

HIGH ISLAND BRIDGE TENDER'S STATION, POWER  
HOUSE  
(Garage)  
Louisiana-Texas Intracoastal Waterway  
State Hwy 124 Crossing of Mud Bayou  
High Island vicinity  
Chambers County  
Texas

HABS No. TX-3404-B

HABS  
TEX  
84-HISL.V  
IB-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED DRAWINGS

HISTORIC AMERICAN BUILDINGS SURVEY  
National Park Service  
U.S. Department of the Interior  
1849 C St. NW  
Washington, DC 20240

HISTORIC AMERICAN BUILDINGS SURVEY  
HIGH ISLAND BRIDGE TENDER'S STATION, POWER HOUSE  
(High Island Bridge Tender's Station, Garage)

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(Note: For information about the Louisiana-Tex (La-Tex) Intracoastal Waterway, see HAER No. TX-24. For more information about the High Island Bridge Tender's Station, see HABS No. TX-3404.)

IDENTIFICATION INFORMATION

Location:

Gulf Intracoastal Waterway at State Highway 124 Bridge  
Located approximately 3.4 miles by road north of the U. S. Highway 87 and State Highway 124 intersection in High Island, Texas; on the north bank of the waterway, 400 feet east of the State Highway 124 bridge and approximately 60 feet west of the High Island Bridge Tender's Station, Residence (HABS NO. TX-3404-A).

Quad/UTM:

United States Geological Survey High Island, Texas 7.5' quadrangle,  
Universal Transverse Mercator Zone 15; 365,620 meters east, 3,274,500 meters north

Occupation and Current Use Data:

The Galveston District Corps of Engineers (COE) has been the owner of the High Island Bridge Tender's Station, Power House and Garage on the Louisiana-Texas (La-Tex) Intracoastal Waterway since the building's original construction in 1933/1934. The building and the associated Mud Bayou Railway Bridge were continuously operated and maintained by the COE between 1934 and 1969 when the railway crossing was discontinued. At present, the High Island Bridge Tender's Station, Power House and Garage is unused and extensively deteriorated, having suffered the effects of prolonged abandonment and vandalism. Most of the remainder of the bridge tender's station property has been redeveloped by a small petrochemical fractionation plant and storage facility.

Significance Statement:

Designed by the Galveston District COE in 1933 in conjunction with planning efforts for the construction of the New Orleans, Louisiana to Corpus Christi, Texas portion of the La-Tex Intracoastal Waterway, the High Island Bridge Tender's Station Power House and Garage was originally built to house engineering equipment required to operate a swing bridge at the Gulf and Interstate Railway Company's crossing of Mud Bayou near High Island, Texas. Resident engineers at the station coordinated the railway bridge's movement to allow for the safe passage of commercial, military and civilian vessels traveling along the intracoastal waterway eastbound and westbound from

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Beaumont and Galveston. The High Island Bridge Tender's Station, Power House and Garage was an integral element of the Bridge Tender's Station (HABS No. TX-3404) which also included the bridge tender's residence (HABS NO. TX-3404-A), an office, a control house, a gasoline house, a fire-hose box, a machinery house, a dock and retaining wall system.

Although the Mud Bayou Railway Bridge and many of its appurtenances were dismantled and removed following abandonment of the railway, the High Island Bridge Tender's Station, Residence and the High Island Bridge Tender's Station, Power House and Garage have remained as representative examples of a locally unusual type of residential and associated building construction. Since their abandonment both buildings have become deteriorated and the High Island Bridge Tender's Station, Residence has been severely damaged by barges passing along the enlarged channel of the waterway. Both buildings retain a remarkable amount of historical and architectural integrity and have been determined eligible for listing in the National Register of Historical Places. Both buildings are scheduled for demolition and removal by the Galveston District COE because they currently pose a severe navigation hazard to vessels passing along the waterway.

### HISTORICAL INFORMATION

#### Physical History:

The High Island Bridge Tender's Station, Power House was probably constructed as an integral component of the Mud Bayou Railway Bridge construction project that was begun October 12, 1933 (War Department 1934:659). Notes on the backs of several aerial photographs taken in April 1934 by the U.S. Army Air Corps indicate that the Tellepsen Company was awarded Contract No. W-359 ENG-1714 for construction of the railway bridge and associated structures. The contractor used approximately 65 men during construction. The photos indicate that the High Island Bridge Tender's Station, Power House was under construction concurrently with the construction of the railway bridge in April 1934

The Mud Bayou Railway Bridge project was officially completed and ready for service on August 18, 1934 with the powerhouse providing electrical power for the bridge's operation via a cable routed beneath the waterway.

Credit for design of the High Island Bridge Tender's Station, Power House cannot be attributed to any particular engineer, as most COE projects require that a team of individuals work together to design and supervise construction of each project. However, such credit can be generally attributed to the engineering staff of the Galveston District COE which provided a very similar design for construction of the High Island Bridge Tender's Station, Residence, with Major E. H. Marke and R.B. Gillette, Jr. providing the necessary review and approval of the design submitted by staff engineers. By 1935, when a design for fitting the open ground floor of the Bridge Tender's Powerhouse as a garage was developed, Major Marke had been promoted to Lieutenant Colonel and approved the design along with Assistant Engineer W. C. Rettiger.

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The 1935 construction drawing for the Bridge Tender's Garage

indicates that the open lower story of the previously completed power house was adapted shortly after the building's completion in 1934 by adding garage doors and corrugated metal siding. In that drawing the building's overall design and details correspond very closely to the existing conditions as observed at the time of recordation. One sheet of engineering maintenance and operation drawings for the Mud Bayou Railway Bridge (see HABS NO. TX-3404, Miscellaneous Field Data) does indicate that minor repairs and alterations were planned for the powerhouse/garage (e.g. replacement of the roof-top ventilator). However, it appears from direct examination of the building that this recommended change was never carried out.

The most notable loss of architectural fabric at the High Island Bridge Tender's Station, Powerhouse is that all original roof-edge flashing materials and gutter system have been lost. The complete absence of all original materials for this portion of the roof suggests that they may have been salvaged along with other architectural and engineering components of the building site. The observed use of copper flashings elsewhere (on the High Island Bridge Tender's Station, Residence) further supports this possibility. Otherwise, all power generating equipment and fixtures have been removed, with the exception of a few segments of electrical conduit and cable buried in the garage floor area. The building is generally in poor condition with all window glass broken and the staircase seriously deteriorated.

### ARCHITECTURAL INFORMATION

#### General Statement:

The High Island Bridge Tender's Station, Power House and Garage has been described as a locally unusual type of construction for outbuildings associated with residential buildings. This description is apt because the building is highly engineered and in this way is atypical of most outbuildings buildings along the Texas Gulf Coast. However, the building is characteristic of many small buildings designed and built by the Galveston District COE in that the rigid, over-built structure of the building is designed to meet demanding environmental stresses of the Texas Coast as well as the building's intended engineering function. It is notable that the building, although primarily engineering in function, is not devoid of architectural character and does relate compatibly to nearby bridge tender's residence, with its the smooth, stuccoed walls and robust piles supporting the main floor. By virtue of this combination of engineering and architectural characteristics, the power house/garage has withstood repeated exposure to hurricanes as well as prolonged neglect and vandalism, and yet still retains to a remarkable extent its architectural character and craftsmanship.

The overall structural integrity of the building is sound, although all of the building's window glass has been broken and much of the exterior wood has decayed - especially the wooden staircase. The interior is littered with the organic debris and waste of nesting birds as well as lathe and plaster debris that has fallen from the ceiling. Vandals have marked the exterior north wall with spray paint and all usable mechanical equipment and hardware has been salvaged.

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**Description of Exterior:**

The gross horizontal dimensions of the building are 21 feet by 11 feet, with the entry placed near the west corner of the north wall at the landing of a wooden staircase. The main floor is elevated on pilings to a height approximately 10 -12 feet above grade. The pilings are located around the perimeter of the building, creating an open space that is one bay wide and two bays deep. The exterior of the ground floor still retains portions of corrugated metal siding and two garage doors below the east wall of the main floor. Fenestration is limited with only the entry door on the north wall, a symmetrical pair of windows on both the east and west walls, and one small window located opposite the doorway on the south wall. The roof is a low-pitched hip configuration with a short ridge and a prominent, centrally located ventilator.

The foundation of the building consists of reinforced concrete piles, typically 1'-6" square in cross-section. The foundation condition (depth of penetration below mean low tide) for this building is unknown. The piles extend above mean low tide approximately 14 feet to support the main floor beams and girders.

All exterior walls are of poured, reinforced concrete that has been finished smooth and coated with aluminized paint. The primary architectural detailing that distinguishes the building's exterior occurs at the base of each wall where the wall thickness flares twice to create a stepped skirting that projects slightly beyond each wall plane. The gently pitched slope of the roof and the ventilator crowning the roof ridge also provide architectural interest.

The structural system consists entirely of reinforced concrete, with the walls and floor poured in stages above but integrated with the piles. The concrete floor is supported by massive concrete beams and girders. The roof is constructed of simple wooden trusses and rafters with plywood gussets at the ends of each truss where they bear on a wall plate.

Ventilation of the interior equipment and machinery space was provided by means of a single roof-mounted ventilator that was connected to the interior space by a metal flue (approximately 1'-0" diameter).

Access to the main-floor equipment and machinery space was from a small landing located at the head of the wooden stair on the north wall. The condition of the landing and stair was very poor at the time of recordation, with many boards missing, decayed or broken. Wire nails were used throughout the staircase for fasteners. It is uncertain whether the stair is an original component of the building, although it closely resembles one depicted in a 1947 engineering drawing of the building (see HABS NO. TX-3404; Miscellaneous Field Data).

At the head of the stair was the only doorway into the equipment and machinery space. At the time of recordation the heavy, metal-case door and casing were intact and partially operable. The door features an arrangement of four industrial-grade safety lights (with metal mesh embedded in the glass) for providing light to the interior of the main floor.

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Windows in the building were all metal, one-over-one, with industrial safety-grade lights (each light was embedded with wire mesh) and no awnings. Poured concrete sills for each window project slightly from the exterior wall surface. Symmetrical pairs of windows are located on each of the end walls. The southern-most window on each end wall has an exterior arrangement of fixed wooden louvers covering the lower sash position for ventilation. The upper sash of these and all other windows appeared to be fixed. Movement of the lower sashes was within grooves manufactured into the window's metal casing. Small tabs had been fixed in place beneath the upper sashes to prevent their movement.

The roof is composed of wooden trusses and rafters constructed in a low-pitched hip configuration. The frame is covered directly with corrugated and galvanized metal panels. The ridge and each hip joint are covered with a galvanized metal cap strip. Because the roof edge materials were entirely missing at the time of recordation, the materials and methods of construction were not observable. However, a detailed drawing from February 1947 that depicts a proposed alteration to the roof-mounted ventilation system (see HABS NO. TX-3404; Miscellaneous Field Data) indicates that the roof edge was surrounded by an external gutter. The gutter appears to have been an integral part of a molded or pressed-metal flashing that attached to the roof surface and the outer surface of the wall. Small fragments of copper metal observed through the open ceiling suggest that the flashing and gutter system which once existed around the edge of the roof were probably salvaged along with other materials and equipment during the Corps' 1969 demolition and removal of much of the bridge tender's station.

One electrical light fixture (yard light) is still located on the south wall overlooking the waterway, although there is no visible evidence of another light fixture shown in the 1947 drawing to be located over the stair. An insulated cable mounting bracket that once supported electrical supply cables to the bridge tender's residence is still mounted on the west wall over the garage doors.

Description of Interior:

At ground level is an open, single-bay garage space defined by the perimeter piling locations. Based on a 1935 COE drawing, the earliest known drawing of the building, the use of this area as a garage appears to have been added shortly after the building had been completed in 1934. The garage was originally accessible from the east end, but the compacted shell floor specified by the Corps has been lost to erosion of the waterway channel. All remaining evidence of the garage floor surface is obscured by soil and vegetation which has overgrown the remaining bankline.

The main floor is a simple open space that once housed a variety of electrical control panels, wiring, motors and generating equipment. Figure - shows the motor-generator equipment to have been located within the eastern end of the space, near the louvered window for improved ventilation and cooling. Control panels and switches were typically mounted to the walls in the center and west end of the main floor.

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The floor surface appears to be smoothly finished concrete, although most of it was covered at the time of recordation by broken ceiling pieces and organic debris. All walls appear to have been similarly finished with smooth, unpainted concrete. The only painted element of the interior is a band around the base of the walls that corresponds to the height of a baseboard. The wall surface around all sides of each window opening is raised to form a narrow trim band. Otherwise there are no moldings.

All window and door hardware is metal and of common industrial-grade manufacture. Electrical switches, lights and outlet fixtures are all surface mounted to the walls and ceiling. A support bracket for the base of a fire extinguisher remains attached to the north wall, just inside the doorway.