Merritt Parkway: Bridge No. 744
(Sport Hill Road Bridge)
Spanning the Merritt Parkway
Fairfield
Fairfield County
Connecticut

HAER No. CT-55

HAER
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1-FAIRF,
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
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HISTORIC AMERICAN ENGINEERING RECORD

MERRITT PARKWAY: BRIDGE NO. 744
(Sport Hill Road Bridge) HAER No. CT-55

Location:	Merritt Parkway under Route 59 Fairfield Fairfield County, Connecticut UTM: 18.646290.4564510 Quad: Westport, Conn., 1:24,000
Date of Construction:	1936
Engineer: Architect:	Connecticut Highway Department George Dunkelberger
Present Owner:	State of Connecticut Department of Transportation Wethersfield, Connecticut 06109
Present Use:	Vehicular bridge
Significance:	This bridge is part of the Merritt Parkway, a landscaped limited-access highway designed and built in the 1930s. The parkway was regarded as a model in its day, largely because of the architectural qualities of its more than 60 bridges. Its rigid-frame reinforced-concrete construction and extensive Art Deco detailing make this span a representative Merritt Parkway bridge.
Project Information:	An evaluation (1988) advised replacement of the structure. To mitigate the adverse effect, the State Historic Preservation Office stipulated documentation and replication of design elements on the new bridge. This documentation was undertaken to fulfill the first stipulation.

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Summary Description of Bridge and Setting

This bridge carries Connecticut Route 59, originally known as Sport Hill Road, over Connecticut Route 15, also known as the Merritt Parkway. Built in 1936, the bridge is a single-span reinforced-concrete rigid-frame structure. The span length is 66' and the overall length 81'. At the bridge, the Merritt Parkway is a divided highway with a 28'-wide roadway in each direction and a guardrail median divider. The bridge provides a 45'-wide roadway for Sport Hill Road over the Merritt Parkway; there are no sidewalks. Vertical clearance for the Merritt Parkway is 14'.

The Merritt Parkway, built in 1934-1940, is a limited-access highway and designed landscape traversing Fairfield County, Connecticut. It runs 37.5 miles between the New York state border (town of Greenwich, Connecticut) and the west bank of the Housatonic River (town of Stratford). Widely hailed since its construction as a masterpiece of parkway design (see Historical and Design Context, below), the Merritt Parkway is characterized by the designers' comprehensive effort to adapt the alignment to its physical setting, and to create a picturesque appearance through sensitive structural and landscape design. Though the roadway does not strictly follow the terrain, it does rise, fall, and curve with the hills it crosses. Originally, grass shoulders sloped upward to the level of the surrounding terrain, and were edged with native shrubs and trees; much of this landscape design is extant.

The bridges are the most prominent and celebrated features of the Merritt Parkway. Concrete is the principal structural and decorative material for the bridges; only three bridges employ steel for major structural components (other than reinforcing bar), and another three feature steel railings or other decorative elements. The rigid frame is the predominant structural type.

Sport Hill Road Bridge is one of the original thirty-

five spans that crossed over the Merritt; another thirty-six bridges carried the Merritt over local roads. The bridge stands about seven miles west of the Housatonic River. The parkway is relatively straight at this location, and runs approximately northeast-southwest. The surrounding area is residential, although the dense shrubbery along the parkway makes an effective visual separation between the road and its environs. Immediately to the southwest of the bridge is a roadside service area, with curving entrance and exit ramps.

The Rigid-Frame Structure

Sport Hill Road Bridge, like the other rigid-frame spans on the Merritt Parkway, utilizes the principle of what was called "continuous construction" in the 1920s and 1930s. Most simply, this method improved the traditional beam-and-abutment structure by building up the joint between the horizontal and vertical members, so that load could be transmitted through the joint. In the beam bridge, a simple conversion of horizontal to vertical moment occurred at the joint, and the horizontal member (beam) had to be capable of supporting the entire load. In the rigid frame, however, the vertical members helped support the load, allowing a substantial saving in material for the beam, in some cases as much as sixty percent. By minimizing the material necessary for the horizontal element, the rigid-frame also reduced its depth, making this form highly appropriate for crossings where a heavier structure would compromise the visual qualities of the surroundings.

The reinforced-concrete rigid frame for Sport Hill Road Bridge exemplifies this method of construction. The vertical and horizontal elements feature a pattern of reinforcement that is continuous through the joints, as the reinforcing bars follow a curved pattern through the upper corners of the frame. The dimensions of the principal structural elements also reflect the distinctive character of the rigid frame.

Each abutment is 8'-wide from its footing up to a height of 6', then it narrows down to 4' midway up the structure, and then widens out to 6' as it blends into the horizontal member at the joint. The horizontal member has a depth of only 1'-9" at the center of the span.

Decorative Treatments

While each of the thirty-five bridges crossing over the Merritt Parkway is unique in its ornamental character, they nonetheless fall into a limited number of stylistic categories. Some thirty of the bridges, including Sport Hill Road Bridge, exhibit Art Deco styling, or some variant of it; the remaining five bridges utilize various styles based on historical precedents, such as Gothic Revival or Renaissance Revival. Art Deco is characterized by the wide eclecticism of its design sources, including Classical antiquity, the Gothic and Renaissance periods, and primitive or naturalistic motifs. Equally characteristic of Art Deco is its liberal adaptation of these various design sources, usually involving simplifying, abstracting or streamlining them.

Sport Hill Road Bridge exhibits a combination of Classical and Gothic-inspired ornamentation. The pylons marking the corners of the bridge are stylized Gothic buttresses, their telescoping planes forming the receding lines that define Art Deco design. In the center of each pylon is a niche with a small concrete balcony; the balcony rail features a treatment of diagonal lines that represents an abstracted acanthus-leaf motif. The railing along the top of the bridge is a straightforward Classically derived balustrade. The plain rail rests upon rectangular-section balusters; simple piers, with niches that echo those in the pylons, divide the rail into sections. The inner faces of the abutments (facing the Parkway) feature five shallow pilasters, marking the locations of the embedded vertical frame members. At their top corners, these pilasters feature molded

caps that suggest a Classical entablature.

The bridge retains all of its historic features, although moisture penetration has caused corrosion of the reinforcing steel, numerous cracks, and widespread spalling.

Historical and Design Context

The Merritt Parkway was the culmination of several trends in Fairfield County transportation that extended a generation or more into the past. It was the first attempt to bypass the road that ran along the coast of Long Island Sound (known as Post Road or Kings Highway, and later as U.S. Route 1). Since the early national period, Post Road had served as the gateway between New York and New England. Commercial and industrial growth in the 19th century increased the use of this road, but at a time when most freight moved on the railroad, the condition of the road was not a major concern beyond the local communities through which it passed. Automotive transport elevated the demands placed on the road; its small size, the densely built up commercial and residential surroundings and the growing volume of through traffic combined to render Post Road unfit by the 1920s. Warren Creamer, who would serve as the state Highway Department's Project Engineer in constructing the Merritt Parkway, later described the situation the Parkway was intended to alleviate:

> It is certain that many of you have occasion to use the Post Road; have doubtless in your journey from Bridgeport to New York City been confronted by an amazing succession of traffic lights . . . have passed through the city and town streets . . . ultimately arriving in the city, nerves on edge and facing exhaustion. (Creamer, p.99)

In 1925 Connecticut Governor John H. Trumbull authorized the planning of a "Parallel Post Road." The enormity of the project was further complicated by

difficulties attending land acquisition and in negotiating cost-sharing among the county, state and federal governments. In 1931 Governor Wilbur Cross created a new commission to oversee the project, and appointed as its chair Schuyler Merritt, who in his former role as U.S. Representative from Fairfield County had been instrumental in obtaining federal funds. In the end, the parkway was paid for with $6 million from the New Deal's Public Works Administration, $1 million from the state, and $15 million from bonds issued by the county.

The Highway Department design team included Creamer; Leslie Sumner, chief structural engineer; A. Earl Wood, engineer of roadside development; W. Thayer Chase, landscape architect; and architect George Dunkelberger, Staff Resident Designer, who specified all the finishes for the bridges. Dunkelberger, a native of Camden, New Jersey, studied at Philadelphia's Drexel Institute before working in that city and later in Hartford as a draftsman and estimator in several architectural offices. During the 1920s he had a partnership in Hartford with Joseph Gelman before joining the Highway Department. According to Wood, the team traveled throughout the northeast to make a comprehensive study of parkways, and "intended to build in Fairfield County a parkway to surpass them all." (National Register of Historic Places Registration Form, p. 8-5)

The most immediate precedent for the Merritt Parkway was the system of landscaped roads in adjacent Westchester County, New York. The first, the Bronx River Parkway, opened in 1923, followed in the next ten years by the Saw Mill, Hutchinson, Briarcliff-Peekskill and Cross-County parkways. The Connecticut team also drew from the codification of parkway principles prepared by the National Park Service in connection with the construction of parkways in the National Capitol Region, for which planning had begun in 1913. The Park Service defined the key requirements for a parkway: prohibition of commercial vehicles; prohibition of unsightly roadside

development and signage; wider than average rights-of-way to buffer the roadway from adjacent properties; no granting of frontage or access rights; preference of a new site to avoid congested areas; providing maximum access to surrounding vistas; using grade separations (bridges) instead of grade crossings (intersections); and well-distanced entrances and exits to reduce traffic interruption.

The success of the Merritt Parkway owed much to the adaptation of these principles for a road serving general transportation needs rather than as a connecting link among parks, and it became a model for highway design in the years immediately following its completion. Lawrence Ivy Hughes used the Merritt Parkway as an example of the "modern four-lane highway" in his influential 1942 book, American Highway Practice. In 1941, the Yale University Bureau for Street Traffic Research began to employ a detailed comparison between the Post Road and the Merritt Parkway as a case study to teach principles of highway engineering. In his influential book, Space, Time and Architecture, the architectural critic Sigfried Giedion described the Merritt Parkway as "a masterpiece of organic layout exemplifying the arrangement of the parkway -- adaptation of the roadbed to the structure of the country, careful alignment of the traffic lanes, separation of vehicular from all pedestrian traffic, and overpasses at junctions." Norman Bel Geddes, the planner and architect who designed General Motors's Futurama Exhibition at the New York World's Fair of 1939, praised the Merritt Parkway as one of "highways today that strike us as excellent" in his 1940 book, Magic Motorways.

Despite such praise, however, the design principles embodied in the Merritt Parkway were superceded immediately after World War II. Engineered for a maximum speed of 45 miles per hour, the parkway could not accommodate the demand for high-speed motoring that overtook the desirability of scenic motoring. The interstate highway system that has been the centerpiece of modern vehicular-transportation

development has employed the utilitarian design precedents of the German autobahn.

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MERRITT PARKWAY:

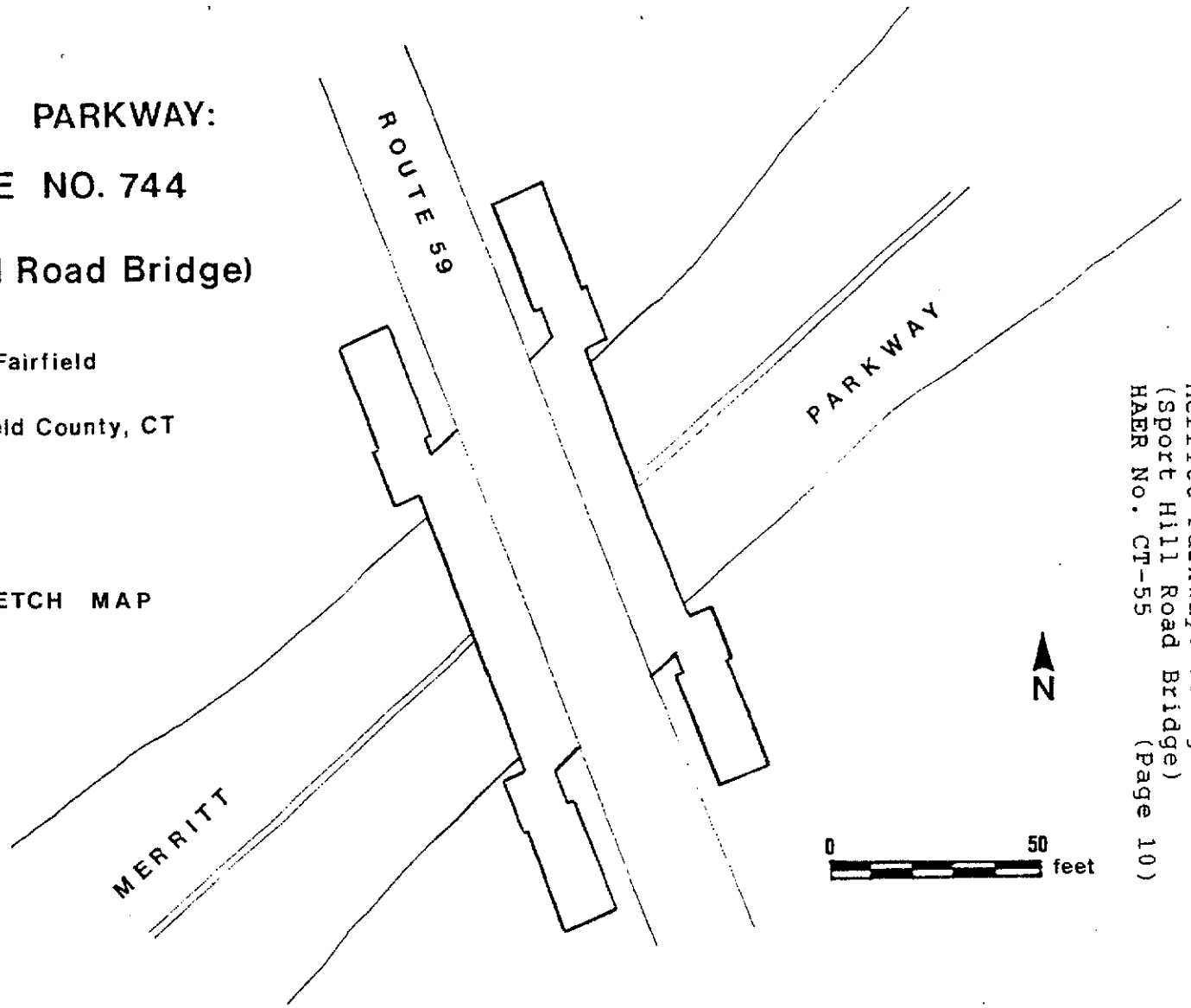
BRIDGE NO. 744

(Sport Hill Road Bridge)

Fairfield

Fairfield County, CT

SKETCH MAP



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