

4.0 RESULTS

4.1 Geomorphology

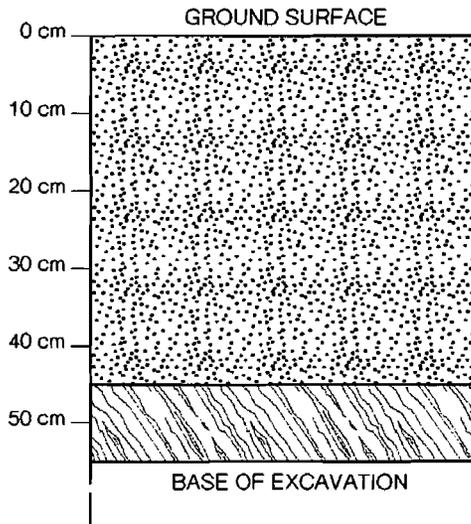
The S.R. 54 Improvements project APE is entirely within an uplands context of deep, unconsolidated coastal plain sediments. According to the *Soil Survey of Sussex County, Delaware* (Ireland and Matthews 1974), soils occurring within the area are from the Evesboro, Fallsington, Klej, Pocomoke, and Woodstown series, all soils forming in coastal plain sediments. Although these soils are similar in the high amount of sand throughout the profile, they exhibit great variation in the internal drainage of the soil profile. These variations are largely due to the position of an area within the landscape, and the depth to a water table. Soils within the Evesboro, Klej, and Woodstown series have no or only moderate drainage restrictions within the internal soil profile, and therefore would have been attractive for aboriginal human occupation. However, soils within the Fallsington and Pocomoke series have severe drainage restrictions, displaying gleyed conditions at shallow depths, and would have been less suitable for aboriginal occupations.

Soils mapping (Ireland and Matthews 1974) predicts these soils as occurring somewhat randomly throughout the project area. The area was investigated for a more site-specific study of the types of soils present and the degree of disturbances to the area. Many soil auger borings were taken to assess the occurrences of soil types, and to document disturbances to the surface and upper subsoil.

Many portions of the project area have been previously disturbed from residential, commercial, and industrial development. Within these areas, the entire soil profile was excavated, then regraded after the construction of buildings and associated access roadways, and landscaped. Deep drainage ditches, for the collection of roadway runoff and to lower the water table within agricultural fields, lie adjacent to much of S.R. 54. The construction of these ditches has disturbed large portions of land adjacent to existing S.R. 54, but a width of 2.0 to 3.0 m (6.6 to 9.8 ft) of undisturbed land was found within the project APE limits beyond the drainage ditches in many sections. The majority of the testable project APE land is in undisturbed portions of agricultural fields, and grassy and wooded areas beyond the roadside drainage ditches.

The soil profiles within five STP excavations, from five different test areas across the project APE, were examined and described according to the methods and nomenclature prescribed by the United States Department of Agriculture-Natural Resources Conservation Service (Figures 3, 4, and 5; Appendix C). These soil profiles were typical and representative of profiles encountered

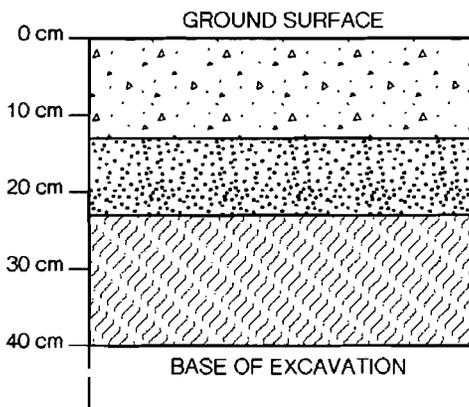
SOIL PROFILE SHOVEL TEST PIT A-3



Ap 10YR 4/2 Dark grayish brown sandy loam.

Btg 2.5Y 5/1 Gray sandy clay loam.

SOIL PROFILE SHOVEL TEST PIT D-1



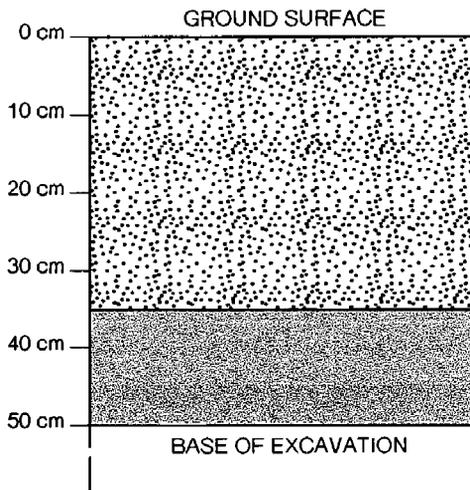
Fill Sandy loam.

A 10YR 3/2 Very dark grayish brown sandy loam.

Bt 10YR 5/4 Yellowish brown sandy clay loam.

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S.R. 54 IMPROVEMENTS SOUND CHURCH ROAD TO KEENWICK ROAD BALTIMORE HUNDRED SUSSEX COUNTY	
SOIL PROFILES SHOVEL TEST PITS A-3 AND D-1	
FIGURE - 3	SKELLY AND LOY, INC. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING

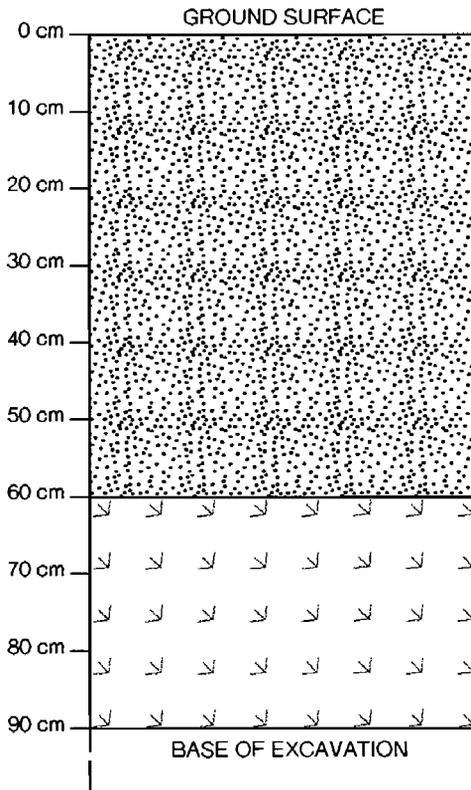
SOIL PROFILE SHOVEL TEST PIT H-4



Ap 10YR 3/2 Very dark grayish brown sandy loam.

Bt 2.5Y 5/4 Light olive brown sandy clay loam.

SOIL PROFILE SHOVEL TEST PIT J-3



Ap 10YR 3/2 Very dark grayish brown sandy loam.

Bt 2.5Y 6/3 Light yellowish brown sandy clay loam.

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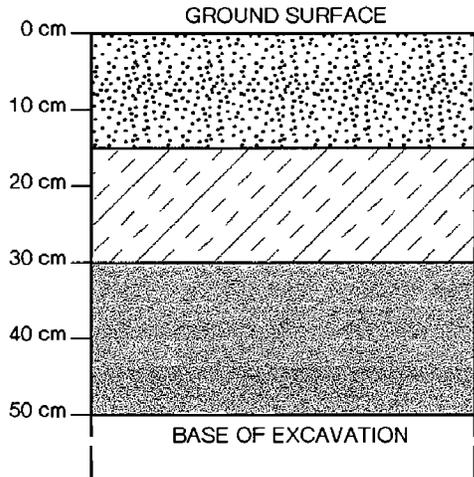
S.R. 54 IMPROVEMENTS
SOUND CHURCH ROAD TO KEENWICK ROAD
BALTIMORE HUNDRED
SUSSEX COUNTY

SOIL PROFILES
SHOVEL TEST PITS H-4 AND J-3

FIGURE - 4

SKELLY AND LOY, INC.
CONSULTANTS IN
ENVIRONMENT - ENERGY
ENGINEERING - PLANNING

SOIL PROFILE SHOVEL TEST PIT N-5



Ap 10YR 3/2 Very dark grayish brown sandy loam.

BA 10YR 5/2 Grayish brown sandy loam.

Bt 2.5Y 5/4 Light olive brown sandy loam, with
10YR 5/4 Yellowish brown mottles.

DELAWARE DEPARTMENT OF TRANSPORTATION	
S.R. 54 IMPROVEMENTS SOUND CHURCH ROAD TO KEENWICK ROAD BALTIMORE HUNDRED SUSSEX COUNTY	
SOIL PROFILE SHOVEL TEST PIT N-5	
FIGURE - 5	SKELLY AND LOY, INC. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING

throughout the project APE. All of the soils identified in the STP profiles, are forming in stable, sandy coastal plain sediments.

Soil profiles from STPs D-1, H-4, J-3, and N-5 are typical of the well developed, well drained soils found within the majority of the undisturbed portions of the project APE. These soils have been deeply weathered. A 13.0 cm (5.1 in) layer of fill was found overlying an undisturbed soil profile in STP D-1, a material most likely spread over the area for lawn enhancement. The profile from STP A-3 is typical of the well developed but somewhat poorly drained profiles found in depressions of the project area. These areas have a shallow water table and are wet during a large portion of the year.

4.2 Archaeology

Originally during the geomorphological reconnaissance, 17 potential test areas (A through Q) were delineated within the project APE. However, by the time of the actual archaeological survey, four of these areas (F, K, L, M) had been extensively disturbed by continued development along the roadway and were not tested. Also, it was discovered all or portions of Test Areas A, B, G, H, P, and Q had previously been surveyed during the Americana Bayside cultural resources research (Otter 2000). Subsurface testing was completed within Test Areas A, B, G, and H during the current survey. Test Areas P and Q were adequately surveyed during the Americana Bayside Phase I survey (Otter 2000), and required no additional survey during the current investigations. Eleven of the original 17 test areas (A, B, C, D, E, G, H, I, J, N, O) were surveyed for archaeological resources *via* 96 hand-excavated STPs, and are described below.

4.2.1 Test Area A

Test Area A is located near the western terminus of the S.R. 54 Improvements project APE along the southern side of the roadway (see Figure 2). The test area begins immediately east of a condemned house and continues east for approximately 195.0 m (639.8 ft) to the proposed realigned intersection of Zion Church Road and S.R. 54. The test area is comprised of grassy portions and fallow soybean fields (Photograph 1). Disturbances to the test area include past agricultural activities and excavation and maintenance of a drainage ditch, utilities, and the roadway.



Photograph 1. View of Test Area A, facing west.

Portions of this test area were previously surveyed (Otter 2000); however, 12 STPs were excavated, paralleling the existing roadway, within Test Area A. A standard 15.0 m (49.2 ft) STP interval, as well as excavation and recordation techniques described elsewhere in this report, were used to survey Test Area A. No prehistoric or historic period cultural artifacts or features were identified in the test area during the Phase I survey. Since no previously recorded archaeological sites or NRHP-listed properties are present within Test Area A, and no cultural materials were identified during the subsurface survey of the area, no additional archaeological investigations are warranted.

4.2.2 Test Area B

Test Area B is located near the western terminus of the S.R. 54 Improvements project APE along the southern side of the roadway (see Figure 2). The test area begins at the proposed realigned intersection of Zion Church Road and S.R. 54 and continues east to the existing intersection of Zion Church Road and S.R. 54, a distance of approximately 96.0 m (315.0 ft). The test area is comprised of grassy areas (Photograph 2). Disturbances to the test area include excavation and maintenance of utilities, and the roadway.

Portions of this test area were previously surveyed (Otter 2000); however, seven STPs were excavated, paralleling the existing roadway, within Test Area B. A standard 15.0 m (49.2 ft) STP interval, as well as excavation and recordation techniques described elsewhere in this report, were used to survey Test Area B. No prehistoric or historic period cultural artifacts or features were identified in the test area during the Phase I survey. Since no previously recorded archaeological sites or NRHP-listed properties are present within Test Area B, and no cultural materials were identified during the subsurface survey of the area, no additional archaeological investigations are warranted.

4.2.3 Test Area C

Test Area C is located near the western terminus of the S.R. 54 Improvements project APE along the southern side of the roadway (see Figure 2). The test area begins immediately east of a condemned house and garage, and continues east for approximately 48.0 m (157.5 ft) to the intersection of Old Mill Bridge Road and S.R. 54. The test area is



Photograph 2. View of Test Area B, facing west.

comprised of grassy areas (Photograph 3). Disturbances to the test area include past excavation and maintenance of utilities, and the roadway.

Four STPs, paralleling the existing roadway, were excavated within Test Area C. A standard 15.0 m (49.2 ft) STP interval, as well as excavation and recordation techniques described elsewhere in this report, were used to survey Test Area C. No prehistoric or historic period cultural artifacts or features were identified in the test area during the Phase I survey. Since no previously recorded archaeological sites or NRHP-listed properties are present within Test Area C, and no cultural materials were identified during the subsurface survey of the area, no additional archaeological investigations are warranted.

4.2.4 Test Area D

Test Area D is located in the central portion of the S.R. 54 Improvements project APE along the southern side of the roadway (see Figure 2). The test area begins immediately east of the intersection of River Run Road and S.R. 54 and continues east for approximately 169.0 m (554.5 ft). The test area is comprised of grassy portions with scattered trees (Photograph 4). Disturbances to the test area include construction of a bus shelter and a driveway, as well as excavation and maintenance of utilities and the roadway.

Eight STPs, paralleling the existing roadway, were excavated within Test Area D. A standard 15.0 m (49.2 ft) STP interval, as well as excavation and recordation techniques described elsewhere in this report, were used to survey Test Area D. No prehistoric or historic period cultural artifacts or features were identified in the test area during the Phase I survey. Since no previously recorded archaeological sites or NRHP-listed properties are present within Test Area D, and no cultural materials were identified during the subsurface survey of the area, no additional archaeological investigations are warranted.

4.2.5 Test Area E

Test Area E is located near the eastern terminus of the S.R. 54 Improvements project APE along the southern side of the roadway (see Figure 2). The test area begins approximately 183.0 m (600.4 ft) east of the intersection of Salty Way and S.R. 54 and continues east for approximately 624.0 m (2,047.2 ft). The test area is comprised of grassy



Photograph 3. View of Test Area C, facing west.



Photograph 4. View of Test Area D, facing east.

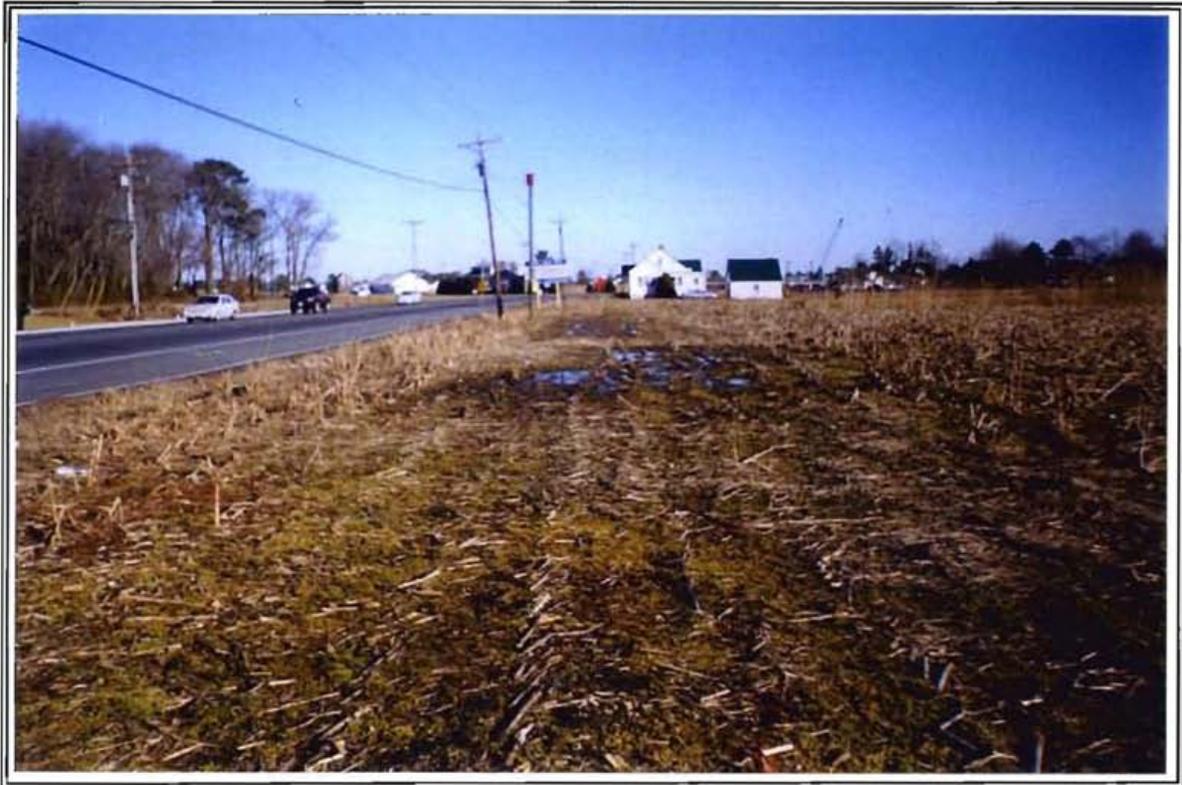
and wooded portions, as well as yards and agricultural fields (Photograph 5). Disturbances to the test area include past agricultural activities; excavation and maintenance of drainage ditches, underground utilities, and the roadway; and house construction and landscaping.

Twenty-nine STPs were excavated, paralleling the existing roadway, within Test Area E. A standard 15.0 m (49.2 ft) STP interval, as well as excavation and recordation techniques described elsewhere in this report, were used to survey Test Area E. No prehistoric or historic period cultural artifacts or features were identified in the test area during the Phase I survey. Since no previously recorded archaeological sites or NRHP-listed properties are present within Test Area E, and no cultural materials were identified during the subsurface survey of the area, no additional archaeological investigations are warranted.

4.2.6 Test Area G

Test Area G is located near the western terminus of the S.R. 54 Improvements project APE along the northern side of the roadway (see Figure 2). The test area begins approximately 274.0 m (899.0 ft) east of the intersection of Sound Church Road and S.R. 54 and continues east for approximately 98.0 m (321.5 ft) to the proposed realigned intersection of Zion Church Road and S.R. 54. The test area is comprised of fallow soybean fields (Photograph 6). Disturbances to the test area include past agricultural activities, and excavation and maintenance of utilities and the roadway.

Portions of this test area were previously surveyed (Otter 2000); however, three STPs were excavated, paralleling the existing roadway, within Test Area G. A standard 15.0 m (49.2 ft) STP interval, as well as excavation and recordation techniques described elsewhere in this report, were used to survey Test Area G. No prehistoric or historic period cultural artifacts or features were identified in the test area during the Phase I survey. Since no previously recorded archaeological sites or NRHP-listed properties are present within Test Area G, and no cultural materials were identified during the subsurface survey of the area, no additional archaeological investigations are warranted.



Photograph 5. View of Test Area E, facing east.



Photograph 6. View of Test Area G and Test Area H, facing west.

4.2.7 Test Area H

Test Area H is located near the western terminus of the S.R. 54 Improvements project APE along the northern side of the roadway (see Figure 2). The test area begins immediately east of the proposed realigned intersection of Zion Church Road and S.R. 54, and continues east for approximately 96.0 m (315.0 ft). The test area is comprised of grassy portions and fallow soybean fields (Photograph 6). Disturbances to the test area include past agricultural activities, and excavation and maintenance of utilities and the roadway.

Portions of this test area were previously surveyed (Otter 2000); however, eight STPs were excavated, paralleling the existing roadway, within Test Area H. A standard 15.0 m (49.2 ft) STP interval, as well as excavation and recordation techniques described elsewhere in this report, were used to survey Test Area H. No prehistoric or historic period cultural artifacts or features were identified in the test area during the Phase I survey. Since no previously recorded archaeological sites or NRHP-listed properties are present within Test Area H, and no cultural materials were identified during the subsurface survey of the area, no additional archaeological investigations are warranted.

4.2.8 Test Area I

Test Area I is located in the western portion of the S.R. 54 Improvements project APE along the northern side of the roadway (see Figure 2). The test area begins immediately east of the intersection of Old Mill Bridge Road and S.R. 54, and continues east for approximately 96.0 m (315.0 ft). The test area is comprised of a grassy lot (Photograph 7). Disturbances to the test area include excavation and maintenance of a drainage ditch, utilities, and the roadway.

Five STPs were excavated, paralleling the existing roadway, within Test Area I. A standard 15.0 m (49.2 ft) STP interval, as well as excavation and recordation techniques described elsewhere in this report, were used to survey Test Area I. No prehistoric or historic period cultural artifacts or features were identified in the test area during the Phase I survey. Since no previously recorded archaeological sites or NRHP-listed properties are present within Test Area I, and no cultural materials were identified during the subsurface survey of the area, no additional archaeological investigations are warranted.



Photograph 7. View of Test Area I, facing east.

4.2.9 Test Area J

Test Area J is located in the western portion of the S.R. 54 Improvements project APE along the northern side of the roadway (see Figure 2). The test area begins approximately 160.0 m (524.9 ft) east of the intersection of Old Mill Bridge Road and S.R. 54 and continues east for approximately 48.0 m (157.5 ft). The test area is comprised of fallow agricultural fields (Photograph 8). Disturbances to the test area include past agricultural activities and excavation and maintenance of a drainage ditch, utilities, and the roadway.

Three STPs were excavated, paralleling the existing roadway, within Test Area J. A standard 15.0 m (49.2 ft) STP interval, as well as excavation and recordation techniques described elsewhere in this report, were used to survey Test Area J. No prehistoric or historic period cultural artifacts or features were identified in the test area during the Phase I survey. Since no previously recorded archaeological sites or NRHP-listed properties are present within Test Area J, and no cultural materials were identified during the subsurface survey of the area, no additional archaeological investigations are warranted.

4.2.10 Test Area N

Test Area N is located in the eastern portion of the S.R. 54 Improvements project APE along the northern side of the roadway (see Figure 2). The test area begins approximately 206.0 m (675.9 ft) east of the intersection of Salty Way and S.R. 54 and continues east for approximately 169.0 m (554.5 ft) to the intersection of Laws Point Drive and S.R. 54. The test area is comprised of grassy portions with scattered trees (Photograph 9). Disturbances to the test area include excavation and maintenance of a drainage ditch, utilities, and the roadway, as well as trailer park development.

Seven STPs were excavated, paralleling the existing roadway, within Test Area N at 15.0 m (49.2 ft) intervals. One of these STPs, N-5, yielded historic period artifacts; therefore, two retest STPs (N-8 and N-9) were emplaced east and west of the positive STP at 7.5 m (24.6 ft) intervals. Neither of the retest STPs yielded additional artifacts. The historic period artifacts recovered from STP N-5 include six small whiteware sherds (Appendix D). Four of the sherds were recovered from Stratum 1, while two of the sherds



Photograph 8. View of Test Area J, facing east.



Photograph 9. View of Test Area N, facing west.

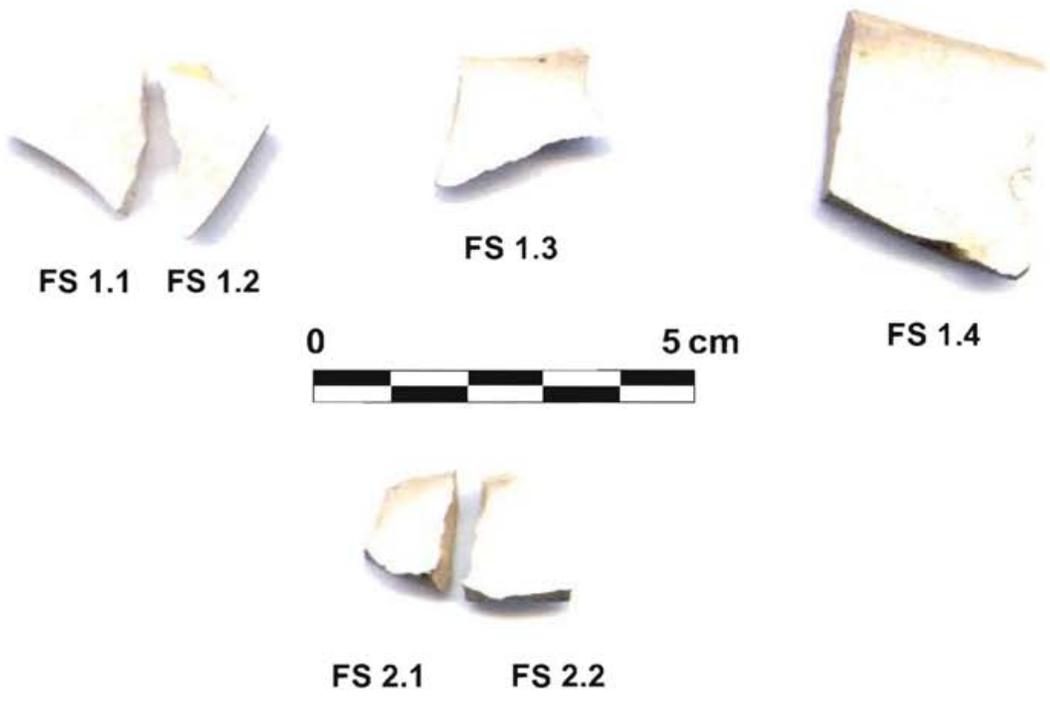
were recovered from Stratum 5; however, all of the sherds appear to originate from the same undecorated, clear glazed plate. All six sherds are plain, without decoration or maker's marks, but do exhibit crazing (Photograph 10).

These sherds are not specifically temporally diagnostic due to the lengthy manufacturing and use periods associated with whiteware. Whitewares, which were first produced in the United States in the 1830s, are still presently manufactured (Ramsay 1947; Spargo 1926). Without a maker's mark, identifying decorative features, or associations with other datable cultural features or artifacts, these plain whiteware sherds are not useful for revealing new or significant information about the history of the project area. These ceramic sherds are most likely the result of a single discard activity, indicative of the general residential/domestic rural land use of the project area. Due to the limited number of sherds recovered, the small size of the individual sherds, their lack of association with cultural features and/or other artifacts, and their temporally non-diagnostic nature, these sherds are considered an isolated find and are not assigned a site designation. These ceramic sherds do not comprise a historic period archaeological site and can not contribute significant information about the specific land-use history within the project APE; therefore, no additional archaeological research in Test Area N is recommended.

4.2.11 Test Area O

Test Area O is located near the eastern terminus of the S.R. 54 Improvements project APE along the northern side of the roadway (see Figure 2). The test area begins immediately east of the intersection of Laws Point Drive and S.R. 54 and continues east for approximately 216.0 m (708.7 ft). The test area is comprised of woods (Photograph 11). Disturbances to the test area include excavation and maintenance of a drainage ditch, utilities, and the roadway.

Eight STPs were excavated, paralleling the existing roadway, within Test Area O. A standard 15.0 m (49.2 ft) STP interval, as well as excavation and recordation techniques described elsewhere in this report, were used to survey Test Area O. No prehistoric or historic period cultural artifacts or features were identified in the test area during the Phase I survey. Since no previously recorded archaeological sites or NRHP-listed properties are present within Test Area O, and no cultural materials were identified during the subsurface survey of the area, no additional archaeological investigations are warranted.



Photograph 10. Ceramic sherds recovered from STP N-5.



Photograph 11. View of Test Area O, facing east.