BATEY COLUMBIA RAILROAD BRIDGE
200 feet west of the highway at PR-3,
(km.106.9)
spanning the Maunabo River
Barrio Calzada
Maunabo
Puerto Rico

HAER No. PR-33

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Southeast Region
Department of the Interior
Atlanta, Georgia 30303

HAER
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HISTORIC AMERICAN ENGINEERING RECORD

BATEY COLUMBIA RAILROAD BRIDGE HAER No. PR-33

Location: 100 ft. west of the highway bridge at PR-3, km. 106.4, spanning the Maunabo River
Barrio Calzada
Maunabo, Puerto Rico

U.S.G.S. 7.5 minute Yabucoa, Puerto Rico, quadrangle
Universal Transverse Mercator coordinates:
1422 III NW.192316.1993220

Date of Construction: 1933-35

Engineer: Puerto Rico Iron Works, Playa de Ponce, PR

Builder: Puerto Rico Iron Works, Playa de Ponce, PR

Present Owner: Asociación Azucarera Cooperativa Lafayette, Arroyo, P.R.

Present Use: Abandoned; to be demolished on October 1993.

Significance: The Batey Columbia Railroad Bridge is one of the few Warren Pony Truss Railroad Bridges which survive in Puerto Rico. The Central Columbia sugar mill, of which several buildings survive near the bridge, had a narrow-gage, portable rail system for hauling sugar cane. At the time when this bridge was erected, Columbia had closed down and its rail system was hauling cane to a weighting and hoisting station on its former grounds. From there it was transported by truck to the one-meter railroad belonging to the Central Lafayette sugar mill. This trucking operation was the first large scale sugar cane road transportation venture in Puerto Rico. This bridge has been judged as eligible for National Register listing by the PR SHPO.

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(On behalf of the US Soil Conservation Service)

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A. Summary

The Batey Columbia Railroad Bridge is a 72'6" long, single-span, steel truss railroad bridge found about 100 ft. west of the highway bridge located at PR-3's kilometer 106.4. It is in Barrio Calzada,[1] about 1000 feet away from the southeastern edge of the town of Maunabo, a small, traditionally agricultural municipality in the southeastern corner of Puerto Rico. It crosses the Maunabo River, the stream which delineates the northern border of the *batey* [2] that belonged to Central Columbia, a sugar mill which closed down in 1928. The bridge is located approximately 80 ft. to the north of the closest surviving Central Columbia building.

The bridge was built between 1933-35 to replace a wooden deck bridge serving a narrow-gage portable rail system. At that time, the rail system, originally built to bring cane for processing at Central Columbia, was serving a weighting and hoisting station at Batey Columbia. From there, the sugar cane was trucked to a transshipment point in Central Lafayette's one-meter railroad system located six miles away.

B. Description and Condition of the bridge

The bridge's superstructure is a Warren pony truss with riveted connections and alternate vertical elements, reinforced with external triangular bracing. The upper chord is a box section with an open-lattice lower flange. The superstructure is 7' 9" high and 12' 6" wide. One of the steel elements bears a low-relief inscription which reads:

CARNEGIE C USA

The truss is supported by concrete abutments which leave a 13-foot clearance above the river's surface. The abuttments, which have some architectural details, have diagonal wings.

The concrete supports appear in good condition, but the steel superstructure is heavily corroded and has been damaged by floods and debris. The end sections of the lower chord, which have lost most of their material, are the most critically

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1. The U.S.G.S. quadrangle map [Yabucoa, P.R., 7.5 minute series] misspells the *barrio's* name as "Calzado".

2. *Batey* is the name given to a sugar mills' grounds, more properly to the area dedicated to handle the cane being hauled in.

affected. The end sections of the longitudinal beams which ran under the rails appear to be taking the load of the corresponding parts of the lower chord.

If the bridge is to be lifted in one piece, a structural engineer may recommend to reinforce the end panels of the trusses for lower chord tension. If the four heavily corroded elements were replaced, the superstructure may be found by a structural engineer to be sound enough to sustain foot traffic in a recreational use on another site.

C. Historical Background

Central Columbia

Central Columbia was founded in 1901 by a group of Maunabo sugar plantation family firms: *C. & J. Fantauzzi*, *Clausell & Verges*, and the Otto Riefkohl estate (Ferreras Pagán 1901, 41-43). Fantauzzi and Clausell were French; Verges was American; and Riefkohl was German. Their *haciendas* [3] had been badly affected by the San Ciriaco Hurricane of 1899. The most important haciendas owned by these families in Maunabo were called: *Bordalesa*, *Orleanesa* and *Garona* (Toro Sugrañes 1975, 86).

Central Columbia's approximate production in its first year was 20,000 bags (2,500 tons) of sugar. This made it the fifth largest sugar producer in Puerto Rico, although far behind the largest two, the gigantic Guánica and Aguirre mills (Ferreras Pagán, *Ibid.*). The latter, owned by American corporations, were established just after the 1898 US invasion, in 1900 and 1902 respectively.

The families who owned Central Columbia also owned other sugar mills in southeastern Puerto Rico: Central Providencia in Patillas and Central Lafayette in Arroyo. Providencia, founded in 1902 and producing 15,000 bags of sugar per harvest, was owned by the Alcaide estate, McCormick, Verges, and Riefkohl (Fereras Pagán, *Ibid.*). Central Lafayette, founded c.1905 on the site of former Hacienda Cuatro Calles, was owned by *C. & J. Fantauzzi*. The French brothers had adquired this hacienda in 1891 (*Ibid.*, 47).

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4. An *hacienda* is a plantation which processes an agricultural product into a finished good. Puerto Rico's turn-of-the-century sugar haciendas used mostly steam or ox mills to grind their cane and employed bagasse-fired *Jamaican trains* of open kettles to process the juice. A *central* is a sophisticated concern which uses powerful steam-powered mills and vacuum evaporation equipment. It processes much more cane, which often comes from plantations. When owned by others, the plantations are called *colonias*.

Central Columbia had a small railroad which included several miles of portable rail. One- and two-ton wagons were hauled by small gasoline locomotives. The smaller ones were used on the portable rail sections and were loaded by hand. The larger type could only roll over fixed rail; they were loaded by hoists which transfered cane from ox-carts.

Central Columbia was limited by topographic factors to handle only cane from the isolated Río Maunabo valley. While other Puerto Rican *centrales* grew as the areas which they served expanded, Columbia was not able to do the same. Hence, it slipped to become a small mill by the late 1920s, with a stagnant grinding capacity of approximately 800 tons of cane per 24 hours (Marrero-Hernández: personal communication, July 1993). By 1928, when Columbia was destroyed by the San Felipe Hurricane, it had been producing between 5,200 and 9,500 tons of sugar per year (Farr 1928, 92).

The Columbia railroad operations outlasted the mill. *C. & J. Fantauzzi*, one of the firms which was a partner of the Columbia mill, was also a partner of Central Lafayette, located 17 road miles to the west of Columbia. After the hurricane, the Fantauzzis bought out their partners both in the mill and in most of the Maunabo canefields (Gilmore 1933, 180). They used part of the Columbia machinery to enlarge Central Lafayette, and used its *batey* as a truck terminal. Central Providencia had also been levelled by the San Felipe Hurricane of 1928. The enhanced Central Lafayette was able to process the cane that had been going to both smaller mills. The Maunabo cane was still brought to the batey by the old mill's railroad system. At that point, the cane was weighted, hoisted into trucks and taken 6 miles to Patillas, the municipality located between Arroyo and Maunabo. At Colonia Merle, it was again transshipped, this time to the Lafayette mill's 1-meter railroad. The Lafayette railroad was connected on its western end to the Aguirre mill's Ponce and Guayama Railroad (P&G RR), and used its tracks to haul sugar to Aguirre's port on Jobos Bay (Francisco Vázquez: personal communication, July 1993).

The 1932 sugar cane crop from Columbia was estimated to amount to about to 80,000 tons, delivered to Merle Colony at a rate of 750 tons per day in a fleet of trucks, each one carrying an average load of 5 tons. Hauling was done on a contract basis with individual truck owners. Starting with the 1932 crop, the trucks were equipped with pneumatic tires to facilitate operations and reduce wear and tear on the road. This development of truck handling of cane at Central Lafayette, for which the existing Batey Columbia bridge was erected, was the initial movement in Puerto Rico toward extensive hauling of cane by truck (Gilmore, *Ibid.*).

In 1937, Lafayette was bought by the Puerto Rico branch of the New Deal, the "Porto Rico Reconstruction Administration", in 1937. A cooperative was

organized for administering it as a social experiment. It outlasted some privately-owned mills during the downfall of the Puerto Rican sugar industry due mainly to rising labor costs and labor scarcity, but eventually it closed down in 1974 (Francisco Vázquez, *Ibid.*).

The cooperative still exists and it owns the mill buildings and lands, including Maunabo canefields and the Batey Columbia. Its main operation at present, other than land holding and rental, seems to be in the area of health care. It uses the mill's hospital as the hub of a medical insurance service, an outgrowth of the health care once provided to the cane-cutters and mill workers.

Central Lafayette:

Year	Capacity (tons of cane/24 hrs)	Sugar production (tons)
1934	1700	37,378
1948	3000	34,952
1952	N/A	35,536

The Existing Bridge

The existing Central Columbia Bridge was built between 1933-35 for the small, 24"- gage railroad which served the Maunabo cane hauling operations of the Lafayette Sugar Mill (*Central Lafayette*). It replaced a wooden deck-truss bridge which had been destroyed by flooding water. The lower clearance of the replaced bridge used to cause flooding in the Columbia grounds because it caught much flood debris and blocked the river bed.

It was designed and built by *Puerto Rico Iron Works* (Sebastián Ortiz: personal communication, July 1993). Puerto Rico Iron Works, a Ponce, P.R. foundry and machine shop which sold, repaired, designed, and fabricated machinery and bridges, was Puerto Rico's most prolific steel bridge fabricator in the 20th Century. Its main customer was the sugar industry of southern Puerto Rico. The 31-meter PR-3 Guayama Bridge (No. 138), fabricated by the same company but erected by Rexach & Sobrinos in 1936, is almost identical to this one. The PR-3 Aruz Bridge (No. 24), in the municipality of Juana Díaz, may have been this company's largest bridge. It is a 50 meter Parker truss, built in 1938 (Pumarada-O'Neill 1992, 105; and *Ibid.* 1990, n.p.).

At the time when the main road crossed the Maunabo River by means of a ford, the railroad bridge was used by the highway vehicles whenever the water level rose. The bridge had then a tarpaulin cover to protect a timber deck which served the cars (José Antonio Marrero-Hernández, *Ibid.*).

The Columbia rail system was in use until 1958. On that year the cooperative which owned Lafayette erected a truck-lifting platform at the mill. The trucks were then loaded with hoists erected at each plantation and driven directly to Central Lafayette, bypassing the Columbia rail system and its steel bridge (Francisco Vázquez, *Ibid.*).

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Oral Sources:

José Antonio Marrero-Hernández, former resident of Batey Columbia.

Sebastián Ortiz, resident of Batey Columbia since 1929; former foreman of the cane weighting station; former mayor of Maunabo.

Francisco Vázquez, manager of the Lafayette Cooperative.

SKETCH PLAN