

historic structure report

CAPE COD FRENCH CABLE HUT



NATIONAL SEASHORE/MASSACHUSETTS

HISTORIC STRUCTURE REPORT
FRENCH CABLE HUT
CAPE COD NATIONAL SEASHORE
MASSACHUSETTS

by
A. Berle Clemensen
and
William W. Howell
with
H. Thomas McGrath
and
Elayne Anderson

January 1986

ACKNOWLEDGEMENTS

I wish to thank the staff at Cape Cod National Seashore who aided my research. A special thanks to Alice Snow of the French Cable Station Museum in Orleans, Massachusetts, without whose help this study would not have been possible

A. Berle Clemensen
Denver, Colorado
November 14, 1984

I wish to thank the Superintendent and staff of Cape Cod National Seashore, especially the Maintenance and Interpretation divisions for their assistance with the physical work of investigating the structure and with research in the park files respectively.

I also want to recognize the significant contributions of H. Thomas McGrath and Elayne Anderson to the field research, measured drawings, and proposed work aspects of this report and for their helpful advice and review comments on the text.

William W. Howell
Denver, Colorado
November 14, 1984

TABLE OF CONTENTS

Acknowledgements	iii
List of Illustrations	v
1. Administrative Data Section	1
1.1 Management Information	3
1.2 Proposed use	3
1.3 Planning background	3
1.4 Proposed treatment and justification	4
1.5 Recommended treatment for materials collected in preparing report	5
2. Physical History and Analysis Section	7
2.1 History Component	9
2.1.1 Statement of Significance	9
2.1.2 Background of the French Cable Company	9
2.1.3 Building the Cable Hut	10
2.1.4 Changes to the Cable Hut	11
2.1.5 Undersea Communications in General	12
2.2 Architecture Component	17
2.2.1 Description of Existing Conditions	17
2.2.1.1 Exterior Description	17
2.2.1.2 Interior Description	19
2.2.1.3 Structural Description	29
2.2.2 Proposed Work	30
2.2.2.1 Treatment alternatives	30
2.2.2.2 No Action	30
2.2.2.3 Maintain, Then Move and Restore	31
2.2.2.4 Maintain, Then Move and Preserve	31
Appendixes	33
A. Assessment of future research potential	35
B. Annotated Bibliography	37

LIST OF ILLUSTRATIONS

Figure	
1. Floor plan of the original cable hut	13
2. Floor plan of the 1950 changes	15
3. French Cable Hut, ca. 1950	16
4. Existing condition drawings - Cover Sheet	20
5. Existing condition drawings, plans and elevations	21
6. Present cable hut appearance	22
7. View of cable termination in crawl space	24
8. View of cable termination in crawl space	25
9. Original exterior shingles and cable	26
10. Elevation, west wall of living room	28

ADMINISTRATIVE DATA SECTION

ADMINISTRATIVE DATA SECTION

1.1 Management Information

The French Cable Hut is a one story rectangular structure approximately 24 feet wide and 26 feet deep with gable roof. It is covered with weathered wood shingle siding trimmed with white painted wood corner and eave boards and window and door frames. At the southeast corner is a small concrete entrance porch. A larger open deck at the north side provides access to the kitchen. The entire structure rests on a concrete block foundation wall with crawl space. The roof is covered with asphalt composition strip roofing (see Figure 6).

1.2 Proposed Use

The National Park Service intends to continue to use the French Cable Hut for seasonal housing.

1.3 Planning Background

1. The Master Plan for Cape Cod National Seashore was approved in October 1970.
2. Topographical surveys of the Nauset Beach and Doane Rock areas were conducted by Sewall Co. and are filed as drawings numbered 609/41,034 and 609/41,036 at the Denver Service Center.
3. The Historic Resource Study for Cape Cod National Seashore was approved in February 1979.
4. An Assessment of Alternatives was prepared in July 1978 and a supplement to it was prepared in March 1980.

5. The Finding of No Significant Impact is dated August 1980.
6. The Development Concept Plan for the Eastham Area was approved in September 1981. The treatment of the French Cable Hut falls under the general guidance of this document.
7. Comprehensive Design for the development of the Nauset Light Beach Complex was approved in September, 1982.
8. The Addendum to the Task Directive that has governed the production of this report was approved in May 1983.

The primary source of documentary data for this structure is the history component of this report prepared by A. Berle Clemensen. It was researched concurrently with the research for the architecture component and the information was made available to the project architectural team during their research work. There is no need to summarize this data because it is concise and it is presented in its entirety in this report.

1.4 Proposed Treatment and Justification

Because the French Cable Hut is listed on the National Register of Historic Places and because it has been identified in the NPS List of Classified Structures as a class A structure (must be preserved), the Development Concept Plan for Eastham outlined a plan for moving and preserving the hut for park housing (presented in more detail in the "maintain, then move and preserve" alternative in this report). That plan was approved by the State Historic Preservation Officer (SHPO) and Advisory Council on Historic Preservation (ACHP) (9/4/81) through the Programmatic Memorandum of Agreement process. Should either the "no action" or "maintain, then move and restore" alternative be chosen, it will be necessary to return to the SHPO and ACHP under the Section 106 process and the Advisory Council's "Regulations for the Protection of Historic and Cultural Properties" (36CFR800).

The preferred alternative is "maintain, then move and preserve." This treatment responds to the inevitable advancing erosion and ultimate destruction of the cable hut site by moving the structure and the remains of the cable when the threat of destruction is imminent. Preservation treatment is preferred to restoration because it allows the continued use of the structure as seasonal housing and because restoration would require extensive conjecture and provide only marginal interpretive benefits.

1.5 Recommended Treatment for Materials Collected in Preparing Report

The two shingles collected in preparing this report will be forwarded to the North Atlantic Historic Preservation Center for inclusion in their collection.

PHYSICAL HISTORY AND ANALYSIS SECTION

2.1 History Component

2.1.1 Significance

The significance of the French Cable Hut is entirely the result of its association, both physical and historical, with the first undersea communication cable between the United States and France. In fact, that association is virtually all that survives of the original cable hut. Fenestration, roofing, siding, roof form, floor plan, and interior finishes all have been changed radically since the French Cable Company abandoned operations during World War II. The termination of the cable in the crawl space of the hut is the most significant aspect of the structure. (See Figure 6.)

The May 1981 McManamon and Borstel draft archeological report located no significant archeological resources at the proposed Cable Hut site.

2.1.2 Background of the French Cable Company

In the 1870s several communication corporations were formed as speculative ventures. One such organization, the Compagnie Francaise du Telegraphe de Paris a New York, began in 1879 with the objective of laying a transatlantic cable. In Great Britain the company was known as the P.Q. Company after its president, Monsieur Pouyer-Quertier. Shortly after its inception, the corporation settled on a route from Brest, France, to the island of St. Pierre in the Miquelon Island group and then to Cape Cod. Using a cable built in England by the Siemens Brothers and an American ship the U.S.S. Faraday, the cable was laid in four months. It stretched 2,242 nautical miles across the Atlantic to St. Pierre and 827 nautical miles from there to Cape Cod.¹

1. J.D. Scott, Siemens Brothers 1858-1958: An Essay in the History of Industry (London: Wordenfold & Nicholson, 1958) p. 40; K.R. Haigh, Cables and Submarine Cables, (Washington: United States Underseas Cable Corp., 1968), pp. 317-21. A nautical miles measures about 6,076 feet.

At the North Eastham terminal on Cape Cod, the company constructed a large building that served as a cable station. Here the messages were received in international code and, in turn, transmitted via an overland telegraph line to New York. The station had offices, quarters for the staff, and space for social gatherings. Because the cable arrived approximately two weeks before the structure was completed, office space was provided during that period in the basement of the Nauset Light Beach lighthouse keeper's dwelling.² When the station was completed the cable was transferred from the dwelling to the station.

The married workers built homes near the cable station at Nauset Light Beach. These men, however, subsequently complained that the isolated location created a hardship on them and their families. The school that their children attended, churches, and stores were far from their homes.³

2.1.3 Building the Cable Hut

Because of the workers' plight, the cable company decided to center its Cape Cod operation in Orleans, Massachusetts, and opened a new station house in March 1891. A cable from the old station at Nauset was laid across Nauset Marsh to the foot of Town Cove at Orleans and then to the new cable station house. Maintaining the large, old station merely as a connection point proved too costly, and as a result, the Nauset station house was sold in 1893 to A.W. Reed. At the same time a small hut that measured about 10 by 15 feet was constructed near the old station as a connecting point for the cable. That hut currently forms part of the

2. Eastham 1651-1951, (Eastham, Massachusetts: Eastham Tercentenary Committee, 1951) pp. 93-5; Interview of Miss Mathilda Smart, Eastham, Massachusetts by Marjorie S. Surling, July 11, 1962 (Cape Cod National Seashore files).

3. Interview of Miss Mathilda Smart by Marjorie S. Burling; Interview of Alice Snow by Berle Clemensen, June 22, 1983.

structure known as the French Cable Hut.⁴ It was common practice to erect cable huts if the station house were set a distance back from the shore.

When the hut was constructed, it had shingle siding on the exterior and cedar shingles on the roof. The inside was not finished, with the studs visible. It was devoid of furniture. Only a connection box, fixed to the corner of the southwest wall above where the cable entered the structure, occupied the room (Figures 1 & 10).⁵

The French Cable Company operated the cable until France surrendered to Germany in June 1940 during World War II. While that war continued and for several years thereafter, the cable hut stood vacant. In the spring of 1949 Alice Snow's husband, who worked for the company, went to the cable hut and found it padlocked. After making an inquiry, he found that the hut had been sold to Dorothy LePage in 1946 for nonpayment of property taxes, even though the cable company had never been notified of such action.⁶

2.1.4 Changes to the Cable Hut

Dorothy LePage and Edward Reed held the property in the name of the Cape Cod Land Company. They altered the hut in 1950 and rented it for tourist accommodations.

The original hut area was finished on the interior and became a living room. Several bedrooms were added at the rear, and a kitchen was

4. Field Curry, Pittsburgh, Pennsylvania, to Edison Lohr, Cape Cod National Seashore historian, February 26, 1973 (Cape Cod National Seashore files); Interview of Alice Snow by Berle Clemensen; Interview of Miss Mathilda Smart by Marjorie S. Burling.

5. Interview of Alice Snow by Berle Clemensen.

6. Ibid.

added on the far side. The original front porch was not disturbed (Figures 2 and 3).

LePage and Reed sold the structure to Joseph R. Whiting in 1951. He, in turn, sold it to Fred J. Rechenberg in August 1957. Rechenberg made further changes to the building to allow more headroom by modifying the back pitch of the roof. The kitchen was lengthened so that it extended forward in line with the porch. An open porch was placed on the north side of the hut. The front entrance was moved from the kitchen wall to the living room wall. A larger window was placed in the living room. The 4-by-4 porch support posts were replaced with 2-by-4 lumber (Figures 4 and 5).

In 1972 the National Park Service acquired the structure from Rechenberg. It has since been used to house summer seasonal employees.

2.1.5 Undersea Communications in General

More than 600 cables have been laid around the world. Between 1857 and 1928, twenty-eight telegraph cables were placed between Europe and North America across the North Atlantic. Those cables which connected Europe and North America after 1928 were designed for telephone use. The early cables ran between Great Britain and Newfoundland or Nova Scotia connecting overland to New York with two exceptions. An 1869 cable laid by the French Atlantic Telegraph Company connected Brest, France to Canada via St. Pierre Island and the Compagnie Francaise du Telegraphe de Paris a New York's 1879 cable connected Brest, France, to Cape Cod via St. Pierre Island. This was the first submarine cable to connect the United States to Europe. In 1897-98 the French Cable Company (Compagnie Francaise du Telegraphe de Paris a New York) laid the first cable directly between the United States and Europe. It ran 3,173 nautical miles from Brest, France, to Cape Cod. This second cable to Cape Cod did not pass through the cable hut. It went directly to the Orleans station. In 1899 a submarine cable was laid between the Orleans station and New York.

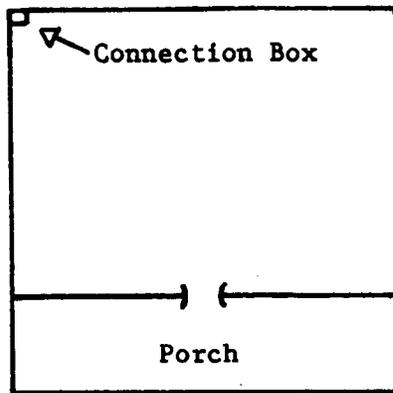


Figure 1
Floor Plan of the Original Cable Hut

The twenty-eight submarine cables laid between North America and Europe from 1857 to 1928 are listed below.

- 1857 - Atlantic Telegraph Company
- 1858 - Atlantic Telegraph Company
- 1865 - Atlantic Telegraph Company
- 1866 - Anglo-American Telegraph Company (England to Hearts Content, Newfoundland)
- 1869 - French Atlantic Telegraph Company (Brest, France to Canada via St. Pierre Island).
- 1873 - Anglo-American Telegraph Company
- 1874 - Anglo-American Telegraph Company
- 1874 - Direct United States telegraph Company
- 1879 - Compagnie Francaise du Telegraphe de Paris a New York
- 1880 - Anglo-American Telegraph Company (renewal of the 1866 cable)
- 1881 - American Telegraph and Cable Company (Cornwall, England to Canso, Nova Scotia. Connected from Nova Scotia to New York in 1889)
- 1882 - American Telegraph and Cable Company (same route as its 1881 line)
- 1883 - Commercial Cable Company (LaHavre, France to New York via England, Ireland, and Dover Bay, Nova Scotia)
- 1884 - Commercial Cable Company (same route as its 1883 line)
- 1894 - Commercial Cable Company (same route as its two previous lines)
- 1894 - Anglo-American Telegraph Company
- 1897-98 - Compagnie Francaise du Telegraphe de Paris a New York (First direct cable Brest, France to the United States)
- 1900 - German Atlantic Telegraph Company (Europe to New York via the Azores)
- 1900 - Commerical Cable Company
- 1901 - Commercial Cable Company
- 1903-04 - German Atlantic Telegraph Company
- 1905 - Commercial Cable Company
- 1910 - Angle-American Telegraph Company
- 1923 - Commercial Cable Company (Europe to New York via the Azores)
- 1924 - Western Union (Europe to New York via the Azores)
- 1926 - Western Union (same route as 1924 cable)
- 1926 - German Atlantic Telegraph Company
- 1928 - Western Union (New York to Europe via Newfoundland and the Azores)

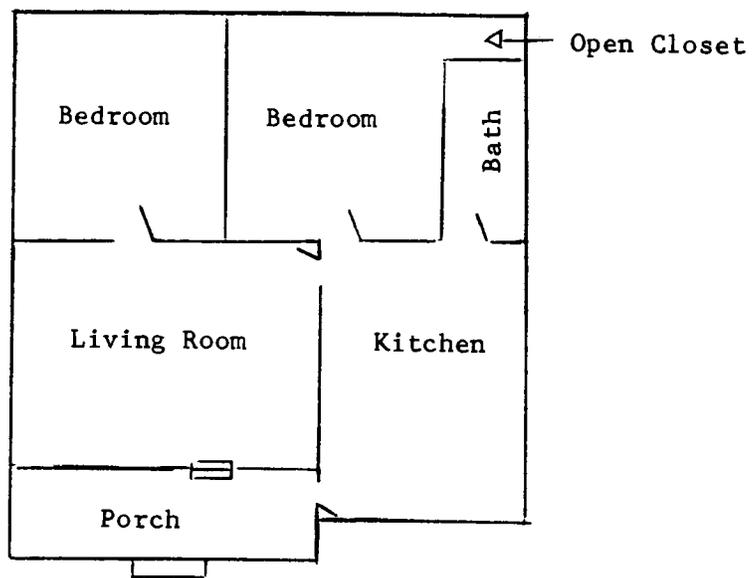


Figure 2
Floor Plan of the 1950 Changes

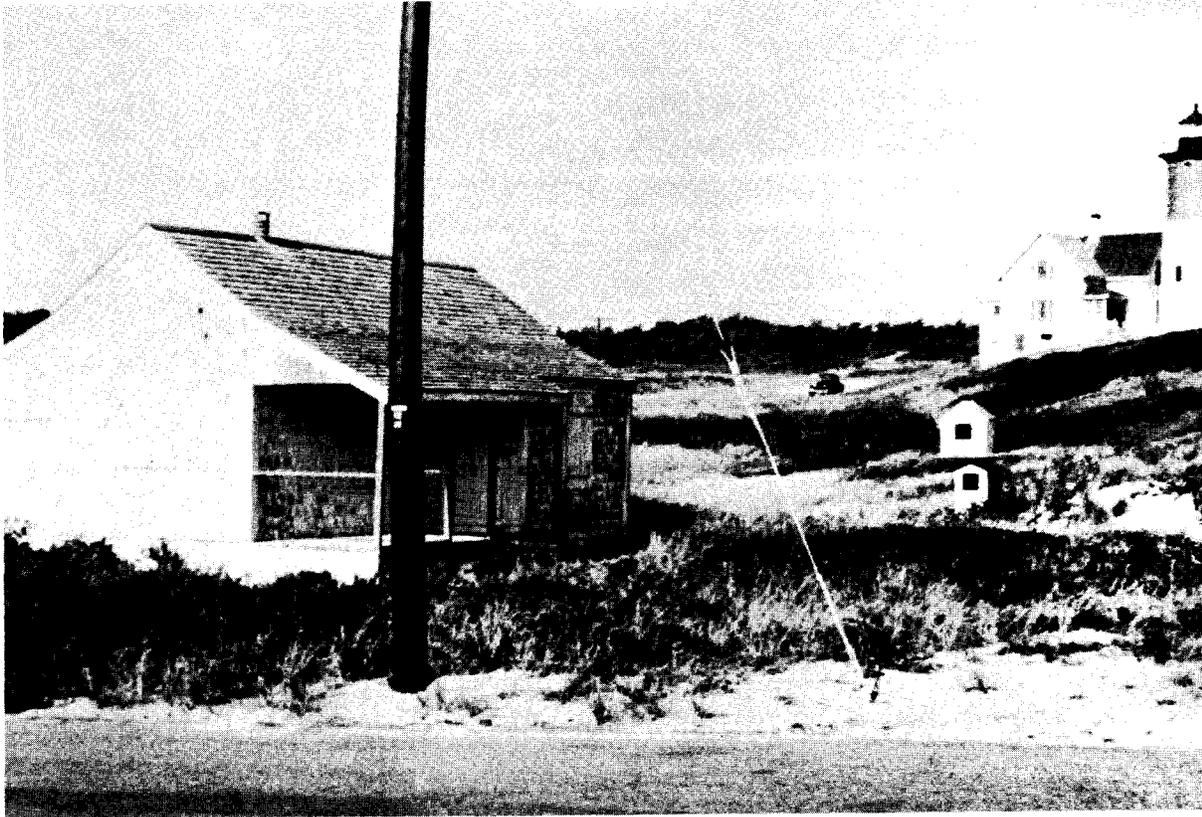


Figure 3
French Cable Hut Ca. 1950
Courtesy of the French Cable Station Museum
Orleans, Massachusetts

This view of the cable hut was made soon after Dorothy LePage enlarged it for a summer tourist cabin. The original hut comprised the porch and the room immediately behind it. LePage added two bedrooms at the rear and a kitchen on the far side. She changed the front entrance and window arrangement. The structure was reshingled at the time it was remodeled. The terra cotta ventilator on the ridge of the roof was original and remains today.

2.2 Architecture Component

2.2.1 Description of Existing Conditions

2.2.1.1 Exterior Description

The French Cable Hut is located near the sand scarp at Nauset Light Beach just twenty feet north of the end of Cable Road in Eastham, Massachusetts. The tract number is 32-6816 and the building number is E-32-91. UTM coordinates are Zone 19 E. 420-995 N.4634-410. The line of the front of the building is nine degrees west of magnetic north. The information presented here was collected at the site in June 1983.

The form of the one story wood frame structure is clearly delineated on the drawings included in this report (Figures 4 and 5, Drawing No. 609/25,000). The shingle siding is unpainted. The historic shingles found in place in the basement are single coursed with exposure of 5" to 5 and 1/2" and widths of 3" to 5". These shingles were 10½" to 11" long. That may have been the full length of all shingles for two layer coverage on a wall surface or it may only have been a starter course for 16" to 18" shingles (Figure 9). Corner boards are one by sixes, butted.

The windows are an assortment of types and styles from the various alterations to the building. The south end of the east facade features a 3'-4" square picture window. The kitchen window at the north end of the same facade is a two-over-two single-hung sash. Similar sash windows are located on the north and south elevations. The west addition to the building has four identical modern hopper-style windows.

The front door is Dutch-style with two separate leaves. The upper leaf has nine 6-inch by 10-inch glass lights. The lower leaf has four triangular panels in an X-braced frame. The paint layers on the outside of the door consist of a white primer, then dark red, bright red, french blue, and the present dark red. The door jamb has only the bright red and dark red layers. There is no evidence of any earlier door in this frame. The door leaves are hung on modern brass butt hinges marked

"Stanley." There is a rim latch marked "Best" and a "Weslock" cylinder lockset.

The kitchen door is located in the north wall with access from the deck. It consists of three horizontal lights over three horizontal wood panels. It has one layer of white paint, it hangs on three modern brass butt hinges marked "Arrow," and an unmarked cylinder lockset secures it.

The front porch is covered by the roof of the main part of the hut; thus it appears as a recessed volume at the southeast corner of the building. A poured-in-place concrete slab supports four two-by-four posts which in turn support the roof. Two-by-fours are toe-nailed between the posts to serve as handrails and lateral bracing for the posts. None of this material is historic and a thorough investigation did not produce any evidence of an historic porch.

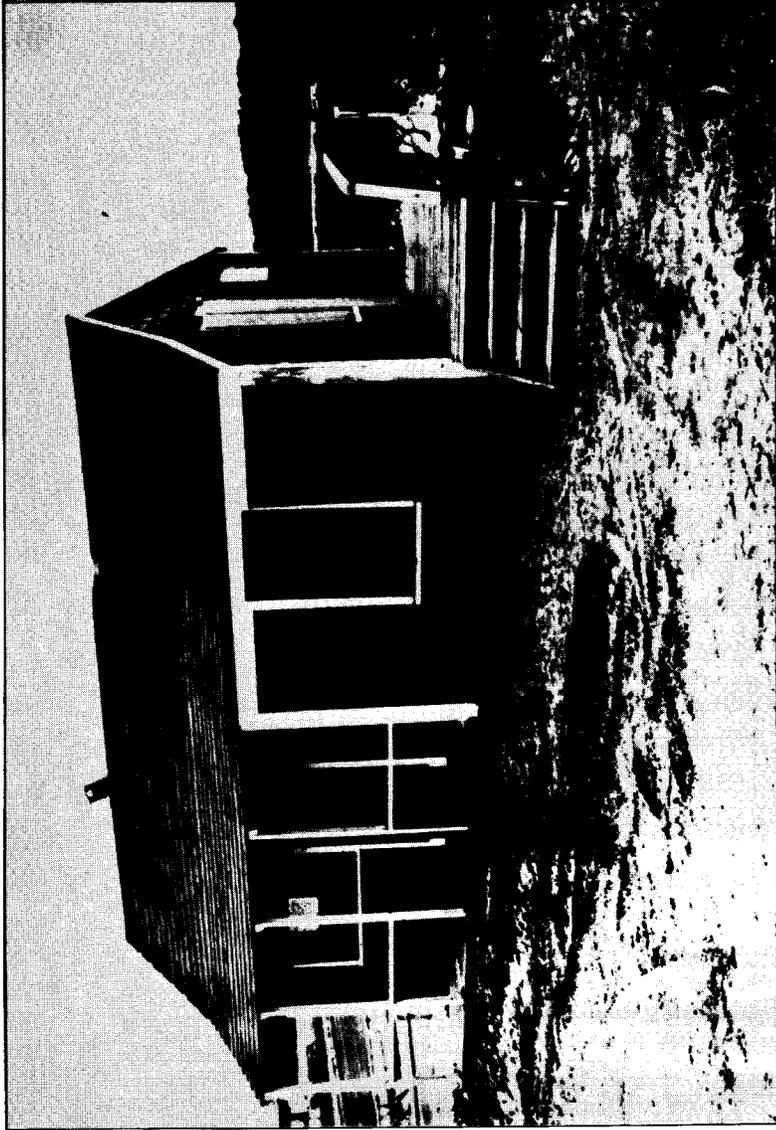
The north porch is a modern deck constructed of dimension lumber on a concrete masonry unit foundation. A three-riser open stair provides access from the east side to the deck. A two-by-six handrail on two-by-four supports protects the north and west sides of the porch.

The roof of the French Cable Hut consists of three sections with different slopes. The ridge is oriented north-south. To the west is an 18-foot section with a slope of 2.33 inches per foot. To the east are a 5'-4" section with a slope of 9.0 inches per foot and a 4'-4" section with a slope of 5.1 inches per foot. The entire roof is covered with mineral-surfaced asphalt strip roofing. Eave boards are one-by-sixes. At the ridge, about five feet from the south end, is a terra cotta flue or ventilator. It is considered original to the Cable Hut because it matches one on display in the Cable Museum in Orleans. The gable vents in the north and south walls reflect the change in roof slope which occurred with the western addition (see figure 5).

2.2.1.2 Interior Description

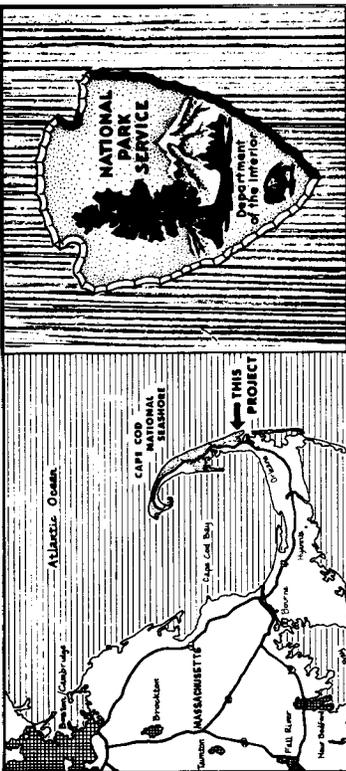
A concrete masonry unit foundation supports the structure and surrounds a crawl space under the entire structure except for the front porch and north deck. The exposed floor joists provide considerable information about the evolution of the structure. At the southeast corner, under the living room, two-by-six joists at 24-inch centers resting on six-by-six sills represent the earliest period of construction. The cable surfaces in this part of the crawl space and original exterior shingle siding is still in place on the north side of the north sill (see Figures 7, 8 and 9). Under the kitchen, the structure also consists of two-by-six joists at 24-inch centers, but the joists rest on a plate atop the foundation wall. The western twelve feet consist of two-by-eight joists at 16-inch centers. Compared to both the other areas of floor framing, the western part seems clean and fresh. The documentary research indicates that, except for a small eastward extension to the kitchen, all of the additions to the Cable Hut were made at one time. The similarity of framing members between the kitchen and living room floors may mean that the kitchen area was an old structure moved to the site and connected to the Cable Hut.

The living room is approximately 9' by 13' with 4-1/2" tongue and groove floor boards running east-west. The floor is painted gray. The walls are finished with similar boards applied horizontally and stained gray. The ceiling is the same material and finish as the walls with boards running north-south. There are recesses in the ceiling for a light fixture and for the attic access hatch. At the south end of the west wall there is a vertical butt joint in the boards that may indicate the former location of the connection box now on display at the Cable Museum. The patched area is 3'-10 1/2" high and extends 1'-6 1/4" from the south wall. (See Figure 10.) The door to the kitchen is a 6'-4 and 3/4" by 2'-7 and 1/2" board and batten door with the battens in a "Z" pattern. It is stained gray to match the wall and ceiling finish. It swings on modern strap hinges and is secured with a cast iron thumb latch. The door to the south bedroom is a 2'-4" by 6'-6 and 1/2" hollow core flush door with mahogany veneer, modern brass butt hinges, and a cylindrical lockset.



SYMBOLS	ABBREVIATIONS	BASIC DATA
<p>□ CONCRETE FOUNDATION WALL</p>	<p>CMU CONCRETE MASONRY UNIT HWH HOT WATER HEATER O.C. ON CENTERS</p>	<p>MASTER PLAN, APPROVED 10/70 NAUSET BEACH & DOANE ROCK TOPOGRAPHY (SEWELL CO.) DWG NOS. 609/41.034 & 609/41.036, 3/78 ASSESSMENT OF ALTERNATIVES, 7/78 HISTORIC RESOURCE STUDY, 2/79 SUPPLEMENT TO THE ASSESSMENT OF ALTERNATIVES, 3/80 FINDING OF NO SIGNIFICANT IMPACT, 8/80 DEVELOPMENT CONCEPT PLAN-EASTHAM AREA, 9/81 COMPREHENSIVE DESIGN, APPROVED 9/82 GEOTECHNICAL & ENGINEERING REPORT, EGA/BRIGGS ENGINEERING 12/82 REVISED TASK DIRECTIVE, APPROVED 5/83</p>

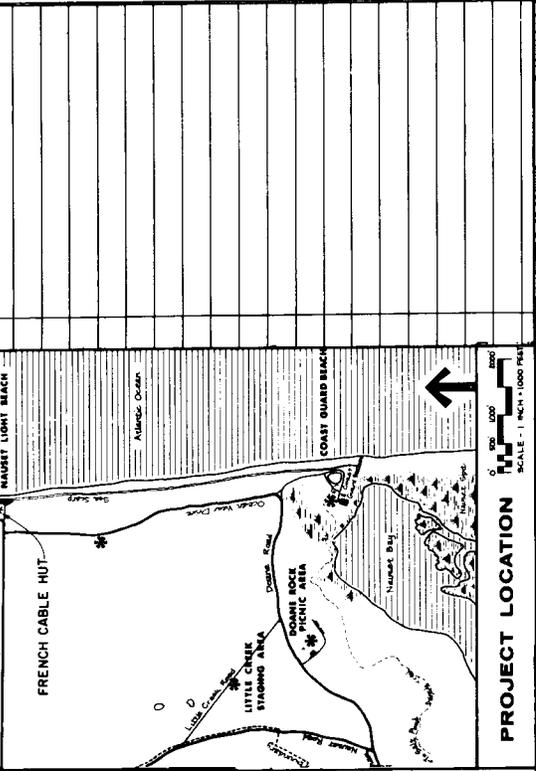
FRENCH CABLE HUT



VICINITY MAP

SCALE - 1 INCH = 10 MILES

N



<p>HISTORIC STRUCTURE REPORT</p> <p>UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE DENVER SERVICE CENTER</p>	<p>DESIGNED BY: MCGRATH MCGRATH TECH. REVIEW LAJOUR 10/78</p>	<p>COVER SHEET</p> <p>EASTHAM AREA NAUSET LIGHT BEACH NAUSET LIGHT BEACH CAPE COD NATIONAL SEASHORE NORTH ATLANTIC BARRIER ISLANDS</p> <p>DRAWING NO. 25,000</p> <p>SHEET NO. 1</p> <p>TOTAL SHEETS 2</p>
---	---	--

NATIONAL PARK SERVICE

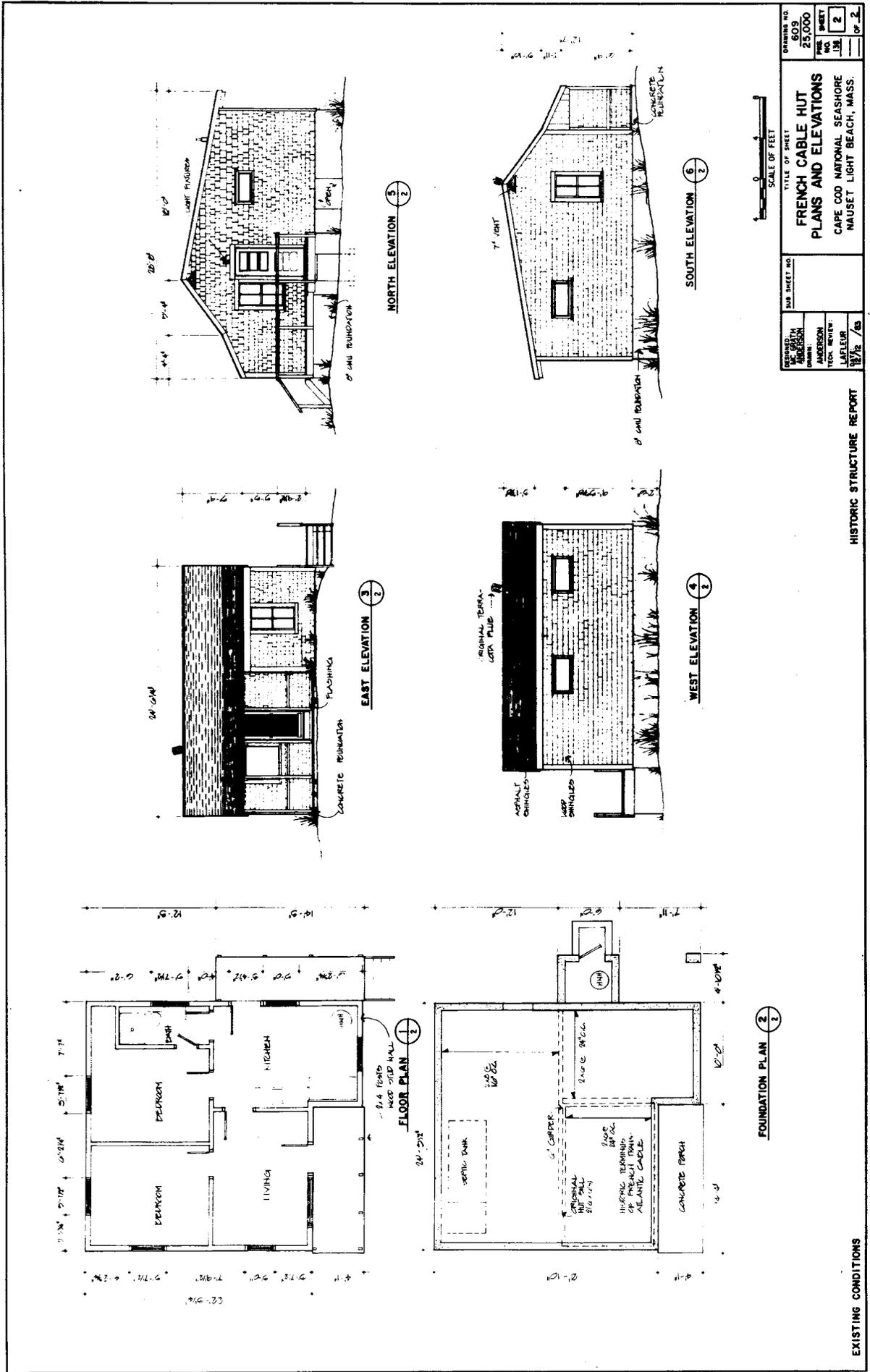
Department of the Interior

SHEET INDEX

NO. SHEET TITLE	1 COVER SHEET
2 PLANS AND ELEVATIONS	

1	COVER SHEET
2	PLANS AND ELEVATIONS

Figure 4. Existing Condition Drawings - Cover Sheet



EXISTING CONDITIONS
 HISTORIC STRUCTURE REPORT
 Figure 5. Existing Condition Drawings - Plans and Elevations

Figure 6
Present Cable Hut Appearance

In this picture one can see the kitchen extension, which is in line with the front of the porch. The front entrance and window have been changed from the 1950 remodeling. An open porch has been added to the north side. The front porch support posts have been changed. Asphalt shingles now cover the roof, replacing the cedar ones.

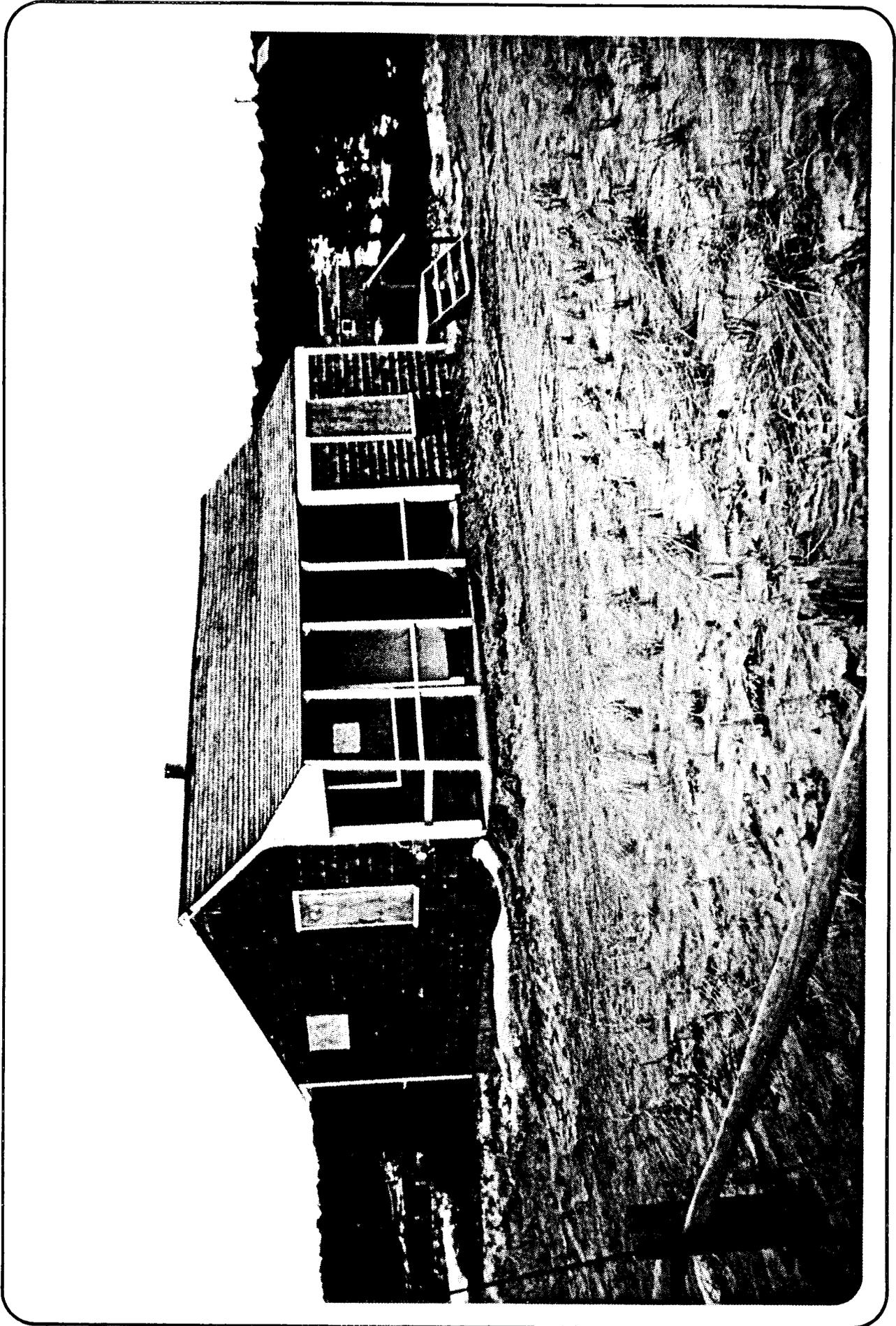




Figure 7

View of crawl space under living room, looking east
The end of the transatlantic cable



Figure 8

Same area as Figure 7, looking northeast

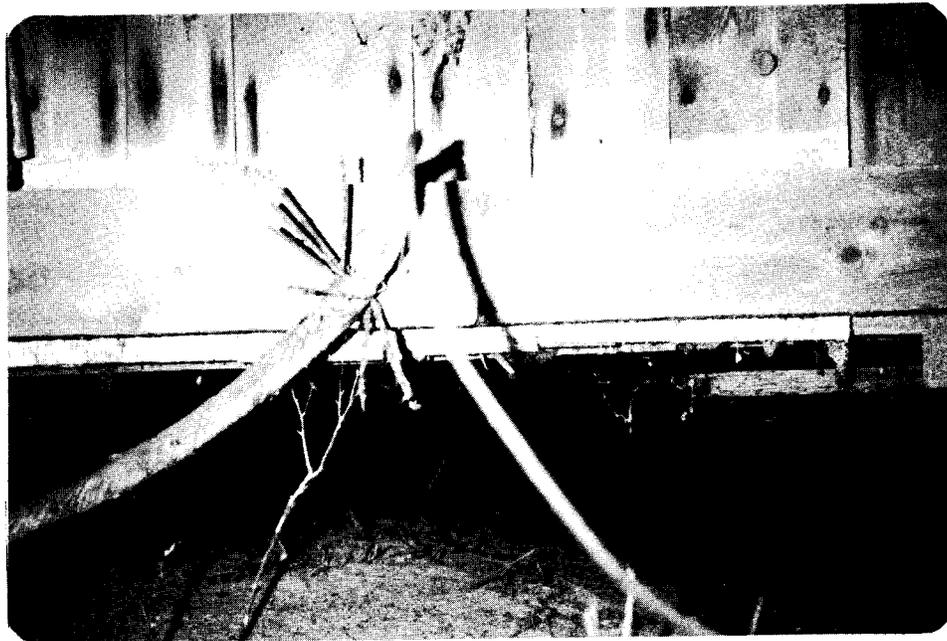


Figure 9

Crawl space under kitchen, looking south at the former exterior shingles on north wall of hut (covered by modern ledgers)

The kitchen is approximately 10' by 14' with 4 and 1/2" tongue and groove boards painted gray and oriented north-south. The one earlier layer of paint is light tan. In the doorway to the bedroom, 12 and 3/4" from the south jamb, is the stub of a two by four stud. Its presence supports the theory that the kitchen is an old structure moved and connected to the Cable Hut. The walls are vertical, random width, tongue and groove boards. Those in the small eastern addition are very wide (up to 11 and 1/2") and have plain joints. Boards in the main part of the room are V-jointed. The ceiling is 5 and 1/2" tongue and groove boards with plain joints oriented north-south. The ceiling in the eastern addition slopes parallel to the roof surface. Cabinets are pine casework with plywood doors. The door to the bedroom is a 2'-5 and 3/4" by 6'-6" hollow core flush door with mahogany veneer, modern brass butt hinges, and a cylindrical lockset. The door to the bathroom is a 2'-6" by 6'-6 and 1/4" hollow core flush door with mahogany veneer, modern brass butt hinges, and a cylindrical lockset.

The south bedroom is approximately 10' by 11' with tightly-laid tongue and groove flooring with a varnish finish. The walls are green-stained vertical tongue and groove boards, 11 and 1/2" wide with V-joints. The ceiling is varnished 5 and 1/2" tongue and groove boards with plain joints.

The north bedroom is approximately 9' by 11' with tightly-laid tongue and groove flooring with a varnish finish. The walls are varnished vertical tongue and groove boards, 11 and 1/2" wide with V-joints. A 2'-6" by 4' alcove at the northwest corner, finished with plywood, is used as a closet. The door to the bathroom is a 1'-11" by 6'-6" hollow core flush door with mahogany veneer, modern brass butt hinges, and a cylindrical lockset.

The bathroom is approximately 4' by 8' with a floor of 12" square vinyl tiles. The walls are green-stained, V-joint, tongue and groove boards. The ceiling is lightly varnished 5 and 1/2" tongue and groove boards with plain joints.

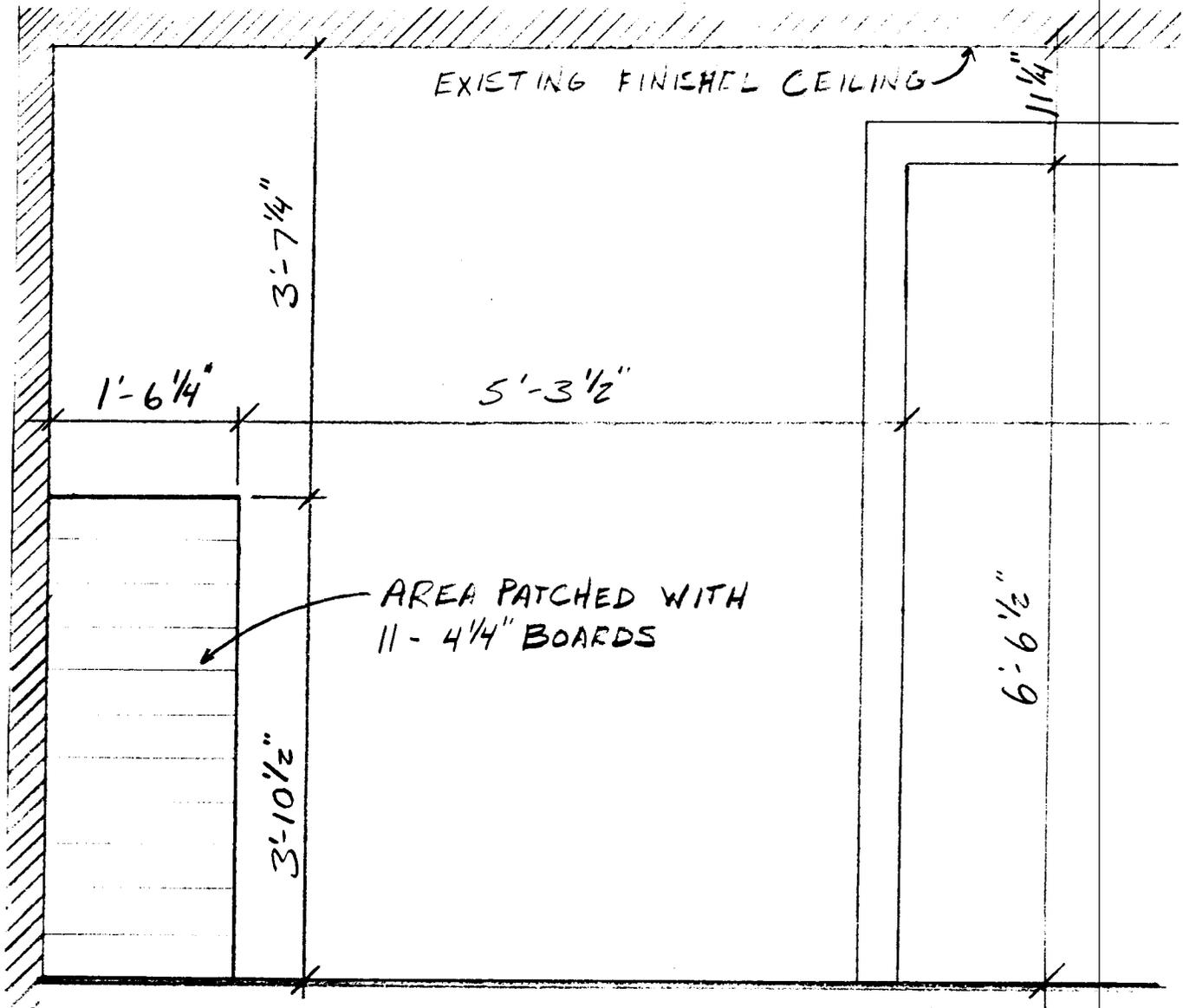


Figure 10
Elevation, West Wall of Living Room

2.2.1.3 Structural Description

The French Cable Hut is a small, simple wood frame structure on a concrete masonry unit foundation. The proposed continued use as a seasonal residence and the "thorough" level of investigation for this report do not warrant the destructive investigation and detailed analysis necessary for a complete structural analysis. However, the floor joists are exposed and analysis of their load bearing capacity indicates they are adequate for normal residential loading of forty pounds per square foot. The girders and posts were not analyzed, but the lack of any evidence of structural distress indicates that they will be adequate until the structure is moved. When the threat of erosion forces a decision to move the Cable Hut, a complete analysis of its structure should be conducted.

2.2.2 Proposed Work

2.2.2.1 Treatment Alternatives

The problems that precipitated this study are the needs for beach parking and seasonal housing, erosion of the sand scarp, and preservation of the historic structure. A winter storm and consequent erosion destroyed a large part of the existing parking lot at Nauset Light Beach, necessitating the project of which this report is a part. Continuing erosion will eventually destroy the French Cable Hut if no action is taken to preserve it. Current projections indicate that the edge of the sand scarp will be close to the Cable Hut around the year 2000. The process of erosion is sufficiently gradual to allow the usual National Park Service budgetary process to be initiated when the edge of the scarp approaches within 25 feet. The alternative treatments to be considered here are:

1. No Action
2. Maintain, Then Move and Preserve

2.2.2.2 No Action

The "No Action" alternative is a continuation of the current standard maintenance treatment and seasonal housing use. This alternative makes no provision for the protection of the historic French Cable Hut from loss to the erosive forces of the sea. The loss of the structure and the cable would be adverse effects that could be mitigated somewhat by the documentation in this report and mitigated further by destructive investigation and salvage of historic materials, (if they prevented viewing the cable terminus) for museum display or study purposes. The estimated cost of this treatment, in addition to regular maintenance, is \$2,000 for additional documentation and salvage. This alternative is not recommended.

2.2.2.3 Maintain, Then Move and Preserve

This alternative calls for maintaining the Cable Hut until the threat of erosion becomes imminent, then moving the entire structure. This alternative involves preserving historic fabric only, removing nonhistoric additions then using the Cable Hut for interpretation. The statement of significance above makes it clear that the relationship of the hut to the cable is the most important feature of the structure. The cable could be moved with the structure, but site integrity would be lost. This alternative would preserve the maximum historic fabric and continue to provide needed seasonal housing. The estimated cost is \$10,000 for construction documents and \$30,000 for moving and preservation. The project team recommends this alternative.

APPENDIXES

APPENDIX A

Assessment of Future Research Potential

We believe that the documentary research for this project has been exhaustive and that the additional data that might be obtained by further research do not warrant the expense of sifting volumes of documents for the chance discovery of an additional bit of relevant information.

If at some future date the proposed treatment for the Cable Hut is changed to restoration, additional physical investigation should be conducted to provide the data necessary for that treatment.

APPENDIX B

ANNOTATED BIBLIOGRAPHY

Very little printed information or photographs can be found on the French Cable Hut. The best source proved to be Alice Snow who operates the French Cable station Museum in Orleans, Massachusetts. Her husband worked for that cable company for many years and through him she became acquainted with the operations and visited the cable hut in the late 1920s before it was altered.

Primary Sources

Interviews

Interview with Miss Mathilda Smart, Eastham, Massachusetts, by Marjorie S. Burling, July 11, 1962, Cape Cod National Seashore files.

Interview with Alice Snow by Berle Clemensen, June 22, 1983.

Letter

Field Curry, Pittsburgh, Pennsylvania, to Historian Edison Lohr, Cape Cod National Seashore, February 26, 1973, Cape Cod National Seashore files.

Secondary Works

Books

Eastham 1651-1951. Eastham, Massachusetts: Eastham Tercentenary Committee, 1951. This is a standard local history of the events that contributed to the development of the Eastham area.

Haigh, K.R. Cables and Submarine Cables. Washington: United States Underseas Cable Corp., 1968. A good account of the various undersea cables and how they were laid.

Scott, J.D. Siemens Brothers 1858-1958: An Essay in the History of Industry. London: Wordenfold & Nicholson, 1958. A history of the company which made the 1878 undersea cable for the French Cable Company. It contains a brief account of its being laid.

Architecture Component Bibliography

Edgerton, Charles E. "The Wire-Nail Association of 1895-96." Political Science Quarterly 12, no. 2:246-47.

This article focuses on the economic, political and legal causes of the rapid transition from widespread use of cut nails to widespread use of wire nails.

Feilden, Bernard M. Conservation of Historic Buildings. London: Butterworth & Co. Ltd., 1982.

The definitive guide to the practice of historic preservation and architectural conservation.

Fleming, John, Hugh Honour, and Nikolaus Pevsner, eds. Penguin Dictionary of Architecture. 3rd ed. New York: Penguin Books, 1980.

General reference for architectural terminology.

Fontana, Bernard L., J. Cameron Greenleaf, et al. "Johnny Ward's Ranch: A Study in Historic Archeology." The Kiva 28 (October-December 1962): 48.

Discussion of the validity of wire and cut nails used for dating archeological contexts.

Gettens, Rutherford J., and George L. Stout. Painting Materials. New York: Dover Publications, 1966.

Standard reference for historical paint research.

Harris, Cyril M., ed. Dictionary of Architecture and Construction. New York: McGraw-Hill Book Co., 1975.

General reference for architectural terminology.

Nelson, Lee H., "Nail Chronology as an Aid to Dating Old Buildings," (American Association for State and Local History Technical Leaflet 48, History News, Vol. 24, No. 11, November, 1968. Nashville, Tennessee).

Discusses evolution in manufacture of nails commonly used in building construction and how to "read" the evidence of manufacturing technology on the nails.

Peterson, Charles E., ed. Building Early America: Contributions toward the History of a Great Industry, Radnor, PA: Chilton Book Co., 1976.

A compilation of papers on early American construction technology presented at a symposium in Philadelphia.

Russell and Erwin Manufacturing Company, Illustrated Catalogue of American Hardware, 1865. Reprint ed. Baltimore: Association for Preservation Technology, 1980.

Comprehensive catalogue of all types of hardware. Used here primarily for terminology and identification.

Timmons, Sharon, ed. Preservation and Conservation: Principles and Practices. Washington: National Trust for Historic Preservation, 1976.

Proceedings of a conference by that title.

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to ensure the wise use of all these resources. The Department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration. NPS D-55, February 1986