AMERICAN INDIANS IN THE DELMARVA UPLANDS: ARCHAEOLOGY AT THE SANDOM BRANCH SITE COMPLEX (7NC-J-227, 7NC-J-228), NEW CASTLE COUNTY, DELAWARE

VERSAR, INC.

DELAWARE DEPARTMENT OF TRANSPORTATION

MAY 2011

ABSTRACT

Archaeological site evaluation (Phase II) and data recovery (Phase III) investigations were conducted at the Sandom Branch Site Complex (7NC-J-227 and 7NC-J-228) for the Delaware Department of Transportation. The archaeological sites occur in the Smyrna-to-Pine Tree Corners segment of the State Route 1 (SR1) right-of-way, north of the town of Smyrna, in southern New Castle County. The sites were located on a low terrace overlooking a tributary of Sandom Branch south and east of its confluence with Blackbird Creek. The evaluation investigation determined that the prehistoric components at both sites were eligible for listing in the National Register of Historic Places (NRHP), as having potential to address research topics related to Delaware chronology, lithic and ceramic technologies, settlement patterning, and paleoenvironmental reconstruction. The historical components at the sites were not eligible for listing in the NRHP due to having no potential for features, a low frequency of artifacts, and a lack of association or context for the artifacts that were present.

Temporally diagnostic artifacts show the presence of American Indians at the two sites during a period spanning the Archaic and Woodland periods. Cultural deposits were primarily compressed within a 30 cm layer occurring near the modern ground surface. Within this compressed layer, several temporal components were identified through extensive analyses of stratigraphic associations, diagnostic artifacts, and radiocarbon assays. The earliest temporal component at the Sandom Branch Site Complex was somewhat ephemeral and dated to the Early Archaic period, in the form of a Kirk point from 7NC-J-227. A Brewerton point from this site and a Lamoka point from 7NC-J-228 show some use of the Sandom Branch Site Complex during the Late Archaic period. Slightly more intensive American Indian use at this site was evident by the Early Woodland period, as reflected in Lackawaxen stemmed points, and fragments of Marcey Creek and clay-tempered wares. The most fully represented temporal component at both sites dated to the Middle and Late Woodland periods. The American Indians that occupied the Sandom Branch Site Complex cooked food using heated stones and possibly participated in sweat lodge ceremonies, leaving behind a large amount of thermally altered stone fragments that occurred in tight clusters and widespread scatters.

The sites provided information related to several research contexts developed for the state by Delaware State Historic Preservation Office (DESHPO). Chronological associations were documented between small, stemmed points and Middle Woodland ceramics, corroborating similar data from other central Delaware sites that has suggested that these points dated to the early portions of the Woodland period. Stone tools (lithics) were made from locally available pebbles for the most part, and very little stone was obtained from outside the region. Relatively few formal tools other than projectile points were recognized in assemblages at the Sandom Branch Site Complex. Many tasks may have been completed through expedient tools in the form of utilized flakes, which were recovered from a number of contexts. Ceramic analyses provided information on the mineralogy of clays and tempers used to manufacture local wares. These analyses provided corroborating evidence for a theory that Minguannan ceramics were introduced to Delaware by populations migrating southward from the Delaware Valley. Additional research questions were also formulated to examine the American Indian inhabitants of the Sandom Branch Site Complex from a more

humanistic perspective as active social agents operating on a changing natural and cultural landscape.

Paleoenvironmental data suggested that Sandom Branch was a relatively recent addition to the landscape and that the site area was characterized by a hardwood forest environment and that open, grassy areas representing the fringes of wetlands were also present. The two sites comprising the Sandom Branch Site Complex likely represent—in part—small, resource procurement and processing locations used by American Indian groups inhabiting the region and taking advantage of the plants and wildlife associated with Sandom Branch. These specific areas would have helped support social groups inhabiting larger sites located along major streams or estuaries to the east. These mobile social groups apparently stored surplus goods at the Sandom Branch Site Complex, as indicated by pit features at 7NC-J-228.

TABLE OF CONTENTS

ABSTRACT ..... **i**

TABLE OF CONTENTS **2-1**

LIST OF FIGURES **2-4**

LIST OF TABLES **2-8**

LIST OF PLATES **2-10**

1.0 INTRODUCTION **2-12**
1.1 Project Description and History 2-12

2.0 RESEARCH DESIGN **2-1**
2.1 Creating a Chronological Framework 2-1
2.1.1 Stratigraphy and Site Formation Processes 2-2
2.1.2 Temporally Diagnostic Artifacts 2-3
2.1.3 Accelerator Mass Spectrometry (AMS) dating 2-4
2.2 Technology, Materiality, and Social Processes 2-5
2.2.1 Anthropological Perspectives on Technology 2-5
2.2.2 Thermally Altered Stones 2-5
2.2.3 Lithic Technology 2-6
2.2.4 Ceramic Technology 2-7
2.2.5 Analyzing Subsistence Practices 2-7
2.3 Scales of Social Organization 2-8
2.4 Paleoenvironmental Studies 2-10
2.4.1 Geoarchaeology 2-10
2.4.2 Archaeobotanical Studies 2-11
2.5 Landscape Approach 2-12

3.0 ENVIRONMENTAL SETTING **2-14**
3.1 Paleoenvironment 2-14
3.1.1 Climatic Episodes 2-14
3.2 Present Environment 2-17
3.2.1 Location and Setting 2-17
3.2.2 Physiographic Setting 2-17
3.2.3 Soils 2-19
3.2.4 Hydrology 2-19
3.2.5 Climate 2-19
3.2.6 Flora and Fauna 2-19
3.2.7 Historical Landscape Impact 2-20

4.0 REGIONAL AMERICAN INDIAN HISTORY **3-1**
4.1 Early American Indian Inhabitants of the Region 3-2
4.2 Later American Indian Inhabitants of the Region and the Sandom Branch Sites 3-2
4.3 Ethnohistoric Records 3-7

5.0 METHODS **3-10**
5.1 Field Methods 3-10

5.1.1 Site Evaluation (Phase II) 3-10
5.1.2 Data Recovery (Phase III) 3-13
5.2 Laboratory Methods 3-15
5.2.1 Field Lab Procedures 3-15
5.2.2 Fairfax and Springfield Lab Procedures 3-15
5.2.3 Analytical Methods 3-18

6.0 SITE 7NC-J-228 3-31
6.1 Site Evaluation (Phase II): Field Strategy and Findings 3-31
6.1.1 Shovel Testing 3-31
6.1.2 Test Units and Stratigraphy 3-31
6.1.3 Features 3-34
6.1.4 Artifacts 3-34
6.1.5 Summary and NRHP Recommendations 3-35
6.2 Data Recovery (Phase III) at 7NC-J-228 3-36
6.3 Stratigraphy and Geoarchaeological Analyses 3-37
6.3.1 Stratigraphy 3-38
6.4 Data Recovery (Phase III) Block Descriptions 3-45
6.4.1 Block A 3-45
6.4.2 Block B 3-119
6.4.3 Block C 3-136
6.4.4 Block D 3-140
6.4.5 Block L 3-4
6.4.6 Block M 3-5

7.0 Site 7NC-J-227 3-11
7.1 Site Evaluation (Phase II): Field Strategy and Findings 3-11
7.1.1 Shovel Testing 3-11
7.1.2 Test Units and Stratigraphy 3-11
7.1.3 Features 3-13
7.1.4 Artifacts 3-14
7.1.5 Summary and NRHP Recommendations 3-15
7.2 Data Recovery (Phase III) at 7NC-J-227 3-16
7.3 Stratigraphy and Geoarchaeological Analyses 3-17
7.3.1 Stratigraphy 3-17
7.3.2 Block GHI 3-23
7.3.3 Block N 3-4
7.3.4 Block E 3-22
7.3.5 Block F 3-26
7.3.6 Block J 3-27
7.3.7 Block K 3-33

8.0 THE SANDOM BRANCH SITE COMPLEX AND REGIONAL CONTEXTS 3-42
8.1 Creating a Chronological Framework 3-42
8.1.1 Stratigraphy and Site Formation Processes 3-42
8.1.2 Temporally Diagnostic Artifacts 3-46
8.1.3 AMS Assays 3-47
8.1.4 Plotting the Chronological Data 3-49

8.2 Technology, Materiality, and Social Processes 3-52
8.2.1 Thermally Altered Stone Features: Formation, Function, Deformation 3-53
8.2.2 Feature Formation 3-53
8.2.3 Feature Function 3-55
8.2.4 Lithic Technology and the Use of Local Gravel Resources 3-65
8.2.5 Thermally Altered Stone 3-69
8.2.6 The Organization of Ceramic Technology 3-70
8.2.7 Comparison to Regional Types 3-70
8.2.8 Ceramic Manufacture and Use 3-72
8.2.9 Subsistence Practices 3-84
8.3 Scales of Social Organization 3-84
8.3.1 Agency and Gender 3-84
8.3.2 Site Structure and Settlement Patterns 3-85
8.3.3 Settlement Patterning 3-86
8.3.4 Chronological Components 3-88
8.3.5 Regional Site Distribution 3-95
8.3.6 Regional Comparisons 3-99
8.4 Paleoenvironmental Studies 3-103
8.4.1 Geoarchaeological Studies 3-103
8.4.2 Archaeobotanical Studies 3-106
8.5 Landscape Approach 3-107

9.0 CONCLUSIONS 4-1
9.1 Summary of Findings 4-1
9.2 Future Directions 4-2
9.2.1 Creating a Chronological Framework 4-2
9.2.2 Technology, Materiality and Social Processes 4-3
9.2.3 Scales of Social Organization 4-4
9.2.4 Paleoenvironmental Studies 4-4
9.2.5 Landscape Approach: Placing People in their Past Cultural Landscapes 4-5

10.0 REFERENCES CITED 5-1

Appendices

Appendix A: Letter of Concurrence, DESHPO
Appendix B: Project Personnel
Appendix C: Historical Component
Appendix D: Artifact Inventory
Appendix E: Lithic Raw Material Study
Appendix F: Thermally Altered Stone Refit Study
Appendix G: Ceramic Lot Descriptions
Appendix H: Geoarchaeological Investigations
Appendix I: Archaeobotanical Analyses
Appendix J: Radiometric Dating Results
Appendix K: Feature Context Analyses

LIST OF FIGURES

Figure 1-1. Location of Sandom Branch Sites along the Proposed SR1 Construction Corridor..... 2-14
Figure 3-1. The Sandom Branch Sites and Their Location on the Terraces above the Tributary Stream..... 2-18
Figure 5-1. Phase I Shovel Test Grid, Sandom Branch Site Complex. 3-11
Figure 5-2. Staged Placement of Excavation Units, Phase II and Phase III, 7NC-J-227. .. 3-13
Figure 5-3. Staged Placement of Excavation Units, Site Evaluation (Phase II) and Data Recovery (Phase III), 7NC-J-228. 3-14
Figure 6-1. Spatial Analysis of Prehistoric Artifact Distribution Based on Phase II Shovel Testing, 7NC-J-228..... 3-32
Figure 6-2. Location of Site Evaluation (Phase II) Test Units, 7NC-J-228..... 3-33
Figure 6-3. Locations of Block Excavations, 7NC-J-228..... 3-37
Figure 6-4. Sites 7NC-J-227 and 7NC-J-228 Showing Major Landforms and the Layout of Geoarchaeological Transects. 3-39
Figure 6-5. Generic Stratigraphy of Site 7NC-J-228, Column at N226.5/E451, Showing the Results of Sedimentological and Geochemical Analyses..... 3-40
Figure 6-6. Geoarchaeological Stratigraphic Reconstruction, North-South Transect 3, 7NC-J-228. 3-42
Figure 6-7. Laboratory Results for Stratigraphic Column at N237/E446.5 Site 7NC-J-228..... 3-43
Figure 6-8. Geoarchaeological Stratigraphic Reconstruction, North-South Transect 4, 7NC-J-228. 3-44
Figure 6-9. North/South Profile Section at E447 Gridline. 3-46
Figure 6-10. East/West Profile Section at N231 Gridline..... 3-47
Figure 6-11. East/West Profile Section at N226 Gridline..... 3-48
Figure 6-12. North/South Profile Section at E442 Gridline. 3-49
Figure 6-13. Size-Grade Distribution of Flaking Debris in A and E Horizons, Block A... 3-65
Figure 6-14. Feature Locations, Block A..... 3-67
Figure 6-15. Artifact Frequency Distribution by Depth in Feature 7. 3-97
Figure 6-16. Artifact Frequency Distribution by Depth in Feature 9. 3-98
Figure 6-17. Artifact Frequency Distribution by Depth in Feature 34. 3-99
Figure 6-18. Artifact Frequency Distribution by Depth in Feature 43. 3-101
Figure 6-19. Bivariate Plot of the Percent Silt + Clay vs. the Percent Organic Matter for Samples of Possible Cultural Sediment from the Sandom Branch Site Complex. 3-103
Figure 6-20. Comparison of the Chemistry of Sediments Analyzed for Five Non-Cultural (disturbed) Contexts and Seven Prehistoric Features from 7NC-J-228..... 3-104
Figure 6-21. Bivariate Plot of the Percent Silt + Clay vs. Available Phosphate for Samples of Possible Cultural Sediment from the Sandom Branch Site Complex. 3-104
Figure 6-22. Phosphate Fractionation results for Samples of Possible Cultural Sediment and Control Samples from the Sandom Branch Site Complex. 3-105
Figure 6-23. Artifact Frequency Distribution with Depth, Block A..... 3-106
Figure 6-24. Spatial Analysis of Artifact Density, A Horizon, Block A. 3-107
Figure 6-25. Spatial Analysis of Artifact Density, E Horizon, Block A. 3-108
Figure 6-26. Artifact Density in A Horizon and Feature Location, Block A. 3-108

Figure 6-27. Distribution of Flaking Debris in A and E Horizons, Block A. 3-109
Figure 6-28. Distribution of Thermally Altered Stone Fragments in A and E Horizons, Block A. 3-110
Figure 6-29. Relative Elevations of Thermally Altered Stone Features in Southern Part of Block A. 3-111
Figure 6-30. Development of the Archaeological Stratigraphy in Block A Current Profile. 3-114
Figure 6-31. Artifact Concentrations in A and E2 Horizons, Block A. 3-115
Figure 6-32. Plot of Activity Groups in the A Horizon, Block A. 3-117
Figure 6-33. General Activity Areas in Late Occupation Based on the Distribution of Tools and Artifact Concentrations in the A Horizon, Block A. 3-117
Figure 6-34. General Activity Areas in Early Occupation Based on the Distribution of Tools and Artifact Concentrations in the E2 Horizon, Block A. 3-119
Figure 6-35. Stratigraphic Profile, Facing East, Block B. 3-119
Figure 6-36. Location of Cultural Features within Block B. 3-125
Figure 6-37. Distribution of Chipped Stone Artifacts by Soil Horizon, Block B. 3-135
Figure 6-38. Distribution of Thermally Altered Stone Fragments by Soil Horizon, Block B.... 3-136
Figure 6-39. East/West Profile Section at N202 Gridline, Block C. 3-136
Figure 6-40. Distribution of Prehistoric Artifacts By Soil Horizon, Block C. 3-139
Figure 6-41. East/West Profile Section at N190 Gridline, Block D. 3-140
Figure 6-42. Prehistoric Artifact Distribution By Soil Horizon. 3-3
Figure 6-43. Distribution of Prehistoric Artifacts, Block L. 3-5
Figure 6-44. North/South Profile Section at E456 Gridline, Block M. 3-6
Figure 6-45. Horizontal Distribution of Thermally Altered Stone by Soil Horizon, Block M. 3-8
Figure 6-46. Horizontal Distribution of Flaking Debris, Stone Tools, and Cores by Soil Horizon, Block M. 3-9
Figure 7-1. Spatial Analysis of Prehistoric Artifact Distribution Based on Phase II Shovel Testing, 7NC-J-227. 3-12
Figure 7-2. Location of Phase II Test Units, 7NC-J-227. 3-13
Figure 7-3. Locations of Block Excavations, 7NC-J-227. 3-17
Figure 7-4. Sites 7NC-J-227 and 7NC-J-228 Showing Major Landforms and the Layout of Geoarchaeological Transects. 3-19
Figure 7-5. Stratigraphic Section at N68/E466 Showing the Results of Sedimentological and Geochemical Analyses. 3-20
Figure 7-6. Geoarchaeological Stratigraphic Reconstruction, Northeast-Southwest near Transect 2, 7NC-J-227. 3-22
Figure 7-7. North/South Profile Section at E471 Gridline. 3-24
Figure 7-8. East/West Profile Sectionat N72 Gridline. 3-25
Figure 7-9. East/West Profile Section at N70 Gridline. 3-26
Figure 7-10. Locations of Plowed and Unplowed Sediments, Blocks GHI. 3-27
Figure 7-11. East/West Profile Sectionat N75 Gridline. 3-27
Figure 7-12. Feature Locations, Block GHI. 3-47

Figure 7-13. Bivariate Plot of the Percent Silt + Clay vs. the Percent Organic Matter for Samples of Possible Cultural Sediment from the Sandom Branch Site Complex. 3-70
Figure 7-14. Bivariate Plot of the Percent Silt + Clay vs. Available Phosphate for Samples of Possible Cultural Sediment from the Sandom Branch Site Complex..... 3-70
Figure 7-15. Phosphate Fractionation results for Samples of Possible Cultural Sediment and Control Samples from the Sandom Branch Site Complex. 3-71
Figure 7-16. Artifact Frequency Distribution with Depth, Blocks GHI. 3-72
Figure 7-17. Schematic Profile of Block G with Temporal Data. 3-73
Figure 7-18. Schematic Profile of Block I with Temporal Data. 3-73
Figure 7-19. Schematic Profile of the North Half of Block H with Temporal Data..... 3-74
Figure 7-20. Schematic Profile of the South Half of Block H with Temporal Data..... 3-75
Figure 7-21. Stratigraphic Correspondence of Temporal Components in Block GHI. 3-76
Figure 7-22. Distribution of Flaking Debris in Late and Middle Woodland Deposits, Block GHI. 3-77
Figure 7-23. Distribution of Thermally Altered Stone Fragments in Late and Middle Woodland, Block GHI. 3-78
Figure 7-24. Thermally Altered Stone Fragments from Feature 30 Showing the Horizontal and Vertical Distributions of Refitted Pieces from a Single Large Cobble, Refit Group 30-A-1..... 3-80
Figure 7-25. Thermally Altered Stone Fragments from Feature 30 Showing the Horizontal and Vertical Distributions of Refitted Pieces from a Single Large Cobble, Refit Group 30-B-1. 3-81
Figure 7-26. Thermally Altered Stone Fragments from Feature 35 Showing the Horizontal and Vertical Distributions of Refitted Pieces from a Single Large Cobble, Refit Group 35-A-1..... 3-82
Figure 7-27. Thermally Altered Stone Fragments from Feature 35 Showing the Horizontal and Vertical Distributions of Refitted Pieces from a Single Large Cobble, Refit Group 35-A-2..... 3-83
Figure 7-28. Thermally Altered Stone Fragments from Feature 35 Showing the Horizontal and Vertical Distributions of Refitted Pieces from a Single Large Cobble, Refit Group 35-D-1..... 3-84
Figure 7-29. Horizontal Distribution of Diagnostic Artifacts in Southeastern Part of Block GHI. 3-2
Figure 7-30. General Activity Areas in Middle Woodland Occupation Based on the Distribution of Tools and Artifact Concentrations in the Southeastern Part of Block GHI..... 3-3
Figure 7-31. East/West Profile Section at N87 Gridline, Block N. 3-4
Figure 7-32. Distribution of Flaking Debris in the Ap Horizon, Block N. 3-15
Figure 7-33. Distribution of Thermally Altered Stone Fragments in the Ap Horizon, Block N. 3-16
Figure 7-34. Distribution of Flaking Debris in the B Horizon, Block N. 3-17
Figure 7-35. Distribution of Thermally Altered Stone Fragments in the B Horizon, Block N. 3-17
Figure 7-36. Ceramic Cross-Mends in the Ap Horizon, Block N. 3-18

Figure 7-37. Measurement of the Axis of Separation between Ceramic Cross-Mends, Block N. 3-19
Figure 7-38. Directional Groups among Ceramic Cross-Mends in the Ap Horizon, Block N. 3-20
Figure 7-39. General Activity Areas in Late Woodland Occupation based on the Distribution of Tools and Artifact Concentrations in the Ap Horizon, Block N. 3-22
Figure 7-40. East/West Profile Section at N78 Gridline, Block E. 3-23
Figure 7-41. Horizontal Artifact Distributions in Ap Horizon, Block E. 3-25
Figure 7-42. Horizontal Artifact Distributions in B Horizon, Block E. 3-25
Figure 7-43. Section Profile at E465 Gridline, Block J. 3-28
Figure 7-44. Horizontal Distribution of Flaking Debris, Stone Tools, Cores and Thermally Altered Stone Artifacts, Block J. 3-32
Figure 7-45. Horizontal Distribution of Chronologically Diagnostic Artifacts, Block J.... 3-33
Figure 7-46. Section Profile at E466 Gridline, Block K. 3-34
Figure 7-47. Distribution of Flaking Debris, Stone Tools, and Ceramics by Soil Horizon, Block K. 3-39
Figure 8-1. Treefall Disturbance along E442 Gridline, Block A. 3-44
Figure 8-2. Graphical display of AMS assays from the Sandom Branch Site Complex. ... 3-47
Figure 8-3. Comparison of Chronological Data from the Sandom Branch Complex Sites.... 3-49
Figure 8-4. Diagnostic Artifacts Recovered from 7NC-J-227. 3-50
Figure 8-5. Diagnostic Artifacts Recovered from 7NC-J-228. 3-51
Figure 8-6. Plan View of Feature 1 and Feature 9, Block A, 7NC-J-228. 3-57
Figure 8-7. Plan View of Feature 5, Block GHI, 7NC-J-227. 3-58
Figure 8-8. Density Analysis of the Thermally Altered Stone Features at the Sandom Branch Sites. 3-61
Figure 8-9. Comparative Analysis of Thermally Altered Stone Features at the Sandom Branch Sites and Type A1-a Features from the Hickory Bluff Site. 3-62
Figure 8-10. Comparative Analysis of Thermally Altered Stone Features at the Sandom Branch Sites and Type A1-b and A1-c Features from the Hickory Bluff Site. 3-62
Figure 8-11. Comparative Analysis of Thermally Altered Stone Features at the Sandom Branch and Lake Powell Sites. 3-63
Figure 8-12. Comparative Analysis of Thermally Altered Stone Features at the Sandom Branch and Single Container Features from 28ME1-B. 3-64
Figure 8-13. Comparative Analysis of Thermally Altered Stone Features at the Sandom Branch and Scattered Container Features from 28ME1-B. 3-64
Figure 8-14. Frequency Distribution by Weight of Quartzite Gravels and Whole Thermally Altered Quartzite from 7NC-J-227. 3-69
Figure 8-15. Frequency Distribution by Weight of Quartzite Gravels and Whole Thermally Altered Quartzite from 7NC-J-228. 3-70
Figure 8-16. Locations of Clay Sources used for the Experimental Tiles. 3-76
Figure 8-17. Distribution of Sites with Woodland I Components in Portions of the Blackbird Creek, and Appoquinimink and Smyrna River Watersheds. 3-96
Figure 8-18. Distribution of Sites with Late Woodland Components in Portions of the Blackbird Creek, and Appoquinimink and Smyrna River Watersheds. 3-96

Figure 8-19. Cumulative Frequency Distributions for Distance to Water Among Woodland I and Late Woodland Components. 3-96
Figure 8-20. Cumulative Frequency Distributions for Distance to Water Among Woodland I and Late Woodland Components in Tidal Areas. 3-97
Figure 8-21. Cumulative Frequency Distributions for Distance to Water Among Woodland I and Late Woodland Components in Non-Tidal Areas. 3-98
Figure 8-22. Results of Viewshed Analysis: Areas within View from the Sandom Branch Sites. 3-108
Figure 8-23. The Sandom Branch Sites and High Resolution Elevation Contours. 3-109

LIST OF TABLES

Table 2.1: Temporally Diagnostic Artifacts Encountered at the Sandom Branch Site Complex 2-3
Table 4-1. Comparison of Prehistoric Chronologies with Climatic Episodes. 3-1
Table 4-2. Woodland Period Regional Complexes in Delmarva. 3-5
Table 5-1. Site Evaluation (Phase II) and Data Recovery (Phase III) Excavations at the Sandom Branch Site Complex by Site. 3-10
Table 5-2: Sandom Branch Charcoal Samples 3-17
Table 5-3. Cultural Feature Typology Developed for the Hickory Bluff Site. 3-26
Table 5-4. Activity Groups and Associated Archaeological Evidence. 3-27
Table 6-1. Artifact Frequency Totals from Site Evaluation (Phase II) Testing, 7NC-J-228. 3-34
Table 6-2. Prehistoric Artifact Frequency Totals from Site Evaluation (Phase II) Testing, 7NC-J-228. 3-35
Table 6-3. Historical Artifact Frequency Totals from Site Evaluation (Phase II) Testing, 7NC-J-228. 3-35
Table 6-4. Total Artifact Distribution by Soil Horizon, Block A. 3-50
Table 6-5. Prehistoric Artifact Distribution by Type and Soil Horizon, Block A. 3-50
Table 6-6. Lithic Material Distribution, Flaking Debris, Block A. 3-63
Table 6-7. Lithic Material Distribution, Flaking Debris by Sediment Horizon, Block A. 3-64
Table 6-8. Distribution of Cortical Flaking Debris in A and E Horizons, Block A. 3-64
Table 6-9. Dimensional and Statistical Attributes of Thermally Altered Stone Features in Block A. 3-92
Table 6-10. Dimensional Attributes of Pit Features in Block A. 3-96
Table 6-11. Artifact Frequency Distribution by Depth in Feature 38. 3-100
Table 6-12. Artifact Frequency Distribution by Depth in Feature 39. 3-101
Table 6-13. Possible Cultural Sediments from 7NC-J-228 Selected for Sedimentological and Geochemical Analysis. 3-102
Table 6-14. Chronologically Diagnostic Artifacts in the Two Major Sediment Horizons, Block A. 3-111
Table 6-15. Total Artifact Distribution By Soil Horizon in Block B. 3-120
Table 6-16. Prehistoric Artifact Distribution by Type and Soil Horizon in Block B. 3-120
Table 6-17. Thermally Altered Stone Distribution By Material and Soil Horizon in Block B. 3-123
Table 6-18. Total Artifact Distribution by Soil Horizon in Block C. 3-137
Table 6-19. Prehistoric Artifact Distribution by Type and Material in Block C. 3-137

Table 6-20. Total Artifact Distribution By Soil Horizon in Block D. 3-140
Table 6-21. Prehistoric Artifact Distribution by Type and Soil Horizon in Block D. 3-141
Table 6-22. Total Artifact Distribution By Soil Horizon in Block L. 3-4
Table 6-23. Prehistoric Artifact Distribution by Type and Material in Block L. 3-4
Table 6-24. Total Artifact Distribution By Soil Horizon in Block M. 3-6
Table 6-25. Prehistoric Artifact Distribution by Type and Material in Block M. 3-6
Table 6-26. Distribution of Artifact Types by Soil Horizon in Block M. 3-8
Table 7-1. Artifact Frequency Totals from site evaluation (Phase II) Testing, 7NC-J-227. . 3-14
Table 7-2. Prehistoric Artifact Frequency Totals from site evaluation (Phase II) Testing, 7NC-J-227 3-14
Table 7-3. Historical Artifact Frequency Totals from Site Evaluation (Phase II) Testing, 7NC-J-227 3-15
Table 7-4. Total Artifact Distribution by Soil Horizon, Block GHI. 3-28
Table 7-5. Prehistoric Artifact Distribution by Type and Soil Horizon, Block GHI. 3-28
Table 7-6. Chronologically Diagnostic Artifacts by Soil Horizon and Period in Block GHI. 3-29
Table 7-7. Dimensional and Statistical Attributes of Thermally Altered Stone Features in Block GHI. 3-64
Table 7-8. Possible Cultural Sediments from 7NC-J-227 Selected for Sedimentological and Geochemical Analysis. 3-69
Table 7-9. Total Artifact Distribution by Soil Horizon, Block N. 3-5
Table 7-10. Prehistoric Artifact Distribution by Type and Soil Horizon, Block N. 3-5
Table 7-11. Lithic Material Distribution, Flaking Debris by Sediment Horizon, Block N. 3-11
Table 7-12. Distribution of Cortical Flaking Debris in Ap and B Horizons, Block N. 3-12
Table 7-13. Artifact Distribution in the Ap Horizon by Stratum and Level, Block N. 3-14
Table 7-14. Historical Ceramic Distribution in the Ap Horizon by Stratum and Level, Block N. 3-15
Table 7-15. Summary of Diagnostic Points by Horizon, Block N. 3-20
Table 7-16. Total Artifact Distribution by Soil Horizon, Block E. 3-23
Table 7-17. Prehistoric Artifact Distribution by Type and Soil Horizon, Block E. 3-23
Table 7-18. Chipped Stone Artifact Distribution by Material Type and Soil Horizon, Block E. 3-24
Table 7-19. Thermally Altered Stone Distribution by Material and Soil Horizon, Block E. 3-24
Table 7-20. Total Artifact Distribution by Group and Soil Horizon, Block F. 3-26
Table 7-21. Prehistoric Artifact Distribution by Type and Soil Horizon, Block F. 3-26
Table 7-22. Total Artifact Distribution by Group and Soil Horizon, Block J. 3-28
Table 7-23. Prehistoric Artifact Distribution by Type and Soil Horizon, Block J. 3-28
Table 7-24. Chipped Stone Artifact Distribution by Material Type and Soil Horizon, Block J. 3-29
Table 7-25. Chronologically Diagnostic Artifacts by Type and Soil Horizon, Block J. 3-33
Table 7-26. Total Artifact Distribution by Soil Horizon, Block K. 3-34
Table 7-27. Prehistoric Artifact Distribution by Type and Soil Horizon, Block K. 3-34
Table 7-28. Chipped Stone Artifact Distribution by Material Type and Soil Horizon, Block K. 3-35

Table 7-29. Chronologically Diagnostic Artifacts by Soil Horizon and Type in Block K. 3-40
Table 8-1. AMS Dates from the Sandom Branch Complex Sites..... 3-48
Table 8-2. Dimensional and Qualitative Attributes of Thermally Altered Stone Features from 7NC-J-227 and 7NC-J-228. 3-54
Table 8-3. Chipped Stone Artifact Attributes by Component, 7NC-J-227 and 7NC-J-228. 3-66
Table 8-4. Comparison of Raw Material Frequencies of Chipped Stone Artifacts and Locally Collected Gravels. 3-67
Table 8-5. Frequency Distribution of Cryptocrystalline Gravel and Selected Cryptocrystalline Artifacts..... 3-68
Table 8-6. Size Comparison Between Cryptocrystalline and Quartz Gravels and Artifacts. 3-69
Table 8-7. Results of Petrographic Analysis of Ceramic Temper Samples..... 3-75
Table 8-8. Comparison of Ceramic Matrices..... 3-82
Table 8-9. Woodland Period Regional Complexes in Delmarva Highlighting Periods Represented by Artifacts at the Sandom Branch Sites. 3-88
Table 8-10. Distribution of Prehistoric Site Components in the Major Watersheds near the Sandom Branch Sites..... 3-95
Table 9-1. Excavation Samples at 7NC-J-227 and 7NC-J-228. 4-2

LIST OF PLATES

Plate 3-1. Seasonal Views of Sandom Branch..... 2-21
Plate 5-1. Site Evaluation (Phase II) Testing at 7NC-J-228. 3-12
Plate 5-2. Excavation: Block I, 7NC-J-227. 3-16
Plate 5-3. Excavation: Block H at 7NC-J-227, with Feature 35 in Foreground. 3-16
Plate 5-4. Excavation: Block A, 7NC-J-228..... 3-16
Plate 5-5. Feature Excavation: Feature 9, Block A, 7NC-J-228..... 3-25
Plate 5-6. Feature Documentation: Feature 5, Block I, 7NC-J-227..... 3-25
Plate 6-1. Documentation of Thermally Altered Stone Feature 21, Block A. 3-66
Plate 6-2. Feature Excavation, Feature 34, Block A..... 3-66
Plate 7-1. Feature Excavation in Block GHI. 3-46
Plate 7-2. Documenting Feature 30, Block GHI..... 3-46
Plate 8-1. Tree Disturbance, Feature 17, Blocks GHI. 3-45
Plate 8-2. Tree Disturbance, Feature 36, Blocks GHI. 3-45
Plate 8-3. Sectioned Tree Root System, N72 Gridline, Blocks GHI. 3-46
Plate 8-4. Sectioned Tree Root System, E446 Gridline, Block A. 3-46
Plate 8-5. Thermally Altered Stone Refit Group 30-B1. 3-56
Plate 8-6. Thermally Altered Stone Refit Group 30-A1, Showing Large Missing Fragments. 3-56
Plate 8-7. Thermally Altered Stone Refit 30-F, Showing Large Missing Fragments..... 3-56
Plate 8-8. Profile Section of Feature 5, Block GHI, 7NC-J-227..... 3-59
Plate 8-9. Gravel Bar on the South Bank of Sandom Branch..... 3-66
Plate 8-10. Remnant Cortex on the Proximal Ends of Cryptocrystalline Artifacts. 3-67
Plate 8-11. Experimental Ceramic Tile BB1. 3-77
Plate 8-12. Experimental Ceramic Tile BB2. 3-79

Plate 8-13. Experimental Ceramic Tile BB3. 3-80
Plate 8-14. Experimental Ceramic Tile HB1. 3-81
Plate 8-15. Artifacts in the Early Component, Block A, 7NC-J-228..... 3-90
Plate 8-16. Artifacts in the Upper Component, Block A, 7NC-J-228. 3-91
Plate 8-17. Artifacts in the Middle Woodland Component, Southern Portion of Blocks GHI, 7NC-J-227..... 3-92
Plate 8-18. Artifacts in the Late Woodland Component, Block GHI 7NC-J-227. 3-93
Plate 8-19. Artifacts in the Late Woodland Component, Block N, 7NC-J-227..... 3-94