Draft Report

An Archaeological Survey of Delaware State Route 54 Between State Routes 58C and 1, Selbyville and Fenwick Island, Sussex County, Delaware

Prepared for:

Delaware Department of Transportation
Division of Environmental Studies and Planning
P.O. Box 778
Dover, Delaware 19903

Prepared by:

Thomas A.J. Crist, Ph.D., Principal Investigator
Kise Straw & Kolodner, Inc.
Cultural Resources Group
123 South Broad Street, Suite 1270
Philadelphia, Pennsylvania 19109
215.790.1050

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ABSTRACT

In December 1997, the Cultural Resources Group of Kise Straw & Kolodner Inc. (KSK) conducted an Archaeological Survey of the Delaware State Route 54 corridor between State Route 58C (Keenwik Avenue) in Selbyville and State Route 1 (Inter-coastal Highway) in Fenwick Island, Sussex County, Delaware. KSK conducted this survey for the Delaware Department of Transportation as part of an Environmental Assessment (EA) associated with proposed improvements to SR 54.

The Delaware Department of Transportation has proposed to build a new section of SR 54 on fill abutments and construct two new bridge structures to alleviate flooding along the roadway, an official Hurricane Evacuation Route. The Preferred Alternative for this construction includes raising the roadway along most of its current alignment and realigning a 3,000-ft. section of the roadway, including the two new bridges, approximately 150 ft. east of the existing road.

The goals of the Archaeological Survey were to document archaeological resources previously recorded in the project area vicinity and to assess the potential for the presence or absence of potentially significant archaeological resources that may be disturbed by the proposed alterations to SR 54. The survey consisted of a literature and historical map review, a pedestrian reconnaissance of the project area, and preparation of this report following guidelines published by the Delaware State Historic Preservation Office.

Results of the Archaeological Survey indicate that intact prehistoric and historical archaeological resources are unlikely to be present within the proposed project area. Review of the Cultural Resource Survey (CRS) files at the Delaware State Historic Preservation Office revealed that no prehistoric or historical archaeological sites are recorded in the project area, which has been a tidal marsh and wetlands since the onset of the Holocene, over 12,000 years B.P. Previous archaeological surveys indicate that prehistoric settlement was far less intensive in the project area vicinity than in other regions of Delaware's Atlantic coast. Extensive disturbance to the project area, particularly widespread ditching, dredging, filling, and subsequent development, further reduces the potential for intact significant archaeological to be present within the SR 54 corridor.

Documentary sources, pedological evidence, and visible indications of extensive disturbance all strongly suggest that any prehistoric or historical archaeological sites that may have been located along the SR 54 corridor are unlikely to have survived. Accordingly, no further archaeological investigation of the areas within 600 ft. of the SR 54 lineal corridor between SR 58C and SR 1 is recommended.

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I. INTRODUCTION

I. INTRODUCTION

This report documents the methods, results, and conclusions of an Archaeological Survey conducted by the Cultural Resources Group of Kise Straw & Kolodner Inc. (KSK) along SR 54 between SR 58C (Keenwik Avenue) in Selbyville and SR 1 (Inter-coastal Highway) in Fenwick Island, Sussex County, Delaware. KSK conducted this survey as part of an Environmental Assessment (EA) associated with proposed improvements to SR 54. The investigation was conducted in December 1997 for the Delaware Department of Transportation.

The Delaware Department of Transportation has proposed to build a new section of SR 54 on fill abutments and add two new bridge structures to alleviate flooding along the roadway, an official Hurricane Evacuation Route. The Preferred Alternative for this construction includes raising the roadway along most of its current alignment and realigning a 3,000-ft. section of the roadway with the two new bridges approximately 150 ft. east of the existing road.

The goals of the Archaeological Survey were to document archaeological resources previously recorded in the project area vicinity and to assess the potential for the presence or absence of potentially significant archaeological resources within the project area that may be disturbed by the proposed alterations to SR 54. This Archaeological Survey fulfills compliance with Sections 106 and 110 of the National Historical Preservation Act (NHPA) of 1966, as amended; the National Environmental Policy Act (NEPA); the Department of Transportation Act, as amended; the Archaeological Resources Protection Act (ARPA), and Title 29 § 8705 and Title 7 § 5302 of the Delaware State Code.

The Archaeological Survey of SR 54 consisted of a literature and historical map review to identify previously recorded or potential cultural resources in the project area and its vicinity; a pedestrian reconnaissance of the project area to document conditions that may have affected the presence and integrity of archaeological resources; and preparation of this report following guidelines published by the Delaware State Historic Preservation Office (1993).

The archaeological investigation was performed by Thomas A.J. Crist, Ph.D., KSK's Director of Archaeological and Anthropological Services. Above-ground resources along SR 54 were previously assessed in July and August 1997 by KSK's Architectural Historian Glenn A. Ceponis and Cultural Resources Specialist Rebecca A. Hunt. Results of the above-ground survey are included in the Environmental Assessment conducted by KSK for the SR 54 project. All three staff members exceed the Department of the Interior's Qualification Standards for conducting cultural resources investigations.

II. BACKGROUND RESEARCH

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Project Location

SR 54 is a two-lane road that runs along the southern coast of Little Assawoman Bay in the southeast corner of Delaware, 400 ft. north of the Maryland border at Fenwick Island (figures 1 and 2). The roadway links Fenwick Island (in actuality, a peninsula) with the Sussex County mainland and also connects Ocean City, Maryland with the inland portions of Delaware. As such, SR 54 is an official Hurricane Evacuation Route, but is prone to flooding and often impassable in its current configuration.

The project area is a linear corridor that extends approximately 2.3 mi. (3.66 km) west from SR 1 (Inter-coastal Highway) in Fenwick Island to SR 58C (Keenwik Avenue) at the north end of Assawoman Bay (Figure 3). A portion of the project area includes a section of SR 54 that crosses an artificial canal known as "The Ditch," located about 3,000 ft. west of SR 1. The Ditch connects Little Assawoman Bay with Assawoman Bay, located to the south of SR 54.

For the purposes of this archaeological survey, the project area is defined as a 600-ft. wide transect superimposed along the entire lineal corridor of SR 54 from SR 58C to SR 1. Most of the land east and west of SR 54 will be unaffected by the proposed improvements; however, a new section of SR 54 approximately 3,000 ft. in length will be constructed 150 ft. east of the existing right-of-way in the middle third of the project area (Figure 4).

Environmental Conditions

The project area is located within Delaware's Low Coastal Plain Physiographic zone (Custer 1987). This is an area of poorly-drained, salty tidal marshes and ponds interspersed by islands of well-drained, wooded uplands. The project area is protected from the Atlantic Ocean by the peninsula known as Fenwick Island, a barrier island typical of the Mid-Atlantic coastal zone.

Sediments of the Coastal Plain consist of unconsolidated clays, silts, sands, and gravels overlying bedrock at a depth of 7,000 ft. at Fenwick Island. The project area consists of Holocene sediments up to 12,000 years old that overlie granular Pleistocene deposits of the Columbia group (Rummel, Klepper & Kahl 1993; United States Department of Agriculture (USDA) 1974). The Holocene soils range from 0-40 ft. thick and were deposited through alluvial and windblown processes. The sediments are primarily medium to fine-grained sand mixed with coarse sand, silt, and clay.

The nature of the landforms in the project area vicinity have varied significantly since the end of the Pleistocene. As the result of considerable changes in sea level, shoreline reconstructions indicate the project area vicinity was approximately 35 mi. west of the Atlantic coast when the first humans entered the area about 12,000 B.P. (Custer and Mellin 1991; Kraft 1971). By 7,500 B.P., rising sea levels had created an estuary about 2 mi. east of the project area. Assawoman Bay reached it present size by about 1,500 B.P., with little change in its natural fauna and flora since then.

Tidal Marsh and Fill Land dominate the soils classifications in the project area (USDA 1974). Development along the SR 54 corridor since the late 1950s included a number of dredge-and-fill residential communities that decreased the amount of wetlands acreage in the project area vicinity (Tiner 1987). These communities were built upon Fill Land consisting of material pumped or dredged from the bottom of local bays or transported from borrow pits and then leveled and graded (USDA 1974). These low filled areas are exposed to serious flooding by storm tides and are vulnerable to severe erosion.

Tidal Marsh is comprised of clay loam with a very high organic component underlain by silty clay loam and sand (USDA 1974). These areas are usually saturated and change from neutral to strongly acidic as they dry during low tide. The tidal marshes in the project area vicinity were subjected to extensive ditching and flooding during the twentieth century in attempts to discourage mosquito breeding. Additional disturbance occurred during dredging and filling of these areas prior to residential and commercial development.

III. METHODS

III. METHODS

Previous Archaeological Research in Project Area Vicinity

As part of its Environmental Assessment and archaeological survey of the SR 54 corridor, KSK's project team reviewed previous research conducted in the project area vicinity to gather and interpret data on the historical use of the area and environmental conditions that may have affected the presence of archaeological resources. This phase of the project included extensive reviews of the Cultural Resource Survey (CRS) files and cultural resources reports at the Delaware State Historic Preservation Office in Dover, the geotechnical report prepared for the SR 54 project (Rummel, Klepper & Kahl 1993), and other engineering and environmental documents pertinent to the area.

Project Area Pedestrian Reconnaissance

A pedestrian reconnaissance of the project area was conducted by KSK archaeologist Thomas A.J. Crist, Ph.D. on December 23, 1997. This phase of the project included documentation of environmental conditions, landform alterations, and modern development that may have affected the presence or absence of intact archaeological remains, particularly those associated with prehistoric occupation of the area. Subsurface testing was not included during this investigation. The field survey concentrated on assessing the project area's current topography and indications of disturbance as factors in evaluating the potential for intact archaeological resources. The pedestrian reconnaissance was conducted with consideration to the environmental and pedological investigations previously conducted along SR 54 and the results of the historical background research and cultural resources survey KSK previously conducted for the proposed project.

IV. RESULTS

IV. RESULTS

Previously Recorded Archaeological Sites

The review of the Cultural Resource Survey (CRS) files at the Delaware State Historic Preservation Office revealed that no prehistoric or historical archaeological sites are recorded in the project area. The closest archaeological site (S-707/Site No. 7S-K-7) was recorded approximately 750 ft. north of SR 54 at Bennett Avenue in an upland area called Fenwick Landing. The CRS form for this site provides no information regarding the cultural affiliation or temporal span of the site, a surface find recorded in December 1977. Its location is given as only "northeast of [farm]house, back of chicken houses on the bay."

Several large-scale reconnaissance surveys have been conducted in the Atlantic coastal region of Delaware, including areas with environmental features similar to those in the project area vicinity. Custer and Mellin (1987) conducted an investigative survey along drainages associated with Indian River and Rehoboth Bay in 1984 and 1985. This survey identified Woodland I period (3,000 B.C.-A.D. 1000) sites as the most common type of site along the inland bays. Custer (1987) subsequently developed a management plan for potential archaeological resources along the coast based on this survey and other cultural resources reports.

A second survey conducted by Custer and Mellin in 1991 focused on drainages surrounding Little Assawoman Bay, Indian River Bay, and Rehoboth Bay. The results of this survey indicate that prehistoric settlement was less intensive in the Assawoman Bay area than in other regions of Delaware's Atlantic coast.

The most recent archaeological investigation in the vicinity of the project area was conducted in the Assawoman Bay Wildlife Area, located along the north coast of Little Assawoman Bay, about 2 mi. north of the project area (Clark and Scholl 1994). Employing Delaware's Coastal Plain Prehistoric Site Location Model, this survey identified 16 small, prehistoric procurement sites (Site Nos. 7S-K-79 through 7S-K-85 and 7S-K-87 through 7S-K-95) among the uplands of the inland bay coast. A total of 7 projectile points and 656 prehistoric ceramic fragments were recovered from these sites. Analysis of these remains indicates that temporary procurement sites along Assawoman Bay were first used during the Woodland I period, most likely no earlier than 800 B.C. (Clark and Scholl 1994:55). Extensive occupation of the area was not realized until after 1000 A.D. and was not intensive until European contact. This survey confirmed the low-density prehistoric settlement patterns of the Assawoman Bay region first suggested by Custer and Mellin in 1991 and also supports the efficacy of the Coastal Plain Prehistoric Site Location Model.

Project Area Pedestrian Reconnaissance

The field survey substantiated indications of extensive disturbance to the project area discussed in the soil survey and other environmental studies of the SR 54 corridor. Most of the SR 54 corridor at the east and west ends of the project area has been intensively developed for both commercial and residential use. The middle third of the project area includes residential

communities built on artificial landforms created after 1955 by dredging and filling the north coast of Assawoman Bay and the south coast of Little Assawoman Bay.

At the time of the pedestrian reconnaissance, conducted in December 1997, much of the tidal marsh adjacent to the middle third of the SR 54 roadway was saturated. It is this area (within approximately 150 ft. east of the roadway) that will be most disturbed during realignment of SR 54. Numerous ponds and areas of standing water were observed, as were clearly defined ditches traversing the area. Other areas of obviously filled land were visible from the highway.

In summary, extensive alterations to the natural landscape were documented during the pedestrian survey of the project area. No areas possessing features consistent with those previously documented to contain intact archaeological resources were identified.

V. CONCLUSIONS AND RECOMMENDATIONS

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Conclusions

Results of the Archaeological Survey of the SR 54 corridor between SR 58 C and SR 1 in Sussex County, Delaware, indicate that intact prehistoric and historical archaeological resources are unlikely to be present within the proposed project area. Previous archaeological surveys conducted along the Atlantic Coastal Plain in southern Delaware, including several Assawoman Bay and Little Assawoman Bay drainages, indicate that prehistoric settlement was far less intensive in this region than in other regions of Delaware's Atlantic coast. Extensive disturbance in the project area vicinity, particularly wide-spread dredging and filling since the 1950s, further reduces the potential for intact archaeological resources to be present within the SR 54 corridor.

Review of the Cultural Resource Survey (CRS) files at the Delaware State Historic Preservation Office revealed that no prehistoric or historical archaeological sites have been previously recorded in the project area. A 1992-1993 archaeological survey of the Assawoman Bay Wildlife Area, located 2 mi. north of the current project area, identified 16 small, temporary Woodland I procurement sites along inland bay coasts. However, though sharing similar environmental features with the project area, the Assawoman Bay Wildlife Area has been virtually untouched by modern development and its archaeological resources protected from the extensive landform alterations common along SR 54. The results of the Assawoman Bay Wildlife Area survey confirmed the findings of earlier surveys that demonstrated fairly non-intensive occupation of the project area vicinity during the Woodland period. Woodland period sites are the most common prehistoric archaeological sites found in coastal Delaware.

A pedestrian reconnaissance of the project area supports documentary evidence regarding the extent to which the tidal marsh adjacent to SR 54 has been disturbed by modern development. The only area of the tidal marsh to be newly impacted by the proposed realignment of SR 54 consists of saturated wetlands with areas of obviously filled land interspersed among tidal ponds and ditches. Due to both natural processes associated with the tidal nature of the area and artificial ground modifications, it is highly unlikely that potentially significant prehistoric or historical archaeological resources are located in this area.

Recommendations

Documentary sources, pedological evidence, and the visible indications of extensive disturbance strongly suggest that any prehistoric or historical archaeological sites that may have been present along the SR 54 corridor are unlikely to have survived the processes of natural erosion, tidal action, and modern soil relocation and subsequent development. Accordingly, no further archaeological investigation of the areas within 600 ft. of the SR 54 lineal corridor between SR 58C and SR 1 is recommended.

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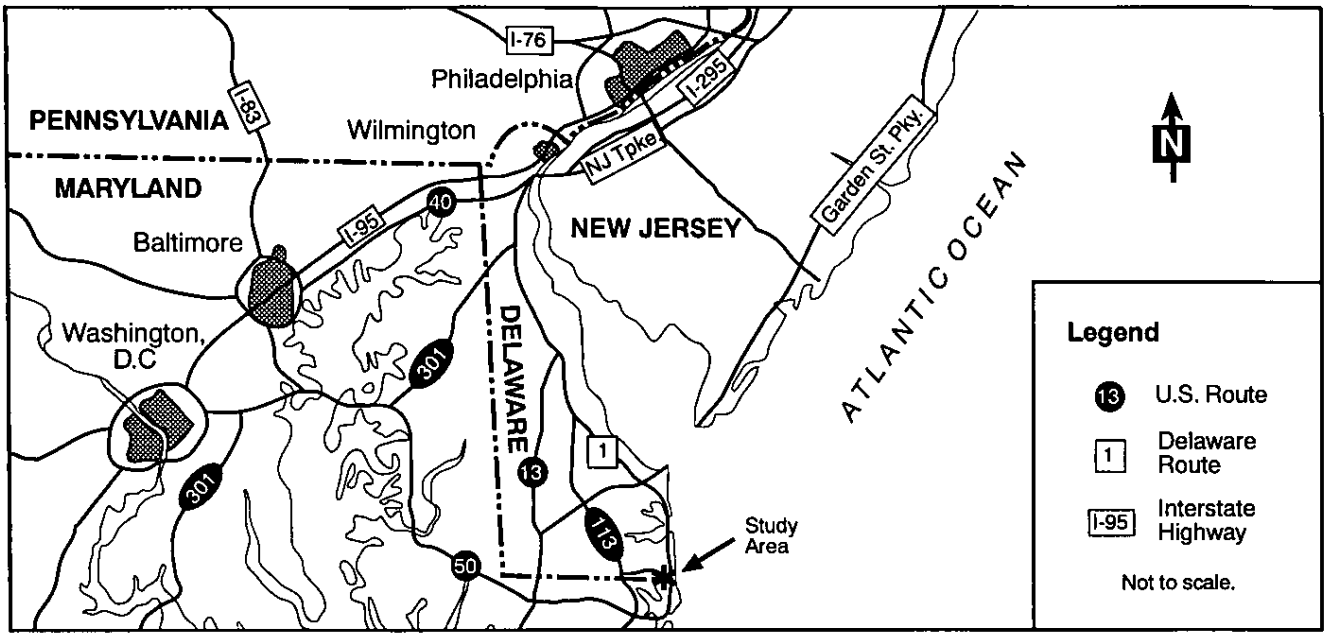
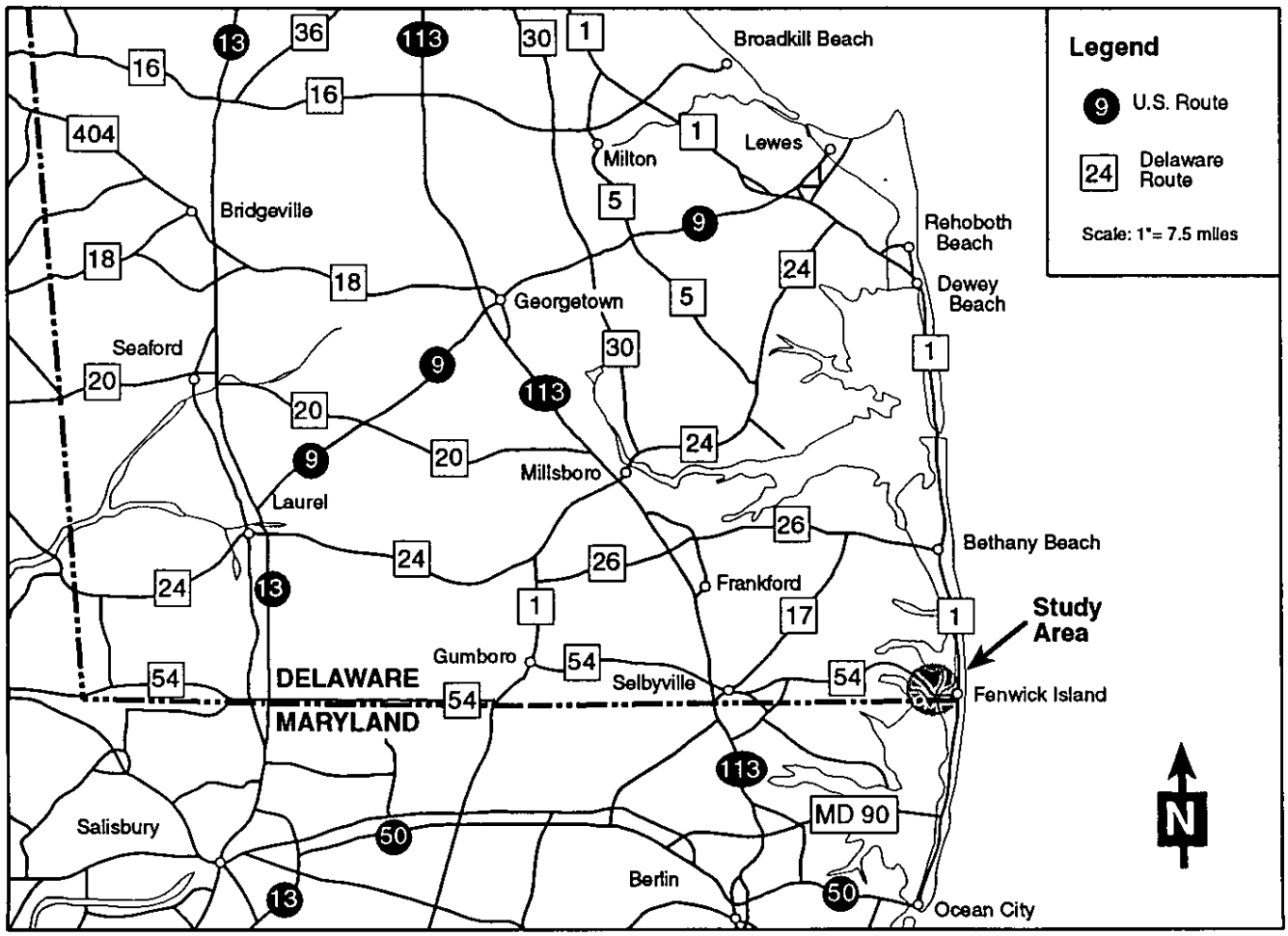
FIGURES



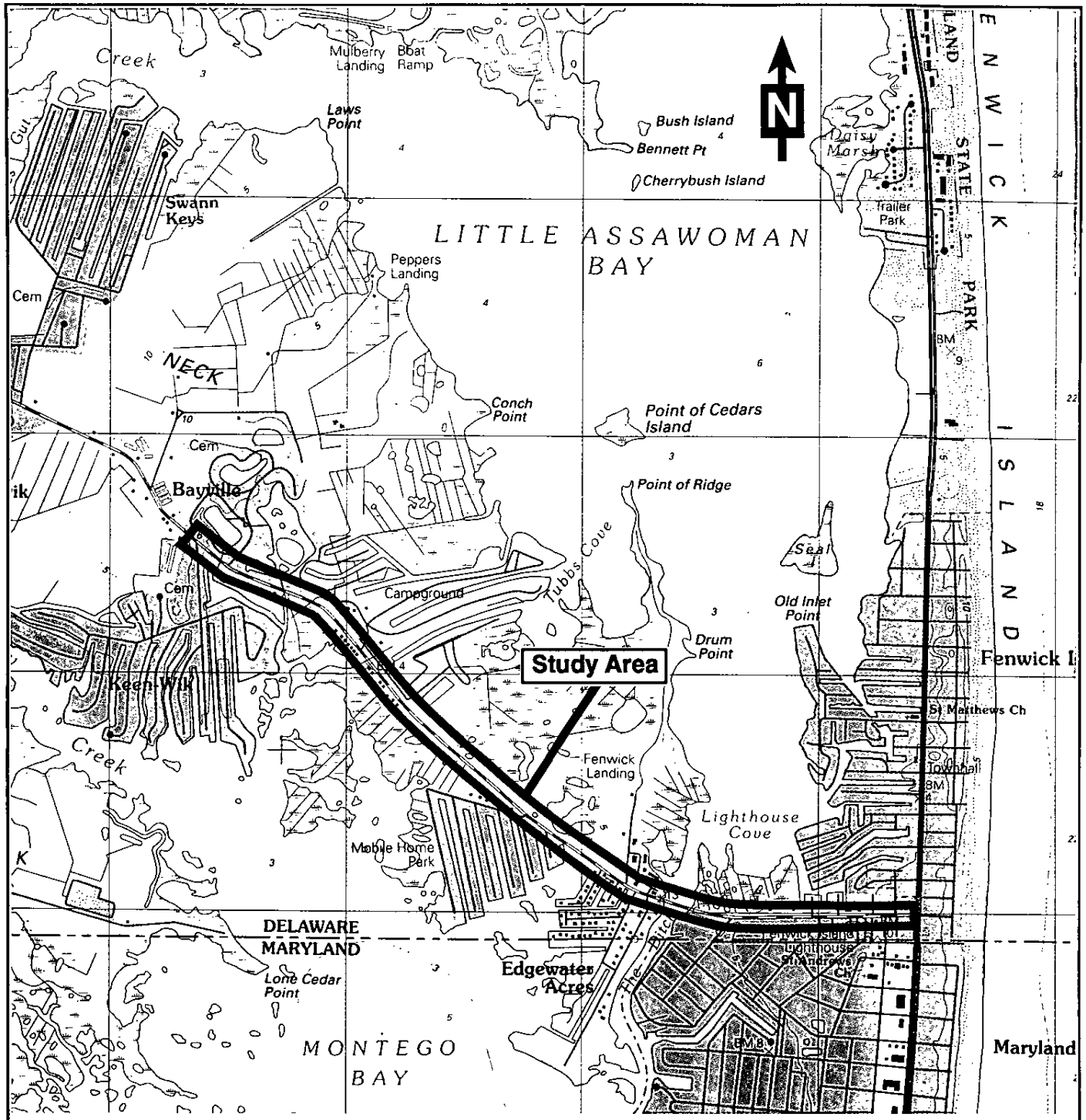
Regional Location

Figure 1



Study Area Location

Figure 2



Scale: 1inch = 2000 feet

Source: USGS. 1992. *Assawoman Bay, MD-DE Quadrangle.*

DE Route 54 Improvements

ENVIRONMENTAL ASSESSMENT

Delaware Department of Transportation

Kise Straw & Kolodner
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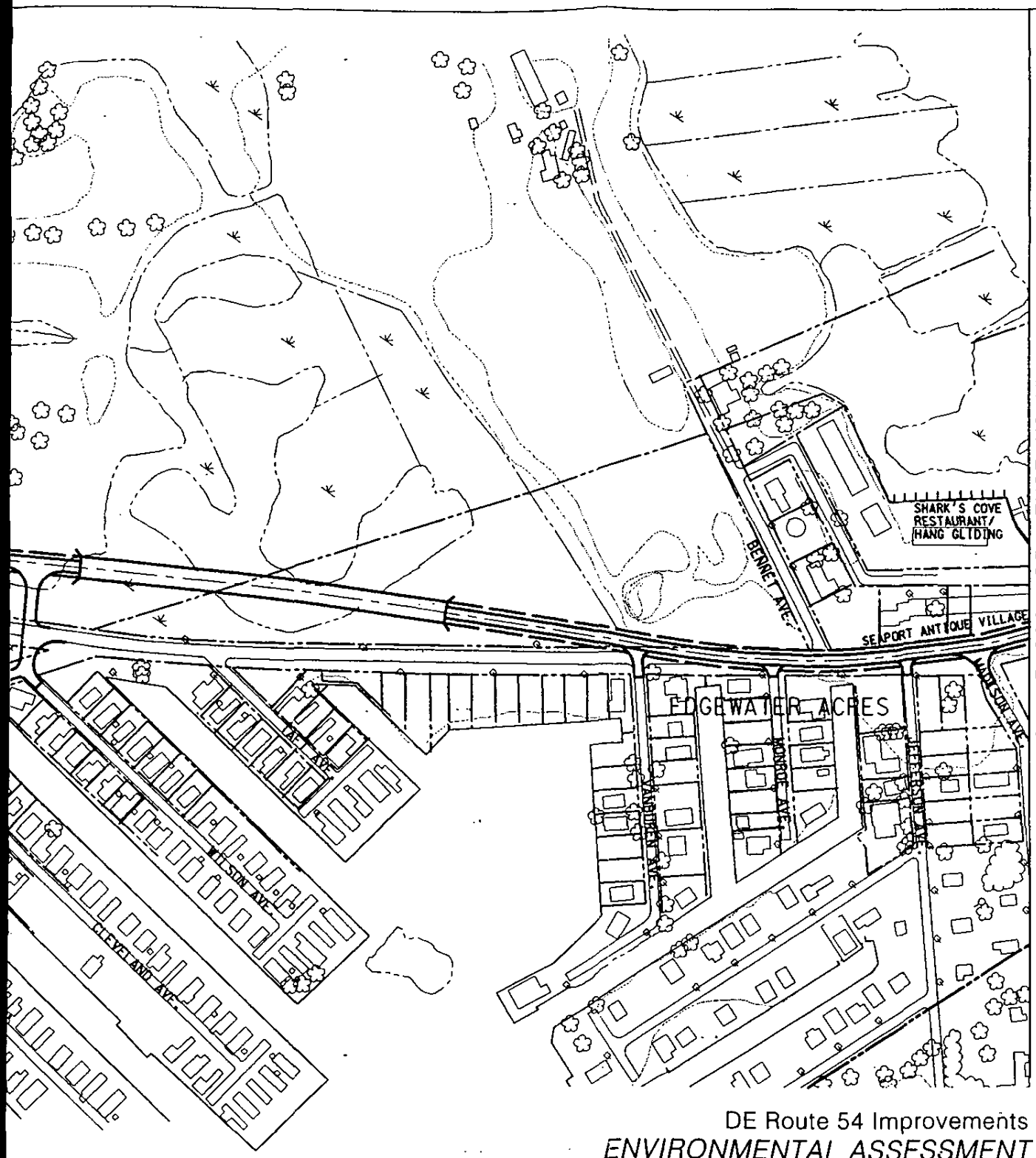
Study Area Limits

Figure 3

APPENDIX A:

KEY PROJECT PERSONNEL

NADB: 43560



DE Route 54 Improvements

ENVIRONMENTAL ASSESSMENT

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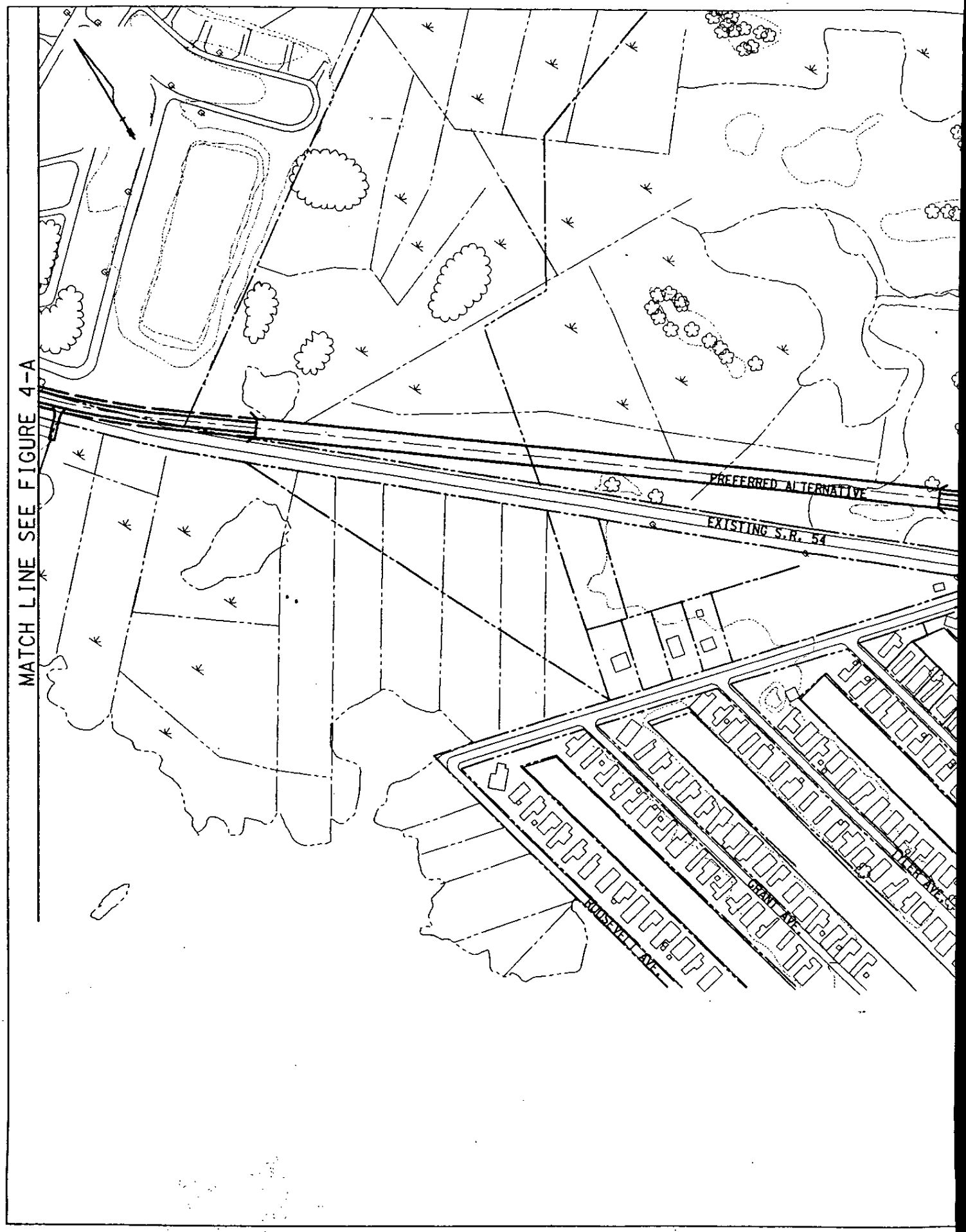
Fong & Associates, Inc.

Preferred Alternative

Figure 4

NAD83 43560


MATCH LINE SEE FIGURE 4-A
PREFERRED ALTERNATIVE
EXISTING S.R. 54
ROOSEVELT AVE.
GRANT AVE.
DEER AVE.