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REPLACEMENT OF MANTOLOKING BRIDGE

COUNTY ROUTE 528 OVER BARNEGAT BAY

BRICK TOWNSHIP AND MANTOLOKING BOROUGH
OCEAN COUNTY, NEW JERSEY

HISTORIC RESOURCES SURVEY

Prepared _____

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Date:

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HISTORICAL
PERSPECTIVES INC.

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HISTORICAL
PERSPECTIVES INC.

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EXECUTIVE SUMMARY

Due to structural deficiencies, functional obsolescence and anticipated long range traffic patterns, the Ocean County Engineering Department has recommended the replacement of the Barnegat Bay Bridge, locally referred to as the Mantoloking Bridge, which currently carries part of County Route 528 over Barnegat Bay and the Intracoastal Waterway. This evaluation of the historic resources at either side of the Mantoloking Bridge over Barnegat Bay was conducted by Historical Perspectives, Inc. in April and May, 1995. It is intended to determine National Register eligibility for the bridge structure and the historic resources in the Area of Potential Effect (APE) of the existing Bridge so they may be appropriately considered in developing plans for the proposed replacement bridge. As currently proposed, there are two alternative designs for a replacement bridge: a new bridge immediately to the north of the existing bridge and a new bridge immediately to the south of the existing bridge.

The New Jersey State Historic Preservation Office has expressed interest in the Mantoloking Bridge as possibly eligible for nomination to the National Register of Historic Places. The structure, completed in 1938, is a two-lane, single-leaf trunion bascule bridge designed by Ash-Howard-Needles & Tammen. The technology used in the Mantoloking Bridge is common in southern New Jersey. At least 10 similar spans were built in the 1930s and 1940s. However, of the remaining spans, the Mantoloking Bridge is unaltered, complete and well-preserved for its age except for the addition of modern electrical controls and a steel grate deck. The Ocean County Engineering Department has maintained the bridge and although the machinery is showing signs of wear and portions of it have required replacement, it is in fairly good condition from an historical perspective. It represents a major, cost effective design which departs from the more complex Strauss designs of the early twentieth century.

The period of most significance for the development of the Mantoloking community is the era 1882 to 1936, from the laying out of the town to the closure of the old bridge to the mainland, which served the community from 1884 to 1936. During this time, many shingled houses were built in the area bounded by Herbert Avenue and Princeton Avenue, bounded by the Ocean and the Bay. This area retains a significant concentration of historic residential structures in a good state of architectural integrity. This historic district appears to be eligible for the National Register based upon its architecture and its reflection of a significant period of development in the community.

The new bridge will have an effect on one of two residential yard areas along Herbert Street (known as 1198 Bay Avenue and 1200 Bay Avenue) at the north edge of the potential historic district. Depending on either a north approach alternative selection or a south approach alternative selection, very small portions of their bayside lawn edges would be "taken" for a new bridge touchdown. However, neither of the houses on these lots is eligible for the National Register as a single resource and the eligibility of the potential district, which lies largely to the south, is not adversely affected by this impact. Although the community was developed based on rail travel, there has been a pedestrian and/or vehicular bridge, in one location or another, across the Bay since 1884. Only since 1992 has truck traffic been restricted from the Mantoloking Bridge; therefore, a replacement bridge will once again allow the full flow of traffic that the community experienced daily until three years ago.

On the mainland side of the bridge, the Winter Yacht Basin continues the tradition of repairing and maintaining boats at this site. The original boatyard here was established by David Beaton in 1928 and acquired by the Winter family in 1950. Beaton continued building and repairing boats at a new yard immediately south of the Winter Yacht Basin. The yard continues in business as David Beaton & Sons and is located on Bay Front Street.

Within the APE, at the touchdown at either end of the Mantoloking Bridge, there are associations of note in the history of yachting and boat building. While this is not the only area where catboats evolved, there is a continuous history of catboat development from workboat to family cruiser to all-out racer. The early catboat design evolved here, guided by shipwrights who used half-hull models to achieve a fair line and efficient shape. In recent years David Beaton strengthened the design of the 'A' catboat. All extant catboats, including the four listed on the 1983 New Jersey Thematic Nomination form, are either stored or under repair at the Beaton Yard.

The Mantoloking Yacht Club in Mantoloking was determined in 1980 by the New Jersey State Historic Preservation Office to be eligible for the National Register of Historic Places. Mantoloking's members depend primarily on the repair, maintenance and storage services of the Beaton and Winter Yards across the bay. The yards and the club have been informally identified with each other for many years and should be considered eligible for the National Register as part of the same resource. However, the construction of the new bridge appears not to have an impact on the integrity of the Winter Yacht Basin and the Beaton Yard as marine resources.

I. INTRODUCTION

Based on inspection studies and anticipated long range traffic patterns, the Ocean County Engineering Department has recommended the replacement of the Barnegat Bay Bridge, known locally as the Mantoloking Bridge, which currently carries part of County Route 528 over Barnegat Bay and the Intracoastal Waterway (Figure 1). This vital roadway connects Mantoloking Borough on the east shore with Brick Township on the west shore. The current bascule bridge, completed in 1938, is now considered structurally deficient and functionally obsolete.

An increasing number of yachts use the Intracoastal Waterway. Many of these carry masts that are higher than the existing 17-foot bridge clearance. There are many more large yachts and cruising sailboats on the waters than when the bridge was built. Contemporary commercial and sport fishing boats carry flying bridges and rigs that also exceed the clearance limit. In addition, vehicular traffic to the resort communities on Island Beach has increased. The result of this is that, in spite of limiting the hours when boat traffic can pass, opening the bridge can cause serious traffic tie-ups during the summer months. A proposed solution to this problem is to replace the Mantoloking Bridge with a new bascule bridge having sufficient vertical clearance to allow most of the boat traffic to pass without opening it.

However, the New Jersey State Historic Preservation Office (SHPO) has identified this same Mantoloking Bridge as possibly eligible for nomination to the National Register of Historic Places. In addition, there are historic structures in the construction impact zone and in the immediate vicinity of the bridge.

A survey of historic resources was undertaken as part of the Level of Action Assessment (LOAA) process for the proposed bridge replacement studies. The environmental review process, both in public meetings and agency comments, considers potential cultural resources of significance, including extant buildings and structures.[1] The following evaluation by Historical Perspectives (Westport, CT) focuses on the bridge

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[1] Section 106 of the National Historic Preservation Act of 1966 as amended, 23 CFR 771, the guidelines developed by the Advisory Council on Historic Preservation published November 25, 1980 and the "Procedures for the protection of Historic and Cultural Properties" as set forth in 36 CFR Part 800, require the effects of federally-assisted projects on any district, site or structure included in, or eligible for inclusion in, the National Register of Historic Places to be assessed before the project can be approved. To comply with these statutes, research must be conducted to identify and inventory significant cultural resources within the project study area.

itself and those resources within the APE - commercial and residential buildings on either side of the bridge touchdown and marina-related resources. The field survey and analysis were completed by Janet Foster (architectural historian) and Robert Stewart (industrial archaeologist).

The Barnegat Bay/Mantoloking Bridge structure, completed in 1938, is a two lane, single leaf trunion bascule bridge designed by Ash-Howard-Needles & Tammen. The technology used in the Mantoloking Bridge is common in southern New Jersey. At least 10 similar spans were built in the 1930s and 1940s. However, of the remaining spans, the Mantoloking bridge is unaltered, complete and well-preserved except for the addition of modern electrical controls and a steel grate deck. The Ocean County Engineering Department has maintained the bridge and although the machinery is showing signs of wear, it is in fairly good condition. It represents a major, cost effective design which departs from the more complex Strauss designs of the early twentieth century. The bridge has been included in the Lichtenstein & Associates' "New Jersey Historic Bridge Survey (Structure # 1506006)".

The period of most significance for the development of Mantoloking is the era 1882 to 1936, from the laying out of the town to the closure of the old bridge to the mainland, which served the community from 1884 to 1936. During this time, many shingled houses were built in the area bounded by Herbert Avenue and Princeton Avenue, bounded by the Ocean and the Bay. This area retains a significant concentration of historic residential structures in a good state of architectural integrity. This historic district appears to be eligible for the National Register based upon its architecture and its reflection of a significant period of development in the community.

A replacement bridge, depending on the approach alignment selected, will have an impact, or effect, on one of two residential lots along Herbert Street (known as 1198 Bay Avenue and 1200 Bay Avenue) at the north edge of the potential historic district. Very small portions of either bayside lawn edges would be "taken" for a new bridge touchdown. The total acreage to be appropriated for a replacement bridge on the north and south sides is .0046 acre and .0192 acre, respectively. These two residences (dating from 1921 and 1900, respectively) have lost much of their architectural integrity through episodes of reconstruction. Neither of these houses is eligible for the National Register as a single resource and the eligibility of the potential district, which lies largely to the south, is not adversely affected by this impact.

Although the community was developed based on rail travel, there has been a pedestrian and/or vehicular bridge, in one location or another, across the bay since 1884. As currently designed, the replacement bridge will span the bay with a slightly higher profile. A higher profile to the bridge will not affect the historic qualities of the potential historic district, nor will it detract from the visual relationship of the community to the bay.

The replacement bridge designs do not include an addition of traffic lanes. A new bascule bridge is not intended to increase the traffic capacity but to allow a more uninterrupted flow of vehicular traffic on County Route 528 and boat traffic along the Intracoastal Waterway. Due to bridge safety concerns, since 1992 truck traffic has been restricted from the Mantoloking Bridge. Therefore, a replacement bridge will once again allow the full flow of traffic that the community experienced daily until three years ago.

On the mainland side of the bridge, the Winter Yacht Basin continues the tradition of repairing and maintaining boats at this site. The original boatyard here was established by David Beaton in 1928 and acquired by the Winter family in 1950. Beaton continued building and repairing boats at a new yard immediately south of the Winter Yacht Basin. The yard continues in business as David Beaton & Sons and is located on Bay Front Street.

The Mantoloking Yacht Club in Mantoloking was determined eligible for the National Register in 1980. Most yacht clubs emphasize social and competitive aspects of yachting; upkeep and winter storage is usually assigned to boatyards. Mantoloking's members depend primarily on the repair, maintenance and storage services of the Beaton and Winter Yards across the bay. The yards and the club have been informally identified with each other for many years and the yards might be considered eligible for the National Register as part of the same resource.

The immediate area at either end of the Mantoloking Bridge is important in the history of yachting and boat building. While not the only area where catboats evolved, there is a continuous history of utilization from workboat to family cruiser to all-out racer. The early catboat design evolved here, guided by shipwrights who used half-hull models to achieve a fair line and efficient shape. Later, the naval architects, Mower and Sweisguth, took these vernacular designs, applied hydrodynamic and aerodynamic principles and perfected a racing boat that was well adapted to the conditions in the local area. In recent years David Beaton strengthened the design of the 'A' catboat, basing his

modifications on many years of observation and repair experience. All extant catboats, including the four listed on the 1983 New Jersey Thematic Nomination form, are either stored or under repair at the Beaton Yard.

The contributions of the Winter Yard to development and production of lapstrake construction are also significant. The technique produced an economical wood hull that was stiff, yet relatively light in weight. The lapstrake Jersey skiff hull is an example of a boat evolved and adapted for local conditions. However, the construction of the new bridge appears not to have an impact on the integrity of the Winter Yacht Basin and the Beaton yard as marine resources.

II. RESEARCH METHODOLOGY

The HNTB engineering study determined the APE, and thus the field for this study, as the area within 1000 feet of either end of the bridge (Figure 2). The following evaluation is intended to determine National Register eligibility for any buildings, structures and/or features within this area, so that any eligible resources may be appropriately considered in developing plans for the new bridge, in accordance with the mandated Section 106 review process.

On the Brick Township side of the bridge, the study area encompassed the properties within 1000 feet of the western edge of the bridge. Three properties were included, most notably the Winter Yacht Basin, on the south side of the bridge and Mantoloking Road. Two properties on the north side of Mantoloking Road were also recorded.

On the Mantoloking Borough side of the bridge, the study area was defined as bounded by Barnegat Bay, public walkway Number 4, (between Ocean Avenue and Barnegat Bay), the west side of Ocean Avenue, and the north side of Downer Street. In addition, a reconnaissance survey in Mantoloking between Princeton Avenue and the 1100 block of Barnegat Lane (immediately north of Herbert Street), and between the Atlantic Ocean and Barnegat Bay assessed all properties for historic architectural characteristics.

There are no properties/structures in Mantoloking Borough or Brick Township listed on the National Register of Historic Places at the time of this study (May 1995). However, the 1990 "Mantoloking Bridge Replacement Studies and Estimates", by HNTB for the Ocean County Engineering Department, particularly noted concern for (1) the bridge and (2) a residential property at the north end of the bridge on the Mantoloking side (p. 15 of referenced study), as a site of some possible historic interest. The McCormick, Taylor and Associates Proposal for a "Level of Action Assessment" again specifically mentions the house north of the bridge as well as a "potential historic district", which is taken to mean the nineteenth century residential structures to the south of the bridge. For this survey, not only were buildings evaluated as individually eligible for the National Register, but buildings in the study area were assessed using the criteria for the National Register, with a particular eye toward the possibility of a historic district.

Research sources contacted include the New Jersey Historic Preservation Office, the Ocean County Cultural and Heritage Office, The Ocean County Library - Bishop Building, the Brick Township Public Library, and the Clerk of the Borough of Mantoloking. Research and interviews were

conducted at both the Calvert Marine Museum (Solomon's Island, MD) and the Mariner's Museum (Newport News, VA). Archival research depended largely on previous surveys, secondary sources, maps, and plans available at the above-mentioned locations.

Field investigations were carried out on the bridge structure and the residences/commercial structures in the study area to determine their actual physical condition and integrity. A photo record of current conditions was made and is referred to throughout the evaluation text. Interviews were conducted with certain property owners, museum staff, and a bridge specialist with the Ocean County Department of Engineering.

In addition, a reconnaissance survey in Mantoloking between Princeton Avenue and the 1100 block of Barnegat Lane, and between the Atlantic Ocean and Barnegat Bay assessed all properties for historic architectural characteristics (Figure 3). Streetscape and panoramic photographs were taken to convey the community image of Mantoloking. All properties were assigned a "contributing" or "non-contributing" designation, following the criteria for National Register historic districts.

The Mantoloking portion of the Ocean County Cultural Resources Survey was carried out under the direction of the New Jersey State Historic Preservation Office in 1980 (Figure 4). This survey identified seventeen individual historic sites in Mantoloking, and determined that two, St. Simon's Episcopal Church and the Mantoloking Yacht Club, were individually eligible for the National Register of Historic Places. Neither of these properties has actually been placed on the National Register in the intervening years. Six of the seventeen surveyed properties were identified in 1980 as National Register eligible as part of a historic district. However, the 1980 survey text did not identify boundaries for any potential historic district. Also the 1980 survey text did not specify the rationale for determining that certain particular properties were "district eligible" and neighboring properties were not "district eligible."

Three buildings included in the 1980 survey have been demolished, two of them Ocean frontage properties, and the third a bayfront site. On each property, a new structure has been built on the site. Figure 4 includes the 1980 listed properties.

III. HISTORIC CONTEXT

Mantoloking is a Lenape Indian word which local tradition says means 'Land of Sunrise'. However, Becker's Indian Place Names in New Jersey translates it as 'frog ground' or 'sand place'(Colie 1970:17). Prior to the establishment of the resort, the island was home to several Coast Guard lifesaving stations. It is a barrier island between the Atlantic Ocean and Barnegat Bay which was developed in the last quarter of the nineteenth century as a residential seashore resort community. A New York attorney, Fredrick Downer, and Frank L. Hall assembled a tract between Bay Head and the south boundary of Mantoloking in 1875 in anticipation of the arrival of the Pennsylvania Railroad in 1881. Access to the embryo resort was by sail boat or steam launch. John Arnold of Point Pleasant turned Downer's speculation into valuable real estate with the formation of two companies in 1883, the Seashore Land Company and the Seashore Improvement Company. The enterprises created streets, divided the land into lots, and, most notably, imported topsoil from the mainland for the establishment of lawns around each spacious house. John Cunningham, New Jersey's noted historian describes Mantoloking as a town which had "the ivy look" from the beginning, referring to the conservatism and wealth of its founders, many of whom were friends from Ivy League schools, particularly Princeton.

Mantoloking was laid out in 1882, and a map of that year shows that Herbert Avenue, Ocean Avenue, Ashton (now Downer) Avenue, and Bay Avenue defined nearly the whole of the community. The Courier of June 18, 1882 announced that Mantolokin [sic] is a "new summer resort established on Squan Beach two miles south of Bay Head." Further development was platted in lots at the lower end of Bay Avenue at Arnold Street. The earliest houses were built along the ocean; only two of these survive today, much rebuilt but recognizable after over a century of ocean storms and a few hurricanes.

The first residents came by train, on the Philadelphia and Long Branch Railroad, which ran up the middle of the block between Bay and Ocean Avenues; today's Barnegat Lane in the study area follows the railroad right-of-way. There were eight trains daily dispatched via Ocean Grove, New Jersey. Many of the founders and first residents of Mantoloking were Princeton alumni and friends, who established social and athletic clubs in their new resort based upon a collegiate model. The Mantoloking Tennis Club was established by 1887, the Golf Club by 1896. The Golf Club evolved into the Mantoloking Golf and Yacht Club (photo 12); today, only the Yacht Club remains, but tennis courts are featured on the grounds. To this day the tennis courts remain a bone of contention and good-natured banter between the yachting members and those who prefer tennis as their sport. The

original layout of the yacht club included a dredged basin for mooring dinghies and small sailboats. Unfortunately the basin had but one outlet and rapidly became a source of foul odors. The club filled it in and located the new tennis courts over it. To irritate the tennis crowd, members of the yachting contingent periodically promote a proposal to remove the courts and once again dredge the basin.

The convivial social life of Mantoloking was predicated on families spending a full "season" at the shore, and most of the community's development was focused toward the single family residence. A beach front hotel existed at the turn of the century, but was not a long-lived institution. More enduring, and more telling about the community, is St. Simon's-by-the-Sea, (photo 36) an Episcopal church built in 1888 which still stands.

A truss bridge, 1159 feet long and sixteen feet wide, was completed in 1884, connecting the barrier island to the mainland for foot and later, some vehicular traffic. Combining possibly wooden and metal members, it had a swing section which provided a forty foot wide channel. This bridge was located approximately 400 feet south of the current crossing. Thomas Sculthorpe was hired at $1.00 per day to tend the draw. He was provided living quarters on the bridge. The bridge was operated by human muscle power; the operator hand cranked the mechanism to swing the bridge and travelers using it were expected to lend a hand (Colie 1970: 74).

The bridge entered Mantoloking on what is now "Old Bridge Street", a short block of shingled houses which epitomize the shingled style of Mantoloking's houses, conservatively decorated but comfortable (photo 37). The "old bridge" was replaced in 1937 by the current single leaf bascule bridge, which enters Mantoloking on Herbert Street (photo 45). The railroad was extended farther south to Seaside Park and across Barnegat Bay on a 7000 foot long wooden pile trestle. This bridge had a 181 foot swing span to allow passage of traffic using the Intracoastal Waterway. It was destroyed in a storm in 1946 and never replaced. By that time, cars had replaced the train as the primary way to reach Mantoloking (photo 38).

The seaside community established itself as an independent borough in 1911, largely to escape taxation by Brick Township for the schools and services needed by mainland, year-round residents, which the summer residents of Mantoloking did not use.

Although some houses continued to be built through the 1930s, development on Mantoloking effectively ceased in the years of the Great Depression and World War II. After the war, new patterns of leisure brought tremendous change to

other resorts on the Jersey shore. Construction of a new bridge specifically for carrying cars across Barnegat Bay brought ever more automobile traffic, much of it came through Mantoloking on the way to Seaside Heights and Point Pleasant, where motels, small rented bungalows, and amusement parks could accommodate the weekend or single-week vacationer. The true summer home, where a family would relocate for July and August, became a quaint relic by the mid-20th century.

Mantoloking retains much of the flavor of its founding, particularly in the blocks near the "center" of town, as marked by the presence of the Post Office, fire house, and town hall on Downer Avenue. Many of the earliest "settlers" of Mantoloking purchased double lots, giving a spacious setting to each house, and providing a far more suburban character of development than in most New Jersey seashore communities, where houses are packed together as tightly as possible. There is no commercial development in Mantoloking, save for the presence of a real estate office on the corner of Herbert and Ocean Avenues, and this reflects the original intent of the developers for a quiet retreat by the sea, away from the commerce and industry which in fact made possible the money and leisure for seashore houses.

IV. FIELDWORK RESULTS

According to the APE, the Bridge and all properties in the area immediately adjacent to the Mantoloking Bridge were examined and photographed from the public rights-of-way, to determine their historic architectural/industrial characteristics. Study of a larger area, rather than just individual buildings, allows the architecture and the bridge mass and profile to be compared and put into a meaningful context.

On the Brick Township side of the bridge, the study area encompassed the properties within 1000 feet of the western edge of the bridge. Three properties were included, most notably the Winter Yacht Basin, on the south side of the bridge and Mantoloking Road. Two properties on the north side of Mantoloking Road were also recorded.

On the Mantoloking side of the bridge, Ocean Avenue, also known as State Highway 35, is approximately 1000 feet from Barnegat Bay, along Herbert Street, which is the roadway into Mantoloking from the bridge. The 1000 feet study area was enlarged somewhat to conform to existing block and lot boundaries within Mantoloking Borough. The area receiving close scrutiny is that bounded by Barnegat Bay, public walkway Number 4, (between Ocean Avenue and Barnegat Bay), the west side of Ocean Avenue, and the north side of Downer Street. In addition, a reconnaissance survey in Mantoloking between Princeton Avenue and the 1100 block of Barnegat Lane (immediately north of Herbert Street), and between the Atlantic Ocean and Barnegat Bay, assessed all properties for historic architectural characteristics.

This larger study area comprises the land laid out for development by the Seashore Land and Improvement Company in the latter nineteenth century. It retains a concentration of historic buildings, most characterized by two-and-a-half story height, wood shingle siding, and porches.

IV.a. Barnegat Bay/Mantoloking Bridge-Structure #1506006

Contextual Overview

The Barnegat Bay Bridge, known locally as the Mantoloking Bridge, is a two-lane bascule bridge crossing Barnegat Bay between Mantoloking Neck, Brick Township and the Borough of Mantoloking on Island (Squan) Beach. See Photographs 45-47. It was designed by Ash-Howard-Needles & Tammen, Consulting Engineers of Kansas City, Kansas and has been operating for 57 years.

The resort of Mantoloking was established on Squan Beach starting in 1875 and an earlier swing bridge built in 1884 serviced the community for 54 years. The locale is one of the narrowest places along northern Barnegat Bay and is a logical site to build a bridge. The bridge's two main spans cross the Intracoastal Waterway. This required a drawbridge designed to allow passage of tall masted and large vessels.

The immediate area is closely identified with recreational boating and sport fishing. Several marinas, two major boatyards and a yacht club provide services for the maritime community. One of the boatyards has been closely associated with design, construction and maintenance of an indigenous and distinctive racing sailboat, the Barnegat 'A' catboat.

Physical Description

The original plan for the Barnegat Bay Bridge can be traced to designs conceived in 1930 by the engineering firm of Ash-Howard-Needles & Tammen. Final design approval was obtained in October of 1937 with construction completed in 1938 (Ash 1930:2). The bridge is 1120 feet long and in addition to the bascule section, incorporates 39 T-beam approach spans supported on timber pile bents. Fifteen bents are to the west and 39 bents are to the east of the draw section. The draw section consists of a single leaf trunion bascule on the eastern side of a central abutment. Channel width between timber fenders is 51 feet 5 inches. Vertical clearance over the channel is 17 feet and the tidal range is 0.4 feet.

Symmetry of design was achieved by building a matching fixed span from the central abutment to the western approach. The moveable span is 58' long from trunion to toe and the fixed or dummy bascule is an open steel deck grate which is 28' wide. Both fixed and moveable spans have haunched deck girders. The girders taper in a graceful curve from the relatively shallow toe end which has a depth of about 5 feet, to the wider end adjacent to the central abutment which is

about 11 feet deep. A sidewalk with a recently modified, modern steel guard rail is cantilevered from a portion of the south side of the structure. Contemporary rolling steel crash barriers replaced the original swinging gates in 1977.

The bridge controls are accommodated in a six-sided operator's house located on the south side of the central abutment. (photo 46) The house has three levels and contains a modern electrical motor starter and control panel which were installed in a 1975 renovation. A spiral staircase leads down to an operator's locker area and a toilet room. A door on the lower level provides access to the machinery space, approach pier and fenders.

The drive motor and gearing is housed in a room immediately north of the lowest level of the operator's house and directly under the bridge. The gearing includes a fully enclosed primary gear reduction unit, open gear sets for secondary reduction and a drive gear. (Photograph 47) A yoke and disengaging mechanism allow the motor drive to be disconnected and an auxiliary hand crank to be attached. In an emergency or power failure the bridge can be manually operated. It takes over an hour to raise or lower the bridge using muscle-power.

The gearing is original equipment except for the main pinion gears which were recently replaced. The trunions and trunion support structure are also original. The counterweight is fixed to the tail end of the moveable leaf and is made of concrete filled with steel punchings. It has a specified weight of 296 pounds per cubic foot. The counterweight balances 96.5% of the leafs' weight. The remaining weight is offset by adding moveable cast iron blocks which fit into pockets in the counterweight.

When the bridge is closed a span lock on the eastern approach pier uses a rack and pinion mechanism to engage a casting mounted on the toe end of the bascule to lock the bascule leaf. A motor brake is used to lock the motor and a machinery brake located between the motor drive shaft and the main gear reduction unit locks up the machinery.

Historical and Engineering Significance

Three main types of opening bridge were commonly employed in the post World War I period. They were the swing, bascule and vertical lift bridge. Bascule bridges were rare and strictly limited in length at the turn of the century. They were also expensive, primarily because costly cast-iron counterweights were used to counter-balance the bridge deck. Early operating mechanisms were also complicated, unreliable and difficult to maintain.

Several inventors and designers, notably T.E. Brown, T. Rall, A.H. Scherzer, M. Wadell and J.B. Strauss were active in advancing bascule bridge design (Hool and Kinne 1923:28-29). Strauss held eight major patents on moveable bridges. Strauss achieved substantial cost reduction through the use of dense concrete filled with steel punchings as a substitute for conventional iron counterweights.

With the expiration of the Strauss patents in the 1920s, other designs came to the forefront and replaced the earlier schemes. In New Jersey, the Ash-Howard-Needles & Tammen moveable bridge design became common. The Barnegat Bay Bridge is historically and technologically distinguished as one of the most complete examples of this style which differs significantly from earlier designs.

Strauss used a swinging counterweight and parallelogram linkage to maintain the counterweight in the same relative position during opening and closing of the bridge. His patented design provides an additional increment of efficiency during movement by maintaining the bascule leaf in a condition of constant balance during operation of the bridge. While this is an elegant solution, it was generally required only on larger bridges and it needed additional maintenance. The Ash-Howard-Needles & Tammen design dispensed with the swinging counterweight and reduced capital and maintenance costs. It is interesting to note that the blueprints are very specific as to requirements and methods for balancing the bridge. The design uses iron blocks to maintain a dynamic operating condition close to constant equilibrium. The design also substituted a commercially available gear reduction unit for some of the custom-made gearing used in earlier designs.

Morris Goodkind, a State Highway Engineer, oversaw and consulted on the project. The Eastern Engineering Company was the prime contractor on the bridge which was financed in part by Works Projects Administration (WPA) funds, a common procedure for depression-era public works projects.

IV.b. Architectural Resources

Detailed descriptions of the buildings in the APE follow. Dates are those on record in the Mantoloking Tax Assessor's office. Each structure is not individually mapped but for general street location, refer to Figures 2, 3, 4 and 5. See the appended photographic key and photographs.

Brick Township

Mantoloking Road Block 69, Lot 8, 8.01 "Winter Yacht Basin"

Description: A complex of 17 buildings used for storage and repair of pleasure boats. The Winter family have owned the property for three generations, but the boat yard's name is also a play on the seasonal need for storage of large boats. The office of the complex is housed in a late 19th century frame building, two-and-a-half stories tall, covered with vinyl siding. The broad gable end contains three bays; on the second floor, the center bay is a door. Above, projecting from the gable peak, is a wooden arm and metal hook, apparently part of an earlier pulley system which raised supplies into the building at the upper floor level. The building retains 6/6 wooden sash in the upper floors. The first floor has been completely remodeled with a projecting storefront addition. The other buildings on the property are less than 50 years of age; many of them are pre-fabricated metal sheds with gable roofs.
Assessment: The office building and its adjacent docks should be considered National Register eligible in conjunction with the Mantoloking Yacht Club across the bay for their symbiotic relationship in promoting and maintaining pleasure craft in Barnegat Bay. The modern facilities at the Winter Yacht Basin are not historic, but they continue to carry out a historic function, with historic roots along the Jersey shore.

Mantoloking Road Block 68, Lot 3 "Sea Tow"

Description: A run-down two-story frame and concrete block building, apparently made of scrap materials, with little architectural merit. A shed roof projects on the south side of the building to cover a shallow porch, carried on brick piers and wooden supports. The building is used as offices and a part-time residence. It appears to date from the 1960s.
Assessment: It is not eligible for the National Register of Historic Places based upon its construction date within the past fifty years.

20 Mantoloking Road Block 68, Lot 51 ca. 1960

Description: A concrete block and brick single-story residence in a vernacular interpretation of "Roadside Modern"

architecture of the 1950s and '60's. It is dominated by a "porte cochere" extended between the front entrance, across a driveway, and resting on a broad brick pillar with integral planter at the base. The whole flat-roofed complex looks like a diminutive motel, but it was apparently constructed as a residence.
Assessment: Although it has some interest as a rare vernacular interpretation of late International Style design, it is not eligible for the National Register of Historic Places based upon its construction date within the past fifty years.

Mantoloking Borough

1198 Bay Avenue Block 25, Lot 1 1921 Photos 1,2,3
"Fitch-Montgomery-Wagner House"

Description: The two-and-a-half story house has wooden shingle siding, over a cement-parged foundation. The wood shingled roof extends beyond the walls, with exposed decorative rafter ends visible on the exterior. The main entry is reached from a porch, recessed under the second floor of the main block. Most of the resulting undercut porch is now enclosed with windows, and the porch wraps around the east entry side and the north side. Windows in the main block of the house include tall 2/2 sash in their original frames and diamond-paned casement windows. There are also replacement vinyl-clad windows in 6/6 and 1/1 sash configurations on the main house, as well as on one-story additions which telescope from the south side of the house. Shutter pintles are visible at many of the window openings in the main block of the house and on the wing closest to it, but where shutters are applied, they are screwed, rather than hung. A two-car pyramidal-roofed garage is located south of the house, immediately adjacent to the north side of the Mantoloking Bridge. The two vertically-planked overhead doors are modern replacements, but the 6/1 wooden sash windows in the garage appear to be original. Construction of the garage appears to have been contemporary with the house.
Historical notes: The pyramidal-roofed, square-shaped main block of the house was built in 1921, incorporating as its dining room the ca. 1882 one-room frame building which served as the Mantoloking Tennis Clubhouse from 1882 to 1901. In that year, it was moved from its original site to approximately this lot. Joseph Stillwell is identified as the contractor who moved the old Tennis Club again, and incorporated it into this building in 1921.
Assessment: The house is well-kept, but there is some loss of architectural integrity as historic features, particularly windows, have been replaced with modern ones. The importance of the Mantoloking Tennis Club is more historical than architectural, for no external evidence of the clubhouse remains, and its incorporation into the interior of this house

resulted in such a radical change of location, use, and appearance as to render it non-existent. As a residence, the house is charming, enhanced by its bayside setting and well-landscaped yard. Its location on the north side of the bridge is also a detriment in the busy summer month. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

1200 Bay Avenue — Block 29, Lot 1 — 1900
extensively remodelled 1980s — Photo 4

Description: This two-and-a-half story, shingle-sided house has a main block with large cross gable and a front-gabled projecting wing. This irregular facade and massing, and the shingle siding, are the primary indications of the building's historic construction date. The roof has been rebuilt with aluminum eaves and asphalt shingles. Vinyl-clad windows with false muntins are flanked by screw-on shutters. The foundation is now parged with cement. The main entry is through the first floor porch, carried on columns. A rear deck and a front driveway/yard area entirely paved with concrete pavers add to the contemporary appearance of the residence.
Assessment: Recently and thoroughly remodelled, the house is in very good condition but has only fair to poor architectural integrity. It could be considered a contributing element in a historic district, based upon its construction date during a significant developmental period in local history.

1204 Bay Avenue — Block 29, Lot 3 — 1972 — Photo 5

Description: A story-and-a-half shingle-sided house with two-car garage projecting close to the street facade. The gable roof is covered with asphalt shingles, broken by gabled dormers. The main entry is located in the corner of the "L" formed by house and garage. Vinyl-clad 6/6 sash windows give the house a "colonial" appearance. A large wooden deck at the rear of the house takes advantage of the bay-side setting.
Assessment: The house is not in itself historic, but if within the boundaries of a historic district it would be a non-contributing structure, based upon its design and age.

1206 Bay Avenue — Block 29, Lot 4&5 — 1935/addition (ca. 1970)
Photo 6

Description: A two-story "saltbox" style house with wooden shingled siding and wooden 2/2 sash windows, sited with its gable end close to the street. The gable roof is finished with asphalt shingles. The concrete block foundation appears to be a replacement, and it continues under the long, one-story addition extending to the west side of the house. This

addition contains the main entry and a partly winterized "sun porch" overlooking the bay.
Assessment: The original portion of the house maintains excellent architectural integrity, although it is in somewhat run-down condition at present. It could be considered a contributing element in a historic district, based upon its construction date during a significant developmental period in local history.

300 Old Bridge Street Block 29, Lot 8 1900 Photo 7

Description: A three-story, wood-shingled late Queen Anne style whose roughly square shape is modified by projecting porches and dormers. The pyramidal roof, covered with asphalt shingles, is broken by pedimented dormers on all sides and a centrally placed brick chimney. A first floor porch wraps around the facade and sides of the house; its turned columns and jigsawn corner brackets match those found on neighboring houses. A second floor sleeping porch extends from the center facade bay. Most of the windows are original 1/1 sash; there are some replacement 8/1 sash windows. The original wooden front door survives, with a large window in the top half, above a paneled bottom half. The house has a brick foundation.
Assessment The historic architectural integrity of this house is good, and it is well maintained. The architecture is enhanced by its appropriately landscaped yard. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

302 Old Bridge Street Block 29, lot 7 1910 Photo 8

Description: A three-story shingled late Queen Anne style house arranged on a "T" plan with a projecting front pedimented gable and pedimented dormers to the sides. There are front and side porches carried on square section columns with square-sectioned railings carried between them. The jigsawn corner brackets match those found on neighboring houses. The third floor windows are classic Queen Anne type, with multiple panes in the upper sash and a single pane in the lower sash. Windows on the lower floors are wooden, 1/1 sash. The original wooden front door survives, with a large window in the top half, above a paneled bottom half.
Assessment: The historic architectural integrity of the house is excellent, and it is well maintained. The architecture is enhanced by an appropriately landscaped yard. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

306 Old Bridge Street Block 29, Lot 6 1920 Photo 9

Description: A two-and-a-half story shingled "L" plan house with front-facing gable. A porch with replacement railing and decorative brackets extends across the two-bay facade and wraps around the sides of the house; at the rear it is enclosed with windows. A new wooden deck is attached to the rear of the house. A round arched attic gable window is probably original; other windows have been replaced with 1/1 wooden sash, flanked by screw-on shutters. The gable asphalt-shingled roof has deeply molded returns.
Assessment: The house has good to fair architectural integrity. The basic house appears to be much older than the 1920 date assigned by the local tax assessor; although 1920 may be the date of significant alterations to the house. Late 20th century replacements of the porch members and windows do not seem to follow the proportions of these elements as found either at the turn-of-the-century or the 1920s. It could be considered a contributing element in a historic district, based upon its architecture and its construction during a significant developmental period in local history.

305 Old Bridge Street Block 30, Lot 1 1900 Photo 10

Description: A three-story wood shingled Colonial Revival style dwelling notable for its complex roofline, particularly on the gable end facade. The basic gable roof of the structure begins above the second floor, but pent eaves give the impression of a gambrel roof beginning above the first floor. The deeply projecting eaves are finished with tongue & groove boards on the underside. A first floor wrap-around porch and a second floor facade porch are supported on battered wooden columns. The windows are Craftsman-influenced with four vertical panes in the top sash and a single pane beneath.
Assessment: This house displays very good architectural integrity, and appears to be well-maintained. The architecture is enhanced by its appropriately landscaped yard. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

301 Old Bridge Street Block 30, Lot 4 1951 Photo 11

Description: A center-entry "colonial-style" two-story house, clad in large-size wooden shingle siding. The pedimented entry portico and the symmetrical massing of the main house emphasize its "colonial" nature, as do the variously sized multi-paned sash windows. The house has an attached one-car garage, and sits in a white pebbled "yard", at odds with the manicured lawns of neighboring historic houses.

Assessment: The house is not in itself historic, but if included in a historic district would be a non-contributing structure, based upon its design and age.

1222 Bay Avenue Block 30, Lot 5 1993

Description: A very contemporary-styled two-and-a-half story shingled house with shingled roof. The irregular trapezoidal plan focuses on the recessed entryway, which serves as a contemporary version of a front porch. The new building is very sympathetic to the scale and materials of surrounding historic houses, and was sited to avoid disturbing mature pines and other native plants from the region.
Assessment: The house is not in itself historic, but could be incorporated in to a historic district as a non-contributing structure, based upon its age.

Mantoloking Yacht Club Block 30, Lot 6 1900 Photos 12, 13

Description: The Yacht Club is composed of three single-story hip-roofed shingled buildings set back from Bay Avenue behind level lawn and tennis courts. On the bay are a series of docks and decks. The largest of the buildings contains the restaurant and dining rooms, it is surrounded by porches used in the summer as dining areas. The other, newer auxiliary buildings contain storage facilities and maintenance equipment. Though the buildings seem to maintain their traditional form, almost all original fabric has been replaced over the years, as part of on-going maintenance. T h e "bungalow" style of the original building is conveyed by porches wrapping around all sides of the square-shape structure. The shallow-pitched hipped roof ends in flared eaves at each corner. A central cupola or vent projects from the center of the hipped roof. Windows are banked 6/6 sash, set in simple wooden frames. The shingle siding is new, although it copies the original material. The newer buildings copy the form and materials of the original except for the extent of their porches, which are smaller.
Historical notes: The original plans for the Mantoloking Yacht Club are filed in the Ocean County Courthouse with the deed to the property. New York architect Henry Pelton was hired for $50.00 to draw up plans for the clubhouse. The drawings as filed show a Queen Anne pavilion-type structure, of the dimensions and outline which exists today, but with fancier details and patterned shingling. Pencilled in upon the drawings are instructions to replace the ornate exterior "with the usual brown shingle", which was obviously done, to put the clubhouse into conformity with the houses already in the neighborhood. [From the 1980 Ocean County Historic Sites Survey, "Mantoloking", p.6]
Assessment: The Mantoloking Yacht Club was identified as individually eligible for the National Register in the Ocean

County Cultural Resources Survey of 1980. Its eligibility would seem to be based on its architecture, its associations with founding families of Mantoloking, and its central position in the summer social life of the community. The Yacht Club also may be identified as one of the centerpieces of a potential historic district, encompassing not only the club, but the residences which are contemporary with its construction.

Borough Hall:
corner Bay and Downer Avenues Block 27, Lot 20 1928
Photo 14

Fire House:
Downer Avenue (west of Borough Hall) Block 27/Lots 30.01-.02
Photo 15

Description: The functional, two-story hip-roofed building uses a simplified classical vocabulary to give it some decorative interest. The first floor windows are round-arched, and the main entry is distinguished by an elliptical fanlight. Shed dormers across the facade and side elevation increase the building's utility, but diminish its historic appearance. The old firehouse is a flat-roofed, two-story shingled structure with two vehicle bays opening onto Downer Avenue and a rear wing containing another over-sized vehicle bay. All bays are now covered with overhead fiberglass and metal doors. The new firehouse is a two-story structure with 4 vehicle bays, connecting the Borough Hall building and the old firehouse. The borough hall, adjacent firehouse, and the post office across Downer Avenue (and out of the study area) are all finished in brick veneer, setting them apart from all non-governmental buildings in Mantoloking.
Assessment The Borough Hall portion of the municipal complex dates from 1928, with subsequent alterations and additions. None of the buildings retains any architectural integrity, but they do maintain their traditional use, and they continued to define the "center" of town, both currently and historically. The complex would be considered a contributing element to a historic district.

1235 Bay Avenue Block 27, Lots 18&19 1917 Photo 16

Description: An eclectically-styled villa set back in an oversized lot, this house is unique in Mantoloking's historic area for its use of stucco on the walls. A pyramidal roof, banked casement windows on the upper floors, and a main entry sheltered under a side porch give the house a distinctly European flavor. The design of the main door is particularly unique. Further research is needed to establish the architect of this house, for undoubtedly it had one.
Historical notes: This was the site of the art studio of Lisa Downer, daughter of one of the founders of Mantoloking. Her

studio is said to be incorporated in this house, although it is undiscernible.
Assessment: The house is well maintained, and retains a number of unique architectural features which appear to be part of the original design. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

1231 Bay Avenue/"The Chimneys"
Block 27/Lots 16&17 1885 Photo 17

Description: The gable end of this "L" plan house is sited very close to Bay Avenue, but its "front yard" is the open lawn of the Mantoloking Yacht Club across the avenue, and the house has a view to the bay beyond. This is a two-and-a-half story shingled house; its dominant gable roof is covered with asphalt shingles. Four end brick chimneys and shed dormers break into the roof, and decorative wooden pendants accent the gables ends. A wrap-around porch is carried on square-section columns. The wooden 2/2 sash appears to be original and is found all over the house except for the replacement casement windows on the first floor facade. The house sits on a brick foundation. A covered walkway links the house to a mid-20th century two-car garage.
Historical notes: This house is identified in the 1980 Historic Sites Survey as the site of the first Post Office in Mantoloking. It was built by Joseph Albertson, a well-known local builder of the late 19th century in the Mantoloking-Bay Head area.
Assessment: The house exhibits good architectural integrity, and its present condition also appears to be good. It is eligible for the National Register as a contributing element in a historic district, based upon its architectural merits, historical associations, and construction during a significant developmental period in local history.

1229 Bay Avenue Block 27, Lots 14&15 1897 Photo 18

Description: A three-story, wood-shingled late Queen Anne style whose roughly square shape is modified by projecting porches and dormers. The pyramidal roof, covered with asphalt shingles, is broken by pedimented dormers on all sides and a centrally placed brick chimney. A first floor porch wraps around the facade and sides of the house; its turned columns and jigsawn corner brackets match those found on neighboring houses. A second floor sleeping porch extends from the center facade bay. Most of the windows are original 1/1 sash; there is a replacement picture window in the first floor. The original wooden front door survives, with a large window in the top half, above a dentil molding and paneled bottom half. The house sits on a brick foundation. This house

is a "twin" to 300 Old Bridge Street, indicating that they were constructed by the same builder from the same plans, a not uncommon approach to building in the 19th century.
Assessment The historic architectural integrity of this house is good, and it is well maintained. The architecture is enhanced by its appropriately landscaped yard. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

1225 Bay Avenue Block 27, Lot 12&13 1897 Photo 19

Description: A three-story shingled late Queen Anne style house arranged on a "T" plan with a projecting front pedimented gable and pedimented dormers to the sides. The roof shingles are interlock-pattern asphalt, of a type popular in the 1920s. There are front and side porches carried on columns; the side porch is now enclosed with screens. The third floor windows are classic Queen Anne type, with multiple panes in the upper sash and a single pane in the lower sash. Windows on the lower floors are replacement 1/1 sash. The original wooden front door survives, with a large window in the top half, above a paneled bottom half. A simple vertically-planked gable-roofed garage stands to the rear of the house. Its vertical-plank slider doors suggest that this garage dates from very early in the 20th century.
Assessment: The historic architectural integrity of the house is excellent, and it is well maintained. The architecture is enhanced by an appropriately landscaped yard. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

1219 Bay Avenue Block 27, Lot 10&11 1920 Photo 20 (foreground)

Description: An unusual interpretation of Colonial Revival details, grafted onto a Shingle style house, this two-and-a-half story house is covered with shingle siding, but notable for its complex gambrel and gable roof. The house has a strong vertical thrust, moving from a three-bay first floor to a two-bay second floor, to a single, large window in the front-facing attic gable, and a centrally located brick chimney looms above. Diamond-patterned upper sash over single-pane lower sash is retained throughout the house, and the detail is repeated on the sidelights flanking the center front entry. The deep front porch has been partially enclosed with screens. A three-story tower addition to the rear of the house is capped with an observation deck whose railing is reminiscent of castle crenellations. A deteriorated hipped-roof, shingle-sided one-car garage stands to the rear of the lot. It has

paired, side-hinged doors, and appears to be contemporary with the house.
Assessment: The historic architectural integrity of the old part of the house is excellent, and it is well maintained. The architecture is enhanced by an appropriately landscaped yard. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

1215 Bay Avenue Block 27, Lots 8&9 1920 Photo 20 (background)

Description: An imposing, three-story gable-fronted Queen Anne style house, whose facade is marked by a pedimented gable. Side gables and dormers are also pedimented; all of the surfaces are finished with wooden shingle siding. The windows appear to be replacement 1/1 sash; in the three bay facade, the center second floor bay is permanently shuttered with louvered shutters. A porch on wooden columns wraps around the front and sides of the house; some replacement of the porch railing is in unpainted treated lumber, lending an inappropriate deck-like character. At the rear of the property, a two-car garage has side-hinged doors, a gable roof, and shingled siding, and appears to be contemporary with the house.
Assessment: The historic architectural integrity of the house is good, and it is well maintained. The architecture is enhanced by an appropriately landscaped yard. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

1211 Bay Avenue Block 27, Lots 6 & 7 1951

Description: A single-story expanded ranch-style house with gable roof, shingle siding, and attached two-car garage. The louvered banked windows, including a corner window, are a telling detail of mid-20th century "modern" design. A pebbled yard contrasts with the manicured lawns of neighboring historic houses.
Assessment: The house is not in itself historic, but could be incorporated in to a historic district as a non-contributing structure, based upon its age.

1209 Bay Avenue Block 27, Lot 5 1920 Photo 21

Description: A wood-shingled, square-plan house with full-elevation cross gables on each side, above encircling first floor porches. A broad polygonal bay on the second floor facade and the deep porches relieve the boxy form of the house. It sits on a high foundation, finished with a

cementitous coating. A corbelled brick chimney rises from the center of the house. A new deck extends from the rear of the house. Wooden 1/1 sash windows appear to be original to the house.
Assessment: Some of the porch has been enclosed, and picture windows added on the first floor, but the overall architectural integrity of the house is maintained. The architecture is enhanced by its appropriately landscaped yard. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

1203 Bay Avenue Block 27, Lots 1,2,3 1947 Photo 22

Description: A Cape Cod style house set in the middle of a three-lot yard, it turns its gable end to Bay Avenue and its back to busy Herbert Avenue to achieve privacy. The wood shingled siding and roof blend in with the much larger historic houses around it. Gabled dormers mark the gable roof. A sun room is located on the west side of the house, while the main entry is across a colored flagstone patio on the south side. A separate two-car garage is located to the east of the house.
Assessment: The house is not in itself historic, based upon its age, but could be incorporated into a historic district as a non-contributing structure.

1130 Barnegat Lane
Block 22, Lot 57 1932 Photo 23;24 (left side)

Description: A two-and-a-half story modified Dutch Colonial style house with shingle siding and an asphalt roof. A gable roof is modified by a false gambrel with deep eaves applied to the gable ends for decorative purposes. The original wooden window frames surround replacement vinyl 6/1 sash windows. The original center front door survives, with four lights in the upper sixth of the door. Single-story wings flank the main section of the house.
A completely rebuilt gambrel-roofed garage with shingle siding stands north of the house; its form complements the house.
Assessment: The house is well maintained, and retains a fair to good state of architectural integrity. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

1126 Barnegat Lane
Block 22, Lot 55 1928 Photo 24 (right side)

Description: A two-and-a-half story shingled dwelling in a very simple, vernacular form. It is characterized by a gable

roof with asphalt shingles, and boxy eaves. Wooden 6/6 sash windows in wood frames are regularly spaced around the building. Screened sleeping porches extend from the first and second floors of the west (facing bay) side. An enclosed porch under a shed roof obscures the main gable-end entry on the street side of the house.
A one-car garage, with gable roof, shingled siding, and side-hinged doors is located closed to the street at the east end of the lot. It appears to be contemporary with the house.
Assessment: The house retains fair to good integrity, and is in fair to good condition. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

1124 Barnegat Lane Block 22, Lot 54 1993

Description: A two-and-a-half story vertically-sided house, with a large garage attached to the house facing the street.
Assessment: The house is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1122 Barnegat Lane Block 22, Lot 53 1960

Description: A story-and-a-half expanded Cape Cod style house, with wood shingle siding.
Assessment: The house is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1120 Barnegat Lane: "The Anchorage" Block 22, Lot 52 1928

Description: A two-and-a-half story shingle-sided house with multiple additions and enlargements which obviously took place over a series of years. The windows are all replacements, as is the front door.
Assessment: The house is in very good condition but has only fair to poor architectural integrity, as it appears thoroughly remodelled. It could be considered a contributing element in a historic district, based upon its construction date during a significant period in local history.

1118 Barnegat Lane Block 22, Lot 51 1993

Description: A two-story "L" plan house of contemporary design.
Assessment: The house is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1116 Barnegat Lane Block 22, Lot 49 & 50 1932 Photo 25

Description: A tall, two-and-a-half story "colonial" style house with a steep gable roof, exterior brick chimney, and 6/6 sash windows all reinforcing the colonial feeling. The main entry of the side-hall plan house is marked by large sidelights and transom, set under a deep porch. .A pyramidal-roofed 2-car garage with overhead door is sited close to the street.
Assessment: The integrity of the house is fair, based upon the application of synthetic siding, but the form and many details of the original construction remain visible. It could be considered a contributing element in a historic district, based upon its construction date during a significant period in local history.

1112 Barnegat Lane Block 22, Lot 48 1932 Photo 26

Description: A two-and-a-half story wood-shingled, pyramidal roofed house marked by hipped dormers on each side. The influence of the Craftsman movement is apparent in the 4/1 sash, with vertical panels in the top sash. First and second floor porches extend from the west (bay) side of the house; the roof of the porch is removed along the north side of the house to form an open pergola with decorative rafters. The lower part of the porch is made of shingle-covered walls while square-section columns rise above. A pyramid-roofed two-car garage is located close to the street.
Assessment: The integrity of the house is good, as is its current condition. It is eligible for the National Register as part of a historic district based upon its age, its construction during a significant period of development for the community, and its architecture.

1110 Barnegat Lane
Block 22, Lot 47 1927;greatly remodelled later

Description: The pyramidal roof of the house is similar to the neighboring house at 1112 Barnegat Lane, and town records indicate that a house has stood on this site since 1927, but almost every historic feature has been replaced since the mid-1960s. The wooden shingle siding is larger scale than that used historically in the community, the windows are vinyl 1/1 sash, and a new brick chimney rises through the asphalt-shingled roof.
Assessment: Thoroughly remodelled, the house is in very good condition but has only a poor state of architectural integrity. It is not eligible for the National Register, and if included in a historic district, should be considered a non-contributing structure.

1108 Barnegat Lane
Block 22, Lot 46 1932;greatly remodelled later

Description: A two story shingled house with oversized round-arched windows and prominent garage. Town records indicate that a house has stood on this site since 1932, but almost every historic feature has been replaced since the mid-1980s.
Assessment: Thoroughly remodelled, the house is in very good condition but has only a poor state of architectural integrity. It is not eligible for the National Register, and if included in a historic district, should be considered a non-contributing structure.

1106 Barnegat Lane Block 22, Lot 45 1927 Photo 27

Description: A wood shingled two-story "cottage" with multi-paned sash flanked by working shutters. The "L" plan house is a combination of Colonial Revival and English Tudor suburban vocabulary with the dominant shingled "shore style".
Assessment: Thoroughly remodelled, the house is in good condition and retains a moderate degree of architectural integrity. It is eligible for the National Register if included in a historic district, where it should be identified as a contributing structure.

1102 Barnegat Lane Block 22, Lot 44 1980s

Description: A two-and-a-half story wood shingled "colonial" house with one-and-a-half story additions surrounding the main block. The primary stylistic details are the multi-paned windows, defined by false muntins, and the screw-on shutters. A garage is the primary street-side focus.
Assessment: By its recent construction date, it is not eligible for the National Register, and if included in a historic district, should be considered a non-contributing structure.

1105 Barnegat Lane Block 24, Lot 44 1994

Description: A contemporary three-story house clad in painted clapboard.
Assessment: By its recent construction date, it is not eligible for the National Register, and if included in a historic district, should be considered a non-contributing structure.

1107-1109 Barnegat Lane Block 24, Lot 45

Description: Vacant land, thickly covered with native plants like scrub pines and bayberry bushes. The sandy lot has apparently never been developed.
Assessment: Land cannot be considered eligible for the

National Register without some evidence of human habitation or development. In the significant period of development (1880-1936), the natural vegetation of the island was scorned, and the homeowners of Mantoloking went to considerable trouble and expense to import topsoil to create manicured suburban-style lawns. Thus, the presence of a natural landscape, although certainly extant in the period of significance, is not part of the desired historical landscape. For this reason, if this lot were included in a historic district, it would have to be considered non-contributing.

1111 Barnegat Lane Block 24, Lot 48.01 1960

Description: A ranch style house covered with asbestos shingle siding and a low-pitch gable roof. Grouped 1/1 sash windows and screw-on shutters mark the long, low elevation, between an attached two-car garage at the north end of the house and a screened porch at the south end.
Assessment: The house is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1117 Barnegat Lane Block 24, Lot 51.01 1988

Description: A two-and-a-half story "L" plan shingle-sided house with large windows marked by false muntins. The Victorian vocabulary used here is unconvincing, and does not complement the authentic Victorian-era houses of the community. The large deck to the side and rear of the house explains why the first and second floor porches on the house are so narrow as to be merely facade decorations; the wide driveway with concrete pavers leading to the prominent garage emphasizes vehicular rather than pedestrian access.
Assessment: The house is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1123 Barnegat Lane Block 24, Lot 53 1956

Description: A two-story, vertical-wood-sided, flat-roofed house, with prominent garage wing.
Assessment: The house is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1127 Barnegat Lane Block 24, Lot 56.01 1983

Description: A three-story wood shingled house with steep gable roof, and decks projecting from the corners of the house at the upper levels.

Assessment: The house is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1128 Ocean Avenue (B&K Realty) Block 24, Lot 56 1949 Photo 28

Description: Mantoloking's only commercial property, the design of this small building suggests a colonial New Jersey farmhouse which grew over time. Each "wing" has a different height, but none is over two stories tall. The multi-paned window sash, the high knee wall of the center section, and shingle and clapboard siding make this a sophisticated late Colonial Revival style structure. It is a brilliant bit of roadside architecture as well, sending a message of "home" to drivers at the busiest intersection in town; a perfect message for the local real estate office.
Assessment: The house is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1126 Ocean Avenue Block 24, Lot 55 1928 Photo 29

Description: Originally designed as a bungalow, alterations and neglect have largely obscured the original house. It is a story-and-a-half tall, with a shed dormer in the gable roof. The undercut porch which it very likely had is enclosed with a variety of plastic tarps and other salvaged materials. The asbestos shingle siding is not likely original. Two garages, also clad in asbestos shingles, stand to the rear.
Assessment: Badly remodelled through the years, and in poor condition, the house retains only a minimum of architectural integrity. It is not eligible for the National Register, and if included in a historic district, should be considered a non-contributing structure.

1124 Ocean Avenue Block 24, Lot 54 1950s

Description: A wood shingled, expanded Cape Cod style house. A high fence around the property obscures it from the public right-of-way.
Assessment: The house is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1120 Ocean Avenue Block 24, Lot 51 1970s

Description: A wood shingled, "U" shaped house with prominent gable roof. One wing of the "U" is a front-facing garage; along with the other wing it forms a secluded courtyard in front of the house.
Assessment: The house is not historic, based upon its age,

and would be considered non-contributing if included in a historic district.

1116 Ocean Avenue. Block 24, Lot 49 1951

Description: A ranch house on a concrete foundation with gable roof, and a second floor added which is lighted by a shed dormer at the rear. The house has a vaguely "colonial" style, expressed in clapboard siding, a broad chimney, and screw-on shutters. A two-car garage is attached to the main house.
Assessment: This ranch house is so heavily overgrown by scrub pines as to be impossible to see. It is in poor condition. It is not old enough to be considered historic, and would not be considered eligible for the National Register. If included in a historic district, it would be identified as a non-contributing building.

1112 Ocean Avenue Block 24, Lot 48 1953

Description: A builder's center-hall colonial with attached two-car garage. The wooden shingle siding, grouped 1/1 sash, and screw-on shutters are the only decorative touches on this rather plain, boxy building.
Assessment: The house is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1110 Ocean Avenue Block 24, Lot 47 1949

Description: Expanded Cape Cod style house with wood shingle siding. The attached single-car garage has been converted to a screened porch.
Assessment: The house is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1108 Ocean Avenue Block 24, Lot 46 1956

Description: A split level-style house with hipped roof and wood shingle siding. The two-car garage is integrated into the lower level of the structure, and leads to a pebbled yard.
Assessment: The house is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

Herbert Street:Borough Utility Property
Block 27/Lot 21.01 1980

Description: A utilitarian brick utility building finished in brick veneer and topped by a decorative wooden cupola. The

small gable-roofed building is surrounded by a chain-link fence enclosing the pebbled yard.
Assessment: The building is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1200 Ocean Avenue Block 27, Lot 21 1963 Photo 30

Description: A classic ranch house under a low-pitched gable roof, arranged in a "T" plan. The projecting center gable contains the main entry. The house is covered with textured, formed "shingles", brick veneer, and board and batten siding in the gable ends. The paired and single 1/1 sash windows include a corner window, a hallmark of ranch house style. A two-car garage is attached to the house.
Assessment: The building is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1204 Ocean Avenue Block 27, Lot 22

Description: Vacant land, overgrown with scrub pines and bayberry bushes.
Assessment: Land cannot be considered eligible for the National Register without some evidence of human habitation or development. In the significant period of development (1880-1936), the natural vegetation of the island was scorned, and the homeowners of Mantoloking went to considerable trouble and expense to import topsoil to create manicured suburban-style lawns. Thus, the presence of a natural landscape, although certainly extant in the period of significance, is not part of the desired historical landscape. For this reason, if this lot were included in a historic district, it would have to be considered non-contributing.

1208 Ocean Avenue Block 27, Lot 23 1982

Description: A two-and-a-half story contemporary style dwelling with weathered vertical plank siding, and a shake roof on the split gable. The house is set well back in a large lot.
Assessment: The building is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1212 Ocean Avenue Block 27, Lot 24 1954

Description: A neo-colonial style house with two-and-a-half story main block, wood shingle siding, 1/1 sash windows, and screw-on shutters. A story-and-a-half tall wing is faced with brick veneer.

Assessment: The building is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1216 Ocean Avenue Block 27, Lot 25 1905

Description: A two-and-a-half story asbestos-shingled house on a square plan. A front porch extends across first and second floors, rising on square wooden pillars. The hipped and cross-gable roof has extended eaves with exposed rafter ends. There are a variety of windows on the house, Queen Anne style multi-lights over single lower sash, 6/6 sash, and several Craftsman-style influenced types with vertical panes in the upper sash. The original front door survives with a large window in the top half. A separate two-car garage has shingle siding, and a roll-up door. Mature trees and overgrown shrubs obscure the house from the street.
Assessment: The house retains a fair to good degree of architectural integrity. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

1220 Ocean Avenue Block 27, Lot 26 1920 Photo 31

Description: A two-and-a-half story shingle-clad bungalow, featuring a gable roof with clipped eaves, and a prominent shed dormer across the facade. The originally recessed front porch has been enclosed with large multi-paned, louvered windows, but other windows throughout the house appear to be the original, Craftsman-inspired 4/1 sash type. The main entry is in the side gable, under a gabled portico. A modern wooden deck has been added to the rear of the house.
A matching garage with shingle siding, a clipped gable roof, and overhead door stands to the rear of the lot.
Assessment: The house is in fair to good condition, and retains an excellent degree of architectural integrity. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant development period in local history.

1224 Ocean Avenue Block 27, Lot 27 1920 Photos 32,33

Description: A two-and-a-half story shingle-clad house with broad eaves which flare at the bottom of the gables to give a slightly oriental touch to the decoration. Gables project from the sides and the front of the house, giving it a complex appearance, but it is basically a square plan. The wrap-around first floor porch is supported on battered columns on a shingled lower rail. The windows are Craftsman-style with four vertical panes above two lower square panes.

A small garage with the same eaves detail as found on the house is located at the back of the lot, and appears contemporary with the house.
Assessment: This house is well maintained, and has a high degree of architectural integrity. It could be considered a contributing element in a historic district, based upon its architectural merits and its construction during a significant developmental period in local history.

1228 Ocean Avenue Block 27, Lot 28 1935

Description: A two-story shingled late Colonial Revival style house with shallow gable roof and "colonial" details, such as 6/1 sash windows and a front door with internal multi-light transom under a projecting portico. A separate two-car garage with shingle siding stands at the rear of the lot.
Assessment: The house appears to have been altered over time, and many of the "colonial" details are not from 1935. Nevertheless, the house retains enough historic architectural integrity, and its construction date is within the period of significance, so that it should be considered a contributing building within the National Register Historic District.

1234 Ocean Avenue Block 27, Lot 29 1966

Description: A Cape Cod style, wood shingled house with center entry, gabled dormers, and a two-car attached garage.
Assessment: The building is not historic, based upon its age, and would be considered non-contributing if included in a historic district.

1238 Ocean Avenue Block 27, Lot 30 1890 Photos 34, 35

Description: A Colonial Revival style shingled house which anticipates the popular Dutch Colonial style of the 1920s. A porch across the first floor is supported on columns; a sleeping porch is centered on the second floor facade, supported on columns and a shingled, wooden rail. One corner of the first floor porch has been enclosed as a sunroom with 8/1 sash windows, apparently originally or quite early in the house's existence. The center front entry is flanked by sidelights. The original first floor facade windows have been replaced with picture windows, but throughout the rest of the house the original multi-paned over single light sash have been retained.
Assessment: The architectural integrity of the house is good to very good, and it is enhanced by a lawn, privet hedge, and latticed rear garden. The house is eligible for the National Register of Historic Places as part of the proposed historic district.

IV.c. Marine Resources

Catboats

The area immediately around the Mantoloking Bridge is a significant site in the history of racing catboats.[2] The catboat is a uniquely American sailing rig which evolved as a distinct type of working boat around 1850. (Figure 6) Its roots possibly go back as far as the Colonial era. The design evolved to fulfill a specific need. Around 1840 a market for locally caught fish developed in many east coast communities. Colie (1970:67) noted that even as late as the turn of the century the area around the Mantoloking Bridge produced an abundant catch of herring, perch and eel. There was some commercial exploitation of these resources.

The catboat evolved as a working boat superbly adapted to capitalize on the resources of local shore fisheries. Catboat development centered on lower New York Bay and in Barnegat Bay (Leavens 1973:vii). Individual fishermen could obtain a comfortable return on their investment in a catboat. The catboat was designed to go out in inclement weather, hold a large quantity of fish or cargo and sail in shoal waters. The design also provided a decent turn of speed and could be easily handled by one person. The catboat gradually abandoned its working boat origins and became a popular racing boat during the latter half of the nineteenth century. By 1900 the catboat, largely through vernacular improvements, had been brought to a high state of development.

Gasoline engines ended its use as a working boat in the first decade of the 20th century, however it has continued as a popular design for a daysailer and cruising boat in the waters from Cape Ann, Massachusetts to Cape May, New Jersey.

The catboat is characterized by a wide beam, shallow draft and a stubby mast. The mast is set well forward and carries a single sail. A centerboard provides resistance to leeway and can be raised to reduce draft or drag and allow sailing in shoal areas. This configuration and hull design gives the catboat great stability and resistance to capsizing. Catboats are designed for sailing in heavy weather. They gained favor as racing boats because of an outstanding ability to go to windward. The catboat rig with its single sail is the most weatherly of all rigs. As more sails are added, windward

[2]In 1983 the State of New Jersey recognized the statewide cultural resource significance of the Barnegat Bay Catboat through acceptance of a thematic nomination on the catboats (B. Craig, NJDEPE, Historic Preservation Office, personal communication to Cece Saunders, 4/16/1995).

ability decreases, a boat carrying a single sail will usually point closer to the wind (Leavens 1973:4).

The construction of catboats was largely a backyard industry. Builders used half-hull models which provided lines for construction. Consequently there are few plans for early catboats and their development is difficult to trace from written records.

Development of 'A' Racing Catboats

a). Charles D. Mower

Several individuals are identified with design and construction of racing catboats at Mantoloking, New Jersey. Charles D. Mower was a naval architect, renowned in the design of racing catboats based on scientific principles. Mower was born in Lynn, Massachusetts in 1880. Boats were for him "a pastime, vacation, everything" according to his son (Grayson 1984:72). As a young boy, he built his first boat and raced it in Marblehead, Massachusetts. Mower began his career in Boston as a draftsman for Arthur Binney and later for Bowdoin Crowinshield, both prominent naval architects. In 1899 he went to work for Flemming Day, editor of a well-known early yachting magazine, *The Rudder*. His work at *The Rudder* included designing several boats suitable for the amateur builder. He wrote several books including How to Build a Motor Launch in 1901 and The Runabout Book in 1947.

Mower began designing boats for yachtsmen in Barnegat Bay after the first World War. He had achieved distinction by developing a radical design for the Mayor of Philadelphia which was 34' in overall length but had a waterline length of only 18'. He acquired a certain degree of notoriety in yachting circles by designing an unusually large cruising catboat which was 40' long on the deck.

Mower designed the first 'A' Catboat in 1922. It was christened the 'Mary Ann'. The boat was a successful racer and a second boat, the 'Bat' was commissioned by a Mr. Crabbe and built by Martin Johnson of Bay Head in 1923. Mower designed five 'A'catboats, four of which survive (Grayson 1984:72). The boats are similar but have some subtle differences. They are 28 feet long, low sided and have flat bottoms with soft bilges. They feature large centerboards to enhance windward ability and a massive skeg on which a large underhung rudder is mounted. Masts are secured by a pair of shrouds on each side, three forestays and running backstays. Other Mower catboats were the 'Spy', 'Lotus' and 'Helen'. 'Helen', built in 1923, was not a successful variation on the design and her whereabouts are not recorded. The others are located in the

project area and are maintained and stored at the David Beaton & Sons Yard, Bay Front Street, Brick Township.

b). Francis Sweisguth

Mower's name is most closely associated with the Mantoloking catboats. However, two other catboats were built in 1923 by Francis Sweisguth, the naval architect who designed the one-design 'Star' class (Grayson 1984:74). 'Foresome', owned by Edwin Schoettle, was unbalanced and not properly rigged; she was deemed a failed experiment. The second catboat was a successful racer named 'Tamwock', after the Lenape word for seagull. 'Tamwock' was destroyed in the 1940s in an Island Heights boatyard fire.

c). David Beaton and Nelson Hartranft

Sometime in the 1970s, 'Tamwock's' original plans were rediscovered in a local antique shop. They were acquired by Nelson Hartranft, who had long desired to own an 'A' catboat. He took the plans to David Beaton, who after much persuasion, agreed to build a new boat. The plans for the Barnegat 'A' catboat designed by Sweisguth are preserved at the Philadelphia Maritime Museum. Beaton, after years of repairing 'A' catboats, knew their weaknesses and set about to reinforce the design without changingthe basic plans. The new boat was named 'Wasp' and her construction excited the local yachting community which was fascinated with watching the re-creation of a bit of local yachting history (Grayson 1974:77). 'Wasp' was three years in the building and was launched on June 19, 1982. Marshel Moorhouse made her sails and was instrumental in standardizing sails for the 'A' catboats. Before 'Wasp', the boat that used the latest sail material and technology would have an edge in any race. Moorhouse said: "When I am old, I want to look back and say I had a part in this rebirth that Nelson Hartranft got going. I'd like to see more boats built and know they'll be here long after I'm gone. Maybe my grandchildren will be sailing one of them someday" (Grayson 1984:80).

Since 'Wasp' was built, the Beaton yard completed and launched another 'A' catboat, 'Ghost'. 'Ghost' and 'Wasp' are currently maintained at the Beaton Yard in Mantoloking.

Other Indigenous Boat Designs

The Mantoloking area produced other boat designs. Around 1920 the 'Barnegat Bay Racing Sneakbox' design provided a 16 to 18 foot platform for gunning, rowing and sailing as well as service as a dingy. An earlier local sneak box design which evolved around 1896 had a spoon-shaped bow. In 1914 Charles

Mower designed a fleet of 'racing sneakboxes' with a scow or pram type of bow.

During the period from 1906 to 1910 'sandbaggers' were commonplace. These were a variant of catboat with a 400 to 600 square-foot, gaff-rigged sail. They carried several hundred pounds of moveable ballast in the form of bags of sand. The crew would move this ballast to the windward side as required to trim the boat.

The Winter Yacht Basin was well known for producing the wooden Jersey Sea Skiff in versions up to 45' long. These power boats featured lapstrake construction using techniques developed and popularized by Morton Johnson of Bay Head. Standard lengths were 20, 24, 32, 38 and 45 feet. In the last 25 years, fiberglass replaced wood as the preferred material for boat building. Demand was not sufficient to continue building wood boats.

Marina Resources for Yachters

The Winter Yacht Basin is located on the south side of the eastern approach to the Mantoloking bridge. The facility, located at the head of Barnegat Bay on the Intracoastal Waterway, has been owned by the Winter family for 45 years. The business was started in 1928 by David Beaton and partners at this site and acquired by the Winter family in 1950.

Equipment at the Winter Yard includes a 4 ton crane, a 50 ton crane, a 50 ton Travelift, a large fork lift and several tractors. Winter's has a marine railway that can handle vessels up to 75' long and weighing up to 75 tons. Winter storage facilities are also available, inside or outside, in water or on land.

The yard has inside facilities for painting and repairing wood, fiberglass or steel vessels. They can repair electrical or electronic equipment. A cabinet shop is capable of custom building yacht interior accommodations. The yard can do complete engine overhauls and installations on gas and diesel engines. They also perform restoration work. The yard accomplishes these tasks with a crew of about 30 employees. Yard commissioning activities peak between February and May.

The Winter Yacht Basin also provides toilet, shower, waste pumpout and laundry facilities for cruising and local yachters. Slips are equipped with hookups for water, electricity, telephones and cable TV. A store handles marine supplies, gifts, parts and accessories for maintenance. The fuel dock dispenses marine gasoline, diesel fuel and CAM2 racing fuel. Oil, ice and water is available to resupply cruising yachts.

The Traders Cove Marina is located on the north side of the eastern approach to the Mantoloking Bridge. The business started 30 years ago (1965) and was acquired by the present owner in 1974. They rent slips, provide minimal yacht services and sell both sail and power boats up to 50'.

David Beaton & Sons is located on Bay Front Street, Mantoloking. David Beaton moved to this location when his original yard was acquired by the Winter Yacht Basin. It is being operated by the third generation of the Beaton family. The yard stores, maintains, repairs and renovates yachts. It provides services for building, repair, maintenance and storage of the 'A' racing catboats designed by Mower and Sweisguth. The facilities include a travelift and cranes and tractors. Shops for painting and repair of fiberglass are available. Beaton's also rents slips and provides general marina services.

V. CONCLUSIONS AND PROPOSED PROJECT EFFECTS

Addressing the Section 106 requirements as outlined for this environmental review process mandates an assessment of cultural resources according to the National Register criteria established by the Department of the Interior's National Park Service. The National Register, authorized under the 1935 Historic Sites Act and expanded under the National Historic Preservation Act of 1966, was designed to be an authoritative guide to be used by federal, state, and local governments in identifying the Nation's historic resources of local, state, and national significance and to indicate what properties are worthy of preservation and consideration in the planning process (USDOI/NPS 1985:4). The following criteria are designed to guide the evaluation of potential nominations to the Register:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. that are associated with the lives of persons significant in our past; or
>
> C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. that have yielded, or may be likely to yield, information important in prehistory or history. (USDOI/NPS 1985:5-6)

The following evaluation of the bridge structure, residential and commercial properties, and marina resources is based on these criteria. The identified resources are also assessed in relation to the two proposed alternative bridge replacement designs: effect and adverse effect.

V.a. Barnegat Bay/Mantoloking Bridge

Conclusions

The technology used in the Mantoloking Bridge is common in southern New Jersey. At least 10 similar spans were built in the 1930s and 1940s.[3] However, of the remaining spans, the Mantoloking bridge is unaltered, complete and relatively well-preserved from an historical perspective except for the addition of modern electrical controls and a steel grate deck. The Ocean County Engineering Department has skillfully maintained the bridge and although the machinery is showing signs of wear and there have been some part replacements, it is in fairly good condition considering its age and extended use. The Mantoloking Bridge represents a cost-effective design which departs from the more complex Strauss designs of the early twentieth century. The designers managed to create a bridge which was aesthetically pleasing and had minimal visual impact on the surrounding environment. The engineering design combined low cost with simple, rugged components. The design concealed the counterweight and operating mechanism under the roadway, thus producing a graceful, low profile bridge that was amenable to a variety of architectural treatments. The design represents a significant step in the evolution of moveable bridges. The Mantoloking Bridge clearly embodies the characteristics of a distinctive bridge type and under Criterion C is eligible for nomination to the National Register of Historic Places.

Proposed Project Effects

The proposed demolition and replacement of the Mantoloking Bridge with a new span will have a direct effect on the historic bridge structure. This proposed replacement constitutes an adverse effect on the historic structure.

[3] See the Appendix for a photographic overview of the remaining nine similar bridges in New Jersey.

V.b. Architectural Resources

Conclusions

The proposed Mantoloking Historic District focuses on the architectural resources of the cohesive recreational, residential community, characterized by wood frame houses built primarily between 1880 and 1935. Based on the standards of Criterion C, the potential historic district represents a significant and distinguishable community important in the development of the Barnegat Bay area. These two-and-a-half story dwellings share a number of features, most notably their wooden shingle siding, wood frame sash windows, front and side porches, and generally an irregular silhouette, marked by projecting gables, dormers, and sleeping porches. The community is unified by the setbacks of the houses, and their surrounding grassy lawns. The accompanying maps (Figures 3 and 4) indicate the extent of the proposed historic district, and the relationship of the bridge to this district.

The bridge into Mantoloking over Barnegat Bay is a completely utilitarian feature of the historic community. The original settlement had no bridge to the mainland, except for railroad connections much farther south on the barrier island. Although the founders of Mantoloking had much to say about the appearance of houses and lawns, and although they actively built docks on the bay and boardwalks at the ocean, there is no recorded expression of concern or interest in the bridge which connected the resort community with the mainland.

The new bridge will have an effect on either of two residential yards along Herbert Street (known as 1198 Bay Avenue and 1200 Bay Avenue Lane) at the north edge of the historic district in that very limited portions of their bayside lawns would be appropriated for replacement bridge touchdowns. As stated above, .0045 acres would be taken from the 1198 Bay Avenue side yard if the north alternative is selected and .0192 acres would be taken from the 1200 Bay Avenue side yard if the south alternative is selected. The loss of either of these small side yards will not adversely affect the eligibility of the remaining district which lies largely to the south.

Beyond the potential historic district, which is bounded by Herbert Street, Princeton Avenue, the Atlantic Ocean and Barnegat Bay, there are a few scattered old houses, but no other significant concentrations of historic resources. The study area for the Mantoloking Bridge includes the northern section of the historic district, located primarily south of the bridge. Herbert Street itself includes historic resources only along its northern side, and a few more straggle up

Barnegat Lane, marking the edge of development in the 1930s, at the end of the period of significance.

On the mainland side of the bridge, the Winter Yacht Basin continues the tradition of repairing and maintaining boats at this site. The Mantoloking Yacht Club in Mantoloking was determined eligible for the National Register by the SHPO-sponsored survey in 1980. Mantoloking's members depend primarily on the repair, maintenance and storage services of the Beaton and Winter Yards across the bay. The yards and the club have been informally identified with each other for many years. Due to this relationship, the Winter Yacht Basin and the Beaton Yard, although the yard structures have been severely compromised, might be considered eligible for the National Register, also under Criterion C, as part of an extended Yacht Club resource.

Proposed Project Effects

The new bridge will have an effect on either of two residential yards along Herbert Street, 1198 Bay Avenue and 1200 Bay Avenue, in that very limited portions of their bayside lawns would be appropriated for replacement bridge touchdowns. Currently, these bayside homelots border the bridge touchdown. As stated above, .0045 acre would be taken from the 1198 Bay Avenue side yard if the north alternative is selected and .0192 acre would be taken from the 1200 Bay Avenue side yard if the south alternative is selected.

The landscaping of the yard surrounding the structure at 1198 Bay Avenue is in the tradition of the founders of Mantoloking and enhances the appearance of the residence with its clipped lawn edged with flower beds. The line of trees and shrubs that edge the property and provide a screen between the house and the bridge would be impacted by the construction activity. Perhaps replanting these trees and shrubs would lessen the impact upon this side yard. While the loss of the side yard footage would have an adverse effect on the appearance of the landscaped property, there would be no adverse impact upon the integrity of the district as a whole.

The residence and surrounding yard at 1200 Bay Avenue was extensively altered during the 1980s. The new landscaping on this lot is not in the "cultivated lawn" tradition of the rest of the historic district. The 1980s paved setting actually detracts from its historic qualities and it is in marked contrast to surrounding properties. Also at 1200 Bay Avenue a large rear deck extends from the house toward the bay. Both the deck and the side of the house are clearly in view from the bridge, and there is no tree or shrub buffer on the bridge side of the lot. There remains a buffer of trees and shrubs on the opposite side of the lot, where the property abuts 1204

Bay Avenue, a relatively new (1972) dwelling, but set in a more traditionally landscaped lot. The loss of the side yard would therefore have no adverse impact upon the historic qualities of the house and lot.

Neither of the structures (1198 and 1200 Bay Avenue) is considered individually eligible for the National Register and there is a determination of no adverse effect. The loss of either of the small side yards of the two residences described above will not adversely affect the eligibility of the remaining potential district which lies largely to the south. The proposed replacement of the bridge over Barnegat Bay at Mantoloking will not adversely affect the potential historic district in Mantoloking. The construction of a replacement bridge appears not to have an effect on the integrity of the Winter Yacht Basin and the more removed Beaton Yard as marina-related resources.

Also, as proposed, a higher profile to the bridge will not affect the historic qualities of the district mentioned above, nor will it adversely effect the visual relationship of the community to the bay. Barnegat Bay is sufficiently wide at Mantoloking Point such that building a higher bridge will not have significant visual effect on the existing viewscape from either the Mantoloking bayfront or the Brick Township shoreline. The increased height, from an existing clearance of 15 feet to 29 feet, over such a wide span raises the visual profile minimally. See Figure 7 for a comparison of Existing and Proposed Profiles. An example of minimal visual impact may be seen at Toms River, New Jersey. At Toms River, NJ Route 37 crosses the Intracoastal Waterway on two parallel bridges. The southerly bridge is a bascule quite similar to the Mantoloking Bridge. It carried two-way traffic for many years and continues to carry two lanes of westbound traffic. A few feet to the north, a higher fixed bridge was built. This bridge provides the vertical clearance currently required on the Intracoastal Waterway and carries two lanes of eastbound traffic. Some idea of the appearance of the profile of the proposed bridge at Mantoloking can be obtained by comparing the two bridges.

A replacement bridge may, in fact, have an impact on the overall quality of life in the Mantoloking community. Currently, the Mantoloking Bridge is a serious restriction to traffic flow patterns and there are often traffic backups along Herbert Street. Reducing traffic strain at this bay crossing by increasing the efficiency, or Level of Service, will alter the current traffic patterns, although it is not likely that there will be significant increases in the amount of cars coming from the surrounding highways. The vast majority of people who use the bridge are those who live there. As can be seen on Figure 8, the main feeder roads to

this section of the shore, Routes 35 and 37, have dedicated exits off the Garden State Parkway. County Route 528 has no such easy access from the Garden State Parkway, and provides no shortcut to other communities. It is likely that the bridge replacement will simply ease the restricted traffic and introduce no long term changes in the borough. Currently, the existing summer congestion and traffic problems of this resort community are a true detriment to the viability of Mantoloking as a single family residential community, composed largely of homeowners rather than seasonal renters. The lack of amusements and other popular destinations also help to sustain the community's residential character. It is the residents' pride in ownership that has helped to preserve the historic houses of Mantoloking over the past century, and which will continue to preserve it if public investment supports the community's single-family residential character.

V.c. Marine Resources

Conclusions

The immediate area at either end of the Mantoloking bridge is significant in the history of yachting and boat building. While not the only area where catboats evolved, there is a continuous history of utilization from workboat to family cruiser to all-out racer. The early catboat design evolved here, guided by shipwrights who used half-hull models to achieve a fair line and efficient shape. Later, the naval architects, Mower and Sweisguth, took these vernacular designs, applied hydrodynamic and aerodynamic principles and perfected a racing boat that was well adapted to the conditions in the local area. In recent years David Beaton strengthened the design of the 'A' catboat, basing his modifications on many years of observation and repair experience.

The contributions of the Winter Yard to development and production of lapstrake construction are also significant. The technique produced an economical wood hull that was stiff, yet relatively light in weight. The lapstrake Jersey skiff hull is an example of a boat evolved and adapted for local conditions.

The presence of the active Yacht Club and marinas attracts active yachters who support these businesses and have contributed both directly and indirectly to the development and evolution of racing catboats and other small craft. The Mantoloking area has many 'old-timers' and dedicated amateur historians who can serve as a valuable resource in documenting the details of boating around the site.

There is no question that the marinas and boat yards in direct proximity to the Mantoloking Bridge have been instrumental in the development of distinctive boats and boat designs. Based on Criterion C both the Winter Boat Yard and the Beaton Boat Yard might be considered eligible for the National Register. However, the yard buildings are not distinctive nor have they retained their architectural integrity. There are no extant structures and/or objects (e.g., cranes, marine railway) that are not fairly recent and standard to the activities of the commercial marine yard.

Proposed Project Effects

Based on current proposed plans, the construction of the new bridge, immediately north of the existing approach, appears not to have an adverse physical and/or visual effect on the limited remaining integrity of the Winter Yacht Basin and the more removed Beaton yard as marina-related resources.

VI. BIBLIOGRAPHY

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VII. PHOTOGRAPH KEY, see following photographs (1995)

Address or name - view	Photo Number
1198 Bay Avenue - facade and side	1
1198 Bay Avenue - rear (from water)	2
1198 Bay Avenue - garden and entry detail	3
1200 Bay Avenue - facade	4
1204 Bay Avenue - rear (from water)	5
1206 Bay Avenue - facade	6
300 Old Bridge Street - facade	7
302 Old Bridge Street - facade	8
306 Old Bridge Street - facade	9
305 Old Bridge Street - facade	10
301 Old Bridge Street - facade	11
Mantoloking Yacht Club - original building -facade	12
Mantoloking Yacht Club - later building - facade & side	13
Mantoloking Borough Hall - facade	14
Mantoloking Fire House - facade	15
1235 Bay Avenue - facade	16
1231 Bay Avenue - facade	17
1229 Bay Avenue - facade	18
1225 Bay Avenue - facade	19
1219 & 1215 Bay Avenue - facade & sides	20
1209 Bay Avenue - facade	21
1203 Bay Avenue - facade & side	22
1130 Barnegat Lane - facade	23
1130 & 1126 Barnegat Lane - side and facade	24
1116 Barnegat Lane - facade	25
1112 Barnegat Lane - rear (street facade)	26
1106 Barnegat Lane - rear (street facade)	27
1128 Ocean Avenue - facade	28
1126 Ocean Avenue - facade	29
1200 Ocean Avenue - facade	30
1220 Ocean Avenue - facade	31
1224 Ocean Avenue - garage	32
1224 Ocean Avenue - facade	33
1238 Ocean Avenue - facade	34
1238 Ocean Avenue - side and rear	35
St. Simon's by-the-sea - Bay Avenue facade	36
Old Bridge Street - view east on the north side	37
View of Mantoloking from the bridge, east on Herbert Street	38

A series of 7 photographs, taken from the Mantoloking Bridge, form a panoramic view from north to south, showing the town of Mantoloking from the bay. The characteristic dark-shingled houses with white-painted trim are quite evident in the photographs, particularly south of the bridge, where a National Register historic district is indicated. Photographs 39 through 44, when arranged numerically from left to right, will provide the 180-degree panorama.

Above photographs taken by Janet Foster.

Photograph Key, continued

Address or name - view	Photo Number
Mantoloking Bridge and Approaches	45
Mantoloking Bridge Operator's House, south side of bridge	46
Mantoloking Bridge Primary Reduction Gear	47

Above photographs taken by Robert C. Stewart.

1198 Bay Avenue - facade and side view: north from Herbert Street 1

1198 Bay Avenue - rear view: east from Bay 2

1198 Bay Avenue
garden and
entry detail

3

1200 Bay Avenue - facade
view: west from Bay Avenue

4

1204 Bay Avenue - rear (from water) 5
view: northeast from Bay

1206 Bay Avenue - facade 6
view: north from within house lot

300 Old Bridge Street - facade
view: north from Old Bridge Street

7

302 Old Bridge Street - facade
view: north from Old Bridge Street

8

306 Old Bridge Street - facade
view: northwest from Old Bridge Street

9

305 Old Bridge Street - facade
view: southeast from Old Bridge Street

10

301 Old Bridge Street - facade 11
view: southwest from Old Bridge Street

Mantoloking Yacht Club - original building -facade 12
view: north from end of Downer Avenue

Mantoloking Yacht Club - later building - facade & side view: northeast from Bay 13

Mantoloking Borough Hall - facade 14
view: northeast from Downer Avenue and Bay Avenue intersection

Mantoloking Fire House - facade 15
view: north across Downer Avenue

1235 Bay Avenue - facade 16
view: northeast from Bay Avenue

1231 Bay Avenue - facade
view: view: east from Bay Avenue

17

1229 Bay Avenue - facade
view: northeast from Bay Avenue

18

1225 Bay Avenue - facade
view: northeast from Bay Avenue

19

1219 (foreground) and 1215 (background) Bay Avenue
facade & sides
view: north, east side of Bay Avenue

20

1209 Bay Avenue - facade 21
view: east from Bay Avenue

1203 Bay Avenue - facade & side 22
view: east from Bay Avenue

1130 Barnegat Lane - facade
view: north from Herbert Street

23

1130 & 1126 (right) Barnegat Lane - side and facade
view: west from Barnegat Lane

24

1116 Barnegat Lane - facade
view: west from Barnegat Lane

25

1112 Barnegat Lane - rear (street facade)
view: west from Barnegat Lane

26

1106 Barnegat Lane - rear (street facade) 27
view: west from Barnegat Lane

1128 Ocean Avenue - facade 28
view: northwest from Ocean Avenue and Herbert Street intersection

1126 Ocean Avenue - facade
view: west from Ocean Avenue

29

1200 Ocean Avenue - facade
view: southeast from Herbert Street

30

1220 Ocean Avenue - facade
view: west from Ocean Avenue

31

1224 Ocean Avenue - garage
view: west from within lot

32

1224 Ocean Avenue - facade
view: northwest from Ocean Avenue

33

1238 Ocean Avenue - facade
view: northwest from Ocean Avenue

34

1238 Ocean Avenue - side and rear
view: northeast from Downer Avenue

35

St. Simon's by-the-sea - Bay Avenue facade
view: east from Bay Avenue

36

Old Bridge Street
view: east
on the north side

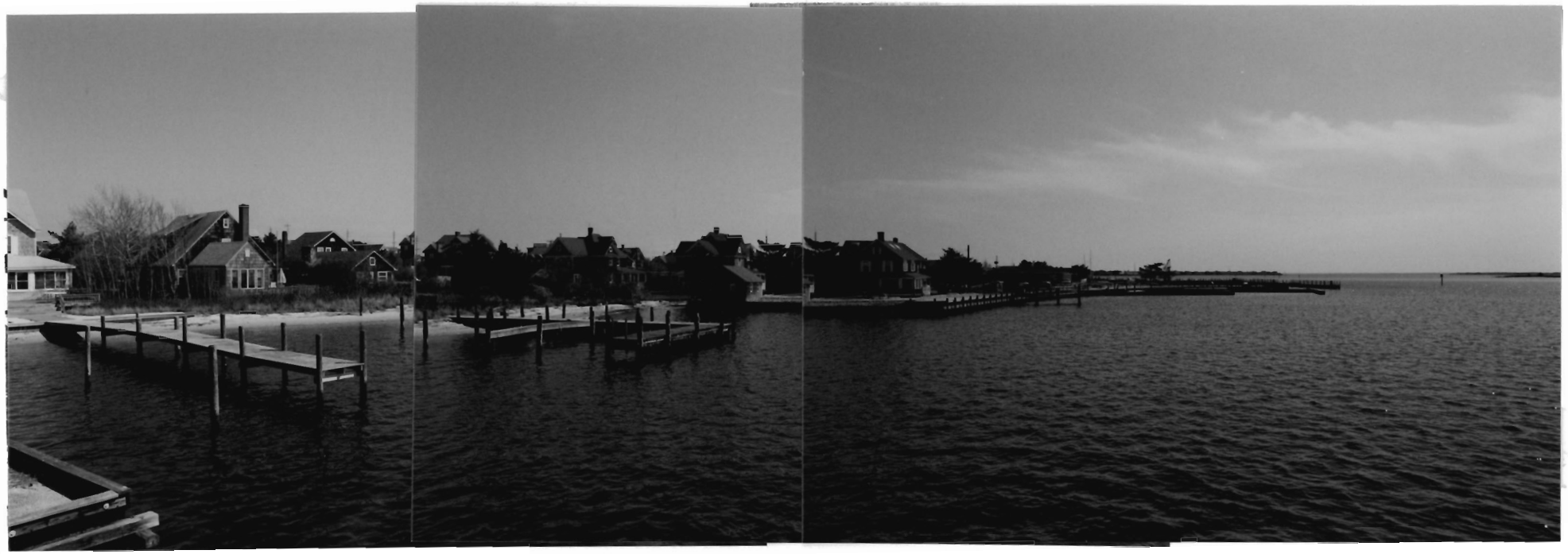
37

View of Mantoloking from the bridge
view: east on Herbert Street

38

The following series of 6 photographs, taken from the Mantoloking Bridge, form a panoramic view from north to south, showing the town of Mantoloking from Barnegat Bay. The characteristic dark-shingled houses with white-painted trim are quite evident in the photographs, particularly south of the bridge, where a National Register historic district is indicated. Photographs 39 through 44, when arranged numerically from left to right, will provide the 180-degree panorama.

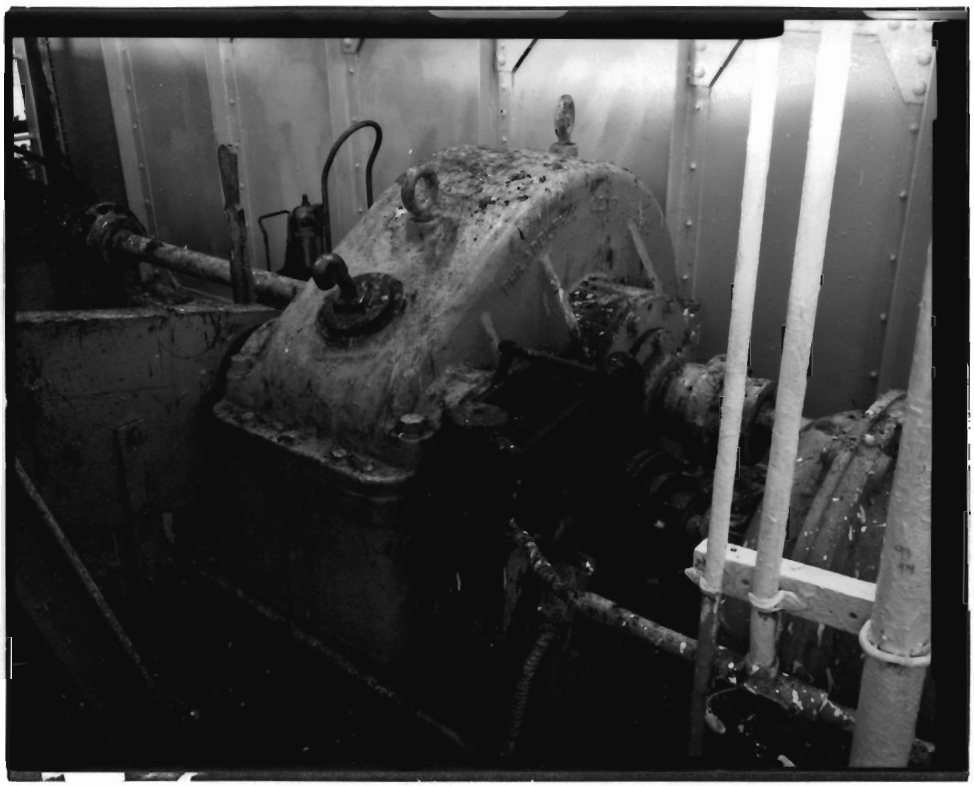
Panoramic view, continued

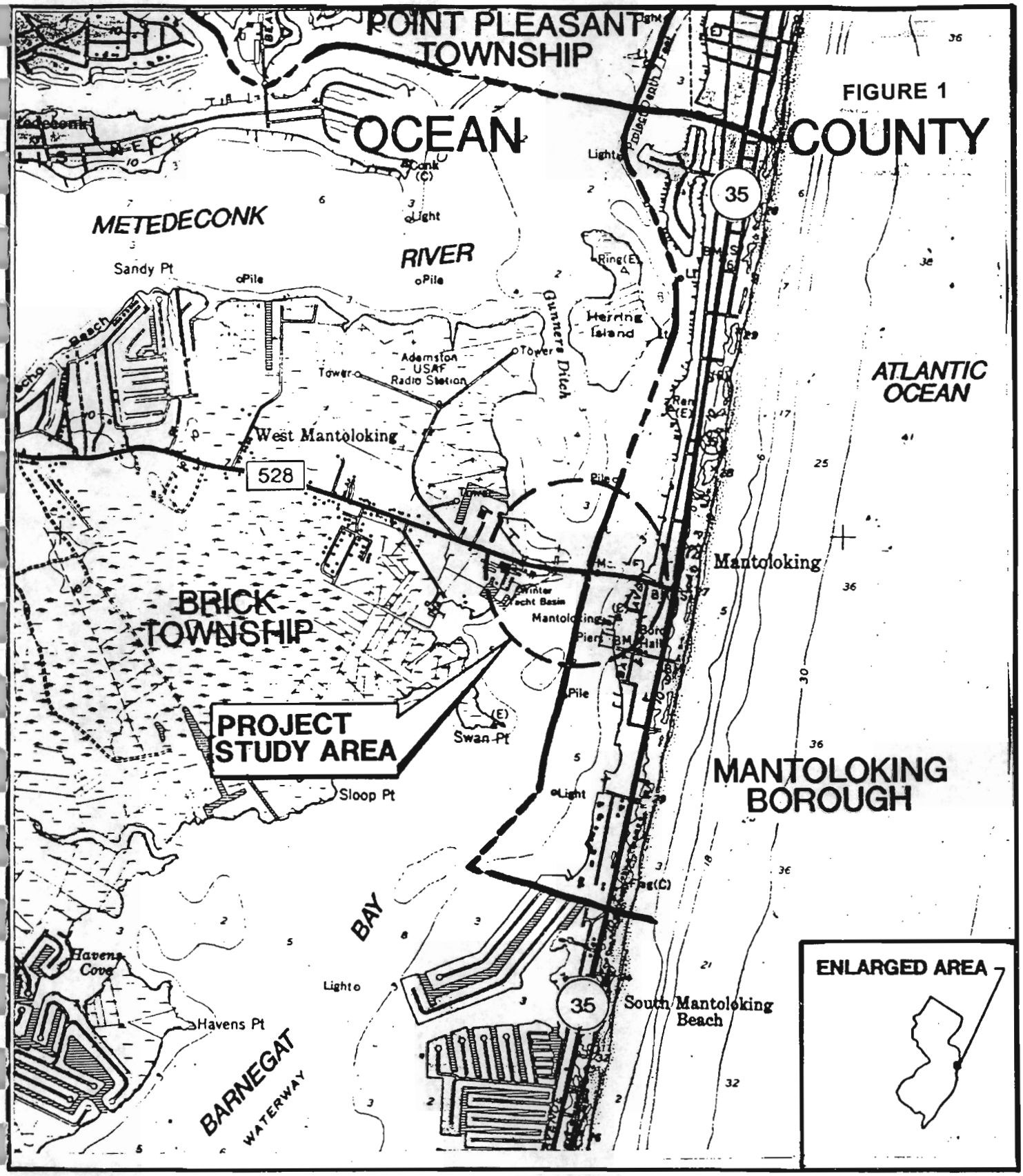


Mantoloking Bridge and Approaches 45
view: north, northwest

Mantoloking Bridge Operator's House, south side of bridge 46
view: west

Mantoloking Bridge Primary Reduction Gear
view: northwest





Project Location Map

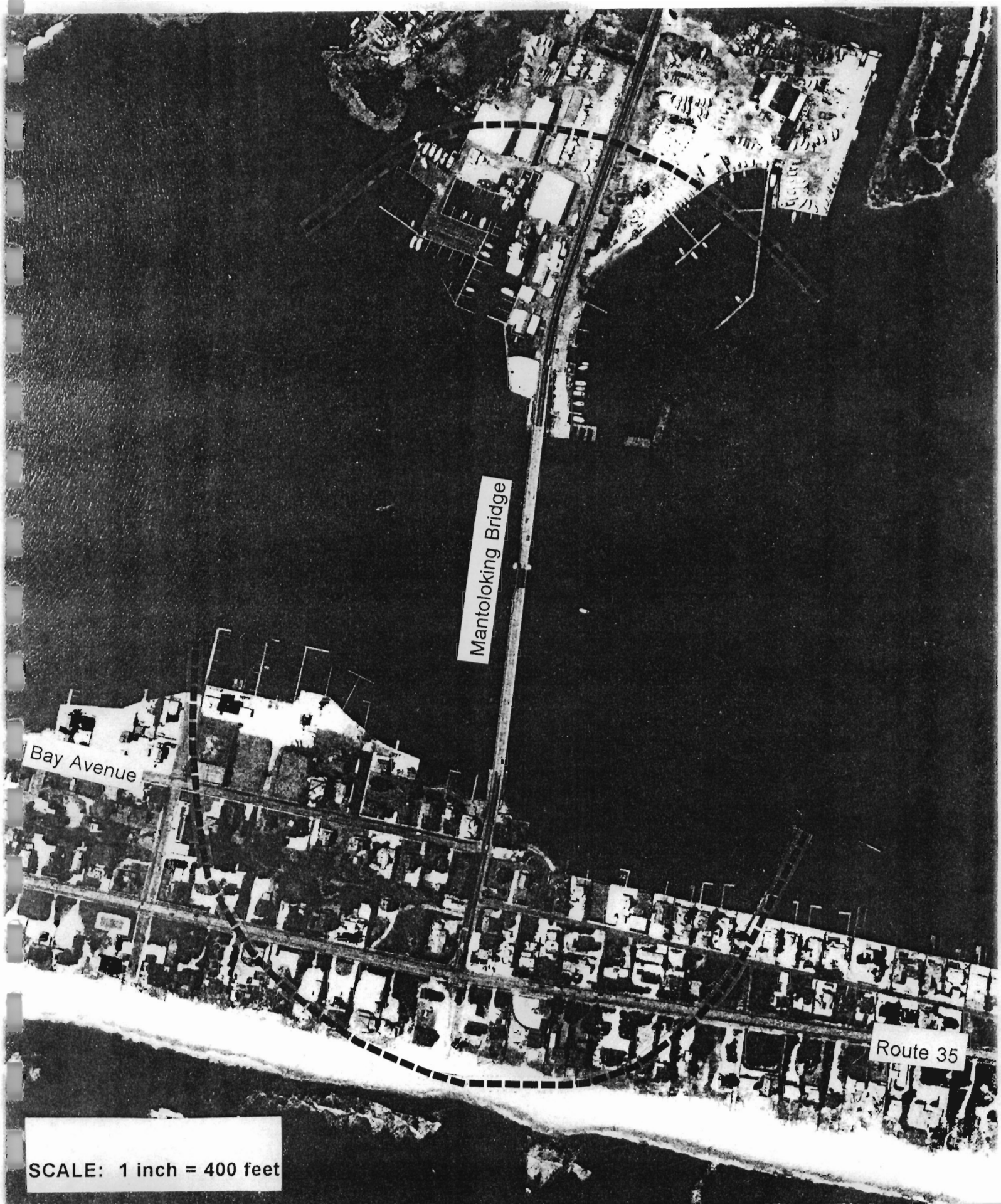
Scale: 1" = 2,000'

0 2000 4000

Base Mapping Source:
U.S.G.S. Topographic Quadrangle -
Point Pleasant, N.J., 1971

FIGURE 2

PROJECT LOCATION MAP: AREA OF POTENTIAL EFFECT (APE) ▬▬



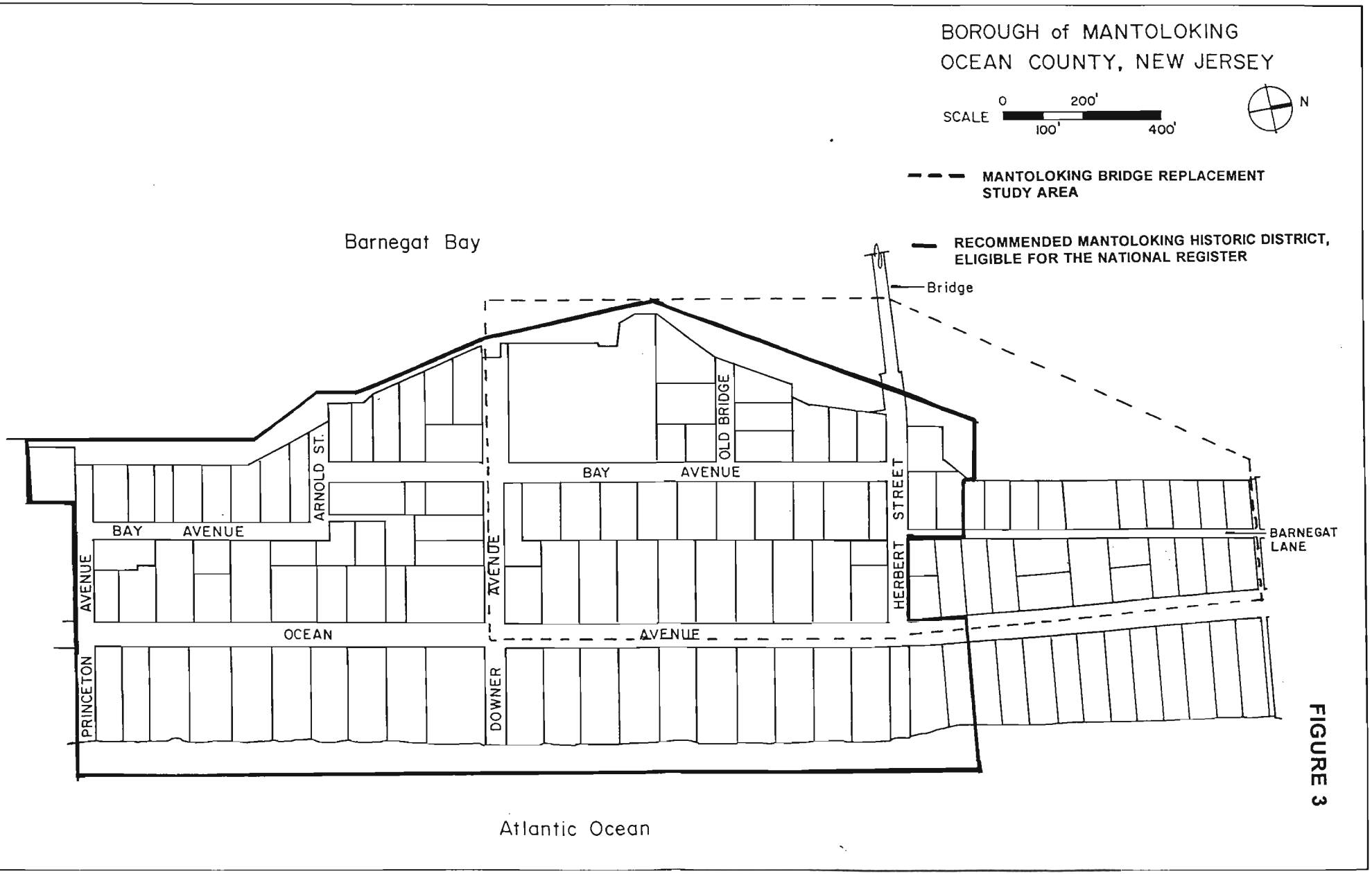

BOROUGH of MANTOLOKING
OCEAN COUNTY, NEW JERSEY
SCALE 0 100' 200' 400'
N
MANTOLOKING BRIDGE REPLACEMENT STUDY AREA
RECOMMENDED MANTOLOKING HISTORIC DISTRICT, ELIGIBLE FOR THE NATIONAL REGISTER
Barnegat Bay
Bridge
OLD BRIDGE
ARNOLD ST.
BAY AVENUE
BAY AVENUE
HERBERT STREET
BARNEGAT LANE
AVENUE
AVENUE
OCEAN AVENUE
PRINCETON
DOWNER
Atlantic Ocean

FIGURE 3

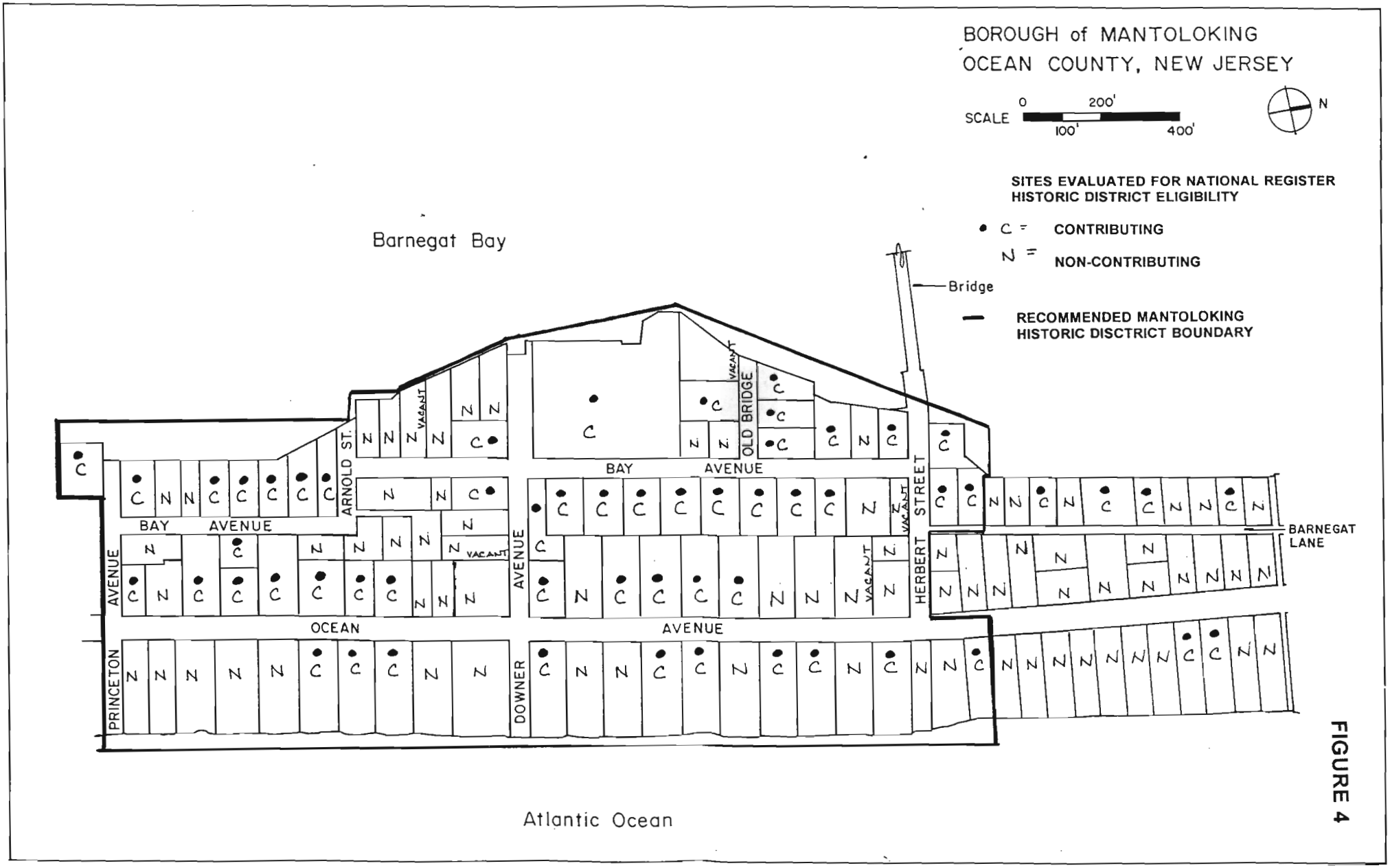

BOROUGH of MANTOLOKING
OCEAN COUNTY, NEW JERSEY
SCALE 0 100' 200' 400'
N
SITES EVALUATED FOR NATIONAL REGISTER HISTORIC DISTRICT ELIGIBILITY
C = CONTRIBUTING
N = NON-CONTRIBUTING
Bridge
RECOMMENDED MANTOLOKING HISTORIC DISCTRICT BOUNDARY
Barnegat Bay
Atlantic Ocean
BAY AVENUE
OCEAN AVENUE
ARNOLD ST.
OLD BRIDGE
HERBERT STREET
BARNEGAT LANE
PRINCETON AVENUE
DOWNER AVENUE
VACANT

FIGURE 4

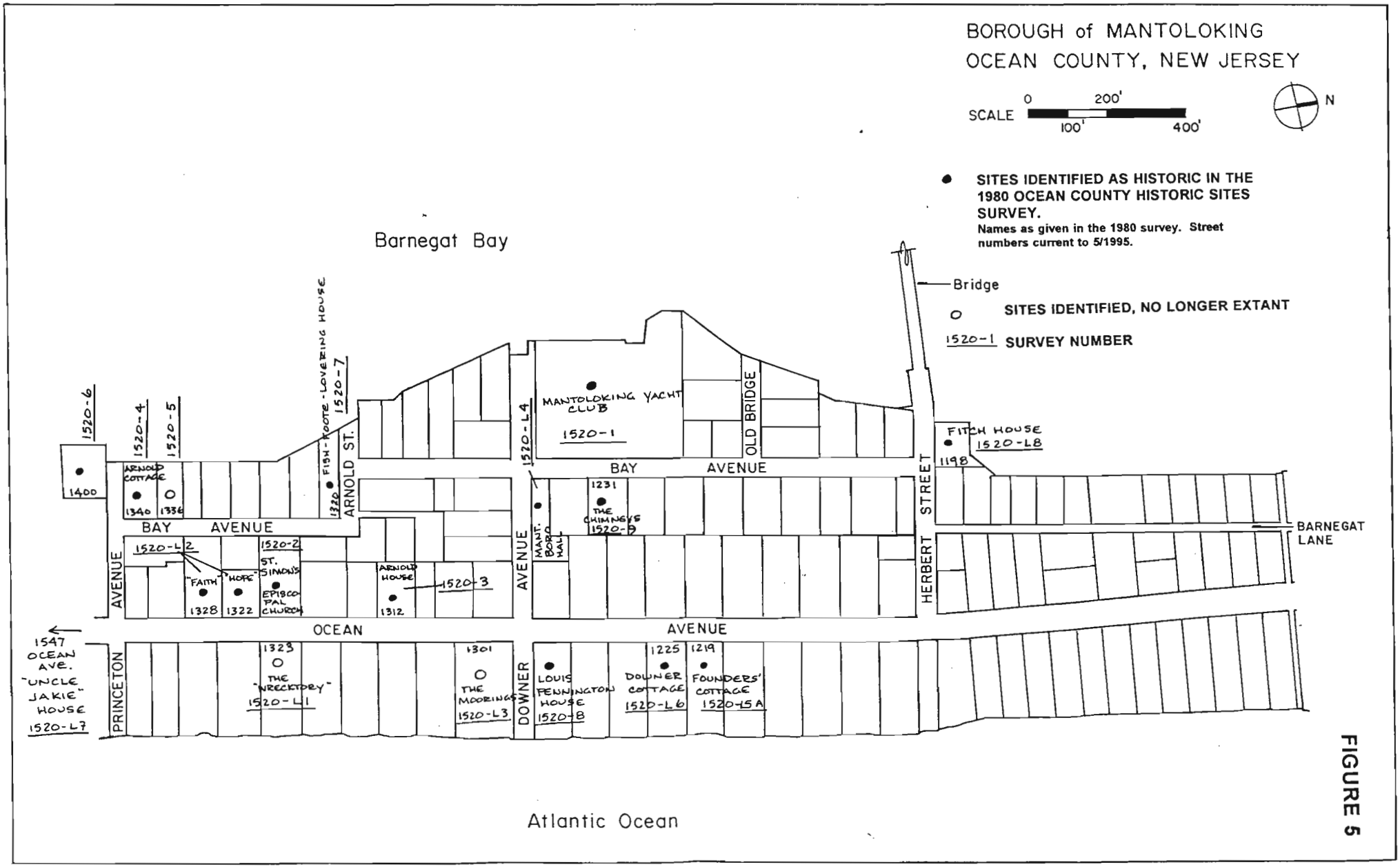
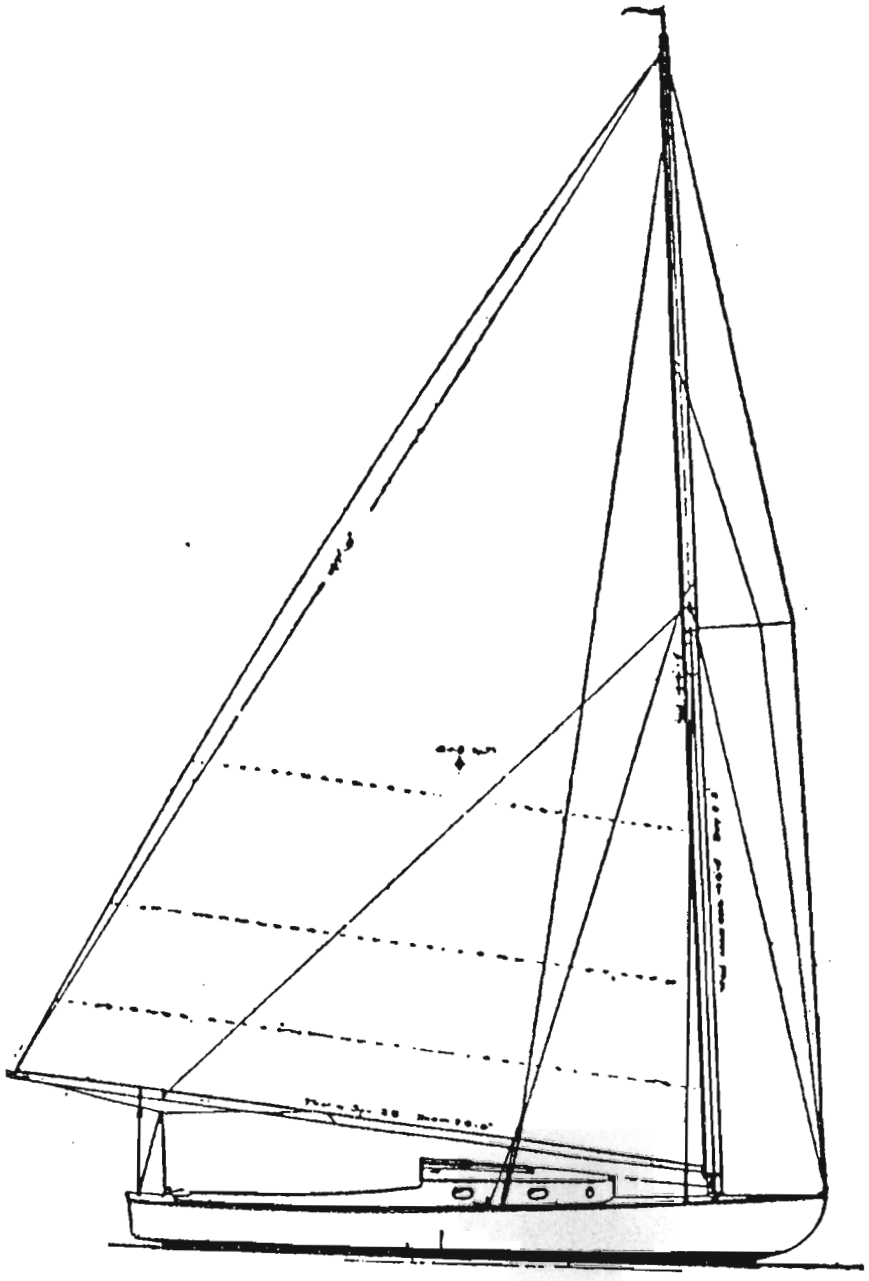

BOROUGH of MANTOLOKING
OCEAN COUNTY, NEW JERSEY
SCALE 0 100' 200' 400'
N
SITES IDENTIFIED AS HISTORIC IN THE 1980 OCEAN COUNTY HISTORIC SITES SURVEY.
Names as given in the 1980 survey. Street numbers current to 5/1995.
Bridge
SITES IDENTIFIED, NO LONGER EXTANT
1520-1 SURVEY NUMBER
Barnegat Bay
1520-6
1400
1520-4
1520-5
ARNOLD COTTAGE
1340
1336
FISH-KOOTE-LOVERING HOUSE
1320
1520-7
ARNOLD ST.
MANTOLOKING YACHT CLUB
1520-1
1520-L4
OLD BRIDGE
FITCH HOUSE
1520-L8
1198
BAY AVENUE
1231
THE CHIMNEYS
1520-9
MANT. BORO HALL
HERBERT STREET
BARNEGAT LANE
1520-L2
"FAITH"
"HOPE"
1328
1322
1520-2
ST. SIMON'S EPISCOPAL CHURCH
ARNOLD HOUSE
1312
1520-3
AVENUE
OCEAN AVENUE
1547 OCEAN AVE. "UNCLE JAKIE" HOUSE
1520-L7
PRINCETON
1323
THE "WRECKTORY"
1520-L1
1301
THE MOORINGS
1520-L3
DOWNER
LOUIS FENNINGTON HOUSE
1520-8
1225
DOWNER COTTAGE
1520-L6
1219
FOUNDERS' COTTAGE
1520-L5A
Atlantic Ocean

FIGURE 5

FIGURE 6



Sail Plan and Lines for 'Mary Ann'
Barnegat 'A' Catboat
Designed by Charles Mower in 1922
(Schoettle 1937:71)

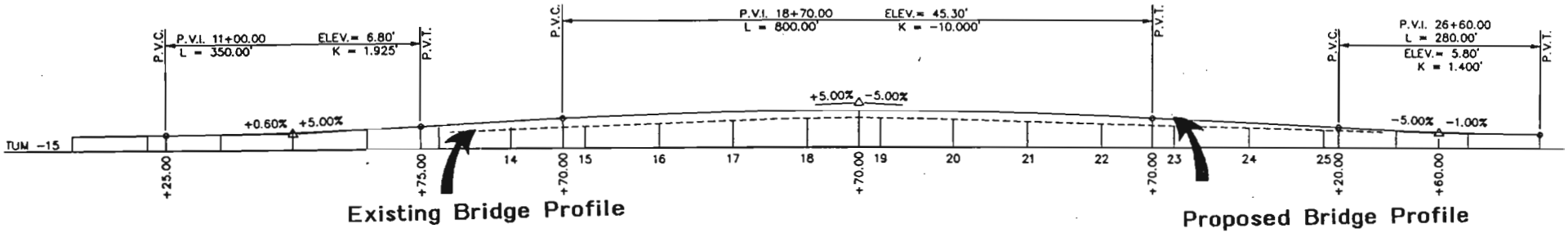
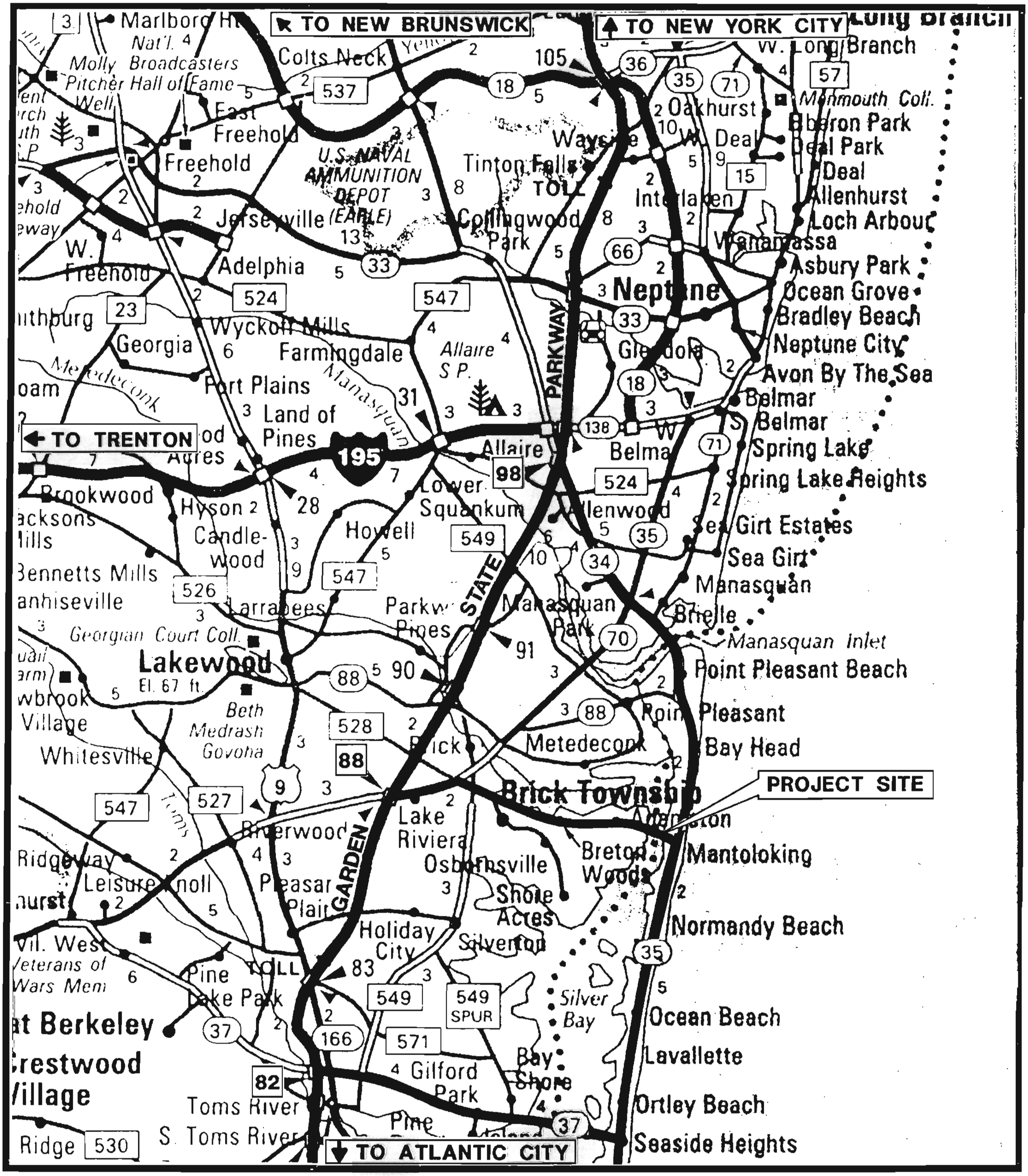


FIGURE 7. Existing and Proposed Bridge Profiles

FIGURE 7



Primary Access Routes

MANTOLOKING BRIDGE

COUNTY ROUTE 528 OVER BARNEGAT BAY

Brick Township and Mantoloking Borough,
Ocean County, New Jersey

Scale: 1" = 3 miles

0 3 miles 6 miles

Base Mapping Source:
Topographic Quadrangle –
Rand McNally State Map
of New Jersey, 1994

McCormick, Taylor & Associates, Inc.,
Collingswood, New Jersey 08108

Figure: 8

APPENDIX

Photographic Overview of Similar Bridges in New Jersey

The New Jersey Bridge Survey, conducted by Lichtenstein & Associates, identified ten extant bridge spans similar to Mantoloking. In order to present a contextual overview of the Mantoloking Bridge and its condition in respect to similar bridges of the same era, a photographic survey of similar spans was completed and is attached.

A. Route 70 Manasquan River. View:north

B. Route 30 Beach Thoroughfare. View:north.

C. Route 52 Beach Thoroughfare. View:south.

D. Route 52 Ship Channel. View:south.

E. Route 621 Middle Thoroughfare.

View:southeast.

F. Route 619 Grassy Sound. View:east.

G. Route 619 Townsends Inlet. View:west.

H. Route 49 Cohansey River/Bridgeton.

View:south.

HISTORICAL PERSPECTIVES INC.

February 23, 1996

RECEIVED
FEB 26 1996
HISTORIC PRESERVATION OFFICE

Andrea Tingey, Senior Historic Preservation Specialist
Division of Parks & Forestry
New Jersey Department of Environmental Protection
Historic Preservation Office
CN 404
Trenton, New Jersey 08625-0404

AT
~~96-947~~
(96-729

RE: Replacement of Mantoloking Bridge, County Route 528
Barnegat Bay, Ocean County, New Jersey

Dear Andrea,

I appreciate your comments on HPI's evaluation study of the above project. As requested, in order to assist you in finalizing the review of the cultural resources assessment for the proposed Mantoloking Bridge replacement project I have enclosed:

photographs of the two boat yards in Brick Township:
Winter Yacht Basin and Beaton Boat Yard

a map of the shoreline on each side of the bridge touchdown that lists block/lot designations and street addresses,

Please append these to our earlier full report (December 1995). If you have any further questions please do not hesitate to call.

Sincerely,

Cece Saunders

Cece Saunders

cc: K. Corti, McCormick, Taylor & Associates, Inc.
D. Mudge, NJDOT

P.O. Box 3037 • Westport, Connecticut 06880-9998 • 203-226-7654 • Fax 203-226-8376

Appendix 2

1. **Photographs of the Winter Yacht Basin**

2. **Photographs of the Beaton Boat Yard**

3. **Brick Township**
   Block and Lot Designations and Street Addresses

4. **Mantoloking Borough**
   Block and Lot Designations and Street Addresses

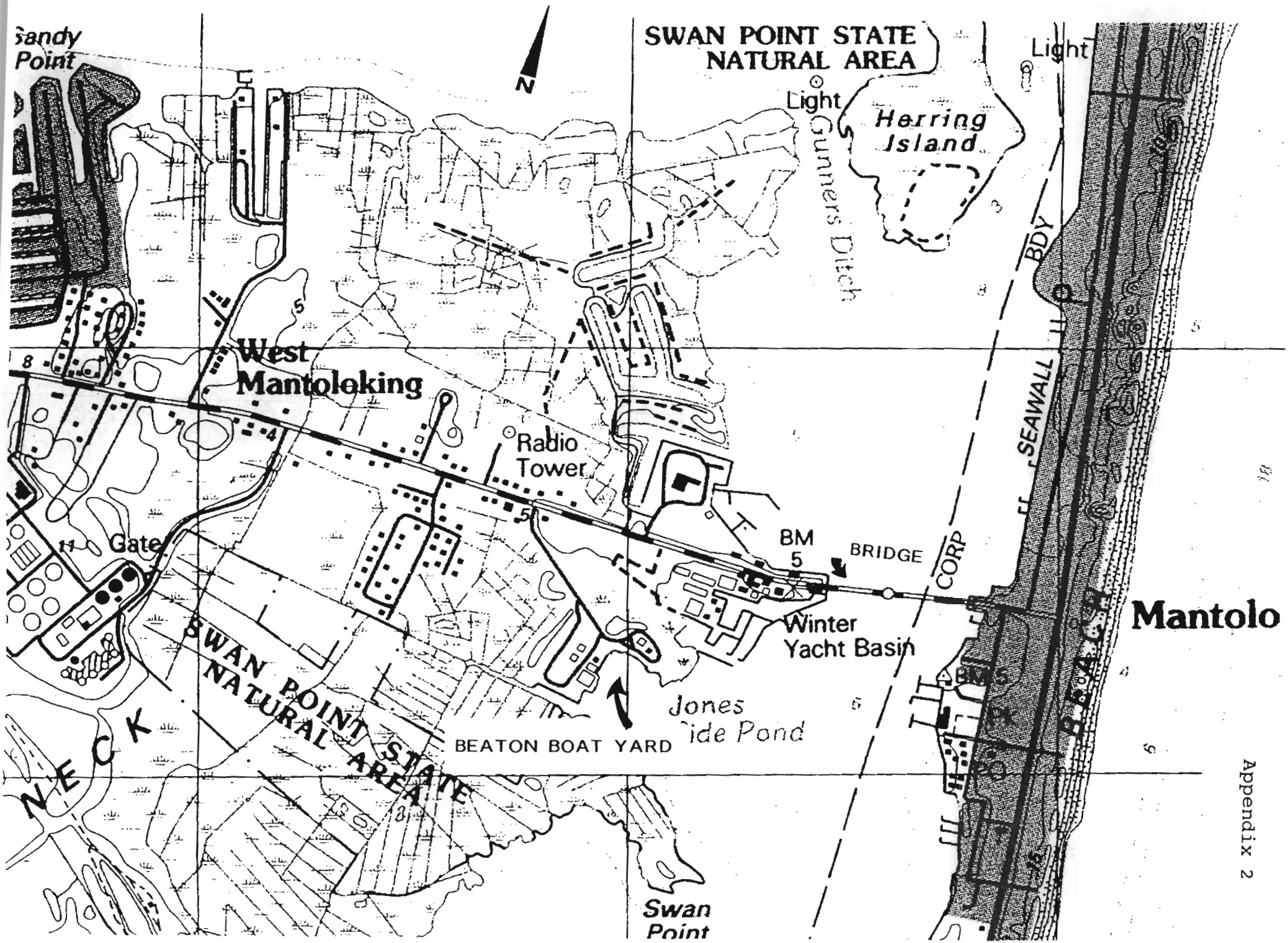
Appendix 2
Winter Yacht Basin
5 Mantoloking Road
view: north to south

Appendix 2
David Beaton & Sons Boat Yard
72 Beaton Road

note: Mantoloking Bridge approach in the extreme lower right corner and Beaton Boat Yard in the extreme upper left corner

Winter Yacht Basin
5 Mantoloking Road
Block 69 Lot 8
Aerial View

Appendix 2


Sandy Point
SWAN POINT STATE NATURAL AREA
Light
Light
Herring Island
Gunners Ditch
BDY
SEAWALL
West Mantoloking
Radio Tower
Gate
BM 5
BRIDGE
CORP
Winter Yacht Basin
Mantolo
SWAN POINT STATE NATURAL AREA
Jones
Tide Pond
BEATON BOAT YARD
NECK
Swan Point

Appendix 2

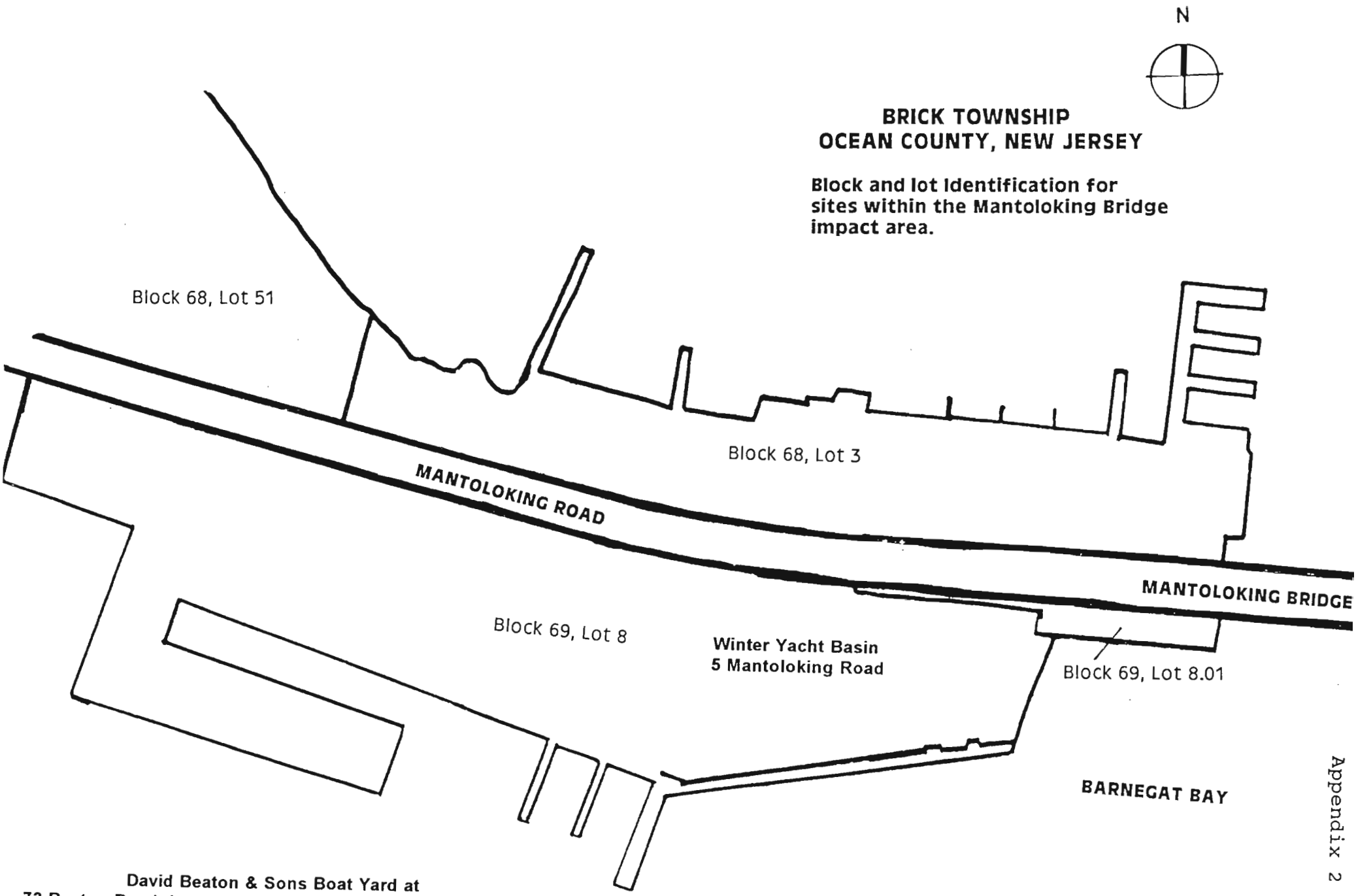
Appendix 2
David Beaton & Sons Boat Yard
72 Beaton Road

View of Lotus, one of five 'A' catboats designed by Charles D. Mower, naval architect, starting in 1923. Mower was notable for his designs for racing catboats based on scientific principles. Four of these historic catboats are maintained at the Beaton Yacht Yard at Mantoloking, NJ.

View of Lotus' transom - David Beaton Yacht Yard, Brick Twp. (Mantoloking), New Jersey.

View Northeast from the "new" David Beaton Yacht yard to the Winter Yacht Basin at Mantoloking, New Jersey.

Refinishing shop at the David Beaton Yacht Yard, Brick Twp. (Mantoloking), New Jersey. Yacht in foreground is Ghost, a Barnegat "A" catboat



David Beaton & Sons Boat Yard at
72 Beaton Road is not on the project map of impact areas.
See the following map for location.

Appendix 2

Appendix 2
David Beaton & Sons Boat Yard
72 Beaton Road

Appendix 2
Winter Yacht Basin
5 Mantoloking Road
view: north to south