	No	No	
231	2B/S	1	F/T	WC	14	7	1	white-gray	No	No	
232	2B/S	1	F/T	WC	9	8	1	brown	No	Yes	
233	2B/S	1	F/T	WC	5	13	1	cream	No	No	
234	2B/S	1	F/T	WC	13	7	2	blue	No	No	
235	2B/S	1	F/T	WC	11	10	1	yellow	No	No	
236	2B/S	1	F/T	WC	9	8	1	white	No	No	
237	2B/S	1	F/T	WC	9	9	0.5	yellow	No	No	
238	2B/S	1	F/T	WC	8	12	1	blue-white	No	No	
239	2B/S	1	F/T	WC	14	5	1	gray-white	No	No	
240	2B/S	1	F/T	WC	6	11	1	white	No	No	
241	2B/S	1	F/T	WC	9	7	1	brown-white	No	No	
242	2B/S	1	F/T	WC	6	12	1	white	No	No	
243	2B/S	1	F/T	WC	9	7	1	cream-blue	No	No	
244	2B/S	1	F/T	WC	9	9	1	gray-brown-white	No	No	
245	2B/S	1	F/T	WC	7	10	1	yellow and blue	No	No	
246	2B/S	1	F/PC	WC	24	22	9	pink-white	Yes	No	
247	2B/S	1	F/T	WC	15	10	2	pink-gray	Yes	No	
248	2B/S	1	F/T	WC	12	11	1	white	Yes	No	burned?
249	2B/S	1	F/T	WC	11	12	1	white-pink	Yes	No	
250	2B/S	1	F/S	WC	13	0	0	pink	Yes	No	
251	2B/S	1	F/S	WC	15	0	0	white	Yes	No	burned?
252	2B/S	1	F/S	WC	11	0	0	white-pink	Yes	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
253	2B/S	1	F/S	WC	9	0	0	white	Yes	No	burned?
254	2B/S	1	F/S	Qe	19	11	3	light gray	No	No	
255	2B/S	1	F/BR	Qe	17	22	5	white	No	No	quartzite
256	2B/S	1	F/T	Qe	11	15	3	white	No	No	quartzite
257	2B/S	1	F/PC	CQz	10	21	3	clear	No	Yes	
258	2B/S	1	F/PC	CQz	9	21	7	clear	No	Yes	
259	2B/S	1	F/PC	CQz	11	17	6	clear	No	No	cortex surface
260	2B/S	1	F/T	CQz	11	11	2.5	clear	No	No	
261	2B/S	1	F/S	CQz	15	0	0	clear	No	No	
262	2B/S	1	F/S	CQz	13	0	0	clear	No	No	
263	2B/S	1	F/S	CQz	10	0	0	clear	No	No	
264	2B/S	1	LF	WQz	25	20	8	white	No	No	cobble fragment, cortex
265	2B/N	1	CF/Cx	WC	45	35	25	white and blue	No	No	
266	2B/N	1	CF/Cx	WC	38	27	21	white	No	No	
267	2B/N	1	F/PC	WC	32	35	11	white	No	No	
268	2B/N	1	F/PC/Cx	WC	31	20	4	blue-white	No	No	
269	2B/N	1	F/PC/Cx	WC	19	20	6	white and blue	No	No	
270	2B/N	1	F/PC	WC	24	22	8	yellow	No	No	
271	2B/N	1	F/S	WC	21	0	0	gray-yellow	No	No	
272	2B/N	1	F/S	WC	15	0	0	yellow	No	No	-
273	2B/N	1	F/T	WC	16	12	2	white	No	No	
274	2B/N	1	F/T	WC	15	13	4	white-cream	No	No	
275	2B/N	1	F/T	WC	9	8	1.5	white	No	No	
276	2B/N	1	F/T	WC	13	14	1.5	cream	No	No	
277	2B/N	1	F/T	WC	11	7	1	cream	No	No	
278	2B/N	1	F/T	WC	7	7	1	white	No	No	
279	2B/N	1	F/T	WC	9	8	1	white	No	No	
280	2B/N	1	F/T	WC	7	9	1	white	No	Yes	
281	2B/N	1	F/S	WC	23	0	0	pink-white	Yes	No	
282	2B/N	1	F/S	WC	11	0	0	white	Yes	No	
283	2B/N	1	F/S	WC	11	0	0	red	Yes	No	
284	2B/N	1	F/PC	CQz	20	29	7	clear	No	No	
285	2B/N	1	F/S	CQz	20	0	0	clear	No	No	
286	2B/N	1	F/S	CQz	13	0	0	clear	No	No	
287	2B/N	1	F/S	CQz	14	0	0	clear	No	No	
288	2B/N	1	F/S	CQz	10	0	0	clear	No	No	
289	2B/N	1	F/S	CQz	9	0	0	clear	No	No	
290	2B/N	1	PP/T-A	Qe	11	16	4	gray	No	No	Small frag. of projectile point - prob. Archaic
291	2B/N	1	W	WC	28	18	11	blue-white	No	No	large frag., (225)
292	2B/N	2	F/B	WC	42	21	3	white-gray	No	No	2 pcs. modern break
293	2B/N	2	F/B	WC	23	18	2	yellow	No	No	
294	2B/N	2	F/PBL	WC	25	17	6	white-gray	Yes	Yes	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
295	2B/N	2	LF	WC	18	0	0	blue-white	Yes	No	
296	2B/N	2	LF	WC	22	0	0	pink-white	Yes	No	2 pcs.
297	2B/N	2	F/S	WC	17	0	0	pink-white	Yes	No	
298	2B/N	2	F/S	WC	13	0	0	pink-white	Yes	No	
299	2B/N	2	F/S	WC	13	0	0	pink-white	Yes	No	
300	2B/N	2	F/S	WC	11	0	0	pink-white	Yes	No	
301	2B/N	2	F/S	WC	18	0	0	gray-white	Yes	No	
302	2B/N	2	F/S	WC	12	0	0	white	Yes	No	
303	2B/N	2	F/S	WC	20	0	0	white	No	No	
304	2B/N	2	F/S	WC	10	0	0	blue	No	No	
305	2B/N	2	F/S	WC	7	0	0	yellow	No	No	
306	2B/N	2	LF	WC	17	0	0	black	No	No	WC?
307	2B/N	2	HPS	WC	17	21	3	cream	No	No	shell fracture
308	2B/N	2	F/T	WC	9	9	0.5	yellow	No	No	
309	2B/N	2	F/T	WC	15	6	1	blue-white	No	No	
310	2B/N	2	F/T	WC	9	8	1	yellow	No	No	
311	2B/N	2	F/T	WC	9	9	1	yellow	No	No	
312	2B/N	2	HPS	WC	10	7	2.5	blue	No	No	
313	2B/N	2	F/S	CQz	17	0	0	clear	Yes	No	
314	2B/N	2	F/PC	CQz	20	18	6	clear	No	No	
315	2B/N	2	F/S	CQz	17	0	0	clear	No	No	
316	2B/N	2	W	WC	39	13	16	blue-white	No	No	edge worn. large fragment, (224)
317	2C	1	F/PC	WC	19	28	8	yellow-white	No	Yes	core #1
318	2C	1	EUF	WC	30	24	4	yellow-white	No	No	core #1, F/PC, (245)
319	2C	1	F/PC	WC	17	13	3	yellow-white	No	Yes	blade?, core #1
320	2C	1	F/T	WC	20	13	2	yellow-white	No	No	core #1
321	2C	1	F/S	WC	19	0	0	yellow-white	No	No	core #1
322	2C	1	F/S	WC	18	0	0	yellow-white	No	No	core #1
323	2C	1	F/S	WC	19	0	0	yellow-white	No	No	core #1
324	2C	1	F/T	WC	9	12	1.5	yellow-white	No	Yes	core #1
325	2C	1	F/T	WC	9	8	1	yellow-white	No	No	core #1
326	2C	1	F/T	WC	11	7	1	yellow-white	No	No	core #1
327	2C	1	F/S	WC	19	0	0	yellow-white	No	No	core #1
328	2C	1	F/S	WC	18	0	0	yellow-white	No	No	core #1
329	2C	1	F/PBL	WC	14	13	3	yellow-white	No	Yes	core #1
330	2C	1	EUF	WC	31	13	4	yellow-white	Yes	Yes	burned?, core #1, F/BR, (246)
331	2C	1	F/T	WC	12	9	1	yellow-white	No	No	core #1
332	2C	1	F/S	WC	14	8	1	yellow-white	Yes	No	core #1
333	2C	1	F/T	WC	15	10	1	yellow-white	No	No	core #1
334	2C	1	F/T	WC	11	10	1.5	yellow-white	No	No	deposit, core #1
335	2C	1	F/PBL	WC	8	12	3	yellow-white	No	No	core #1
336	2C	1	F/S	WC	15	7	1	yellow-white	No	No	core #1

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
337	2C	1	F/S	WC	13	5	3	yellow-white	No	No	core #1
338	2C	1	F/S	WC	15	10	2	yellow-white	No	No	core #1
339	2C	1	F/S	WC	13	5	1	yellow-white	No	No	core #1
340	2C	1	F/S	WC	8	7	0.5	yellow-white	No	No	core #1
341	2C	1	F/S	WC	9	7	0.5	yellow-white	No	No	core #1
342	2C	1	F/S	WC	7	7	0.5	yellow-white	No	No	core #1
343	2C	1	F/T	WC	12	8	1	yellow-white	No	No	core #1
344	2C	1	F/PC	WC	45	15	17	yellow-white-blue	Yes	No	burned?, core #2
345	2C	1	LF/S	WC	33	15	11	yellow-white-blue	No	No	core #2
346	2C	1	F/PC	WC	27	14	8	yellow-white-blue	No	No	core #2
347	2C	1	F/PC	WC	26	13	4	yellow-white-blue	No	No	core #2
348	2C	1	F/PC	WC	16	28	3.5	yellow-white-blue	No	No	shell spall, core #2
349	2C	1	F/PC	WC	16	24	9	yellow-white-blue	No	No	core #2
350	2C	1	F/PC	WC	11	17	5	yellow-white-blue	No	Yes	blade?, core #2
351	2C	1	HPS	WC	26	13	9	yellow-white-blue	No	No	core #2
352	2C	1	HPS	WC	18	14	5	yellow-white-blue	No	No	core #2
353	2C	1	F/PC	WC	12	16	2	yellow-white-blue	No	Yes	core #2
354	2C	1	F/BR	WC	21	16	2	yellow-white-blue	No	No	core #2
355	2C	1	F/S	WC	24	13	6	yellow-white-blue	No	No	core #2
356	2C	1	F/S	WC	23	10	3	yellow-white-blue	No	No	core #2
357	2C	1	F/T	WC	16	17	3	yellow-white-blue	Yes	No	core trim, core #2
358	2C	1	F/T	WC	19	13	3	yellow-white-blue	Yes	No	core #2
359	2C	1	F/T	WC	10	14	2	yellow-white-blue	No	No	core #2
360	2C	1	F/S	WC	19	0	0	yellow-white-blue	No	No	core #2
361	2C	1	F/T	WC	18	9	1	yellow-white-blue	Yes	No	burned?, core #2
362	2C	1	F/S	WC	14	0	0	yellow-white-blue	No	No	core #2
363	2C	1	F/S	WC	23	6	1.5	yellow-white-blue	No	No	core #2
364	2C	1	F/T	WC	11	15	3	yellow-white-blue	No	No	core #2
365	2C	1	F/T	WC	7	13	2	yellow-white-blue	No	No	core #2
366	2C	1	F/PC	WC	37	34	8	blue-white	No	No	plow strike, core #3
367	2C	1	F/PC	WC	20	17	5	blue-white	Yes	No	core #3
368	2C	1	F/PC	WC	22	24	6	blue-white	No	No	core #3
369	2C	1	F/BR	WC	20	24	4	blue-white	No	No	core #3
370	2C	1	F/PBL	WC	11	15	4	blue-white	No	No	blade-core prep., core #3
371	2C	1	F/PC	WC	26	21	6	blue-white	No	Yes	core #3
372	2C	1	F/PC	WC	15	20	5	blue-white	No	No	core #3
373	2C	1	F/PC	WC	15	22	6	blue-white	No	No	crushed platform, core #3
374	2C	1	F/T	WC	18	12	3	blue-white	No	No	core #3
375	2C	1	F/Cx/S	WC	20	19	2	blue-white	No	No	core #3
376	2C	1	F/Cx/S	WC	14	0	0	blue-white	No	No	core #3
377	2C	1	F/Cx/S	WC	11	0	0	blue-white	No	No	core #3
378	2C	1	F/Cx/S	WC	12	0	0	blue-white	No	No	core #3

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
379	2C	1	F/T	WC	13	12	1	blue-white	No	No	core #3
380	2C	1	F/T	WC	12	8	1	blue-white	No	No	core #3
381	2C	1	F/S	WC	13	0	0	blue-white	No	No	core #3
382	2C	1	F/S	WC	15	0	0	blue-white	No	No	core #3
383	2C	1	F/S	WC	11	0	0	blue-white	No	No	core #3
384	2C	1	LF/Cx	WC	16	0	0	blue-white	No	No	core #3
385	2C	1	F/T	WC	8	14	1	blue-white	No	No	core #3
386	2C	1	F/S	WC	11	0	0	blue-white	No	No	core #3
387	2C	1	F/T	WC	10	7	1	blue-white	No	No	core #3
388	2C	1	F/S	WC	12	0	0	blue-white	No	No	core #3
389	2C	1	SFG	WC	20	12	4	blue-white	No	No	formal tool, core #3, (237)
390	2C	1	F/S	WC	13	0	0	blue	Yes	No	
391	2C	1	F/Cx/S	WC	21	0	0	red-gray	Yes	No	
392	2C	1	F/Cx/S	WC	25	0	0	gray	Yes	No	
393	2C	1	F/PC	WC	15	23	5	red-gray	Yes	No	
394	2C	1	F/S	WC	13	0	0	red-black	Yes	No	
395	2C	1	F/T	WC	15	13	1.5	pink	Yes	No	
396	2C	1	F/S	WC	14	0	0	pink	Yes	No	
397	2C	1	F/T	WC	10	14	2.5	pink	Yes	No	
398	2C	1	F/T	WC	11	9	1.5	white and brown	Yes	No	
399	2C	1	F/T	WC	13	8	1.5	pink and blue	Yes	No	
400	2C	1	F/S	WC	14	0	0	pink and blue-white	Yes	No	
401	2C	1	F/S	WC	9	0	0	pink	Yes	No	
402	2C	1	F/S	WC	12	0	0	yellow-white	Yes	No	
403	2C	1	F/S	WC	11	0	0	pink	Yes	No	
404	2C	1	F/S	WC	13	0	0	white	Yes	No	
405	2C	1	F/S	WC	12	0	0	pink-white	Yes	No	
406	2C	1	F/S	WC	9	0	0	white	Yes	No	
407	2C	1	F/T	WC	10	7	2	pink	Yes	No	
408	2C	1	F/T	WC	10	13	1	red, blue-gray	Yes	No	
409	2C	1	F/S	WC	10	0	0	red and brown	Yes	No	
410	2C	1	F/S	WC	9	0	0	red and white	Yes	No	
411	2C	1	F/T	WC	8	7	2	yellowish-tan	No	No	
412	2C	1	F/T	WC	6	9	1	yellowish-tan	No	No	
413	2C	1	F/S	WC	9	0	0	white	No	No	
414	2C	1	F/B	CQz	27	14	5	clear	No	Yes	
415	2C	1	F/PC	CQz	12	28	3	clear	No	Yes	
416	2C	1	F/PC	CQz	14	21	4	clear	No	Yes	
417	2C	1	F/S	CQz	16	0	0	clear	No	Yes	
418	2C	1	F/BR	CQz	14	12	3	clear	No	No	
419	2C	1	F/PC	CQz	23	16	6	clear	No	No	
420	2C	1	F/PC	CQz	36	16	8	clear	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
421	2C	1	F/PC	CQz	26	17	5	clear	No	No	
422	2C	1	F/S	CQz	15	0	0	clear	No	No	cortex crystal surface
423	2C	1	F/PC	CQz	20	20	4	clear	No	No	
424	2C	1	F/BR	CQz	17	14	2	clear	No	No	
425	2C	1	F/S	CQz	18	0	0	clear	No	No	cortex
426	2C	1	F/S	CQz	15	0	0	clear	No	No	
427	2C	1	F/S	CQz	21	0	0	clear	No	No	
428	2C	1	F/BR	CQz	19	16	2.5	clear	No	No	
429	2C	1	F/PC	CQz	10	22	3.5	clear	No	No	cortex
430	2C	1	F/PBL	CQz	11	13	3	clear	No	No	
431	2C	1	F/BR	CQz	12	19	2	clear	No	No	F/BR
432	2C	1	FS	CQz	19	0	0	clear	No	No	
433	2C	1	FS	CQz	21	0	0	clear	No	No	
434	2C	1	FS	CQz	19	0	0	clear	No	No	
435	2C	1	FS	CQz	17	0	0	clear	No	No	
436	2C	1	F/T	CQz	13	10	2.5	clear	No	No	
437	2C	1	F/T	CQz	9	13	3	clear	No	No	
438	2C	1	F/S	CQz	15	0	0	clear	Yes	No	
439	2C	1	F/S	CQz	12	0	0	clear	No	No	cortex
440	2C	1	F/S	CQz	15	12	5	clear	No	No	
441	2C	1	F/S	CQz	10	9	1.5	clear	No	No	
442	2C	1	F/T	CQz	15	8	2.5	clear	No	No	
443	2C	1	F/S	CQz	13	0	0	clear	No	No	
444	2C	1	F/S	CQz	20	0	0	clear	No	No	
445	2C	1	F/S	CQz	13	0	0	clear	No	No	
446	2C	1	F/S	CQz	14	0	0	clear	No	No	
447	2C	1	F/T	CQz	7	9	3	clear	No	Yes	
448	2C	1	F/S	CQz	10	0	0	clear	No	No	
449	2C	1	F/BR	CQz	14	8	2	clear	No	No	F/BR
450	2C	1	F/S	CQz	10	0	0	clear	No	No	
451	2C	1	F/T	CQz	10	5	0.5	clear	No	No	
452	2C	1	F/S	CQz	7	6	1	clear	No	No	
453	2C	1	F/Cx	Qe	28	17	5	brown	No	No	
454	2C	1	F/S	Qe	20	0	0	light brown	No	No	
455	2C	1	WS	WC	18	28	6	yellow-white-blue	No	No	formal tool, HPS, core #2, (244)
456	2C	1	P	WC	20	17	5	blue-white	No	No	formal tool, (242)
457	2C	1	B(F)	CQz	8	9	4	clear	No	No	formal tool, very small tip fragment
458	2C	1	W(F)	WC	26	20	8	yellow-white	No	No	formal tool, (241)
459	2C	1	EUF/WS	WC	21	13	4	blue-white	No	No	formal tool, (239)
460	2C	1	B(F)	WC	22	30	9	white-blue	No	Yes	biface, overshoot fracture, (236)
461	2C	1	W	WC	48	35	22	white-blue	No	No	formal tool, worn fracture edges, (240)
462	2C	1	W	WC	29	31	10.5	white-blue	No	No	formal tool, used up, (238)

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
463	2C	1	W	WC	59	39	16	white-gray	No	No	formal tool, worn edges, F/PC-F/B-EW, (235)
464	2C	1	HPS	WC	26	8	4	white and blue	No	No	core#2
465	2C	2	F/PBL	WC	9	16	4	yellow-white	No	Yes	core #1
466	2C	2	F/S	WC	23	11	1.5	yellow-white	No	No	core #1
467	2C	2	F/S	WC	11	0	0	yellow-white	No	No	core #1
468	2C	2	F/T	WC	15	8	1	yellow-white	No	No	core #1
469	2C	2	F/S	WC	15	0	0	yellow-white	No	No	core #1
470	2C	2	F/S	WC	13	0	0	yellow-white	No	No	core #1
471	2C	2	F/S	WC	9	0	0	yellow-white	No	No	core #1
472	2C	2	F/S	WC	9	0	0	yellow-white	No	No	core #1
473	2C	2	F/T	WC	6	8	1	yellow-white	No	No	core #1
474	2C	2	F/S	WC	6	0	0	yellow-white	No	No	core #1
475	2C	2	F/S	WC	7	0	0	yellow-white	No	No	core #1
476	2C	2	F/T	WC	4	5	0.5	yellow-white	No	No	core #1
477	2C	2	F/T	WC	5	6.5	0.5	yellow-white	No	No	core #1
478	2C	2	F/PC	WC	32	17	6	yellow-white-blue	No	No	core #2
479	2C	2	F/PC	WC	21	23	5	yellow-white-blue	No	No	core #2
480	2C	2	F/Cx/S	WC	25	0	0	yellow-white-blue	No	No	core #2
481	2C	2	F/S	WC	21	23	4	yellow-white-blue	No	No	core #2
482	2C	2	F/PC	WC	20	12	3	yellow-white-blue	No	Yes	core #2, F/BR?
483	2C	2	F/BR	WC	21	11	4	yellow-white-blue	No	No	core #2, F/BR?
484	2C	2	F/PC	WC	16	19	9	yellow-white-blue	No	No	core #2
485	2C	2	F/T	WC	10	16	2.5	yellow-white-blue	No	No	core #2
486	2C	2	F/S	WC	9	12	2	yellow-white-blue	No	No	core #2
487	2C	2	F/T	WC	8	12	1	yellow-white-blue	No	No	core #2
488	2C	2	F/T	WC	13	7	1	yellow-white-blue	No	No	core #2
489	2C	2	F/T	WC	13	8	1	yellow-white-blue	No	No	core #2
490	2C	2	EUF	WC	23	31	4.5	yellow-white-blue	No	Yes	core #2, formal tool, F/BR?, (243)
491	2C	2	F/BR	WC	16	15	4	blue-white	No	No	F/BR?
492	2C	2	F/T	WC	12	9	1.5	blue-white	No	No	
493	2C	2	F/S	WC	6	6	1	blue-white	No	No	
494	2C	2	F/BR	WC	10	12	3	blue-white	No	No	
495	2C	2	F/S	WC	11	9	1	pink-white	Yes	No	
496	2C	2	F/T	WC	9	13	2	pink-white	Yes	No	
497	2C	2	F/T	WC	10	8	1	pink-white	Yes	No	
498	2C	2	F/S	WC	8	6	1	pink-white	Yes	No	
499	2C	2	F/S	WC	4	4	0.5	pink-white	Yes	No	
500	2C	2	F/PC/S	CQz	17	10	6	clear	No	No	cortex
501	2C	2	F/PC/S	CQz	10	18	3.5	clear	No	Yes	
502	2C	2	F/BR	CQz	18	16	3	clear	No	Yes	
503	2C	2	F/PC/S	CQz	10	11	4	clear	No	Yes	cortex
504	2C	2	F/S	CQz	24	0	0	clear	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
505	2C	2	F/S	CQz	18	0	0	clear	No	No	
506	2C	2	F/S	CQz	20	0	0	clear	No	No	
507	2C	2	F/S	CQz	15	0	0	clear	No	No	
508	2C	2	F/S	CQz	10	0	0	clear	No	No	
509	2C	2	F/S	CQz	10	0	0	clear	No	No	
510	2C	2	F/S	CQz	14	0	0	clear	No	No	
511	2C	2	F/S	CQz	14	0	0	clear	No	No	
512	2C	2	F/T	CQz	8	18	2.5	clear	No	No	
513	2C	2	F/T	CQz	9	7	1	clear	No	No	
514	2C	2	F/T	CQz	7	7	1	clear	No	No	
515	2C	2	F/T	CQz	8	7	1.5	clear	No	No	
516	2C	2	F/T	CQz	8	8	2	clear	No	No	
517	2C	2	F/T	CQz	10	6	0.5	clear	No	No	
518	2C	2	F/T	CQz	5	5	0.5	clear	No	No	
519	2C	2	F/T	CQz	9	6	1	clear	No	No	
520	2C	2	F/T	CQz	6	5	1	clear	No	No	
521	2C	2	F/T	CQz	4	5	0.5	clear	No	No	
522	2D	1	CF/Cx	WC	36	38	12	cream & brown	No	No	
523	2D	1	CF/Cx	WC	24	33	12	cream & brown	No	No	
524	2D	1	F/PC	WC	21	14	4.5	cream & brown	No	No	
525	2D	1	F/PBL	WC	13	15	5	cream & brown	No	Yes	
526	2D	1	F/BR	WC	19	13	1.5	cream & brown	No	No	
527	2D	1	F/S	WC	11	13	3	cream & brown	No	No	
528	2D	1	WS	WC	22	8	3	cream & brown	No	No	
529	2D	1	F/T	WC	11	6	2	cream & brown	No	No	
530	2D	1	F/T	WC	8	7	1	cream & brown	No	No	
531	2D	1	F/T	WC	7	7	1	cream & brown	No	No	
532	2D	1	F/T	WC	7	7	1	cream & brown	No	No	
533	2D	1	F/T	WC	5	9	1.5	cream & brown	No	No	
534	2D	1	F/T	WC	6	8	1	cream & brown	No	No	
535	2D	1	F/S	WC	11	0	0	cream & brown	No	No	
536	2D	1	F/S	WC	9	0	0	cream & brown	No	No	
537	2D	1	F/S	WC	15	0	0	cream & brown	No	No	
538	2D	1	F/S	WC	12	0	0	cream & brown	No	No	
539	2D	1	F/S	WC	11	0	0	cream & brown	No	No	
540	2D	1	F/S	WC	6	0	0	cream & brown	No	No	
541	2D	1	F/S	WC	11	0	0	cream & brown	No	No	
542	2D	1	F/S	WC	8	0	0	cream & brown	No	No	
543	2D	1	F/PC/Cx	WC	26	21	14	yellow-white-blue	No	Yes	Core #2
544	2D	1	F/PC/Cx	WC	28	29	13	yellow-white-blue	No	Yes	Core #2, plow strike
545	2D	1	F/PC	WC	26	22	5	yellow-white-blue	No	Yes	Core #2
546	2D	1	F/PC	WC	23	14	9	yellow-white-blue	No	No	Core #2, plow strike - break

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
547	2D	1	F/PC/S	WC	15	16	4	yellow-white-blue	No	Yes	Core #2
548	2D	1	F/PC/S	WC	26	17	5	yellow-white-blue	No	No	Core #2
549	2D	1	F/PC/S	WC	16	23	4	yellow-white-blue	No	No	Core #2
550	2D	1	F/PC/Cx/S	WC	15	15	5	yellow-white-blue	No	No	Core #2
551	2D	1	F/PC/S	WC	12	18	7	yellow-white-blue	No	No	Core #2
552	2D	1	F/PC	WC	28	14	3	yellow-white-blue	No	Yes	Core #2
553	2D	1	F/T	WC	16	11	1.5	yellow-white-blue	No	Yes	Core #2
554	2D	1	F/T	WC	10	11	1.5	yellow-white-blue	No	No	Core #2
555	2D	1	F/T	WC	14	9	2	yellow-white-blue	No	No	Core #2
556	2D	1	F/T	WC	8	13	1	yellow-white-blue	No	No	Core #2
557	2D	1	F/PC	WC	17	11	3	yellow-white-blue	No	No	Core #2
558	2D	1	F/T	WC	11	10	3	yellow-white-blue	No	No	Core #2
559	2D	1	F/T	WC	9	9	1.5	yellow-white-blue	No	No	Core #2
560	2D	1	F/T	WC	12	7	1	yellow-white-blue	No	No	Core #2
561	2D	1	F/T	WC	10	11	1	yellow-white-blue	No	No	Core #2
562	2D	1	F/T	WC	8	10	1	yellow-white-blue	No	No	Core #2
563	2D	1	F/T	WC	8	7	1	yellow-white-blue	No	No	Core #2
564	2D	1	F/T	WC	10	8	1.5	yellow-white-blue	No	No	Core #2
565	2D	1	F/T	WC	7	10	2	yellow-white-blue	No	Yes	Core #2
566	2D	1	F/T	WC	9	7	1	yellow-white-blue	No	No	Core #2
567	2D	1	F/T	WC	9	7	1	yellow-white-blue	No	No	Core #2
568	2D	1	F/T	WC	9	5	1	yellow-white-blue	No	No	Core #2
569	2D	1	F/T	WC	8	9	1.5	yellow-white-blue	No	No	Core #2
570	2D	1	F/T	WC	7	7	2.5	yellow-white-blue	No	No	Core #2
571	2D	1	F/T	WC	6	10	2	yellow-white-blue	No	No	Core #2
572	2D	1	F/T	WC	8	4	1	yellow-white-blue	No	No	Core #2
573	2D	1	F/S	WC	16	0	0	yellow-white-blue	No	No	Core #2
574	2D	1	F/S	WC	15	0	0	yellow-white-blue	No	No	Core #2
575	2D	1	F/S	WC	15	0	0	yellow-white-blue	No	No	Core #2
576	2D	1	F/S	WC	15	0	0	yellow-white-blue	No	No	Core #2
577	2D	1	F/S	WC	14	0	0	yellow-white-blue	No	No	Core #2
578	2D	1	F/S	WC	14	0	0	yellow-white-blue	No	No	Core #2
579	2D	1	F/S	WC	14	0	0	yellow-white-blue	No	No	Core #2
580	2D	1	F/S	WC	12	0	0	yellow-white-blue	No	No	Core #2
581	2D	1	F/S	WC	11	0	0	yellow-white-blue	No	No	Core #2
582	2D	1	F/S	WC	12	0	0	yellow-white-blue	No	No	Core #2
583	2D	1	F/S	WC	13	0	0	yellow-white-blue	No	No	Core #2
584	2D	1	F/S	WC	12	0	0	yellow-white-blue	No	No	Core #2
585	2D	1	F/S	WC	9	0	0	yellow-white-blue	No	No	Core #2
586	2D	1	F/S	WC	10	0	0	yellow-white-blue	No	No	Core #2
587	2D	1	F/S	WC	8	0	0	yellow-white-blue	No	No	Core #2
588	2D	1	F/S	WC	8	0	0	yellow-white-blue	No	No	Core #2

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
589	2D	1	F/S	WC	8	0	0	yellow-white-blue	No	No	Core #2
590	2D	1	F/S	WC	7	0	0	yellow-white-blue	No	No	Core #2
591	2D	1	F/S	WC	17	0	0	yellow-white-blue	Yes	No	Core #2
592	2D	1	F/S	WC	18	0	0	yellow-white-blue	Yes	No	Core #2
593	2D	1	F/S	WC	19	0	0	yellow-white-blue	Yes	No	Core #2
594	2D	1	F/T	WC	9	9	2.5	yellow-white-blue	Yes	No	Core #2
595	2D	1	F/S	WC	11	0	0	yellow-white-blue	Yes	No	Core #2
596	2D	1	F/PC	WC	19	16	5	yellow-white-blue	Yes	No	Core #2
597	2D	1	F/S	WC	31	0	0	pink-white	Yes	No	
598	2D	1	F/PC	WC	26	18	5	pink-white-blue	Yes	No	
599	2D	1	F/S	WC	25	13	5	pink-white	Yes	No	
600	2D	1	F/S	WC	20	18	5	pink-white	Yes	No	
601	2D	1	F/PC	WC	15	15	4	blue-gray	Yes	Yes	plow strike
602	2D	1	F/T	WC	20	10	2	pink-white	Yes	Yes	
603	2D	1	F/S	WC	13	0	0	pink-white	Yes	No	
604	2D	1	F/T	WC	13	12	1.5	red-white	Yes	No	
605	2D	1	F/T	WC	12	10	1	red-pink-brown	Yes	No	
606	2D	1	F/S	WC	14	0	0	pink-white	Yes	No	
607	2D	1	F/T	WC	7	9	1	pink-white	Yes	No	
608	2D	1	F/T	WC	11	11	2	pink-white	Yes	Yes	
609	2D	1	F/S	WC	14	7	1	white	Yes	No	F/S?
610	2D	1	F/T	WC	14	9	1.5	pink-white	Yes	No	
611	2D	1	LF/S	WC	16	8	3	white	Yes	No	
612	2D	1	F/T	WC	13	10	2	pink	Yes	No	
613	2D	1	F/T	WC	14	9	2	purple-white	Yes	No	
614	2D	1	F/T	WC	1	1	2.5	gray-pink	Yes	No	
615	2D	1	F/S	WC	11	0	0	gray-blue	Yes	No	
616	2D	1	F/S	WC	7	0	0	blue-brown	Yes	No	
617	2D	1	F/S	WC	7	0	0	gray	Yes	No	
618	2D	1	F/T	WC	7	6	1	red-white	Yes	No	
619	2D	1	F/T	WC	7	9	1	clear, pink-white	Yes	No	
620	2D	1	F/T	WC	5	9	1	yellow-blue	Yes	No	
621	2D	1	F/T	WC	6	8	1	brown	Yes	No	
622	2D	1	F/T	WC	8	5	1	pink-white	Yes	No	
623	2D	1	F/T	WC	5	3	0.5	blue	Yes	No	
624	2D	1	F/T	WC	8	7	1	gray-brown	Yes	No	
625	2D	1	F/T	WC	14	11	2	yellow-white	No	No	
626	2D	1	F/T	WC	13	7	1.5	yellow-white	No	No	
627	2D	1	F/T	WC	8	8	1.5	yellow-white	No	No	
628	2D	1	F/T	WC	9	9	2	yellow-white	No	No	
629	2D	1	F/T	WC	7	11	1	yellow-white	No	No	
630	2D	1	F/T	WC	7	8	2	yellow-white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
631	2D	1	F/T	WC	5	5	0.5	yellow-white	No	No	
632	2D	1	F/BR	WC	23	18	5	yellow-white	Yes	Yes	
633	2D	1	F/BR	WC	20	23	3.5	yellow-white	Yes	Yes	
634	2D	1	F/S	WC	9	0	0	yellow-white	No	No	
635	2D	1	F/S	WC	10	0	0	yellow-white	No	No	
636	2D	1	F/S	WC	8	0	0	yellow-white	No	No	
637	2D	1	F/S	WC	10	0	0	yellow-white	No	No	
638	2D	1	F/S	WC	10	0	0	yellow-white	Yes	No	
639	2D	1	F/S	WC	11	0	0	yellow-white	No	No	
640	2D	1	F/S	WC	12	0	0	yellow-white	No	No	
641	2D	1	F/S	WC	7	0	0	yellow-white	No	No	
642	2D	1	F/S	WC	8	0	0	yellow-white	No	No	
643	2D	1	F/S	WC	5	0	0	yellow-white	No	No	
644	2D	1	F/S	WC	6	0	0	yellow-white	No	No	
645	2D	1	F/S	WC	4.5	0	0	yellow-white	No	No	
646	2D	1	F/S	WC	5	0	0	yellow-white	No	No	
647	2D	1	F/S	WC	7	0	0	yellow-white	No	No	
648	2D	1	F/S	WC	5.5	0	0	yellow-white	No	No	
649	2D	1	F/S	WC	4	0	0	yellow-white	No	No	
650	2D	1	F/S	WC	4	0	0	yellow-white	No	No	
651	2D	1	F/S	WC	5	0	0	yellow-white	No	No	
652	2D	1	F/BR	WC	24	31	4	blue-white	No	Yes	
653	2D	1	F/BR	WC	19	15	3	blue-white	No	Yes	
654	2D	1	F/PC/Cx	WC	13	14	4	blue-white	No	No	
655	2D	1	F/BR	WC	12	15	4	blue-white	No	Yes	
656	2D	1	F/Cx/S	WC	20	0	0	blue-white	No	No	
657	2D	1	F/S	WC	18	0	0	blue-white	No	No	
658	2D	1	F/S	WC	10	9	5	blue-white	No	No	
659	2D	1	F/T	WC	9	11	2	blue-white	No	No	
660	2D	1	F/T	WC	7	10	1	blue-white	No	No	
661	2D	1	F/T	WC	6	5	1	blue-white	No	No	
662	2D	1	F/S	WC	10	0	0	blue-white	No	No	
663	2D	1	F/S	WC	10	0	0	blue-white	No	No	
664	2D	1	F/S	WC	12	0	0	blue-white	No	No	
665	2D	1	F/S	WC	6	0	0	blue-white	No	No	
666	2D	1	F/Cx/S	WC	12	0	0	blue-white	No	No	
667	2D	1	F/Cx/S	WC	13	0	0	blue-white	No	No	
668	2D	1	F/Cx/S	WC	8	0	0	blue-white	No	No	
669	2D	1	F/Cx/S	WC	12	0	0	blue-white	No	No	
670	2D	1	F/Cx/S	WC	11	0	0	blue-white	No	No	
671	2D	1	F/Cx/S	WC	13	0	0	blue-white	No	No	
672	2D	1	F/Cx/S	WC	8	0	0	blue-white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
673	2D	1	F/Cx/S	WC	9	0	0	blue-white	No	No	
674	2D	1	F/T	Qe	9	8	1	light-brown	No	No	
675	2D	1	F/LPC	Qe	33	58	18	light-brown	No	No	possibly EUF
676	2D	1	F/PC/Cx	CQz	24	32	7	clear	No	No	
677	2D	1	F/PC	CQz	21	20	4	clear	No	No	
678	2D	1	F/PC	CQz	17	21	4.5	clear	No	No	
679	2D	1	EUF	CQz	27	24	7.5	clear	No	No	F/PC, tool
680	2D	1	F/Cx	CQz	15	19	7	clear	No	No	smooth xl-like worn surface
681	2D	1	F/Cx	CQz	13	18	7.5	clear	No	No	smooth xl-like surface
682	2D	1	F/Cx	CQz	15	9	5	clear	No	No	worn surface
683	2D	1	F/BR	CQz	7	14	4	clear	No	Yes	hinged flake
684	2D	1	B(F)	CQz	9	10	4	clear	No	No	very small fragment
685	2D	1	F/S	CQz	23	0	0	clear	Yes	No	
686	2D	1	F/BR	CQz	12	16	1.5	clear	No	No	
687	2D	1	F/T	CQz	14	15	3	clear	No	Yes	
688	2D	1	F/T	CQz	7	9	1.5	clear	No	No	
689	2D	1	F/T	CQz	14	11	1.5	clear	No	No	
690	2D	1	F/T	CQz	8	9	1	clear	No	No	
691	2D	1	F/T	CQz	10	8	1	clear	No	No	
692	2D	1	F/T	CQz	7	11	1	clear	No	No	
693	2D	1	F/T	CQz	17	8	3	clear	No	No	
694	2D	1	F/T	CQz	10	11	1.5	clear	No	No	
695	2D	1	F/T	CQz	11	7	2	clear	No	No	
696	2D	1	F/T	CQz	11	5	0.5	clear	No	No	
697	2D	1	F/T	CQz	7	9	1.5	clear	No	No	
698	2D	1	F/T	CQz	8	9	2	clear	No	No	
699	2D	1	F/T	CQz	9	6	1	clear	No	No	
700	2D	1	F/T	CQz	5	9	1	clear	No	No	
701	2D	1	F/S	CQz	15	0	0	clear	No	No	
702	2D	1	F/S	CQz	17	0	0	clear	No	No	
703	2D	1	F/S	CQz	22	0	0	clear	No	No	
704	2D	1	F/S	CQz	12	0	0	clear	No	No	
705	2D	1	F/S	CQz	17	0	0	clear	No	No	
706	2D	1	F/S	CQz	17	0	0	clear	No	No	
707	2D	1	F/S	CQz	21	0	0	clear	No	No	
708	2D	1	F/S	CQz	12	0	0	clear	No	No	
709	2D	1	F/S	CQz	12	0	0	clear	No	No	
710	2D	1	F/S	CQz	11	0	0	clear	No	No	
711	2D	1	F/S	CQz	14	0	0	clear	No	No	
712	2D	1	F/S	CQz	14	0	0	clear	No	No	
713	2D	1	F/S	CQz	13	0	0	clear	No	No	
714	2D	1	F/S	CQz	12	0	0	clear	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
715	2D	1	F/S	CQz	11	0	0	clear	No	No	
716	2D	1	F/S/Cx	CQz	12	0	0	clear	No	No	smooth, worn cortex surface
717	2D	1	F/S	CQz	10	0	0	clear	No	No	
718	2D	1	F/S	CQz	9	0	0	clear	No	No	
719	2D	1	F/S	CQz	11	0	0	clear	No	No	
720	2D	1	F/S	CQz	15	0	0	clear	No	No	
721	2D	1	F/S	CQz	11	0	0	clear	No	No	
722	2D	1	F/S	CQz	8	0	0	clear	No	No	
723	2D	1	F/S	CQz	9	0	0	clear	No	No	
724	2D	1	F/S	CQz	7	0	0	clear	No	No	
725	2D	1	F/S	CQz	6	0	0	clear	No	No	
726	2D	1	F/S	CQz	8	0	0	clear	No	No	
727	2D	1	F/S	CQz	12	0	0	clear	No	No	
728	2D	1	F/S	CQz	6	0	0	clear	No	No	
729	2D	1	F/S	CQz	6	0	0	clear	No	No	
730	2D	1	F/S	CQz	3	0	0	clear	No	No	
731	2D	1	F/S	CQz	4	0	0	clear	No	No	
732	2D	1	EWF	WC	22	23	2	white	No	No	serrated flake (BR),
733	2D	1	F/S	WC	30	20	2.5	brown	No	No	covered with black deposits
734	2D	1	WS	WC	20	25	4	white	No	No	used as knife?, (253)
735	2D	1	P	WC	15	8	4	blue	No	No	micro-tool, drill tip?, (252)
736	2D	1	G	WC	8	10	2	white	No	No	broken graver tip, (251)
737	2D	1	Beak	WC	74	52	35	blue and white	No	No	core, unifacial - PZ interface, (247)
738	2D	1	BC	WC	45	40	30	tan and blue	No	No	disc shape, bifacial platform, (250)
739	2D	1	B(F)	WC	46	30	9	cream and brown	No	No	overshoot fracture, tip, PZ interface, (248)
740	2D	2	EUF	CQz	36	10.5	8.5	clear	No	No	worn edges and tip, (263)
741	2D	2	W	WC	38	22	11	white-cream-blue	No	No	(264)
742	2D	2	Chisel tip	WC	29	10	9	white	No	No	tip, frag. (compression failure), (249)
743	2D	2	Lancet	WC	27	13	3	white-blue	No	Yes	F/B, (266)
744	2D	2	EUF	WC	38	27	8	cream-blue	No	No	deposits, F/PC/Cx, (261)
745	2D	2	EUF	WC	27	25	7	cream-blue	No	No	F/S, (262)
746	2D	2	EUF	WC	32	15	4	blue-white	No	Yes	F/B, (254)
747	2D	2	EUF	WC	22	8	4	blue-white	No	No	F/PBL, (259)
748	2D	2	EUF	WC	14	14	3	gray-blue	No	No	F/PBL, (260)
749	2D	2	EUF	WC	24	11	4.5	white and blue	No	No	F/B/Cx, (255)
750	2D	2	F/B	WC	21	15	5.5	yellow-white	No	Yes	
751	2D	2	F/PBL	WC	17	16	3.5	yellow-white	No	Yes	
752	2D	2	F/BR	WC	12	14	3.5	gray-white	No	Yes	
753	2D	2	F/BR	WC	16	16	2.5	blue-white	No	Yes	
754	2D	2	F/BR	WC	15	17	2.5	white	No	Yes	
755	2D	2	F/PBL	WC	17	9	4	white	No	Yes	
756	2D	2	F/T	WC	12	8	3	tan	No	Yes	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
757	2D	2	F/T	WC	13	10	3	brown	No	Yes	jasper
758	2D	2	F/T	WC	9	10	1	cream-white	No	Yes	
759	2D	2	F/T	WC	9	14	3	white and blue	No	Yes	
760	2D	2	F/T	WC	10	5	1	yellow-white	No	No	
761	2D	2	F/T	WC	7	6	1	white	No	No	
762	2D	2	F/T	WC	8	7	1	white	No	No	
763	2D	2	F/T	WC	7	6	1	white	No	No	
764	2D	2	F/T	WC	9	5	1	blue-gray	No	No	
765	2D	2	F/T	WC	7	6	0.5	yellow-white	No	No	
766	2D	2	F/BR	WC	11	16	3	blue-white	No	Yes	
767	2D	2	F/BR	WC	15	11	2.5	yellow-white	No	Yes	
768	2D	2	F/BR	WC	8	13	2.5	blue	No	Yes	
769	2D	2	F/BR/Cx	WC	12	16	3	brown	No	Yes	jasper
770	2D	2	F/PBL	WC	17	16	3	tan-white	No	No	
771	2D	2	F/T	WC	18	11	5	blue-white	No	Yes	
772	2D	2	F/BR	WC	16	15	3	yellow-white-blue	No	Yes	
773	2D	2	F/BR	WC	21	15	2	pink-white	Yes	No	
774	2D	2	F/BR	WC	13	6	2	blue-white	No	Yes	F/BR?
775	2D	2	F/T	WC	7.5	9	1.5	blue-white	No	Yes	
776	2D	2	F/T	WC	7	6	2	yellow-blue-white	No	No	
777	2D	2	F/T	WC	5	5	0.5	brown-white	No	Yes	
778	2D	2	F/BR	WC	19	12	2	yellow-white	No	No	
779	2D	2	F/BR	WC	9	11	1	white	No	No	F/BR?
780	2D	2	EWF	WC	25	11	5.5	blue-white	Yes	No	F/S, serrated, (258)
781	2D	2	HPS	WC	15	14	2.5	white	No	No	
782	2D	2	F/T	WC	14	9	3	red-white	Yes	No	
783	2D	2	HPS	WC	13	11	3	pink-blue	Yes	No	
784	2D	2	F/T	WC	12	11	2	cream and brown	Yes	No	
785	2D	2	F/T	WC	14	8	2	pink and white	Yes	No	
786	2D	2	F/T	WC	10	11	3	pink and white	Yes	No	
787	2D	2	F/T	WC	11	8	1.5	pink-blue	Yes	No	
788	2D	2	F/T	WC	8	10	2.5	gray	Yes	Yes	
789	2D	2	F/T	WC	9	11	1.5	gray-white	Yes	No	
790	2D	2	F/T	WC	13	9	1.5	pink and white	Yes	No	
791	2D	2	F/S	WC	11	13	2	yellow-gray	Yes	No	
792	2D	2	F/S	WC	9	0	0	gray	Yes	No	
793	2D	2	F/S	WC	12	0	0	red-white	Yes	No	
794	2D	2	F/T	WC	8	9	1	yellow-white	Yes	No	
795	2D	2	F/S	WC	7	0	0	pink-yellow	Yes	No	
796	2D	2	F/S	WC	6	0	0	pink-white	Yes	No	
797	2D	2	F/S	WC	6	0	0	gray-white	No	No	
798	2D	2	F/T	WC	9	13	2	gray-yellow	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
799	2D	2	F/S	WC	9	0	0	blue	Yes	No	
800	2D	2	F/BR	WC	17	12	1	tan	No	No	
801	2D	2	F/T	WC	9	9	1	pink	No	No	
802	2D	2	F/T	WC	12	10	3	blue-white	No	No	
803	2D	2	F/T	WC	9	7	1.5	white	No	No	
804	2D	2	F/T	WC	10	7	1	white	No	No	
805	2D	2	F/T	WC	10	7	2	blue	No	No	
806	2D	2	F/S	WC	18	0	0	blue-gray	No	No	
807	2D	2	F/S	WC	12	0	0	blue-gray	No	No	
808	2D	2	F/S	WC	15	0	0	white	No	No	
809	2D	2	F/S	WC	10	0	0	blue	No	No	
810	2D	2	F/S	WC	18	0	0	cream-tan	No	No	
811	2D	2	F/S	WC	16	0	0	yellow-blue	No	No	
812	2D	2	F/S	WC	13	0	0	yellow-white	No	No	
813	2D	2	F/S	WC	16	0	0	gray-white	Yes	No	burned?
814	2D	2	F/S	WC	14	0	0	blue-white	No	No	
815	2D	2	F/S	WC	9	0	0	white	No	No	
816	2D	2	F/S	WC	14	0	0	yellow	No	No	
817	2D	2	F/S	WC	12	0	0	yellow	No	No	
818	2D	2	F/S	WC	13	0	0	white	No	No	
819	2D	2	F/S	WC	12	0	0	blue-brown	No	No	
820	2D	2	F/S	WC	14	0	0	white	No	No	
821	2D	2	F/S	WC	12	0	0	white	No	No	
822	2D	2	F/S	WC	12	0	0	blue-white	No	No	
823	2D	2	F/S	WC	15	0	0	blue	No	No	
824	2D	2	F/S	WC	8	0	0	blue	No	No	
825	2D	2	F/S	WC	11	0	0	blue-white	No	No	
826	2D	2	F/S	WC	11	0	0	blue-white	No	No	
827	2D	2	F/S	WC	7	0	0	blue-white	No	No	
828	2D	2	F/S	WC	9	0	0	white	No	No	
829	2D	2	F/S	WC	9	0	0	yellow-white	No	No	
830	2D	2	F/S	WC	8	0	0	white	No	No	
831	2D	2	F/S	WC	10	0	0	white	No	No	
832	2D	2	F/S	WC	12	0	0	white	No	No	
833	2D	2	F/S	WC	9	0	0	blue	No	No	
834	2D	2	F/S	WC	7.5	0	0	blue	No	No	
835	2D	2	F/S	WC	11	0	0	blue-white	No	No	
836	2D	2	F/S	WC	7	0	0	red-cream	Yes	No	burned?
837	2D	2	F/S	WC	7	0	0	white	No	No	
838	2D	2	F/S	WC	9	0	0	white	No	No	
839	2D	2	F/S	WC	6	0	0	white	No	No	
840	2D	2	F/S	WC	7	0	0	white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
841	2D	2	F/S	WC	6	0	0	red-brown	Yes	No	
842	2D	2	F/S	WC	20	0	0	cream and brown	No	No	
843	2D	2	F/S	WC	13	0	0	cream and brown	No	No	
844	2D	2	F/S	WC	11	0	0	cream and brown	No	No	
845	2D	2	F/BR	WC	20	15	3	cream and brown	No	Yes	
846	2D	2	F/BR	WC	7.5	13	2.5	cream and brown	No	Yes	F/BR?
847	2D	2	F/BR	WC	12	9	2.5	cream and brown	No	Yes	
848	2D	2	F/BR	WC	15	8	3	cream and brown	No	No	
849	2D	2	F/T	WC	10	7	1.5	cream and brown	No	No	
850	2D	2	F/T	WC	8	6	1	cream and brown	No	No	
851	2D	2	F/PC/Cx	CQz	17	23	8	clear	No	No	
852	2D	2	F/PC/Cx	CQz	28	31	5	clear	No	No	
853	2D	2	EWF	CQz	24	19	2.5	clear	No	No	F/PC, bifacial edge work, (265)
854	2D	2	F/S	CQz	14	24	8	clear	No	No	
855	2D	2	F/PC/Cx	CQz	19	13	3.5	clear	No	No	possibly xl surface
856	2D	2	F/PC	CQz	24	11	4	clear	No	No	
857	2D	2	F/PC/Cx	CQz	24	8	3	clear	No	No	
858	2D	2	F/PC/S	CQz	10	16	4.5	clear	No	Yes	
859	2D	2	F/B	CQz	24	12	2.5	clear	No	Yes	
860	2D	2	F/BR/S	CQz	8	16	5	clear	No	Yes	
861	2D	2	F/BR/S	CQz	8	15	3.5	clear	No	Yes	
862	2D	2	F/T	CQz	12	18	3	clear	No	No	
863	2D	2	F/T	CQz	14	11	3	clear	No	No	
864	2D	2	F/T	CQz	13	12	2	clear	No	No	
865	2D	2	F/T	CQz	11	12	1.5	clear	No	No	
866	2D	2	F/T	CQz	12	12	2.5	clear	No	No	
867	2D	2	F/T	CQz	9	10	3	clear	No	No	
868	2D	2	F/T	CQz	10	8	2	clear	No	No	
869	2D	2	F/T	CQz	10	18	3	clear	No	No	
870	2D	2	F/T	CQz	8	14	1.5	clear	No	No	
871	2D	2	F/T	CQz	13	8	1.5	clear	No	No	
872	2D	2	F/T	CQz	12	8	1	clear	No	No	
873	2D	2	F/T	CQz	12	8	1	clear	No	No	
874	2D	2	F/T	CQz	12	13	1	clear	No	No	
875	2D	2	F/T	CQz	7	11	1.5	clear	No	No	
876	2D	2	F/T	CQz	10	7	1	clear	No	No	
877	2D	2	F/T	CQz	7	10	1	clear	No	No	
878	2D	2	F/T	CQz	8	7	1	clear	No	No	
879	2D	2	F/T	CQz	7	8	1	clear	No	No	
880	2D	2	F/T	CQz	6	7	1	clear	No	No	
881	2D	2	F/T	CQz	8	7	1	clear	No	No	
882	2D	2	F/S	CQz	17	0	0	clear	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
883	2D	2	F/S	CQz	23	0	0	clear	No	No	
884	2D	2	F/S	CQz	18	0	0	clear	No	No	
885	2D	2	F/S	CQz	15	0	0	clear	No	No	
886	2D	2	F/S	CQz	15	0	0	clear	No	No	
887	2D	2	F/S	CQz	16	0	0	clear	No	No	
888	2D	2	F/S	CQz	15	0	0	clear	No	No	
889	2D	2	F/S	CQz	13	0	0	clear	No	No	
890	2D	2	F/S	CQz	16	0	0	clear	No	No	
891	2D	2	F/S	CQz	13	0	0	clear	No	No	
892	2D	2	F/S	CQz	10	0	0	clear	No	No	
893	2D	2	F/S	CQz	12	0	0	clear	No	No	
894	2D	2	F/S	CQz	11	0	0	clear	No	No	
895	2D	2	F/S	CQz	12	0	0	clear	No	No	
896	2D	2	F/S	CQz	12	0	0	clear	No	No	
897	2D	2	F/S	CQz	9	0	0	clear	No	No	
898	2D	2	F/S	CQz	9	0	0	clear	No	No	
899	2D	2	F/S	CQz	12	0	0	clear	No	No	
900	2D	2	F/S	CQz	8	0	0	clear	No	No	
901	2D	2	F/S	CQz	7	0	0	clear	No	No	
902	2D	2	F/S	CQz	12	0	0	clear	No	No	
903	2D	2	F/S	CQz	10	0	0	clear	No	No	
904	2D	2	F/S	CQz	9	0	0	clear	No	No	
905	2D	2	F/S	CQz	8	0	0	clear	No	No	
906	2D	2	F/S	CQz	7.5	0	0	clear	No	No	
907	2D	2	F/S	CQz	7.5	0	0	clear	No	No	
908	2D	2	F/S	CQz	8	0	0	clear	No	No	
909	2D	2	F/S	CQz	8	0	0	clear	No	No	
910	2D	2	F/S	CQz	7	0	0	clear	No	No	
911	2D	2	F/S	CQz	7	0	0	clear	No	No	
912	2D	2	F/S	Qe	18	8	3	gray	No	No	
913	2D	2	WS	WC	45	12	13	cream-brown	No	No	like another piece of wedge from 2D unit, (256)
914	2D	2	SFG	WC	14	14	4	blue and brown	Yes	No	burned?, (257)
915	3A	1	F/PC	WC	26	44	15	blue	No	No	
916	3A	1	F/PC/Cx	WC	31	32	8	cream-blue	No	No	
917	3A	1	F/PC	WC	32	29	10.5	blue-white	No	No	
918	3A	1	F/PC/Cx	WC	23	26	5	cream-white	No	No	
919	3A	1	F/PC	WC	21	26	6	blue-white	No	No	
920	3A	1	F/PC	WC	12	22	3.5	clear-white	No	Yes	
921	3A	1	HPS	WC	33	19	3	brown-cream	No	No	
922	3A	1	HPS	WC	23	15	5	red	Yes	No	
923	3A	1	HPS	WC	16	25	7.5	white	No	No	
924	3A	1	HPS	WC	26	18	4	blue-gray	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
925	3A	1	EUF	WC	20	15	4	brown and white	No	No	HPS, blade-like, (302)
926	3A	1	SF/EU	WC	14	11	4	blue	No	No	PC/Cx, (304)
927	3A	1	F/BR	WC	28	11	2	yellow-white	No	No	
928	3A	1	EUF	WC	26	9	5	yellow-white	No	No	deposits, F/PBL, (303)
929	3A	1	SPS	WC	17	8	4	blue-white	No	No	
930	3A	1	F/S	WC	19	0	0	white	No	No	
931	3A	1	F/S	WC	29	0	0	tan-white	No	No	
932	3A	1	F/S	WC	24	0	0	blue-white	No	No	
933	3A	1	F/S	WC	19	0	0	blue-white	No	No	
934	3A	1	F/S	WC	18	0	0	blue	No	No	
935	3A	1	F/S	WC	16	0	0	gray-blue	No	No	
936	3A	1	F/S	WC	15	0	0	tan and pink	Yes	No	
937	3A	1	F/S	WC	18	0	0	black and cream	No	No	
938	3A	1	F/S	WC	11	0	0	white and brown	No	No	
939	3A	1	F/S/Cx	WC	14	0	0	blue	No	No	
940	3A	1	F/S	WC	19	0	0	yellow-white	No	No	
941	3A	1	F/S	WC	13	0	0	gray-white	No	No	
942	3A	1	F/S	WC	13	0	0	pink	Yes	No	
943	3A	1	F/S	WC	19	0	0	blue	No	No	
944	3A	1	F/S	WC	20	0	0	gray-white	No	No	
945	3A	1	F/S	WC	9	0	0	white	No	No	
946	3A	1	F/S	WC	12	0	0	red and white	Yes	No	
947	3A	1	F/S	WC	10	0	0	cream	No	No	
948	3A	1	F/S	WC	14	0	0	blue and white	No	No	
949	3A	1	F/S	WC	14	0	0	white	No	No	
950	3A	1	F/S	WC	11	0	0	cream	No	No	
951	3A	1	F/S	WC	13.5	0	0	yellow and gray	No	No	
952	3A	1	F/S	WC	12	0	0	cream	No	No	
953	3A	1	F/S	WC	13	0	0	red and blue	Yes	No	
954	3A	1	F/S	WC	14	0	0	blue-white	No	No	
955	3A	1	F/S	WC	9	0	0	blue-white	No	No	
956	3A	1	F/S	WC	10	0	0	blue	No	No	
957	3A	1	F/S	WC	9	0	0	white	No	No	
958	3A	1	F/S	WC	9.5	0	0	white	No	No	
959	3A	1	F/S	WC	10	0	0	white	No	No	
960	3A	1	F/S	WC	8.5	0	0	white	No	No	
961	3A	1	F/S	WC	7	0	0	blue	No	No	
962	3A	1	F/T	WC	9	10	2	yellow	No	No	
963	3A	1	F/T	WC	9	16	2	yellow and brown	No	No	
964	3A	1	F/T	WC	13	7	1.5	white	No	No	
965	3A	1	F/T	WC	12	8	2	pink and white	Yes	No	
966	3A	1	F/T	WC	12	7	2.5	white	No	Yes	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
967	3A	1	F/T	WC	10	11	3	blue	No	Yes	
968	3A	1	F/T	WC	7	7	1.5	white	No	No	
969	3A	1	F/T	WC	7	10	1.5	white-pink	No	No	
970	3A	1	F/T/Cx	WC	8	8	2	blue	No	No	
971	3A	1	F/T	WC	9	9	2	brown-pink	No	No	
972	3A	1	F/T	WC	7	9	1.5	white	No	No	
973	3A	1	F/T	WC	7	8	1	brown	No	No	
974	3A	1	F/T	WC	7.5	9	2	gray-white	No	No	
975	3A	1	F/Cx	Qe	22	22	4.5	gray-brown	No	No	
976	3A	1	F/S	Qe	11	0	0	brown	No	No	very fine grain
977	3A	2	CF/Cx	WC	58	41	21	blue-white and pink	Yes	No	
978	3A	2	F/PC	WC	21	22	5	gray-white	No	No	
979	3A	2	F/PC/Cx	WC	18	21	5	blue-white	No	No	
980	3A	2	F/PC	WC	18	16	5	white-blue	No	No	
981	3A	2	F/T	WC	11	17	3.5	blue and white	No	No	
982	3A	2	F/T/Cx	WC	15	18	2.5	white	No	No	
983	3A	2	F/T	WC	18	16	3	pink-clear	Yes	Yes	
984	3A	2	F/T	WC	8	11	2	brown-pink	No	No	
985	3A	2	F/T	WC	10	7	1	brown and white	No	No	
986	3A	2	F/T	WC	5	9	1	brown-tan	No	No	
987	3A	2	F/S	WC	22	0	0	brown and white	Yes	No	
988	3A	2	F/S	WC	15	0	0	blue and white	Yes	No	burned?
989	3A	2	F/S	WC	16	0	0	brown and white	Yes	No	
990	3A	2	F/S	WC	10	0	0	red	Yes	No	
991	3A	2	F/S	WC	31	0	0	blue-white and pink	Yes	No	
992	3A	2	F/S	WC	19	0	0	gray-white and clear	No	No	
993	3A	2	F/S	WC	20	0	0	white and brown	No	No	
994	3A	2	F/S	WC	11	0	0	gray-white	Yes	No	
995	3A	2	F/S	WC	16	0	0	white-cream	No	No	
996	3A	2	F/S	WC	12	0	0	gray-brown	Yes	No	
997	3A	2	F/S	WC	15	0	0	brown	No	No	
998	3A	2	F/S/Cx	WC	14	0	0	blue	Yes	No	burned?
999	3A	2	F/S	WC	17	0	0	pink and red	Yes	No	
1000	3A	2	F/S	WC	14	0	0	light brown	No	No	jasper
1001	3A	2	F/S/Cx	WC	17	0	0	blue and white	No	No	
1002	3A	2	F/S	WC	13.5	0	0	pink and white	Yes	No	
1003	3A	2	F/S	WC	10	0	0	light brown	No	No	jasper
1004	3A	2	F/S	WC	9	0	0	white and pink	Yes	No	
1005	3A	2	F/S	WC	13	0	0	tan	No	No	
1006	3A	2	F/S	WC	11	0	0	yellow-white	No	No	
1007	3A	2	F/S/Cx	WC	8	0	0	blue	No	No	
1008	3A	2	F/S	WC	14	0	0	yellow-gray	Yes	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1009	3A	2	F/S	WC	9	0	0	white	No	No	
1010	3A	2	F/S	WC	8	0	0	white	No	No	
1011	3A	2	F/S	WC	7	0	0	blue-white	No	No	
1012	3A	2	F/S	WC	5	0	0	tan	No	No	
1013	3A	2	EUF	WC	24	14	4.5	yellow	No	No	HPS, blade-like, (306)
1014	3A	2	HPS	WC	16	8	2.5	yellow	No	No	
1015	3A	2	SF/EU	WC	17	12	3.5	yellow	No	No	(307)
1016	3A	2	SF/EU	WC	15	17	3	white	No	No	(308)
1017	3A	2	F/S	Qe	19	17	2	pink	Yes	No	
1018	3A	2	F/T	WQz	7	8	2	white	No	Yes	
1019	3A	2	EUF	WC	29	13.5	5	white and blue	No	Yes	F/B, (305)
1020	3A	3	F/PC	WC	18	26	7	brown and white	No	No	jasper
1021	3A	3	F/BR	WC	33	18	2.5	blue-white	No	No	
1022	3A	3	F/BR	WC	22	12	3	pink and white	No	Yes	
1023	3A	3	F/BR	WC	19	17	3	tan	No	No	
1024	3A	3	F/BR	WC	13	17	2.5	pink-gray	No	No	
1025	3A	3	EWF	WC	14	16	2	blue-white	No	Yes	F/BR, serrated, (314)
1026	3A	3	Channel Flake	WC	15	14	2	brown	No	Yes	jasper
1027	3A	3	HPS	WC	20	18	4	gray-white	No	No	
1028	3A	3	HPS	WC	21	29	4	cream	No	No	
1029	3A	3	HPS	WC	17	7	4	cream-white	No	No	
1030	3A	3	HPS	WC	10	12	1.5	pink and white	Yes	No	
1031	3A	3	F/BR	WC	21	12	2	cream	Yes	No	
1032	3A	3	F/T	WC	8	15	2	white	No	No	
1033	3A	3	F/T	WC	14	9	3	brown and blue	No	Yes	
1034	3A	3	F/T	WC	11	8.5	3	blue-white	No	No	
1035	3A	3	F/T	WC	9	9	1	white	No	No	
1036	3A	3	F/T	WC	7	10	1.5	gray-white	No	No	
1037	3A	3	F/T	WC	10	13	2	gray	No	No	
1038	3A	3	F/T	WC	9	7	2.5	gray-white	No	No	
1039	3A	3	F/S	WC	28	0	0	brown and white	No	No	
1040	3A	3	F/S	WC	26	0	0	white	No	No	
1041	3A	3	F/S	WC	18	0	0	white	No	No	
1042	3A	3	F/S	WC	24	0	0	yellow-white	No	No	
1043	3A	3	F/S	WC	15	0	0	blue-white	No	No	
1044	3A	3	F/S	WC	16	0	0	blue	No	No	
1045	3A	3	F/S	WC	15	0	0	gray	No	No	
1046	3A	3	F/S	WC	9	0	0	white	No	No	
1047	3A	3	F/S	WC	12	0	0	yellow-blue	No	No	
1048	3A	3	F/S	WC	16	0	0	yellow-blue	No	No	
1049	3A	3	F/S	WC	16	0	0	white	No	No	
1050	3A	3	F/S	WC	14	0	0	yellow	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1051	3A	3	F/S	WC	12	0	0	brown	No	No	
1052	3A	3	F/S	WC	14	0	0	white	No	No	
1053	3A	3	F/S	WC	12	0	0	blue-white	No	No	
1054	3A	3	F/S	WC	8.5	0	0	gray-blue	No	No	
1055	3A	3	F/S/Cx	WC	12	0	0	brown and blue	No	No	
1056	3A	3	F/S	WC	12	0	0	blue	No	No	
1057	3A	3	F/S	WC	10	0	0	blue	No	No	
1058	3A	3	F/S	WC	21	0	0	brown and white	Yes	No	jasper
1059	3A	3	F/S	WC	23	0	0	red and brown	Yes	No	jasper
1060	3A	3	F/S	WC	19	0	0	red and yellow	Yes	No	
1061	3A	3	F/S	WC	20	0	0	dark gray and yellow	Yes	No	
1062	3A	3	F/S	WC	19	0	0	yellow and blue	Yes	No	
1063	3A	3	F/S	WC	14	0	0	red and blue	Yes	No	
1064	3A	3	F/S	WC	14	0	0	red, white and blue	Yes	No	
1065	3A	3	F/S	WC	15	0	0	red, white and blue	Yes	No	
1066	3A	3	F/S	WC	14	0	0	gray	Yes	No	
1067	3A	3	F/S	WC	13	0	0	white	Yes	No	
1068	3A	3	F/S	WC	15	0	0	yellow-blue	Yes	No	
1069	3A	3	F/S	WC	12	0	0	white	Yes	No	
1070	3A	3	F/S	WC	15	0	0	pink and white	Yes	No	
1071	3A	3	F/S	WC	9	0	0	pink and white	Yes	No	
1072	3A	3	F/S	WC	12	0	0	red and yellow	Yes	No	
1073	3A	3	F/S	WC	8	0	0	red and white	Yes	No	
1074	3A	3	F/S	WC	9	0	0	brown and white	Yes	No	jasper
1075	3A	3	F/S	WC	12.5	0	0	red and white	Yes	No	
1076	3A	3	F/S	WC	15	0	0	dark gray and yellow	Yes	No	
1077	3A	3	F/BR	MV	13	8.5	1.5	green	No	No	same as CP in unit 2B
1078	3A	3	F/S	Qe	23	16	5	gray	No	No	very fine grain
1079	3A	3	F/BR	Qe	17	19	1.5	brown	No	No	very fine grain
1080	3A	3	F/PBL	WC	19	19	4	yellow-blue-white	No	No	
1081	3A	3	EWF	WC	39	18.5	5	blue-white	No	No	used as drill?, (312)
1082	3A	3	EWF	WC	26	16	9	gray	Yes	No	burned?; end worked, (311)
1083	3A	3	EWF	WC	39	16	7.5	blue-white	No	No	blade flake (wear analysis), F/B, (309)
1084	3A	3	EUF	WC	40	24	8	white and gray	No	No	blade-like (wear analysis), (310)
1085	3B	1	CF	WC	54	26	19	yellow-gray	Yes	No	
1086	3B	1	CF/Cx	WC	52	25	18	blue-white	No	No	(329)
1087	3B	1	EUF	WC	33	50	19	blue-white	No	No	CF, (334)
1088	3B	1	CF	WC	37	31	25	blue-white	No	No	conical core (?) fragment, (327)
1089	3B	1	SF	WC	43	39	12	yellow-cream	No	No	(328)
1090	3B	1	CF	WC	30	33	4	blue	No	No	battered
1091	3B	1	EUF	WC	47	27	23	cream and blue	No	No	Beak, CF/Cx
1092	3B	1	EUF	WC	44	22	13	blue-white	No	No	F/PC, (333)

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1093	3B	1	EWF	WC	30	28	7	yellow-white	No	No	(332)
1094	3B	1	F/PC	WC	28	35	9	white	No	Yes	
1095	3B	1	BG	WC	36	19	10	tan-blue	No	No	(315)
1096	3B	1	TFF	WC	30	21	7	white and pink	Yes	No	
1097	3B	1	F/PC	WC	23	35	6	white-pink	No	No	
1098	3B	1	F/PC	WC	29	21	11	blue-brown-white	No	No	
1099	3B	1	LF	WC	24	0	0	yellow	No	No	
1100	3B	1	EWF	WC	50	32	15	tan and white	No	No	F/PC, (330)
1101	3B	1	F/PC	WC	22	25	8	gray and white	No	No	
1102	3B	1	SF	WC	27	20	6	blue-tan	No	No	
1103	3B	1	F/S	WC	24	23	3	tan and white	No	No	
1104	3B	1	W	WC	42	23	15	brown, pink and white	Yes	No	(329)
1105	3B	1	EWF	WC	19	23	7	blue-white	No	No	end used, (331)
1106	3B	1	CF	WC	34	25	12	yellow	No	No	
1107	3B	1	LF	WC	33	18	13	blue and brown	No	No	
1108	3B	1	EUF	Qe	41	37	9	purple-brown	No	No	white cortex
1109	3B	1	ES(F)	WC	9	13	11	yellow-blue	No	No	broken end scraper, (326)
1110	3B	1	CF/Cx	WC	23	22	12	blue-brown	No	No	
1111	3B	1	SFG	WC	26	27	7	yellow	No	No	(316)
1112	3B	1	F/PC	WC	20	24	5	yellow	No	No	
1113	3B	1	EUF	WC	13	14	4	blue-tan	No	No	F/PBL, (324)
1114	3B	1	EUF	WC	15	14	4	red and blue	Yes	Yes	F/PBL, (323)
1115	3B	1	EUF	WC	13	13	3	red and white	Yes	Yes	jasper, F/PBL, (325)
1116	3B	1	EUF	WC	25	11	6	yellow	No	Yes	graver-like, F/PBL, (322)
1117	3B	1	EUF	WC	26	16	4	gray-brown	Yes	No	jasper, F/PBL, (318)
1118	3B	1	F/PBL	WC	28	13	4	yellow-white	No	No	EU?, (317)
1119	3B	1	EUF	WC	27	11	4	white	No	Yes	F/PBL, (321)
1120	3B	1	F/BR	WC	12	14	2	blue	No	Yes	
1121	3B	1	F/BR	WC	20	18	4	tan	No	Yes	
1122	3B	1	F/BR	WC	10	10	2.5	tan	No	Yes	
1123	3B	1	F/PC	WC	18	26	6.5	tan and blue	No	Yes	
1124	3B	1	F/PC	WC	17	21	3	tan	No	Yes	jasper
1125	3B	1	F/PC	WC	18	18	4	brown and white	No	Yes	
1126	3B	1	F/PC	WC	18	25	5	brown and tan	No	No	
1127	3B	1	F/PC/Cx	WC	26	17	8	blue-brown and red	Yes	No	
1128	3B	1	SF/EU	WC	27	11	5	white-brown-blue	Yes	No	(320)
1129	3B	1	SF/EU	WC	11	15	4	white	No	Yes	(319)
1130	3B	1	SF	WC	10	22	4	red and white	Yes	No	
1131	3B	1	SF	WC	10	19	3.5	white	No	No	
1132	3B	1	SF	WC	18	5	3.5	gray-white	No	No	
1133	3B	1	TFF	WC	26	0	0	pink and blue	Yes	No	
1134	3B	1	TFF	WC	22	0	0	white	Yes	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1135	3B	1	TFF	WC	19	0	0	brown	Yes	No	
1136	3B	1	TFF	WC	19	0	0	pink and white	Yes	No	
1137	3B	1	TFF	WC	14	0	0	gray	Yes	No	
1138	3B	1	TFF	WC	16	0	0	pink and white	Yes	No	
1139	3B	1	TFF	WC	14	0	0	pink	Yes	No	
1140	3B	1	TFF	WC	12	0	0	red and pink	Yes	No	
1141	3B	1	TFF	WC	13	0	0	pink and tan	Yes	No	
1142	3B	1	TFF	WC	10	0	0	white	Yes	No	
1143	3B	1	TFF	WC	12.5	0	0	red	Yes	No	
1144	3B	1	TFF	WC	16	0	0	red and white	Yes	No	
1145	3B	1	TFF	WC	12	0	0	red and white	Yes	No	
1146	3B	1	TFF	WC	13	0	0	gray	Yes	No	
1147	3B	1	TFF	WC	16	0	0	gray and red	Yes	No	
1148	3B	1	TFF	WC	18	0	0	tan	Yes	No	
1149	3B	1	TFF	WC	13	0	0	tan	Yes	No	
1150	3B	1	TFF	WC	13	0	0	purple and white	Yes	No	
1151	3B	1	TFF	WC	14	0	0	pink and white	Yes	No	
1152	3B	1	TFF	WC	10	0	0	pink and white	Yes	No	
1153	3B	1	TFF	WC	14	0	0	tan-white	Yes	No	
1154	3B	1	TFF	WC	12	0	0	pink	Yes	No	
1155	3B	1	F/S	WC	22	0	0	white	No	No	
1156	3B	1	F/S	WC	23	0	0	pink and white	No	No	
1157	3B	1	F/S	WC	23	0	0	yellow-white	No	No	
1158	3B	1	F/S	WC	16	0	0	white	No	No	
1159	3B	1	F/S	WC	18	0	0	white	No	No	
1160	3B	1	F/S	WC	21	0	0	tan	No	No	
1161	3B	1	F/S	WC	20	0	0	blue-white	No	No	
1162	3B	1	F/S	WC	13	0	0	gray-white	No	No	
1163	3B	1	F/S	WC	16	0	0	white	No	No	
1164	3B	1	F/S	WC	13	0	0	white	No	No	
1165	3B	1	F/S	WC	14	0	0	tan-blue	No	No	
1166	3B	1	F/S/Cx	WC	19	0	0	blue-white-brown	No	No	
1167	3B	1	F/S	WC	11	0	0	blue-white	No	No	
1168	3B	1	F/S/Cx	WC	16	0	0	brown-blue	Yes	No	
1169	3B	1	F/S	WC	17	0	0	brown-white	No	No	
1170	3B	1	F/S	WC	10	0	0	pink-blue	No	No	
1171	3B	1	F/S	WC	15	0	0	gray-white	No	No	
1172	3B	1	F/S	WC	11	0	0	blue-white	No	No	
1173	3B	1	F/S	WC	16	0	0	brown	No	No	
1174	3B	1	F/S	WC	13	0	0	tan-white	No	No	
1175	3B	1	F/S	WC	14	0	0	white	Yes	No	
1176	3B	1	F/S	WC	11	0	0	white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1177	3B	1	F/S	WC	18	0	0	brown	No	No	
1178	3B	1	F/S	WC	14	0	0	yellow	No	No	
1179	3B	1	F/S	WC	19	0	0	white and brown	No	No	
1180	3B	1	F/S	WC	12	0	0	blue-white	No	No	
1181	3B	1	F/S	WC	13	0	0	white	No	No	
1182	3B	1	F/S	WC	21	0	0	gray-white-blue	No	No	
1183	3B	1	F/S	WC	18	0	0	yellow-white	No	No	
1184	3B	1	F/S	WC	14	0	0	white and blue	No	No	
1185	3B	1	F/S	WC	21	0	0	white and blue	No	No	
1186	3B	1	F/S	WC	15	0	0	blue-white	No	No	
1187	3B	1	F/S	WC	17	0	0	yellow-tan	No	No	
1188	3B	1	F/S	WC	16	0	0	white	No	No	
1189	3B	1	F/S	WC	15	0	0	blue	No	No	
1190	3B	1	F/S	WC	18	0	0	gray	No	No	
1191	3B	1	F/S	WC	14	0	0	pink and white	No	No	
1192	3B	1	F/S	WC	18	0	0	pink and white	No	No	
1193	3B	1	F/S	WC	13	0	0	blue	No	No	
1194	3B	1	F/S	WC	12	0	0	blue-white	No	No	
1195	3B	1	F/S	WC	16	0	0	tan and blue	No	No	
1196	3B	1	F/S	WC	13	0	0	brown	No	No	
1197	3B	1	F/S	WC	17	0	0	blue-white	No	No	
1198	3B	1	F/S	WC	15	0	0	white	No	No	
1199	3B	1	F/S	WC	13	0	0	tan and blue	No	No	
1200	3B	1	F/S	WC	12	0	0	brown	No	No	
1201	3B	1	F/S	WC	12.5	0	0	yellow-white	No	No	
1202	3B	1	F/S	WC	10	0	0	brown	No	No	
1203	3B	1	F/S	WC	10	0	0	yellow-brown	No	No	
1204	3B	1	F/S	WC	12	0	0	tan and red	No	No	
1205	3B	1	F/S	WC	11	0	0	tan	No	No	
1206	3B	1	F/S	WC	15	0	0	yellow-white	No	No	
1207	3B	1	F/S	WC	13	0	0	gray-white	No	No	
1208	3B	1	F/S	WC	11	0	0	blue and white	No	No	
1209	3B	1	F/S	WC	11	0	0	gray-white	No	No	
1210	3B	1	F/S	WC	14	0	0	gray	No	No	
1211	3B	1	F/S	WC	11	0	0	white	No	No	
1212	3B	1	F/S	WC	10	0	0	blue-white	No	No	
1213	3B	1	F/S	WC	8	0	0	blue-brown-white	No	No	
1214	3B	1	F/S	WC	12	0	0	yellow	No	No	
1215	3B	1	F/S	WC	10	0	0	white	No	No	
1216	3B	1	F/S	WC	12	0	0	yellow-white	No	No	
1217	3B	1	F/S	WC	12	0	0	tan and white	No	No	
1218	3B	1	F/S	WC	10	0	0	white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1219	3B	1	F/S	WC	12	0	0	gray-white	No	No	
1220	3B	1	F/S	WC	15	0	0	gray-white	No	No	
1221	3B	1	F/S	WC	10	0	0	gray-blue-white	No	No	
1222	3B	1	F/S	WC	9	0	0	blue and tan	No	No	
1223	3B	1	F/S	WC	12	0	0	white	No	No	
1224	3B	1	F/S	WC	8	0	0	blue-white	No	No	
1225	3B	1	F/S	WC	9	0	0	tan and blue	No	No	
1226	3B	1	F/S	WC	7	0	0	brown	No	No	
1227	3B	1	F/S	WC	10	0	0	gray	No	No	
1228	3B	1	F/T	WC	16	11	2.5	brown and pink	Yes	No	
1229	3B	1	F/T	WC	10	15	3	yellow-white	No	No	
1230	3B	1	F/T	WC	18	14	2.5	blue-white	No	No	
1231	3B	1	F/T	WC	19	15	3.5	brown and white	No	No	
1232	3B	1	F/T	WC	15	13	2	tan	No	No	
1233	3B	1	F/T	WC	14	13	2	white	No	No	
1234	3B	1	F/T	WC	12	17	2.5	blue-white	No	No	
1235	3B	1	F/T	WC	20	12	2.5	blue-tan	No	No	
1236	3B	1	F/T	WC	17	8	1.5	white	No	No	
1237	3B	1	F/T	WC	22	9	2	brown, blue and white	No	No	
1238	3B	1	F/T	WC	14	14	3	yellow	No	No	
1239	3B	1	F/T	WC	12	11	2	brown	No	No	jasper
1240	3B	1	F/T	WC	7	12	1.5	yellow-blue	No	No	
1241	3B	1	F/T	WC	13	8	2	brown and white	No	No	
1242	3B	1	F/T	WC	13	8	1.5	red	Yes	No	
1243	3B	1	F/T	WC	17	12	2	white and blue	No	No	
1244	3B	1	F/T	WC	20	8	1.5	pink-white	No	No	
1245	3B	1	F/T	WC	15	10	1	brown	No	No	jasper
1246	3B	1	F/T	WC	12	13.5	1.5	white-brown-red	No	No	
1247	3B	1	F/T	WC	12	11	3	brown	No	No	jasper
1248	3B	1	F/T	WC	17	11	1	white and blue	No	No	
1249	3B	1	F/T	WC	18	12	1.5	red and yellow	Yes	No	
1250	3B	1	F/T	WC	8	14	3	brown	No	Yes	
1251	3B	1	F/T	WC	10	11	1.5	yellow-white	No	No	
1252	3B	1	F/T	WC	17	10	2	pink and white	Yes	No	
1253	3B	1	F/T	WC	10	13	2	blue and white	Yes	No	
1254	3B	1	F/T	WC	12	9	1	brown	No	No	jasper
1255	3B	1	F/T	WC	10	12	2.5	yellow-blue	No	No	
1256	3B	1	F/T	WC	9	12	2	blue-pink-white	Yes	No	
1257	3B	1	F/T	WC	12	13	1.5	white	No	No	
1258	3B	1	F/T	WC	7.5	11	1	brown-tan	No	No	
1259	3B	1	F/T	WC	9	10	1.5	blue-white	No	No	
1260	3B	1	F/T	WC	13	12	1	blue-white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1261	3B	1	F/T	WC	8	9	1	white	No	No	
1262	3B	1	F/T	WC	8	10	1.5	blue and white	No	No	
1263	3B	1	F/T	WC	10	8	2	yellow-brown	No	No	
1264	3B	1	F/T	WC	11	8	1	blue-white	No	No	
1265	3B	1	F/T	WC	10	7	2	yellow-blue-brown	No	No	
1266	3B	1	F/T	WC	12	8	1	yellow	No	No	
1267	3B	1	F/T	WC	12	7	1	yellow-blue	No	No	
1268	3B	1	F/T	WC	8	8	1	yellow	No	No	
1269	3B	1	F/T	WC	10	8	2	white	No	No	
1270	3B	1	F/T	WC	11	9	1	blue and white	No	No	
1271	3B	1	F/T	WC	10	7	0.5	white	No	No	
1272	3B	1	F/T	WC	8	12	1	gray	Yes	No	
1273	3B	1	F/T	WC	11	9	1.5	blue	No	No	
1274	3B	1	F/T	WC	8	10	1	blue and brown	No	No	
1275	3B	1	F/T	WC	7	9	1	blue-white	No	No	
1276	3B	1	F/T	WC	9	10	1	brown	No	No	
1277	3B	1	F/T	WC	7	7	0.5	white	No	No	
1278	3B	1	F/T	WC	9	9	1	blue-white	No	No	
1279	3B	1	F/T	WC	7	8	1	blue and brown	No	No	
1280	3B	1	F/PC	WC	28	25	5	yellow-white and brown	No	No	
1281	3B	1	F/PC	WC	33	34	8	yellow, brown and blue	No	Yes	
1282	3B	1	F/PC	WC	18	16	5	yellow-blue	No	No	
1283	3B	1	F/S	WC	10	0	0	yellow-blue	No	No	
1284	3B	1	F/T	Qe	11	10	2	gray	No	No	
1285	3B	1	F/T	Qe	12	12	2	red	Yes	No	
1286	3B	1	F/S	Qe	20	0	0	brown	No	No	
1287	3B	1	EUF	Qe	40	35	10	gray	No	No	cobble quartzite, (335)
1288	3B	2	F/PC/Cx	WC	47	20	9.5	blue-white	No	No	
1289	3B	2	F/PC/Cx	WC	27	39	10	tan	No	Yes	
1290	3B	2	F/PC/Cx	WC	31	21	7	gray-blue	Yes	No	
1291	3B	2	F/PC/Cx	WC	22	22	13	gray-pink	Yes	No	
1292	3B	2	F/PC/Cx	WC	27	19	8	tan and blue	No	No	
1293	3B	2	F/Cx	WC	21	17	7	white	Yes	No	burned?
1294	3B	2	LF/Cx	WC	21	20	11	blue	No	No	
1295	3B	2	F/Cx	WC	22	27	6	blue and white	No	No	
1296	3B	2	F/Cx	WC	25	22	5	tan	No	No	
1297	3B	2	LF/Cx	WC	11	16	9	pink and blue	Yes	No	
1298	3B	2	LF/Cx	WC	16	23	8	pink and blue	Yes	No	
1299	3B	2	F/S/Cx	WC	21	0	0	pink	Yes	No	
1300	3B	2	F/Cx	WC	17	13	5	blue-white	No	No	
1301	3B	2	F/Cx	WC	18	15	8	blue	No	No	
1302	3B	2	F/Cx	WC	22	9	4	white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1303	3B	2	F/Cx	WC	15	13	7	blue-white	No	No	
1304	3B	2	LF/Cx	WC	15	8	6	white	Yes	No	
1305	3B	2	F/Cx	WC	20	10	3	white	No	No	
1306	3B	2	F/Cx	WC	12	12	4	blue and white	No	No	
1307	3B	2	F/Cx	WC	18	9	8	blue and white	No	No	
1308	3B	2	F/S/Cx	WC	13	0	0	blue and white	No	No	
1309	3B	2	F/S/Cx	WC	15	0	0	blue and white	No	No	
1310	3B	2	F/S/Cx	WC	13	0	0	blue and white	No	No	
1311	3B	2	F/S/Cx	WC	11	0	0	blue and white	No	No	
1312	3B	2	F/S/Cx	WC	10	0	0	white	No	No	
1313	3B	2	F/S/Cx	WC	10	0	0	white	No	No	
1314	3B	2	F/S/Cx	WC	13	0	0	white	No	No	
1315	3B	2	F/S/Cx	WC	10	0	0	white	No	No	
1316	3B	2	F/S/Cx	WC	17	0	0	pink and white	Yes	No	
1317	3B	2	TFF	WC	11	0	0	pink	No	No	
1318	3B	2	TFF	WC	13	0	0	pink	No	No	
1319	3B	2	TFF	WC	15	0	0	pink	No	No	
1320	3B	2	TFF	WC	9	0	0	pink	No	No	
1321	3B	2	TFF	WC	9	0	0	pink	No	No	
1322	3B	2	TFF	WC	8	0	0	pink	No	No	
1323	3B	2	TFF	WC	9	0	0	blue	No	No	
1324	3B	2	TFF	WC	15	0	0	white	No	No	
1325	3B	2	F/S	WC	21	0	0	brown	No	No	jasper
1326	3B	2	F/S	WC	18	0	0	yellow-white	No	No	
1327	3B	2	F/S	WC	24	0	0	white	No	No	
1328	3B	2	F/S	WC	27	0	0	blue and yellow	No	No	
1329	3B	2	F/S	WC	17	0	0	brown and white	No	No	
1330	3B	2	F/S	WC	16	0	0	blue and tan	No	No	
1331	3B	2	F/S	WC	15	0	0	pink	Yes	No	
1332	3B	2	F/S	WC	13	0	0	white and pink	No	No	
1333	3B	2	F/S	WC	13	0	0	white and blue	No	No	
1334	3B	2	F/S	WC	16	0	0	yellow	No	No	
1335	3B	2	F/S	WC	15	0	0	yellow	No	No	
1336	3B	2	F/S	WC	14	0	0	yellow-gray	No	No	
1337	3B	2	F/S	WC	16.5	0	0	red and blue	Yes	No	
1338	3B	2	F/S	WC	13	0	0	brown and white	Yes	No	
1339	3B	2	F/S	WC	17	0	0	blue and tan	No	No	
1340	3B	2	F/S	WC	16	0	0	white	No	No	
1341	3B	2	F/S	WC	13.5	0	0	white	No	No	
1342	3B	2	F/S	WC	13	0	0	brown	No	No	
1343	3B	2	F/S	WC	17	0	0	white an tan-gray	No	No	
1344	3B	2	F/S	WC	15	0	0	pink and black	Yes	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1345	3B	2	F/S	WC	17	0	0	blue and white	No	No	
1346	3B	2	F/S	WC	17	0	0	blue	No	No	
1347	3B	2	F/S	WC	18	0	0	yellow-white	No	No	
1348	3B	2	F/S	WC	14	0	0	yellow-white	No	No	
1349	3B	2	F/S	WC	27	0	0	gray-white	No	No	
1350	3B	2	F/S	WC	22	0	0	yellow and black	No	No	
1351	3B	2	F/S/Cx	WC	14	0	0	blue and gray	No	No	
1352	3B	2	F/S	WC	13	0	0	yellow	No	No	
1353	3B	2	F/S	WC	14	0	0	blue and tan	No	No	
1354	3B	2	F/S	WC	16	0	0	red and white	No	No	
1355	3B	2	F/S	WC	10	0	0	tan	No	No	
1356	3B	2	F/S	WC	8	0	0	red	Yes	No	
1357	3B	2	F/S	WC	15	0	0	blue and white	No	No	
1358	3B	2	F/S	WC	12	0	0	gray and white	No	No	
1359	3B	2	F/S	WC	12	0	0	white	No	No	
1360	3B	2	F/S	WC	12	0	0	pink	Yes	No	
1361	3B	2	F/S	WC	12	0	0	pink and yellow	No	No	
1362	3B	2	F/S	WC	12.5	0	0	blue and tan	No	No	
1363	3B	2	F/S	WC	11	0	0	pink	Yes	No	
1364	3B	2	F/S	WC	13	0	0	white and gray	No	No	
1365	3B	2	F/S	WC	11	0	0	gray and yellow	No	No	
1366	3B	2	F/S	WC	11	0	0	tan	No	No	
1367	3B	2	F/S	WC	12	0	0	blue	No	No	
1368	3B	2	F/S	WC	14	0	0	white	No	No	
1369	3B	2	F/S	WC	12	0	0	blue and white	No	No	
1370	3B	2	F/S	WC	11	0	0	white	No	No	
1371	3B	2	F/S	WC	13	0	0	tan	No	No	
1372	3B	2	F/S	WC	12	0	0	blue and gray	No	No	
1373	3B	2	F/S	WC	11	0	0	gray and white	Yes	No	
1374	3B	2	F/S	WC	15	0	0	white-yellow-gray	No	No	
1375	3B	2	F/S	WC	10	0	0	blue and tan	No	No	
1376	3B	2	F/S	WC	11	0	0	white	No	No	
1377	3B	2	F/S	WC	11	0	0	blue and brown	No	No	
1378	3B	2	F/S	WC	10	0	0	blue and brown	No	No	
1379	3B	2	F/S	WC	12	0	0	white-blue	No	No	
1380	3B	2	F/S	WC	11	0	0	white	No	No	
1381	3B	2	F/S	WC	12	0	0	tan and white	No	No	
1382	3B	2	F/S	WC	13	0	0	blue and gray	No	No	
1383	3B	2	F/S	WC	12	0	0	yellow an brown	No	No	
1384	3B	2	F/S	WC	10	0	0	yellow-white	No	No	
1385	3B	2	F/S	WC	8	0	0	blue and white	No	No	
1386	3B	2	F/S	WC	13	0	0	red, tan and blue	Yes	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1387	3B	2	F/S	WC	9	0	0	pink and blue	No	No	
1388	3B	2	F/S	WC	9	0	0	yellow-white	No	No	
1389	3B	2	F/S	WC	12	0	0	gray-pink and red	Yes	No	
1390	3B	2	F/S	WC	9	0	0	brown	No	No	
1391	3B	2	F/S	WC	13	0	0	tan and white	No	No	
1392	3B	2	F/S	WC	11	0	0	white	No	No	
1393	3B	2	F/S	WC	11	0	0	tan	No	No	
1394	3B	2	F/S	WC	10	0	0	yellow-white	No	No	
1395	3B	2	F/S	WC	12	0	0	blue-white	No	No	
1396	3B	2	F/S	WC	8	0	0	white	No	No	
1397	3B	2	F/S	WC	9	0	0	brown	No	No	jasper
1398	3B	2	F/S	WC	8	0	0	white	No	No	
1399	3B	2	F/S	WC	11	0	0	pink and yellow	No	No	
1400	3B	2	F/S	WC	12	0	0	yellow-white	No	No	
1401	3B	2	F/S	WC	9	0	0	black and pink	Yes	No	
1402	3B	2	F/S	WC	8	0	0	brown	No	No	
1403	3B	2	F/S	WC	10	0	0	yellow-pink	Yes	No	
1404	3B	2	F/S	WC	8	0	0	yellow-tan	No	No	
1405	3B	2	F/S	WC	9	0	0	gray and white	Yes	No	
1406	3B	2	F/S	WC	9	0	0	tan	No	No	
1407	3B	2	F/S	WC	10	0	0	blue	No	No	
1408	3B	2	F/S	WC	10	0	0	white	No	No	
1409	3B	2	F/S	WC	9	0	0	white	No	No	
1410	3B	2	F/S	WC	6	0	0	white	No	No	
1411	3B	2	F/S	WC	5	0	0	red	Yes	No	
1412	3B	2	F/T	WC	11	17	1.5	tan	No	No	
1413	3B	2	F/T	WC	13	13	2	yellow-tan	No	No	
1414	3B	2	F/T	WC	11	11	1.5	tan	No	No	
1415	3B	2	F/T	WC	13	8.5	1.5	pink	Yes	No	
1416	3B	2	F/T	WC	17	11	2	tan and white	No	No	
1417	3B	2	F/T	WC	16	10	1.5	white	No	Yes	
1418	3B	2	F/T	WC	8	15	1	blue and white	No	No	
1419	3B	2	F/T	WC	9	11	1.5	red	Yes	No	
1420	3B	2	F/T	WC	12	11	1.5	blue-white	No	No	
1421	3B	2	F/T	WC	13	9	2	blue-white	No	No	
1422	3B	2	F/T	WC	14	10	1.5	yellow-white	No	No	
1423	3B	2	F/T	WC	13	11	2	yellow-white	No	No	
1424	3B	2	F/T	WC	8	14	2	white and blue	No	No	
1425	3B	2	F/T	WC	15	13	2	blue-white	No	No	
1426	3B	2	F/T	WC	14	10	3	tan and blue	No	No	
1427	3B	2	F/T	WC	10	9	3	red	Yes	Yes	
1428	3B	2	F/T	WC	11	12	3	blue	No	Yes	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1429	3B	2	F/T	WC	10	13	2	yellow	No	No	
1430	3B	2	F/T	WC	11	10	1.5	white	No	No	
1431	3B	2	F/T	WC	12	10	1.5	white and red	Yes	No	
1432	3B	2	F/T	WC	9	15	1.5	cream and red	No	Yes	
1433	3B	2	F/T	WC	12	8	1.5	blue and gray	No	No	
1434	3B	2	F/T	WC	9	12	1.5	tan	No	No	
1435	3B	2	F/T	WC	9	9	1	white and pink	Yes	No	
1436	3B	2	F/T	WC	10	12	1.5	white and blue	No	No	
1437	3B	2	F/T	WC	10	10	1	blue-gray-white	No	No	
1438	3B	2	F/T	WC	13	11	1	blue and gray	No	No	
1439	3B	2	F/T	WC	7	11	1.5	brown and white	No	No	
1440	3B	2	F/T	WC	9	14	1	tan	No	No	
1441	3B	2	F/T	WC	8	12	1	white	No	No	
1442	3B	2	F/T	WC	9	10	1.5	tan	No	No	
1443	3B	2	F/T	WC	7.5	8	2	yellow	No	Yes	
1444	3B	2	F/T	WC	8	9	1	blue	No	No	
1445	3B	2	F/T	WC	10	11	1.5	yellow-white	No	Yes	
1446	3B	2	F/T	WC	9	12.5	2	blue and white	No	No	
1447	3B	2	F/T	WC	10	7	2	blue	No	Yes	
1448	3B	2	F/T	WC	10	8	1.5	cream	No	No	
1449	3B	2	F/T	WC	11	7	2	white	No	No	
1450	3B	2	F/T	WC	9	9	1	pink and white	Yes	No	
1451	3B	2	F/T	WC	8	11	2	brown and blue	No	Yes	
1452	3B	2	F/T	WC	12	10	2	white	No	No	
1453	3B	2	F/T	WC	9	10	2	blue and yellow	No	No	
1454	3B	2	F/T	WC	7	7	1	cream-gray-pink	Yes	No	
1455	3B	2	F/T	WC	8	8	1	blue and pink	Yes	No	burned?
1456	3B	2	F/T	WC	8	11	1.5	tan	No	No	
1457	3B	2	F/T	WC	10	10	1	blue	No	No	
1458	3B	2	F/T	WC	9	8	2	cream	No	No	
1459	3B	2	F/T	WC	7	11	1.5	blue and white	No	Yes	
1460	3B	2	F/T	WC	6	11	1.5	pink	Yes	Yes	
1461	3B	2	F/T	WC	8	10	1	white	No	No	
1462	3B	2	F/T	WC	8	7	1	clear white	No	No	
1463	3B	2	F/T	WC	12	7	1	white	No	No	
1464	3B	2	F/T	WC	7.5	8	0.5	pink-white	Yes	No	
1465	3B	2	F/T	WC	9	6	1	white and black	No	No	
1466	3B	2	F/BR	WC	20	15	3.5	blue	No	No	
1467	3B	2	F/BR	WC	25	22	4	blue-gray	No	No	
1468	3B	2	F/BR	WC	21	16	2.5	blue-white	No	No	
1469	3B	2	F/BR	WC	18	20	4	blue-white	No	Yes	
1470	3B	2	F/BR	WC	15	15	2.5	blue-white-pink	No	Yes	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1471	3B	2	F/BR	WC	14	13	2.5	yellow-blue	No	No	
1472	3B	2	F/BR	WC	14	21	2.5	gray	Yes	No	F/BR?
1473	3B	2	F/BR	WC	21	16	2.5	tan and white	No	No	
1474	3B	2	F/BR	WC	11	14	2.5	white	No	Yes	
1475	3B	2	F/BR	WC	16	18	2	red	Yes	No	
1476	3B	2	F/BR	WC	12	17	2	red and brown	Yes	No	
1477	3B	2	F/BR	WC	15	22	2.5	brown and cream	No	Yes	
1478	3B	2	F/BR	WC	17	13	2.5	red	Yes	Yes	
1479	3B	2	F/BR	WC	16	21	4	white-pink-gray	Yes	Yes	
1480	3B	2	F/PBL	WC	21	14	4	cream-blue	No	Yes	
1481	3B	2	EUF	WC	28	16	4	tan	No	Yes	F/PBL, (355)
1482	3B	2	SFG/EU	WC	17	17	4	cream-white	No	Yes	F/PBL
1483	3B	2	EUF	WC	10	12	3	yellow-white	No	No	F/PBL, (338)
1484	3B	2	EUF	WC	40	19	5.5	tan and white	No	Yes	core type?, F/B, (336)
1485	3B	2	F/B	WC	33	13	5	tan and white	No	No	(337)
1486	3B	2	F/B	WC	26	10	6	blue-gray-white	No	No	EU?, (339)
1487	3B	2	EUF	WC	18	11	3	brown and red	Yes	No	jasper, F/PBL, (340)
1488	3B	2	F/PP	WC	14	30	6	yellow-white	No	No	circular
1489	3B	2	F/PP	WC	16	25	3	tan	No	No	circular
1490	3B	2	F/PP	WC	11	17	2	yellow-white	No	No	circular
1491	3B	2	F/PP	WC	10	18	2	yellow-gray	No	No	circular
1492	3B	2	SF/EU	WC	28	18	2.5	blue-white	No	No	2 snaps, (345)
1493	3B	2	SF	WC	12	9	1.5	blue	No	No	3 snaps, (343)
1494	3B	2	SFG	WC	26	16	5	brown, blue and pink	No	No	2 snaps, (347)
1495	3B	2	SFG/EU	WC	16	16	2.5	white	No	No	5 snaps, (346)
1496	3B	2	SF/BG	WC	30	21	12	blue	No	No	3 snaps/spalls, (354)
1497	3B	2	SFG/EU	WC	25	14	4	blue-white	No	No	1 snap, (349)
1498	3B	2	SF/EU	WC	26	14	8	tan, white and blue	No	No	2 snaps, (348)
1499	3B	2	SF/EU	WC	30	30	10	brown-blue-white	No	Yes	2 snaps, blade flake, (352)
1500	3B	2	G	WC	26	18	4	white and blue-brown	No	No	F/B, notch, SF, (358)
1501	3B	2	F/PC	WC	41	13	10	white	No	No	
1502	3B	2	F/PC	WC	37	15	8	blue-white	No	No	
1503	3B	2	HPS	WC	23	22	6	cream-white	No	No	
1504	3B	2	HPS	WC	13	18	5	cream-white	No	No	
1505	3B	2	SF/EU	WC	17	18	4	cream	No	No	2 snaps, (344)
1506	3B	2	F/S	WC	23	0	0	blue-white	No	No	
1507	3B	2	F/S	WC	25	0	0	blue-white	No	No	
1508	3B	2	TFF	WC	31	0	0	blue-white-red	Yes	No	
1509	3B	2	F/PC/Cx	WC	29	18	13	white and pink	Yes	No	
1510	3B	2	F/PC	WC	28	16	8	blue and gray	No	No	
1511	3B	2	SF/EU	WC	18	17	4	brown and white	No	No	2 snaps, (342)
1512	3B	2	W/EU	WC	40	25	9.5	pink and white	Yes	No	(356)

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1513	3B	2	EUF	WC	25	15	5	blue-white	No	No	F/BR, (341)
1514	3B	2	EUF	WC	24	25	9	cream-white	No	Yes	end used, graver spur, (357)
1515	3B	2	EWF/HPS	WC	28	27	8	tan-brown	No	No	(353)
1516	3B	2	SS	UC	63	23	5.5	brown	Yes	No	jasper, (350)
1517	3B	2	ES	WC	28	25	9	white	No	No	(wear analysis), graver spur, (351)
1518	3B	2	F/S	Qe	15	0	0	brown	No	No	
1519	3B	2	F/T	Qe	14	8	1	brown	No	No	
1520	3B	2	SF	WC	28	18	8	white and blue	No	No	
1521	3C	1	CF/Cx	WC	53	41	26	pink-white	Yes	Yes	
1522	3C	1	CF/Cx	WC	41	26	23	pink-blue	Yes	No	
1523	3C	1	F/PC/Cx	WC	31	33	12	brown and pink	Yes	No	
1524	3C	1	F/PC/Cx	WC	38	24	9	brown and red	Yes	No	
1525	3C	1	EUF	WC	33	26	9	tan and blue	No	No	F/PC/Cx, (359)
1526	3C	1	F/PC/Cx	WC	31	32	11	yellow-gray	No	Yes	
1527	3C	1	LF/Cx	WC	30	19	11	brown	No	No	
1528	3C	1	LF/Cx	WC	33	12	7	gray-blue-brown	No	No	
1529	3C	1	F/S/Cx	WC	19	0	0	blue-pink	No	No	
1530	3C	1	F/PC	WC	22	30	10	gray-brown	No	No	
1531	3C	1	LF/Cx	WC	23	0	0	pink	No	No	
1532	3C	1	F/PC	WC	26	28	11	blue-brown-cream	No	No	
1533	3C	1	F/Cx	WC	24	16	5	yellow-gray	No	No	
1534	3C	1	F/Cx	WC	14	16	4	yellow-tan	No	No	
1535	3C	1	F/Cx	WC	10	0	0	blue	No	No	
1536	3C	1	F/Cx	WC	11	0	0	blue	No	No	
1537	3C	1	EUF	WC	17	17	5	brown and white	No	Yes	jasper, F/PBL, (361)
1538	3C	1	EUF	WC	12	18	4.5	brown and white	No	Yes	jasper, F/PBL, (367)
1539	3C	1	EUF	WC	38	14	8	brown-cream	No	Yes	F/B, (360)
1540	3C	1	SFG/EU	WC	19	20	4	blue and tan	No	No	(374)
1541	3C	1	SF/EU	WC	15	19	5	spotted white	No	Yes	(373)
1542	3C	1	HPS	WC	9	15	1	cream	No	No	
1543	3C	1	EWF	WC	20	14	2.5	cream, blue and brown	No	No	F/PBL, serrated, (364)
1544	3C	1	SF/HPS	WC	15	15	3	cream	No	No	
1545	3C	1	HPS	WC	20	11	7	blue-white	Yes	No	
1546	3C	1	HPS	WC	12	12	3.5	tan	No	No	
1547	3C	1	BS	WC	18	10	5	blue	No	No	
1548	3C	1	EUF	WC	35	19	3	blue	No	No	(372)
1549	3C	1	EUF	WC	26	16	8	white	Yes	No	burned?
1550	3C	1	EUF	WC	18	26	10	blue-white	No	No	(370)
1551	3C	1	EUF	WC	22	21	9	blue-white-pink	Yes	Yes	F/PBL, (362)
1552	3C	1	EUF	WC	15	19	5	tan	No	Yes	(369)
1553	3C	1	EUF	WC	15	15	4	white-blue	No	Yes	(371)
1554	3C	1	F/T	WC	18	14	2.5	tan	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1555	3C	1	F/T	WC	16	13	3	blue	No	No	
1556	3C	1	F/T	WC	9	12	2.5	pink-brown	Yes	No	
1557	3C	1	F/T	WC	15	12	1.5	pink	Yes	No	
1558	3C	1	F/T	WC	18	14	2.5	brown and white	No	No	
1559	3C	1	F/T	WC	10	18	2	spotted white	No	Yes	
1560	3C	1	F/T	WC	10	10	2	white	No	No	
1561	3C	1	F/T	WC	10	10	2.5	yellow-white	No	No	
1562	3C	1	F/T	WC	11	9	1.5	yellow	No	Yes	
1563	3C	1	F/T	WC	11	11	2	cream	Yes	No	
1564	3C	1	F/T	WC	15	8	3	yellow	No	No	
1565	3C	1	F/T	WC	15	8	2	white	No	No	
1566	3C	1	F/T	WC	12	13	2	white and pink	Yes	Yes	
1567	3C	1	F/S	WC	9	10	1.5	tan	No	No	
1568	3C	1	F/S	WC	12	8	2	white-clear	No	No	
1569	3C	1	F/S	WC	7	10	1	red	Yes	No	
1570	3C	1	F/S	WC	9	13	1.5	tan and blue	No	No	
1571	3C	1	F/S	WC	8	10	1	brown and tan	No	No	
1572	3C	1	F/S	WC	11	9	1	white	No	No	
1573	3C	1	F/S	WC	9	8	2	yellow	No	No	
1574	3C	1	F/S/Cx	WC	8	11	2.5	blue	No	No	
1575	3C	1	F/BR	WC	12	19	3	white	No	Yes	
1576	3C	1	F/BR	WC	21	12	2	dark brown and white	No	No	
1577	3C	1	F/BR	WC	13	13	1.5	spotted-gray	Yes	No	
1578	3C	1	F/BR	WC	8	15	3	red and white	Yes	Yes	
1579	3C	1	F/BR	WC	9	14	2.5	blue	No	No	
1580	3C	1	F/BR	WC	11	11	1.5	tan and gray	No	Yes	
1581	3C	1	EUF	WC	22	14	2.5	gray-white	No	Yes	F/PBL, (363)
1582	3C	1	F/PBL	WC	21	10	3	white	No	Yes	EU?, (366)
1583	3C	1	SF/EU	WC	16	14	3.5	blue-tan-white	No	Yes	F/PBL, SF, (368)
1584	3C	1	F/PBL	WC	13	10	4	pink	Yes	Yes	EU?, (365)
1585	3C	1	TFF	WC	23	0	0	blue-white-pink	Yes	No	
1586	3C	1	TFF	WC	21	0	0	pink and gray	Yes	No	
1587	3C	1	TFF	WC	18	0	0	red	Yes	No	
1588	3C	1	TFF	WC	20	0	0	pink and white	Yes	No	
1589	3C	1	TFF	WC	16	0	0	white	Yes	No	
1590	3C	1	TFF	WC	17	0	0	gray-white and pink	Yes	No	
1591	3C	1	TFF	WC	23	0	0	white, red and pink	Yes	No	
1592	3C	1	TFF	WC	18	0	0	red and white	Yes	No	
1593	3C	1	TFF	WC	18	0	0	red and blue	Yes	No	
1594	3C	1	TFF	WC	13	0	0	white, red and blue	Yes	No	
1595	3C	1	TFF	WC	13	0	0	pink	Yes	No	
1596	3C	1	TFF	WC	17	0	0	white and gray	Yes	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1597	3C	1	TFF	WC	14	0	0	white	Yes	No	
1598	3C	1	TFF	WC	9	0	0	white and red	Yes	No	
1599	3C	1	TFF	WC	11	0	0	blue and red	Yes	No	
1600	3C	1	TFF	WC	12	0	0	white and gray	Yes	No	
1601	3C	1	TFF	WC	11	0	0	red and white	Yes	No	
1602	3C	1	TFF	WC	10	0	0	red and blue	Yes	No	
1603	3C	1	TFF	WC	13	0	0	white	Yes	No	
1604	3C	1	TFF	WC	15	0	0	white	Yes	No	
1605	3C	1	TFF	WC	10	0	0	red and white	Yes	No	
1606	3C	1	TFF	WC	9	0	0	tan	Yes	No	
1607	3C	1	TFF	WC	10	0	0	white and pink	Yes	No	
1608	3C	1	TFF	WC	10	0	0	pink-gray	Yes	No	
1609	3C	1	F/PBL	WC	19	15	3	dark brown, blue and white	Yes	No	burned?
1610	3C	1	WS	WC	18	14	5	pink and white	Yes	No	
1611	3C	1	F/S	WC	15	0	0	white	No	No	
1612	3C	1	F/S	WC	23	0	0	brown	No	No	
1613	3C	1	F/S	WC	23	0	0	tan, white and red	No	No	
1614	3C	1	F/S	WC	24	0	0	white	No	No	
1615	3C	1	F/S	WC	18	0	0	cream	No	No	
1616	3C	1	F/S	WC	19	0	0	yellow and white	No	No	
1617	3C	1	F/S	WC	15	0	0	white	No	No	
1618	3C	1	F/S	WC	20	0	0	red	No	No	
1619	3C	1	F/S	WC	17	0	0	tan and blue	No	No	
1620	3C	1	F/S	WC	20	0	0	red and white	Yes	No	
1621	3C	1	F/S	WC	12	0	0	red and white	Yes	No	
1622	3C	1	F/S	WC	17	0	0	pink	Yes	No	
1623	3C	1	F/S	WC	16	0	0	blue and white	No	No	
1624	3C	1	F/S	WC	20	0	0	yellow-gray	No	No	
1625	3C	1	F/S	WC	11	0	0	red and white	Yes	No	
1626	3C	1	F/S	WC	14	0	0	pink and white	No	No	
1627	3C	1	F/S	WC	14	0	0	blue and white	No	No	
1628	3C	1	F/S	WC	12	0	0	dark brown and blue	No	No	
1629	3C	1	F/S	WC	12	0	0	cream	No	No	
1630	3C	1	F/S	WC	13	0	0	brown and white	No	No	
1631	3C	1	F/S	WC	12	0	0	red	Yes	No	
1632	3C	1	F/S	WC	14	0	0	white	No	No	
1633	3C	1	F/S	WC	14	0	0	white and brown	No	No	
1634	3C	1	F/S	WC	14	0	0	blue	No	No	
1635	3C	1	F/S	WC	10	0	0	blue-white	No	No	
1636	3C	1	F/S	WC	13	0	0	blue-white	No	No	
1637	3C	1	F/S	WC	12	0	0	blue	No	No	
1638	3C	1	F/S	WC	11	0	0	yellow	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1639	3C	1	F/S	WC	15	0	0	white and brown	No	No	
1640	3C	1	F/S	WC	11	0	0	red and white	Yes	No	
1641	3C	1	F/S	WC	12	0	0	pink and white	Yes	No	
1642	3C	1	F/S	WC	11	0	0	blue	No	No	
1643	3C	1	F/S	WC	10	0	0	white	No	No	
1644	3C	1	F/S	WC	11	0	0	gray and white	No	No	
1645	3C	1	F/S	WC	10	0	0	blue-white	No	No	
1646	3C	1	F/S	WC	10	0	0	gray-pink and white	Yes	No	
1647	3C	1	F/S	WC	14	0	0	pink and white	Yes	No	
1648	3C	1	F/S	WC	14	0	0	white	No	No	
1649	3C	1	F/S	WC	10	0	0	white	No	No	
1650	3C	1	F/S	WC	10	0	0	tan	No	No	
1651	3C	1	F/S	WC	9	0	0	pink and white	Yes	No	
1652	3C	1	F/S	WC	8	0	0	blue	No	No	
1653	3C	1	F/S	WC	11	0	0	blue	No	No	
1654	3C	1	F/S	Qe	17	0	0	gray-white	Yes	No	
1655	3C	1	F/T	Qe	7.5	9	1	brown	No	No	
1656	3C	1	F/PBL	WC	12	10	4	pink and white	Yes	Yes	
1657	3C	1	F/PBL	WC	15	13	4	yellow and blue	No	Yes	
1658	3C	2	F/Cx	WC	33	26	10	blue-white	No	No	
1659	3C	2	F/Cx	WC	34	18	8	brown	No	No	
1660	3C	2	F/Cx	WC	23	21	6	pink and white	Yes	No	
1661	3C	2	F/Cx	WC	16	24	7	blue-white	No	No	
1662	3C	2	F/Cx	WC	20	17	9	brown-blue	No	No	
1663	3C	2	F/Cx	WC	14	23	8	brown	No	No	
1664	3C	2	F/Cx	WC	21	14	6	white and blue	No	No	
1665	3C	2	F/Cx	WC	11	17	7	blue	No	No	
1666	3C	2	F/Cx	WC	20	11	6	gray-blue	No	No	
1667	3C	2	F/Cx	WC	11	10	6	gray-blue	No	No	
1668	3C	2	F/Cx	WC	11	7	5	white	No	No	
1669	3C	2	F/Cx	WC	14	6	5	gray	No	No	
1670	3C	2	EUF	WC	23	44	13	blue	No	No	F/PC, (378)
1671	3C	2	CF/Cx	WC	22	43	18	brown-blue-white	Yes	No	
1672	3C	2	F/PC/Cx	WC	32	26	13	brown-blue-white-red	Yes	No	
1673	3C	2	F/PC/Cx	WC	23	25	15	blue and red	Yes	No	
1674	3C	2	F/PC/Cx	WC	22	23	13	white, red and blue	Yes	No	
1675	3C	2	F/PC	WC	19	22	5	pink, white and blue	Yes	No	
1676	3C	2	EUF	WC	30	41	4	brown, white and pink	No	Yes	F/PC, (380)
1677	3C	2	F/PC	WC	25	30	5	white	No	No	
1678	3C	2	F/PC	WC	24	30	7	gray-white	No	Yes	
1679	3C	2	F/PC	WC	26	12	12	brown and white	Yes	No	burned?
1680	3C	2	F/PC	WC	15	26	7	yellow-white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1681	3C	2	SF/EU	WC	15	21	4	cream	No	No	(377)
1682	3C	2	F/PBL	WC	23	13	2.5	yellow and red	No	Yes	
1683	3C	2	EUF	WC	31	12	5	brown	No	Yes	F/B, (381)
1684	3C	2	EWF	WC	29	22	6	blue-white-brown	No	No	F/PBL (wear analysis), (376)
1685	3C	2	F/BR	WC	35	21	5	brown	No	Yes	F/BR?
1686	3C	2	EUF	WC	25	19	3.5	red and white	Yes	Yes	(386)
1687	3C	2	F/BR	WC	21	18	2	cream-gray	No	Yes	
1688	3C	2	F/BR	WC	14	18	2.5	gray-white	No	Yes	
1689	3C	2	F/BR	WC	18	14	3	blue-pink	Yes	Yes	
1690	3C	2	F/PC/Cx	WC	22	20	7	blue	No	No	
1691	3C	2	EUF	WC	47	9	7	white	Yes	Yes	F/B, (379)
1692	3C	2	ES(F)	WC	12	23	8	white	Yes	No	broken, (375)
1693	3C	2	EUF	WC	28	23	6	dark brown and pink	Yes	No	F/PBL, (382)
1694	3C	2	EUF	WC	19	19	6	dark brown and pink	Yes	Yes	F/PBL, (383)
1695	3C	2	F/BR	WC	18	26	4	white	No	No	
1696	3C	2	HPS	WC	31	18	4	tan and white	No	No	
1697	3C	2	EUF	WC	31	11	5.5	blue and brown	No	No	HPS, (384)
1698	3C	2	HPS	WC	16	19	2.5	blue and white	No	No	
1699	3C	2	HPS	WC	20	17	3	blue and white	No	No	
1700	3C	2	EUF	WC	19	13	3.5	blue and white	No	No	HPS, slot tool?, (385)
1701	3C	2	HPS	WC	9	13	6	white	No	No	
1702	3C	2	HPS	WC	15	19	3.5	white	No	No	
1703	3C	2	HPS	WC	14	14	2	white	No	No	
1704	3C	2	F/T	WC	17	10	2	gray-white	No	Yes	
1705	3C	2	F/T	WC	10	17	2.5	cream	No	Yes	
1706	3C	2	F/T	WC	16	14	3	yellow	No	No	
1707	3C	2	F/T	WC	12	11	2.5	clear, white	No	No	
1708	3C	2	F/T	WC	11	10	2	brown and pink	Yes	Yes	
1709	3C	2	F/T	WC	17	13	1.5	brown and yellow-pink	Yes	No	
1710	3C	2	F/T	WC	14	11	3	white	Yes	No	
1711	3C	2	F/T	WC	18	12	2.5	white	No	No	
1712	3C	2	F/T	WC	13	14	1.5	cream	No	No	
1713	3C	2	F/T	WC	14	14	2	pink and cream	Yes	No	
1714	3C	2	F/T	WC	7	13	2	blue	No	Yes	
1715	3C	2	F/T	WC	10	12	2	blue	No	No	
1716	3C	2	F/T	WC	10	11	3	gray	No	Yes	
1717	3C	2	F/T	WC	6	11	2	white	No	No	
1718	3C	2	F/T	WC	8	14	2.5	yellow	No	No	
1719	3C	2	F/T	WC	10	9	2	pink	No	No	
1720	3C	2	F/T	WC	8	8	1	pink-blue	No	No	
1721	3C	2	F/T	WC	8	11	1	gray	No	No	
1722	3C	2	F/T	WC	8	11	2	tan	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1723	3C	2	F/T	WC	8	11	2	red	Yes	No	
1724	3C	2	F/S	WC	22	0	0	white	No	No	
1725	3C	2	F/S	WC	14	0	0	cream	No	No	
1726	3C	2	F/S	WC	16	0	0	brown	No	No	
1727	3C	2	F/S	WC	15	0	0	clear, white	No	No	
1728	3C	2	F/S	WC	14	0	0	white	No	No	
1729	3C	2	F/S	WC	14	0	0	brown	No	No	jasper
1730	3C	2	F/S	WC	15	0	0	pink and white	Yes	No	
1731	3C	2	F/S	WC	12	0	0	red and white	Yes	No	
1732	3C	2	F/S	WC	15	0	0	dark brown and white	No	No	
1733	3C	2	F/S	WC	13	0	0	white	No	No	
1734	3C	2	F/S	WC	15	0	0	white	No	No	
1735	3C	2	F/S	WC	16	0	0	yellow-white	No	No	
1736	3C	2	F/S	WC	21	0	0	blue-white	No	No	
1737	3C	2	F/S	WC	11	0	0	pink and white	Yes	No	
1738	3C	2	F/S	WC	14	0	0	brown and white	No	No	
1739	3C	2	F/S	WC	13	0	0	red	Yes	No	
1740	3C	2	F/S	WC	16	0	0	cream and blue	No	No	
1741	3C	2	F/S	WC	12	0	0	tan and blue	No	No	
1742	3C	2	F/S	WC	12	0	0	clear and red	Yes	No	
1743	3C	2	F/S	WC	11	0	0	tan and blue	No	No	
1744	3C	2	F/S	WC	11	0	0	clear and blue	Yes	No	
1745	3C	2	F/S	WC	9	0	0	blue-white	No	No	
1746	3C	2	F/S	WC	14	0	0	pink and yellow	Yes	No	
1747	3C	2	F/S	WC	12	0	0	white and pink	Yes	No	
1748	3C	2	F/S	WC	9	0	0	yellow-white	No	No	
1749	3C	2	F/S	WC	11	0	0	blue-white	No	No	
1750	3C	2	F/S	WC	14	0	0	white	No	No	
1751	3C	2	F/S	WC	10	0	0	white and red	No	No	
1752	3C	2	F/S	WC	12	0	0	white	No	No	
1753	3C	2	F/S	WC	10	0	0	yellow	No	No	
1754	3C	2	F/S	WC	12	0	0	brown and blue	No	No	
1755	3C	2	F/S	WC	9	0	0	tan	No	No	
1756	3C	2	F/S	WC	7	0	0	blue and white	Yes	No	
1757	3C	2	F/S	WC	8	0	0	white and brown	No	No	
1758	3C	2	TFF	WC	25	0	0	pink and blue	Yes	No	
1759	3C	2	TFF	WC	24	0	0	white, blue and pink	Yes	No	
1760	3C	2	TFF/Cx	WC	29	0	0	black, blue and red	Yes	No	
1761	3C	2	TFF/Cx	WC	19	0	0	red	Yes	No	
1762	3C	2	TFF	WC	21	0	0	white	Yes	No	
1763	3C	2	TFF	WC	13	0	0	white and gray	Yes	Yes	
1764	3C	2	TFF	WC	13	0	0	tan	Yes	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1765	3C	2	TFF	WC	12	0	0	red and white	Yes	No	
1766	3C	2	TFF	WC	16	0	0	pink and white	Yes	No	
1767	3C	2	TFF	WC	13	0	0	blue-pink-white	Yes	No	
1768	3C	2	TFF	WC	13	0	0	pink and red	Yes	No	
1769	3C	2	TFF	WC	15	0	0	red	Yes	No	
1770	3C	2	TFF	WC	12	0	0	blue and white	Yes	No	
1771	3C	2	TFF	WC	13	0	0	pink and white	Yes	No	
1772	3C	2	TFF	WC	13	0	0	red, white and brown	Yes	No	
1773	3C	2	TFF	WC	9	0	0	white and gray	Yes	No	
1774	3C	2	F/S	Qe	15	0	0	brown and red	Yes	No	
1775	3C	2	F/BR	Qe	10	17	2	red	Yes	Yes	
1776	3C	2	F/Cx	UC	12	8	2	red and cream	No	No	cobble surface
1777	3C	2	F/T	S/Qz	12	12	1.5	white	No	No	fine grain
1778	3D	1	CF	WC	46	32	25	yellow and tan	No	No	
1779	3D	1	W	WC	44	21	18	blue-white	No	No	BPC?, (389)
1780	3D	1	W	WC	59	25	8	blue-white and brown	No	No	BPC?, (387)
1781	3D	1	HPS	WC	28	35	9	blue-white	No	No	
1782	3D	1	EUF	WC	29	11	6	yellow	No	No	HPS, (388)
1783	3D	1	HPS/Cx	WC	13	21	3	tan	No	No	
1784	3D	1	HPS	WC	19	24	6	tan and blue	No	No	
1785	3D	1	HPS	WC	11	19	3	yellow	No	No	
1786	3D	1	HPS	WC	12	13	3	yellow-white	No	No	
1787	3D	1	BG	WC	23	29	11	blue-white	No	No	(393)
1788	3D	1	EWF/G	WC	10	17	5	blue-white	No	No	micro-tool,(392)
1789	3D	1	F/T	WC	17	13	3	white	No	Yes	
1790	3D	1	F/T	WC	13	12	3	white	No	No	
1791	3D	1	F/T	WC	13	7	1.5	white and gray	Yes	No	burned?
1792	3D	1	F/T	WC	12	14	4	gray-brown	No	Yes	
1793	3D	1	F/T	WC	6	12	2	yellow	No	No	
1794	3D	1	F/T	WC	16	11	3	brown, blue, and white	No	No	
1795	3D	1	F/T	WC	12	10	2.5	tan and blue	No	No	
1796	3D	1	F/T	WC	13	13	3.5	pink and white	Yes	No	
1797	3D	1	F/T	WC	8	10	2	white-tan	No	No	
1798	3D	1	F/T	WC	10	9	1.5	blue	No	No	
1799	3D	1	F/T	WC	12	10	1.5	yellow-white	No	Yes	
1800	3D	1	F/T	WC	9	7	1.5	pink-white	Yes	No	
1801	3D	1	F/T	WC	7	7	1	pink	Yes	No	
1802	3D	1	F/T	WC	9	8	1	cream and red	Yes	No	
1803	3D	1	F/T	WC	6	6.5	1	blue	No	No	
1804	3D	1	F/T	WC	7	8	2	white	No	Yes	
1805	3D	1	F/T	WC	7	7	1.5	pink	Yes	No	
1806	3D	1	F/PC/Cx	WC	35	29	16	blue	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1807	3D	1	F/PC/Cx	WC	24	26	8	blue-white	No	No	
1808	3D	1	EUF	WC	26	16	8	blue-white	No	No	F/PC/Cx, PBL, (394)
1809	3D	1	F/PC/Cx	WC	38	19	7	blue-white	No	No	
1810	3D	1	F/PC/Cx	WC	14	19	6	cream	No	No	
1811	3D	1	F/Cx	WC	8	12	1.5	brown	No	No	
1812	3D	1	LF/Cx	WC	11	0	0	brown	No	No	
1813	3D	1	LF/Cx	WC	13	0	0	brown	No	No	
1814	3D	1	F/S/Cx	WC	10	0	0	yellow-brown	No	No	
1815	3D	1	F/S/Cx	WC	7.5	0	0	blue	No	No	
1816	3D	1	TFF	WC	10	0	0	red and white	Yes	No	
1817	3D	1	TFF	WC	13	0	0	red	Yes	No	
1818	3D	1	TFF	WC	14	0	0	gray	Yes	No	
1819	3D	1	TFF	WC	14	0	0	yellow-gray	Yes	No	
1820	3D	1	TFF	WC	11	0	0	red and blue	Yes	No	
1821	3D	1	TFF	WC	13	0	0	yellow-gray	Yes	No	
1822	3D	1	TFF	WC	11	0	0	white and pink	Yes	No	
1823	3D	1	TFF	WC	7	0	0	red	Yes	No	
1824	3D	1	TFF	WC	8.5	0	0	red	Yes	No	
1825	3D	1	TFF	WC	8	0	0	red	Yes	No	
1826	3D	1	TFF	WC	10	0	0	tan	Yes	No	
1827	3D	1	TFF	WC	9	0	0	yellow-white	Yes	No	
1828	3D	1	F/S	WC	21	0	0	tan	No	No	
1829	3D	1	F/S	WC	20	0	0	gray-blue	No	No	
1830	3D	1	F/S	WC	12	0	0	pink	Yes	No	
1831	3D	1	F/S	WC	19	0	0	blue-white	No	No	
1832	3D	1	F/S	WC	15	0	0	pink	Yes	Yes	
1833	3D	1	F/S	WC	16	0	0	blue	No	No	
1834	3D	1	F/S	WC	16	0	0	red	Yes	No	
1835	3D	1	F/S	WC	20	0	0	blue and brown	No	No	
1836	3D	1	F/S	WC	16	0	0	red	Yes	No	
1837	3D	1	F/S	WC	12	0	0	red	Yes	No	
1838	3D	1	F/S	WC	14	0	0	brown	No	No	
1839	3D	1	F/S	WC	19	0	0	blue-white	No	No	
1840	3D	1	F/S	WC	16	0	0	yellow-white	No	No	
1841	3D	1	F/S	WC	21	0	0	white	No	No	
1842	3D	1	F/S	WC	15	0	0	yellow and blue	No	No	
1843	3D	1	F/S	WC	15	0	0	yellow	No	No	
1844	3D	1	F/S	WC	13	0	0	yellow and white	No	No	
1845	3D	1	F/S	WC	12	0	0	red and clear	Yes	No	
1846	3D	1	F/S	WC	13	0	0	blue-white	No	No	
1847	3D	1	F/S	WC	16	0	0	blue-white	No	No	
1848	3D	1	F/S	WC	14	0	0	gray	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1849	3D	1	F/S	WC	13	0	0	blue-white	No	No	
1850	3D	1	F/S	WC	15	0	0	blue-white	No	No	
1851	3D	1	F/S	WC	18	0	0	blue	No	No	
1852	3D	1	F/S	WC	13	0	0	pink-white	Yes	No	
1853	3D	1	F/S	WC	12	0	0	yellow-white	No	No	
1854	3D	1	F/S	WC	12	0	0	tan	No	No	
1855	3D	1	F/S	WC	13	0	0	blue-white	No	No	
1856	3D	1	F/S	WC	15	0	0	white	No	No	
1857	3D	1	F/S	WC	11	0	0	yellow-white	No	No	
1858	3D	1	F/S	WC	14	0	0	blue-gray	No	No	
1859	3D	1	F/S	WC	11	0	0	blue	No	No	
1860	3D	1	F/S	WC	13	0	0	blue	No	No	
1861	3D	1	F/S	WC	12	0	0	cream	No	No	
1862	3D	1	F/S	WC	12	0	0	blue and pink	No	No	
1863	3D	1	F/S	WC	10	0	0	blue-white	No	No	
1864	3D	1	F/S	WC	11	0	0	blue	No	No	
1865	3D	1	F/S	WC	11	0	0	white	No	No	
1866	3D	1	F/S	WC	8	0	0	white	No	No	
1867	3D	1	F/S	WC	9	0	0	gray and white	No	No	
1868	3D	1	F/S	WC	7	0	0	tan	No	No	
1869	3D	1	F/S	WC	7	0	0	blue and tan	No	No	
1870	3D	1	F/S	WC	10	0	0	yellow	No	No	
1871	3D	1	F/S/Cx	Qe	11	0	0	red	Yes	No	cobble cortex
1872	3D	1	F/T	CQz	8	12	2	clear	No	Yes	
1873	3D	1/PZ	CP Channel F	WC (J)	20	12	2.5	yellow-brown	No	No	level 1/PZ interface, (391)
1874	3D	1/PZ	F/B	WC	37	19	5	tan and red	Yes	Yes	level 1/PZ interface, (390)
1875	6A	1	LF/Cx	WC	44	39	6	blue-gray	No	No	
1876	6A	1	F/Cx	WC	10	13	4	blue	No	No	
1877	6A	1	F/PP	WC	15	27	2	clear, white-gray	No	No	EU?
1878	6A	1	F/PP	WC	22	16	3	brown and white	No	No	
1879	6A	1	F/PC	WC	16	27	5	blue and white	No	Yes	
1880	6A	1	F/BR	WC	10	16	1.5	white	No	Yes	
1881	6A	1	TFF	WC	16	0	0	white and brown	Yes	No	
1882	6A	1	F/T	WC	12	15	3.5	clear and white	No	Yes	
1883	6A	1	F/T	WC	16	13	2	blue and white	No	No	
1884	6A	1	F/T	WC	14	11	1	blue and yellow	No	No	
1885	6A	1	F/T	WC	9	13	1.5	white	No	No	
1886	6A	1	F/T	WC	15	9	2	blue and yellow-white	No	No	
1887	6A	1	F/T	WC	10	7.5	1.5	blue-gray	No	No	
1888	6A	1	F/T	WC	12	6	1	blue-white	No	No	
1889	6A	1	F/T	WC	11	7	1	blue-brown	No	No	
1890	6A	1	F/T	WC	8	7	1	white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1891	6A	1	F/T	WC	10	7	1.5	white	No	No	
1892	6A	1	F/T	WC	7	6	0.5	blue	No	No	
1893	6A	1	F/T	WC	9	8	1	yellow and blue	No	No	
1894	6A	1	F/T	WC	12	10	2	blue	No	No	
1895	6A	1	F/S	WC	22	0	0	blue and white	No	No	
1896	6A	1	F/S	WC	16	0	0	blue and white	No	No	
1897	6A	1	F/S	WC	12	0	0	blue and tan	No	No	
1898	6A	1	F/S	WC	16	0	0	blue	No	No	
1899	6A	1	F/S	WC	14	0	0	yellow-gray	No	No	
1900	6A	1	F/S	WC	14	0	0	yellow-blue	Yes	No	
1901	6A	1	F/S	WC	13	0	0	pink and red	Yes	No	
1902	6A	1	F/S	WC	13	0	0	blue-gray and white	No	No	
1903	6A	1	F/S	WC	10	0	0	white	No	No	
1904	6A	1	F/S	WC	8.5	0	0	blue and red	Yes	No	
1905	6A	1	G	WC	29	14	6	blue	No	No	(604)
1906	6A	1	F/T	WC	8	12	1	blue	No	No	
1907	6C	1	CF	WC	43	31	14	yellow-white	No	No	
1908	6C	1	F/Cx	WC	16	20	7.5	gray-white	No	No	
1909	6C	1	F/Cx	WC	19	14	5	brown and white	No	No	
1910	6C	1	F/Cx	WC	16	8	3.5	blue and gray	No	No	
1911	6C	1	F/Cx	WC	20	12	4	gray	No	No	
1912	6C	1	F/Cx	WC	11	9	3	blue-gray	No	No	
1913	6C	1	F/Cx	WC	12	7	4	blue-black	No	No	
1914	6C	1	LF/Cx	WC	15	0	0	brown	No	No	
1915	6C	1	LF/Cx	WC	13	0	0	brown and blue	No	No	
1916	6C	1	LF/Cx	WC	13	0	0	blue-gray	No	No	
1917	6C	1	LF/Cx	WC	16	0	0	brown and cream	No	No	
1918	6C	1	EUF	WC	21	32	7	brown-blue and white	No	Yes	deposits, F/PC, (601)
1919	6C	1	F/PC	WC	19	23	6	brown-blue and white	No	No	
1920	6C	1	F/PC	WC	21	15	4	brown and black	No	No	
1921	6C	1	F/BR	WC	29	19	2.5	brown and white-gray	No	Yes	
1922	6C	1	F/BR	WC	17	13	2.5	white	No	No	
1923	6C	1	F/BR	WC	17	16	4	blue-gray	No	Yes	
1924	6C	1	F/BR	WC	21	19	3.5	yellow and gray	No	No	
1925	6C	1	F/BR	WC	13	12	2	brown and white	No	No	
1926	6C	1	F/T	WC	20	7	2.5	blue and brown	No	No	
1927	6C	1	F/T	WC	7	12	2	blue-gray	No	No	
1928	6C	1	F/T	WC	13	11	2	blue and brown	No	No	
1929	6C	1	F/T	WC	9	12	1	blue and white	No	No	
1930	6C	1	F/T	WC	13	9	2	blue and brown	No	No	
1931	6C	1	EUF	WC	13	10	1.5	blue	No	No	F/T
1932	6C	1	F/T	WC	16	13	2	blue	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1933	6C	1	F/T	WC	14	17	1.5	tan	No	No	
1934	6C	1	F/T	WC	10	15	2	blue	No	No	
1935	6C	1	F/T	WC	14	9	1.5	blue and brown	No	No	
1936	6C	1	F/T	WC	18	9	1.5	yellow and white	No	No	
1937	6C	1	F/T	WC	10	11	2.5	blue and brown	No	No	
1938	6C	1	F/T	WC	10	10	1	white	No	No	
1939	6C	1	F/T	WC	10	11	1.5	blue-white	No	No	
1940	6C	1	F/T	WC	8	9	1.5	blue and brown	No	No	
1941	6C	1	F/T	WC	7	7	1	blue and brown	No	No	
1942	6C	1	F/T	WC	10	6	1.5	blue and brown	No	No	
1943	6C	1	F/T	WC	9	9	2	yellow-white	No	No	
1944	6C	1	F/T	WC	8	9	1	blue	No	No	
1945	6C	1	F/T	WC	7	9	1	red and brown	No	No	
1946	6C	1	F/T	WC	12	7	1	pink and blue	Yes	No	burned?
1947	6C	1	F/T	WC	7	11	1	brown and clear	No	No	
1948	6C	1	F/T	WC	11	8	1.5	brown and blue	No	No	
1949	6C	1	F/S	WC	17	0	0	blue and brown	No	No	
1950	6C	1	F/S	WC	15	0	0	blue and brown	No	No	
1951	6C	1	F/S	WC	17	0	0	blue, white and brown	No	No	
1952	6C	1	F/S	WC	21	0	0	white	No	No	
1953	6C	1	F/S	WC	18	0	0	blue	No	No	
1954	6C	1	F/S	WC	20	0	0	blue and brown	No	No	
1955	6C	1	F/S	WC	19	0	0	blue and gray	No	No	
1956	6C	1	F/S	WC	20	0	0	yellow-white	No	No	
1957	6C	1	F/S	WC	16	0	0	blue and brown	No	No	
1958	6C	1	F/S	WC	20	0	0	blue and brown spotted	No	No	
1959	6C	1	F/S	WC	19	0	0	blue and brown	No	No	
1960	6C	1	F/S	WC	22	0	0	yellow-white	No	No	
1961	6C	1	F/S	WC	16	0	0	blue and white	No	No	
1962	6C	1	F/S	WC	16	0	0	blue and pink	Yes	No	
1963	6C	1	F/S	WC	14	0	0	blue-white and yellow	No	No	
1964	6C	1	F/S	WC	17	0	0	blue and brown	No	No	
1965	6C	1	F/S	WC	17	0	0	blue and red-brown	Yes	No	burned?
1966	6C	1	F/S	WC	13	0	0	gray-white	No	No	
1967	6C	1	F/S	WC	10	0	0	blue	No	No	
1968	6C	1	F/S	WC	12.5	0	0	blue and brown	No	No	
1969	6C	1	F/S	WC	13	0	0	blue and black	No	No	
1970	6C	1	F/S	WC	12	0	0	blue	No	No	
1971	6C	1	F/S	WC	13	0	0	pink-blue-brown	Yes	No	
1972	6C	1	F/S	WC	18	0	0	blue and gray	No	No	
1973	6C	1	F/S	WC	15	0	0	brown and blue	No	No	
1974	6C	1	F/S	WC	11	0	0	dark brown	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
1975	6C	1	F/S	WC	16	0	0	blue and brown	No	No	
1976	6C	1	F/S	WC	12	0	0	blue	No	No	
1977	6C	1	F/S	WC	13	0	0	brown and clear	No	No	
1978	6C	1	F/S	WC	11	0	0	dark brown	No	No	
1979	6C	1	F/S	WC	10	0	0	blue	No	No	
1980	6C	1	F/S	WC	11	0	0	blue and brown	No	No	
1981	6C	1	F/S	WC	13	0	0	gray-white	No	No	
1982	6C	1	F/S	WC	12	0	0	white and clear	No	No	
1983	6C	1	F/S	WC	9	0	0	blue and brown	No	No	
1984	6C	1	F/S	WC	12	0	0	gray	No	No	
1985	6C	1	F/S	WC	9	0	0	yellow-white	No	No	
1986	6C	1	F/S	WC	10	0	0	brown	No	No	jasper
1987	6C	1	F/S	WC	9	0	0	blue-gray	No	No	
1988	6C	1	F/S	WC	8	0	0	blue-white	No	No	
1989	6C	1	F/S	WC	12	0	0	yellow and red	Yes	No	
1990	6C	1	F/S	WC	10	0	0	pink and white	Yes	No	
1991	6C	1	EUF	WC	29	12	2	gray-white	No	No	
1992	6C	1	F/S	Qe	23	0	0	white-gray	No	No	
1993	6C	1	F/T	Qe	8	10	1.5	red	Yes	No	
1994	6C	1	EUF	WC	41	36	17	blue, light brown and cream	No	Yes	Feature; F/LPC/Cx, (614)
1995	6C	1	EUF	WC	37	24	7	blue, spotted brown	No	Yes	Feature; F/PC, (617)
1996	6C	1	F/B	WC	46	24	4.5	blue and clear	No	Yes	Feature; cross mend, (609)
1997	6C	1	EUF	WC	21	34	9	blue	No	No	Feature; F/PC, (616)
1998	6C	1	EUF	WC	41	34	8.5	light brown-tan	No	No	Feature; (wear analysis), F/PC, (608)
1999	6C	1	G/Piercer	WC	28	17	10	blue-white	No	No	Feature; (wear analysis), (612)
2000	6C	1	BG	WC	37	18	7	blue and brown	No	No	Feature; (wear analysis), (613)
2001	6C	1	EUF	WC	16	20	3.5	blue and brown	No	No	Feature; (610)
2002	6C	1	F/S	WC	25	0	0	blue and spotted black	No	No	Feature
2003	6C	1	F/S	WC	15	0	0	blue	No	No	Feature
2004	6C	1	F/T	WC	18	10	3	blue	No	No	Feature
2005	6C	1	F/T	WC	10	13	2	blue	No	Yes	Feature
2006	6C	1	F/PP	WC	15	15	2	blue and spotted black	No	No	Feature
2007	6C	1	F/PP	WC	15	19	3.5	blue and spotted brown	No	No	Feature
2008	6C	1	F/Cx	WC	18	15	5	blue and spotted brown	No	No	Feature
2009	6C	1	F/T	WC	11	10	1.5	blue and spotted brown	No	No	Feature
2010	6C	1	F/S	WC	12	0	0	blue	No	No	Feature
2011	6C	1	F/Cx	WC	14	13	5	blue and spotted brown	No	No	Feature
2012	6C	1	EUF	WC	24	24	3.5	blue and brown	No	No	Feature; F/BR, (615)
2013	6C	1	F/Cx	WC	18	14	7	brown	No	No	Feature
2014	6C	1	F/PP	WC	14	19	4	blue and spotted brown	No	No	Feature
2015	6C	1	F/BR	WC	9	13	3	blue and brown	No	No	Feature
2016	6C	1	F/BR	WC	18	15	3	blue and brown	No	No	Feature; F/BR?

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
2017	6C	1	F/PC	WC	10	23	5	blue and brown	No	No	Feature
2018	6C	1	F/S/Cx	WC	18	0	0	blue and brown	No	No	Feature
2019	6C	1	F/S	WC	17	0	0	blue and brown	No	No	Feature
2020	6C	1	F/S	WC	15	0	0	clear white, blue and spotted brown	No	No	Feature
2021	6C	1	EUF	WC	26	18	2.5	white, blue and brown	No	No	Feature; F/BR
2022	6C	1	EUF	WC	17	17	2.5	white	No	No	Feature, (618)
2023	6C	1	F/BR	WC	12	22	2	white-blue-tan	No	No	Feature; F/BR?
2024	6C	1	F/BR	WC	18	16	3.5	white and yellow	No	Yes	Feature
2025	6C	1	F/PP	WC	25	16	3.5	white and pink-blue	Yes	No	Feature; burned?
2026	6C	1	F/T	WC	13	14	1.5	white, blue and brown	No	No	Feature
2027	6C	1	F/BR	WC	10	16	1.5	blue-white	No	Yes	Feature
2028	6C	1	EUF	WC	13	21	3	clear and white	No	No	Feature; F/BR?, (619)
2029	6C	1	F/PBL	WC	32	18	4	blue and spotted brown	No	No	
2030	6C	1	EUF	WC	31	18	4	blue and brown	No	No	Feature; F/BR, (611)
2031	6D	1	F/PC/Cx	WC	25	32	7	blue and brown-pink	Yes	Yes	burned?
2032	6D	1	F/PC	WC	16	22	5	gray-white	No	Yes	
2033	6D	1	F/PC/Cx	WC	19	25	4	gray-brown-clear	No	No	
2034	6D	1	F/PC	WC	30	21	7	blue-white-clear	No	No	
2035	6D	1	F/PP	WC	18	18	7	white	No	No	
2036	6D	1	F/PC/Cx	WC	24	31	5	gray-blue-clear	No	Yes	
2037	6D	1	EUF	WC	23	18	3	blue and brown	No	No	F/PC (605)
2038	6D	1	SF/EU	WC	23	23	2.5	blue	No	No	F/BR, (603)
2039	6D	1	F/PC/Cx	WC	25	25	6.5	blue-brown-pink	Yes	No	burned?
2040	6D	1	SF/EU	WC	26	19	3.5	gray-clear and pink	Yes	No	
2041	6D	1	EUF	WC	17	11	3.5	blue and gray	No	No	burned?, F/B, (606)
2042	6D	1	LF/Cx	WC	19	18	12	yellow-white	No	No	
2043	6D	1	LF/Cx	WC	19	15	9	red and brown	Yes	No	
2044	6D	1	F/S/Cx	WC	15	0	0	gray-white	No	No	
2045	6D	1	LF/Cx	WC	19	13	6	brown	No	No	
2046	6D	1	F/S/Cx	WC	16	0	0	blue	No	No	
2047	6D	1	F/S/Cx	WC	16	0	0	brown	No	No	
2048	6D	1	F/S/Cx	WC	6	0	0	brown	No	No	
2049	6D	1	F/S/Cx	WC	8	0	0	blue	No	No	
2050	6D	1	F/S/Cx	WC	12	0	0	brown	No	No	
2051	6D	1	F/T	WC	15	12	1.5	brown and white	No	No	
2052	6D	1	F/T	WC	21	8	2	blue-white	No	No	
2053	6D	1	F/T	WC	9	13	2	blue and tan	No	Yes	
2054	6D	1	F/T	WC	9	11	2.5	yellow-white	No	No	
2055	6D	1	F/T	WC	15	11	1.5	blue and brown	No	No	
2056	6D	1	F/T	WC	13	9	2	blue-white	No	Yes	
2057	6D	1	F/T	WC	12	13	2	blue-gray	No	No	
2058	6D	1	F/T	WC	10	10	2	blue	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
2059	6D	1	F/T	WC	10	9	1	white and black	No	No	
2060	6D	1	F/T	WC	8	13	1.5	yellow and white	No	No	
2061	6D	1	F/T	WC	10	9	1.5	blue	No	No	
2062	6D	1	F/T	WC	8	10	2	blue	No	No	
2063	6D	1	F/T	WC	12	8	1.5	yellow-gray	No	No	
2064	6D	1	F/T	WC	9	13	1	blue and brown	No	No	
2065	6D	1	F/T	WC	10	9	1	blue, white and brown	No	No	
2066	6D	1	F/T	WC	11	17	2	pink-blue-brown	Yes	No	
2067	6D	1	F/T	WC	9	16	1.5	pink-blue-brown	Yes	No	
2068	6D	1	F/T	WC	7	13	1.5	blue and white	No	No	
2069	6D	1	F/T	WC	8	8	2	blue	No	No	
2070	6D	1	F/T	WC	15	8	2	blue and brown	No	No	
2071	6D	1	F/T	WC	13	8	1.5	white and brown	No	Yes	
2072	6D	1	F/T	WC	6	10	1	brown and white	No	No	
2073	6D	1	F/T	WC	7	15	2	blue	No	No	
2074	6D	1	F/T	WC	9	12	2	brown and pink	No	No	
2075	6D	1	F/T	WC	12	9	2	tan	No	No	
2076	6D	1	F/T	WC	16	13	3	brown and white	No	Yes	
2077	6D	1	F/T	WC	7	8	1.5	blue and pink	No	No	
2078	6D	1	F/T	WC	10	8	1.5	blue-gray	No	No	
2079	6D	1	F/T	WC	9	10	2	blue and pink	Yes	No	
2080	6D	1	F/T	WC	7	8	1	brown and blue	No	No	
2081	6D	1	F/T	WC	9	8	1.5	pink and white	Yes	No	
2082	6D	1	F/T	WC	8	8	1	brown	No	No	
2083	6D	1	F/T	WC	8	7.5	1.5	white and pink	Yes	No	
2084	6D	1	F/T	WC	6	7	1	yellow-clear	No	No	
2085	6D	1	F/T	WC	7	7	1	brown-tan	No	No	
2086	6D	1	F/T	WC	7	6	1	white and brown	No	No	
2087	6D	1	F/T	WC	7	8	1.5	white	No	No	
2088	6D	1	F/T	WC	5	5	0.5	clear-blue	No	No	
2089	6D	1	F/T	WC	8	7	1	white	No	No	
2090	6D	1	F/T	WC	6	3.5	1	blue	No	No	
2091	6D	1	F/S	WC	16	0	0	white	No	No	
2092	6D	1	F/S	WC	14	0	0	blue-white	No	No	
2093	6D	1	F/S	WC	18	0	0	blue	No	Yes	
2094	6D	1	F/S	WC	21	0	0	white and clear	No	No	
2095	6D	1	F/S	WC	21	0	0	brown and white	No	No	
2096	6D	1	F/S	WC	18	0	0	gray-brown	No	No	
2097	6D	1	F/S	WC	17	0	0	pink	Yes	No	
2098	6D	1	F/S	WC	14	0	0	white	No	No	
2099	6D	1	F/S	WC	18	0	0	brown	No	No	
2100	6D	1	F/S	WC	16	0	0	pink and blue	Yes	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
2101	6D	1	F/S	WC	15	0	0	blue and white	No	No	
2102	6D	1	F/S	WC	17	0	0	tan	No	No	
2103	6D	1	F/S	WC	13	0	0	blue	No	No	
2104	6D	1	F/S	WC	14	0	0	brown and pink	No	No	
2105	6D	1	F/S	WC	9	0	0	pink	Yes	No	
2106	6D	1	F/S	WC	14	0	0	brown and white	No	No	
2107	6D	1	F/S	WC	11	0	0	blue	No	No	
2108	6D	1	F/S	WC	11	0	0	yellow	No	No	
2109	6D	1	F/S	WC	10.5	0	0	white	No	No	
2110	6D	1	F/S	WC	12	0	0	white	No	No	
2111	6D	1	F/S	WC	10	0	0	brown	No	No	
2112	6D	1	F/S	WC	9	0	0	yellow	No	No	
2113	6D	1	F/S	WC	9	0	0	gray-blue	No	No	
2114	6D	1	F/S	WC	10	0	0	black and pink	No	No	
2115	6D	1	F/S	WC	11	0	0	gray	No	No	
2116	6D	1	F/S	WC	10	0	0	tan	No	No	
2117	6D	1	F/S	WC	10	0	0	white	No	No	
2118	6D	1	F/S	WC	12	0	0	blue	No	No	
2119	6D	1	F/S	WC	11	0	0	yellow-clear	No	No	
2120	6D	1	F/S	WC	8.5	0	0	white	No	No	
2121	6D	1	F/S	WC	13	0	0	blue	No	No	
2122	6D	1	F/S	WC	9	0	0	blue	No	No	
2123	6D	1	F/S	WC	10	0	0	blue-white	No	No	
2124	6D	1	F/S	WC	9	0	0	yellow	No	No	
2125	6D	1	F/S	WC	9	0	0	blue	No	No	
2126	6D	1	F/S	WC	8	0	0	white	No	No	
2127	6D	1	F/S	WC	7	0	0	white	No	No	
2128	6D	1	F/S	WC	5	0	0	white	No	No	
2129	6D	1	F/PC/Cx	WC	25	21	11	white-gray	No	No	
2130	6D	1	EUF	WC	17	12	4.5	white	No	No	slot tool?, (607)
2131	6D	1	F/T	WC	12	14	2	pink and white	Yes	No	
2132	6D	1	TFF	WC	12	0	0	pink and white	Yes	No	
2133	6D	1	F/S	WC	10	0	0	gray-white	Yes	No	
2134	6D	1	F/S	WC	8.5	0	0	pink and yellow	Yes	No	
2135	6D	1	Limace	WC	34	11	4	brown and white	No	No	wear analysis, (602)
2136	7A	1	F/PC	WC	31	13	6	brown	No	Yes	
2137	7A	1	F/B	WC	22	10	3.5	brown and white	No	No	
2138	7A	1	F/PC	WC	26	19	11	brown and black	No	Yes	
2139	7A	1	HPS	WC	23	14	2.5	clear-white	No	No	
2140	7A	1	HPS	WC	25	12.5	9	brown	No	No	jasper
2141	7A	1	HPS	WC	30	32	5	gray-brown	No	No	
2142	7A	1	HPS	WC	27	9	3	clear-white	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
2143	7A	1	HPS	WC	14	24	5	pink-white	No	No	
2144	7A	1	HPS	WC	15	10.5	3	white	No	No	
2145	7A	1	HPS	WC	14	13	1.5	brown	No	No	jasper
2146	7A	1	HPS	WC	25	26	4	cream	No	No	
2147	7A	1	HPS	WC	18	15	8	blue-gray	No	No	
2148	7A	1	HPS	WC	21	12	7	clear-white	No	No	
2149	7A	1	HPS	WC	20	15	4	white and gray	No	No	
2150	7A	1	HPS	WC	20	12.5	2.5	brown	No	No	jasper
2151	7A	1	HPS	WC	25	15	6	blue and white	No	No	
2152	7A	1	HPS	WC	18	13	7	cream	No	No	
2153	7A	1	HPS	WC	17	7	6.5	blue-white	No	No	
2154	7A	1	HPS	WC	21	22	8	pink-white	No	No	
2155	7A	1	EUF	WC	20	19	6	blue and brown	No	No	
2156	7A	1	SPS	WC	20	14	3.5	white	No	No	
2157	7A	1	SPS	WC	12	20	3	blue	No	No	
2158	7A	1	SPS	WC	19	11	4	gray	No	No	
2159	7A	1	F/S	WC	12	8	5	yellow-red	No	No	
2160	7A	1	F/S	WC	16	0	0	gray-clear	No	No	
2161	7A	1	F/S	WC	12	9	2	white and brown	No	No	
2162	7A	1	Burin or WS	WC	23	16	5	blue	No	No	wear on multiple surfaces, (716)
2163	7A	1	Notch	WC	35	24	11.5	white and brown	No	No	heavy wear in notch
2164	7A	1	HPS	WC	43	22	7.5	brown and black	No	No	(713)
2165	7A	1	WS	WC	53	24	12	gray and white and clear	No	No	(712)
2166	7A	1	W	WC	25	20.5	7	pink and brown	No	No	
2167	7A	1	WS	WC	29	21	12	cream and tan	No	No	(715)
2168	7A	1	W	WC	31	42	16	striped blue, white, tan and brown	No	No	(711)
2169	7A	1	W	WC	23	17	9.5	clear-white	No	No	(714)
2170	7A	2	HPS	WC	35	17	8	blue	Yes	No	
2171	7A	2	HPS	WC	29	20	4	yellow-brown	No	No	
2172	7A	2	HPS	WC	29	15	7	brown	No	No	jasper
2173	7A	2	HPS	WC	25	12	7	red and blue	No	No	
2174	7A	2	HPS	WC	21	19	3	cream-yellow	No	No	
2175	7A	2	HPS	WC	15	20	3	brown	No	No	
2176	7A	2	HPS	WC	19	9	3.5	blue	No	No	
2177	7A	2	HPS	WC	15	10	3.5	blue	No	No	
2178	7A	2	HPS	WC	20	11	5.5	blue	No	No	
2179	7A	2	HPS	WC	14	16	2.5	clear-white	No	No	
2180	7A	2	HPS	WC	12	21	7.5	gray	No	No	
2181	7A	2	HPS	WC	11	16	3.5	clear-white	No	No	
2182	7A	2	HPS	WC	18	12.5	6	gray-blue	No	No	
2183	7A	2	HPS	WC	14	15	2.5	blue-brown	No	No	
2184	7A	2	HPS	WC	20	17	4	clear-gray	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
2185	7A	2	HPS	WC	14	8	1	white	No	No	
2186	7A	2	HPS	WC	8	13.5	1.5	gray	No	No	
2187	7A	2	HPS	WC	12	7	2	blue-white	No	No	
2188	7A	2	F/S	WC	17	0	0	clear-white	No	No	
2189	7A	2	F/S	WC	13	0	0	blue and red	No	No	
2190	7A	2	F/S	WC	11	0	0	red	Yes	No	
2191	7A	2	F/S	WC	9	0	0	clear-red	Yes	No	
2192	7A	2	F/S	WC	11	0	0	blue and white	No	No	
2193	7A	2	F/S	WC	15	0	0	clear-gray	No	No	
2194	7A	2	F/S	WC	12	0	0	blue-white	No	No	
2195	7A	2	F/S	WC	7	0	0	white	No	No	
2196	7A	2	F/S	WC	11	0	0	clear-blue	No	No	
2197	7A	2	F/S	WC	8	0	0	red	No	No	
2198	7A	2	F/S	WC	7	0	0	gray	No	No	
2199	7A	2	F/S	WC	5	0	0	blue	No	No	
2200	7A	2	F/S	WC	9	0	0	white	No	No	
2201	7A	2	EUF	WC	17	28	2	pink, red and white	No	No	heavy edge wear
2202	7A	2	F/BR	WC	11	18	2.5	white-gray	No	Yes	
2203	7A	2	F/BR	WC	9	15	2	white	No	Yes	
2204	7A	2	F/BR	WC	12	16	2	blue and brown	No	No	
2205	7A	2	W	WC	37	37	18	blue	No	No	(wear analysis), (718)
2206	7A	2	W	WC	38	30	9	gray	No	No	(wear analysis), (719)
2207	7A	2	W	WC	50	19	15	blue and pink	No	No	(wear analysis), (717)
2208	7A	2	WS	WC	38	27	16	blue and clear	No	No	(710)
2209	7A	2	W	WC	32	20	12	gray	No	No	(705)
2210	7A	2	W	WC	47	30	15	blue and pink	Yes	No	(704)
2211	7A	2	W	WC	27	24	13	brown striped	No	No	(708)
2212	7A	2	W	WC	35	22	11	gray and clear	No	No	(707)
2213	7A	2	F/S	WC	8	0	0	cream	No	No	
2214	7A	2	F/S	WC	11	0	0	blue	No	No	
2215	7A	2	F/S	WC	9	0	0	white	No	No	
2216	7B	1	BPC	WC	49	38	16	blue-brown	No	No	
2217	7B	1	F/PC/Cx	WC	41	28	15	brown-white	No	No	
2218	7B	1	F/PC/Cx	WC	35	20	10	gray-clear	No	No	
2219	7B	1	F/PC/Cx	WC	25	18	10	gray-clear	No	No	
2220	7B	1	WS	WC	44	18	11	cream-blue-pink	No	No	(735)
2221	7B	1	WS	WC	44	20	15	blue and brown	No	No	jasper, (734)
2222	7B	1	HPS	WC	28	19	9	gray-blue	No	No	
2223	7B	1	HPS	WC	28	25	9	gray and brown	No	No	jasper
2224	7B	1	HPS	WC	21	18	10	blue and brown	No	No	jasper
2225	7B	1	HPS	WC	31	16	8	brown	No	No	jasper
2226	7B	1	HPS	WC	19	32	10.5	gray-blue	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
2227	7B	1	HPS	WC	32	10	8	yellow and black	No	No	
2228	7B	1	HPS	WC	28	17	5	white and brown	No	No	
2229	7B	1	HPS	WC	25	14	4.5	tan	No	No	
2230	7B	1	HPS	WC	26	11	4	white-gray	No	No	
2231	7B	1	HPS	WC	22	11	5	brown and blue	No	No	
2232	7B	1	HPS	WC	16	11	5	gray	No	No	
2233	7B	1	HPS	WC	20	14	4	red-white	Yes	No	
2234	7B	1	HPS	WC	14	12	3	red-white	Yes	No	
2235	7B	1	F/S	WC	36	17	5	pink-red	Yes	No	
2236	7B	1	F/S	WC	15	0	0	brown	No	No	
2237	7B	1	F/S	WC	19	0	0	brown	No	No	jasper
2238	7B	1	F/S	WC	15	0	0	brown	No	No	
2239	7B	1	F/S	WC	17	0	0	gray-clear	No	No	
2240	7B	1	F/S	WC	14	0	0	white	No	No	
2241	7B	1	F/S	WC	11	0	0	blue, white, brown	No	No	
2242	7B	1	F/S	WC	15	0	0	brown and white	No	No	
2243	7B	1	F/S	WC	15	0	0	white	No	No	
2244	7B	1	F/S	WC	11	0	0	gray-blue	No	No	
2245	7B	1	F/S	WC	10	0	0	gray-white-red	Yes	No	
2246	7B	1	F/S	WC	15	0	0	white and pink	Yes	No	
2247	7B	1	F/BR	WC	26	22	4	gray-white	No	No	
2248	7B	1	F/BR	WC	29	18	3	gray-white-pink	No	Yes	
2249	7B	1	F/BR	WC	33	20	3.5	purple-white	No	Yes	
2250	7B	1	F/BR	WC	18	16	2.5	blue chalcedony	No	Yes	
2251	7B	1	F/BR	WC	11	16	2	blue chalcedony	No	Yes	
2252	7B	1	F/BR	WC	16	18	1.5	blue chalcedony	No	No	
2253	7B	1	F/T	WC	16	10	1.5	brown	No	No	
2254	7B	1	SPS	WC	14	22	2.5	blue chalcedony	No	No	
2255	7B	1	SPS	WC	13	16	3.5	white	No	No	
2256	7B	1	SPS	WC	17	25	5	brown	No	No	
2257	7B	1	SPS	WC	17	14	3.5	gray-brown	No	No	
2258	7B	1	SPS	WC	18	18	4.5	pink-white	No	No	
2259	7B	1	SPS	WC	24	20	8	brown and blue	No	No	
2260	7B	1	WS	WC	28	11	6	yellow and black	No	No	
2261	7B	1	WS	WC	15	16	4	brown and black	No	No	
2262	7B	1	W	WQz	21.5	17.5	6	glossy white	No	No	(732)
2263	7B	1	F/S	WQz	16	9	5	glossy white	No	No	
2264	7B	1	F/S	WQz	11	0	0	glossy white	No	No	
2265	7B	1	W	WC	41	34	17	gray-brown translucent chalcedony	No	No	(729)
2266	7B	1	W	WC	33	21	9	blue-white	No	No	(730)
2267	7B	1	W	WC	37	22	11	blue	No	No	(731)
2268	7B	1	W	WC	41	40	10.5	blue and brown	No	No	jasper, (733)

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
2269	7B	2	HPS	WC	26	25	5	blue	No	No	(702): refit w/wedge from PZ
2270	7B	2	WS	WC	56	25	14	gray-clear	No	No	F/PC/Cx, (736)
2271	7B	2	HPS	WC	20	23	4	brown-blue	No	No	
2272	7B	2	HPS	WC	19	20	4	gray-clear	No	No	
2273	7B	2	HPS	WC	20	14	3	tan	No	No	
2274	7B	2	HPS	WC	18	11	7	blue	No	No	
2275	7B	2	HPS	WC	19	13	6	white	No	No	
2276	7B	2	HPS	WC	25	9	3.5	red	No	No	
2277	7B	2	HPS	WC	17	6.5	3.5	white-red-black	Yes	No	
2278	7B	2	HPS	WC	17	12	5	red and white	No	No	
2279	7B	2	HPS	WC	16	9	1	brown	No	No	
2280	7B	2	F/S	WC	22	0	0	blue	No	No	
2281	7B	2	F/S	WC	17	0	0	brown	No	No	
2282	7B	2	F/S	WC	19	0	0	dark red	No	No	
2283	7B	2	F/S	WC	11.5	0	0	blue-white	No	No	
2284	7B	2	F/S	WC	13	0	0	tan-pink	No	No	
2285	7B	2	F/S	WC	14	0	0	red-white	No	No	
2286	7B	2	F/S	WC	16	0	0	brown	No	No	
2287	7B	2	F/S	WC	15	0	0	blue	No	No	
2288	7B	2	F/S	WC	10	0	0	blue	No	No	
2289	7B	2	F/S	WC	11.5	0	0	blue-gray	No	No	
2290	7B	2	F/S	WC	10	0	0	clear-white	No	No	
2291	7B	2	F/S	WC	9	0	0	cream-white	No	No	
2292	7B	2	F/S	WC	11	0	0	clear-white	No	No	
2293	7B	2	F/S	WC	6	0	0	blue	No	No	
2294	7B	2	W	WC	26	15	9	brown	No	No	Jasper, (740)
2295	7B	2	WS	WC	35	16	7	blue, gray, red	No	No	(738)
2296	7B	2	WS	WC	30	13	11	dark brown and blue	No	No	(741)
2297	7B	2	WS	WC	26	11	6	blue-gray	No	No	(739)
2298	7B	2	WS	WC	22	24	6.5	blue	No	No	(737)
2299	7B	2	WS/EU	WC	20	22	5	gray-blue	No	No	worn edges, (744)
2300	7B	2	SFG	WC	22	22	5	blue-white	No	No	worn edges and tip (743)
2301	7B	2	F/PC	WC	30	32	5	brown and white	No	No	
2302	7B	2	WS	WC	20	18	8	brown and black	No	No	jasper, HPS, (742)
2303	7B	2	SPS	WC	14	23	3	brown	No	No	jasper
2304	7B	2	F/S	WC	10	0	0	blue	No	No	
2305	7B	2	EUF	WC	18	26	8	brown	No	No	jasper
2306	7C	1	BPC	WC	52	25	20	tan	No	No	
2307	7C	1	CF/Cx	WC	33	27	15	brown and blue	No	No	
2308	7C	1	HPS	WC	40	36	11	white	No	No	
2309	7C	1	F/PC	WC	20	47	7	cream	No	No	
2310	7C	1	HPS	WC	34	27	11	brown and black	No	No	jasper

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
2311	7C	1	WS/SF	WC	26	25	9	clear white	No	No	HPS, worn edges (752)
2312	7C	1	F/S	WC	25	0	0	gray	No	No	
2313	7C	1	F/S	WC	27	0	0	blue and white	No	No	
2314	7C	1	SPS	WC	34	10	7	pink	No	No	
2315	7C	1	HPS	WC	18	23	4	brown and black	No	No	jasper
2316	7C	1	HPS	WC	27	14	6	white	No	No	
2317	7C	1	F/PC	WC	21	17	7	tan	No	No	
2318	7C	1	HPS	WC	15	20	5	blue-tan	No	No	
2319	7C	1	F/PC	WC	23	24	6	tan	No	Yes	
2320	7C	1	FS	WC	21	13	6.5	clear white	No	No	
2321	7C	1	FS	WC	19	0	0	blue-white	No	No	
2322	7C	1	FS	WC	15	0	0	clear-blue	No	No	
2323	7C	1	FS	WC	19	0	0	clear-white	No	No	
2324	7C	1	FS	WC	21	0	0	blue	No	No	
2325	7C	1	FS	WC	21	0	0	tan-clear	No	No	
2326	7C	1	FS	WC	17	0	0	blue	No	No	
2327	7C	1	FS	WC	19	0	0	blue-brown	No	No	
2328	7C	1	FS	WC	18	0	0	white	No	No	
2329	7C	1	FS	WC	17.5	0	0	tan	No	No	
2330	7C	1	FS	WC	20	0	0	blue-gray	No	No	
2331	7C	1	FS	WC	20	0	0	yellow and red	No	No	
2332	7C	1	FS	WC	19	0	0	tan	No	No	
2333	7C	1	FS	WC	15	0	0	yellow and white	No	No	
2334	7C	1	FS	WC	14	0	0	tan	No	No	
2335	7C	1	FS	WC	17	0	0	brown and white	No	No	
2336	7C	1	FS	WC	16	0	0	brown and black	No	No	
2337	7C	1	FS	WC	18	0	0	red-clear	No	No	
2338	7C	1	FS	WC	21	0	0	blue	No	No	
2339	7C	1	FS	WC	15	0	0	brown and black	No	No	
2340	7C	1	FS	WC	13	0	0	tan	No	No	
2341	7C	1	FS	WC	16	0	0	red-brown	No	No	
2342	7C	1	FS	WC	18	0	0	tan	No	No	
2343	7C	1	FS	WC	17	0	0	blue-white	No	No	
2344	7C	1	FS	WC	20	0	0	tan	No	No	cortex
2345	7C	1	FS	WC	18	0	0	blue	No	No	
2346	7C	1	FS	WC	15	0	0	yellow-white	No	No	
2347	7C	1	FS	WC	18	0	0	white	No	No	
2348	7C	1	FS	WC	14	0	0	blue-white	No	No	
2349	7C	1	FS	WC	17	0	0	brown	No	No	
2350	7C	1	FS	WC	19	0	0	blue	No	No	
2351	7C	1	FS	WC	12	0	0	red-clear	No	No	
2352	7C	1	FS	WC	12	0	0	blue	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
2353	7C	1	FS	WC	16	0	0	blue-white	No	No	
2354	7C	1	FS	WC	13	0	0	clear-white	No	No	
2355	7C	1	FS	WC	16	0	0	blue-white	No	No	
2356	7C	1	FS	WC	11	0	0	red and white	No	No	
2357	7C	1	FS	WC	11	0	0	brown	No	No	jasper
2358	7C	1	FS	WC	12.5	0	0	blue and white	No	No	
2359	7C	1	FS	WC	9	0	0	blue-gray	No	No	
2360	7C	1	FS	WC	8	0	0	blue	No	No	
2361	7C	1	FS	WC	13	0	0	blue	No	No	
2362	7C	1	FS	WC	10	0	0	clear-gray	No	No	
2363	7C	1	FS	WC	10	0	0	yellow	No	No	
2364	7C	1	FS	WC	11	0	0	clear-gray	No	No	
2365	7C	1	FS	WC	9	0	0	clear-white	No	No	
2366	7C	1	FS	WC	11	0	0	gray-white	No	No	
2367	7C	1	FS	WC	7	0	0	white	No	No	
2368	7C	1	FS	WC	7	0	0	white	No	No	
2369	7C	1	FS	WC	11	0	0	tan	No	No	
2370	7C	1	FS	WC	9	0	0	clear-blue	No	No	
2371	7C	1	FS	WC	8	0	0	blue	No	No	
2372	7C	1	FS	WC	7.5	0	0	yellow-clear	No	No	
2373	7C	1	FS	WC	11	0	0	tan	No	No	
2374	7C	1	FS	WC	21	0	0	pink	Yes	No	
2375	7C	1	TFF	WC	16	0	0	pink	Yes	No	
2376	7C	1	TFF	WC	11	0	0	pink	Yes	No	
2377	7C	1	TFF	WC	11	0	0	pink	Yes	No	
2378	7C	1	TFF	WC	13	0	0	pink	Yes	No	
2379	7C	1	SPS	WC	16	28	4	pink	Yes	No	
2380	7C	1	SPS	WC	20	16	4	pink	Yes	No	
2381	7C	1	SPS	WC	20	15	2	pink	Yes	No	
2382	7C	1	F/S	WC	16	0	0	brown	No	No	jasper
2383	7C	1	F/S	WC	11	0	0	pink	Yes	No	
2384	7C	1	F/S	WC	14	0	0	pink	Yes	No	
2385	7C	1	F/S	WC	11	0	0	red	Yes	No	
2386	7C	1	F/S	WC	9	0	0	pink	Yes	No	
2387	7C	1	F/T	WC	15	13	2	brown and white	No	No	
2388	7C	1	F/T	WC	11	8	1.5	brown and white	No	No	
2389	7C	1	F/T	WC	10	12	1.5	brown and white	No	No	
2390	7C	1	F/T	WC	7	7	1	brown and white	No	No	
2391	7C	1	F/T	WC	10	6	1	brown	No	No	
2392	7C	1	F/T	WC	8	12	1.5	brown	No	No	
2393	7C	1	F/T	WC	8	12	2	pink	Yes	Yes	
2394	7C	1	F/T	WC	15	15	2.5	white	No	Yes	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
2395	7C	1	F/T	WC	17	14	2.5	white	No	No	
2396	7C	1	F/T	WC	17	10	2	blue	No	No	
2397	7C	1	F/T	WC	13	10	2	pink	Yes	No	
2398	7C	1	F/S	WC	11	0	0	pink	Yes	No	
2399	7C	1	EUF	WC	23	13	3.5	blue	No	No	blade-like
2400	7C	1	F/Cx/S	WQz	12	10	2.5	white	No	No	
2401	7C	1	W	WC	36	21	19	red	Yes	No	(751)
2402	7C	1	W	WC	53	28	15	blue	No	No	(746)
2403	7C	1	WS	WC	44	16	15	brown and gray	No	No	
2404	7C	1	WS	WC	39	15	15	cream and blue	No	No	
2405	7C	1	WB	WC	42	33	8	blue, tan and red	No	No	F/PC, (749)
2406	7C	1	WB	WC	55	51	19	brown	No	No	F/PC/Cx, (748)
2407	7C	1	W	WC	51	42	13	blue and gray	No	No	(wear analysis), (747)
2408	7C	1	W	WC	28.5	25	15	blue, white and tan	No	No	(wear analysis), (750)
2409	7C	2	SPS	WC	21	26	7	tan	No	No	
2410	7C	2	TFF	WC	29	22	11	pink	Yes	No	
2411	7C	2	SPS	WC	13	21	3.5	gray and white	Yes	No	
2412	7C	2	SPS	WC	18	14	5	clear white	No	No	
2413	7C	2	F/S	WC	10	0	0	gray	No	No	
2414	7C	2	F/S	WC	16	0	0	red and white	Yes	No	
2415	7C	2	F/S	WC	9	0	0	brown and clear	No	No	
2416	7D	1	CF	WC	41	29	27	red, blue and white	No	No	
2417	7D	1	CF/Cx	WC	31	27	14	brown and red	No	No	
2418	7D	1	F/S	WC	27	0	0	gray and blue	No	No	
2419	7D	1	F/S	WC	17	0	0	clear white	No	No	
2420	7D	1	F/S	WC	18	0	0	yellow-blue-white	No	No	
2421	7D	1	F/S	WC	15	0	0	gray-blue and brown	No	No	
2422	7D	1	HPS	WC	21	18	2.5	brown	No	No	jasper
2423	7D	1	HPS	WC	15	13	2.5	clear chalcedony	No	No	
2424	7D	1	HPS	WC	17	7	9	blue	No	No	
2425	7D	1	HPS	WC	14	10	2	blue	No	No	
2426	7D	1	SPS	WC	23	10	3	blue	No	No	
2427	7D	1	CF	WQz	23	21	6.5	white	No	No	
2428	7D	1	HPS	WC	23	18	2.5	yellow and pink	No	No	
2429	7D	1	SPS	WC	23	15	2	brown, yellow and blue	No	No	
2430	7D	1	W	WC	36	23	11	red, blue an brown	No	No	
2431	7E	1	WB	WC	63	57	21	blue, gray and brown	No	Yes	F/PC
2432	7E	1	WB	WC	48	35	10	white and gray	No	Yes	F/PC
2433	7E	1	EUF	WC	31	34	6	white and brown	No	No	
2434	7E	1	SPS	WC	26	15	5	blue, cream and brown	No	No	
2435	7E	1	SPS	WC	22	12	4	blue	No	No	
2436	7E	1	SPS	WC	19	17	7	tan	No	No	

ID	Unit	Level	Artifact Type	Material	Length	Width	Thickness	Color	Burned?	GSP	Comments
2437	7E	1	SPS	WC	23	15	4	gray and brown	No	No	
2438	7E	1	F/T	WC	21	14	7.5	white	No	No	
2439	7E	1	F/T	WC	15	9	2	white	No	No	
2440	7E	1	F/S	WC	30	0	0	brown and blue	No	No	
2441	7E	1	F/S	WC	22	0	0	white	No	No	
2442	7E	1	F/S	WC	26	0	0	blue-gray	No	No	
2443	7E	1	F/S	WC	13	0	0	white	No	No	
2444	7E	1	F/S	WC	9	0	0	blue	No	No	
2445	7E	1	F/S	WC	8	0	0	blue	No	No	
2446	7E	2	F/PC	WC	49	25	17	red, blue and white	Yes	No	
2447	7E	2	F/PC	WC	26	21	6	brown	No	No	jasper

Appendix C
NRS Williamson Site Investigation
44DW1
List of Artifacts Recovered in Shovel Tests and Archaeological Cores
Test Locations 1 through 8

Data from NRS Field Survey Forms (FSF) #1 through #112*

***On file at the VDHR, Portsmouth Regional Office, 612 Court Street, Portsmouth, Virginia**

LIST OF ARTIFACTS RECOVERED IN SHOVEL TESTS, AND ARCHAEOLOGICAL CORES DURING THE NRS INVESTIGATION OF THE WILLIAMSON SITE, 44DW1

FSF	LOCATION	TEST #***	ARTIFACTS
FSF #1	test location 1	1-1/CS	NR*
FSF #2	test location 1	1-2/CS	3 chert flakes
FSF #3	test location 1	1-3/CS	2 chert flakes
FSF #4	test location 1	1-4/CS	NR*
FSF #5	test location 1	1-5/CS	7 chert flakes
FSF #6	test location 1	1-6/ST	5 chert flakes; historic period: 1 glass fragment, 1 plate fragment
FSF #7	test location 1	1-7/ST	9 chert flakes, 1 quartz flake
FSF #8	test location 1	1-8/ST	13 chert flakes
FSF #9	test location 1	1-9/ST	18 chert flakes, 1 chert core fragment; historic period: 1 piece of rust scale or nail fragment
FSF #10	test location 1	1-10/ST	13 chert flakes
FSF #11	test location 1	1-11/ST	18 chert flakes; historic period: 2 pieces of rust scale, 1 piece of glass
FSF #12	test location 1	1-12/ST	8 chert flakes, 1 chert end scraper; historic period: 3 pieces of rust scale
FSF #13	test location 2	2-1/ST	32 chert flakes, 1 quartzite flake, 5 crystal quartz flakes, 1 red paint stone(?) fragment
FSF #14	test location 2	2-2/CS	2 chert flakes, 1 crystal quartz flake
FSF #15	test location 2	2-3/CS	5 chert flakes
FSF #16	test location 2	2-4/CS	8 chert flakes, 1 piece of chert shatter
FSF #17	test location 2	2-5/CS	NR*
FSF #18	test location 2	2-6/CS	11 chert flakes
FSF #19	test location 2	2-7/ST	7 chert flakes
FSF #20	test location 2	2-7A/GC	N/A**
FSF #21	test location 2	2-8/ST	4 chert flakes and shatter
FSF #22	test location 2	2-9/ST	2 chert flakes
FSF #23	test location 2	2-10/ST	22 chert flakes, 1 chert channel flake, 2 quartzite flakes, 1 crystal quartz flake
FSF #24	test location 2	2-11/ST	25 chert flakes, one chert biface fragment, 1 quartzite flake
FSF #25	test location 2	2-12/ST	48 chert flakes, 1 chert biface fragment, 1 chert core fragment, 1 amber chalcedony flake, 1 quartzite flake, 6 crystal quartz flakes
FSF #26	test location 2	2-13/ST	68 chert flakes, 1 quartzite flake, 1 crystal quartz flake
FSF #27	test location 2	2-14/GC	N/A**
FSF #28	test location 2	2-15/GC	N/A**
FSF #29	test location 2	2-16/GC	N/A**
FSF #30	test location 2	2-17/GC	N/A**
FSF #31	test location 3	3-1/CS	6 chert flakes, 1 chert graver
FSF #32	test location 3	3-2/CS	4 chert flakes
FSF #33	test location 3	3-3/ST	47 chert flakes, 1 chert snapped-flake graver; historic period: 1 piece of rust scale, 2 very small red brick fragments
FSF #34	test location 3	3-4/ST	12 chert flakes
FSF #35	test location 3	3-5/ST	72 chert flakes, 1 chert core, 1 crystal quartz flake; historic period: 3 small red brick fragments
FSF #36	test location 3	3-6/ST	198 chert flakes and pieces of chert shatter, 1 quartzite flake, 1 piece of FCR
FSF #37	test location 3	3-7/ST	51 chert flakes, 1 chert edge-worked flake;

FSF	LOCATION	TEST #***	ARTIFACTS
			historic period: 1 piece of glass, 1 red brick fragment
FSF #38	test location 3	3-8/ST	31 chert flakes, 1 chert chisel-wedge
FSF #39	test location 3	3-9/ST	120 chert flakes, 2 worked chert fragments, 1 chert core fragment, 2 quartzite flakes, 1 cobble abrader, 1 quartz chisel-wedge; historic period: 1 fragment of stoneware, 1 piece of brass sheet, 1 piece of coal
FSF #40	test location 3	3-10/ST	91 chert flakes, 1 chert edge-worked flake, 2 quartzite flakes; historic period: 1 glass fragment
FSF #41	test location 3	3-11/ST	36 chert flakes, 1 quartzite flake, 1 quartz flake, 1 piece of FCR; historic period: 1 fragment of modern china plate or cup
FSF #42	test location 3	3-12/ST	113 chert flakes, 1 chert core fragment, 1 quartzite flake; historic period: 1 glass fragment
FSF #43	test location 3	3-13/ST	26 chert flakes, 2 fragments of burned chert, 1 chert end scraper, 1 chert adz blade-like object, 1 quartz flake; historic period: 1 fragment of red brick
FSF #44	test location 4	4-1/CS	1 chert flake
FSF #45	test location 4	4-2/ST	28 chert flakes
FSF #46	test location 4	4-3/ST	38 chert flakes
FSF #47	test location 4	4-4/CS	NR*
FSF #48	test location 4	4-5/ST	24 chert flakes; historic period: 1 fragment of clear bottle glass
FSF #49	test location 4	4-6/CS	3 chert flakes
FSF #50	test location 4	4-7/ST	17 chert flakes, 1 quartzite flake
FSF #51	test location 4	4-8/ST	14 chert flakes
FSF #52	test location 4	4-9/ST	9 chert flakes
FSF #53	test location 4	4-10/ST	42 chert flakes, 1 quartz flake, 1 rhyolite flake
FSF #54	test location 4	4-11/ST	26 chert flakes
FSF #55	test location 4	4-12/CS	4 chert flakes
FSF #56	test location 4	4-13/ST	10 chert flakes; historic period: 1 fragment of Albany slip stoneware
FSF #57	test location 4	4-14/ST	4 chert flakes, 1 chert chisel-wedge
FSF #58	test location 4	4-15/ST	29 chert flakes, 1 metavolcanic flake
FSF #59	test location 4	4-16/CS	5 chert flakes
FSF #60	test location 4	4-17/CS	NR*
FSF #61	test location 4	4-18/ST	13 chert flakes, 1 fractured cobble abrader (quartzite)
FSF #62	test location 4	4-19/CS	1 chert flake
FSF #63	test location 4	4-20/GC	N/A**
FSF #64	test location 4	4-21/GC	N/A**
FSF #65	test location 4	4-22/GC	N/A**
FSF #66	test location 4	4-23/GC	N/A**
FSF #67	test location 4	4-24/GC	N/A**
FSF #68	test location 4	4-25/GC	N/A**
FSF #69	test location 4	4-26/GC	N/A**
FSF #70	test location 4	4-27/GC	N/A**
FSF #71	test location 4	4-28/GC	N/A**
FSF #72	test location 4	4-29/GC	N/A**
FSF #73	test location 4	4-30/GC	N/A**
FSF #74	test location 4	4-31/GC	N/A**
FSF #75	test location 4	4-32/ST	10 chert flakes
FSF #76	test location 5	5-1/ST	NR*

FSF	LOCATION	TEST #***	ARTIFACTS
FSF #77	test location 5	5-2/ST	1 chert flake
FSF #78	test location 5	5-3/ST	1 chalcedony (burned) flake, 1 quartzite flake or natural fragment(?); historic period: 1 small fragment of white ware
FSF #79	test location 5	5-4/ST	1 chert decortication flake or natural chert fragment(?)
FSF #80	test location 5	5-5/GC	N/A**
FSF #81	test location 5	5-6/GC	N/A**
FSF #82	test location 5	5-7/GC	N/A**
FSF #83	test location 5	5-8/GC	N/A**
FSF #84	test location 5	5-9/GC	N/A**
FSF #85	test location 5	5-10/GC	N/A**
FSF #86	test location 5	5-11/GC	N/A**
FSF #87	test location 5	5-12/GC	N/A**
FSF #88	test location 5	5-13/GC	N/A**
FSF #89	test location 6	6-1/ST	4 chert flakes, 1 quartzite flake (edge used); historic period: accumulation of modern debris in fill dirt in a graded area (not retained)
FSF #90	test location 6	6-2/ST	1 chert flake
FSF #91	test location 6	6-3/ST	45 chert flakes, 1 chert core fragment
FSF #92	test location 6	6-4/ST	1 metavolcanic flake (highly silicified)
FSF #93	test location 6	6-5/ST	1 chert flake
FSF #94	test location 6	6-6/ST	67 chert flakes, 1 chert *limace*-like unifacial tool
FSF #95	test location 6	6-7/ST	6 chert flakes, 1 small piece of red paint-stone(?)
FSF #96	test location 6	6-8/ST	27 chert flakes, 1 chert worked-flake
FSF #97	test location 6	6-9/ST	58 chert flakes, 1 chert core fragment
FSF #98	test location 7	7-1/CS	NR*
FSF #99	test location 7	7-2/GC	N/A**
FSF #100	test location 7	7-3/GC	N/A**
FSF #101	test location 7	7-4/CS	historic period only: modern debris from grading in area of 20th century house (not retained)
FSF #102	test location 7	7-5/ST	13 chert flakes, 3 chisel-wedges
FSF #103	test location 7	7-6/ST	1 chert flake
FSF #104	test location 7	7-7/GC	N/A**
FSF #105	test location 7	7-8/ST	NR*
FSF #106	test location 7	7-9/GC	N/A**
FSF #107	test location 7	7-10/GC	N/A**
FSF #108	test location 7	7-11/GC	N/A**
FSF #109	test location 7	7-12/GC	N/A**
FSF #110	test location 8	8-1/ST	14 chert flakes, 1 chert core fragment
FSF #111	test location 8	8-2/CS-3/ST	58 chert flakes, 1 chert burned fragment
FSF #112	test location 8	8-4/ST	17 chert flakes, 1 Stony Creek cord marked pottery sherd (Middle Woodland)

*NR = nothing recovered; **N/A = not applicable; ***TEST #: ST = shovel test (minimum of 12 inches by 12 inches, 144 square inches); CS = archaeological core sample (hand auger, cylindrical, 4 inches diameter, 12 square inches); GC = geological core sample (same type/size as CS, except geological cores are not screened for artifacts, just evaluated for soil horizons)